

# *Private Voluntary Health Insurance in Development*

Friend or Foe?



*Editors*

Alexander S. Preker  
Richard M. Scheffler  
Mark C. Bassett



THE WORLD BANK



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**THE WORLD BANK**  
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## Foreword

**E**ffective management of risk is essential to development. The recent bird flu illustrated the global reach of unexpected events with potentially devastating welfare and economic consequences. Currency fluctuations can destabilize even a robust economy. The impact of crop cycles on the livelihood of rural populations is well-known. Floods, earthquakes, and hurricanes strike without warning. And civil strife and wars can drag even a prosperous country into ruin.

This volume is about managing risk. Not the risk of national or man-made disasters but the risk of illness. The developing world is plagued by many of the historical scourges of poverty: infectious disease, disability, and premature death. As countries pass through demographic and epidemiological transition, they face a new wave of health challenges from chronic diseases and accidents.

In this respect, illness has both a predictable and an unpredictable dimension. Illness is predictable in that as people age, most will experience a period of illness and disability before dying. The overall burden of illness and aggregate financial consequences are well-known. But the impact on individuals, households, and local communities is much more varied.

Contributors to this volume emphasize that the public sector has an important role to play in the health sector, but they demonstrate that the private sector also plays a role in a context in which private spending and delivery of health services often composes 80 percent of total health expenditure. Managing risks in the private sector begins at the household level. The mother who washes her hands before feeding her baby and the elderly person who uses a cane to steady himself or herself when walking are managing risk. Individual savings play a role. Local communities that band together and provide micro health insurance are anticipating future needs.

Private voluntary health insurance is merely an extension of such nongovernmental ways to deal with the risk of illness and its impoverishing effects in low- and middle-income countries. Given a choice between spending \$10 out of pocket or \$10 channeled through insurance, the editors and authors of this volume compellingly argue in favor of the latter. Providing appropriate incentives for populations to enter into risk-sharing arrangements should be a high public policy priority in developing countries.

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## Preface

**D**oes private health insurance have a place in development? Does it benefit only the rich, or can it contribute to the well-being of poor and middle-class households? Does it lead to insurance market failure and distortionary effects in the health sector, or can it improve access to health care, provide financial protection against the cost of illness, and combat social exclusion?

The world of technical experts and policy analysts is divided into two camps over private health insurance. One camp claims that it leads to overconsumption of care, escalating costs, diversion of scarce resources away from the poor, cream skimming, adverse selection, moral hazard, and an inequitable American-style health care system. The other camp claims that it provides access to care when needed without the long waits, low quality, and abuse characteristic of public services provided by ministries of health. This camp asserts that many of the problems observed in private health insurance are also observed in social health insurance and government-subsidized health services.

This volume presents findings of a World Bank review of the existing and potential role of private voluntary health insurance in low- and middle-income countries and is the third volume in a series of reviews of health care financing. One volume in the series, *Health Financing for Poor People: Resource Mobilization and Risk Sharing*, presents findings of a World Bank review of the role of community financing schemes in rural areas and inner-city slums. It reports that these schemes contribute to financial protection against illness and increase low-income rural and informal sector workers' access to health care. However, the schemes mobilize few resources from poor communities, frequently exclude the poorest of the poor without some form of subsidy, have a small risk pool, possess limited management capacity, and cannot offer the more comprehensive benefits often available through more formal health financing mechanisms and provider networks. Many of these observations hold true for private voluntary health insurance.

Another volume in the series, *Social Reinsurance: A New Approach to Sustainable Community Health Financing*, details use of community rather than individual risk-rated reinsurance as a way to address some of the weaknesses of community financing schemes. The authors show how standard techniques of reinsurance can be applied to micro insurance in health care. These techniques are especially relevant when the risk pool is too small to protect a scheme against expected expenditure variance. In this context, reinsurance provides a "virtual" expansion of the risk pool without undermining the social capital that underpins participation by rural and urban informal sector workers in small community-based schemes.

The findings of these earlier volumes are relevant to the review of private voluntary health insurance presented in this volume. Community financing schemes and private health insurance often have important interfaces with government programs through subsidies and provider networks. Both rely on voluntary membership. Membership is small unless the effective risk pool is enlarged through reinsurance or establishment of a federation with other schemes. Both depend on trust: members must have confidence that contributions will lead to benefits when needed. Both are vulnerable to insurance market failures such as adverse selection, cream skimming, moral hazard, and free-rider phenomena.

But private health insurance and community financing schemes differ in some important ways. The latter emerged where governments were unable to reach the rural poor and urban informal sector workers; they are often linked with rural loans, savings, and micro insurance programs; and many benefited from donor involvement during start-up. They usually serve the poor, and their benefit packages are constrained by their limited resources unless they receive a government or donor subsidy. By contrast, private voluntary health insurance schemes were often set up by large enterprises in the hope that access to health care would cut illness-related absenteeism and improve labor productivity. These schemes therefore serve formal sector workers and provide benefits that are often generous compared with those provided by community financing schemes and publicly financed government programs. Whereas community financing schemes tend to be nonprofit, many private voluntary health insurance schemes are for-profit.

Many countries have attempted to make membership in community-based or private voluntary health insurance compulsory and to offer subsidized insurance through the public sector. Arguments in favor of this approach include coverage of a higher proportion of the population and broadening of the risk pool through collection of contributions at the source from formal sector workers. Two forthcoming World Bank books, *Government-Run Mandatory Health Insurance* and *Fiscal Space for Health Care*, examine these and other arguments.

Some countries have attempted to “leapfrog” both private and public insurance by introducing legislation that gives the population at large access to a free, government-subsidized national health service, but few low- and middle-income countries have secured universal access through this approach. First, at low-income levels, weak taxation capacity limits the fiscal space available to health and other segments of the public sector. Second, the public lacks trust in government-run programs that require payment today for benefits that may or may not be available tomorrow due to shifting priorities and volatile resource flows. Finally, public subsidies often do not reach the poor when programs are designed to provide care for everyone. The result is underfunded and low-quality publicly financed health services that leave the poor and other households without adequate care and exposed to severe financial risk in the event of illness.

How scarce money is spent in the public sector probably has a greater impact on the services available to the poor than the presence or absence of private and government-run mandatory health insurance. Public sector spending is the topic

of four other World Bank books: *Spending Wisely: Buying Health Services for the Poor*; *Public Ends, Private Means: Strategic Purchasing of Health Care*; *Innovations in Health Service Delivery: The Corporatization of Public Hospitals*; and *Private Participation in Health Services*. These books emphasize the important role that markets and nongovernmental providers play in improving value for money spent by the public sector.

Explicit public policies are needed to secure an efficient and equitable system of health care financing. But state involvement alone is insufficient. Contributors to this volume argue that private health insurance should receive increased attention as an instrument, along with other financing mechanisms, for providing fiscally sustainable access to needed health services, financial protection against the impoverishing cost of illness, and health insurance coverage for social groups often excluded from access to publicly provided health care.

To achieve these goals, chapter 1, “The Evolution of Health Insurance in Developing Countries,” emphasizes the need to combine subsidies, insurance, savings, and user charges in a single system. With respect to insurance, it argues in favor of voluntary health insurance (community- and private enterprise-based programs). The chapter summarizes the key health financing challenges in low-income countries, policy options for reform, and the methodology for the volume’s review of private voluntary health care.

The remaining chapters are divided into three sections. Part 1 (chapters 2–6) reviews the economics of private voluntary health insurance, paying special attention to constraints in low-income countries. These constraints include low participation in the formal labor market and high participation in the informal labor market, low contribution compliance in the formal sector, little social cohesion, high reliance on donor funding, a high consumer price index, high medical inflation, high morbidity and mortality, and underuse of health services in the public sector and overuse of services in the private sector.

Chapter 2, “Insights on Demand for Private Voluntary Health Insurance in Less Developed Countries,” reviews the economic theory of insurance demand to determine whether a case can be made for insurance coverage of high out-of-pocket payments in many developing countries. The chapter suggests that these payments provide a *prima facie* case that insurance is both desirable and “affordable” if it can be offered at relatively moderate administrative cost. It argues that adverse selection, moral hazard, and risk selection are surmountable obstacles to at least partial coverage of out-of-pocket expenses, and it presents ways to overcome cultural impediments, such as unfamiliarity with insurance or distrust of insurance organizations, which could explain the lack of insurance markets in developing countries.

Chapter 3, “Supply of Private Voluntary Health Insurance in Low-Income Countries,” examines dimensions of supply, which include loading, comprehensiveness of benefits, level of risk selection effort, degree of vertical integration with health service providers, and degree of seller concentration in the market. It argues that premium regulation and moral hazard (the tendency of consumers to be lax in prevention, opt for the more intensive treatment alternative

when ill, and push for application of the latest medical technology) influence several of these dimensions. Moral hazard induces health insurers to include only a few benefits, because each benefit tends to increase in price, quantity, and hence expenditure. Premium regulation induces risk selection. If allowed to charge contributions according to true risk, health insurers will set premiums such that high-risk individuals and low-risk individuals yield the same contribution margin on expectation. In that event, risk selection is not worthwhile. Case studies from low-income countries illustrate these theoretical predictions, which hold true not only for private health insurance but also for community-based and public health insurance. On the whole, the limited empirical evidence suggests that the theory developed in the chapter may be sufficiently descriptive to provide some guidelines for policy.

Chapter 4, “Market Outcomes, Regulation, and Policy Recommendations,” describes the outcomes that can be expected in unregulated voluntary markets for health insurance. It argues that government can be viewed as the supplier of regulation, whereas consumers and insurers are demanders of regulation. In the market for regulation, governments usually do not take into account the efficiency losses they impose, thereby creating a negative externality. Because governments are unlikely to levy an internalizing (Pigou) tax on themselves, demand for regulation should be kept as small as possible. According to the chapter authors, the primary purpose of regulation should be to mitigate the consequences of any insolvency, for example, by means of a guarantee fund to be built up by (private) health insurers. But because governments often seek to redistribute income and wealth through (health) insurance, an alternative worth considering is a means-tested subsidy sufficient to close the gap between the competitive risk-based premium for reference policies (usually with rather modest benefits) and a maximum contribution deemed politically acceptable. This alternative keeps regulation at a minimum while empowering consumers throughout the wealth distribution. Its downside is that government must explicitly commit funds to the financing of health insurance for the poor. Moreover, middle-class and upper-class taxpayers may seek to benefit from subsidization of access to health, which may cause public expenditure devoted to insurance to explode. Therefore, the chapter offers no one-size-fits-all policy suggestions but instead recognizes the importance of institutional differences.

Chapter 5, “Provision of a Public Benefit Package alongside Private Voluntary Health Insurance,” examines the nature of the benefit package under public health insurance and private health insurance from an economic perspective. The statutory (or public) package is available to all for free at the point of access and is funded by taxation. Citizens may choose to augment the statutory package with voluntary insurance, charged at an actuarially fair premium. The government’s problem is to determine the optimal size and composition of the statutory package in light of efficiency and equity concerns. The chapter shows that when health care is insured solely under a public package, equity concerns may be important in selecting the interventions to insure. However, when voluntary

insurance is also available, interventions to be insured in the statutory package can be selected solely according to their cost-effectiveness, and equity concerns can be addressed through the size of the implicit tax transfer from rich to poor. These findings have important implications for policy on health technology assessment and national priority setting in health care.

Chapter 6, “Economics of Private Voluntary Health Insurance Revisited,” reexamines some of the questions and conclusions in earlier chapters. First, why is demand for insurance so low in low-income countries? As chapter 2 notes, affordability cannot be the sole reason that so little voluntary insurance exists. It follows that governments or donors seeking to expand insurance coverage will have to deal with the cultural factors that hold back demand. Second, what is the right kind and amount of regulation for private voluntary insurance in a relatively poor country? Chapter 6 takes issue with the idea that regulation should be minimal, as argued in chapter 4. It contends that regulation must be sufficient to ensure that insurers comply with their promises, that the insured are protected if they need to change their coverage, and so on. Third, what is the proper role of a subsidy in the insurance market? Who should be subsidized, for what, and to what extent? These questions turn out to be closely related to the subject of chapter 5, because governments have a choice between implicitly insuring people (by providing care) and subsidizing private insurers. Using cost-effectiveness as the sole criterion, a government can choose services to provide at different levels of overall expenditure; the choice may depend on the offerings of private insurers, which subsidies can affect. The main unresolved issue is that of the relative importance of ensuring coverage of cost-effective interventions—whether financed publicly, privately, or publicly and privately—and of protecting people from financial risk. The amount of protection people desire affects both the demand for private insurance and the degree to which a government may depart from the cost-effectiveness criterion even in the presence of private coverage.

Part 2 (chapters 7–9) examines health insurance trends in developing countries and member countries of the Organisation for Economic Co-operation and Development (OECD). Case studies supporting these chapters are available online at [www.worldbank.org/hnp](http://www.worldbank.org/hnp) under Publications: Discussion Papers. These studies provide evidence of the impact of private health insurance on specific outcome indicators, including financial protection against the cost of illness, insurance coverage, nonmedical consumption, access to health care, and labor markets.

Chapter 7, “Scope, Limitations, and Policy Responses,” analyzes characteristics of private voluntary health insurance in low- and middle-income countries and evaluates its significance for national health systems. The authors draw three major conclusions. First, private voluntary health insurance involving prepayment and risk sharing currently plays only a marginal role in the developing world. Coverage rates are generally below 10 percent of the population; private risk-sharing programs have higher coverage rates in a few countries. Second, in many countries, the importance of private voluntary health insurance in financing health care is on the rise. Various factors contribute to this

development: growing dissatisfaction with public health care, liberalization of markets, and increased international trade in the insurance industry, as well as overall economic growth, which stimulates higher and more-diversified consumer demand. Third, the development of private voluntary health insurance presents both opportunities and threats to the health care system of developing countries. If such insurance is carefully managed and adapted to local needs and preferences, it can be a valuable complement to existing health financing options. In particular, nonprofit, group-based insurance schemes could become an important pillar of health care financing, especially for individuals who would otherwise be left out of a country's health insurance system. However, private voluntary health insurance could undermine the objective of universal coverage. Opening up markets for private health insurance without an appropriate regulatory framework might increase inequalities in access to health care. It might lead to cost escalation, deterioration of public services, reduction of the provision of preventive health care, and a widening of the rich-poor divide in a country's medical system. Given these risks, the challenge for policy makers is to develop a regulatory framework that is adapted to a country's institutional capacities and in which private voluntary health insurance can efficiently operate.

Chapter 8, "Lessons for Developing Countries from the OECD," summarizes findings from a seminal OECD review of private voluntary health insurance in Western market economies. Debate on such insurance in the OECD is hampered by limited evidence on its functions and impact on health systems. Nevertheless, the chapter assesses available evidence on the effects of private voluntary health insurance under various circumstances and draws conclusions about its strengths and weaknesses. The author identifies factors that contribute to desirable or undesirable performance of private voluntary health insurance markets.

Chapter 9, "Trends and Regulatory Challenges in Harnessing Private Voluntary Health Insurance," examines some public policy challenges related to private voluntary health insurance in low- and middle-income countries. It argues that the distinction between private and public health insurance is often exaggerated, because well-regulated private insurance markets and public insurance systems share many features. It notes that private health insurance preceded many modern social insurance systems in Western Europe, allowing countries to develop the mechanisms, institutions, and capacities needed to provide universal access to health care. The authors report that private insurance is restricted to no particular region or level of national income. The seven countries that finance more than 20 percent of their health care through private health insurance are Brazil, Chile, Namibia, South Africa, the United States, Uruguay, and Zimbabwe. In each case, private health insurance provides primary financial protection for workers and their families, whereas public health care funds are targeted to programs covering poor and vulnerable populations. The chapter argues that private health insurance can serve the public interest if governments implement effective regulations and focus public funds on programs for the poor and vulnerable. Moreover, countries can use it as a transitional form of health insurance to develop



experience with insurance institutions while the public sector increases its own capacity to manage and finance health care coverage.

Part 3 (chapters 10–13) examines the evolution of the health insurance industry, regulatory issues, and the feasibility of expanding private health insurance in countries where such insurance currently plays only a minor role. Case studies supporting these chapters are available online at [www.worldbank.org/hnp](http://www.worldbank.org/hnp) under Publications: Discussion Papers.

Chapter 10, “Financial and Management Best Practice in Private Voluntary Health Insurance,” reviews best practice in the management of voluntary health insurance. It addresses governance, strategic directions, financial performance, actuarial performance, managerial capacity, and risk management.

Chapter 11, “Opportunities and Constraints in Management Practices in Sub-Saharan Africa,” identifies insurance issues specific to South Africa and the countries of West Africa and East Africa. Drawing on insights from chapter 10, the chapter identifies needed improvements in regulatory and institutional frameworks.

Chapter 12, “Facilitating and Safeguarding Regulation in Advanced Market Economies,” examines regulation of private voluntary health insurance in advanced market economies, particularly the United States. It suggests ways to balance “facilitating regulations,” which foster development of private health insurance, with “safeguarding regulations,” which protect consumers and serve other public policy interests. The chapter considers solvency oversight and regulation, regulation of premium rates and underwriting/risk classification, regulation of policy language and insurers’ sales and claims practices, and regulation of possible cooperative arrangements among private insurers. It pays particular attention to procedures for avoiding the destabilizing effects of potentially inadequate premiums in relation to insurers’ promised payments. It describes solvency monitoring systems, regulatory capital requirements, financial reporting requirements, and government guarantees of health insurers’ obligations. The author considers the benefits and costs of requiring prior regulatory approval of health insurers’ rate changes and of limiting underwriting/classification related to preexisting conditions and renewability of coverage. He contrasts two approaches for dealing with high-risk segments of the population: full risk rating, with either mandatory high-risk pools or government subsidization of premiums for high-risk citizens, and broad restrictions on underwriting/classification (community rating) that subsidize rates to the high-risk insured by increasing rates for the low-risk insured. The chapter concludes with discussion of cooperative arrangements among insurers as a means to enhance the stability of private health insurance in developing countries.

Chapter 13, “Financial and Other Regulatory Challenges in Low-Income Countries,” examines the regulatory environment most likely to foster private voluntary health insurance in low-income countries. In some countries, restrictive capital and other regulatory requirements prevent the natural growth of private health insurance. In other countries, insurance and prepayment schemes flourish in a

totally unregulated environment. In considering various approaches to regulation of private health care insurance in developing countries, the chapter emphasizes the need for regulation that is not restrictive but enforceable and tailored to an environment in which institutional and management capacity is weak.

The appendix, "Review of the Literature on Private Voluntary Health Insurance," examines, selectively and descriptively, the major studies (in English, since 1989) on the demand for and supply, regulation, performance, and impact of private voluntary health insurance on specific outcome indicators in low- and middle-income countries. Before assessing the internal and external validity of these studies, the authors examine frameworks for analyzing health financing and health insurance. They conclude that most studies are hampered by lack of data on the impact of private voluntary health insurance on broad social goals, such as financial protection. They find no overall consensus on the impact of voluntary health insurance on public health activities or on the quality, innovation, and efficiency of personal health services.

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# Abbreviations and Acronyms

AMA	American Medical Association
BUPA	British United Provident Association
CARA	coefficient of absolute risk aversion
CBI	community-based health insurance
CRRA	constant relative risk aversion
DHS	Demographic and Health Surveys
FDA	Food and Drug Administration (United States)
GDP	gross domestic product
HEDIS	Health Plan Employer Data and Information Set
HICs	high-income countries
HMOs	health maintenance organizations
ICs	industrialized countries
iFHP	International Federation of Health Plans
ILO	International Labour Organization
LICs	low-income countries
LSMS	Living Standard Measurement Surveys
MDGs	Millennium Development Goals
MICs	middle-income countries
MR	marginal review
OECD	Organisation for Economic Co-operation and Development
PHI	private health insurance
PMB	prescribed minimum benefits
PRSP	Poverty Reduction Strategy Paper
PVHI	private voluntary health insurance
SHI	social health insurance
THE	total health expenditure
VHF	voluntary health financing
VHI	voluntary health insurance
WHO	World Health Organization

Unless otherwise noted, all monetary denominations are in current U.S. dollars.



## CHAPTER 1

# The Evolution of Health Insurance in Developing Countries

*Alexander S. Preker*

**A**chieving the health-related Millennium Development Goals (MDGs) will require mobilization of significant financial resources for the health sector, improved management of financial risk, and better spending of scarce resources, in addition to effective attempts to address the intersectoral determinants of illness. This chapter summarizes the key health financing challenges in low- and middle-income countries; policy options for reform; a methodology for a study on private voluntary health insurance; and key findings from this study, which was based on a World Bank review of such insurance in low- and middle-income countries.

Interventions to deal with HIV/AIDS and with malaria and other infectious diseases can impoverish even middle-income families that lack health insurance. Additional resources could be mobilized by increasing the share of government funding allocated to the health sector. But doing so could have negative macroeconomic repercussions in many low-income countries and would require a decrease in public expenditure on other programs, some of which may also contribute to overall gains in health. Therefore, political support for the measure is difficult to obtain. In many low-income countries, achieving public health ends—improved access to better health services, financial protection against the cost of illness, and inclusion of vulnerable groups—will require increased mobilization and more effective use of private means.

This chapter reviews the recent role of private voluntary health insurance as one of several sources of funding for the health sector. It emphasizes the need to combine several instruments to achieve three major development objectives in health care financing: sustainable access to needed health care, increased financial protection against the impoverishing cost of illness, and increased access by low- and middle-income households to organized health financing instruments. These instruments include subsidies, insurance, savings, and user charges.

Few organizational and institutional arrangements include all four of these instruments under a single system. For health care financing in low- and middle-income countries, the authors of this volume argue in favor of a multipillar approach, which would include a voluntary health insurance component—that is, community- and private enterprise-based insurance programs.

## OVERVIEW

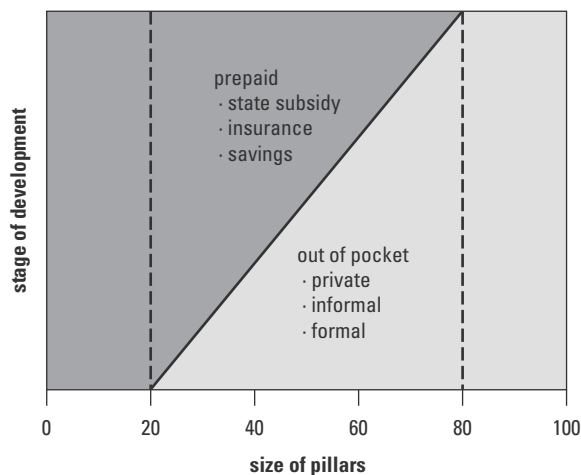
Low-income countries often rely heavily on government funding and out-of-pocket payments for financing health care. At an early stage of economic development, a country's ratio of prepaid to out-of-pocket sources of financing is often as low as 20:80. At higher income levels this ratio is reversed: prepaid sources make up 80 percent of financing sources. Countries on an optimal development path will progress from the 20:80 to 80:20 ratio (figure 1.1). But many of the fragile low-income countries are on a slower and suboptimal development path toward a 40:60 ratio. Without a significant shift in policy direction and implementation, out-of-pocket spending will continue to represent a large share of total health care expenditure (figure 1.2), leaving many households exposed to financial hardship or impoverishment despite significant government spending on health care.

In many countries on a suboptimal development path, a large share of government funding comes from donors rather than domestic sources of financing. These countries are vulnerable to donor dependence, volatility in financial flows, and fungibility. Furthermore, in many of these poorly performing countries, a large share of out-of-pocket expenditure is on informal payments in the public sector and on private sector spending, exposing households to whatever cost the local market can bear.

### Financing Challenges

Low-income countries attempting to improve health financing through introduction of government-run mandatory health insurance are struggling with

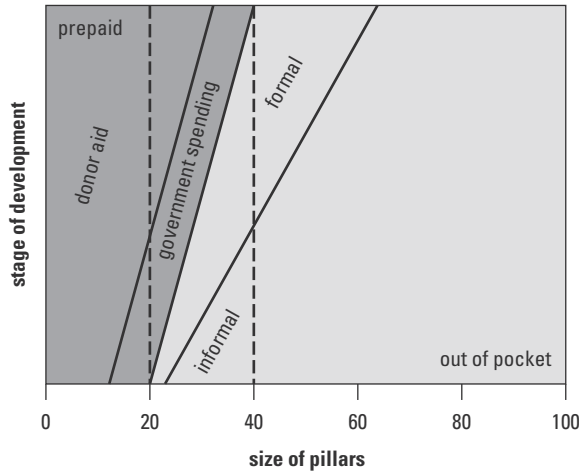
**FIGURE 1.1 Rule of 80 Optimal Development Path**



Source: Author.



**FIGURE 1.2** Fragile States' Suboptimal Development Path



Source: Author.

three health care financing functions: collection of revenues, financial risk management, and spending of resources on providers. With respect to mobilizing adequate financial resources for health insurance, low-income countries face four challenges. First, in many of these countries an incomplete population registry limits the state's capacity to identify potential members. Second, low-income countries' typically large informal labor sector limits the segment of the population that can be forced to join a mandatory insurance scheme; other segments of the population must be induced to join. Third, three problems beset prepayment: low participation rates in the formal labor sector limit contributions that can be collected at the source under a mandatory scheme for employees; lack of familiarity with insurance and risk-averting behavior limits willingness to pay; and lack of income limits ability to pay. Fourth, lack of accurate income data limits information that can be used to construct progressive payment schedules.

With respect to financial risk management (distributing resources efficiently and equitably), low-income countries face three challenges. The first challenge is related to the size and number of risk pools. Spontaneous growth of many small insurance funds limits the size and increases the number of voluntary pools, as does diversity in employment, domicile, and other local social factors. Lack of trust in government and national programs limits the size and number of mandatory pools, as does weak management and institutional capacity. The second challenge relates to risk equalization. The small share of fiscal space allocated to the health sector limits public resources for subsidizing inactive population groups. Lack of national social solidarity limits willingness to cross-subsidize from rich to poor, from healthy to sick, and from gainfully employed to inactive

individuals. The third challenge relates to coverage. A national health scheme for the general public limits the need for universal population coverage or comprehensive benefit coverage through insurance.

With respect to spending on providers, low-income countries face five challenges. First, lack of good membership data limits capacity to identify vulnerable groups. Second, lack of good data on cost-effectiveness limits capacity to obtain value for money spent. Third, private providers dominate the ambulatory sector, and public hospitals dominate the inpatient sector, limiting the choice of providers. Fourth, weak management and lack of institutional capacity limit the sophistication of performance-based payment systems that can be used. Fifth, lack of good cost data limits the transparency of prices charged by public and private providers.

### Other Challenges

In addition to health care financing challenges, low-income countries attempting to introduce government-run mandatory health insurance face other challenges. One, noted above, is a weak institutional environment. Often institutional capacity is lacking, the underlying legal framework is incomplete, regulatory instruments are ineffective or not enforced, administrative procedures are rigid, and informal customs and practices are difficult to change.

Another challenge relates to the organizational structure of health insurance funds. In countries where small, community-based funds abound, the scale and scope of insurance coverage and benefits are small. However, many government-run health insurance programs, even those operating as semiautonomous programs, suffer from the rigid hierarchical incentive structures characteristic of state-owned and -run national health services. This phenomenon is especially evident in countries where insurance schemes have acquired extensive networks of their own providers, thereby undermining the benefits of a purchaser-provider split. In other countries, multiple employment-based funds often do not benefit from competitive pressures but suffer from all the shortcomings of fragmented risk pools and purchasing arrangements. These shortcomings include insurance market failure, high administration costs, and information asymmetry.

Yet other challenges relate to the management characteristics of health insurance funds in low-income countries. First, stewardship, governance, line management, and client services may be weak, and few individuals may have the skills to manage mandatory insurance. Second, health insurers that must serve as agents for the government, health services, and providers confront conflicting incentives and reward structures. Third, the information technology and other systems needed to manage an insurance program's finances, human resources, health information, and so on are often lacking.

### Policy Options

Sound policy options for health care financing are important not only to achieve health sector-related objectives but also to promote growth. Introduction of con-

tributory health insurance, public and private, has significant implications for tax burdens, labor market costs, and international competitiveness. In many low- and middle-income countries, economic growth ultimately leads to higher incomes, less poverty, and more resources devoted to health care and better health.

The problems associated with central government funding and with direct out-of-pocket payments in low- and middle-income countries are now common knowledge. But three research findings suggest that alternative policy options are available for low- and middle-income countries.

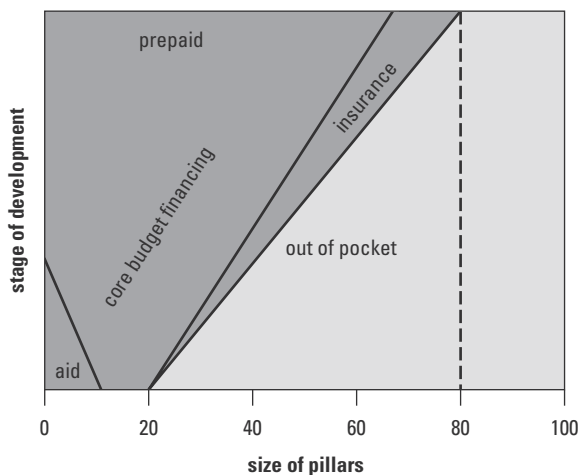
First, analysis of household survey data indicates that willingness and ability to pay for health care—even among the poor—are far greater than government's capacity to mobilize revenues through formal taxation mechanisms. In much of Sub-Saharan Africa and South Asia, the relative share of health expenditures financed directly through households is as high as 80 percent of total expenditures.

Second, reviews of community participation in micro insurance programs indicate that households—even poor ones—are insurable. Often they already benefit from micro loans and savings, crop insurance, burial insurance, and community health insurance. Health insurance involves some transfer of resources from rich to poor, healthy to sick, and gainfully employed to inactive. Households in low-income settings understand the nature of such transfers and are willing to contribute to them, proving they believe that outlays today will lead to benefits tomorrow. Too often, however, governments and national insurance programs break such trust by collecting contributions under one set of conditions and then changing the rules of entitlement.

Third, if subsidies were given to poor households rather than providers, they would be used on health services that serve the poor rather than the rich. Such subsidy transfers could take the form of vouchers or premium subsidies so that the poor can have access to the same type of health insurance as the rich. A viable health insurance program requires that everyone pay an actuarially sound premium. Such a program does not necessarily exclude the poor if they receive a partial or full premium subsidy. The advantage of this approach is that the poor can choose the services that they feel meet their needs, and service providers will be paid accordingly.

Two alternative approaches underpin recent efforts to expand coverage through insurance-based mechanisms. Under the first approach, health insurance is introduced for the small number of individuals, usually civil servants and formal sector workers, who can afford to pay and from whom employers can collect payroll taxes (figure 1.3). Under this model, the poor and low-income informal sector workers continue to be covered through access to subsidized public hospitals and ambulatory clinics. Although this policy option appears to be pro-rich, because only those in formal employment who can afford to pay can join the program, it frees up public money to subsidize care for those without the means to pay themselves. It therefore allows indirect targeting of the limited government finances available to the ministry of health.

Under the second approach, health insurance is introduced for a broader segment of the population through government payment or subsidization of

**FIGURE 1.3 Progress toward Subsidy-Based Health Financing**

Source: Author.

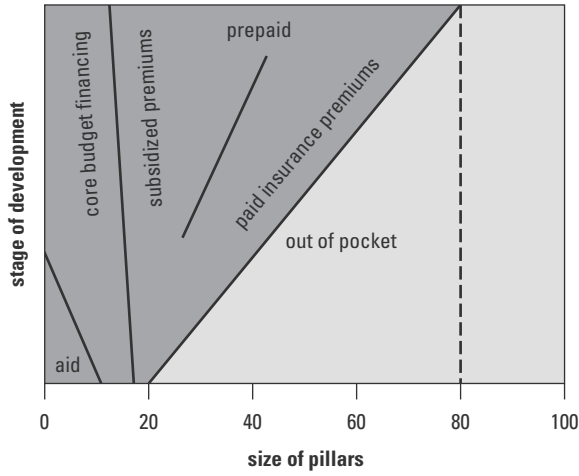
the premiums of the poor and low-income informal sector workers (figure 1.4). This approach, under which premiums rather than service providers are supported through resources freed up from the contributing portion of the population, allows more rapid expansion of coverage and more direct targeting of poor households than the first approach, which focuses on supply-side subsidies.

Voluntary private health insurance is evolving under one or the other of these approaches in many developing countries. Such insurance can be a critical pillar of a robust health financing system that includes subsidies, insurance, savings, and user fees to achieve the objectives of equity, risk management, and household-income smoothing (see figure 1.5). Nevertheless, policy makers and the international development community often ignore such insurance for ideological reasons or even stifle its development.

## OBJECTIVES OF REVIEW

This volume analyzes the strengths, weaknesses, and potential future role of private voluntary health insurance in low- and middle-income countries. It considers the economics of such insurance in terms of supply, demand, market dynamics, and insurance market failure. In addition, it presents empirical evidence on the impact of voluntary health insurance on financial protection against the cost of illness, insurance coverage, households' access to affordable health care, labor markets, and household consumption patterns. Finally, it explores the characteristics of voluntary health insurance markets emerging

**FIGURE 1.4** Progress toward Insurance-Based Health Financing



Source: Author.

in developing countries (current trends in terms of policy framework, organizational structure, institutional environment, and management attributes) and prospects for future business development.

**METHODOLOGY**

Volume contributors used cross-sectional and longitudinal techniques (quantitative and qualitative) to explore the role of private voluntary health insurance in securing wider and better access to health care. Where possible, they used health

**FIGURE 1.5** Voluntary and Mandatory Health Financing Instruments under a New Multipillar Approach

Objective	Equity		Risk management			Income smoothing
	Donor aid	General revenues	Public health insurance	Private health insurance	Community financing	Household savings
Voluntary	■	□	▴	■	■	■
Mandatory	□	■	■	■	▾	▾

Source: Author.

financing projection models to estimate fiscal implications, labor market effects, and impacts on revenue and expenditure flows in the health sector.

Their analysis builds on research in the areas of health insurance (voluntary micro health insurance and government-run mandatory health insurance), user fees, and resource allocation and purchasing. It draws on expertise throughout the World Bank Group: health and social protection, poverty alleviation, public sector management, corruption and fiscal policy, insurance and risk management, and contracting with nongovernmental organizations (NGOs) and the private sector.

Findings from regions outside Africa should not be assumed to hold in Africa because its political and socioeconomic circumstances are unique.

### **Economics of Health Insurance at Low-Income Levels**

The first set of studies in this volume focus on constraints to private voluntary private health insurance at low-income levels. These constraints include low household income; low participation in the formal labor market and high participation in the informal labor market; low compliance with contributions requirements in the formal sector; lack of social cohesion; GDP and GDP growth (usually low but sometimes very high); high levels of donor funding; high consumer price index; high medical inflation, morbidity, and mortality; and less use of health services in the public sector and more use of these services in the private sector.

The review of demand-side economic factors focuses on health needs, revealed preferences, and demand for health insurance; variations in benefit packages and expenditures; willingness and ability to pay; insurable and noninsurable risks and risk aversion; moral hazard/free-rider problems; price (loading cost); and transaction costs.

The review of supply-side economic factors focuses on market structure; competitive environment; choice and coverage; benefit packages; price (loading cost); transaction costs; expenditure (level, distribution, and variations); adverse selection/cream skimming; legal framework, regulation, and administrative procedures; vertical integration (managed care); and organizational, institutional, and management issues.

The review of market equilibrium factors focuses on the existence and stability of equilibrium, coverage, market and government failure, performance (efficiency and equity), and the economics of regulatory instruments.

### **Evaluation of the Impact of Voluntary Health Insurance in Selected Countries**

The second set of studies examines the impact of private voluntary health insurance on selected outcome indicators in developing countries. Households in these countries face a variety of covariant and idiosyncratic risks. These risks interact with a household's assets and affect households' risk management

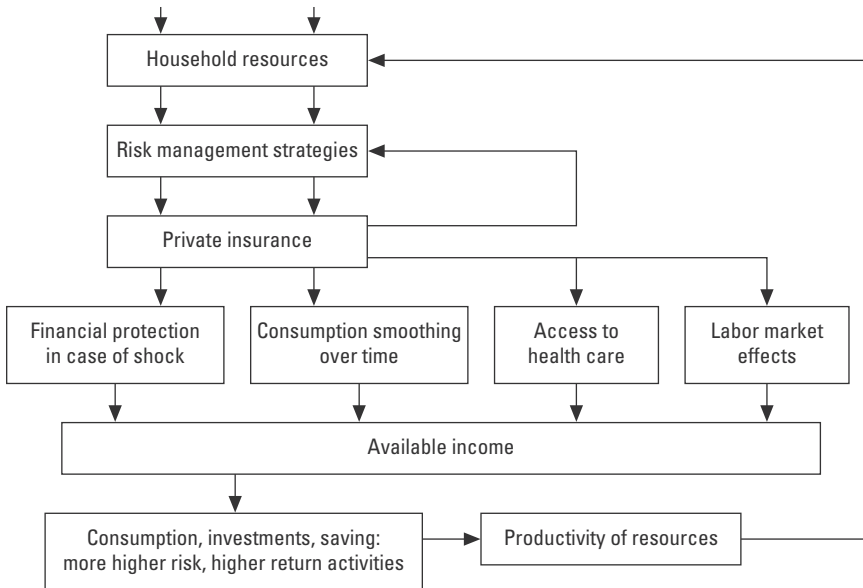
capacity. Risks are transmitted through a change in the value or productivity of assets and affect the reallocation of resources.

Research indicates that illness represents the greatest risk of impoverishment to households. Voluntary health insurance can have an impact on financial protection against the cost of illness, as well as on insurance coverage, nonmedical consumption, access to health care, and labor market productivity, all of which affect household income, nonmedical consumption, saving, and investment behavior. With access to insurance, households might engage in higher-risk activities, but also in more profitable production techniques, which in turn increases their resources and reduces their vulnerability to risks. This process involves a smoothing of household income available for consumption of non-medical goods and services, savings, and investment (figure 1.6).

**Methodology for Review of Literature on Impact of Voluntary Health Insurance**

Voluntary health insurance has been extensively studied in developed countries but not in developing countries. Little is known about the impact of such insurance on the latter's broad goals, such as increasing health, reducing the risks of impoverishment due to illness, and combating social exclusion. Experts debate

**FIGURE 1.6 Impact of Voluntary Health Insurance**



Source: Jütting 2004.

which indicators best capture progress toward achieving these goals. Moreover, little is known about the impact of voluntary health insurance on financial protection against the cost of illness, insurance coverage, nonmedical consumption, access to health care, and labor markets.

### *Assessment of Studies' Internal and External Validity*

This volume's literature review uses an approach similar to that used in assessing the role of community health financing (Preker and others 2004). Because methodological rigor in research on voluntary health insurance is heavily influenced by researchers' ideological bias, any study that failed to meet high methodological standards was not given serious attention.

### *Assessment of Overall Performance*

Volume contributors examine both the impact and determinants of voluntary health insurance. They assess the robustness of evidence that such insurance provides financial protection against the cost of illness, expands coverage and includes a wide range of client groups, increases disposable income and household consumption smoothing, increases access to affordable health care, and increases labor market participation.

### *Assessment of Institutional Determinants of Performance*

The direct and indirect determinants of improved health, financial protection against the cost of illness, and social inclusion are complex. The World Bank's Poverty Reduction Strategy Paper (PRSP) framework indicates that policy actions by governments, civil society, and the private sector are mediated through supply and demand factors related to the health sector and other sectors that affect the outcome measures under examination in this volume. These factors include service delivery system (product markets), input generation (factor markets), stewardship or government oversight (policy making, coordination, regulation, monitoring, evaluation) and market pressures. The current body of literature on voluntary health financing in low-income countries is not comprehensive, so the present analysis examines only those factors directly related to health care financing.

Table 1.1 lists the core policy variables, and the management, organizational, and institutional characteristics of health care financing in general.

### **Methodology for Country Case Studies**

The case studies use both quantitative analysis of micro-level household survey data and qualitative analysis of key policy, management, organizational, and institutional determinants of good outcomes, using an adapted version of the methodology developed for research on community financing (Preker and others 2004).



**TABLE 1.1 Framework for Analyzing Policy Options for Voluntary Health Insurance**

<i>Key policy options</i>	<i>Key policy questions</i>
<b>Policy framework</b>	<p><b>Revenue collection mechanisms</b></p> <p>Level of prepayment compared with direct out-of-pocket spending</p> <p>Extent to which contributions are compulsory or voluntary</p> <p>Progressivity of contributions</p> <p>Subsidies for the poor and buffer against external shocks</p> <p><b>Arrangements for pooling revenues and sharing risks</b></p> <p>Size</p> <p>Number</p> <p>Redistribution from rich to poor, healthy to sick, and gainfully employed to inactive</p> <p><b>Resource allocation and purchasing arrangement itself</b></p> <p>For whom to buy (demand question 1)</p> <p>What to buy, in which form, and what to exclude (supply question 2)</p> <p>From whom to buy: public, private, NGO (supply question 1)</p> <p>How to pay (incentive question 2)</p> <p>At what price: competitive market price, set prices, subsidized (market question 1)</p>
<b>Institutional environment</b>	<p>Legal framework</p> <p>Regulatory instruments</p> <p>Administrative procedures</p> <p>Customs and practices</p>
<b>Organizational structures</b>	<p>Organizational forms (configuration, scale, and scope of insurance funds)</p> <p>Incentive regime (extent of decision rights, market exposure, financial responsibility, accountability, and coverage of social functions)</p> <p>Linkages (extent of horizontal and vertical integration or fragmentation)</p>
<b>Management attributes</b>	<p>Management levels (stewardship, governance, line management, clinical management)</p> <p>Management skills</p> <p>Management incentives</p> <p>Management tools (financial, resources, health information, behavior)</p>
	<p>↓</p> <p>↓</p>
<i>Possible benefits</i>	<p><i>Efficiency</i></p> <p><i>Equity (mainly poverty impact)</i></p>
<p>Financial protection</p> <p>Coverage</p> <p>Household consumption</p> <p>Access to health care</p> <p>Labor market effects</p>	

Source: Modified from Preker and others 2004, 19.

### *Qualitative Description of Scheme Characteristics*

The case studies describe insurance schemes' policy, institutional, organizational, and management attributes, which may lead to strengths and weaknesses similar to those in the framework used for the review of literature described above and summarized in table 1.1.

### *Quantitative Analysis of Micro-Level Household Data*

The aim of the micro-level household survey analysis is to shed light on five possible benefits of voluntary health insurance. Possible market indicators for each of the major benefits are indicated in table 1.2.

Volume contributors searched various household budget surveys, Living Standard Measurement Surveys (LSMS), and Demographic and Health Surveys (DHS) for voluntary health insurance (VHI) data. Most surveys do not allow identification of households with access to voluntary health insurance. Therefore, the subset of countries that can be examined using this methodology is small. The annex to this chapter presents a detailed model specification for this part of the study.

## **REVIEW OF OPPORTUNITIES FOR EXPANDING VHI MARKETS**

Volume contributors review the evolution of VHI markets at the global level, summarize the prerequisites for good VHI business practices, and conducted studies of the feasibility of expanding voluntary health insurance in countries where market conditions are favorable.

### **Global Review of VHI Market**

Volume contributors review the empirical evidence on the supply, demand, market equilibrium, and market imperfections of voluntary health insurance in developing countries as well as the role and effectiveness of public policy instruments such as regulations, subsidies, and taxes.

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**TABLE 1.2 Market Indicators for Benefits of Voluntary Health Insurance**

<i>Dependent variable</i>	<i>Possible market indicator</i>	<i>Independent variable</i>
Financial protection	Household expenditure	All policy, organizational, institutional, and management variables and factors in PRSP framework
Consumption smoothing	Nonmedical goods and services consumption	
Access to care	Service utilization	
Labor	Labor market and productivity	

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*Source:* Author.

### *Investment Climate*

The first part of the market analysis examines the investment climate and institutional setting of existing VHI schemes:

- political orientation (market economy, transition economy, welfare state, or socialist economy),
- economic variables (economic stability and growth, inflation, debt, and competitive environment),
- income levels,
- geographic distribution,
- labor market participation (urban versus rural, formal versus informal, industrial versus agricultural, employment rate versus unemployment),
- tax structure (level, progressivity, exemptions, payroll taxes, and so on),
- regulatory environment (insurance law, antitrust law, competition law, health legislation),
- social cohesion (tribal, traditional, modern nuclear, and so on),
- corruption,
- health sector trends (public versus private), and
- health expenditure trends—factor markets (labor, pharmaceuticals, medical equipment, consumables, and so on) and product markets (hospitals, clinics, and diagnostic laboratories).

### *Supply of Voluntary Health Insurance*

The market analysis continues with examination of the supply side of voluntary health insurance. Data sources include country-level databases (statistical year books), insurance rating agencies (for example, Moody's), actuarial firms (Milliman and Roberts and so on), and major insurance firms that also deal in health (for example, AIG, AETNA, United, Lloyds, and Munich Re). Volume contributors summarize the main characteristics of existing schemes in terms of coverage (full or partial, level of copayments, exclusions), choice (mandatory, compulsory, and so on), and benefits (range and level) and develop a topology for voluntary health insurance on the basis of

- ownership arrangements—private profit (commercial), private nonprofit (NGO), community based, employer based, foreign involvement (international versus domestic);
- degree of market concentration—size and distribution; and

- links (particularly when a VHI scheme is a secondary funder under a mandated national or government system) to other insurance instruments (life, casualty, accident, death, and so on), the overall health financing system (complementary, supplementary, substitutive), and health maintenance organizations (HMOs)

### *Demand for VHI Coverage*

The second part of the market analysis examines the demand side of voluntary health insurance. Specifically, it examines health needs; preferences as revealed by demand for health insurance; willingness and ability to pay for health care and health insurance, including benefit incidence analysis; insurable and non-insurable risks; degree of risk aversion; access to providers; expenditure variance; moral hazard/free-rider behavior; consumption taxes on insurance; and subsidies and tax exemptions.

### *Market Structure and Dynamics of Voluntary Health Insurance*

The third part of the market analysis examines the extent to which supply, demand, and competition lead to a functioning voluntary insurance market. Volume contributors assess the extent to which VHI schemes in low-income countries are subject to moral hazard, adverse selection, free-rider behavior, insurance premium escalation, and so on. They also assess the extent to which public policy instruments such as taxation, subsidies, tax credits, and exemptions have increased or decreased such market failures.

### *Development Path for Growth of Voluntary Health Insurance*

The final part of the market analysis examines the historical context in which VHI markets have evolved in developed and developing countries. Volume contributors attempt to answer several questions. Is voluntary health insurance part of a critical development path in achieving financial protection against the cost of illness? What were some of the problems encountered in countries with more mature markets today? Which public policy instruments and business strategies—taxation, subsidies, tax credits, exemptions, and so on—were successful in addressing these problems?

### **Best Business Practice in Voluntary Health Insurance**

Volume contributors review best practices in managing voluntary health insurance in four developed countries (Australia, Ireland, New Zealand, and the United Kingdom) and two emerging market economies (Israel and South Africa) and make recommendations that may be relevant to countries in which VHI schemes are developing. Specifically, they examine the following:

- *Company, sponsors, and management.* Who owns, controls, and runs each VHI company under examination?
- *Strategic plan.* Where does the company wish to be in 10 years, and how does it plan to get there? That is, what are its goals (target markets, customers, cost reduction, repositioning), capital investment strategy, strengths (strategic fit of company mission/skills with potential market), and weaknesses (misalignment of company mission/skill with potential market)?
- *Financial performance.* What are the company's revenues and main product groups, variable cost structure (expenditures), fixed cost structure (expenditures), capital structure (own and borrowed) and cost, return on capital (own and borrowed), and bottom line (profit or loss)?
- *Actuarial balance.* What is the company's financial future (solvency and anticipated revenues and expenditures under different scenarios)?
- *Management capacity.* How capable are the managers to run a health insurance firm?
- *Benefits and risks.* What are the company's likely opportunities and risks in the future?

On the basis of this information, volume contributors identify the cycle of activity that ensures the sustainability of voluntary health insurers and provide guidelines on setting up regulatory and institutional frameworks for better VHI business practice in low- and middle-income countries.

### Global VHI Market

Volume contributors analyze the global VHI market in terms of supply, demand, market dynamics; best business practice; and public policy instruments for addressing market failure. Using existing household health expenditure and other data, they assess willingness and ability to purchase voluntary health insurance, examine affordability and design of benefit packages, obtain feedback from local officials on the political feasibility of introducing voluntary health insurance, and identify potential insurance carriers.

In the context of expanding VHI programs, volume contributors explore opportunities for collecting and analyzing data on

- household income distribution, household expenditures distribution (including health/medical care), household health services utilization patterns, and household health insurance participation and premium expenditures;
- the benefit and population coverage, premiums, and organizational structure of public insurance programs;
- inpatient and outpatient distributions of health service providers;

- willingness and ability to pay for voluntary health insurance; and
- potential institutional arrangements and legal regulations for setting up VHI programs.

## ANNEX: MODEL SPECIFICATION FOR IMPACT EVALUATION STUDIES

### Impact of Voluntary Health Insurance on Financial Protection and Consumption Smoothing

To gauge the impact of voluntary health insurance on financial protection and consumption smoothing, a measure with the following properties is needed:

- Given income, premiums, and the distribution of medical spending, the measure *rises* when insurance coverage increases.
- Given income, premiums, and insurance coverage, the measure *falls* when the distribution of spending becomes more variable (higher relative probability of high cost).
- Given income, insurance coverage, and the distribution of medical expenses, the measure *falls* as paid premiums rise (paid by household).
- Given insurance coverage, premiums, and the distribution of medical expenses, the measure *falls* as income falls.<sup>2</sup>

#### *Proposed Measure*

$$\varphi = \overline{\text{NMC}} / (\sigma_{\text{NMC}}) = \text{inverse of coefficient of variation of NMC,}$$

where

$\varphi$  = financial protection,  
 $\overline{\text{NMC}}$  = average of nonmedical consumption,  
 NMC = nonmedical consumption,  
 Oops = out-of-pocket spending,  
 $\rho$  = premium,  
 $\sigma$  = standard deviation, and  
 Y = household income,

and

$$\text{NMC} = Y - (\rho + \text{Oops}).$$

#### *Definitions:*

HEX = health expenditure

Oops = out-of-pocket expenditure by individuals or household for health care

Premiums = amount spent by individuals or households

Income = total revenues of households from formal and informal sector sources

Insurance coverage = ratio of (total household HEX) – Oops/total household HEX

*Assumptions:*

1. Increases in insurance coverage reduce some values of Oops and so reduce  $\sigma_{NMC}$ .
2. Increases in variance of medical spending increase  $\sigma_{NMC}$ .
3. Increases in paid premiums reduce NMC.
4. Increases in income increase NMC.

*Comments:*

If the distribution of medical expenses is independent of income and insurance coverage (that is, has no income effect and presents no moral hazard), a rise in coverage will increase financial protection. If spending rises with insurance coverage (that is, presents moral hazard), an increase in insurance coverage (over some range) may not increase financial protection. Assuming an agreed-on definition of “critical consumption or income level”—the amount needed for purchased food, basic education, and so on—the coefficient of variation at each income level can be used to estimate the probability that medical spending will cause consumption to fall below the critical level. This measure omits effects on utility or health of increased access to or use of medical care if there is moral hazard.

*Corollary*

Increased insurance coverage that increases access may reduce financial protection.

*Context:*

Insurance pays 70 percent of health care costs (30 percent coinsurance); insurance provides a 90 percent subsidy to an actuarially fair insurance premium; income is held constant.

*Conclusion:*

Easier access puts individuals at a greater financial risk if they must make a copayment.

**TABLE 1A.1 Insurance Coverage under Easy and Hard Access**  
(percent)

<i>Scenario</i>	<i>Case A: easy access</i>	<i>Case B: difficult access</i>
1. No insurance (average medical consumption)	100	100
2. Post-coverage (average medical consumption)	300	150
3. Premium paid (0.1 × row 2)	30	15
4. Average out-of-pocket expenditure	90	45
5. Premium + out-of-pocket expenditure	120	60

Source: Author.

*Comments:*

A person is at higher financial risk in case A than in case B (see table A1.1) and may be at higher risk with subsidized insurance in case A than in the absence of insurance. But the person gets more access to and use of health care in case A than in case B. The “paradox” (more insurance leads to higher financial risk) becomes more likely as the “effective demand elasticity” grows. As coverage approaches 100 percent, the paradox disappears with the linear demand curve.

### Impact of Voluntary Insurance on Access to Health Care

To assess the impact of scheme membership on access to health care, a two-part model is used.<sup>1</sup> The first part of the model analyzes the determinants of health care service use. The second part of the model analyzes the determinants of health care expenditures for those who reported health care use.

This approach is taken for several reasons. First, using health expenditure alone as a predictor of financial protection does not capture the lack of financial protection for people who do not seek health care because they cannot afford it. Because the first part of the model assesses the determinants of utilization, it indicates whether membership in a VHI scheme reduces barriers to access to health services. Second, the distribution of health expenditures is typically not a normal distribution. Many nonspenders do not use health care in the recall period. Moreover, the distribution has a long tail due to the small number of very high spenders. To address the first cause of non-normality, the present study restricted analysis of health expenditures to the expenditures of individuals who reported health care use. To address the second part of non-normality, a log-linear model specification is used.

Part one of the model is a binary logit model for health insurance data from Rwanda, Thailand, and India and a probit model for data from Senegal. The model estimates the probability of an individual’s visiting a health care provider. The binary logit and probit model can be written as follows:

$$\text{Prob}(\text{visit} > 0) = X\beta + \varepsilon$$

The log-linear model estimates the level of out-of-pocket expenditures, conditioned on positive use of health care services. This model can be written as follows:

$$\text{Log}(\text{out-of-pocket expenditure} \mid \text{visit} > 0) = X\gamma + \mu,$$

where  $X$  represents a set of individual and household characteristics that are hypothesized to affect individual patterns of utilization and expenditure.

$\beta$  and  $\gamma$  are vectors of coefficient estimates;  $\varepsilon$  and  $\mu$  are error terms.

The two variables of primary interest are scheme membership status and income. Other control variables are included in the estimation model to control for the differences in need for health care (for example, age and gender); differences



in preferences for seeking health care (for example, gender and religion); and differences in the cost, direct and indirect, of seeking health care (for example, distance).

### **Impact of Voluntary Health Insurance on Labor Market Productivity**

The impact of VHI enrollment on labor market productivity is examined by comparing actual days relative to the total number of days that a person would have worked had he or she not been on leave due to illness. The hypothesis to be tested is that VHI members are likely to seek care for medical illnesses earlier and therefore require less time off work than those without access to voluntary health insurance or other forms of community financing, social insurance, and subsidized care.

#### ***Effect on Household Members' Labor Productivity***

The following assumptions were made about the impact of insurance on labor productivity–related variables:

1. *Insured persons will lose fewer days of work due to illness.* An insured person seeks health care earlier than an uninsured person. The insured person—and his or her caregiver at home—might therefore require less time off work.

Model: binomial model (BMI) or ordinary least squares (OLS) with the same structure

Dependent variable: work absenteeism due to illness

Independent variables: common control variables + membership in health insurance scheme

$$\text{Prob}(\text{work absenteeism} > 0) = X\beta + \varepsilon$$

2. *Insured persons will be more productive while at work.* Consider farmers in rural malarial areas. Malaria infections substantially reduce work ability, lowering productivity, particularly in physically demanding agricultural activities. Farmers with insurance have better access to drugs and appropriate protection schemes (bed nets) and thus work more productively than farmers without insurance.

Model: BMI or OLS

Dependent variable: income/labor (input, for example, work days); alternative BMI

Independent variables: common control variables + membership in health insurance scheme

$$\text{Prob}(\text{worked hours/day/given activity} > 0) = X\beta + \varepsilon$$

3. *Insured persons will have a higher probability of hiring in or hiring out labor.* Household surveys on the cost of illness suggest that households that are better protected against health shocks have a higher probability of joining the labor force. Participation in the labor force positively affects household welfare and the local economy.

Dichotomous variable: hiring labor in/hiring out labor

Independent variable: common control variables + membership in health insurance scheme

Prob (hiring labor, in or out > 0) =  $X\beta + \varepsilon$

4. *Insured persons will take on riskier jobs.* Insured persons are not only willing to take riskier jobs with better pay but also to invest in higher-risk, higher-return activities.

Dependent variable: activities undertaken by the household head (differentiated according to risk profiles and income-earning possibilities)

### ***Labor Market Effects***

The following assumptions were made about the impact of insurance on labor markets:<sup>3</sup>

1. *VHI coverage affects wages.* Higher aggregate cost of labor may shift to workers in the form of lower individual wages.
2. *VHI coverage affects labor force participation.* Extension of subsidized health insurance to the nonworking population decreases the probability that this population will enter the labor market (this effect would be most pronounced in low-income households) (Chou and Staiger 2001).
3. *VHI coverage affects employment pattern.* Labor demand may shift toward sectors exempted from insurance provision, primarily sectors offering few work hours or low wages.
4. *VHI coverage affects coverage.* By discouraging unneeded dependent coverage, VHI coverage might reduce double coverage of dependents.

### **Determinants of Enrollment with Voluntary Health Insurance**

Individual and household characteristics and community characteristics are assumed to be the main influences on the decision to enroll in a VHI scheme. Individual and household characteristics influence the cost-benefit calculation of the rational decision maker, but the social values and ethics of the local culture might moderate the result of this calculation. Two individuals with similar

individual and household characteristics (for example, income, household size, assets, education level, and health status) may make different decisions about whether to join a prepayment scheme, depending, for example, on encouragement from community leaders, availability of information, and ease of undertaking unfamiliar processes.

To estimate the weight of these determinants, a binary logit model was applied to four of the datasets, and a binary probit was applied to the Senegal dataset. The model can be written as follows:

$$\text{Prob (enrollment} > 0) = X_1\beta_1 + X_2\beta_2 + \varepsilon.$$

The independent variable takes on a value of 1 if the individual belongs to a VHI scheme and 0 if he or she does not.  $X_1$  represents a set of independent variables that are characteristics of the individual and the household, such as income, gender, age, chronic illness, or disability.  $X_2$  represents a set of independent variables that approximate a community's social values: religion and, where appropriate, a marker for various communities. Other variables specific to the surveys, as well as interaction terms, are included where appropriate.  $\beta_1$  and  $\beta_2$  are vectors of coefficient estimates, and  $\varepsilon$  is the error term.

The two variables of primary interest are income (measure of social inclusion) and a marker for community factors (dummy variable). Control variables include gender, age, disability or chronic illness, religion, and distance to the health center. Some of these variables control for the different probabilities of health care use (for example, age, health status, and distance from provider). In addition, these variables allow testing for the presence and importance of adverse selection, to which voluntary prepayment schemes are subject. Other variables (for example, gender and religion) control for different individual and household attitudes toward investment in health at a time when illness is not necessarily present. Research indicates that distance to hospitals and local health centers and existence of outreach programs influence the decision to purchase scheme membership.

## NOTES

The author is grateful for comments received at the March 15–16, 2005, Wharton Impact Conference on Voluntary Health Insurance in Developing Countries and for subsequent feedback on various drafts.

1. This model is similar to the two-part demand model developed as part of the RAND Health Insurance Experiment to estimate demand for health care services (Duan and others 1982; Manning and others 1987).
2. The annex methodology is based on work by Mark V. Pauly.
3. For details and methodology, see Thurston 1997.

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## PART 1

# Economic Underpinnings

**2. Insights on Demand for Private Voluntary Health Insurance in Less Developed Countries**

*Mark V. Pauly*

**3. Supply of Private Voluntary Health Insurance in Low-Income Countries**

*Peter Zweifel, Boris B. Krey, and Maurizio Tagli*

**4. Market Outcomes, Regulation, and Policy Recommendations**

*Peter Zweifel and Mark V. Pauly*

**5. Provision of a Public Benefit Package alongside Private Voluntary Health Insurance**

*Peter C. Smith*

**6. Economics of Private Voluntary Health Insurance Revisited**

*Philip Musgrove*



## CHAPTER 2

# Insights on Demand for Private Voluntary Health Insurance in Less Developed Countries

*Mark V. Pauly*

This chapter reviews the economic theory of insurance demand to determine whether a case can be made for voluntary insurance coverage of the often high out-of-pocket health care payments in many developing countries. Such payments provide a prima facie case that insurance is both desirable and “affordable” if it can be offered at relatively moderate administrative cost. Possible impediments to the emergence of insurance, such as adverse selection, moral hazard, or cream skimming, do not present insurmountable obstacles to at least partial coverage of such expenses. Other problems, such as unfamiliarity with insurance or unwillingness to trust insurance organizations, might explain the absence of an insurance market, but they can be solved. Because insurance offers potentially large welfare gains, including protection against unexpected large shocks to consumption or wealth, efforts to furnish it in low-income countries are well justified.

### INTRODUCTION

In most developing countries, a substantial proportion of total market-level medical care costs are paid out of pocket by citizens. Although the fraction paid in this fashion varies to some extent across countries at similar levels of income, depending on the form of public programs, it is almost always relatively large. For example, the percentage of national health expenditures paid out of pocket is estimated to be 80 percent in Vietnam, 47 percent in Indonesia, and 26 percent in Colombia. In contrast, even in the United States, which has the least ostensibly extensive program for mandatory health insurance among developed countries, the percentage paid out of pocket by citizens in 2002 was less than 14 percent (Levit and others 2004). As Cutler and Zeckhauser (2000) put it, “health insurance is common to all developed countries,” but, beyond nominal public provision of limited amounts of care, it is uncommon in many developing countries.

This chapter focuses on the policy question of whether, based on economic theory, there *could and should* in principle be demand for voluntary health insur-

ance in these countries. In particular, could there be demand for such insurance by people below the highest income stratum, if not by the very poor? A large fraction of the population of developing countries might be willing and able to obtain at least some welfare-improving insurance. The theoretical basis for that possibility is explored here, along with alternatives to voluntary insurance, such as mandated coverage.

Virtually all studies of insurance in developing countries that use insurance theory do so to comment on specific aspects of an existing system or design. This chapter takes a different approach by beginning with theory and asking what system could or should be possible to implement. The theory of insurance demand suggests those elements that should be present in insurance markets and insurance arrangements, regardless of institutional structure and (within broad limits) regardless of the level and distribution of household incomes. The chapter identifies characteristics on the demand side that are required for voluntary insurance markets to exist, as well as considers aspects of institutional structure in developing countries that may foster or inhibit what is in theory possible. In short, rather than using theory to comment (often inconclusively) on something already developed, this chapter develops the framework for good design on the basis of theory and uses it to comment on what has been or could be implemented.

## **TOWARD AN APPLICABLE THEORY OF MEDICAL INSURANCE DEMAND**

One of the conditions necessary for demand for voluntary health insurance is present in many developing countries: a relatively high level of unpredictable out-of-pocket payments for medical services. This fact alone suggests both that the medical services voluntary insurance would cover are, at some positive quantity, worth more to consumers than their prices and that there exists a financial risk to be protected against. It suggests, virtually by definition, that such insurance would be widespread in the sense of covering a large fraction of total medical care spending (though, of course, it does not guarantee that the spending will be “adequate” by some normative definition).

This fact also immediately rules out one explanation for the absence of voluntary medical insurance: that consumers (in general) cannot “afford” the insurance. “Affordability” (sometimes called “unfavorable economic and social conditions” [Vate and Dror 2002]) has no precise economic meaning in any case. At least for some consumers, insurance is “affordable,” precisely because the alternative to insurance—payment out of pocket—is voluntarily made. If the high out-of-pocket payments are “affordable”—and they must be if consumers are willing to make them—insurance is, in principle, even more affordable. This argument also allows for the possibility that even those without sufficient income to make out-of-pocket payments would demand insurance. A household unwilling to pay a high but rare out-of-pocket expense may still be willing to pay



(to “afford”) the lower annual premium to cover that expense, as Nyman (1999) shows. (See Vate and Dror [2002] on “truncated elasticity.”)

The empirical evidence from developing countries on the distribution of out-of-pocket spending across the population shows that such spending is fairly widespread and is not concentrated among very well-off people. Data from Jamaica (Gertler and Sturm 1997), for example, show that, although average out-of-pocket expenses to supplement public medical care are eight times greater in the highest quartile than in the lowest, they are positive even in the lowest quartile. More important, they remain high in the middle quartiles. Data from Rwanda also indicate positive amounts of out-of-pocket spending across the income distribution; spending in the top quartile (which still represents a very low level of income) is about four times as great as spending in the next lower quartile. Another kind of data indicates spending during rare but severe episodes of illness. For example, Arhin (1995) found that actual expenditures for 70 percent of hospital episodes exceeded 4 to 6 percent of average household income in Africa. Information from Vietnam shows a similar pattern of high absolute and relative spending across the income distribution—certainly in the top half (in countries where the median income is very low), and even in the below-median levels (Wagstaff, Watanabe, and van Doorslaer 2001).

This information is usually presented as evidence of the high financial burden of out-of-pocket spending and the need for insurance. But consumers are doing the spending, suggesting demand for health insurance to smooth and spread that spending. Consumers, the theory says, ought at least to be willing to pay for insurance as much as they would expect to pay out of pocket for covered services.

Because the initial valuation question—whether formal purchased medical care is of sufficient value to induce many consumers in developing countries to sacrifice other types of consumption to obtain it—is answered in the affirmative, the next question is whether using insurance to make payments rather than risking out-of-pocket spending could also be of sufficient value to make voluntary (and presumably welfare-improving) insurance feasible.

## **THE THEORY OF INSURANCE DEMAND**

Consider a set of households above the poverty threshold that are identical in terms of members’ beginning-of-period health status, income, education, and all other factors that might affect demand for health or medical care. Many of these households will be relatively free from illness and therefore have low medical care demand and low potential out-of-pocket expenses. But a small minority of households will have potentially high levels of medical care spending. That is, at the end of a given period, a few households will have much-above-average medical spending, and many households will have below-average spending. (The rule of thumb is that about 20 percent of households will make about 80 percent of the population’s medical care spending.) This proposition presumably

holds even when describing medical spending in developing countries, which is quite low on average relative to developed countries. Nevertheless, spending varies substantially around that lower mean; some people in developing countries make out-of-pocket payments that are large relative to their incomes and even large relative to the developed country mean. Evidence of the shape of the distribution of out-of-pocket spending by the nonpoor in developing countries (as measured, say, by variance) is not definitive.

Assume for the present that the level of spending will be the same whether or not covered by insurance. If people attach value to health and to other items of consumption, and if utility is increasing in consumption but at a declining rate (diminishing marginal utility of consumption or “income”), it follows that households will be willing to pay an amount that exceeds the expected or average value of their spending for insurance that covers all of their (given) out-of-pocket spending. That is, if an insurance arrangement could make insurance available at a premium  $\Pi$  that equaled the expected value of medical spending  $m$  (or  $pm$ , where  $p$  is the [average] probability of illness), households would prefer to obtain that insurance than to face the risk of out-of-pocket payments of varying and potentially large (but rare) amounts. By giving up moderate amounts of consumption, people who buy insurance can avoid drastic cuts in present or future consumption in the rare but possible event of a serious illness that requires costly treatment. In short, people desire insurance, because they desire to reduce the impact of unexpected shocks to their levels of overall consumption.

Whether they also desire insurance to increase their use of medical care is a more debatable proposition. Although the utility gain from purchasing insurance to cover formerly out-of-pocket medical expenses can be substantial, that gain is usually not matched by a substantially higher national output measure and therefore is missed by the usual crude indicators of economic well-being, such as GDP. For example, if consumers in Indonesia were able to convert the approximately 4 percent of GDP represented by out-of-pocket medical payments into insurance, GDP would rise by, at most, the administrative cost of the insurance, even though welfare might rise substantially.

The value of insurance can in theory be measured by the “risk premium,” the amount in excess of the actuarially fair premium that people would be willing to pay for coverage rather than go without insurance. This amount could be much higher than the actual administrative cost, but only the increased administrative spending, not the gain to consumers (in the form of consumers’ surplus), is observed. Measures of the risk premium, even in developed countries, are not precise, but willingness to buy insurance at positive loadings suggests that the risk premium, on average, could be half or more of the expected expense. Thus the utility gain in Indonesia could be equivalent to 2 percent or more of GDP. (To say that a consumer has a positive risk premium is equivalent to saying either that the consumer is risk averse or has a decreasing marginal utility of income. Risk-loving consumers who would have to be paid to accept insurance are assumed to be an atypical and tiny group.)

Research on developing countries has generally tracked other (observable and desirable) correlates of the availability of insurance—such as enhanced consumption opportunities, both for medical care and other goods, and reduced need for interfamily transfers or other insurance substitutes (Wagstaff and Pradhan 2005). But note that increasing self-financed insurance is quite unlikely to increase aggregate total consumption of all goods and services; such insurance need not create jobs, and that is not its purpose. It does permit greater consumption of nonmedical goods by those who, if uninsured, would have had high medical expenses. But the premiums or taxes needed to pay for it reduce such consumption, as does the necessary administrative loading. The mix of consumption would change: high medical bills presumably cut into consumer durables and housing expenditures (and investment too), whereas premiums probably affect routine spending like food and clothing. Only externally funded (for example, by donations or taxes on the wealthy) insurance can increase aggregate consumption.

These measures, valuable as they are, would tell much less than the full story. A correct measure of welfare tied to well-being, rather than to purchased consumption alone, would tell more of the story. Moreover, some of the consequences of the absence of insurance are behaviors that tend to increase measured GDP. Uninsured households save more (as a precautionary insurance substitute), and they probably have greater labor supply. The main point here is that, although the theoretical welfare gains from insurance are potentially enormous, they generally will not be well manifested in the economic aggregates that policy makers typically monitor.

The theory of insurance demand has one important empirical implication: it defines a point on the insurance demand curve. If premiums are actuarially fair, the theory says that all risk-averse people should be willing to buy insurance with benefits just equaling the amount of loss. Thus, if insurance is subsidized sufficiently to reduce its explicit premiums to the actuarially fair or a lower level, take up and coverage should each be at 100 percent. In reality, the percentages may be less, because consumers are poorly informed about the value of insurance, because they believe that their expected expenses are lower than those on which the premium is based, or because moral hazard makes the premium much higher than expected expenses without insurance. In theory, a consumer's amount of risk aversion equals the maximum administrative cost he or she would be willing to pay. In real world settings, where the administrative cost is (without subsidies) usually positive, the risk premium for those who choose not to buy at that level of cost is equal to the minimum subsidy that would be needed to get them to buy.

How much *more* than the expected value or “fair” premium risk-averse consumers would be willing to pay depends on how rapidly the marginal utility of income diminishes. If the utility function takes the form  $U(y, h)$ , where  $y$  is consumption and  $h$  is health, the coefficient of absolute risk aversion (CARA) is the rate at which the marginal utility of income diminishes, or  $-U''/U'$ . If this

coefficient is positive, a consumer will be willing to pay an amount in excess of the expected value of benefits, the so-called “consumer risk premium.” The fragmentary evidence on this question indicates that people in some developing countries are risk averse and would seek insurance (Arhin 1996) but that not all may be so eager to obtain it (Brown and Churchill 2000). Strongly evidenced is a thriving market in life insurance (and, in some cases, in burial insurance), so the concept of insurance is neither unfamiliar nor unacceptable in these countries. Although some consumers may have a fatalistic sense of the evolution of events, many quite obviously do not. A farmer, for example, who chooses to fertilize and use insecticide early in the growing process cannot believe that the health of crops is entirely in the hands of the gods.

In the real world, where supplying insurance entails administrative costs, demand will be positive when the price consumers are willing to pay exceeds the price suppliers charge and that price (in the absence of subsidies) exceeds the expected value of losses entailed by administrative costs. In the case of insurance, the price of insurance is not the total premium but the so-called loading: the excess of the price over a premium equal to the expected value of benefits, usually expressed as a percentage of premium or benefits. In market insurance, even in unsubsidized competitive markets, this price will be positive; insurance will not be free.

More can be said about willingness to pay this price for insurance than can be said about other products, because one of the incentives for buying insurance is to reduce risk. For instance, a positive demand for voluntary insurance requires that consumers be sufficiently risk averse to pay a premium in excess of fair value. In short, the strength of risk aversion determines consumers’ willingness to pay a premium in excess of the fair premium. In developed countries, judging from revealed preferences, many consumers appear willing to pay the loading of 20 to 40 percent of premiums that is typical for individual insurance. Although evidence on the strength of risk aversion in developing countries per se is lacking, researchers can ask whether, for a given monetary amount of loss, risk aversion is related to wealth.

On the one hand, insurance premiums cut a larger proportion of consumption for lower-wealth individuals, but, on the other hand, a given loss without insurance does the same thing. If people have constant *relative* risk aversion (CRRA) utility functions, as is commonly assumed, the loading they are willing to pay against a loss that is a given proportion of wealth remains constant. (CRRA is approximately [CARA]/U.)

Observed levels of net loading indicate risk aversion for risky health expenditures in developed countries. When tax advantages reduce the net loading for nonpoor people to negative levels, as they do for employment-based health insurance in the United States, the take-up rate is very high, probably 90 percent or more. (About 30 percent of eligible poor people do not sign up for free insurance, which reflects behavior inconsistent with theory or a high implicit price for enrolling.) At the other extreme, for people ineligible for tax subsidies who

would have to buy individual health insurance with loadings on the order of 30 to 40 percent of premiums, the take-up rate is about 25 percent, but it increases with income, chronic conditions, and age, even when premiums are risk rated (Pauly and Nichols 2002).

Direct studies of the strength and distribution of risk aversion, and the resulting maximum risk premiums people would be willing to add to fair premiums, appear not to exist in developing countries. Some kinds of consumer insurance (such as life insurance) are successfully sold to a non-negligible minority of their population, even at loadings in the range for individual health insurance. So there is some reason to be optimistic, but more empirical work is needed on the average level and distribution of the risk premium across households. At a minimum, it appears plausible that consumers in developing countries would be risk averse and thus that *there will be positive demand for insurance at a non-zero loading*. But will that demand turn into actual positive purchases in the market? The answer to this question depends on the market equilibrium level of loading. If this loading is “too high” relative to consumers’ degree of risk aversion, few or no purchases may occur. Thus *a voluntary insurance market may fail to exist if markets cannot supply insurance at loadings that are low relative to consumers’ risk aversion*. Loading is primarily a supply phenomenon but is important in determining whether demand for insurance will emerge. If risk aversion is low relative to minimum feasible loading, the potential for unsubsidized voluntary insurance is zero.

This discussion has implications for the role of voluntary insurance in “resource mobilization” for medical care. As Arkin-Tenkorang (2005) has noted, new resources for health care for others are mobilized to the extent that insurance premiums can exceed paid benefits plus administrative costs. Any possible margin in excess of these two costs presumably can be made available for other purposes. But theory says that utility gains can be substantial even in the absence of any appreciable margin for redistribution. Moreover, resource mobilization for medical care is a goal for the economy as a whole only to the extent that provision of health care is more valuable than other resource uses.

### **WHEN IS INSURANCE MOST VALUABLE?**

How is willingness to pay for insurance by a risk-averse person related to the size and probability of a potential loss? The most useful proportion is this: for *risks of equal expected value*, willingness to pay an administrative loading increases as the size of the loss increases (and the loss probability correspondingly decreases). Catastrophic coverage is worth more than “front-end” coverage. In the limit, as the loss probability approaches one and the premium therefore approaches (or even exceeds) the amount of the loss, insurance demand goes to zero.

This simple observation leads to an important intuition: if out-of-pocket payments (losses) can vary in amount, and if the loading is positive and proportional

to the expected value of out-of-pocket payment, purchase of insurance with a “deductible” (a provision that excludes small losses from coverage) is rational. The reason is that willingness to pay loading for insurance that covers small, highly likely events will be small and, in the limit, must be less than any positive loading. Thus the optimal extent of coverage, if losses vary inversely in amount and probability (as they do with medical care), will be less than complete coverage.

### **MORAL HAZARD: WHAT IF INSURANCE AFFECTS THE AMOUNT OF LOSS?**

Another aspect of insurance, and especially health insurance, that will affect the amount and type of insurance demanded is *moral hazard*. This hazard refers to situations in which the expected loss is affected by the presence and extent of insurance. (Sometimes moral hazard is defined as changes in excess of those due to any income effects.)

Moral hazard in health insurance can take two forms. The presence of insurance coverage may affect actions that affect an individual’s probability of illness (type-1 moral hazard). For example, a person who has full coverage of the cost of flu treatment may not be willing to pay the cost, make the effort, and endure the pain to get a flu vaccine or may not make the effort in terms of hand washing to reduce the odds of getting the flu. If the insurer cannot determine whether the consumer was vaccinated or had taken other costly precautions (hidden action), claims will be higher with insurance than without it. The presence of insurance may also affect the amount and cost of care once illness has occurred (type-2 moral hazard). Because insurance reduces the user price of medical care and because the premium a person pays is usually independent of that person’s use, the person responds to the lower out-of-pocket price by demanding more medical care and possibly more expensive types of medical care (Pauly 1968). If the insurer cannot determine exactly how sick the person is (hidden ex post severity), it may be forced to use the level of spending as an indicator of the amount of loss. Consequently, actual losses will be larger with insurance than without it.

In developed countries, extensive empirical analysis shows that significant moral hazard characterizes the kinds of insurance contracts or policies generally used. The bulk of moral hazard for health insurance appears to be type-2 moral hazard. Insurance that makes all care free of out-of-pocket payment leads to nearly 50 percent greater spending than wealth-related catastrophic coverage with deductibles, with very modest improvements in health outcomes. The extensive RAND Health Insurance Experiment revealed an implicit price elasticity on the order of 0.1 to 0.2. Other research suggests that elasticity varies across types of care and can range as high as 0.7. Even a relatively low numerical value of elasticity can imply a high impact on spending if the change in coverage involves a large percentage change in out-of-pocket payment. For example, cutting a proportional coinsurance rate from 40 percent to 20 percent implies

a 50 percent reduction in the out-of-pocket price and as much as a 35 percent increase in use or spending.

Research on the effect of insurance compared with no insurance is less definitive. The expansion in use is surely larger than that associated with varying the extent of coverage over the positive range, and the health effects are probably greater, but the magnitudes of those effects are not known with great precision.

The relationship of household income to moral hazard has been studied to some extent. The RAND experiment found that income exerted the expected positive effect on use, especially outpatient use, at any level of copayment. However, there was no evidence of a significant difference by income level of the effect of cost sharing on use when cost sharing was capped as a percentage of income; the demand elasticity did not vary by income. This finding is somewhat counterintuitive; the effect of copayments on use should be greater for lower-income people. Perhaps other costs not covered by insurance (for example, transportation) constrain use by low-income individuals even when care is free, causing use to vary directly with income even then.

Most fundamentally, type-2 moral hazard causes people who seek protection against financial risk to face distorted incentives at the point of use of care. These distorted incentives cause them to use care that is worth less to them than its cost or price; this use of low- (but positive) value care gives rise to the so-called welfare cost of health insurance. Other factors being equal, consumers would prefer insurance forms or types that limit this overuse. However, limiting moral hazard also reduces protection against risk for which insurance is demanded in the first place. One way to reduce moral hazard is to increase the extent of consumer cost sharing, but this strategy increases the *financial* risk the consumer faces. Another way to reduce moral hazard is to offer incentives to suppliers to limit the use of low-value care (managed care), but this strategy increases *care* risk—the risk that the person will not obtain care that is worth its cost—unless supplier decisions are perfect, consumers are forced to pay out of pocket for insured care that suppliers refuse to furnish, or both. (If the person is willing to go “out of plan” and buy care denied by the managed care plan at its full out-of-pocket price, “care risk” is transformed back into financial risk; however, impediments to such supplementation are often substantial.)

The general theoretical proposition with the strongest support here is that, holding everything else constant, including the consumer’s risk aversion, *optimal (and demanded) insurance coverage will be less generous, with either financial or managed care limits, the greater the extent of moral hazard*. Some medical services with rather high degrees of moral hazard (dental care and, to a lesser extent, mental health care and outpatient prescription drugs) do tend to have less voluntary insurance coverage in developed countries. Conversely, the generally high coverage of inpatient care may be explained by relatively low moral hazard combined with a quintessential low-probability, high-loss scenario.

The more general point here is that the most attractive kind of insurance coverage in the presence of moral hazard will involve some patient cost sharing and

that ideal cost sharing is unlikely to be uniform across types of care or illnesses. In reality, cost sharing often takes the form of uniform “coinsurance” (percentage cost sharing), which provides incentives to consumers to pay attention both to the level of use and to the relative cost of different types of treatment. Sometimes it takes the form of “copayment” (fixed monetary payment per unit of care), but even the copayment typically is greater for a unit with a higher price (brand-name drugs) than a unit with a lower price (generic drugs).

What is the effect of moral hazard on the emergence of voluntary insurance? Under typical assumptions, the supposition that it prevents the emergence of such insurance is incorrect.

If the administrative cost of insurance is a constant proportion of expected benefits, and if a person would have bought insurance in the absence of moral hazard, theory predicts that the person would still voluntarily buy *some* positive amount of insurance even with moral hazard—just less coverage. Shavell (1979) explains this result as follows: assume that a person has no insurance and that he or she buys insurance that covers 1 percent of his or her total losses (for example, spending on covered medical services). If the person is risk averse, this marginal protection against risk will have a positive value. But the welfare cost associated with reducing the out-of-pocket price to 99 percent of its true value will be close to zero, because the additional care is worth almost (but not quite) what the care truly costs. Thus at least some coverage will increase utility. The optimal (utility-maximizing) coinsurance rate will be that rate at which the marginal benefit for increasing coverage by one more percentage point just equals the marginal welfare cost associated with that charge. Because the marginal benefit for risk reduction decreases as coverage increases, and because the marginal welfare cost of moral hazard increases from zero at zero coverage, an interior solution with positive (but less than complete) coverage results. Thus *moral hazard is not a reason for the absence of an insurance market, but it can reduce coverage in that market.*

This result is modified if (as is almost surely the case) purchasing any amount of insurance entails a fixed cost, along with a loading that perhaps increases with the generosity of coverage. (Term life insurance has this cost structure [Cawley and Philipson 1999], which almost surely applies to health insurance as well.) Conversely, if some costs associated with the illness are not covered by insurance (for example, loss of income, pain and suffering), nominal coverage can be 100 percent of medical care costs or even more than 100 percent (Schlesinger and Doherty 1995).

How will moral hazard affect the demand for insurance? As noted above, it will cause the optimal insurance (from the buyer’s viewpoint) to be less than full coverage. At the optimal coinsurance rate, the marginal welfare cost of increasing coverage just equals the marginal welfare gain from reducing risk. Thus if the total gross risk premium at this level of coverage is known, the net premium can be calculated by subtracting from it the total welfare cost to that point. For example, suppose that insurance covering half of out-of-pocket costs increases use by 20 percent. Then the marginal welfare cost is 10 percent of spending.



If the risk premium for this level of coverage were, say, 40 percent of expected expenses without moral hazard, the risk premium with moral hazard would be 30 percent (40 percent minus 10 percent). One implication of this discussion is that maximum willingness to obtain insurance occurs when coverage is set at the optimal level. If people are allowed only to obtain coverage that is much more generous than they would have chosen, they might decline that coverage even if the loading were zero.

Although the use-stimulating effect of moral hazard is a negative influence from a buyer's point of view (setting aside Nyman's point), it may be viewed as positive from a societal perspective. Moral hazard is, after all, equivalent to (or, more precisely, the consequence of) increased access. If this access and use is valued at more than its costs by others, if not by the direct consumer (for example, because of low income), society may wish to cause excessive moral hazard. Moral hazard may sometimes be explained as "use of unnecessary care," but in the economic interpretation, "unnecessary" cannot mean "useless." In the economic model described thus far, consumers do not pay for useless care. Rather, the care rationed out by copayment is beneficial care, but care with benefits to the consumer (in terms of willingness to pay) that are less than their cost. Although the income-constrained consumer may want to avoid low-value use to conserve household resources for more immediate needs, society may feel differently, particularly if the care reduces illnesses that are contagious.

This point is especially relevant to developing countries. One reason that insurance is desirable from a public policy perspective is because it promotes "access to care." Far from being regarded as a welfare cost, the additional use that follows from insurance may be thought of as achieving social objectives, especially if the use occurs among people with moderate to low incomes.

But policy discussions usually ignore a trade-off indicated by the preceding discussion. If the insurance is to be voluntary, the greater the extent of increased access, the smaller the willingness of people to pay the insurance premium. Absent a subsidy, the power of insurance to stimulate socially desirable use is constrained. Countries could regulate coverage to maximize some combination of additional access and use, but this access and use will probably be distributed unevenly. In effect, insurance that would be effective in "augmenting resources" for medical care will be too expensive and too unattractive to be sold in an unsubsidized private market and thus could reduce aggregate access relative to a lower-priced policy with less incentive for use but better incentives for purchase. Policy makers will probably need to choose between the insurance they want their citizens to have and the insurance for which citizens are willing to pay.

Finally, this discussion raises a question that is (or ought to be) at the heart of public policy on insurance in any country. If additional access to care is not worth its cost to citizens who voluntarily purchase insurance, is it socially desirable? If individuals other than the direct consumer value access, shouldn't those individuals pay for access? In developing countries, who (or where) is this alternative source of value and financing?

## INSURANCE DEMAND- AND SUPPLY-SIDE COST SHARING

Type-2 moral hazard is caused by the absence of insurer information on how severe a person's illness is. If such information were available, moral hazard could be perfectly controlled either on the demand side or on the supply side. Demand-side control would emerge as insurance takes the form of a fixed-dollar indemnity conditional on the state of illness. The insured would receive a payment equal to the cost of care that is optimal (in the sense that the marginal benefit from care just equals its marginal cost) for that illness severity; the person would then face the full cost of care for any additional use and would therefore choose to use care at the optimal level. Supply-side control would emerge as the insurer pays the full cost of care to a provider, who (in a competitive market) would render care of the efficient amount and cost.

When information on ex post illness severity is imperfect, a trade-off between protection against risk and moral hazard arises, as already noted with regard to demand-side cost sharing. Under supply-side cost sharing, there need be no financial risk, but the trade-off is between moral hazard and "care risk": the risk that the amount of care supplied will not be appropriate to the actual state of illness.

Although supply-side cost sharing may sometimes be desirable (Ellis and McGuire 1993), consumer demand for insurance generally will be strongest, in the presence of moral hazard, with a combination of demand- and supply-side cost sharing (Pauly and Ramsey 1999). A general theory for this case has not been worked out, but the mix will probably depend on which kind of risk—financial or absence of care—is more tolerable.

## ADVERSE SELECTION AND VOLUNTARY INSURANCE MARKETS

The other phenomenon that can limit or inhibit the emergence of voluntary insurance is adverse selection. Such selection occurs when insurers do not set premiums that reflect information about a consumer's expected expenses. In unregulated markets, this failure occurs when the insured know more true information about their expected losses than the insurer knows (information asymmetry) and when insurance purchasers incorrectly *think* they know more than the insurer knows (information distortion). Even if all information is common knowledge, adverse selection can arise if insurers are not permitted (by law or custom) to set premiums that reflect information (for example, if insurers are not permitted to set sufficiently higher premiums for higher risks).

Adverse selection often reduces the number of policies sold in the insurance market, can prevent the existence of a stable market, and might (though rarely) cause the market to disappear entirely. The behavior to be expected depends as well on whether insurers can know the total amount of insurance each person purchases, the conditions for entry into markets, and the degree of foresight insurers are assumed to have.

To see how adverse selection can prevent insurance from emerging, consider the extreme case in which public regulation requires private insurers to charge the same premium for a single “approved” policy to all regardless of risk. Suppose also that some consumers are certain that they will make a large claim under this insurance.

Is there a premium that can cover insurers’ costs that at least some consumers are willing to pay? If insurers set a premium on the basis of the average experience of risks at all levels, and if risk varies fairly substantially, the lower-risk individuals will be unwilling to buy insurance at that premium. Insurers would then anticipate that they would sell only to the higher-risk individuals and therefore would have benefits costs higher than the initial “average” premium. But if they raise their premium to cover these higher expected costs, more relatively low-risk individuals will drop out. A so-called death spiral can ensue until only those sure or almost sure to incur large losses are left in the market. But these individuals, because their losses are virtually certain, may be unwilling to pay anything more than their actual expenses for insurance, and so insurers will be unable to cover their administrative costs.

For adverse selection to prevent the emergence of any market, the number of such undetectable high-risk users would need to be nontrivial. If the highest-risk individuals still have a chance of low or less-than-average use, a market will exist even in the presence of adverse selection, but it will be confined to insuring the uncertainty of actual losses for those known already to be highest risk.

On the ground that the purpose of insurance is to “spread risk,” regulators are sometimes encouraged to require insurers to charge premiums that do not reflect the risk differences insurers can observe. But the risk voluntary insurance can spread is the risk of poor health that has yet to occur, not the higher risk that results from a chronic condition that has already become evident. Whatever policy and ethical benefits flow from making transfers from lower risks to higher (already-realized) risks, such policies inhibit emergence of insurance markets.

If insurers were free to charge higher premiums to higher-risk individuals and if insurers knew as much about individuals’ risk levels as insurance purchasers did, the extent of the voluntary insurance market would be maximized as long as the loading is moderate. The reason is that low-risk individuals would be willing to buy insurance at low premiums, and higher-risk individuals, who expect higher benefits from insurance, would be willing to pay higher premiums as long as there remains some uncertainty about what their claims will be.

This last point is a subject of enormous confusion in the policy-oriented insurance literature. Sometime analysts conclude (without having actually done the analysis) that, in unregulated competitive insurance markets selling to nonpoor people, private insurers would have an incentive to select only low-risk subscribers or that high-risk individuals are effectively excluded from the insurance markets due to prohibitively high premiums (Rogal and Gauthier 2000). They apparently have a “cream-skimming” story in mind, but simple theory shows that cream skimming cannot exist in competitive insurance markets (Pauly

1984). It can exist only if regulators require insurers to charge low premiums to high risks that insurers can identify. In the absence of such rules, the lower risks and the higher risks will both face premiums based on the expected value of their out-of-pocket payments. At those premiums, selling to low or to high risks should be equally profitable. Insurers would have no “incentive” to select low risks; the low premiums they could charge would make those risks not especially profitable. Likewise, they would be willing to sell to high risks if premiums charged to those risks would cover the expected value of their expenses.

Given some idealized but infeasible situation of mandated insurance with community rating, concern about this market equilibrium might arise. But given the relevant alternative of high out-of-pocket payments, such risk-rated insurance permits utility gains by both low risks and high risks; indeed, under plausible assumptions about risk aversion, the high risks might gain more from the opportunity to buy insurance at above-average premiums than the low risks would gain from buying coverage at below-average premiums. For the bulk of “high risks,” individuals who are older or who have some medical condition, the premium will remain affordable if the former out-of-pocket expense it covers was affordable. High risks will not be excluded from the market by high premiums that cover expenses they would otherwise have had to pay out of pocket. Only the very highest risks, whose expected expenses equal the premium because the loss probability is close to one, will find insurance with loading unattractive. Other higher-than-average risks will prefer paying their risk-rated premiums to going uninsured. The individual insurance market in the United States, which reflects risk-rated premiums, has been more effective (controlling for income) in providing coverage to some higher risks than in providing coverage to lower risks. Of course, a profit-maximizing insurer would prefer to select low risks and persuade them to pay the high-risk premium, but it cannot do so in a competitive insurance market, where all insurers have the same information on risk.

Finally, if prospective insurance purchasers know more than insurers, there will be some adverse selection—probably not as severe as the extreme case under imposed uniform or “community” rating—and some failure to make adequate coverage attractive to lower risks. How severely this failure will affect the market depends on the elasticity of demand for insurance and on the technology for implementing rate regulation (and controlling the types of policies offered).

So will adverse selection pose an insurmountable problem for voluntary insurance markets in developing countries? The evidence is mixed and surely incomplete. The most rigorous recent evidence suggests problems arise only when regulation-required community rating compels insurers to ignore information they have. The possibilities for group insurance and for guaranteed renewability provisions in individual contracts are unknown. Adverse selection will probably not pose an absolute barrier to emergence of a voluntary insurance market, but it could limit the market’s scope. If regulators choose to impose rating limits, markets may disappear.

## **CREAM SKIMMING AND DEMAND**

Cream skimming will not occur in competitive unregulated insurance markets (Pauly 1984). The reason is that in such markets premiums will adjust to reflect insurers' perception of risk. Premiums will be reduced to attract lower profitable risks, and they will be increased until higher risks become profitable.

If regulation or custom does not permit such premium adjustment, cream skimming can occur. However, if insurers are also required to enroll all who apply, the primary manifestation of cream skimming in competitive insurance markets will be an insurer decision to render more lavish care than is needed to low risks (to attract them) and to reduce care below the optimal level to higher risks (to lower costs and make them closer to premiums). In the limit, only inefficiency, not financial transfers across risk classes, may occur.

## **INSURANCE RESERVES AND DEMAND**

Commercial insurers promise to make large payments to people who suffer losses in return for the premiums they have already received. How can they, or their customers, be sure that this promise will be kept? As Dror and Preker (2002) explain, insurers are appropriately concerned that the benefits they owe may exceed the premiums they collect and therefore choose (and are often required by regulators) to assemble "reserves" to cover the cost of aggregate claims in any time period in excess of aggregate premiums collected in that period. But how high should these reserves be set? Economic theory provides an answer that differs in some important ways from the answer provided by actuarial theory.

In a risky world, the maximum possible (if improbable) level of total claims can be quite high relative to total premiums; higher reserves will almost always reduce by a small but positive amount the chance that premium revenues and assets will be insufficient to cover claims. Because the cost of reducing this chance to zero would be enormous, an optimal non-zero probability of default will exist at the optimal level of reserves as long as reserves are costly. But "most of the time," the chance that claims exceed premiums by a substantial margin is low because of the so-called law of large numbers. As long as losses to one policyholder are not highly correlated with losses to other policyholders, which is generally the case in health care, the average claim can come as close as desired to the average premium if the number of insured exposures grows sufficiently large.

The normative economic solution to this dilemma is straightforward. First, calculate the marginal cost of sequestering capital so as to add to insurer reserves. Second, calculate the change in the probability that claims will not be fully paid that such an addition will make possible. Third, calculate the value to the insured of this reduction in the risk of nonpayment. Finally, set reserves at the level at which the marginal expected benefits to risk-averse consumers associated with a

lower probability of nonpayment equals the marginal cost of adding to reserves. (This approach differs from some actuarial models that simply assume some [low] target value for the “probability of ruin.”)

What do these considerations have to do with demand for health insurance? The first practical point to note is that the relevance of either ruin or reserves to health insurance is generally thought to be considerably less (though by no means zero) than for some other kinds of insurance. The reason is that most health events are independent (one person’s heart attack is unlikely to be correlated with another person’s heart attack), and most health insurance promises benefits only for one year in the future. Thus, the need to hold reserves as a large proportion of premiums is generally small in health insurance. The primary reasons to hold reserves are, first, the possibility of an epidemic (for example, the 2006 winter flu scare in the United States substantially boosted drug claims) and, second, the uncertainty about prices, use, and technology in the next time period independent of the incidence of illness (for example, the unexpected spread of laparoscopic surgery caused claims to surge). In developed countries, even these examples of nonindependence are generally small relative to the value of total claims, but that may not be the case in developing countries. Finally, consumers sometimes appear willing to choose low-priced insurers with risky financial status but then profess ignorance and the need for government help when the insurer cannot pay claims or exits the market. This willingness exists even though more financially reliable insurance generally increases premiums.

Rather than have to bail out people who bought from the low-premium, low-reserve firms, governments could choose to force insurers to have enough reserves to be minimally risky. From a purely paternalistic point of view, one might believe that people should not be allowed to buy “risky” insurance—but for some consumers, the alternative to cheap, low-quality insurance may be to remain uninsured. Mandatory insurance purchasing rules solve these kinds of problems (and many others) but may be politically difficult, because they impose *de facto* head taxes if unsubsidized.

What kind of reserves would a private health insurer optionally choose to hold? Imagine that the expected value of benefits per person is  $\beta$  and that the insurer sets a per person premium of  $\Pi = \beta +$  administrative expenses. After these expenses have been paid, an insurer that sells to  $N$  people will have  $N\beta$  available to pay claims. If  $\beta$  were correctly calculated, these collections should on average be enough to cover actual benefits as long as the benefit levels are independent and  $N$  is reasonably large (say, 10,000 people). Although one person might have a costly expense, in health insurance as opposed to some other kinds of insurance, like liability, the maximum possible expense is relatively small, assuming that the insurer does not pay for “million-dollar” heroic-measures treatments. The fraction of the insured who get sick every year will change, but that variation should be modest. Hence, if reserves are costly, their levels ideally should be fairly modest.

This conclusion would change in two circumstances. First, if a large share of total claims was related to infectious disease, payouts would be sensitive to the presence of epidemics, and the assumption of independence would not hold. The key issues here are both the infectious nature of the disease and the possibility of response to epidemics, either because the disease is contagious among humans or because it can spread rapidly in response to sudden and unexpected changes in insect or animal hosts. Second, the cost of treatment could be subject to unpredictable fluctuations due to changes in prices, wages, or new technology. An unexpected change in drug prices, or the introduction of costly new technology that becomes popular, affect all expenses so that pooling within the insured group will not work. Because both these kinds of risks vary across plans, some reinsurance of the excess risk may be preferable to increasing reserves. The choice depends, of course, on the cost of reserves relative to the cost of reinsurance.

## **GROUP INSURANCE DEMAND**

Often the private insurance made available in voluntary insurance markets in developed countries takes the form of group insurance. Insurance is arranged for a group of buyers, who then may have only one plan available or may choose from a small set of plans. Typically the group is based on employment at a particular firm, but it may also be based on membership in a labor union, in some other nongovernmental organization, or even on residence in a community.

Theory suggests several reasons that demand for insurance is sometimes channeled through a group. First, insurance purchased in this way may give rise to tax advantages (usually some portion of the premium labeled the “employer payment” is exempted from taxation). Second, even in the absence of a subsidy, group purchase can reduce insurers’ administrative costs, especially costs incurred for selling and billing. Finally, even if not desirable to all consumers, group insurance “pools risk” across people with different levels of expected expense (based on age or the presence of chronic illness) to a greater extent than does individual insurance.

Traded off against these advantages (relative to individual insurance) is the need to settle for the insurance policy or small set of policies that the group would voluntarily choose and that would retain group members who become unusually low or high risks. Madrian (1994) showed that higher-risk people with employment-based group insurance were much less likely than other lower-risk workers to move to more attractive jobs. In addition, the risk pooling advantage may not be that strong, both because employers who provide insurance as part of total compensation appear to vary worker wages inversely (other factors being equal) with some characteristics related to increased risk (like age), and because individual insurance in unregulated competitive markets typically provides protection

against the onset of high risk through guaranteed renewability protection (Pauly and Herring 1999).

The least well-known aspect of group insurance is “group demand” for insurance. When groups contain people with different insurance demands, what determines actual choices by or for the group? Possible designees for the role of decision maker are the average worker, the marginal worker, the worker with the most political influence in the group, and the uninformed employer (Pauly and Goldstein 1976). Nevertheless, group insurance purchases often match characteristics of workers: groups with higher-income workers with larger families choose more generous insurance coverage. Moreover, workers move across groups in part on the basis of the insurance offered. Finally, more heterogeneous groups are more likely to offer multiple insurance options than groups in which all workers are similar in demand characteristics (Bundorf 2002). However, unionization appears to be associated with higher insurance demand, given worker characteristics (Herring and Pauly 2003).

### **EFFECT OF INSURANCE SUBSIDIES ON DEMAND**

Demand for insurance appears to be responsive to the presence of subsidies. Most of this responsiveness appears to occur at the group level, rather than at the level of the individual worker (Washington and Gruber 2004). However, the range of estimates of demand elasticities in developed countries is wide, and evidence concerning these elasticities in less developed countries is lacking.

### **DEMAND FOR PROTECTION AGAINST RISK RECLASSIFICATION**

One of the characteristics of individual market insurance in a static world is that premiums charged to any person will reflect what the insurer knows about that person’s level of risk, in the sense of expected expenses. From a policy perspective, this kind of risk rating, however helpful it is to efficiency and the emergence of markets, is troublesome. One reason for concern is a normative judgment that there should be transfers from low risks to high risks. Even though the efficient vehicle for making such transfers is the use of formal public tax and transfer programs unrelated to insurance premiums, or through the use of risk adjustment in any public subsidies, the political temptation is to favor uniform insurance premiums. But another reason for concern on the part of a currently low-risk consumer is the desire to be protected against substantial increases in future or lifetime premiums in the event of a chronic condition that results in high expected expenses over multiple periods. It turns out that most competitive individual insurers in developed countries offer protection against this risk in the form of “guaranteed renewability” provisions in the insurance policy (Herring and Pauly 2003). These provisions commit the insurer to charging the same



premium to someone who becomes a high risk as to others in the person's initial risk pool; that is, the insurer agrees not to charge discriminatory premiums based on the person's postpurchase health experience. Actual market premiums are consistent with the functioning of guaranteed renewability.

More formally, it appears that consumers demand to be protected against subsequent increases in premiums based on their own health experience. Protecting them against marketwide reasons for premium increases, such as increases in prices or costly new technology, is much more difficult for insurers.

### **HEALTH INSURANCE, INCOME, AND DEMAND**

According to the standard theory of insurance, described above, insurance protects financial wealth. People buy insurance to cushion the financial blow of the cost of care they would have purchased even in the absence of insurance. In the case of medical services, the threats to wealth are large out-of-pocket payments. But suppose that there exists a treatment that the consumer knows he or she might need for a life-threatening illness and that the treatment's cost is greater than his or her financial wealth and greater even than the present discounted value of his or her lifetime earnings or consumption. Spending on this treatment for this person will not be observed in the absence of insurance. But if the person attaches enough value to survival, value above and beyond any productivity effects, Nyman (1999) argues that he or she may be willing to pay the premium for health insurance that (in effect) "buys" this survival. If so, insurance will be associated with more spending than in its absence, but this increase in spending will *not* be inefficient moral hazard. As Nyman explains, the increase in spending is really an income effect resulting from the higher wealth that insurance creates when an individual becomes "very sick" and thus eligible for a very high benefit payment.

How important is the motivation described above in developing countries? It depends on the form of a person's utility function for survival and the reason for the demand for medical care. Here is a helpful way to think about this problem in comparative terms. Consider the demand curves for treatment of a given illness of people at different income levels. Assume, perhaps in contrast to the RAND results, that higher-income people always buy more care at various user prices and that the intercept at which some care is bought rises with income but that the effect of income on quantity demanded is larger at higher user prices than at lower user prices. At any user price, lower-income people may have more elastic demand curves than higher-income people. Under the conventional view, the implication is that, other factors being equal, lower-income people will prefer insurance with higher levels of coinsurance, because their demand reflects more moral hazard. But this implication should be incorrect if the larger increase in demand proceeds from the basis suggested by Nyman. Empirically examining the relationship between income and insurance demand in unregulated, unsubsidized markets

would provide a test of his hypothesis. His theory might even suggest that lower-income people are more likely to demand comprehensive insurance (to help them “afford” costly care) than would higher-income people, who could more easily pay out of pocket.

According to Nyman, willingness to pay a premium in excess of the expected value of no-insurance spending can be quite high, much higher than would be attributed to risk aversion alone. If this hypothesis is true, it implies a substantial demand for coverage of expensive but highly effective (life-saving) treatments even by consumers of moderate wealth. More important, it means that the increase in spending associated with such coverage might not represent inefficient moral hazard. At present, both the positive and normative analysis of these cases in developed countries is incomplete. More research on the relationship between income and wealth and the demand for both medical care and insurance is needed.

To what extent does the type of insurance premium rating—risk rating each period, community rating, or the multiperiod rating—embodied in guaranteed renewability affect the level of reserves optimal for an insurer to hold? Some analysts think that risk “segmentation,” which through risk rating can lead to relatively small numbers in each risk cell, increases the need for reserves more than full actuarial rating or use of fewer risk classes. Generally, this view is incorrect as long as risks are independently distributed across cells and regulations do not logically require each cell or group to hold its own reserves. The size of the total number of the insured in each risk class and the risk-rated premium charged, not the variation of the risk-rated premium around the overall average premium, determines the risk of large loss (relative to premiums) for which reserves must be held. Just as a fire insurer can charge different premiums for brick and wooden houses and still pool risks, so can a health insurer pool heterogeneous risks as well as homogeneous risks. A small number of observations in a given risk cell may sometimes make it difficult to get the risk-rated premium correct, but this issue is not the one at hand and is not usually a problem for a moderately large health insurer using valid actuarial models with good claims data. (It can be a problem at start-up.)

## **NEW TECHNOLOGY, COST CONTAINMENT, AND INSURANCE DEMAND**

One characteristic of voluntary market insurance in developed countries, relative to many public insurance plans, is that market insurance has been more accommodating to the introduction of beneficial but costly new technology and therefore less cost containing. To some extent, it appears that the “failure” of cost containment is not a defect as far as consumers are concerned but rather the price they are willing, if not eager, to pay for less-restrictive, supply-side rationing than occurs in public insurance plans. Nevertheless, the question that remains

is whether voluntary competitive insurers will cover costly technology in an efficient fashion.

Pauly (2003) has argued that, as long as competitive insurers are free to refuse to cover new technology, and the market for medical services is competitive, they will never add coverage that makes consumers worse off. What appear to be inefficient technological “arms races,” such as occurred in the United States in the 1960s and 1970s, are probably associated with state regulations forbidding the insurer from denying coverage or contracting selectively with providers that do not provide expensive technology. However, the role of markets and the impact of new technology on the demand for coverage need to be investigated further.

### **OTHER REASONS FOR NONPURCHASE OF INSURANCE OR MARKET FAILURE**

Economic theory identifies low risk aversion, moral hazard, and adverse selection as the primary reasons for no or low insurance demand in competitive markets. Could demand be low for other reasons, especially reasons germane to developing countries?

#### **Consumer Information**

Demand for insurance at premiums required by insurers may not materialize if consumers have incomplete or incorrect information about the distribution of expected losses. Consumers may underestimate *ex ante* the chance of developing an illness with relatively expensive treatment, or they may overestimate the odds that a public insurance system will pay forth. If the loss probability is in a sufficiently low range, it may be rational for consumers to fail to obtain correct information (Pauly and Kunreuther 2004). More generally, culturally conditioned beliefs about the future or even high interest rates can lead to a myopia in which severe losses are not anticipated by consumers and therefore are not insured.

If closing the gaps in knowledge appears attractive, the question is whether data exist or could exist to develop estimates of illness probabilities (defined not just by the existence of illness but by its severity or other proxies for effectiveness of treatment). Better data are almost always desirable, but the importance of perfect knowledge should not be overemphasized. Consumers surely must develop some subjective estimate of illness probability, which they can update in a Bayesian way if better information becomes available. If commercial firms supply insurance, they will have some estimate of expected losses (even if ambiguous). Theory and empirical evidence suggest that ambiguity about probability is not *necessarily* a barrier to insurance demand (or the emergence of markets) as long as consumers’ subjective estimates are higher than those of insurers, and as long as consumers are sufficiently risk averse (or protection seeking) to pay enough to cover any amount insurers might add as a hedge against ambiguity

(Kunreuther and Pauly 2006). Imperfect information does not necessarily make losses uninsurable.

This conclusion is strengthened if the possibility of mutual insurance is allowed (Pauly, Kunreuther, and Vaupel 1984; Doherty 1991). Consider a simple model in which data on loss probability associated with treatment of some illness (for example, stroke) are poor, and assume that consumers differ in how likely they think the chance of this illness is. Insurance can emerge if consumers agree that, whatever the loss probability, that probability is the same or similar for all households in a community and that the correlation between losses is not high. Then the solution is mutual insurance; in its simplest form, all households agree to share the cost of treatment for those who become ill. In this arrangement, the “premium” is a person’s estimate of his or her household’s share of the *ex post* cost. Setting aside transaction costs, making such a payment will always be preferred to risking high out-of-pocket expense. Those who think illness is unlikely will still join the pool, because they expect their *ex post* share to be low, whereas those who think illness is likely but not certain will prefer to pay a relatively high premium to running the risk of an even higher out-of-pocket payment.

### Political Limits

The kind of insurance for which voluntary consumer demand would exist could be politically unacceptable. “Acceptability” depends on the nature of a country’s political system and the distribution of political power and private influence. (Lobbying by medical professional associations is common.)

Begin by assuming that monetary income in a country is distributed unequally and that (tautologically) no effective political consensus exists to redistribute it. Willingness to pay out of pocket for medical care will also be distributed unequally, even among households at the same level of health. Generally, medical spending will vary positively with income (and often other socioeconomic factors like education). The variation in spending will be transformed into variation in demand for voluntary private insurance coverage, which may make higher-income individuals more likely to obtain actual insurance and perhaps more likely to choose more generous coverage.

Although variation across people in terms of spending for many goods and services may be politically acceptable (especially if the uneven initial distribution of income is acceptable), similar variation in health insurance coverage and associated “access” may be regarded as undesirable on the basis of views about what constitutes “equity” or fairness. Many people have strong views on equity, and many also think equity is important in health care, even if distribution of income and many types of consumption remain quite unequal, but they often do not agree on what is fair. More to the point, clashing views on the importance of equity (and efficiency) can raise opposition to private insurance markets, often precisely because these markets make the inequality already inherent in a society much more obvious. Insurance markets tempt politicians and advo-

cates to use health insurance pricing to redistribute income across income levels or from the healthy to the sick; these efforts, however praiseworthy on ethical or esthetic grounds, can impede the emergence and functioning of private insurance markets that best satisfy private demand.

More generally, health insurance and health care are both common objects of taxation and regulation. Sometimes the politics of taxation and regulation can be counterproductive. For example, regulators sometimes require insurance to cover certain medical services or to hold very large reserves, both of which can make the price of insurance too high for many people to be willing to buy it. It might be more desirable to have many people with incomplete and somewhat less stable insurance than to have a few people with “bullet-proof” insurance. Not all health insurance is government licensed or regulated, however. For example, many large employers provide insurance to their workers that the employers “self-insure.”

### **Distrust of Insurers**

Consumers are alleged to mistrust insurers when there has been a history of default (Weber 2002). Insurers of all types with comparatively little financial stability are penalized in terms of the lower premiums they can charge or their relatively small market shares (Cummins and Danzon (1997)). A structure that will reassure consumers that they can collect claims without excessive delay and bother is important in establishing a functioning insurance market. Establishing insurers under the auspices of other trusted social institutions, such as hospitals, labor unions, or trade associations, can help.

Distrust of insurers is probably of limited importance in countries with enough development to have some experience with other kinds of insurance. If 100 villagers buy term-life insurance and one dies, the other 99 will see that a payment has been made. Only a brief period of limited experience with a health insurance plan is required for people to appreciate the fact that the insurance pays off. Communication among consumers should generate this message; a savvy insurer will make sure that such communication occurs. There appears to be no intrinsic problem in producing trust in the insurer if the insurer can generate a sufficient track record of doing what is in its contract. Moreover, the insured need not know personally other insured who are helped: the purpose of voluntary insurance is not to help others but to help yourself, and the idea that, sooner or later, you will collect something is easy enough to convey.

### **Paying Premiums and Getting Nothing Back**

The concept of insurance is the expectation that many will pay premiums of a moderate amount but few will collect high benefits. Consumers do not always appreciate this concept and feel cheated when they pay and get nothing back. In the case of life insurance, failing to collect money because of death may be

an alternative people do not mind missing. An insurer could add some modest upfront payments that are more or less certain (at a slightly higher premium) to offer reassurance on this score.

For health insurance, the phenomenon of paying in money just to get it back may not be wholly irrational if preventive care is taken into account. Consider having insurance pay for some type of immunization or common treatment (for example, treatment of worms). If the treatment is highly cost-effective, it may make sense for insurers to cover it. The substantial cost savings thereby created is what Pauly and Held (1990) call “benign moral hazard.” Thus the coverage would perform the double duty of providing an upfront benefit and reducing total costs. Of course, the insurer could just offer lower premiums to people who had their shots, but the process of coverage may turn out to be administratively less costly.

### **Benefit of Insurance for Risk-Averse Individuals**

People are painfully aware of potential harm from a large out-of-pocket payment. But some may not make the connection between this peril and the purchase of insurance. Insurer marketing should be able to help people understand that insurance is the rational solution to this problem. In contracts, insurers can promise to remove the risk (which the person fears) in return for payment of a premium. The consumer does not need to understand the theory or the actuarial calculations to understand the value of trading a “potential bad” for a “sure thing.” Insurers will doubtless emphasize the cases in which small premiums return big benefits just when they are needed most, assuming that will be the truth. At a minimum, consumers will understand the risk transfer, even if they do not understand full risk pooling.

### **Lack of Competition**

Given some potential demand for insurance by a population, the quantity actually demanded will increase as the price (in the sense of administrative costs and profit markup) decreases. Limited competition among insurers can lead to higher prices. Even if insurers are not for profit, the absence of competition can lead to excessively high administrative costs. The possibility of market power cannot, however, explain failure of insurance to emerge, because even a profit-maximizing monopoly must set a price low enough that it can sell some product.

## **APPLYING THEORY TO DEMAND FOR HEALTH INSURANCE IN DEVELOPING COUNTRIES**

Health insurance can be supplied either as voluntarily purchased insurance or as government subsidization of the cost of medical care. Public provision is generally financed through taxation; private provision is generally financed by

voluntary payments, sometimes as individual insurance purchases and sometimes as employment-based group insurance. In each case, citizen demand for risk protection is presumably a common motivation. Public insurance demand may additionally be motivated by externalities, either the technological ones associated with incomplete insurance coverage of care for contagious disease or the altruistic and paternalistic ones that reflect consensus about the health and health care of fellow citizens.

Taxation in almost all countries is used to redistribute income as well as finance publicly purchased goods. Higher-income individuals generally are charged higher taxes for public goods even when they do not get higher benefits from them. Thus taxes distort economic behavior, and the greater the level of distortion (other factors being equal), the smaller the demand for the public sector to provide goods.

Employment-based insurance chosen on a voluntary basis responds to worker valuations of coverage as well as to the magnitude of administrative cost savings associated with group insurance. The precise connection between the insurance that profit-maximizing employers will choose to provide and the insurance demand of heterogeneous workforces is unclear.

Which of the three insurance methods will be chosen depends on the relative costs and benefits of each. Compared with public provision or group insurance, individual insurance can allow each person to get exactly the insurance he or she demands, but the administrative cost will be high. In contrast, group insurance will generally have lower administrative cost but less perfect tailoring to individual desires.

Public provision also tends to have low explicit administrative cost, but (in contrast with either form of private insurance) the use of the tax system generates economic distortion or “excess burden.” This observation may be especially relevant for developing countries with poorly administered tax systems or small shares of the economy in the formal sector. In such countries, limiting the amount of insurance furnished through the public sector is rational. The reason is not that incomes are low but that tax-collected funds are costly and therefore scarce. In this sense, emergence of private insurance, which will generate less distortion, is less costly. Hence, private provision is an unavoidable alternative to public provision; private insurance may be the desirable instrument when public insurance is too costly to be efficient.

An alternative to full public provision is subsidization of private insurance. This strategy can tap private willingness to pay and still achieve equity and efficiency goals. If the public subsidy program could be appropriately designed, it would tend to dominate any program in which the government provides fully paid insurance (public or private). The intuition behind this conclusion is straightforward: because insurance is bound to be worth something to citizens (even if not enough to cover its full cost), it should always be possible to induce people to make private payments to match public subsidies. At a minimum, these private payments would lower the need for administratively costly public

funds. Whether they would also lower the excess burden of taxation depends on whether income redistribution or other reasons for tax disincentives can be reduced. If, for example, political constraints require public funding to be redistributive in a way that deters work effort, greater use of tax funds will cause more distortion. Of course, some other redistributive taxes could be reduced to offset any higher taxes to finance public insurance, but this strategy may prove politically difficult.

Will moral hazard, adverse selection, or both impede an effort to convert out-of-pocket payments into private insurance? This concern would appear to be the most important. It can be addressed in either of two contexts: the normative economic model that attributes to government a desire for economic efficiency or a positive model of government in which political pressures and rent-seeking motivations may prompt regulation and control over private insurance.

In the first (normative) context, the conventional tools of deductibles and coinsurance in indemnity-type insurance should control moral hazard sufficiently to allow an insurance market to emerge. As long as spending is verifiable, coverage should be possible. It may even be possible and desirable to implement “true indemnity”—that is, coverage in which payment depends only on the evidence of the existence of a treatable illness and need not require information on actual spending.

Assume that the entity implementing collective choice (“the government”) has no political or economic constraints. It can reallocate the population’s total resources instantly, it can levy nondistortive taxes on precisely those households it wishes to tax, it can allocate subsidized services in a minimally constrained way, and it can impose out-of-pocket payments for medical care that it chooses. (This last power is somewhat superfluous if the second one is present.)

A government with such power would be able to implement the allocative and distributional objectives described by Musgrave (1959). Its “allocation branch” would choose the level of medical services by comparing marginal benefit from care to each person with a given illness and other characteristics to marginal service cost. Then the “distributional branch” would choose how to pay for this allocation in the way that satisfies the society’s distributional objectives and would impose nondistortive taxes and transfers from private income where necessary.

If this model approximates reality, people should not be facing such high levels of out-of-pocket payment as to exclude them from appropriate care. This powerful and benevolent government would see that they get what they need. In the ideal scenario, it would have zero out-of-pocket payments for all risk-averse people and use its hypothesized powers of control to prevent moral hazard.

The relevant marginal benefit to be considered by this government would have two components. One component would represent the value of medical care to the household receiving it; if households differ in their values because of tastes, these tastes would be taken into account and use would not be expected to be completely uniform. The other component of marginal benefit reflects poten-



tially positive externalities for others in society of a given household's greater use of medical care. If the care reduces contagious disease, this external benefit should be obvious. But even if the illness that might be effectively treated is not contagious, altruistic and humanitarian motives might cause others to attach positive value to the relief of suffering.

In this model, the "solidarity principle" applied to medical care has no role. According to this principle, which has no precise interpretation, people should have access to medical care according to their marginal benefit ("need") and should pay on the basis of some assumed ability to pay. The first part of this principle carries over to the ideal outcome, but the second part becomes superfluous or harmful. If the general tax and transfer system is doing an adequate job of achieving the desired redistribution, particular taxes, even ones that may to some extent be earmarked for health care, need not be tailored to achieve distributional objectives. In other words, each tax need not meet distributional or equity goals; only the package of taxes must do so.

For example, the decision to fund health insurance for the nonpoor with a uniform premium would not necessarily limit an ability-to-pay or rich-to-poor transfer. Compared with a country that used a proportional wage tax, a country that used a uniform premium would just have to have greater progressivity in its other taxes. If not all taxes are identical in terms of targeting or excess burden, the choice will be complex, and some have agreed (Besley and Coate 1991) that distributional objectives could be better achieved through the health tax and spending budget. But the main point is that, either way, a break-even system operated according to the solidarity principle has no basis. And if specific health care funding is supplemented with general revenues, as is often the case, the overall distributional pattern is affected at the margin by the general revenue taxes: the health insurance tax is irrelevant.

Assuming that governments can or will choose to do what welfare economics says is unrealistic. One reason for deviation has already been suggested: different practical taxes have different efficiency or excess burden implications in addition to distributional goals. Therefore, assume next that efficient taxation is not possible, but continue to assume government makes the aggregate welfare-maximizing allocation given the cost it faces.

If a tax causes economic distortion, it imposes two limits on the provision of social goods. Limits on the amount of funding that can be generated at any tax rate; make the tax rate too high, and less money may be collected than at a lower tax rate. So if the tax on the base available to the country is set at the revenue-maximizing level, but that amount is less than the cost of the ideal levels of social goods, social goods will be undersupplied. More generally, the theory of excess burden indicates that the economic cost of transferring resources from the private to the public sector is higher when taxes are distortive. In effect, the cost of spending  $X$  raised through taxation is more than  $X$ . This excess burden raises the cost of providing social goods, and the efficient response is to provide less of them.

In such a situation, the government chooses a level of provision of some social goods like medical care that falls far short of the level at which the marginal private benefit for such goods equals their marginal resource costs because of the “tax on a tax” character of excess burden. If some alternative method to fund medical spending exists (such as private purchase or private insurance), purchases of medical insurance and medical care might increase, and the resulting mixed system would be efficient.

However, the pattern of such additional private purchases would not replicate the pattern of the government program. The government program in principle takes account of both private benefits from health care and external or social benefits. The supplemental private purchases take account only of private benefits but will have a less strict budget constraint. As a result, only those with high private benefits—those with strong demands for health care or insurance—will engage in supplementary purchases.

Some of the discussion of actual systems imagines that a new tax base (for example, an insurance and related health insurance “premium”) can be tapped. But if a new tax were feasible, why has it not been used to finance the basic (and chronically underfunded) preexisting social system? “Political feasibility” may be the answer. It may be that, in contrast with the assumptions above, politics has inhibited provision of services with marginal benefits exceeding their marginal tax cost. Perhaps restructuring proposals for additional spending in the form of new insurance (rather than national social insurance or general public spending) will garner greater political support. The feasibility of this strategy should not be taken for granted.

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## CHAPTER 3

# Supply of Private Voluntary Health Insurance in Low-Income Countries

*Peter Zweifel, Boris B. Krey, and Maurizio Tagli*

This chapter describes how economic theory (and experience) of the demand for insurance predicts that risk-averse individuals purchase coverage if available at so-called fair premiums, which amount to no more than the expected value of the loss to be covered. In the case of health, additional financial means (provided by coverage) may be even more important when a person is ill than when he or she is healthy. If so, demand for health insurance, even in low-income countries, could be high.

Every insurer needs to charge a “loading” for administrative expense, compensation for risk, and profit (in the case of a public insurer, the loading amounts to the efficiency loss caused by taxation needed to finance the insurer’s operations). Therefore, the behavior of health insurance suppliers becomes of crucial importance. The loading contained in their premiums (or contributions) is just one of several supply dimensions, which include comprehensiveness of benefits, amount of risk selection effort, degree of vertical integration with health services providers, and degree of seller concentration in the market. This chapter addresses these dimensions of supply and the powerful effect on them of moral hazard (the tendency of consumers to underinvest in prevention, choose the most intensive treatment alternative, and push for application of the latest medical technology). In the presence of marked moral hazard effects, health insurers are well advised to include only a few items in their benefit list, because each of these items tends to increase in price, quantity, and hence expenditure. Moreover, premium regulation induces risk selection efforts. If allowed to charge contributions according to true risk, health insurers will set premiums such that high and low risks yield the same contribution margin on expectation. In that event, risk selection (“cream skimming”) is not worthwhile. These phenomena hold not only for private health insurance in low-income countries but also for community-based and public health insurance.

Because little empirical data on the supply of health insurance exist, case studies, mainly of low-income countries, are used to illustrate theoretical predictions. On the whole, the limited empirical evidence suggests that the theory developed in this chapter may be sufficiently descriptive to provide some guidelines for policy.

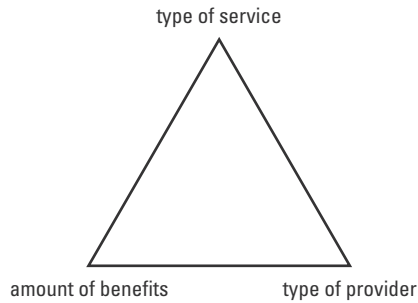
## INTRODUCTION

This chapter reviews the extent and the structure of health insurance coverage offered by a theoretical private insurer in a competitive, unregulated market. However, an attempt is made to qualify the argument when considering the situation prevailing in developing countries; case studies (where available) are cited for support. A specific variant considered is community-based (health) insurance (CBI), which has some interesting features (Dror and Preker 2002, 2). Throughout the chapter, private insurance is also compared with public insurance, which is defined as a compulsory monopolistic insurance scheme operated by a government agency.

The chapter begins with elements of the supply of insurance coverage that can be determined or at least influenced by the individual insurer in an unregulated market and continues with elements that are more related to market processes and outcomes. The first element considered is the composition of the benefits package. In principle, the broader the package, the greater the opportunities for risk diversification. However, this argument needs to be qualified in the case of both low-income countries (LICs) and CBI. Insurers can use the design of insurance policies as an instrument of risk selection (Rothschild and Stiglitz 1976); policy makers the world over view cream skimming as a major concern. The next element is the loading, or the price of health insurance. It should be noted that gross premium has no influence on supply, because the component that equals expected loss is paid out to the insured. Loading contributes to cost recovery and expected profit. The next element is vertical integration (distinguished from vertical integration with vertical restraints), the degree of which influences the nature and scope of products supplied. Variants of managed care are prominent examples of vertical integration in health insurance. The final element considered is the degree of concentration prevailing in the market. This degree reflects insurers' decisions but also is influenced by antitrust legislation and enforcement. In all of these considerations, the roles of the legal environment and the institutional environment are taken into account (annexes 3A and 3B).

## BENEFIT PACKAGE

An unregulated private insurer has the option to specify its offer along three dimensions (Zweifel and Breyer 1997, 159). First, it can decide to cover only certain types of services, for instance, inpatient care but not outpatient care like the community health fund in Tanzania (Musau 1999). Second, it can differentiate its offer by covering or excluding services offered by certain provider categories, for instance, include only physicians registered with a public agency. Third, it may determine the amount of the benefits paid in case of sickness. The compensation may state a certain quantity of services, the compensation per unit of consumption, or the limit up to which expenditures are refunded (see figure 3.1).

**FIGURE 3.1** Differentiation of Benefits

Source: Authors.

Possible combinations of type of service, type of provider, and amount of benefits create opportunities for product innovation and the building of profitable market segments. The optimal choice is influenced by several factors listed in table 3.1, which are discussed starting with the insurer's point of view and moving toward demand-side considerations and regulatory and institutional factors that affect the insurer's decision making.

### Risk Aversion of Insurer

The relevance of risk aversion for the behavior of insurers has been the subject of continued debate (Greenwald and Stiglitz 1990; Chen, Steiner, and White 2001). In industrial countries, owners of insurance companies can be assumed to hold fully diversified portfolios. As such, they are exposed only to nondiversifiable risk, which is reflected in the company's  $\beta$  (the slope of the regression linking the company's expected rate of return to the expected rate of return on the capital market at large). Therefore, diversification is only in the interest of shareholders to the extent that it lowers the company's (positive) value of  $\beta$ . Management, being much less diversified in its assets, has an interest in diversification of its own. Therefore, the extent to which it actually engages in diversification of the underwriting portfolio is a question of corporate governance.

Assuming that risk aversion raises interest in risk diversification, its impact on the benefit package can go either way. To the extent that inpatient services and outpatient services constitute complements rather than substitutes, they are positively correlated. Including both in the benefits package increases the variance of liabilities *ceteris paribus* (all other factors being equal), which runs counter to the interests of a risk-averse insurer. Benefits triggered by communicable diseases have the same effect, motivating the benefits' strict limitation. Even if the correlation is negative, risk diversification does not necessarily imply more complete

benefit packages at the individual level, because the insurer can offer different packages to different client groups.

To the extent that domestic investors in LICs cannot rely on a sufficiently developed capital market (or are prevented from achieving full international diversification), their risk aversion is more likely to be relevant for management decisions. Management, finding itself in a similar situation, will tend to further reinforce this tendency (assuming corporate governance is as imperfect as in industrial countries).

In CBI schemes, which amount to mutual insurance schemes, owners are individuals and households with little asset diversification. These schemes have an even keener interest in diversification. However, the low income of CBI enrollees may force most CBI schemes to stick to narrowly defined products in spite of a basic need for diversification (Musau 1999). Moreover, in the presence of imperfect capital markets, borrowing opportunities for CBI schemes are limited, giving rise to liquidity constraints to diversification.

A public health insurance agency is unlikely to be significantly risk averse with respect to its financial results. Its opportunities to shift financial risk to the government, which can resort to printing money if necessary, and responsibility for failure are numerous. Therefore, risk aversion cannot have much importance in determining the benefit package.

### Synergies among Benefits

Synergies denote economies of scope in production, distribution, and marketing that are unrelated to risk diversification effects. They cause insurers to benefit from the offer of multiple benefits rather than a single benefit. In production, synergies arise when the costs of writing and executing contracts (specifically the processing of losses, compare the term  $\mu \times \pi$  in equation (3.1) on page 69) do not rise proportionally with the number of benefits, resulting in decreasing expected unit cost. In distribution, the same channel may be used to sell additional products. In marketing, brand advertising benefits all the products that a given insurer sells.

Synergy effects can be as strong as in LICs as in industrial countries. To the extent that private health insurers in LICs seek to maximize profits, they want to make full use of economies of scope. For instance, Fedsure Holdings, a South African insurance company, was able to decrease unit costs by cooperating with Norwich Holdings, a medical scheme administrator and private hospital owner. This alliance enabled Fedsure to make its medical benefit package more comprehensive (McGregor and others 1998).

Synergy effects typically are limited for CBI schemes, which often lack the capacity to jointly administer several insurance products. The scarcity of health care providers in their area of operation also means that opportunities for combining services are limited. Moreover, CBI schemes sometimes rely on barter, and the goods offered in exchange for services may not accord with the preferences



**TABLE 3.1 Factors Affecting the Size of the Benefit Package**

Factor	Private insurance		Community-based insurance	Public insurance		
	(competitive market)	(in LICs)		(in LICs)	(in LICs)	
Risk aversion of insurer	+/-	+/-	↑	+/-	↓	n.a.
Synergies among benefits	+	+		+	↓	n.a.
Moral hazard	-	-	↓	-	↓	- ↑
Diversity of preferences	+	+	↓	+	↓	+ ↓
Diversity of risks	+	+	↓	+	↓	+ ↓
Emergence of new health risks	+	+	↓	+	↓	+ ↑
Regulation	+	+		+		+ ↑
Fraud and abuse	-	-		-	↑	- ↓

Source: Authors.

Note: LICs = low-income countries; n.a. = not applicable. A plus sign means the factor increases the benefits package; a minus sign means it decreases the package. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.

of a great variety of providers (Tenkorang 2001). For example, the Mburahati Health Trust Fund in Tanzania only offers a limited benefit package of outpatient care, along with a cost reimbursement of 10 percent for treatment in public hospitals. Chronic diseases, HIV/AIDS, and tuberculosis are not covered (Musau 1999). In general, scope for synergy effects appears to lie with cooperation among CBI schemes. However, this cooperation would result in larger pools, which tend to worsen moral hazard problems.

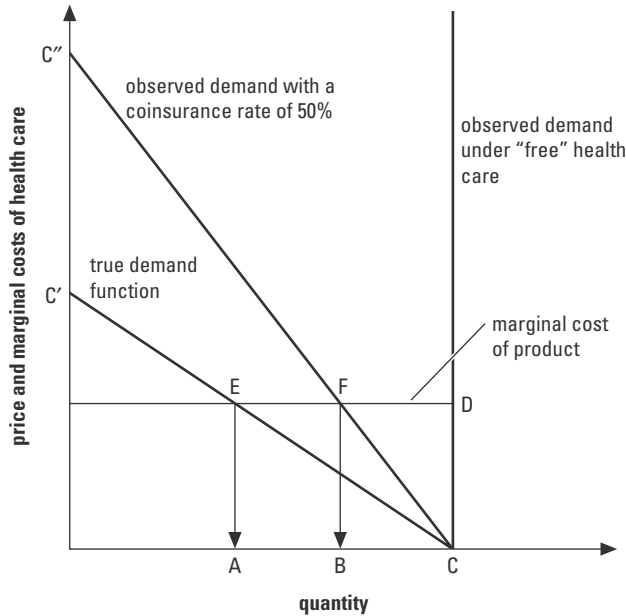
In a public insurance system, synergies are not very relevant criteria for a public decision maker who aims at providing public and merit goods to the population. This objective tends to override the economic justification of extending benefits purely because of synergies.

### Moral Hazard

The effect of ex post moral hazard (defined below) on the benefit package can be illustrated as follows. Assume that consumers' willingness to pay out of pocket for a medical service or product is approximately given by the linear demand function  $C'C$  of figure 3.2. In the case of health insurance with a 50 percent coinsurance rate, maximum willingness to pay is doubled, from  $C'$  to  $C''$ . More generally, the demand function is rotated outward to become the effective demand function  $CC''$ . The lower the rate of coinsurance, the more pronounced this rotation. With no copayment (as is often the case with tax-funded schemes), the curve runs fully vertical from  $C$ .

Therefore, the market equilibrium shifts from point E to F; a higher quantity of the service or product is transacted. In terms of equation (3.2) on page 69, the benefits to be paid in the event of illness ( $I$ ) increase, resulting in an ex post moral

FIGURE 3.2 Ex Post Moral Hazard



Source: Authors.

hazard effect. As will be argued below, a decrease in the rate of coinsurance causes both parts of the loading and, hence, the premium to increase, creating a negative income effect (shifting the demand curve inward) that is neglected for simplicity.

The moral hazard effect is relevant to the choice of benefit package, because it comes to bear with each additional item in the package. The more complete the package, the larger the loading component in the gross premium and, hence, the larger the net cost of insurance. Therefore, moral hazard considerations should lead an insurer to exercise caution in expanding the package. Specifically, it would want to add services characterized by low price elasticity of demand, because the moral hazard effect is more limited in this case. In figure 3.2, lower price elasticity means that for a given maximum willingness to pay such as  $C'$ , the demand function runs steeper, causing point C to shift toward the origin. This shift serves to reduce the difference between the true and the observed demand curve and, hence, the size of the ex post moral hazard effect.

Ahuja and Jütting (2003, 13) argue that ex post moral hazard is less of a problem in LICs, mainly because density of supply remains low, causing nonmonetary costs of utilization to weigh heavily. The following example may illustrate their argument. Suppose that the total cost of using medical care in an LIC is 100, of which 50 is the monetary price of the visit and 50 is the cost of travel,

accommodation, and lost income. With full coverage, this total cost falls to 50, or by one-half. By way of contrast, in an industrial country, the total cost may be 500. However, because of income replacement, the only cost is cost of travel to the insured, amounting to 100. Even this cost is relatively low due to a high density of medical supply. If the price of the visit is reimbursed in full, total cost falls from 500 to 100, a reduction of 80 percent. Thus, LICs are still characterized by barriers to access that limit ex post moral hazard effects, which in principle should facilitate expansion of benefit packages.

Moral hazard may be even less of a problem in CBI schemes, which usually consist of small risk pools. First, asymmetric information is less pronounced in a small (often rural) community, where each member of the pool can easily monitor the behavior of others. Therefore, any overuse of an extended benefit package would be quickly detected. Furthermore, the sanctions meted out by the community can be enormous (in the extreme, expulsion from the community) and thus constitute an effective device to enforce discipline among the insured. The experience of community-based credit schemes is instructive in this regard. Failure to pay back a credit may be sanctioned by whipping and even expulsion from the community (Hoff and Stiglitz 1993). *Ceteris paribus*, CBI schemes should be less hampered than private insurers by moral hazard considerations when making decisions about an expansion of their benefit package.

In a public insurance system, moral hazard sooner or later becomes an important consideration in determination of the benefit package. Consumption of health care services usually entails little or no cost sharing for the user, which means that in figure 3.2 the vertical observed demand function applies. Therefore, the public insurer must finance the maximum quantity,  $C$ , times the unit price,  $CD$ , for each benefit added. The public insurer is subject to the ex post moral hazard effect to a higher degree than a private insurer, which would offer policies with varying degrees of cost sharing. Unless contributions (often levied in the guise of a payroll tax) or tax allocations are increased accordingly, the scheme ends up in deficit.

### Diversity of Preferences

Creation of a benefit package depends on its value to consumers. Consumers will demand a package that combines benefits to the extent that their marginal rate of substitution is equal on expectation. A unit of benefit will be added to the package until its ratio of expected marginal utility to the premium increase occasioned is equal across all benefits. This expected value depends on the amount of risk aversion and the relevant probabilities of loss. Differences in loss probabilities are addressed in "Diversity of Risks."

Diversity of preferences among the insured causes their optimality conditions to be satisfied at different (sometimes zero) levels of benefits. To attract consumers, insurers will customize their products in an attempt to maximize expected profit. The diversity of preferences may relate to the amount of the deductible,

the rate of coinsurance, and the limits on benefits, as well as type of service (for instance, alternative medicine) and type of provider. In this way, permanent innovation and adjustment to changing demand occur. As a general rule, product differentiation is costly.

Consumers at low levels of income and wealth are less willing and able to bear this cost. For this reason, the relationship between diversity of preferences and size and structure of benefit packages likely is attenuated in LICs, both for private and CBI schemes. This reasoning also holds for a public health insurer operating in a LIC.

### Diversity of Risks

Diversity of risks (in the sense of differences in loss probabilities) promotes a differentiation of degrees of coverage, combined with a differentiation of premiums. If insurers are unable to assess risks, a differentiation of premiums cannot occur, which encourages the purchase of excess coverage by high risks and reduced coverage by low risks. Therefore, the insurer runs the danger of incurring a deficit when expanding the benefit package. The same argument holds when the insurer is prevented from differentiating premiums by a mandate to take on every applicant on the same conditions. When combined with asymmetric information, diversity of risks thus hampers creation of comprehensive benefit packages.

This argument appears to be relevant for LICs as well. ISAPRE, a private health insurance group in Chile, has been offering fair comprehensive benefit packages while avoiding deficits. However, it has the right to form homogeneous risk groups, which are charged differentiated, risk-based premiums. Such premiums make coverage too expensive for the poor and large subsets of the elderly (Hohmann and Holst 2002). In Indonesia, where premium differentiation is more limited, most private health insurers greatly reduce benefits offered to people aged 55 and older (Hohmann, Lankers, and Schmidt-Ehry 2002).

CBI schemes typically provide uniform coverage to all participants at a uniform premium. According to the argument advanced above, this coverage should cause the schemes to opt for small benefit packages. This prediction is borne out in the case of the Kisiizi and Chogoria insurance schemes in Kenya, which exclude HIV/AIDS treatment, eyeglasses, self-inflicted injuries, and dental care (Musau 1999, 10). Of course, other reasons may be responsible for the limited size of the benefit package in this country and other LICs.

For a public health insurer, uniformity of benefits is part of its mission, because it acts on behalf of the government, whose likely objective is to provide citizens with a maximum of public and so-called merit goods. By assumption, public goods are enjoyed by everyone to the same degree; therefore, if the government views access to health care as a public good, its insurance branch must act accordingly, guaranteeing equal access through equal benefits. Diversity of risks can hardly be reflected in a diversity of (planned) benefits under these circumstances.

## Emergence of New Health Risks

New health risks increase demand for extension of the benefit package. However, even under competitive conditions, insurers will not immediately adjust to this demand. First, they need time to assess the probability of loss  $\pi$ . Second, an extension of the benefit package calls for a premium adjustment, which in turn usually requires a cancellation of the policy. It takes new business to provide the insurer with the opportunity to test consumers' willingness to pay a higher premium for the added benefit. Even under competitive conditions, new health risks will thus be covered only with a certain delay.

With regard to LICs, the expected cost of treating a new disease is crucial. Although coverage of costly new diseases increases a consumer's willingness to pay, the necessary premium adjustment may result in an amount exceeding the consumer's income. Moreover, in LICs some of the new risks will be communicable diseases, which cause individual illness probabilities to be positively correlated. Extending the benefit package may increase the risk of ruin. This latter argument carries even more weight for CBI schemes, because they operate in areas where close personal contact is common (Nugroho, Macagba, and Dorros 2001). A public insurer is called on to cover emerging new risks, because public health is at stake. Although hardly concerned by the risk of ruin, the insurer still must take into account that the government might have to cover high deficits.

## Regulation

Premium regulation typically concerns not only premiums but also products, because it can be subverted by product differentiation. Premium regulation typically prevents insurers from differentiating premiums according to true risk. A given uniform premium is associated with a contribution to expected profit in the case of a low risk but is the cause of an expected deficit in the case of a high risk. Therefore, an insurer must attract as many low risks as possible. One way to do so is to modify the benefit package, excluding services that attract high risks. More generally, insurers will use benefits to compete with differentiated products, because the regulator hinders price competition. In principle, premium regulation increases the variety of benefit packages in the market, unless product regulation neutralizes this tendency.

Overall, regulation of insurance can reduce efficiency, particularly if it seeks to minimize the social cost of insolvency by avoiding insolvency altogether (see annex 3A and table 3A.1). Typically this type of regulation limits itself to mitigating the social costs of insolvencies, while permitting them in principle (see table 3A.2).

A country with little regulation of private health insurance is Croatia, and the choice of insurance products there is indeed very wide (World Bank 2003, 19). However, the benefit package may also include coverage of the copayment imposed by the public insurance scheme, which exposes the scheme to moral

hazard of the ex post type and thus causes the true price of public health insurance to increase. In addition, the danger of cartelistic agreements is considerable, because two insurers, one of which is even government owned, dominate the market.

The extent to which LICs regulate premiums and products differs greatly. Some private insurers, such as those in Singapore and Taiwan (China), face strict regulations with regard to both premiums and products (for an overview of the different national regulatory systems, see table 3A.3). By way of contrast, insurers in countries such as Chile and Thailand have more autonomy in setting their premiums, and their benefit packages are more varied.

In most CBI schemes, members determine the premium, and the resulting premium is uniform. The schemes undertake little risk selection effort through product differentiation, because the risk pool is homogeneous. Moreover, most CBI schemes are local monopolies; therefore, they have little incentive to compete for members with differentiated benefit packages. An example is the Mburahati Health Trust Fund in Tanzania (Musau 1999), which offers only coverage for outpatient care and a small contribution toward public hospital care.

Because public health insurance is subject to a maximum degree of regulation, its benefit package is more strongly determined by regulation than the benefit package of private and CBI schemes. Expanding benefits is the aim of a government that seeks to provide a maximum amount of public goods; therefore, a strong tendency in this direction can be expected.

### **Fraud and Abuse**

Fraud and abuse may occur at three levels. First, it constitutes an extreme form of moral hazard on the part of the insured, which the insurer can counter with inspections and curtailment or even denial of benefits. Second, providers of services may act fraudulently; here the countermeasure is to pattern their remuneration so as to give them an incentive for honesty (revelation principle, see for example, Laffont and Tirole 1993, chapter 1). Third, fraud and abuse may occur when health care providers make their purchase. The insurer cannot easily neutralize this type of fraud and abuse unless competition among providers is strong.

In LICs, generally weak institutions foster corruption, which may affect the quality and quantity of benefit packages. According to international corruption indexes, such as the annually published Transparency International Bribe Payers and Corruption Perception Indices, unfair market behavior is much more common in developing countries than in countries in the Organisation for Economic Co-operation and Development (OECD) (Transparency International, several years). China, the Russian Federation, and Taiwan (China) scored particularly poorly in both indexes in 2002 (see annex 3B).

Providers of medical supplies may ex ante defraud physicians and hospitals by offering money payments for use of their more expensive products rather

than cheaper products from competing suppliers. The former products tend to be of lower quality and quantity, because corrupt suppliers have to recover their bribery payments through their sales margins. The result is that insurable medical services are of lower quality at a given price. An insurer considering extension of its benefits package thus has to take into account that an additional benefit may well be of lower quality and thus induce little willingness to pay in terms of higher premiums, which makes more-comprehensive benefit packages unattractive. For instance, some private health insurers in Thailand decided to terminate coverage for ambulatory care, because auditing the bills and checking for fraud became too costly (Health Systems Research Institute 2002, 7).

CBI schemes have minimum administrative capacity, suggesting that they have limited capability to monitor the behavior of health care providers. Therefore, they may run an even greater risk than private health insurers of purchasing services of low quality when extending their benefit package. This risk forces them to build their package on those (possibly few) services the purchase of which is little infected by corruption.

In principle, corruption affects a public health insurer in the same way as a private one: the former can offer only fewer services or lower-quality services for the amount of payroll tax or general tax received—thus its benefit package is not as comprehensive as it could be. The public health insurer cannot easily purge from its benefits those items whose suppliers are corrupt. Therefore, the negative relationship between benefits and fraud is attenuated, at least as long as incurring a deficit is an option.

## **RISK SELECTION EFFORT**

Most policy makers and even many economists believe that “skimming the cream,” that is, making an effort to attract favorable risks, is typical of private health insurers. However, on closer examination, this belief is unjustified. If health insurers were entirely free to grade their premiums according to risk, they would not want to invest in risk selection, because an unfavorable risk would be charged a high premium, whereas a favorable risk would demand and obtain a low premium. Given expected future health care cost, insurers would adjust premiums to equalize the expected contribution margin across risk groups. Under the pressure of competition, they simply cannot cross-subsidize one risk group to the detriment of another, because the discriminated group can generate a more favorable offer from a competing insurer (see Zweifel 2005 for a quantitative formulation). For this reason, “not applicable” is entered in table 3.2 where appropriate to reflect the fully competitive unregulated benchmark, indicating that the factor considered is ineffective. In the following discussion, however, the assumption is that premiums are regulated at least to some extent, imposing more uniformity than warranted in view of actuarial considerations and inducing competitive insurers’ interest in risk selection.

## Risk Aversion of Insurer

If premiums have to differ from the expected value of the loss covered plus loading (see equation (3.1) on page 69), the insurer's underwriting result has excessive variance. The predicted response of management to this increased risk exposure depends on the same considerations noted above. If management has leeway to pursue its own interests, inducing risk-averse behavior, it will undertake risk selection efforts because it can decrease its own risk exposure in this way (see table 3.2). This response is probably particularly marked in those LICs imposing premium regulation, because in the interest of simplicity, this regulation tends toward uniform premiums (rather than moderation of excessive premium differentiation or neutralization of incentives for risk selection by implementation of a more or less elaborate risk-adjustment scheme; see, for example, van de Ven and Ellis 2000). CBIs also tend to undertake risk selection, because their member-owners are much less diversified than the typical shareholders of an insurance company and thus are particularly concerned about excess exposure to a risk that may ultimately spell insolvency. For a public insurer that wields a monopoly, risk selection is irrelevant, hence the "not applicable" entries in table 3.2.

## Moral Hazard

A competitive health insurer would want to charge a high premium to consumers who are particularly susceptible to moral hazard (see equation (3.3) on page 74). If premium regulation would make doing so impossible, risk selection is a substitute measure, because it can be used to keep the high-moral-hazard types out of the insured population. However, as long as nonmonetary barriers to utiliza-

**TABLE 3.2 Factors Affecting Risk Selection Effort**

<i>Factor</i>	<i>Private insurance (competitive market)</i>	<i>Private insurance (in LICs)</i>	<i>Community-based insurance</i>	<i>Public insurance (in LICs)</i>
Risk aversion of insurer	+(n.a.)	+ ↑	+ ↑	n.a.
Moral hazard	+(n.a.)	+ ↓	+ ↓	n.a.
Size of the benefit package	+(n.a.)	+ ↑	+ ↑	n.a.
Diversity of risks	+(n.a.)	+ ↓	+ ↓	n.a.
Access to risk information	+(n.a.)	+ ↓	+ ↓	n.a.
Sellers' concentration	-(n.a.)	- ↑	- ↑	n.a.
Regulation	+(n.a.)	+ ↑	+ ↑	n.a.

*Source:* Authors.

*Note:* LICs = low-income countries; n.a. = not applicable. A plus sign means the factor increases risk selection efforts; a minus sign means it decreases these efforts. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.



tion of health care services are high in LICs, moral hazard effects and hence the incentive to engage in risk selection are mitigated in LICs. The same argument in combination with social control mechanisms applies to CBI schemes.

### **Size of Benefit Package**

With a very limited benefit package, differences in the expected contribution margins of the high-risk insured and those of the low-risk insured typically are not that large. Therefore, the incentive to engage in risk selection is not very marked either (Zweifel 2005). Conversely, the more comprehensive the benefit package, the more health insurers are predicted to invest in risk selection efforts. This tendency is probably especially strong among CBI schemes, because once they begin to offer more benefits, their risk exposure increases, and so a more careful selection of risks acts as a counterbalance.

### **Diversity of Risks**

Above all, diversity of risks means that the insured differ widely in terms of their expected value of loss, that is, their probability of illness, use of medical care in the event of illness, or both. The larger such diversity, the more premium regulation (in the limit, uniformity of premiums) induces excess variance in the underwriting result. A private health insurer is predicted to counter this variance by stepping up its risk selection effort. However, the same behavior is predicted for a CBI scheme (or in fact any nonprofit insurer) as long as running into deficit triggers a sanction of some sort (Zweifel 2005). In the case of CBIs, this tendency is weaker, because traditionally their insured population has always been very homogeneous.

### **Access to Risk Information**

Risk selection is an attempt on the part of the health insurer to at least partially overcome an asymmetry of information resulting from the likely fact that the person to be enrolled knows more about his or her future health risks than does the insurer. However, genetic information may change that asymmetry. In fact, the availability of such information permits the insurer to predict the future health care expenditure of an individual with much greater precision. Moreover, refusal to provide genetic information suggests that the person has genetic information at his or her disposal, indicating he or she constitutes a high risk. Therefore, improved access to risk information of this type greatly enhances the effectiveness of risk selection efforts. Accordingly, risk selection becomes a more attractive alternative for health insurers. The limiting factor in the case of most LICs is that this information may be more costly to obtain in LICs than in industrial countries.

## Sellers' Concentration

Wilson (1977) illustrates the importance of sellers' concentration with the following thought experiment. If only two companies (A and B) were in the market, risk selection would not make much sense, provided the two competitors' planning horizon extended beyond the current period. In period 1, insurer A may be able to filter out the favorable risks. However, it would dump these risks on insurer B, which in turn would resort to risk selection in period 2. Thus, in period 3, the unfavorable risks would again seek coverage with insurer A. In the end, both A and B would lose from investing in risk selection. This consideration makes risk selection less likely in concentrated health insurance markets than in unconcentrated markets. However, the consideration may apply to CBI schemes to a lesser degree, because their insured also own the schemes, fully exposing them to the risk of insolvency that may result from failure to carefully gauge potential clients.

## Regulation

As noted above, a health insurer with the freedom to grade its premiums according to risk will tend to equalize expected contribution margins across risks. High risks, although expected to cause high health care expenditures, also pay a high premium, whereas low risks must be attracted by low premiums that reflect their low future cost. Arguably, premium regulation, by seeking to relieve the high risks of "excessive" premiums, induces risk selection (Pauly 1984). Chapter 4 proposes a means-tested subsidy paid to potential purchasers of health insurance with low incomes to avoid this counterproductive side effect of premium regulation, which is also to be expected in LICs, regardless of for-profit status.

## LOADING

Private insurers pay an indemnity  $I$  to cover a loss against a premium. The gross premium can be divided in a net premium ( $\pi \times I$ ), with probability of loss  $\pi$  depending negatively on preventive effort on the one hand and loading on the other. The net premium covers the expected amount of benefit to be paid. The loading can be further divided into two components. One is a per unit amount  $\mu$  associated with claims processing. The higher the likelihood of presentation of a claim, the more often an administrative process is triggered. The other component is a multiple  $\lambda$  of expected benefits net of copayment (symbolized by a rate of coinsurance,  $c$  for simplicity), reflecting acquisition cost, a risk premium, and profit. Therefore, a viable insurance contract must be priced to contain the following elements (Zweifel and Breyer 1997, chapter 6.2):

$$(3.1) \quad P(I) = \text{net premium} + \text{loading} \\ = \pi(V) \times (1 - c) \times I + \mu \times \pi(V) + \lambda \times \pi(V) \times (1 - c) \times I,$$

where

P = premium

$\mu$  = loading factor for variable administrative costs

$\pi$  = loss probability, probability of illness [ $0 < \pi < 1$ ,  $\pi'(V) < 0$ ]

V = preventive effort (unobservable)

c = rate of coinsurance ( $c < 1$ )

$\lambda$  = loading factor for acquisition cost, risk premium, and profit

I = benefit paid in the event of illness.

The more complete the coverage, denoted by I, the weaker in general are the insured's incentives for prevention V.<sup>1</sup> Taking into account this ex ante moral hazard effect, the amount of loading can be written as

$$(3.2) \quad \text{amount of loading} = \mu \times \pi[V(I)] + \lambda \times (1 - c) \times \pi[V(I)] \times I.$$

The question immediately arising is whether the concept of loading has any relevance to a public health insurer. It does. First, a public scheme has administrative expenses, which rise as the frequency of claims  $\pi$  increases. As is the case with private insurers, this frequency depends on preventive effort V, which is again negatively related to coverage I (the ex ante moral hazard effect). The term  $\mu \times \pi[V(I)]$  of equation (3.2) therefore applies to public insurance. Second, although a public insurer need not charge for acquisition cost, risk bearing, and profit, it gives rise to a "loading" similar to the second term of equation (3.2). The larger the expected value of benefits to be paid net of coinsurance [ $(1 - c) \times \pi \times I$ ], the higher must be the rate of tax levied on labor income or on sales. Taxes cause inefficiencies, because they reduce the volume of transactions; some contracts that would have been mutually beneficial are not struck because of tax. These inefficiencies easily amount to 20 percent of transaction value (see, for example, McMaster 2001) and thus comparable in magnitude to  $\lambda$  in equation (3.2).

The expression for the loading given by equation (3.2) can also be applied to public health insurance, at least to a first approximation. The "loading" may differ, depending on the type of taxation used to fund the scheme. The income tax base is very weak in developing countries (for example, Sierra Leone, Uganda, and Zambia), where only a few workers receive formal pay, which could be taxed, and most workers are employed in the informal sector. A consumption tax is the preferred form of financing for public insurance in many LICs, and because its levy is not so costly, it may even decrease loading. The amount of loading is influenced by several factors listed in table 3.3.

**TABLE 3.3 Factors Affecting the Net Price of Health Insurance (Loading)**

<i>Factor</i>	<i>Private insurance (competitive market)</i>	<i>Private insurance (in LICs)</i>	<i>Community-based insurance</i>	<i>Public insurance (in LICs)</i>
Administrative expenses, including capital charge	+	+	+ ↓	+
Reinsurance	+/-	+/- ↑	+/- ↑	n.a.
Pool size	+/-	+/-	+/-	-
Benefit package	+	+	+	+
Share of high-income members	+/-	+/- ↓	+/- ↓	+/-
Copayments and caps	-	-	-	- ↓
Moral hazard	+	+ ↓	+ ↓	+ ↑
Quality and proximity of health care services	+	+ ↑	+	+
Regulatory framework	+/-	+/- ↑	+/- ↓	+/- ↑
Fraud and abuse	+	+ ↑	+ ↓	+ ↑

*Source:* Authors.

*Note:* LICs = low-income countries; n.a. = not applicable. A plus sign means the factor increases loading; a minus sign means it decreases loading. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.

## Administrative Expenses

Administrative expenses must be recovered before the insurer breaks even. They are added to the expected loss. The loading factors  $\mu$  and  $\lambda$  reflect these expenses and thus determine the amount of loading (see equation (3.2)). They depend on possible economies of scale, implying that a certain number of contracts and transactions may be necessary to reach minimum average cost. The loading factors also include capital utilization costs and surcharges for uncertainty about future cost inflation in the health care sector and about the loss probability  $\pi$ .

Administrative capacity differs widely among developing countries, reflecting differences in labor productivity. However, wage costs are an important component of administrative expenses. Because wage rates and labor productivities are highly correlated, their combined effect on  $\mu$  and  $\lambda$  is undetermined. Therefore, whether these loading factors are higher or lower in LICs compared with industrial countries and whether they differ systematically among LICs are unclear.

CBI schemes are known for their low administrative expenses, because they do not employ many people, and most staff members are volunteers (Nugroho, Macagba, and Dorros 2001). Low administrative expenses keep loading factors at a low value. In fact, members bear part of the costs of organization by choosing the product to be offered and premium to be charged.

Public health insurance constitutes a monopoly, which means that marketing and advertising expenses are reduced. However, a monopoly decreases pressure

to minimize cost. On the whole, the relationship may be comparable to that in private competitive health insurance.

### Reinsurance

Generally, reinsurance is an expense that reduces the expected value of profit (if the premium exceeds the actuarial value of losses ceded) (Doherty and Tinic 1981). Reinsurance is therefore similar to administrative expense, causing loading to increase, *ceteris paribus*. The benefit of reinsurance is that it improves the solvency of the insurer, permitting a lower value of the loading factor  $\lambda$ . But if additional capital is available at lower cost than reinsurance, insurers will find reliance on the capital market preferable to taking out reinsurance.

Interest rates, and thus capital costs, are higher in LICs, because the risk premium in the credit lending market is high. Consequently, insurers might wish to purchase reinsurance rather than raise costly new capital.

Reinsurance can be beneficial to CBI schemes, in which pool size usually is insufficient for the law of large numbers to come into full effect. According to this law, insurers are able to estimate  $\pi$  and hence the expected value of benefits to be paid more precisely when the number of risks increases. *Ceteris paribus*, this ability facilitates attainment of a given level of solvency. In addition, the typically undiversified individual (member) owners of CBI schemes will gain from the lower variance of the surplus (assets minus liabilities) generally afforded by reinsurance. But this benefit in terms of variance reduction must be weighed against the reinsurance premium. Therefore, low-cost reinsurance may become a precondition for the viability of CBI schemes, which usually have no access to capital markets.

Reinsurance will hardly be an issue for a public health insurer. Such an insurer has a large risk pool, which allows it to minimize per capita reserves (see discussion below), to which reinsurance contributes. Moreover, the government, as lender of last resort, usually provides these reserves; ultimately, taxpayers act as reinsurers of the public health insurer. The savings on reinsurance give the public monopolist a cost advantage over private insurers.

### Pool Size

A large number of the insured of a similar type allows insurers to estimate the unknown parameters  $\pi$  and  $I$  with increased precision. Therefore, insurers do not have to carry as many reserves per unit risk to attain a given level of solvency (Dror and Preker 2002, 135). The pertinent loading factor  $\lambda$  decreases, resulting in a smaller total loading.

However, a large pool size shields the individual insurance buyer from social control through other members. This control likely refers to the benefits claimed ( $I$ ) rather than to preventive behavior and hence  $\pi$ . Increased pool size thus strengthens *ex post* moral hazard and lessens *ex ante* moral hazard.

The second term of equation (3.2) increases, indicating that the amount of loading increases.

The same arguments apply to a private insurer operating in an LIC. In the case of CBI schemes, the trade-off between the two influences can be studied. For instance, the Dana Sehat schemes in Indonesia are organized in several thousand independent groups, with approximately 50 to 100 families in each group. Families are homogeneous with regard to household size and income, and the community environment allows close monitoring of behavior. Although the total number of Dana Sehat participants is large (7 million), moral hazard can be controlled effectively, resulting in a small loading in spite of small pool size. Farmers' Health Insurance in Taiwan (China) provides a counterexample. There, a risk pool typically comprises a few thousand individuals (Bureau of National Health Insurance 2003). This small pool could lead to a lower value of  $\lambda$ ; however, greater pool size also calls for more complex management, and social control is undermined. Although information about the total loading is not available, it is likely to be higher in Taiwan (China) than in Indonesia.

Public health insurance schemes have risk pools too large for social control to mitigate moral hazard effects. Therefore, expanding these pools unambiguously decreases the loading contained in the contribution.

### **Benefit Package**

An extension of the benefit package increases the likelihood of submission of claims. Therefore, the probability of loss  $\pi$  increases even without any behavioral modification on the part of the insured (moral hazard effects are dealt with below). Likewise, payment may occur under additional titles, resulting in an increased value of payments  $I$ . Therefore, the amount of loading must increase according to equation (3.2). This argument holds for LICs in general, as well as for CBI schemes and public health insurance.

### **Share of High-Income Members**

Two elements promote higher expected consumption of health care services by the high-income insured. First, these insured have higher opportunity time costs, making prevention (which often is time intensive) more costly and leading to a higher value of  $\pi$ , that is, a higher likelihood of illness. Second, because medical care is a good—although income elasticity in developed countries has been found to be quite low, between 0 and 0.2 (Ringel and others 2002)—the high-income insured seek to consume more medical care or medical care of a higher quality, increasing the value of  $I$ . However, the use of health care usually involves taking time from work or household chores. Once more, high-income policyholders bear higher opportunity time costs, reducing the quantity (but not necessarily the quality) of medical care. This effect is mitigated if supplier density is high.

On balance, the value of the product  $\pi[V(I)] \times I$  in equation (3.2) is likely to increase for a higher share of the high-income insured. However, the share of high-income members may also affect the two loading factors. Provided some copayment is required, every treatment episode is associated with a risk of collecting receivables. A high-income member triggers less administrative expense on this score, thereby lowering the value of  $\mu$ . An insurer accounting for the financial risk will also reduce its safety loading and hence  $\lambda$ . The net effect of a higher share of high-income members on the total amount of loading is therefore ambiguous.

The same argument holds for LICs, except when benefits are paid in cash against presentation of the receipt. This payment eliminates the risk of collecting receivables. In that case, high-income members do not give rise to lower loading factors and therefore make a positive impact on total loading more likely. With respect to CBI schemes, potential differentiations between high- and low-income members within a scheme have little relevance, because homogeneous groups of similar income join the schemes.

In contrast with private insurance, a mandatory public scheme can impose price discrimination with regard to income, thus making health insurance a vehicle for systematic wealth redistribution (see chapter 4 for more detail). Individuals with high incomes are therefore charged a loading in the sense that their contributions tend to exceed the expected value of benefits received. In return, the loading charged to the majority of low-income contributors can be reduced even to the point of becoming negative. However, this redistribution strategy may fail if the rich not only pay more but also consume more medical services, a scenario not uncommon in LICs (Filmer, Hammer, and Pritchett 2002).

### Copayments and Caps

Copayments and caps have three effects on total loading. First, they limit ex post moral hazard. Copayments increase the net price of medical care to consumers, lowering the quantity demanded, while caps increase the net price to its full market value when the threshold quantity is exceeded. Therefore, the value of payments  $I$  decreases on average and with it the amount of loading. In addition, caps exclude very high values of  $I$ , reducing the (semi-)variance of  $I$  and hence the loading factor  $\lambda$ .

Second, copayments relieve the insurer of part of the payment in the advent of illness. As shown in equation (3.4), an increase in the rate of coinsurance  $c$  lowers the total amount of loading. Copayments and caps thus unambiguously reduce the amount of loading.

The same arguments hold for LICs and CBI schemes. They have even greater force for public health insurance, where the initial rate of copayment is zero, resulting in maximum ex post moral hazard effects. Indeed, according to equation (3.4), the amount of loading reacts most strongly to a variation in the rate of coinsurance  $c$  when  $(1 - c) = 1$ , that is, when  $c = 0$  initially.

## Moral Hazard

Moral hazard increases the insured's consumption of health care services and thus entails additional costs to the insurer. Ex ante moral hazard refers to the probability of illness  $\pi$ . This probability depends on related preventive effort on the part of the insured, denoted by  $V$ . Although preventive effort can hardly be observed in the context of health behavior, it generally decreases when the amount of coverage offered is extended. Ex ante moral hazard thus results in a positive relationship between  $\pi$  and the amount of insurance coverage  $I$ .

Indeed, because of ex ante moral hazard, an increase in  $I$  is associated with not only a higher gross premium but also a higher amount of total loading. For convenience, equation (3.2) is repeated here:

$$(3.2) \quad \text{amount of loading} = L = \mu \times \pi[V(I)] + \lambda \times (1 - c) \times \pi[V(I)] \times I.$$

The derivative of this expression with respect to  $I$  (neglecting possible effects of  $I$  on the loading factors  $\mu$  and  $\lambda$ ) is given by

$$(3.3) \quad L'(I) = \mu \times \pi'(V) \times V'(I) + (1 - c) \times \lambda \times \pi'(V) \times V'(I) \times I + \lambda \times (1 - c) \times \pi[V(I)] > 0.$$

(–)
(–)
(–)
(–)
(+)

With  $\pi'$  and  $V'$  negative, the first term is positive. For the same reason, the second term is positive as well, and the third term is positive by definition. In analogy to the development in Zweifel and Breyer (1997, 183), the loading usually increases progressively in  $I$ , that is,  $L''(I) > 0$  if  $\pi'' > 0$  (prevention becoming less effective at the margin) in addition to  $V'(I) < 0$ .

According to equation (3.3), some health insurance benefits may be more affected by ex ante moral hazard than others because preventive effort  $V$  responds more strongly to an increase in  $I$ . Conversely, this effect may be mitigated to some extent if health insurance is provided through the employer, which can at least monitor prevention at the workplace. This difference would be reflected in a more moderate increase in the loading (as well as the gross premium) when coverage becomes more complete or more comprehensive.

Summing up, ex ante moral hazard probably causes an increase in the total loading, which may even be progressive in benefits  $I$ . There appear to be no strong reasons to modify this argument for private insurers operating in LICs or CBI schemes. With regard to public health insurance, the government's objective of maximizing the provision of public goods frequently militates against imposition of a copayment. However, any increase in benefits must go along with a maximum increase in the loading because of ex ante moral hazard. In equation (3.3), the amount of loading reacts most strongly to an increase in benefits if  $(1 - c) = 1$ , that is, when  $c = 0$ .

Ex post moral hazard, as noted above, is the tendency of the insured to demand more medical care (or care of a higher quality or by a more expensive provider) after the onset of illness. It was illustrated in figure 3.2, in which the role of coinsurance played a crucial role.



To show that a decrease in copayment also increases the amount of loading, a slightly different interpretation of the variable  $I$  is needed. Now  $I$  becomes the amount of benefits actually claimed (rather than promised in the contract), which depends on the rate of coinsurance. Therefore,  $I$  must be replaced by  $I(c)$  in equation (3.2):

$$(3.4) \quad L'(c) = \underbrace{-\lambda \times \pi \times I}_{(-)} + \lambda \times (1 - c) \times \underbrace{\pi \times I'(c)}_{(-)} < 0.$$

Therefore, the higher the rate of coinsurance, the lower the loading, and conversely, the lower the rate of coinsurance, the higher must be the loading. The ex post moral hazard effect is given by  $I'(c) < 0$ : the more the actual utilization of covered services increases with a decrease in cost sharing, the more marked is the ex post moral hazard effect.

As argued above, ex post moral hazard is of less concern in LICs, because the density of supply is very low, causing nonmonetary costs of utilization to weigh heavily. In the context of loading, ex post moral hazard effects in LICs are limited, resulting in a smaller absolute value of  $L'(c)$ .

Ex post moral hazard problems in CBI schemes are of minor concern for the same reasons as outlined above. These schemes benefit from a smaller degree of asymmetry of information, as well as effective sanctioning mechanisms that contain overuse.

The “loading” contained in the contributions to public health insurance is affected strongly by ex post moral hazard, again because the rate of coinsurance is usually zero. With  $(1 - c) = 1$  or  $c = 0$ , the absolute value of equation (3.4) is maximum. Conversely, moving away from a rate of coinsurance would have a marked beneficial effect on the loading.

### Quality and Proximity of Health Care Services

Health care services of high quality have a direct effect on the total loading, because the benefits actually claimed typically are more expensive (see the effect of a high value of  $I$  in equation (3.2)). High quality of services may also aggravate ex post moral hazard effects, as illustrated by figure 3.2. Maximum true willingness to pay for such services must be very high, causing the observed demand function to run steeply. In this case, ample insurance coverage (low  $c$ ) results in a marked discrepancy between true and observed willingness to pay. Graphically, the distance between quantities A and B becomes larger. In terms of equation (3.4), a decrease of the rate of coinsurance  $c$  would cause benefits claimed to increase greatly. With  $I'(c)$  large—equivalent to a steep demand function—the loading must increase more strongly with a decrease in  $c$ . Therefore, the loading depends positively on the quality of medical services in general.

Increasing the proximity of services decreases the cost of access and hence the total cost of utilizing medical care. Therefore, the amount of services claimed  $I$  increases, and with it the amount of loading (see equation (3.4)). In addition,

as argued above, this reduction of access cost may be greater in LICs than in industrial countries, implying that increased proximity of services may boost the loading even more in LICs than in industrial countries.

Most members of CBI schemes are located far away from high-quality health care service providers. Any increase in the proximity of a health care provider therefore is likely to have a considerable effect on the cost of access, inducing a particularly marked increase in utilization. However, CBI schemes benefit from a degree of mutual member monitoring that does not prevail in the context of a private insurer operating in an LIC. Therefore, in LICs the amount of loading may not respond more strongly to an increase in proximity than in industrial countries.

Increased quality and proximity also drive up the loading component in contributions to public health insurance; equation (3.4) applies once more.

### Regulatory Framework

The types of regulation of relevance in this context are again premium and product regulation. If designed to guarantee solvency, premium regulation typically amounts to an increased safety loading, which is reflected in  $\lambda$ . Conversely, if regulation is consumer oriented, it may increase transparency for consumers, raise demand, and enlarge the risk pool. Therefore, reserves held per unit risk can be reduced, decreasing  $\lambda$ .

With regard to product regulation, this decrease in reserves implies that certain procedures in loss settlement have to be followed, presumably at an increased cost to the insurer. These procedures drive up the value of the other loading factor,  $\mu$ . Therefore, the overall effect of regulation on the loading is ambiguous, although in the case of U.S. automobile regulation, Frech and Samprone (1980) found that regulation had a demand-decreasing net effect, pointing to a positive relationship between regulation and loading.

The insurance regulatory authorities of many LICs are pressured to relax regulations to satisfy World Trade Organization (WTO) requirements (Lee 2000). China, in particular, seeks to increase the degree of competition in its domestic insurance market by attracting additional companies. With regard to the type of regulation pursued, LIC regulators see few possibilities for insurers to build up deposited reserves that could be used to mitigate social cost in the event of insolvency. Therefore, they tend to concentrate on measures designed to minimize the risk of insolvency. According to table 3A.1, this type of regulation tends to reduce efficiency.

Many LIC regulatory authorities hope that competition among private insurers will keep loadings and hence premiums low. Companies are thus under increased pressure to keep their loading factors, particularly management and administration costs ( $\mu$ ), down. With regard to  $\lambda$ , the typical objective is not to reduce the safety loading component but possibly the profit component. As a result, the expectation is that the efficiency of insurance companies will improve and that consumers will have better choices at lower loadings and hence lower premiums (given the expected value of benefits paid).

In an oligopolistic market, in which insurers pursue a Bertrand strategy (whereby price is the decision variable), rate wars cannot be entirely excluded. These wars would result in inadequate reserves and hence failure to mitigate the social cost of an insolvency. This argument pushes regulators to accept rather high premiums in the hope of maintaining a sufficiently high safety loading. In LICs, oligopolistic insurance markets will be prevalent for some time to come, possibly justifying regulation that keeps the amount of loading and the premium high (Lee 2000).

In CBI schemes, members strictly regulate insurance packages and the premium rate—not to create reserves through a loading surcharge on the risk premium but to attract additional contributions (often in kind) in the event that their scheme runs a deficit. The downside of the reduced loading is an increase in the residual asset variance for members; however, risky insurance is associated with reduced willingness to pay.

An elaborate regulatory framework usually governs public health insurance (as argued below, such insurance is subject to the greatest regulatory intensity). This framework adds to the administrative expense and hence the loading. The total amount of loading may still be low due to savings on the cost of acquisition.

### **Fraud and Abuse**

Fraud and abuse are closely related to the institutional framework (see annex 3B). Fraud and abuse by the insured and their impact on the loading are discussed below.

Fraud and abuse are an extreme form of moral hazard. In the case of ex ante moral hazard, preventive effort  $V$  could be said to turn negative, implying that the insured's behavior increases the probability of illness to 1. A negative value of  $V$  may well be induced by insurance; in terms of equation (3.3),  $V'(I)$  would have to be strongly negative. Hence the amount of loading must increase rapidly with any increase in  $I$ .

Fraud can also occur ex post, for example, in the guise of persuading providers to overstate medical bills. Again, this extreme form of ex post moral hazard is encouraged by a vanishing rate of coinsurance (or more generally, the absence of cost sharing). As soon as the insured have to pay parts of the medical bill out of pocket, they have an incentive to resist fraudulent overbilling. In general terms, the relationship between the degree of cost sharing  $c$  and benefits claimed  $I$  is strong in the presence of fraud. For the insurer, the term  $I'(c)$  in equation (3.4) takes on a very large value (in absolute terms), indicating that the total amount of loading must increase strongly with a decrease in cost sharing when fraud is prevalent.

As discussed above, fraud commonly occurs in LICs when hospitals and physicians allow cheaper products to replace more expensive alternatives (CORIS 2003). The insurer must pay for the more expensive product, causing  $I$  to increase and, with it, the amount of loading, according to equation (3.3). In LICs the consequences may be severe, because poor people, who might be able to pay the premium in the absence of corruption, are now unable to afford insurance.

As argued above, rural communities' enormous sanctions and nearly complete information mitigate moral hazard in CBI schemes. Therefore, the amount of loading due to fraud and abuse should not increase much in these schemes.

A public health insurance scheme operating in an LIC is under comparatively little pressure to control fraud and abuse; unlike private insurers, it does not have to compete for customers through a favorable benefit-cost ratio (to which a low amount of loading contributes).

## VERTICAL RESTRAINTS/VERTICAL INTEGRATION

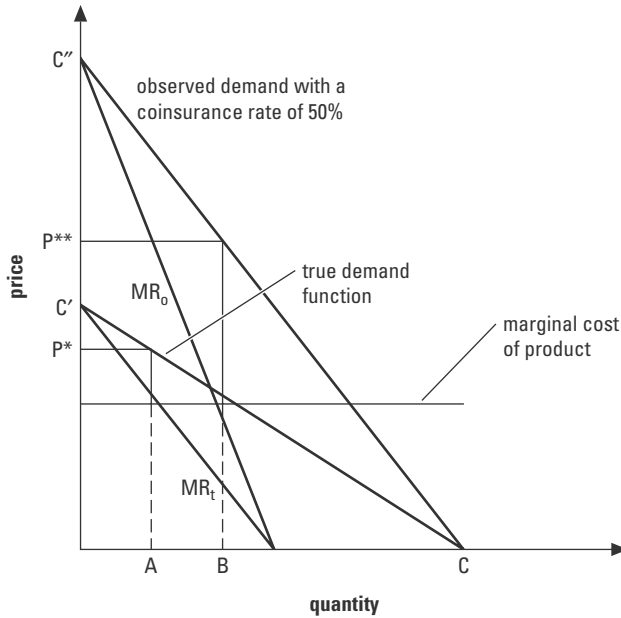
Two forms of vertical restraints (in the extreme, full vertical integration) can be distinguished: insurer driven and provider driven. A third form of integration is lateral and occurs when a firm outside the sector takes up business in health insurance or the provision of health care. This form of integration will be dealt with only in passing.

### Insurer-Driven Vertical Integration

A private insurer can limit its activities to the refunding of medical expenditures. This policy poses no vertical restraints and offers no opportunities for vertical integration. Such a policy is costly to the insurer if medical care providers have monopolistic power. In that event, insurance coverage drives up providers' markup over marginal cost. Figure 3.3, which builds on figure 3.2, illustrates this phenomenon.

Figure 3.3 includes two marginal revenue (MR) functions. Without insurance coverage, the provider faces the MR function derived from the true demand function ( $MR_t$ ). The quantity satisfying the optimality condition, "marginal revenue equals marginal cost" (of health care services) is A. Accordingly, the monopoly price is  $P^*$ , which already contains a markup over marginal cost. With insurance, the MR function becomes  $MR_o$ , which is associated with the observed demand function. The new optimal quantity of services provided is B, consistent with a higher monopoly price at  $P^{**}$ , reflecting an increased markup over marginal cost. In this situation, the moral hazard effect of insurance not only consists of an increased quantity of consumption ( $B > A$ ), but also higher prices ( $P^{**} > P^*$ ). Because this effect boosts payments I, the amount of loading, and hence the price of insurance, increases, according to equation (3.3). One rationale of insurer-driven vertical integration is to avoid this extra moral hazard effect, given by  $(P^{**} - P^*)$ .

In more general terms, the provision of health insurance and of health care services may be viewed as two parts of a system. The extra moral hazard effect then amounts to an externality within the system—one that the insurer may seek to mitigate by imposing vertical constraints on service providers. To be successful, the insurer must have a degree of monopoly power. Therefore, the objective of the insurer becomes to avoid a double monopoly markup, or double

**FIGURE 3.3** Effect of Insurance Coverage on Monopolistic Pricing

Source: Authors.

marginalization (Waldman and Jensen 2001, 468f). The solution can be a two-part remuneration scheme. First, the provider agrees to charge a price equal to marginal cost. Then the insurer pays a fixed amount sufficient to motivate the provider to sign the contract. In the extreme case, the insurer can opt for fully integrating service providers to avoid this externality and other externalities. The different possibilities form a continuum between independent provision and full vertical integration (see figure 3.4).

For example, when full integration would be inefficient, the insurer may limit itself to owning hospitals and contracting with ambulatory care providers. It also can mix insurer-managed plans with plans governed by contractual relationships devoid of vertical restraints. The imposition of restraints can be delegated, for example, to a medical association, but individual provider behavior is unlikely to be effectively restrained.

Some of the factors encouraging and hampering vertical integration by the insurer are listed in table 3.4. As a general observation, many LICs suffer from weak law enforcement. In Thailand, for example, legal actions, such as foreclosure after insolvency, are infrequently executed for cultural and religious reasons (Harmer 2000). A weak legal infrastructure, corruption, and bribery saddle insurers with high costs when they attempt to sanction breaches of contract in the

**FIGURE 3.4** Forms of Vertical Restraints and Integration Imposed by the Insurer

Source: Authors.

context of vertical relationships. However, vertical restraints provide the integrating firm with incentives and sanctions, often permitting it to dispense with the clauses of official contract law. This reality implies that not only the costs but also the benefits of vertical constraints and integration can be greater in LICs than in industrial countries. Therefore, the effects listed in table 3.3 are not generally reinforced or attenuated in CBI schemes or in private or public insurance in LICs; these effects must be individually examined.

### ***Market Power of the Insurer***

Market power amounts to a necessary condition for the imposition of vertical restraints. If one of many insurers were to impose vertical restraints, a given service provider could strike a contract with a competitor that does not seek to impose such constraints. Moreover, as long as these constraints do not amount to exclusive dealings, failure to sign up with a particular insurer has negligible consequences for a service provider. Therefore, unless the insurer wields a degree of market power, service providers need not accept vertical restraints.

With regard to private health insurers operating in LICs, the definition of the relevant market is of some importance. Under present conditions, only the urban areas of most LICs form the relevant market. Because the number of insurers with activity in LICs is smaller than in industrial countries to begin with,

**TABLE 3.4 Factors Affecting Insurer-Driven Vertical Integration**

<i>Factor</i>	<i>Private insurance (competitive market)</i>	<i>Private insurance (in LICs)</i>	<i>Community-based insurance</i>	<i>Public insurance (in LICs)</i>
Market power of the insurer	+	+ ↑	+ ↑	+
System efficiency gains to be realized	+	+	+	+ ↓
Management know-how of insurer	+	+	+	+
Contestability of health care markets	+	+ ↓	+ ↓	+ ↓
Potential to increase entry barriers for competitors	+	+	+	n.a.
Contestability of health insurance market	-	- ↓	- ↓	n.a.
Lack of capital of insurer	-	- ↑	- ↑	- ↑
Opportunistic behavior and fraud on the part of insurers	-	- ↑	- ↓	- ↓
Cartelization of service providers	-	-	- ↓	- ↓
Legislation prohibiting vertical restraints	-	- ↓	- ↓	-

*Source:* Authors.

*Note:* LICs = low-income countries; n.a. = not applicable. A plus sign means the factor increases vertical integration; a minus sign means it decreases such integration. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.

market concentration is more marked. In addition, barriers to entry usually are higher and antitrust policy more lenient, making market power easier to build up. This factor facilitates insurer-driven vertical integration in LICs.

Market power is high in the CBI segment of the market, because CBI schemes as a rule wield a monopoly in the rural area they serve. On this score, their degree of market power would certainly enable them *ceteris paribus* to impose vertical restraints.

A public health insurer, being a monopolist, can impose strong vertical restrictions on providers in terms of prices and products if not prevented by legislation. Market power can be abused; in particular, purchasing prices may be set so low as to drive foreign suppliers and privately funded hospitals out of the market. This power is more marked under a public insurance scheme than under a competitive private insurance system. Grant and Grant (2002), citing an unpublished paper, refer to the example of a Sub-Saharan African country where payments by national health insurance are so low that service suppliers have to rely heavily on unofficial charges for finance. Using data from Transparency International, Grant and Grant show that up to 80 percent of recent transactions with health workers in certain countries involve an unofficial fee or a bribe.

### *System Efficiency Gains to Be Realized*

The double marginalization problem noted above is not the only within-system externality that vertical restraints can mitigate. One discussed in the industrial organization literature (Carlton and Perloff 1999, chapter 12) is the risk that the distributor delivers substandard quality, adversely affecting the producer's reputation. In the present context, this risk translates into physicians and hospitals skimping on quality in the treatment of patients enrolled with a particular insurer. The solution to this problem can be the insurer's creation of a quality assurance scheme.

Another problem that is more peculiar to the health care sector is fraud. As emphasized by Ma and McGuire (1997), the insurer has to rely on a report provided by the physician to be able to establish the appropriateness of treatment. The typical vertical restraint used here is a clause to the effect that service providers are to offer additional information in case of ambiguity.

A third within-system externality, of particular relevance to health care, is the "medical technology race." Given that insurance coverage is complete and density of supply is high, service providers cannot compete much on the basis of price and location. An important remaining parameter of competition is medical technology. For the insurer it suffices to have few specialized providers offering the most advanced technology for diagnosis and treatment of a given health condition. Thus a technology race among the providers who are contractual partners amounts to a source of inefficiency. To avoid it, the insurer may assign providers to certain health conditions, at the same time guaranteeing them a minimum number of cases per period. Such a commitment can be supported by a premium reduction offered to enrollees in return for a restricted choice of provider, as is often the case with managed care contracts.

These within-system inefficiencies are of relevance to private health insurers operating in LICs as well. First, double marginalization may be a problem, because physicians tend to be organized in urban areas, where private insurers typically are active. The risk of substandard quality being delivered is considerable; it may be mitigated somewhat when the insured pay and are reimbursed by the insurer. However, fraud is more common in LICs and promotes within-system inefficiency. Finally, major cities of emerging economies appear to be engaged in a technological race. In the poorest LICs, one (public) hospital located in the capital offers advanced medical technology. Some of the insured prefer not to be treated there but to travel to an industrial country. Imposing a vertical restraint on institutions located abroad is beyond the capability of insurers in LICs, however.

CBI schemes face a double marginalization problem. In the rural areas where they operate, an individual physician or hospital may be a local monopolist. The fact that CBI schemes contract with nonprofit institutions is of limited relevance as soon as these providers must recover their cost. Quite likely the patients treated free of charge or at a reduced fee are those without any insurance coverage. Higher fees from those with insurance protection—the members of CBI



schemes—must neutralize the deficit. Provision of substandard quality therefore can be an issue for these schemes. Because these providers are also monopolists in their local labor markets, they pay a comparatively low wage and are unlikely to attract the most skilled health care workers. With regard to fraud, CBI schemes may benefit from the nonprofit status of missionary and other hospitals (see Ramani 1996); however, public hospitals have a tradition of cheating to ease bureaucratic processes. The technological race between competing providers can be excluded from consideration, because CBI schemes are localized primarily in rural areas of LICs, where local monopolies prevail.

Another source of efficiency gain, peculiar to CBI schemes, is mode of payment. In many rural areas of LICs, service providers are paid in kind. However, service providers generally prefer to receive cash, leading some schemes to use so-called moneylenders who transform the in-kind contributions of CBI members into cash to be paid to providers. In return, hospitals in particular have been willing to accept prospective payment for treating CBI members, which constitutes a vertical restraint.

A public health insurer operating in an LIC is protected by a monopoly and therefore is under comparatively little pressure to reap any system efficiency gains through vertical restraints. Therefore, this particular motivation is viewed as of less importance for public health insurers than for competing private insurers.

### *Management Know-How of Insurer*

Ample management know-how helps companies successfully negotiate and monitor vertical restraints, especially in the context of full vertical integration, which presupposes the insurer's understanding of how to efficiently run provider facilities.

Management expertise is much lower in LICs. Education is a good proxy for such expertise, and the augmented Barro-Lee dataset (World Bank 2000) provides evidence that average years of schooling are substantially lower in developing countries than in industrial countries. At one extreme are Afghanistan, Bangladesh, and Mozambique, with values of 1.7, 1.1, and 2.6 years, respectively. At the other extreme are countries such as Australia and Norway, with values of 10.9 years and 11.8 years, respectively. This indirect evidence suggests that health insurers in LICs generally lack the know-how necessary to impose vertical restraints and implement full vertical integration.

Management expertise is even scarcer in CBI schemes, making vertical restraints less likely than conventional, often not fully specified, contracts with service providers. For public health insurance, management expertise may be roughly comparable to that of private health insurers operating in LICs.

### *Contestability of Health Care Markets*

Contestable markets are characterized by an actual or potential influx of suppliers when incentives to enter become strong. As the experience of managed care

organizations in the United States suggests, newcomers to the market for medical services are likely to accept the corresponding vertical restraints.

Barriers to entry are generally higher in LICs than in industrial countries (WTO 2003), and this difference is expected to affect markets for health care services. This means that an insurer doing business in an LIC has difficulty in finding providers willing to agree to vertical restraints.

Having their centers of activity in rural areas, CBI schemes cannot count much on the contestability of the health care markets with which they deal. Service providers move, if at all, from the countryside to the cities. Therefore, CBIs' chances of finding partners that accept vertical constraints are rather slim.

To a public health insurer, increased contestability of health care markets facilitates vertical restraints. However, public administrators still have to seek out alternate providers; their incentive to undertake this effort may be undermined by the monopoly status of the scheme.

### *Potential to Increase Entry Barriers to Competitors*

One motivation for vertical restraints and integration can be to keep potential entrants out of the insurance market.<sup>2</sup> Incumbent insurers can do this by tying up the scarce supply of health care services, with which potential entrants must establish contractual relationships to build a delivery system. Given the complexity and high human capital content of health care services, controlling a part of health care supply can constitute a more effective barrier than closing the insurance market itself. However, an outsider can overcome this barrier by offering compensation high enough to make health care suppliers leave the vertical arrangement, but such compensation tends to be above the level a newcomer is willing to pay (Carlton and Perloff 1999, 357).

The same argument applies to LICs and to the urban areas where private health insurers typically operate.

CBI schemes benefit from a different type of barrier to entry, which obviates the use of vertical integration to protect their markets from outside competition. Credit markets suggest this particular barrier. In rural areas, most community credit schemes are set up along kinship lines. In the case of Nigeria, more than 95 percent of borrowing and lending occurs within a community scheme operated by and for a tribe. This phenomenon suggests that a potential challenger to an incumbent CBI scheme would have to surmount a high barrier in the form of kinship relationships.

To a public health insurance scheme, the potential of vertical integration to reinforce market entry barriers has no relevance, because law prohibits entry by competitors.

### *Contestability of Health Insurance Markets*

When insurance markets are and remain contestable, incumbent insurers will be strapped for resources to defend their position; they are absorbed in ensuring

their survival in the market. In addition, when insurers have to compete because entry or exit barriers are low, their profitability is driven down to the competitive return; funds and management time will be too scarce for insurers to impose vertical restraints or even engage in full vertical integration.

Barriers to entry and exit can be substantial in LICs. Some incumbent insurance companies, like Cigna in India, provide both health insurance and health care services. In this way, they can reap the within-efficiency gains discussed above. In addition, they operate in a market with many reasonably homogeneous risks and thus benefit from economies of scale. These factors combine to enable them to offer private health insurance products at a lower cost than a smaller potential rival. Furthermore, incumbent insurance companies are able to increase spending in advertising campaigns, which can further strengthen barriers to entry.

As to barriers to exit, long-term labor contracts are often the norm in the formal sectors of LICs. Therefore, when exiting from the market, an insurer may have to continue to pay for employees who are redundant. This necessity provides an incentive for incumbents to defend their position against a new rival. In summary, insurance markets in LICs do not appear to be very contestable, a fact that fosters vertical restraints and vertical integration, *ceteris paribus*.

With regard to CBI schemes, barriers to entry emanate mainly from the characteristics of informal markets. Many health insurers that might consider entry do not accept in-kind payment of the premium. This payment may take the form of cattle and even the provision of bonded labor and the cession of land rights. Thus, barriers to entry do not appear to hamper CBI schemes' imposition of vertical restraints, *ceteris paribus*.

In the case of a public health insurer, the contestability of the market for health insurance again has no relevance, because the law makes that market incontestable.

### *Lack of Capital of Insurer*

Lack of capital is another impediment to integration. Full vertical integration (but less so vertical restraints) often requires a capital investment on the part of the firm acquiring control. If internal finance is available, management enjoys some leeway in deciding about such an investment, monitoring by the firm owners being incomplete. Lacking internal finance, the integrating firm has to convince banks and investors that vertical integration will improve profitability and that the debt can be repaid.

In many LICs, domestic capital markets and the banking industry are not fully developed, and access to international capital markets is exceedingly costly. Thus, the alternative of external finance often does not exist. In this situation, lack of capital on the part of the insurer can make full integration of a hospital, for example, impossible.

CBI schemes are organized as mutuals and thus do not sell tradable shares of ownership. Therefore, external equity finance, except through increasing

membership, is precluded. However, increasing membership is problematic, because a scheme may lose its homogeneity and hence an important cost advantage. Finance through banks, for example, is also difficult, because CBI schemes cannot offer marketable collateral. However, in some cases, lateral integration may help. Citing the experience of communities in Bangladesh, Desmet, Chowdhury, and Islam (1999) argue that community-based credit schemes, in which many individuals are already involved, may provide the entry point to finance health insurance. But on the whole, lack of capital constitutes an even greater impediment to integration for CBI schemes than for private insurers operating in LICs.

Lack of capital also hampers vertical integration of public health insurance schemes, which are not permitted to accumulate funds or issue debt for capital investment. Initiatives of this type would be interpreted as a sign of for-profit orientation.

### *Opportunistic Behavior and Fraud on the Part of Insurers*

Insurers with a reputation for opportunistic and fraudulent behavior have difficulty striking contracts that call for vertical restraints. By engaging in opportunistic behavior, insurers inflict damage on providers, albeit at the expense of their own reputation and credibility. This damage reduces the insurers' chances of successfully arranging vertical restraints with providers. Insurers must establish a good credit and payment reputation to win providers over for vertical restraints.

Opportunistic behavior and fraud is common in LICs (see discussion above and annex 3B), where weak legal infrastructures and complicated and time-consuming bureaucratic procedures promote such behavior on the part of insurers in general. Providers will be especially reluctant to agree to vertical restraints when they cannot rely on receiving their share of the attainable efficiency gain.

However, fraud appears to be a minor issue in CBI schemes, because service providers wield a local monopoly in many cases. If found cheating, a CBI scheme stands to lose the one available provider in its region. Because this reality constitutes an effective sanctioning mechanism, CBI schemes and providers can more easily agree on vertical restraints.

Public insurers can also engage in opportunistic behavior and fraud, undermining the willingness of service providers to enter into vertical agreements. However, this effect is attenuated by providers' understanding that they have no choice but to sign up if they want to profit from the demand-enhancing effect of insurance coverage.

### *Cartelization of Service Providers*

On the provider side, cartelization makes the imposition of vertical constraints difficult. First, the cartel is a means for providers to jointly increase their incomes. An insurer seeking to negotiate a vertical restraint must beat this benchmark. Second, a cartel must impose discipline on its members to be successful. Restrictions

on output, however, conflict with the integrating firm's desire to avoid double marginalization, which may result in the imposition of a minimum volume of sales. In the present context, a medical association would want its members to maintain a low volume of treatments to support higher fees. However, an insurer may want to contract for a minimum volume of services at a fixed fee to avoid insurance coverage's upward pressure on fees (see figure 3.3).

Health insurers considering vertical restraints in LICs are confronted with much the same problems, because physicians in particular are highly organized in urban areas.

To CBI schemes, cartelization of health care providers has little relevance. In rural areas of LICs, providers are sufficiently protected from competition through mere distance. They can therefore do without the protection afforded by a cartel.

For a public health insurance scheme, cartelization of providers constitutes an obstacle to vertical restraints and integration in much the same way as for a private insurer. But because the cartel has no one else with whom to contract, it may agree to a uniform set of vertical agreements to secure the viability of the system (and its demand-enhancing effect) as a whole.

### ***Legislation Prohibiting Vertical Restraints***

Restraints can be impossible when legislation prohibits vertical restraints and integration in the health care sector. For example, in several industrial countries, only individuals with a medical degree can own medical practices or hospitals or both. At the very least, medical management must lie in the hands of physicians.

In many LICs, such ownership and management rules are not fully enforced, because legal infrastructure is often weak, not least due to corruption. Moreover, church hospitals are generally exempted. These hospitals contribute importantly to the provision of health care, and sponsors would have to cease operations if required to ensure management by a physician. Whether an exemption would be extended to a private insurer acquiring a church hospital is unclear.

CBI schemes, by contrast, appear to face few legal impediments to vertical integration. In fact, they have cooperated with missionary hospitals in several countries, including Indonesia, Kenya, and Uganda.

A public health insurer presumably must respect legislation concerning vertical integration in the same way that a private insurer does, because the objective of this legislation is to secure the independence of the comparatively small businesses of health care providers.

### **Provider-Driven Vertical Integration**

The second type of vertical integration is provider driven. The typical case would be a hospital chain that seeks to avoid double marginalization in its dealings with insurers that wield a degree of market power. The chain may view an insurer as

a sales channel, through which promotional efforts are decisive for the market success of its products. (If insurers provide an insufficient amount of advice to future patients, client matching suffers, with unfavorable effects on the hospital's reputation.) A competing insurer could "free-ride" on these efforts by letting the other insurer make them while selling its own policy at a lower premium. Such free riding would of course undermine an insurer's incentive to provide advice. The solution to the problem can be the assignment of exclusive territories to insurers or even exclusive dealings (Carlton and Perloff, 1999, 403–05).

In general, the factors promoting provider-driven vertical restraints and integration (see table 3.5) are the same ones hampering their insurer-driven counterparts (see table 3.3). With regard to public health insurance, however, provider-driven vertical integration is regarded as inapplicable (see table 3.4). The reason is that a hospital or a group of physicians will find it impossible to impose rules on a public agency, for example, with regard to the amount of contribution to be paid by the insured. For full integration, they would have to acquire property in the agency, which is unimaginable according to known legal codes.

### *Market Power of Service Provider*

As in the case of insurer-driven vertical constraints and integration, market power is a necessary condition for success. This condition usually is not satisfied by a single physician but may be met by a physician network, or a hospital with a large catchment area.

Hospitals generally are much more sparse in LICs than in industrial countries. This reality has sometimes enabled hospitals in LICs to integrate insurance business into their operations (see table 3.5). Moreover, the leniency of antitrust authorities has resulted in a high concentration of hospital markets. In South Africa, several hospital groups were able to merge, so that only a few units controlled most of private health provision<sup>3</sup> (Soderlund, Schierhout, and van den Heever 1998). Eventually, some of the groups integrated health insurance into their business. In India, the Apollo hospital group, which has a substantial share of the market, also writes health insurance.

In the rural areas where CBI schemes are typically active, hospitals have the market power to impose vertical restraints on insurers or to integrate insurance, as the Kisiizi hospitals of Uganda have done (see table 3.5).

### *System Efficiency Gains to Be Realized*

Possible efficiency gains are the same as those discussed above. Conceivably, an insurer has enough market power to increase premiums independently of the amount of payment to service providers. The result is double marginalization, which this time hurts the health care provider.

An insurer can skimp on quality by delaying reimbursement of patients and by having unjustified recourse to small print in its insurance policy. Whether the reputation of the service provider, rather than that of the insurer, suffers is

**TABLE 3.5 Factors Affecting Provider-Driven Vertical Integration**

<i>Factor</i>	<i>Private insurance (competitive market)</i>	<i>Private insurance (in LICs)</i>	<i>Community-based insurance (in LICs)</i>	<i>Public insurance (in LICs)</i>
Market power of service provider	+	+ ↑	+ ↑	n.a.
System efficiency gains to be realized	+	+	+	n.a.
Management know-how of provider	+	+	+	n.a.
Contestability of insurance market	+	+ ↓	+ ↓	n.a.
Potential to increase entry barriers to competitors	+	+	+	n.a.
Contestability of health care markets	-	- ↓	- ↓	n.a.
Lack of capital of service providers	-	-	-	n.a.
Market power of insurer	-	- ↑	- ↑	n.a.
Cartelization of insurers	-	- ↓	- ↓	n.a.
Legislation prohibiting vertical restraints	-	-	-	n.a.

*Source:* Authors.

*Note:* LICs = low-income countries; n.a. = not applicable. A plus sign means the factor increases vertical integration; a minus sign means it decreases such integration. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.

unclear. If the reputation of the insurer suffers, no externality affects the health care provider.

In the same vein, fraud by the insurer (in particular, failure to pay in the event of insolvency) might constitute a source of within-system inefficiency. The insurer, rather than the provider, is likely to suffer the loss of reputation in this case.

Negative external effects due to insurers engaging in a technological race do not appear to be an issue.

Incentives for health care providers to integrate health insurance into their operations appear to be rather weak. However, provider-based insurance schemes may have some cost advantages compared with a nonintegrated competitor, because they already have some relevant risk information about the insured. This efficiency gain accrues to health care providers.

In many LICs, the problem of double marginalization is particularly acute, because insurers are allowed to engage in mergers and acquisitions to build substantial market power. In addition, private insurers may be more likely than health insurers operating in industrial countries to offer substandard quality of services, for example, by delaying payment for health care costs, which could negatively affect the health care provider's reputation. Fraud and opportunistic

behavior can lead to within-system inefficiency; typically, the solution is full vertical integration. Finally, a technological race among insurers, which would motivate imposition of vertical restraints, is not evidenced.

Health care providers and, in particular, hospitals dealing with CBI schemes must take into account double marginalization, because a given scheme usually is the monopoly supplier of health insurance in its region. This consideration promotes vertical restraints or even full integration. However, CBI schemes' delivery of substandard service is rather a remote possibility. After all, the insured own the schemes, and they would suffer from a lower-than-contracted quality of service (Musau 1999). In addition, hospitals are confronted with fraudulent behavior on the part of CBI schemes, as evidenced by a study of Chogoria Hospital in Kenya. Schemes running group policies allowed nonmembers (who initially were not identifiable as such at the point of service) to present themselves for treatment, creating bad debts for the hospital (Musau 1999). A technological race is not an issue, because most CBI schemes lack the resources to build substantial administrative capacity.

On the whole, providers in LICs appear to have no stronger incentives than providers in industrial countries to avoid within-system inefficiencies through vertical integration.

### *Management Know-How of Provider*

Management know-how facilitates implementation of vertical restraints and especially vertical integration. But, as noted above, average years of schooling in developing countries can be very low, suggesting that domestic health providers in LICs have difficulty mastering the skills to effectively apply management know-how that is needed to impose vertical restraints, vertical integration, or both on insurers.

The lack of management know-how is still more marked in CBI schemes, leading to even fewer vertical restraints and less vertical integration between health providers and insurers.

### *Contestability of Insurance Market*

If the market for health insurance is contestable, a health care provider considering vertical integration can strike an agreement with newcomers to increase its likelihood of successfully imposing vertical constraints.

As noted above, barriers to entry in LICs are higher in general than in industrial countries. This difference is also expected to translate to the market for health insurance. That is, a health provider doing business in an LIC has difficulty finding private insurers that may be willing to agree to vertical restraints.

Because CBI schemes are organized along kinship lines, their markets are not much contested. A newcomer would have to make substantial investments to match the advantages of social control enjoyed by CBI schemes.



In summary, health care providers, whether private and profit oriented or community based, face considerable obstacles in seeking to impose vertical constraints on health insurers in LICs.

### *Potential to Increase Entry Barriers to Competitors*

Vertical restraints and integration can serve a strategic purpose by raising the entry barrier, for example, to a new hospital. Similarly, physician networks can set up an insurance scheme to the disadvantage of outside physicians.

South African hospitals have found it difficult to establish themselves in areas controlled by incumbent groups at least in part because the groups offer health insurance.

Hospitals dealing with CBI schemes, which are local monopolies, could in principle attempt to protect their markets by integrating with the CBI scheme operating in their catchment area. However, the little evidence available suggests that the main motive for provider-driven vertical integration is the prospect of eliminating within-system inefficiencies.

### *Contestability of Health Care Markets*

Providers find it difficult to integrate themselves with insurers if their market is contestable, because they must devote much of their resources to defending their position in the market, which leaves few resources for investing in vertical restraints and integration.

Health care markets are less contestable in LICs than in industrial countries, because bureaucratic hurdles are more substantial in LICs. *Ceteris paribus*, these hurdles give incumbent hospitals the leeway to impose vertical restraints or pursue vertical integration.

Most health care providers doing business with CBI schemes are located in poor rural areas. Because any monopoly rents must be of fairly small amount, the incentive for a new competitor to break into the market is weak, and the degree of market contestability is therefore small.

### *Lack of Capital of Service Providers*

Physician networks may lack capital because their joint liability status impedes their access to capital markets. In a deregulated, competitive market, for-profit hospitals, and especially hospital groups, may offer an investment with favorable hedging properties. With a measure of independence from the capital market and hence comparatively low  $\beta$ , they can raise capital at a lower cost than other industries.

Many LICs have limited access to international capital markets, which means that little capital is available to domestic health care providers. This lack of capital hampers vertical integration.

Lack of formal capital is an even greater problem in the case of health care providers dealing with CBI schemes. In rural areas, neither physicians nor hospitals have easy access to domestic capital markets. In addition, they have difficulty raising internal finance, because intermediation by moneylenders is incomplete.

### *Market Power of Insurer*

Insurers with market power require ample compensation to allow themselves to be constrained or integrated. As argued above, insurers tend to have more market power in LICs than in industrial countries. Insurers' possession of market power hampers provider-driven vertical integration.

In CBI schemes, the market power of insurers is high, because these insurers usually are the only suppliers of health insurance coverage. *Ceteris paribus*, a health care provider that wishes to impose vertical integration would find it difficult to do so.

### *Cartelization of Insurers*

The costs of negotiation within a cartel of insurers are high, because all members of the cartel must be included in the negotiation.

As noted above, the degree of cartelization is likely to be higher in LICs than in other countries, because agreements can be struck at a lower cost among fewer participants. In LICs, fraud and opportunistic behavior add to the costs of negotiating an agreement. Moreover, the likelihood of detection and punishment is low, because antitrust authorities tend to be weak. These realities promote insurer cartels and hence hamper provider-driven vertical integration.

With regard to CBI schemes, cartelization is of little relevance for two reasons. First, the fact that these schemes often operate along kinship lines makes horizontal agreements difficult to reach. Second, CBI schemes usually constitute a monopoly and thus have little interest in the protection from competition that a cartel affords.

### *Legislation Prohibiting Vertical Restraints*

Legislation might prohibit medical providers from owning an insurer. However, the authors are aware of no such legislation.

### **Actual Examples of Integration**

Table 3.6 presents some of the existing variants of insurer-driven and provider-driven vertical integration as well as lateral integration and illustrates that all these types of integration may involve community-based insurers and private, for-profit insurers in industrialized countries and in LICs.

**TABLE 3.6** Forms of Integration

<i>Indicator</i>	<i>Variants</i>	<i>Private, for-profit insurers</i>	<i>Insurers in LICs</i>	<i>Community-based insurers</i>
Insurer driven	<p>Insurer runs clinics and ambulatory care centers</p> <p>Insurer owns ambulatory care centers</p>	<p>British United Provident Association offers private health insurance and cooperates closely with domestic health care providers</p>	<p>Cigna, a U.S. insurance company, provides health insurance and health care services in India</p> <p>Holding Banmédica S.A., the second biggest private health insurer in Chile, formed an alliance with Las Américas of the Penta group, which primarily offers health care services and controls Chile's largest private hospital, Clínica Alemana</p> <p>In South Africa, Fedsure Holdings, which owns and controls subsidiaries involved in life insurance, purchased substantial shares in Network Healthcare Holdings, the largest private hospital group in South Africa</p>	<p>Atiman Health Insurance Scheme in Tanzania cooperates closely with local health care providers</p>
Provider driven	<p>Hospital set up insurance schemes</p> <p>Ambulatory care centers/association of doctors set up insurance schemes</p>	<p>Community hospitals in rural Pennsylvania in the United States formed a risk retention group made up of similar entities that pool resources and insure their own members</p>	<p>Apollo hospitals group in India extended health insurance through alliances with private insurance providers</p>	<p>In Uganda, Kisiizi Hospital and the Engozi Society provide a CBI scheme</p> <p>Chogoria Hospital in Kenya offers an insurance scheme</p>
Lateral	<p>Companies/cooperatives active in the credit or insurance sector extended their product line</p>	<p>An insurance product line in Singapore was extended to include bancassurance activity</p>	<p>Bangladesh (Desmet)</p>	<p>The Chogoria Hospital Insurance Scheme in Kenya focuses increasingly on treatment of HIV</p>

Source: Authors.

## Market Structure

Aside from degree of vertical integration, other important dimensions of market structure typically are number of buyers and sellers and degree of product differentiation (Carlton and Perloff 1999, chapter 1). Number of buyers has not been an issue in health insurance markets, even in countries where employers are involved in its provision. Degree of product differentiation increases with the number of sellers unless economics of scope are very marked (see below).

One aspect of market structure omitted here is the legal form of the insurance company. Originally, most health insurers were mutuals, presumably because as such they could attain a reasonable degree of homogeneity of risks. Homogeneity of risks ensures that the variance of total claims to be paid does not increase without bounds when risks are added (Malinvaud 1972, appendix). A finite variance in turn implies that the expected value of the loss can be estimated with increased precision (a decreased standard error according to the law of large numbers), permitting the insurer to hold fewer reserves per unit risk while holding its probability of insolvency constant (Cummins 1991). However, mutuals are at a disadvantage when it comes to raising capital for expanding their risk pool, because they do not issue tradable ownership shares. For this reason, the preferred legal form of insurers in industrialized countries has become the publicly traded stock company.

Health insurers in LICs do not rely to the same extent as insurers in industrialized countries on their (local) capital market, which usually is not very developed. Indeed, the mutual form is alive and even thriving in the guise of CBI schemes. With increasing demand for capital to finance expansion, these schemes may become stock companies. For the purpose of the present exposition, it is taken as given that CBI schemes and private insurers (which need not be stock companies) will continue to coexist in LICs for the foreseeable future.

## *Diversity of Preferences*

With greater diversity of preferences, a large set of differentiated insurance products is necessary to match supply with demand. This diversity of preferences creates the potential for niche products written by specialized insurers, and therefore an increased number of companies, *ceteris paribus*. But according to the theory of consumer demand, diversity of preferences arises only when income becomes sufficiently high. When income is low, the attainable consumption set in attribute space is too restricted to permit choices that lie far apart. Therefore, the number of profitable product varieties (and usually firms) is low when income is low.

In keeping with this argument, the concentration of sellers is expected to be high in LIC markets for private health insurance. Moreover, sellers cluster in urban areas, where the number of high-income earners is large enough to create a pool of sufficient size and hence an acceptable loading factor  $\lambda$ , resulting in a viable total loading. In the case of CBI schemes, lack of access to the capital

market, which limits the size of the unit and its geographical expansion, creates a countervailing effect. The balance of the two influences is an open issue.

### *Economies of Scale*

The size of an insurer's risk pool may be the source of economies of scale, defined as decreasing unit cost as a function of the number of individuals insured. According to the law of large numbers, a larger pool size enables the insurer to reduce its reserves per unit risk without increasing its risk of insolvency (Cummins 1991, table 1). Hence, a large insurer's premiums contain a smaller amount of loading than a small insurer's premiums and give rise to a lower premium for a given amount of expected benefits. A large insurer could therefore increase its market share; a possible outcome is the so-called natural monopoly.

However, a large pool may require the insurer's acceptance of less favorable risks; the consequence may be a rise in the expected value of the benefit to be paid. In addition, a large pool can be associated with a loss of social control among the insured, which promotes moral hazard. According to equations (3.2) and (3.3) above, both effects cause the amount of loading to increase, thus counteracting economies of scale. Empirical evidence on this issue in the domain of insurance, let alone health insurance, is lacking. However, the available evidence points to constant rather than increasing returns to scale (see, for example, Fecher, Perelman, and Pestieau 1991). Absent economies of scale, however, a particularly high degree of concentration in private insurance markets is unlikely.

Fujita, Krugman, and Venables (1999) argue that economies of scale occur because of positive spatial externalities. These externalities may explain why health insurers in LICs concentrate mainly in urban areas. Strong centripetal forces that draw businesses to one another (because firms may want to share a customer base or local services and to have access to trained and experienced labor) outweigh weaker centrifugal forces that drive businesses from one another (because firms compete for labor and land). The former forces constitute spillover effects and result in economies of scale in the guise of lowered administration and advertising costs. As such, they encourage market concentration.

Table 3.7 focuses on factors influencing degree of market concentration. It has no entries for public health insurers in LICs, because these insurers are assumed to be monopolies.

Fujita, Krugman, and Venables (1999), although not focusing on CBI schemes, also provide an explanation for concentration of CBIs in rural areas. There, strong centripetal forces (such as capability to serve certain customers and acceptance of informal market behavior such as bartering) outweigh weaker centrifugal forces (such as small customer base, poor infrastructure, and an underdeveloped capital market). Economies of scale may occur due to the former forces and, given the market characteristics of CBI schemes, lower unit costs.

**TABLE 3.7 Factors Affecting the Degree of Concentration of Health Insurance Sellers in Markets for Private Health Insurance**

<i>Factor</i>	<i>Private insurance (competitive market)</i>	<i>Private insurance (in LICs)</i>	<i>Community-based insurance</i>
Diversity of preferences	–	– ↓	–
Economies of scale	+/-	+	+
Economies of scope	+	+	+
Barriers to entry	+	+ ↑	+ ↑
Barriers to exit	–	– ↑	– ↑
Antitrust policy	–	– ↓	– ↓

*Source:* Authors.

*Note:* LICs = low-income countries. A plus sign means the factor increases concentration; a minus sign means it decreases concentration. An upward-pointing arrow indicates reinforcement of relationship; a downward-pointing arrow indicates attenuation of relationship.

### *Economies of Scope*

Economies of scope prevail if the cost of providing an extra unit of coverage in one line of business decreases as a function of the volume written in some other line. In the context of health insurance, economies of scope may operate at two levels.

First, a firm's health insurance line may benefit from the firm's other business activities. A firm may be able to market health insurance through its network for selling banking services, for example. The health insurance market's tendency toward increased concentration is indirect and hence not very marked in this case. Moreover, the limited amount of available empirical evidence suggests that economies of scope at this level are not important (Suret 1991).

Second, however, health insurers A and B, whether they are community-based insurers or private insurers operating in LICs, may realize that although their products are differentiated, the costs of marketing and administering those of A increase less than proportionately when the quantity of B's products increases. Therefore, the amount of loading would increase less than proportionately with the expected volume of benefits combined, providing a powerful motive for a merger of the two companies. Given economies of scope of this second type (often called "synergies"), market concentration tends to increase, but the number of product varieties does not necessarily decrease. In this case, the number of product varieties sold in the market does not vary in step with the number of firms.

### *Barriers to Entry*

High market-entry barriers exist when a newcomer must make large investments that it cannot recuperate if entry fails (high sunk costs). Barriers to entry thus increase market concentration. They are clearly relevant in health insurance

markets, in which newcomers usually must launch extensive advertising campaigns to gain even a small share of the market. Newcomers cannot recuperate this investment if they withdraw from the market.

A small number of sellers makes negotiation and monitoring of collusive agreements comparatively inexpensive. For this reason, concentration poses a threat to price and product competition in insurance markets. However, collusive agreements can be destabilized by the emergence of a new competitor. Destabilization is less likely to occur when barriers to entry are high. Therefore, barriers to entry not only increase concentration but may also reinforce the anti-competitive effects that usually accompany a high degree of concentration.

These considerations apply to health insurance markets in LICs as well as in industrialized countries. However, LICs frequently impose additional barriers to entry in the guise of restrictions on foreign ownerships. Thailand, for example, limits foreign equity in new local insurance firms to 25 percent or less (USTR 1998). Neighboring Malaysia offers 51 percent equity in insurance to foreign investors (WDM 2005), which is still substantially lower than ownership quotas in Indonesia, where 80 percent foreign ownership of joint ventures is allowed, and in the Philippines, where 100 percent is permitted. High barriers to entry contribute to the concentration of domestic health insurance markets.

The informal nature of the market reinforces barriers to entry in CBI schemes (for example, not all insurance companies are willing to accept payment in kind). Furthermore, the relationship between the insurance scheme and its members usually develops over a long period of time (which helps to minimize moral hazard effects). A newcomer to a CBI scheme would have to make a substantial and nonrecuperable investment to acquire this experience. This investment constitutes a barrier to entry and thus facilitates concentration in the CBI segment of the market for health insurance.

### *Barriers to Exit*

When challenged by a newcomer, incumbents may consider exiting from the market rather than defending their position. However, exit is not an attractive alternative if it entails the loss of investments that cannot be recuperated (sunk costs). For instance, a sales force specialized in health insurance is not an asset once the firm leaves the market; even with economies of scope, it has a reduced value, for example, in selling life insurance. Barriers to exit thus decrease concentration. However, through their stabilizing effect, they help to preserve collusive agreements, reinforcing the anticompetitive effect of concentration. Bailouts of ailing companies also modify the opportunity cost of leaving the market, thus creating a barrier to exit.

As noted above, barriers to entry in LICs are higher than in industrial countries, a difference that is expected to hold for private health insurance as well. In addition, given the small number of private health insurers in LICs, bailouts

tend to decrease concentration but also to have a marked anticompetitive effect in light of weak antitrust policies. On the whole, high barriers to exit keep the degree of concentration in LICs' health insurance markets low, all other factors being equal.

Still higher barriers to exit may characterize markets in which CBI schemes operate. These schemes benefit from their favorable reputation and established social control mechanisms (limiting, in particular, ex post moral hazard). These advantages are lost if a CBI scheme exits the market. Again, market exit increases concentration, all other factors being equal.

### *Antitrust Policy*

In many countries, merger projects must be submitted to antitrust authorities. Mergers that would result in a notable increase in the level of concentration are subject to scrutiny according to the rules followed by both the U.S. Federal Trade Commission and the Commission of the European Union. To date, few mergers of health insurers have been blocked. Nevertheless, antitrust policy can have an impact on concentration. Indeed, the mere risk of a merger proposal's rejection may keep concentration at a level lower than otherwise would be maintained.

Antitrust policy is less effective in many LICs than in industrialized countries. For instance, in South Africa a recent wave of mergers between health insurers, between pharmaceutical manufacturers, and between hospital groups has resulted in a small number of companies controlling most of the private health care industry (Soderlund, Schierhout, and van den Heever 1998). Although most insurance markets probably remain reasonably competitive, further consolidation might lead to nearly monopolistic positions for certain players in several geographic areas.

Mergers of CBI schemes are rare, but not because of effective antitrust policies. Arguably, antitrust policies do not take effect in CBI schemes. These schemes consist of small groups, whose members share common characteristics like close family and community relationships. Mergers between CBI schemes thus come at the cost of increased heterogeneity, which appears to greatly outweigh the mergers' benefits. The literature on credit markets offers evidence on the importance of market segmentation along geographic and kinship lines. Udry (1993, 95) discovered that loans between individuals in the same village or kinship group accounted for 97 percent of the value of transactions. Virtually no loans were provided to outside communities, as information about repayment prospects and village sanctions as a mechanism for contract enforcement were lacking. Similar evidence on informal credit markets is reported in a case study of rural China (Feder, Lin, and Xiao-Peng 1993).



## CONCLUSIONS

The following conclusions are mainly based on theoretical considerations, empirical confirmation of which is very limited. Admittedly, the case studies cited are too few to provide real confirmatory evidence. Therefore, the conclusions must be regarded as tentative.

The supply of health insurance was characterized above by five dimensions: size of benefit package, risk selection effort, amount of loading as the net price of coverage, degree of vertical integration between insurers and health care providers, and market structure as indicated by degree of concentration.

With regard to the benefits package, private insurers doing business in LICs are predicted to offer less comprehensive packages than private insurers in industrialized countries. The latter are used as the competitive benchmark, although many industrialized countries heavily regulate health insurers or permit their cartelization (see tables 3A.1, 3A.2, and 3A.3). However, some factors that promote comprehensive benefits are attenuated in LICs. This finding holds to an even greater extent for CBI schemes.

Risk selection effort may be greater in LICs than in industrialized countries, because fully uniform premiums, which induce maximum effort at cream skimming, are a likely choice of LIC regulators. At the same time, risk-adjustment mechanisms, which are designed to neutralize health insurers' incentive to select favorable risks in response to regulated premiums, are too complicated to be implemented in many LICs. Their deficiencies are considerable even in industrialized countries (see Zweifel and Breuer 2006).

The amount of loading in health insurance premiums in LICs is expected to be high in comparison with the competitive benchmark, because the regulatory framework and the prevalence of fraud and abuse exert pressure in that direction. Because administrative expenses are lower in CBI schemes to an extent that regulation is unlikely to neutralize, these schemes may have a competitive advantage on this score.

Imposition of vertical restraints or completion of full vertical integration can originate with insurers or health care providers. Private health insurers in LICs appear to be hampered in these endeavors to an even greater extent than their counterparts in industrialized countries. CBI schemes may have an advantage here, because their behavior is less likely to hurt their reputation with health care providers and because they do not have to deal with provider cartels. Such a difference cannot be discerned in the case of provider-driven integration efforts; settings reminiscent of managed care may therefore originate with CBI schemes.

Finally, the degree of concentration in LICs' markets for private health insurance could be higher than in industrialized countries' markets, in large part due to high barriers to entry. CBI schemes should not systematically differ in this regard.

**ANNEX 3A: TYPES AND EFFICIENCY EFFECTS OF REGULATION**

Individuals losing their health insurance protection may face hardship and poverty that affect society as a whole. The main motives to regulate private health insurance are to eliminate the social costs of insolvency by preventing insolvency or to mitigate these social costs while accepting the possibility of insolvency (Zweifel and Eisen 2003, chapter 8.1).

Regulations designed to eliminate insolvencies also seek to avoid instability in insurance markets that may occur due to adverse selection processes. Typically, these regulations are comprehensive and detailed, because current operations of insurers must be monitored to attain the objective. However, this type of regulation generates inefficiency, because it prevents insurers from adopting least-cost solutions. Thus, regulation aimed at avoiding insolvency under all circumstances may not maximize social welfare. Once private insurance schemes are fully regulated—for example, prices, quantity, and quality of private insurance products are determined outside the market mechanism—resource allocation is likely to deteriorate. In other words, incorrect product pricing, ineffective packages, and reduced competitive behavior may lead to an inefficient and inequitable allocation of private health insurance products. Table 3A.1 provides an overview of regulations that tend to lower efficiency. For example, budget approval stifles product innovation, because, apart from possible delays, the insurer runs the risk that the cost of innovation will not be approved.

Regulation can be designed to reduce social costs by making insurers bear them in the event of insolvency. Two ways to internalize these costs are to require the deposit of reserves or the establishment of a guaranty fund financed jointly by the insurers (see table 3A.2). These measures mitigate the hardship of the insured in the event of insolvency. But these regulations also have a cost, because, for example, the reserves probably could have been invested at a rate of return higher than that earned by deposit. In addition, the regulations entail an administrative cost. On the whole, however, regulations aimed at internalizing the social costs of insolvency appear to have greater potential to enhance efficiency than regulations aimed at preventing insolvency.

Finally, insurance regulation may have the objective of creating demand for private coverage. Such demand is viewed as a precondition for expanded provision of private health care and the reaping of efficiency gains associated with such care (Griffin 1989, 23).

Table 3A.3 presents selected countries' health insurance regulations (identified by letter and number in tables 3A.1 and 3A.2).

**TABLE 3A.1 Regulations that Tend to Lower Efficiency**

	<i>Regulation</i>	<i>Effect</i>
A.1	Imposed premiums	Provides few incentives Undermines price competition Premium fails to reflect expected costs Disturbs balance of underwriting and investing activities
A.2	Obligation to provide specific products and have other products approved by regulator	Restricts product competition Does not reflect individual benefit-cost estimates
A.3	Rules on active/passive ownership (vertical integration)	Prevents insurers from finding the optimal degree of vertical integration
A.4	Obligation to provide certain benefits, to ensure certain risks, or both	Threatens viability of insurance Does not reflect individual benefit-cost estimates
A.5	Separation of lines of business	Loss of synergy effects both for insured and insurer (allocation of reserves is not optimal)
A.6	Budget approval	Hampers product innovation
A.7	Rules on investments	May prevent insurers from obtaining maximum expected return for a given volatility
A.8	Subsidies and tax exemptions in favor of insurers	Justified if insurers provide a public good (e.g., cohesion of society) Induces overconsumption of insurance
A.9	Obligation to contract with providers	Lowers pressure on providers to be efficient

**TABLE 3A.2 Regulations that Tend to Enhance Efficiency**

	<i>Regulation</i>	<i>Effect</i>
B.1	Licenses for insurers	Lowers probability of insolvency
B.2	Minimum capital	Lowers probability of fraud
B.3	Minimum liquidity requirements	Lowers probability of insolvency
B.4	Reinsurance schemes	Lowers probability of insolvency
B.5	Provision of a guarantee fund	Lowers probability of insolvency
B.6	Industrywide insolvency fund	Lowers probability of insolvency
B.7	Provision of information to regulators and consumers	Increases transparency
B.8	Agreed-on accounting procedures, internal and external auditing	Increases transparency
B.9	Mandatory risk-adjustment scheme among insurers in the presence of adverse selection	Eliminates cream skimming by insurers Often a complement of premium regulation

**TABLE 3A.3 Health Insurance Regulation in Specific Countries**

<i>Regions/countries</i>	<i>Regulations reducing efficiency</i>	<i>Regulations enhancing efficiency</i>	<i>Comments</i>
<b>OECD countries</b>			
Switzerland	A.1, A.3, A.5, A.7	B.1, B.2, B.3, B.5, B.7, B.8	
The Netherlands	A.2, A.4, A.8,	B.1, B.2, B.3, B.4, B.5, B.7, B.8	General: 31% of population covered by private health insurance
<i>Uncertain</i>		B.6, B.9	
Australia	A.1, A.2, A.3, A.4, A.6, A.7, A.8, A.9	B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.9	General: 1/3 of population covered by private health insurance
United States	A.1, A.2, A.3, A.4, A.5, A.7, A.8, A.9	B.1, B.2, B.3, B.4, B.7, B.8	General: Regulation varies greatly from state to state
<i>Uncertain</i>	A.6	B.3, B.5, B.9	
Canada	A.2, A.3, A.4, A.8	B.1, B.2, B.6, B.7, B.8	
<i>Uncertain</i>	A.7	B.3, B.5	
New Zealand		B.1, B.3, B.7, B.8	B.3: \$500,000 must be kept in a trust General: Private health insurer must provide an annual annotated statement, otherwise business hardly regulated
<b>Africa</b>			
South Africa		B.1, B.2, B.8	
<i>Uncertain</i>	A.6, A.7		
Zambia		B.1, B.2, B.4, B.5	
<i>Uncertain</i>	A.1, A.2, A.3, A.4, A.6, A.7, A.8, A.9	B.3, B.6, B.7, B.8, B.9	
Zimbabwe		B.1, B.2, B.4, B.5, B.8	
<i>Uncertain</i>	A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9	B.3, B.6, B.7, B.9	
Nigeria		B.4	General: 0.03% of population covered by private health insurance
<i>Uncertain</i>	A.2, A.3, A.4, A.5, A.6, A.8, A.9	B.1, B.2, B.3, B.5, B.6, B.7, B.8, B.9	(in July 1995)
<b>Asia</b>			
Philippines	A1	B.1, B.2, B.4, B.5, B.6, B.7, B.8	A.1: Premiums are taxed at 5% per year General: Private health insurance covers 2% of population; premiums for poor citizens paid/subsidized by government's public health insurance scheme
<i>Uncertain</i>	A.4, A.6, A.8	B.3, B.9	

**TABLE 3A.3 Health Insurance Regulation in Specific Countries** (continued)

<i>Regions/countries</i>	<i>Regulations reducing efficiency</i>	<i>Regulations enhancing efficiency</i>	<i>Comments</i>
Thailand	A.3, A.7, A.8	B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8	General: Private health insurance covers 2% of population; 24% of population not covered by any form of health insurance
<i>Uncertain</i>		B.9	
Singapore	A.2, A.4, A.7, A.8	B.1, B.2, B.4, B.5, B.7, B.8	A.2: Like Eldersshield B.2: Risk-based capital requirements General: Monetary Authority of Singapore estimates risk profiles for each Singapore-based health insurer; more critical insurers more stringently supervised
<i>Uncertain</i>	A.3	B.3, B.6, B.9	
Malaysia	A.8	B.1, B.2, B.4, B.7, B.8	
<i>Uncertain</i>	A.6, A.7	B.3, B.5, B.6, B.9	
Indonesia	A.4, A.7	B.1, B.2, B.3, B.4, B.8	General: Private health insurance covers 1% of population; only 14% of population has some form of insurance; private health insurance protection expires when individual reaches age 55; community-based primary insurance – Dana Sehat
Taiwan (China)	A.1, A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9	B.1, B.2, B.3, B.4, B.5, B.7, B.8, B.9	General: Community-based insurance program (Farmers' Health Insurance) also available
China	A.1, A.2, A.4, A.6	B.1, B.8	General: 3.17% of urban and 1.41% of rural population covered by private health insurance
<i>Uncertain</i>	A.3, A.5, A.7, A.8, A.9	B.2, B.3, B.4, B.5, B.6, B.7, B.9	
India	A.7	B.1, B.2, B.3, B.4, B.7, B.8	
<i>Uncertain</i>	A.6, A.8		
<b>Eastern Europe</b>			
Slovenia	A.2, A.3, A.4, A.5, A.7	B.1, B.2, B.4, B.5, B.6, B.7, B.8	
<i>Uncertain</i>	A.6, A.8	B.9	
Kazakhstan	A.4, A.7	B.1, B.4, B.6	General: Regulations differ from oblast (state) to oblast
<i>Uncertain</i>	A.1, A.2, A.3, A.5, A.6, A.8, A.9	B.2, B.3, B.5, B.7, B.9	

(continued)

**TABLE 3A.3 Health Insurance Regulation in Specific Countries** (continued)

<i>Regions/countries</i>	<i>Regulations reducing efficiency</i>	<i>Regulations enhancing efficiency</i>	<i>Comments</i>
Turkey	A.8	B.1, B.2, B.4, B.8	General: 30% of population has no form of insurance
<i>Uncertain</i>	A.2, A.3, A.4, A.5, A.6, A.7, A.9	B.3, B.5, B.6, B.7, B.9	
Russian Federation	A.2, A.4, A.7, A.8, A.9	B.1, B.4, B.8	
<i>Uncertain</i>	A.3, A.5	B.2, B.3, B.5	
<b>Latin America</b>			
Colombia	A.1, A.2, A.4, A.8	B.4, B.6	General: 1% of working-age population enrolled only in private health insurance
<i>Uncertain</i>	A.3, A.5, A.6, A.7, A.9	B.1, B.2, B.3, B.5, B.7, B.8	
Brazil	A.3, A.4, A.5, A.6	B.1, B.4, B.8	
<i>Uncertain</i>	A.8	B.2, B.3, B.5, B.6, B.9	
Chile	A.1, A.2, A.4	B.1, B.4, B.8	A.1: Government determines compulsory premium, currently 7% of private income General: Private health insurance covers 33% of population; among those aged 60+ (9.5% of population), this share drops to 3.2%
Costa Rica	A.1, A.7	B.4, B.8	General: Public company monopolizes insurance market
<i>Uncertain</i>	A.2, A.3, A.4, A.5, A.6, A.8, A.9	B.1, B.2, B.3, B.5, B.6, B.7, B.9	
Argentina	A.2	B.1, B.4, B.7, B.8	General: Private health insurance covers 9% of population
<i>Uncertain</i>	A.6, A.7, A.8	B.2, B.3	
Mexico	A.7	B.1, B.4, B.5, B.6, B.7, B.8	
<i>Uncertain</i>	A.2, A.3, A.4, A.5, A.6, A.7, A.8, A.9	B.2, B.3, B.9	

*Sources:* **Switzerland:** Socioeconomic Institute (SOI) resources. **The Netherlands:** Bertens and Bultman 2003; Egen 2002; Hamilton 2002. **Australia:** Bowie 2003; Industry Commission 1997; IASB 1999. **United States:** Egen 2002; SOI resources. **Canada:** CPSS 2003; Canada Department of Finance 2002; IASB 1999; SOI resources. **New Zealand:** Bowie 2003. **South Africa:** Mametja 1997; Khunoane 2003; Soderlund, Schierhout, and van den Heever 1998. **Zambia:** WHO (World Health Organization) online resources. **Zimbabwe:** WHO online resources. **Nigeria:** Awosika 2003; Ogunbekun 1997; WHO online resources. **Philippines:** Akal and Harvey 2001. **Thailand:** Charoenparij and others 1999; Gross 1997; *Insurance Journal* 2003; Keeratipitapong 2002; Singkaew and Chaichana 1998. **Singapore:** Khan 2001; Kumar 2000; Loong 2002; Ministry of Health (Philippines) 2003; Taylor 2003; Taylor and Blair 2003. **Malaysia:** Malaysian Medical Association 2003; World Bank online resources; WHO online resources. **Indonesia:** Marzolf 2002; Heath Lambert Group Global online resources ([www.healthlambertgroup.com/default3.asp](http://www.healthlambertgroup.com/default3.asp)); Hohmann, Lankers, and Schmidt-Ehry 2002. **Taiwan (China):** Bureau of National Health Insurance (Taiwan) ([www.nhi.gov.tw/00english/e\\_index.htm](http://www.nhi.gov.tw/00english/e_index.htm)); World Bank online resources; WHO online resources. **China:** Liu 2002; Liu, Rao, and Hu 2002. **India:** Mahal 2002; India Infoline ([www.indiainfoline.com/view/201299.html](http://www.indiainfoline.com/view/201299.html)). **Slovenia:** Trade Point Slovenia 2002. **Kazakhstan:** Brinkerhoff 2002; BISNIS 2002. **Turkey:** Rooney 2001; Sarp, Esatoglu, and Akbulut 2002. **Russian Federation:** Yegerov 2003; World Bank online resources; WHO online resources. **Colombia:** Trujillo 2002; World Bank online resources; WHO online resources. **Brazil:** Bardroff, Hohmann, and Holst 2000; World Bank online resources; WHO online resources. **Chile:** Barrentos and Lloyd-Sherlock 2000; Hohmann and Holst 2002; Mahal 2002; World Bank online resources; WHO online resources. **Costa Rica:** Pan American Health Organization profile of Costa Rica ([www.paho.org/English/SHA/prfICOR.htm](http://www.paho.org/English/SHA/prfICOR.htm)); World Bank online resources; WHO online resources. **Argentina:** Bardroff, Hohmann, and Holst 2000; Barrentos and Lloyd-Sherlock 2000; World Bank online resources; WHO online resources. **Mexico:** World Bank online resources; WHO online resources.

**ANNEX 3B: CORRUPTION**

The extent of a government's corruption affects a country's health insurance market, because most of a health insurer's contractual partners and partners in vertical restraints are domestic.

The extent of corruption can be measured in several ways. Among the more traditional indexes are the ones developed by Business International Corporation (used by Mauro 1995 and by Ades and Di Tella 1997) and Political Risk Service Inc. International (used by Knack and Keefer 1995 and by Tanzi and Davoodi 1997). However, the construction of these indexes appears to involve some degree of arbitrariness. For instance, the Business International index assigned a value of 10 (indicating no corruption) to Iraq during the period 1980–83. At this time, the regime of Saddam Hussein, widely recognized as corrupt, had been in power for many years.

Here, preference is given to the Transparency International (TI) corruption index, which reflects data provided by the World Economic Forum, the World Bank (World Business Environment Survey), the Institute of Management Development, PricewaterhouseCoopers, the Political and Economic Risk Consultancy, the Economist Intelligence Unit, and Freedom House's Nations in Transit. The TI corruption index is based on surveys of perception. It includes only countries for which at least three survey sources are available; each source must rank nations and measure the overall perceived level of corruption but must not forecast changes in corruption or risks to political stability. In the index, 10 indicates no corruption and 0 indicates absolute corruption. Table 3B.1 presents the TI rankings of the countries presented in table 3A.3 in the order that the countries are listed in table 3A.3.

**TABLE 3B.1 Transparency International Corruption Index 2003, Selected Countries**

<i>Country</i>	<i>Corruption index</i>	<i>Country</i>	<i>Corruption index</i>
Switzerland	8.8	Indonesia	1.9
The Netherlands	8.9	Taiwan (China)	5.7
Australia	8.8	China	3.4
United States	7.5	India	2.8
Canada	8.7	Slovenia	5.9
New Zealand	9.5	Kazakhstan	2.4
South Africa	4.4	Turkey	3.1
Zambia	2.5	Russian Federation	2.7
Zimbabwe	2.3	Colombia	3.7
Nigeria	1.4	Brazil	3.9
Philippines	2.5	Chile	7.4
Thailand	3.3	Costa Rica	4.3

*Source:* Transparency International.

**ANNEX 3C: QUALITY OF GOVERNANCE**

Shareholders of an insurance company might be said to hold a call option on the value of the insurer's asset portfolio; the strike price is equal to the terminal value of the company's liabilities—that is, the value of the policyholders' claims. When assets at the end of a period are larger than liabilities, shareholders' wealth equals the difference between the two. When assets fall below the value of liabilities, this wealth falls to zero rather than becoming negative as a consequence of the shareholders' limited liability. The right to dispose of shares at zero rather than a negative price amounts to a put option in the hands of shareholders. Conversely, policyholders bear the loss when liabilities exceed assets. The value of their policy is therefore given by its stated nominal value less the put option they have implicitly sold to shareholders.

Shareholders can engage in risky projects because their maximum loss is limited and must be borne by the insured. Therefore, good governance (in the interest of the firm's owner) would call for management to take actions that devalue the contingent claims held by policyholders. Limited judicial capacity and enforcement in LICs make this scenario realistic. According to the Organisation for Economic Co-operation and Development/World Bank roundtable on corporate governance (OECD 2003), "tunneling" (insiders taking the assets of the company for themselves) is one primary problem with corporate governance in developing countries. If corporate governance is lax, management can even move funds out of the company once policyholders have paid the premium.

This extreme case aside, an insurance company pursuing the interest of shareholders is predicted to act against the interests of policyholders. However, informed policyholders are not willing to buy insurance coverage from such a company. Therefore, at a given price (loading), demand for the products of the company will be weak, or alternatively, the products must be sold at a discount. Weak demand and discounted products hurt future profits and thus lower the value of shareholders' call option. Cummins and Sommer (1996) have found that companies in the United States react to volatility increases by augmenting reserves, presumably to restore the value of the claims held by policy owners. Ultimately, good governance calls for management to take feedback from the product market into account, but the company needs a sufficient amount of information from policyholders, a condition not always satisfied in LICs.

Disseminating information about the risk exposure of insurance companies is an important task for an LIC government that is considering an enlarged role for private health insurance. Absent such information, scope for management to siphon reserves from an insurance company is great. For example, it may transfer assets to individuals who are not owners of the firm; invest funds at a less-than-market return in another company (typically to the benefit of the company's majority stockholder); or shift liabilities to the insurance company, again at insufficient compensation.



Governance issues concern public insurers as well. Lack of competition, the absence of monitoring through the capital market, and the presence of vested-interest groups facilitate diversion of public resources.

## NOTES

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1. Under certain circumstances the incentives for prevention are higher when coverage increases.  $V$  responds positively to an increase in  $I$  when the insured earns a high wage, is risk averse, or enjoys generous sick leave. This situation can be common in developed countries (Zweifel and Manning 2000, 417).
2. See Preker, Harding, and Travis 2000.
3. See, for example, the merger between Afrox Healthcare Limited and Amalgamated Hospital Limited (South African Competition Tribunal 2001).

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## CHAPTER 4

# Market Outcomes, Regulation, and Policy Recommendations

*Peter Zweifel and Mark V. Pauly*

This chapter begins with a description of the outcomes that can be expected in unregulated voluntary markets for health insurance. With an increasing amount of loading (due to the combination of comprehensive benefit packages and moral hazard effects), fewer people, especially those in low-income countries, are willing to purchase health insurance. Government typically reacts by forcing at least a portion of the population into a compulsory risk pool. Thus government can be viewed as the supplier of regulation, while consumers (and even more often, insurers) are demanders of regulation. In this market for regulation, government usually does not take into account the efficiency losses it imposes on the remainder of the economy, thereby creating a negative externality. The equilibrium outcome likely entails excessively intense health insurance regulation.

The optimum amount of regulation can be defined as the equilibrium that would result if government as the supplier of regulation took into account regulation's full social (marginal) cost. Because government is unlikely to levy an internalizing (Pigou) tax on itself, demand for regulation should be kept as small as possible. This goal calls for mitigation of the consequences of any insolvency—for example, by means of a guarantee fund to be built up by (private) health insurers. However, governments often seek to redistribute income and wealth through (health) insurance by forcing the rich and individuals with low risks to join the risk pool and pay excess contributions that can subsidize the insurance of the poor and individuals with high risks. This strategy is inconsistent with competition, because each insurer has an incentive to offer rich consumers, low-risk consumers, or both a slightly better deal until everyone again pays a risk-based premium.

An alternative is to pay a means-tested subsidy sufficient to close the gap between the competitive, risk-based premium of reference policies (usually with rather modest benefits) and a maximum contribution deemed politically acceptable—for example, 10 percent of personal income. This alternative has the advantage of minimizing regulation while empowering consumers, rich and poor. Its downside is that government must explicitly commit funds to the financing of health insurance for the poor. Middle- and upper-class taxpayers may seek to benefit from this public expenditure for subsidization of health care access, which may cause the expenditure to explode. Therefore, policy suggestions are made in recognition of the importance of differences among institutions.

## MARKET EQUILIBRIA IN VOLUNTARY INSURANCE MARKETS

Some of the conditions necessary for emergence of a voluntary market for medical services financing already exist in developing countries. Aside from risk-averse behavior by consumers (widespread, if not universal), the most important condition is a high burden of out-of-pocket payment. If any entity—private or public, for profit or nonprofit—could supply insurance at premiums close to the average level of benefits or expenses to cover out-of-pocket payments, voluntary insurance would be feasible. It would be feasible (though not necessarily optimal) even without subsidies to lower-income households, and certainly would be feasible with subsidies well short of the total premium. The most important supply and demand issues in emergence of a private voluntary health insurance market are discussed below in three contexts: a world with neither subsidies nor special insurance regulation, a world with regulation but no subsidies, and a world with both subsidies and regulation.

Consider a world with no government intervention in insurance markets beyond the enforcement of property rights and contracts. To analyze the demand side, potential purchasers are defined as those who anticipate that they might choose in the near future (say, over the next 12 months) to spend out of pocket on medical services or products. The maximum out-of-pocket spending contemplated by such individuals sets a lower bound to the premium that they can “afford.” For many people, even those with moderate incomes in developing countries, this maximum feasible out-of-pocket payment might well exceed the premium an insurer would have to charge to cover its benefits and administrative costs.

Those who could afford no substantial out-of-pocket payment (and who therefore would not make such a payment) are thus excluded from the set of potential unsubsidized voluntary purchasers. Such individuals need a subsidy if they are to obtain insurance voluntarily. But the “nonpauper” segment of the population could in principle create demand for insurance.

On the supply side, the key to emergence of voluntary insurance is premiums nearly equal to consumers’ expected expenses (or benefits, given the provisions of coverage)—that is, of a reasonably modest loading. Sufficiently low loadings may be feasible on average (see chapter 3). But premiums tailored to each buyer’s expected expenses are also needed. Such premiums are generally the outcome in competitive markets as long as asymmetry of information is to the detriment of insurance suppliers.

Probably the most serious threat to the emergence of markets occurs when out-of-pocket expenses vary greatly with income, as appears to be the case in many developing countries. If insurance is to be feasible, lower-income people with lower expected expenses must have lower premiums than higher-income people (minimal adverse selection), and insurance use by lower-income people must not expand to the level of use by higher-income people when insurance coverage becomes available (minimal moral hazard). Although the existence of

income-related adverse selection or moral hazard does not preclude the emergence of insurance, it does limit the scope of coverage (see chapter 3).

The other necessary condition on the supply side for emergence of voluntary insurance is the capacity of financial infrastructure, property rights, and contract law to support insurance policies. At a minimum, insurers must be seen to collect premiums and use them to pay benefits according to the language in the insurance contract. The actual mechanics of these transactions depend on the nature of the insurance contract and the familiarity of the population with transactions that require time to be fulfilled. Consumers who are familiar with borrowing and lending in capital markets will be best situated to understand insurance contracts.

Some serious problems can arise from government efforts, some well-meaning and others not, to regulate or tax private health insurance. Taxation obviously inhibits the full growth of a market and so should be avoided. Regulation to enforce or to standardize contracts has merit, as does regulation to prevent arbitrary and capricious decisions by insurers.

Regulation of reserves or premiums (beyond disclosure) may well do more harm than good (see annex 3A of chapter 3 for regulations that tend to weaken or strengthen efficiency). For example, insurers may occasionally find that total claims are unusually high. Requiring insurers to attract enough capital to reduce the potential for this occurrence to (almost) zero will mean that consumers face higher premiums but get more dependable coverage. When capital markets and premium setting are in their infancy, it may be preferable to offer consumers less-than-guaranteed insurance if the alternative is no insurance or absolutely reliable insurance but at a premium so high that few buy it.

Another important issue concerns the relationship of insurer to provider. In its simplest form, this relationship entails indemnity payments by insurers to reimburse the insured for their out-of-pocket expenses. Insurers can be integrated with providers that might help to limit spending on services of low benefit; however, scope for vertical integration is often severely limited, as argued in chapter 3.

The available empirical evidence suggests that voluntary private insurance is feasible in developing countries but that, without subsidies (discussed below), it may not be universally purchased or comprehensive in coverage. Determining the likely degree of regulation of health insurance is important, because “excessive” regulation undermines the viability of private voluntary insurance.

## **STRUCTURE AND INTENSITY OF REGULATION OF HEALTH INSURANCE**

Insurance is one of the most highly regulated industries. This statement certainly applies to health insurance. Even among market economies, many countries have opted for a mandatory national health insurance scheme with uniform

contributions and benefits. This solution entails maximum regulation by government. Even when insurance purchase is nominally noncompulsory, government usually has a strong interest in controlling the form of coverage and the set of premiums that can be charged. The question then arises as to the reasons for a government to propose (in democracies) or impose (in authoritarian rule) insurance regulation of differing intensity on coverage or premiums.

An attempt to explain the intensity and (as far as possible) the structure of regulation is made below. The discussion focuses on regulation of insurer reserves but also considers premiums and the extent and form of coverage.

### **Proximate Ordering of Health Insurance Regulation in Terms of Intensity of Regulation**

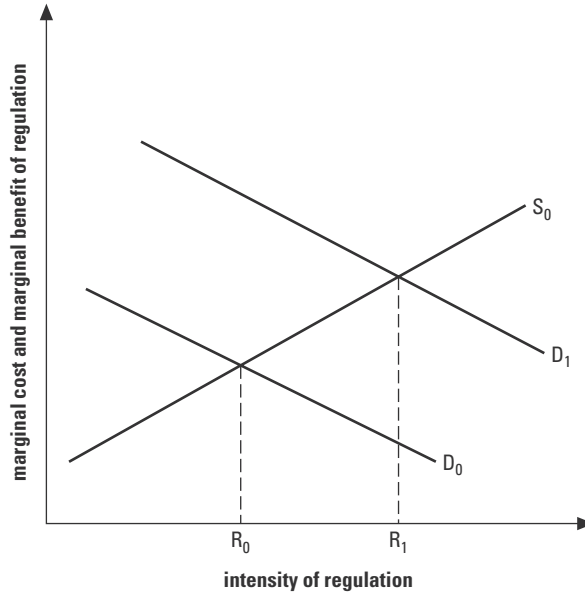
Peltzman (1976) pioneered the classic economic theory of regulation. He distinguishes three explanations for the existence of regulation. According to the public interest theory, regulation corrects a market failure—for example, a health insurer's failure to provide promised benefits. The problem with this explanation is that it does not predict the kind and intensity of regulation that is implemented.

Posner (1974) proposed a radically different view—capture theory, which predicts that the owners of the firms to be regulated convince the regulatory authorities to act in their interest—that is, to protect them from competition. The problem here is that owners of other firms often are hurt, because they have to pay higher prices for inputs and accept lower prices for outputs. Moreover, this theory presupposes that the authorities in question seek to be captured.

Therefore, Peltzman proposes a more general theory of a market for the commodity “regulation” for which a supply and a demand exist. Government and public administration supply regulation. For government, the benefits of additional regulation are potentially enhanced support from some consumers of the regulated product, and, most important, enhanced support from the product's suppliers (that is, health insurers), who enjoy protection from competition. These benefits must cover the cost of additional regulation, which in the present context consists of the budgetary expense of implementing and coordinating an expanding set of regulatory activities, along with addressing political opposition from consumers and other suppliers who are harmed. Additional regulation is in the interest of public administration, because it generates power, prestige, and often pay. Therefore, the amount of regulation provided by government and public administration combined is high when a high marginal benefit covers the marginal cost incurred, giving rise to the upward-sloping supply curve  $S_0$  in figure 4.1.

Demand for regulation emanates in part from consumers, for example, holders of health insurance who pay a high premium (in the case of premium regulation) or who fear that their claims are not secure in the absence of reserves and guarantees (see annex 3C of chapter 3 on the governance problems of insurers). For consumers as a group, unsubsidized markets represent a trade-off: more generous or

**FIGURE 4.1** Market Model of Regulation



Source: Authors.

more secure coverage will necessarily lead to higher premiums for some consumers. Hence, nonmyopic “consumers” may differ in their demand for regulation. However, as noted above, health insurers may be willing to extend favors to the government and its administration in return for regulation that lowers the intensity of competition. For the first few regulatory steps, insurers typically count on a high marginal benefit that is more than sufficient to cover the marginal cost incurred by suppliers. With increasing intensity of regulation, this advantage can be assumed to fall, resulting in a downward-sloping demand curve  $D_0$ .

The market equilibrium determines the quantity of regulation transacted, which may be interpreted as the intensity of regulation. Figure 4.2 presents a rough ordering of types of health insurance according to regulatory intensity.

Unregulated private insurance is an outcome at the origin of figure 4.2. The transition to formal oversight, and especially to a uniform monopolistic scheme, is associated with a movement away from the origin, indicating increased (and finally maximum) intensity of regulation. Almost always the social insurance arrangements involve mandated (not voluntary) coverage, some form of general subsidy (often disguised as the government’s commitment to cover the deficit of the scheme), or both.

**FIGURE 4.2** Types of Health Insurance according to Intensity of Regulation

Source: Authors.

## Hypotheses Concerning Regulation of Health Insurance

On the basis of the market model of regulation, Adams and Tower (1994) identify shifts of demand and supply schedules that change the equilibrium intensity of insurance in general. Their arguments are adapted to health insurance and to low-income countries (LICs) below.

### *Hypothesis 1 (H1)*

*Crises in health insurance (and insolvencies in particular) cause the demand function for regulation to shift outward (see  $D_1$  in figure 4.1), increasing the intensity of regulation. This shift may be even more marked in LICs than in industrial countries (ICs) since LIC households presumably are less diversified, making the loss in expected utility due to a possible shortfall of insurance protection particularly*

important. However, low-income households may be less able to afford the high premiums that accompany more heavily reserved insurance.

Regulators' first likely response is to increase transparency, so that potential buyers can judge the security of a particular insurer's policy. However, filtering out the information that signals a future crisis (an insolvency in particular) and communicating that information in a comprehensible manner to the insured are not easy tasks. Regulators' second likely response is to increase the reserve requirements for health insurers. Tied funds have a steep opportunity cost, however, as they often generate a higher rate of return if invested elsewhere. Thus, a higher loading surcharge is contained in the premium. Regulators' third likely response is mandating reinsurance, often to be provided by a public organization. Here, the opportunity cost is more visible to the extent that health insurers must pay a reinsurance premium.

Industrial countries provide empirical support for H1. One piece of evidence, although not relating to health insurance, concerns the thalidomide tragedy that was averted in the United States. In 1962 the U.S. Congress approved amendments giving the Food and Drug Administration (FDA) considerably more control over the introduction of new products. The new legislation required much more testing and extended the FDA's authority to regulate premarket testing (including testing of generic drugs). Equally important, the legislation required evidence of efficacy (Folland, Goodman, and Stano 2001).

With regard to general insurance, the collapse of the Vehicle and General Insurance Company in 1971 in the United Kingdom was the event chiefly responsible for tightening of insurance company legislation and regulatory procedures (Adams and Tower 1994).

Argentina's health insurance system (Obras Sociales) was regulated in the late 1990s to increase transparency, an objective that can be reached through merely formal regulation (Jack 2000). At the same time, mandatory reinsurance, which comes closer to material oversight, was implemented. Minimum reserve requirements for health insurers were enforced in countries such as India and Thailand during the 1990s. Without access to investment capital or reinsurance, many West African mutual schemes (*mutuelles*) have built their own reserves. In essence, enrollees capitalize many of these schemes. Members are required to contribute premiums for some time, in some cases more than a year, before receiving benefits. These initial collections form the reserve fund. *Mutuelles* without reserves that have underestimated use have failed (USAID 2000).

Demand for regulation may be so strong as to make some form of social health insurance scheme the preferred alternative. However, to lessen the likelihood that such a scheme will become insolvent, reserves must be accumulated, within the system or by the government. Because the reserves must be liquid on short-term notice, they carry a considerable opportunity cost.

### ***Hypothesis 2 (H2)***

*The higher the intensity of regulation, the more effort health insurers make in terms of organizational and lobbying activities.* This hypothesis follows from the fact that

intensity of regulation is high when demand for regulation is high (like  $D_1$  in figure 4.1). Of course, all other determinants of the equilibrium must be equal, in particular the location of the supply function. This strong demand is reflected in insurers' willingness to invest in activities that support regulation.

One piece of evidence in support of H2 relates to regulation in general. In 1998 the U.S. tobacco industry spent \$66.6 million for lobbying (up from \$38.2 million in the previous year, according to the Center for Responsive Politics [2006]) to defuse bankruptcy-threatening events and negotiate compromises. Increased regulatory intensity was already on the horizon because of a \$10 billion verdict against Philip Morris in a class action suit for deceiving customers, a ban on workplace smoking in New York, a \$206 billion settlement agreement with 46 states, and RJR Nabisco Holding's settlement with the states in a matter concerning Medicaid (Office of the Attorney General 2006).

Other supporting evidence, fully relevant to health insurance, is the merger of the Health Insurance Association of America and the American Association of Health Plans with the explicit aim to increase lobbying effectiveness. Like the tobacco industry's lobbying effort, the merger was announced in a period of looming regulation—for example, in the form of proposed Medicare legislation (Kelly 2003).

In all countries, lobbying may take the form of favors or bribes to members of the administration or even the government. The cost of this practice may well be smaller than that of the public relations campaigns waged in ICs. Both increase the loading contained in the health insurance premium, thereby reducing efficiency.

### ***Hypothesis 3 (H3)***

*Producer groups are better able to influence regulation than consumers, and groups consisting of a small number of producers are more effective at this task than larger groups.* This hypothesis follows from two considerations. First, producers specialize, whereas consumers diversify. Producers therefore have a far greater interest in influencing the conditions in the market they serve. Because regulation strongly influences these conditions, producers have a powerful motive to shape regulation. Individual consumers typically spend a small fraction of their incomes on any given good or service (health insurance, say), making them rather indifferent to the conditions prevailing in that particular market. They therefore have little reason to influence regulation (of health insurance, say). The second consideration is the cost of organizing a pressure group. If only a few companies are writing health insurance, little effort is needed to organize an association for lobbying purposes. Therefore, health insurers in a market with few insurers, rather than consumers, often determine actual demand for regulation.

The American Medical Association (AMA) has been known for its effective organization of already focused professional interests, while its Canadian counterpart is often hampered by language conflicts. In the 1940s, the AMA was successful in blocking creation of a national health insurance scheme as proposed by President Truman. Canadian physicians were also opposed to national health



insurance, but they were unable to prevent its adoption (Folland, Goodman, and Stano 2001). However, the AMA was instrumental in having certain benefits included in the list of insurance benefits. This example suggests that H3 applies as much to health care providers as to health insurers. In recent years, the AMA's political power has waned, as many societies of specialist physicians have entered the lobbying arena.

The South African Fedsure holdings group, which comprises several health insurers and health care providers, began to influence regulation effectively in the late 1990s; changes in the legal system triggered the group's lobbying efforts (Soderlund, Schierhout, and van den Heever 1998).

In LICs the cost of organizing a pressure group comprising residents and firms outside a capital city has been prohibitive until recently. Technological improvements such as the spread of mobile phones and introduction of the Internet have reduced the cost of mobilizing and organizing pressure group activities. However, the group profiting from low cost of organization continues to be government employees. To expand the domain of public influence, they will tend to favor premium regulation, especially uniform premiums.

Such "community rating" encourages the high-risk insured to seek coverage and low-risk individuals to avoid the scheme if possible. But health insurers have a clear incentive to attract low risks, notably through product differentiation (see chapter 3 and the experience of Chile, where private health insurers offer products with only very limited coverage, which do not appeal to high-risk consumers; see also Jack 2000). This product differentiation calls for regulation that imposes uniformity on products, not only premiums. Differentiation with respect to health care providers must also be suppressed, because provider profiles may be used for cream skimming.

When product differentiation is prohibited, an important advantage of competition, the structuring of products in accordance with the different preferences of purchasers is lost. Consumers are left with the rather high costs of acquisition that characterize competition with differentiated products in general and health insurance in particular. In this situation, arguing in favor of social health insurance in the guise of a uniform scheme, which would entail the maximum degree of regulation in figure 4.2, is easy.

#### ***Hypothesis 4 (H4)***

*A large number of small insurers are typical of highly regulated but less "captured" insurance markets, provided the industry is domestic rather than dominated by multinationals.* This hypothesis reflects several considerations. First, large firms do not have to rely on regulation to be successful competitors; they need regulation only if their large size and dominance is due to regulation. If firms are few in number (because of natural economies of scale relative to the size of the market), they can control the market through agreements at very low cost. Second, economies of scale can give rise to increasing returns locally rather than globally (Fecher, Perelman, and Pestieau [1991] present some evidence that this is the case in ICs). In that event, the attenuation of competitive pressure permits small units to remain

smaller than their minimum efficient size. Finally, regulatory knowledge constitutes an asset for incumbent insurers. They lose this asset when exiting from the market. This asset keeps market concentration low (see chapter 3).

This effect of regulation may furnish justification for even more regulation, resulting in uniform social insurance. When already bound by premium and product regulation, small insurers writing the same policy are inefficient. It might be argued that once regulation reaches a level at which social health insurance replaces private insurance, the need for lobbying vanishes, obviating expenditure of doubtful social value. Certainly visible lobbying by health insurers and their associations is no longer needed. But for professional associations and sellers of medical supplies, decisions made by a national health insurance scheme have a far greater impact on incomes and profits than those taken individually by competing health insurers. The former decisions call for a stepped-up lobbying effort by those groups.

In Germany, health insurance is heavily regulated. As of 2003, no less than 370 sickness funds existed for a population of 80 million. In the United States, with triple that population, some 300 commercial health insurers exist. By way of contrast, the American Association of Health Plans, which represents managed care organizations, has 1,000 members (Kelly 2003). The greater number of managed care organizations may be interpreted as the consequence of U.S. regulation fostering such organizations.

Argentina's experience may illustrate the hypothesis. There, 360 Obras Sociales cover fewer than 9 million formal sector employees (World Bank 2004). The direction of causation is ambiguous, however. Is regulation stringent because the Obras Sociales are small and many in number, or are such small organizations able to survive only because regulation protects them?

### ***Hypothesis 5 (H5)***

*Highly regulated health insurance markets tend to be characterized by large public bureaucracies.* In figure 4.1, a high intensity of regulation is associated (for a given supply schedule  $S_0$ ) with high marginal cost (accumulating to a high total cost) of regulation.

An important question in this context is whether the transition to higher intensities of regulation occurs along the same supply function or is associated with a function indicating lower marginal cost. Here, two facts should be noted. First, a uniform social insurance scheme saves on costs of acquisition (in response to reduced adaptation to preferences). However, these expenses have nothing to do with the (marginal) cost of oversight and regulation. These are costs of enforcing constraints on the behavior of economic agents who pursue their own objectives. Second, these monitoring costs also occur in a public agency for social health insurance. In principle, the costs are lower when those being monitored work in one organization rather than multiple organizations. However, the tendency to deviate from stated objectives may be stronger among workers spread out among multiple organizations than among workers in one organization. A social health insurer collects a large amount of contributions,

creating a strong temptation for embezzlement. In contrast, premium contributions are divided among competing private health insurers, and the owners of the companies have a clear incentive to prevent embezzlement—for example, by allowing management to participate in profit. These considerations speak against a downward shift of the supply curve of figure 4.2 when a transition to social health insurance occurs.

Data on so-called red tape (a proxy for the size of bureaucracy) taken from Mauro (1995) and compiled by Business International illustrates H5. In China and Ghana, countries with strong regulation, the relevant index values are 6 and 7.67, respectively, on a scale of 1 (no bureaucracy) to 10 (extreme bureaucracy). In comparison, Argentina and South Africa, countries with weak regulation, have values of 3.34 and 3.0, respectively.

### ***Hypothesis 6 (H6)***

*Highly regulated health insurance markets are characterized by a high contribution per association member in support of lobbying efforts.* This hypothesis follows from the fact that the more comprehensive the regulation, the greater the amount of assets it affects. Accordingly, the asset owners have a considerable interest in influencing regulation, and if an association provides a vehicle for doing so, they want to support it.

Because H6 relates to the internal flow of funds from members of a lobbying organization to the organization, empirical evidence is hard to obtain. This hypothesis is of minor relevance for the performance of a health insurance system and is therefore stated in the interest of completeness only.

Overall, however, the six hypotheses emanating from the market model of regulation appear to have sufficient empirical support and therefore provide a useful basis for formulating policy recommendations concerning voluntary private health insurance in LICs.

## **POLICY RECOMMENDATIONS**

Optimal intensity of regulation and instruments to attain this optimal intensity are considered below.

### **Defining Optimum and Excessive Intensity of Regulation**

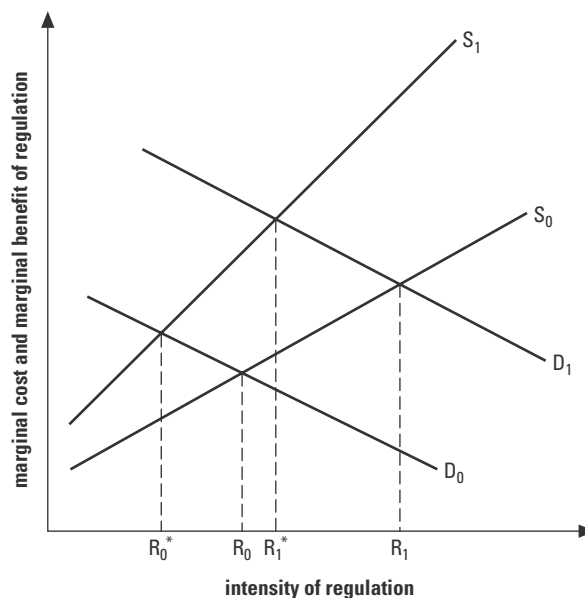
The institutional framework for private voluntary health insurance (PVHI) in LICs should prevent regulation from becoming excessive in the sense that the equilibrium regulation derived from the simple market model described above, although optimal from the point of view of the respective parties, does not take efficiency losses into account. Higher-risk consumers who push for lower uniform premiums are not concerned about low-risk consumers who lose because premiums are actuarially unfair to them. Incumbent health insurers do not care about the increased market closure due to heightened barriers to entry that often go along with regulation. These demanders of regulation may in fact desire the market closure effect of

regulation. In short, those demanding regulation disregard the negative “external” effects on others who are not party to their arrangement with regulation suppliers.

Regulation often is at a level that burdens the economy with negative externalities. To the extent that the parties acting on the market for regulation disregard these externalities, the outcome will be an excessive intensity of regulation. However, government, as the supplier of regulation, might have reason to take these external effects into account. Specifically, efficiency losses could lower its chance of staying in power. If this feedback mechanism were perfect, government would have to base its regulatory policy not only on marginal budgetary costs but also on marginal costs of externalities.

Figure 4.3, which reiterates the basic elements of figure 4.1, illustrates this argument. A government that under the influence of its administration disregards the efficiency losses of regulation operates along  $S_0$ . In combination with demand  $D_0$ , the equilibrium outcome is  $R_0$ . However, if the government were to fully take into account the marginal cost of the regulation-induced externality (often called deadweight loss), its “true” supply function would run higher. Typically it would also run steeper, the presumption being that additional regulation increases deadweight loss more if the regulation is already comprehensive and elaborate than if regulatory intensity remains low. Absent any demand shock, the true social optimum is  $R_0^*$ , which is less than  $R_0$ .

**FIGURE 4.3** Efficiency Loss of Regulation as an Externality



Source: Epple and Romano 1996.

Internalizing external effects to an optimal degree can restore overall efficiency. A leading instrument to restore efficiency is the internalizing (Pigou) tax, levied on the party causing the externality. In the present context, the government and its administration as the suppliers of regulation can be said to be ultimately responsible for the external effect. Thus, the optimal solution could call for a tax or penalty on the government (or public administration)! This proposal is impractical, although the United States has promulgated regulations to control the spread of regulation.

The better alternative is to devise constitutional rules that bring the outcome of the market for regulation closer to the true optimum. In figure 4.3, both the demand and the supply function are shifted inward so that the equilibrium outcome  $R_0$  approaches the true optimum  $R_0^*$ . More generally, the objective is to formulate guidelines designed to preserve the contribution that voluntary private health insurance may make to the overall efficiency of the health care system and of the economy as a whole without dispensing with rules and transparency to the extent that neglect destroys the market.

### **Limiting Consumers' Demand for Regulation of Voluntary Health Insurance**

Because financial crises may boost consumers' demand for regulation (see H1), they should be minimized. In figure 4.3, in which the marginal cost of the externality is increasing, a demand shock increases the amount of excess in regulation [ $(R_1 - R_1^*)$  is greater than  $(R_0 - R_0^*)$ ]. Without much loss of generality, crises can be equated with insolvencies. Insolvency constitutes a risk for public policy, which means that it has a probability of occurrence and an associated (financial) consequence. Therefore, policy could be directed at reducing the probability of occurrence if doing so will not cause other inefficiencies and, more important, mitigating the financial consequences of insolvency. The discussion below is limited to private and community-based insurance (CBI), because public health insurance is already at the upper end of the spectrum of regulatory intensity.

#### ***Lowering the Probability of Insolvency***

When regulating private health insurance, many governments heed the maxim, "prevention is better than cure." But adopting the objective of insolvency prevention entails several disadvantages. First and foremost, this objective implies that the health insurer is protected. Policyholders enjoy protection indirectly and only partially, because even an inefficient insurer may be kept afloat. Generally, insolvency regulation considerably reduces the pressure of competition on insurers. Industrywide guarantee funds, bailout arrangements, and other protection instruments create moral hazard for individual firms and can actually increase the probability of default.

Second, day-to-day management decisions can have an important impact on the probability of insolvency. For example, a drive to increase market share runs the risk that unfavorable risks will be included in the portfolio or that premiums

will be set too low, thus increasing the future probability of insolvency and making material oversight by the regulator (see figure 4.2) virtually a necessity.

Finally, probabilities are intrinsically difficult to measure and communicate. The regulator is called on to demonstrate that insolvency would have been “almost certain” without its intervention. Conversely, if insolvency occurs, the regulator would have to prove that the probability of future insolvency remains “sufficiently low.” Clearly, attempting to lower the probability of insolvency has important efficiency-reducing effects.

### *Mitigating the Consequences of Insolvency*

Mitigating the consequences of insolvency entails payment of a sizeable part of consumers’ claims in the event that a private health insurer fails. However, as soon as the insurer is vertically integrated to some extent (see chapter 3), health care providers typically hold claims against it (for example, in the guise of promised capitation payments). Now competing claims must be satisfied; whichever institution is in charge must have considerable know-how in adjudicating these claims.

Regulatory instruments to mitigate the consequences of insolvency belong to the domain of purely formal supervision. But they are not without side effects that may reduce efficiency. In particular, imposition of conditions for market access necessarily creates barriers to entry, a consideration absent from the “Insurance Core Principles” issued by the International Association of Insurance Supervisors (2003).

The traditional requirement that sufficient capital be put up for starting a business actually serves both objectives—reducing the probability of insolvency and reducing its consequences. Updating such a requirement through solvency margins (comparing liabilities to reserves, the European Union approach) or risk-based capital requirements (comparing risk-weighted items of the balance sheet with reserves, the U.S. approach) tends to interfere with insurance operations. For example, under the 1999 revision of its Insurance Act, India combines a capital requirement with a solvency margin (Mahal 2002).

One solution could be mandated reinsurance, purchased from competing reinsurance companies with expertise in adjudicating claims. However, this solution has at least two problems. First, the solvency of the reinsurer is an issue, and assessing it may amount to a difficult task for either a health insurer or the government, especially if the company does business worldwide. Second, judging from the experience of banks with credit insurance, insuring part of a health insurer’s liabilities could encourage the insurer to be less careful in its underwriting policy (Demirgüç-Kunt and Huizinga 2004).

A mandatory guaranty fund financed by private health insurers may look like an attractive alternative. Its drawback is that the fund managers will find it difficult to deal at arms’ length with either the contributors or the government. Maintaining independence from the government is crucial once substantial funds have accumulated, because pressure to help finance the government deficit is high.

Finally, the government could take on the reinsurance function. In this way, risk pooling becomes comprehensive, involving all taxpayers of the country. However, unless the government is capable of setting reinsurance premiums according to true risk of insolvency, this solution is burdened with moral hazard: a health insurer can gain market share by attracting unfavorable risks (and hence increasing the likelihood of insolvency) without any financial sanction.

On the whole, relying on (internationally diversified) reinsurers may most effectively dampen demand for regulation of private health insurance. Reinsurers' premiums look expensive compared with government reinsurance premiums. However, the government must hold reserves if it takes the reinsurance function seriously. Therefore, it must generate additional tax revenue, which comes at an efficiency cost of some 25 percent per dollar, even in an industrial country (Ballard, Shoven, and Whalley 1985). Efficiency losses occur, because excise taxes reduce the volume of transactions in product markets, while income taxes negatively affect the supply of labor and hence the volume of hours worked. Given the government's likely lack of expertise in providing reinsurance, purchase of cover from competitive reinsurers may turn out to be the lower-cost alternative.

The threat of insolvency is particularly imminent in the case of community-based health insurers (Dror 2002). Demand for regulation emanating from CBI members therefore is potentially great. However, this demand is mitigated by the fact that these members predominantly live in rural areas, which makes the cost of organizing a pressure group high. Still, it may be worthwhile to analyze again the two alternatives for regulatory policy regarding insolvencies.

The first alternative is lowering the probability of occurrence. In the case of community-based insurance, lack of actuarial expertise (rather than negligent management) again appears to be the primary reason for insolvency. Accordingly, purely formal oversight (see figure 4.2) can significantly limit demand for regulation. A wider acceptance (or change) of community-based insurers' payment methods should also reduce the risk of insolvency and the demand for regulation. As outlined in chapter 3, some CBI schemes use barter to finance their health treatment.

The second alternative is mitigating the consequences of insolvency. This alternative has much less appeal in the case of community-based insurers. First, as stated in chapter 3, contributions to CBI schemes are sometimes paid in kind, particularly in Sub-Saharan Africa. Storing foodstuffs, cattle, and the like is a costly way of holding reserves, and these reserves cannot be used freely to satisfy claims against the schemes. Second, to the extent that the schemes are local monopolies, the insured have no competitor to whom to turn when the schemes fail. This consideration implies that mandating reinsurance would be difficult. A reinsurer would want to limit the duration of its obligation to cover claims. Even then, as noted by Dror (2002), many CBI schemes lack databases to estimate their claims distribution with any degree of precision. Their uncertainty spills over to the reinsurer, which typically has to cover the upper segment of the loss distribution (excess loss contract). Because the reinsurer wants to keep its own

risk of insolvency at a certain level, it charges a safety loading to compensate for uncertainty about loss distribution, which makes reinsurance costly.

Dror (2002) therefore advocates creation of mutual reinsurance of CBI schemes (which is similar to establishment of a guaranty fund). To overcome the initial lack of capital, a great deal of government involvement is needed. This involvement is not easily cut off once the fund is operational. When it comes to estimating the insolvency risk of contributing insurers, the fund manager would encounter the same problems as a commercial reinsurer. Finally, the government may assume the reinsurance function. However, it will face great difficulty limiting the duration of its commitment because members of a failed CBI scheme will accuse it of denying access to health care services once it stops payments.

With regard to CBI schemes, the most promising alternative for dampening consumers' demand for regulation appears to be lowering the probability of insolvency through minimum requirements in terms of actuarial expertise.

### **Limiting Insurers' Demand for Health Insurance Regulation**

According to H3, demand for regulation mainly comes from health insurers, because compared with consumers, they stand to benefit from it more and to incur lower costs of organizing a pressure group. These two elements are addressed in the context of private health insurers and CBI schemes in turn.

Keeping the benefits of regulation low for private insurers is difficult. The principal benefit of regulation to a private insurer is erecting barriers to entry. Without such barriers, even an insurer enjoying a monopoly is constrained in its decisions on all dimensions of supply: benefit package, loading of the premium, and vertical integration (see chapter 3).

Keeping the cost of organizing a pressure group high is difficult, because even formal oversight increases the homogeneity of licensed insurers, which usually results in greater homogeneity of interests. With increasing intensity of regulation, insurers need to elaborate appropriate interpretations of and responses to norms. These interpretations and responses facilitate creation of a pressure group. When the number of firms in the market is small, defining a shared position with regard to regulation is easy.

A regulatory spiral can emerge. Health insurers can bring their demand for regulation to bear (in keeping with H3). Increased intensity of regulation then induces them to invest in lobbying activities (H4), which in turn helps them exert pressure for more regulation as long as benefits accruing to them are sufficient to cover the extra cost. Strict competition policy is required to prevent this spiral from turning.

Two somewhat modified considerations apply to CBI schemes. First, entry barriers protecting these schemes are already high (see chapter 3). Indeed, the chance that a newcomer will drive the incumbent scheme into insolvency and trigger an insolvency crisis is low. Second, the cost of organizing a pressure group is high only as long as CBI schemes' management capacity remains limited. However, this cost may be reduced, because more professionalism will be required from these schemes.



## Making the Supply of Regulation Costly to Government and Administration

If the supply function  $S_0$  in figure 4.3 shifts up toward the function incorporating the externality of regulation, the equilibrium intensities of regulation ( $R_0, R_1$ ) approach the true optima ( $R_0^*, R_1^*$ ). Two ways to bring about such a shift are increasing the budgetary cost of regulation to government and making government and public administration bear more of the marginal cost of the externality caused by regulation.

First, increase the budgetary cost. Having public administration operate at higher cost than necessary just to keep the intensity of regulation low does not make sense. There is one qualification: a regulatory agency can keep its own cost of regulation down by dealing with few rather than many firms, or possibly dealing only with an association, a behavior which contributes to demand for regulation. Producing a given intensity of regulation at a higher cost may help to avoid this effect, thus improving the quality of regulation.

Second, make government and administration bear more of the negative externality. An explicit internalizing tax is out of the question because a government does not tax itself. But it would be possible to penalize the budget of a regulatory agency if its decisions can be shown to cause efficiency losses. More practically, however, at least the government can be made to take the efficiency losses more fully into account if these losses have an impact on the government's chance of holding on to power. This condition is satisfied to some extent in very open economies, where international investors withdraw if they deem the loss of efficiency sufficiently dramatic, or in countries characterized by direct democratic control in the guise of popular initiatives and referenda. In addition, information about the performance of regulators must be available to voters; a source of information other than the regulatory agency would avoid bias.

In short, the prospects that LICs can avoid excessive intensity of regulation by making government and its administration face regulation's true cost are rather bleak.

## Changing Access and Redistributing Welfare through Regulation of Unsubsidized Insurance Markets

A major concern with health insurance is equity of access. Does private voluntary health insurance help provide coverage for segments of the population without adequate access? Such coverage has two potential objectives. First, as already noted, the absence of insurance leads to large fluctuations in resources for other types of consumption; high financial risk experienced by some citizens may represent equity and externality concerns to other citizens. These concerns lead to concerns about the use of medical care; the increased "access" to medical care embodied in conventional insurance may raise insurance premiums and costs, but increased access may be valued by others. Developed and developing countries

undertake both regulation and subsidization to provide access to insurance and care that is greater than the access individuals would voluntarily choose on their own. Attempts to deal with this issue have important consequences for regulatory policy.

Any practical quest to grant access to health insurance to individuals who are unable to pay the premium implies that a redistribution of resources must take place. (A mandate could be used to purchase insurance without any explicit redistribution [effectively, a head tax], but this approach is almost never taken.) Although voluntary market insurance redistributes wealth *ex post* (from purchasers who did not suffer a loss to those who have suffered a loss), it does not redistribute wealth *ex ante*. Nevertheless, the idea of using an insurance vehicle for additional *ex ante* redistribution in favor of those thought to be needy has great appeal. In fact, the ICs of continental Europe that have an insurance-financed health care system use social health insurance for systematically redistributing wealth *ex ante*; generally, the redistribution appears to favor lower-income people and those at higher *ex ante* risk of medical expenses, although the longer lives of higher-income people sometimes skew the lifetime income-related redistribution.<sup>1</sup>

The goal of equity in health care *per se* may be both unfeasible and illogical if a country's initial distribution of monetary income is highly uneven, and the country is unable or unwilling to levy substantial taxes and make substantial resource transfers. The strategy of redistribution via insurance is usually incompatible with consumer choice and competition; it induces risk selection by insurers (see chapter 3). (In contrast, explicit redistribution through general-revenue taxes and transfers can occur in a competitive, unrestricted market.) To survive economically, any unsubsidized health insurer must recover the expected value of benefits to be paid plus a loading for administrative expense and solvency. A single insurer's policy of charging less than expected costs for enrollees who are poor or at high risk therefore entails an expected loss that must be recouped from enrollees who are wealthy or at low risk, unless a subsidy is implemented. But if consumer choice is permitted, healthy and wealthy individuals will migrate to an insurer that charges a lower premium for the same expected benefits. This reality forces the incumbent insurer to lower its premiums for the healthy and wealthy, ultimately to the point at which the premium equals the expected value of benefits plus loading.

Under the force of competition, whereby all insurers must attempt to earn the market rate of return on capital, there can be no cross-subsidization. Put in another way, competitive insurance is a mechanism for chance-driven or *ex post* redistribution (between those who happen to have suffered a loss and those who happen not to have suffered one). But competitive insurance is a poor vehicle for systematic or deterministic *ex ante* redistribution (from the rich to the poor or from those in good health to those in poor health).

Governments do, nevertheless, sometimes seek to redistribute income through health insurance systems. One way to do so is to require all otherwise competitive insurers to charge premiums that differ from expected expenses—premiums that

are higher for higher-income people or higher than those based on expected losses for low-risk people. When “paying” consumers cannot then find an insurer that offers them a better price, they can and sometimes do choose to go without insurance. The usual solution to this problem is to create a monopoly with compulsory membership, which amounts to abrogating consumer choice and, in a de facto sense, converting the insurance premium into a tax (a compulsory payment for public purposes). This monopoly need not be publicly administered; the government can subcontract it or auction it off to a privately owned health insurer that will enroll a defined population. Some U.S. states’ “outsourcing” of Medicaid beneficiaries to private insurance plans reflects this solution. Incentives for efficiency can be preserved in principle, provided the government and its administration are not corruption and are able to monitor insurer performance and cost. With substantial sums at stake, the potential for confusion and corruption is considerable, however (chapter 3 describes the effects of fraud and abuse on the amount of loading and hence the viability of private voluntary health insurance).

Another solution is “managed competition.” Consumers have a choice between competing health insurers that must charge compulsory uniform premiums. Uniform premiums may appear to be pro-poor, but need not be. A rich individual who also is in ill health typically demands more medical care than a poor individual. Yet he or she pays the same contribution as a poor person who happens to be in good health. However, uniform premiums give an incentive to any insurer concerned with its economic survival to engage in risk selection, because only favorable risks generate positive net contributions.

Risk selection effects can be controlled to some degree by implementing a second round of regulation in the guise of a risk-adjustment mechanism. Briefly, insurers with more than the average share of unfavorable risks on their books obtain a compensating payment from competitors with too many favorable ones (van de Ven and Ellis 2000; for a fundamental critique, see Zweifel and Breuer 2006). Regulators need detailed diagnostic information to discern the different types of risk; even ICs have great difficulty organizing the transfer of this information from medical service providers to regulators. The combination of uniform premiums and risk adjustment therefore amounts to a costly policy alternative for LICs. Nevertheless, paying for health insurance through resource redistribution on the basis of income *and* risk is a desirable goal, and one LICs should adopt to some extent. How far such a redistribution can or should be carried depends on the effectiveness of other methods of redistribution.

Competing health insurers cannot engage in systematic resource redistribution. Redistribution is the task of the government. If it seeks to grant access to health insurance to the needy, it can simply pay them a subsidy or issue a voucher of a certain value.

Put slightly differently, increasing access to insurance to one deserving group by underpricing its insurance and making up the difference by overpricing insurance to other groups is like financing an insurance subsidy to the target group

through an excise tax on insurance bought by others. Even if the deserving group can be well targeted, the insurance offered to it is ideal, and the overcharged group deserves to make a sacrifice, the basic economics of taxation indicate that partial excise taxes are almost always inefficient and often inequitable. They are inefficient precisely because they cause people to avoid the taxed good. In the case of cross-subsidized health insurance, the evidence from developed countries suggests that, without subsidies and with voluntary purchases, such “community rating” may actually increase the number of uninsured and create incentives for cream skimming (Pauly and Nichols 2003). Accordingly, recommending that LICs adopt a strategy of underpricing insurance to one group and overpricing it to another group is difficult.

## **SUBSIDIZED AND REGULATED INSURANCE**

How might efficient *subsidized* insurance work, and what are the consequences of alternative models of public support? A benchmark “minimum regulation” model of earmarked subsidies is described below.

### **Minimum Administrative Regulation**

An insurance subsidy could take the form of a certificate or voucher of eligibility for a subsidy. Along with a receipt for a paid contribution, the beneficiary could redeem the voucher at the nearest administrative unit offering the insurance that he or she prefers. But vouchers often entail higher transaction costs than direct government outlays, because they need to be protected against counterfeit and distributed to people. However, a large public bureaucracy to administer insurance and pay medical providers is not needed.

### **Minimum Regulation/Specification of the Benefit Package**

“Access to health insurance” must be defined if government chooses to regulate the benefit package bought with the aid of an insurance subsidy. (This strategy assumes that insurers are not permitted to offer cash back to the insured.) What will happen in a voluntary but subsidized market depends both on the form of the subsidy and the minimum benefit package.

At one extreme, the subsidy might be a fixed monetary amount (possibly conditional on household characteristics such as income or risk), and the minimum benefit package might be any insurance with a premium as high as the subsidy. Consumers who wanted more generous packages than those that can be purchased with the subsidy could pay an additional premium. Because the minimum insurance is free of charge to the consumer, the take-up rate of at least that insurance is expected to be 100 percent. At the other extreme, the benefit package might be identical for all insurers and equal to some politically chosen

generous level; the subsidy and the insurance potentially would cover only a portion of the cost. Some consumers might decide to forgo the subsidy if they felt that their own payment was too high. Other factors being equal, the first strategy would, for a given per person subsidy, persuade more people to buy insurance than the second strategy, but the second strategy might ensure more generous coverage than the first strategy.

An intermediate approach would be to specify the subsidy as some proportion of the premium. This approach would offer a large subsidy to those who choose more generous coverage, but would probably induce some people who would have declined expensive policies to at least buy some coverage. Proportional subsidies also provide a kind of automatic risk adjustment if higher risks are charged higher premiums.

The problem posed by strict requirements of uniformity might be mitigated somewhat by permitting insurers to offer a set of actuarially equivalent policies. Insurers might choose to offer coverage in selected hospitals to urban customers while limiting ambulatory care, or CBI schemes might limit hospital coverage in exchange for better drug coverage. But the potentially high additional premium would remain an obstacle to those who attach low value to insurance. This product differentiation is efficiency enhancing under fully risk-adjusted subsidies; insurers would have no reason to favor good risks if they charge a premium scaled to risk.

Given a subsidization scheme, competing insurers have an incentive to provide a benefit package of a given cost that is most valuable to consumers by, for example, striking exclusive contracts with health care providers. Both insurers and providers should enjoy freedom of contract, and cartels or collusion should be prosecuted. Competition among plans serves to protect consumers from insurers that might impose excessively strict limits on access.

## **IDEAL AND ALTERNATIVE PUBLIC-PRIVATE COMBINATIONS**

The preceding discussion has dealt with a situation in which a market is created for voluntary insurance, and government's role is limited to subsidizing those needing help to access it. The more typical arrangement in developed and developing countries is for basic insurance to be publicly financed and controlled, and private insurance to be treated as a supplement or substitute for basic insurance. Various versions of a voluntary private market that might be fostered or permitted to grow alongside a dominant public plan are discussed below.

### **Ideal Subsidy for the Ideal Insurance Policy**

Suppose that an LIC government wishes to define the optimal insurance program (under optimal, not minimal, regulation) for a population with a given set of characteristics and the optimal subsidy that will lead to purchase of that policy.

(The notion of optimality used here is further specified in Pauly [1971].) The population under consideration might consist of households of a given size, income, and health risk. Suppose initially that all these households have the same demand for medical care (as a function of out-of-pocket price) and the same demand for health insurance (as a function of the insurance loading or premium).

The optimal quantity of medical care is that at which the marginal benefit or value of care, to the household and to others in the community or society, just equals the marginal cost of care. (Risk reduction benefits are discussed below.) The marginal benefit to the household from medical care is measured by its (informed) demand curve for medical care; the price at which the representative household would demand a given quantity of care provides a money measure of its marginal valuation at that quantity. The marginal benefit of medical care for this household to others in the community is manifest in externalities such as protection from contagious disease, altruism, and equity. Presumably the schedule of community marginal benefit declines with the level of medical care use per household. The optimal quantity is that at which the sum of these two marginal evaluations equals the marginal cost. The optimal *insurance* is a policy that has the level of cost sharing at which the representative household demands this optimal quantity.

The optimal level of insurance will probably vary across households. At a given level of health risk, higher-income households will consume more than lower-income households. This means that the level of cost sharing (in the public insurance) could be high for higher-income households but could be zero (or even negative) for poor households.

The optimal subsidy to insurance is that needed to induce consumers to buy the insurance with benefits at least as great as the optimal benefits defined above. Again, high-income households that are sufficiently risk averse might be willing to buy insurance with the socially optimal level of cost sharing, or even a lower level, entirely without subsidy. The need for insurance subsidies would arise if households demanded no insurance or demanded insurance with higher levels of cost sharing than those levels that lead to optimal use of care. The minimum optimal subsidy to insurance would then equal the difference between the maximum premium that a household would be willing to pay for a policy with optimal cost sharing and the actual premium needed to cover benefits and administration costs for that policy. The government would require that the subsidy be used to purchase the optimal policy. Almost certainly this subsidy will rise as income falls, and for the poor, the subsidy will be nearly equal to the entire premium. If purchase is involuntary, at any subsidy some will buy and others (less averse, less future oriented) will not.

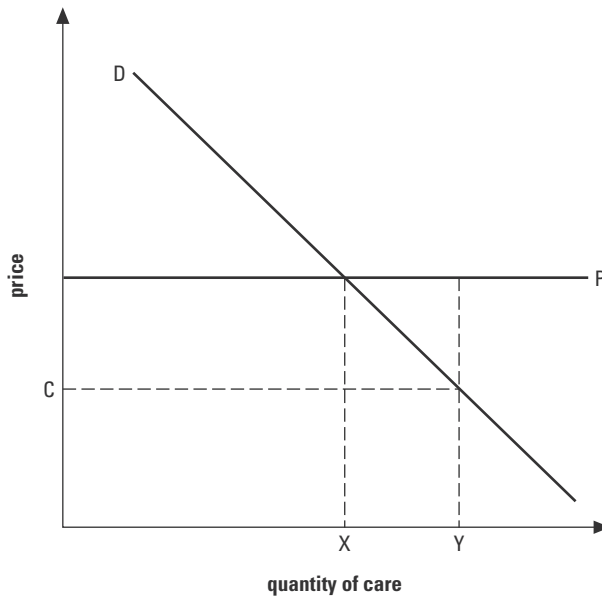
Two probable complexities alter this simple conclusion. First, if others in the community are concerned about financial protection for a household as well as about its use of medical care, the extent of protection at the optimal level of cost sharing could be judged to be too low. Unless some other instrument exists

to hold medical care use at its optimal level, there will be a trade-off between increasing financial protection and increasing moral hazard. Second, households of similar observable characteristics are unlikely to be identical. If they have different degrees of risk aversion, limiting the eligible policies to a single policy may (for reasons noted above) cause some households to remain uninsured. A compromise may be to widen the range of policies for which a lump sum subsidy can be used or to offer a proportional subsidy for a range of policies.

Figure 4.4 illustrates the notion of optimality and the size of the required subsidy. Suppose  $D$  represents the “average” demand for medical care for a “non-rich” household. One possibility is that this household remains uninsured in the absence of a subsidy; if so, it would demand  $X$  units of care and pay for them entirely out of pocket at a unit price of  $P$ . Suppose that  $Y$  represents the social optimal level of use. (The marginal benefit or valuation of others in the community would then equal  $(P - C)$ , the difference between the fair premium and the household’s evaluation.) Insurance with a per unit coinsurance of  $C$  would then be optimal and would induce the household to consume  $Y$  units.

The total actuarially fair premium for this coverage would equal  $Y(P - C)$ . However, the household should be willing to pay at least  $X(P - C)$ , the expected value of its out-of-pocket expense, plus  $1/2(Y - X)(P - C)$ , which is the value of the additional use induced by the insurance coverage. To this amount would be added a

**FIGURE 4.4** Optimality and the Size of the Required Subsidy



Source: Authors.

risk premium reflecting the household's value of insurance coverage per se. The market premium  $P^*$  (equals loading +  $Y(P - C)$ ) would be the actuarially fair premium plus the administrative loading, and the subsidy needed would be the difference between this premium and the household's willingness to pay. Even if the household were risk neutral, the maximum subsidy needed would be  $P^* - [0.5(Y + X)(P - C)]$ . This subsidy is equivalent to the loading plus  $0.5(Y - X)(P - C)$ . So, unless the loading is very high or the increase in access to care very large, the optimal minimum subsidy could be substantially less than the premium.

Suppose instead that even in the absence of a subsidy, the household had chosen to buy insurance but preferred a policy with a higher level of coinsurance than  $C$ . Then a subsidy would still be needed to get consumers to choose more generous coverage voluntarily, but the subsidy could be even smaller than the one described above, because it would need to cover only part of the cost of a smaller increase in access.

### Alternative Models of Public-Private Interaction

This ideal model of insurance subsidization is usually not followed. Instead, different countries have used different combinations of subsidized public and private activities. In some cases, these combinations are the result of explicit choices; in others, they are the unintended consequences of political decisions made for various other reasons. These alternative "models" are compared to the ideal model below.

Many studies categorize arrangements as "substitution," "supplementation," or "complementarity" in a rather loose way. The economic definition would view public and private spending as substitutes if lower public prices, generally associated with higher public spending, led to reduced private spending, and as complements if private spending increased along with lower public prices. But in almost all cases, the two types of spending are substitutes. Public and private spending may sometimes "fit" well together (and so could be called "complementary"), but they would remain substitutes in the economic sense. Where there are matching arrangements (for example, the government program pays  $x$  percent of whatever total cost a person chooses to incur), higher private spending will trigger higher public spending. But as a rule, a higher value of  $x$  will lower private spending once consumers have adjusted (basically, as long as the price elasticity of the demand for care or insurance is less than unity, which appears to be the case), so it would be more correct to say that government *policy* is a substitute for private spending.

The classification of nonideal systems below is based on two characteristics: whether the government spending program is *closed ended* or *open ended*, and, if the latter, whether the public sector *plans or controls* for private spending or ignores it in setting public policy. Note that this discussion concerns the form of financing for insurance that affects demand for medical care. The question of whether a monopoly public system (for example, a national health service), fully



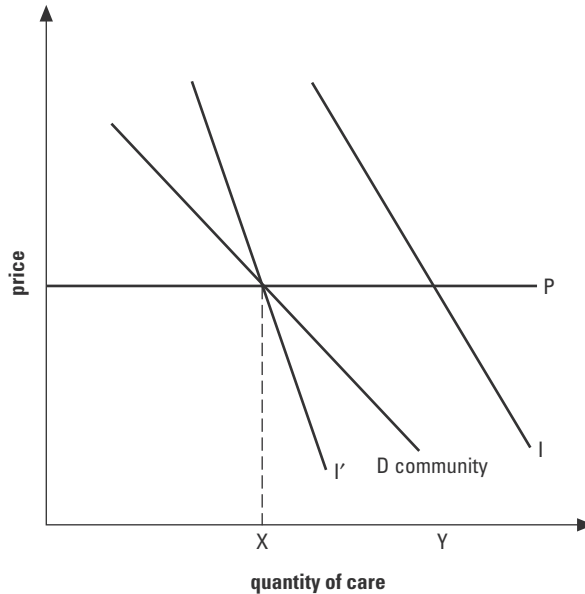
competing private and public hospitals and doctors, or some regulated or mixed system should supply insurance or care is not considered.

**Closed-Ended Public Program**

The simplest system to describe is one in which public spending is chosen as if public and private spending were in watertight compartments. The government chooses its level of spending on health care or health insurance as a predetermined amount for a predetermined set of services that is “closed ended” in the sense that it does not change if people also engage in insured or uninsured private spending. (This arrangement is also sometimes termed “defined contribution.”) A typical national health system model would represent this kind of arrangement. Private purchasing and insurance may and often does arise, however, when and if the publicly provided amount falls significantly short of what individuals would demand privately.

Suppose, for example, that the level of government spending is determined by a community or public demand curve like D in figure 4.5; the government chooses to fund and supply X units of care. If an individual’s demand curve is like I in that figure, the person will spend privately and might even choose insurance to cover the private spending. Note, however, that if the individual

**FIGURE 4.5 Public Demand as Determinant of Government Spending**



Source: Authors.

demand curve were at  $I'$  or lower, there would be no private supplementation. Similarly, the lower the level of  $D$ , given some level of  $I$ , the greater the likelihood of private supplementation.

The closed-ended public program will usually produce an outcome less than efficient than the outcome described above. If  $D$  really is the community demand curve described in that analysis,  $X$  will be a suboptimal quantity. But even when supplementation occurs, the quantity still falls short of the optimum. The problem is that, in this individual-adjustment equilibrium, neither the individual nor the public sector takes the marginal valuation of the other party into account. From the perspective of efficiency, allowing private demand such as  $I$  to be exercised is better than forbidding private supplementation as some countries (for example, Canada) have done, but the improvement in efficiency will still fall short of the ideal.

The public system's failure to pay for some useful medical goods and services provides the rationale for the purchase of private insurance. A politically incendiary but accurate slogan for supplementary private insurance is "we cover the effective medical care that the government does not." Of course, the insurance must back up the slogan by paying claims when they are made. Moreover, private insurance ideally should contain the policy provision called "guaranteed renewability at class-average rates," whereby the insurer promises not to "dump" claimants back into the public system by raising premiums or canceling coverage for especially high users. Most private insurance takes this form even in the absence of regulation, and regulation should require that it do so (Herring and Pauly 2006).

Matters are more complex in the case of full substitution, in which private insurance covers the services covered by public insurance but at higher levels of amenity or quality. Full substitution generally generates the least efficient outcomes, because the consumer's decision about whether to purchase private coverage fails to take any marginal community or public benefits into account.

### *Open-Ended Public Program with No Planning for Private Behavior*

In the open-ended or "defined benefit" approach, the public sector specifies a set of insurance benefits, but permits patients and doctors to determine how much they will be used and whether supplementary insurance will be obtained to cover them. If (as is often the case) the coverage of the government plan is less than comprehensive, because it involves patient cost sharing or fails to cover some useful services, private spending and private insurance could emerge to cover these uncovered services. This arrangement is reflected in traditional U.S. Medicare, which is supplemented by private "Medigap" policies that pay for deductibles, copayments, and drugs not covered by Medicare; French voluntary health insurance or supplementary insurance in Croatia are other examples.

Suppose that the chosen level of patient cost sharing is optimal in the sense that it represents the ideal balance among financial protection, access, and the

government's budget. If positive private demand exists for insurance to cover the copayments, such coverage defeats the cost containment purposes of copayment. It makes total medical spending too high, and it makes the government's budget too large. The reason is that the people who have private coverage of copayments will use more medical care than if they had no such coverage and paid out of pocket. This additional use (for which public insurance pays in part) will raise the cost of the public program, but buyers of the supplemental insurance will not pay for the additional publicly funded use. Thus private supplemental coverage entails an implicit subsidy, precisely because the additional moral hazard it causes is only partially captured in its own premiums. Estimates of this "cost spillover" for U.S. Medicare are in the range of 25 percent of Medigap (supplemental) premiums. Short of a tax on supplemental coverage to reflect this cost, purchases of the coverage will be excessive (Ginsburg 1988.)

Continued demand for private coverage after imposition of such a tax would indicate that the rate of use of care at the public copayment level was less than socially optimal. Put slightly differently, if public insurance were the optimal insurance described above, and if supplemental insurance were properly priced, demand for supplemental insurance, at least by the average person, would not exist.

### *Open-Ended Public Program with Planning for Private Behavior*

The alternative version of open-ended public coverage is a model in which government explicitly regulates and manages private supplemental coverage. Rules for such coverage reflect the usual types of insurance regulation. Theoretically, government could plan a program of nominal public coverage, subsidies, and permitted private coverage that would lead to the optimal insurance discussed above. In effect, the "real" social insurance program would be the public-private combination, and the subsidies and rules that go with it, not public insurance alone. The main problem with this approach is administrative complexity; managing two insurance plans as one is generally more costly and more complicated than managing one plan. Moreover, if the ideal plan is the combination of public insurance and private supplementation, why should the option of declining private supplementary coverage be kept open?

## **IDEAL MODEL OF PRIVATE INSURANCE PURCHASING AND MARKETS IN LICs**

The preceding discussion assumes a model of rational insurance purchasing by risk-averse individuals to describe the demand for insurance and a combined profit-maximization and political economy model to describe insurance supply. The main conclusion is that the existence and persistence of voluntary insurance markets in the many developing countries with high out-of-pocket payments is surely possible. But an empirical puzzle arises: if efficiency-improving markets are theoretically possible, why are they so rare?

### **Possibility 1: The Numbers Are Incorrect**

Consumers' risk premium could exceed the administrative cost required by insurers' need to manage coverage, reserves, and marketing. An unlikely possibility is that many households may not be sufficiently risk averse, because of the form of their utility functions (about which little is known), or because the availability of family resources acts as an insurance substitute with lower administrative costs (and probably better control over moral hazard and adverse selection).

A more plausible scenario is one of very high administrative costs. Insurance is a sometimes complex capital instrument, and the limited scope of the formal economy that generates a developing country government's tax problems often has a mirror image in lack of administrative skills in the private sector. However, many countries, especially former British African countries and countries in Southeast Asia, have developed what appears to be well-administered insurance plans for larger and higher-wage firms that provide insurance as a worker benefit. The challenge, to these companies and others, is adapting or modifying what they offer to an individual, less-formal market that often supplements rather than replaces public insurance.

### **Possibility 2: Sociological and Cultural Factors Impede the Emergence of Markets**

If markets in insurance are to emerge, buyers must trust traders, and traders must trust one another. All must trust the power of social mores to control or discourage inefficient behaviors (moral hazard, risk rating, fraud, and side payments).

At present, sociological theory offers no rationale for community-based insurance to be preferred to more arm's-length private insurance, whether nonprofit or for profit. Greater understanding of the role that "community," variously defined, plays in setting and possibly altering cultural factors that affect trust in insurance markets is needed. But researchers already know that innovations can dramatically affect markets and change cultural values.

### **Possibility 3: Affordability and Behavior**

One argument that voluntary insurance markets ought to exist is that because premiums are less than observable maximum out-of-pocket payments, insurance is "affordable" if these payments are affordable. But this conclusion turns on a subtle (and currently confused) aspect of the concept of "affordability." Might purchase of an expensive drug that virtually wipes out a family's wealth (because the alternative to financial ruin is death) be unaffordable, and might the premium that would have to be charged to a lower-income family to cover the drug also be "unaffordable"? If based on what Bundorf and Pauly (2006) call the "normative definition" of affordability, the answer may be "yes." Subtracting the premium from the family's low income may plunge remaining consumption below some

normative definition of adequacy. At the same time, insurance to cover the cost of the drug might be what Bundorf and Pauly call “behaviorally affordable” in the sense that the family is expected to choose the insurance (and very low consumption of other goods) over no insurance (and certain death). In many cases, the premium could be low enough (because the event is rare enough) that paying it and maintaining a reasonably decent life are possible. But for some people, this problem might call for a subsidy or some type of assistance.

## CONCLUSION

Some alternatives to the plan of optimal subsidies to optimal private plans approach the optimal case. Chile permits people to transfer their public subsidy to private insurance. Although the setup of this system poses some potential sources of inefficiency (Sapelli and Vial 2003), it appears to have stimulated a substantial private market. The U.S. Medicare+Choice plan allows people to transfer their public contributions to equivalent (or better) private plans; this arrangement was working well until payment levels were cut. Those levels have been restored, and growth of private health insurance has resumed. Neither of these examples, nor any other actual program, is exactly equivalent to the ideal, but evidence of the feasibility of voluntary private insurance with targeted subsidies is ample.

A program should not be required, at least initially, to solve all possible problems of access, quality, and behavior. Financial protection is what voluntary insurance does best, and financial protection is worth having. Whether a full insurance market is feasible in developing countries, and whether it can approach the ideal, are open questions but ones worth answering.

## NOTES

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1. See Feldstein (2005) for a theoretical argument (mandatory insurance as a means to avoid free-riding of potential donors) and U.S. evidence suggesting that social insurance in general must favor the rich.

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## CHAPTER 5

# Provision of a Public Benefit Package alongside Private Voluntary Health Insurance

*Peter C. Smith*

This chapter examines the economic link between public and private health insurance from an economic perspective. The statutory (or public) package is available for free to all at the point of access and is funded by taxation. Citizens may choose to augment the statutory package with voluntary insurance, charged at an actuarially fair premium. The government's problem is to determine the optimal size and composition of the statutory package in light of efficiency and equity concerns. When health care is insured solely under a public package, equity concerns may be important in selecting interventions to insure. However, when voluntary insurance is also available, interventions for the statutory package can be selected solely according to their cost-effectiveness. Equity concerns are instead addressed through the size of the implicit tax transfer from rich to poor. Possible extensions to the model, including a public choice perspective, are outlined. The results have important implications for policy on health technology assessment and national priority setting in health care.

### INTRODUCTION

The principal means of financing most mature health systems is a statutory health care insurance scheme covering all citizens. Private health care, used only by those willing and able to pay, often supplements this scheme (Mossialos and others 2002). Some sort of taxation or social insurance, with contributions unrelated to health status, usually fund the statutory system. User fees or voluntary insurance, financial contributions to which usually reflect actual or expected use of services, fund the nonstatutory system (Mossialos and Thomson 2004).

Most wealthy countries seek to make the statutory package reasonably comprehensive, ensuring that all citizens are insured for reimbursement of most mainstream health care (sometimes with a modest user copayment). But because health technologies are increasing the opportunities to address sickness and disability, citizens are increasing demands on their health care systems. At the same time, many commentators claim that the extent to which the traditional sources of finance for statutory insurance can be exploited are limited. Two policy questions

therefore arise: should some interventions be removed from the statutory package, and, if so, which ones?

In low-income countries, financial resources for statutory insurance, based on a slender tax base and (sometimes) donor funds, are limited. These countries usually make no attempt to offer comprehensive coverage but instead rely heavily on personal finance of health care, usually in the form of user charges (Gertler and van der Gaag 1990). A key policy question in these circumstances is the extent to which the limited statutory system is being deployed to best effect. The concerns are that statutory funds are spent on interventions that are not cost-effective and that they do not support those most in need, namely the sick and the poor (Hauck, Smith, and Goddard 2002).

Such concerns have led to an increasingly concerted effort to specify explicitly an “essential” package of health care that is covered by the statutory insurance fund (Jost 2005). The intention is to create a set of interventions to which all qualifying citizens have a right when clinical indications are satisfied.<sup>1</sup> The usual assumption is that care will be free or subject to a small copayment. Of course, the scope of the essential package is constrained by the financial resources available to the statutory scheme.

Economists have championed the use of the cost-effectiveness ratio as the main criterion for selecting interventions for inclusion in the essential package of care (Drummond and others 1997). This policy prescription follows from the notion of maximizing health benefits subject to a budget constraint. Cost-effectiveness analysis may therefore be relevant at the margin for choosing interventions to be excluded from a near-comprehensive statutory package of health care. However, the cost-effectiveness criterion alone may be inappropriate for determining the essential package when private payments play a significant role in funding health care (Smith 2005).

Below are described optimality conditions for selecting interventions to include in the essential package when citizens can pay for voluntary insurance to supplement or replace statutory coverage. These conditions are derived from a stylized model of health care in which governments must choose a statutory package, and citizens must choose the nature of any additional voluntary insurance. Extensions of the model are suggested to deal with the possible resistance of the rich to financing public insurance.

## **BACKGROUND**

Countries rely to greatly varying extents on voluntary health insurance (Colombo and Tapay 2004). *World Health Report 2000* indicates that in 90 of the 149 countries with populations over 1 million, less than 1 percent of all health care is financed from prepaid private insurance (WHO 2000). These 90 countries account for 67 percent of the world’s population. Table 5.1 shows that a few countries rely heavily on private insurance. Although private coverage is man-

**TABLE 5.1 Countries with the Heaviest Reliance on Private Insurance**

<i>Country</i>	<i>Percentage of all health care financing</i>
South Africa	44.3
Uruguay	36.8
United States	34.8
Namibia	32.1
Zimbabwe	26.7
Netherlands	24.9
Chile	23.1
Brazil	20.8
Canada	19.8
Switzerland	18.8

*Source:* WHO 2000.

datory for some citizens in certain countries, such as the Netherlands, private coverage in most countries is voluntary.

Pressure on all sources of health finance has led many countries to re-examine the potential for increasing the use of voluntary insurance to finance health care, especially where reliance on user charges has been traditionally high. The first requirement for a viable insurance function is to establish appropriate and reliable systems of governance, to ensure the collection and stewardship of insurance premiums, and to ensure that providers are reimbursed according to the use made by the insured. These basic requirements imply the need for a minimum degree of long-term trust in health care institutions, a rudimentary flow of adequate information, and reliable enforcement of contracts. These requirements are absent in many low-income countries (Mahal 2003). However, for the purpose of the present discussion, their satisfaction is assumed.

Private health insurance (alongside a publicly funded compulsory package) can take three broad forms: substitutive, supplementary, or complementary (Mossialos and Thomson 2004). Substitutive insurance is purchased as an alternative to statutory insurance; the implication is that those who elect to take out such coverage are at least partially exempt from the premiums or taxes associated with the statutory package. Substitutive insurance may lead to creation of a voluntary risk pool with a relatively low expenditure requirement, as it will tend to be attractive to the rich and healthy.

Supplementary private insurance covers services in the statutory package, but the insured receive no exemption from payments to the statutory package and therefore enjoy double coverage. A market for supplementary insurance implies that such insurance offers a perceived quality advantage over care secured by the statutory package, perhaps in the form of reduced waiting times or access to superior facilities. In contrast, complementary insurance offers full or partial coverage for services excluded or not fully covered by the statutory health care system. In

particular, as in France, it may cover liability for copayments levied on services within the statutory package.

A small body of economic literature considers the role of voluntary health insurance alongside a statutory, publicly funded essential package of health care. Besley (1989) examines the extent to which the problem of moral hazard can be abated by augmenting a competitive insurance market with publicly funded catastrophic health insurance. The paper stimulated a lively academic exchange that highlights the complexity of formulating mathematical models in this domain and the need for clarity about the assumptions underlying any modeling (Selden 1993; Blomqvist and Johansson 1997).

Petretto (1999) examines the functioning of a publicly insured essential package of care alongside a market in private complementary insurance. In this scheme, the citizen is free to choose the insured copayment rate for the complementary services. Citizens make three contributions to health care financing: a tax contribution, a private insurance premium, and the residual copayment. A form of optimal income taxation model is used to analyze the government's problem, which is to select the optimal statutory copayment rate in light of response in the private insurance market.

This model requires specification of a social welfare function to infer optimal policy. In contrast, Epple and Romano (1996b) model the mix of public and private health insurance from a public choice perspective. They demonstrate that a mix of public and private provision will in many circumstances be preferred by society to systems relying solely on government or private provision.

A broader public economics literature considers the public/private mix. Black-orby and Donaldson (1988) note that the sort of in-kind transfers implied by public insurance may be preferred to cash transfers when (as in the case of health care) they are nontradable. In contrast to cash transfers, in-kind transfers can ensure that only the intended beneficiaries receive the relevant service. Munro (1991) examines the implications for optimal taxation policy of such transfers. Ireland (1990) models the integration of in-kind transfers and cash transfers, in the form of unconditional payments to the poor, as well as models conditional subsidies of private consumption, for example, in the form of vouchers.

Epple and Romano (1996a) examine the public/private mix within a majority voting model and find that society's choice may depend on the balance of electoral power between middle-income voters (who prefer higher public provision) and a coalition of high and low earners (who prefer lower public provision). Finally, Besley and Coate (1991) note the crucial redistributive function of social provision of private goods. Provided that the quality of the social good is not "too high," some richer households will, without the need for financial compensation, opt out of the social good so that they can consume its private counterpart, thereby yielding an implicit financial transfer to the poor. In a similar vein, Blomqvist and Horn (1984) examine the transfer from the healthy to the sick implicit in a system of statutory insurance in a health care setting.

This literature explicitly models neither the great heterogeneity of services that make up health care nor the variations in epidemiology across social groups. It focuses principally on the choice of taxation and copayment rates and does not address a fundamental concern of policy makers: which types of service to include in the essential package. The discussion below considers this concern in the context of a market in voluntary private insurance. It does not consider variable copayment rates, which are treated elsewhere (Smith 2005). Instead, it assumes that procedures are either fully subsidized by public funds (and therefore are included in the statutory package) or must be insured at market rates through private insurance.

## THE MODEL

Assume that a set of  $n$  health care problems exists and that for each problem a technology is available at a known constant price  $x_i$  and that it has a known constant health benefit  $b_i$  that does not differ from individual to individual. Also assume that the technologies are efficient in that their benefits exceed their costs and that no technology dominates any other for the specified condition (these are the most cost-effective technologies for each condition). The decision makers are a national government and individuals. The government must decide which package of health care to subsidize from public funds. The statutory package comprises a subset of the health technologies offered for free to the patient and financed by a tax on all citizens.

Any technology  $i$  not in the government package is available at market price  $x_i$  to patients, and private insurance covers all procedures not in the government package. In the first instance, assume that the costs and benefits of procedures are the same in the public sector and the private sector. The voluntary insurance market is presumed to be complete and efficient.

Moral hazard and adverse selection are not a central concern of this model. Citizens are presumed to receive an intervention if and only if they will secure the expected benefit  $b_i$ . Treatments can only be secured through insurance (either public or private), and the parameter  $b_i$  should therefore reflect the average expected net benefits of treatment, including any opportunity cost associated with unnecessary treatment. Private premiums are risk related, and the assumption of no adverse selection in the voluntary insurance market is based on the presumption that insurers have adequate information with which to set actuarially fair premiums.

Individuals optimize their voluntary coverage knowing the statutory package chosen by the government. The government chooses the statutory package in light of the known responses of individuals in the voluntary insurance sector. The model is solved using backward induction. The following sections therefore consider the individual's response to a statutory package and the government's optimization problem.

## The Individual

In the first instance, consider a dichotomy of just “rich” and “poor” people. The incidence of disease differs according to wealth (though it may not always be the poor who have a higher incidence for all diseases). (The implications of a continuous distribution of wealth are considered below.) Individual utility  $U(h, y)$  depends on health and wealth, with the usual properties (diminishing marginal utility in health and wealth). Health state with no health care for rich and poor is  $h_0^R > h_0^P$ . Wealth with no health care expenditure is  $y_0^R > y_0^P$ . The proportion of rich people in the population is  $\rho$ . The annual incidence of the health problem requiring intervention  $i$  is distributed as  $\pi_i^R$  and  $\pi_i^P$  in rich and poor populations, respectively; the aggregate incidence is equal to  $\Pi_i = \rho\pi_i^R + (1-\rho)\pi_i^P$ . Although no explicit assumption about risk aversion is made, an implication is that the benefits  $b_i$  include any utility gains from risk reduction associated with insuring intervention  $i$ .

With no statutory health care package, the private insurance problem for an individual in wealth group  $Z$  is to choose the set of interventions that

$$\text{maximize } U(h_0^Z + \sum_i \pi_i^Z \theta_i b_i, y_0^Z - \sum_i \pi_i^Z \theta_i x_i),$$

where the decision variables  $\{\theta_i\}_{i=1}^n$  are binary variables indicating whether or not the intervention is insured. This operation yields the familiar rule that intervention  $i$  is covered if and only if

$$\frac{b_i}{x_i} \geq \frac{\partial U^Z}{\partial y} \bigg/ \frac{\partial U^Z}{\partial h},$$

where the marginal conditions apply at wealth after the relevant premium has been paid. Under most reasonable assumptions, this ratio decreases with wealth, yielding the obvious result that the rich will purchase more extensive insurance coverage than the poor. Note that this solution requires the existence of a complete insurance market that can offer policies to all citizens.

Now consider the individual's insurance decision when a statutory package is funded from taxation. The individual must decide whether to purchase some form of insurance, and, if so, whether to purchase complementary insurance (covering nonstatutory health care) or substitutive insurance (comprehensive voluntary insurance replacing the statutory insurance). For this discussion, supplementary insurance is considered a special case of substitutive insurance in which the insured gains no financial relief from statutory coverage.

The individual's choice can be modelled by comparing expected utility under the following three insurance arrangements: (a) public insurance only, (b) complementary plus statutory insurance, and (c) substitutive insurance.

Expected benefits of the chosen statutory package will in general vary according to wealth and the epidemiology of disease. The chosen public package reduces the wealth of all according to the required tax rate. Utility will be as follows:

- Under public insurance only, utility will be a function of the expected benefits of the public package and its personal tax cost.
- Under complementary plus public insurance, utility will be a function of the expected benefits of the combined voluntary and statutory packages and the personal tax cost plus the voluntary insurance premium.
- Under substitute insurance, utility will be a function of the expected benefits of the replacement private package and the tax cost of the unused public package plus the private insurance premium.

The status of intervention  $i$  in the statutory package chosen by the government is indicated by a binary variable  $\lambda_i$ , where  $\lambda_i = 1$  if intervention  $i$  is in the statutory package and  $\lambda_i = 0$  otherwise. Tax payments for the rich and poor are indicated by  $t^R$  and  $t^P$ . First assume that the mode of coverage (statutory or voluntary) makes no difference to the quality or price of an intervention. Citizens therefore have no incentive to purchase substitute or supplementary insurance. However, individuals may purchase complementary insurance covering interventions not included in the statutory package  $\lambda$ . The extent of the complementary package is indicated by the binary choice variables  $\theta_i$ , where  $\theta_i = 1$  if intervention  $i$  is in the complementary package and  $\theta_i = 0$  otherwise. The voluntary insurance premium is actuarially fair, that is, equal to the expected cost of utilization. An individual in wealth group  $Z$  will then choose a complementary coverage package  $\{\theta_i\}_{i=1}^n$  so as to

$$\begin{aligned} &\text{maximize } U(h_0^Z + \sum_i (\theta_i + \lambda_i) b_i \pi_i^Z, y^Z - t^Z - \sum_i \theta_i x_i \pi_i^Z) \\ &\text{subject to } \theta_i + \lambda_i \leq 1 \quad \forall i \end{aligned}$$

If complementary insurance is selected (some  $\theta_i = 1$ ), the optimality conditions for the selected interventions (after the relevant tax and voluntary premium have been paid) are

$$\frac{b_i}{x_i} \geq \frac{\partial U^Z}{\partial y} \bigg/ \frac{\partial U^Z}{\partial h},$$

with equality for the marginal intervention. In general, a larger statutory package will reduce the wealth of all citizens (through the necessary tax contributions), thereby increasing the threshold for inclusion in the voluntary package.

Within the framework above, individuals have no reason to take out substitute insurance, which duplicates and may augment the statutory package. For such insurance to be attractive, a financial or a quality advantage must replace the benefits already insured through the statutory package. Any financial incentive to take out substitute insurance is simply a transfer payment and is not analytically interesting, as it merely involves adjustments to the tax payments  $t^R$  and  $t^P$ .

However, substitutive insurance may become attractive if the private package enjoys a quality advantage over the statutory package. Quality differences are

readily observed in health systems with significant private insurance markets—for example, in the form of reduced waiting times (in the United Kingdom) or superior choice and “hotel” arrangements (in Germany). For a full treatment of the welfare implications of quality differences, see Besley and Coate (1991) and Ireland (1990). Here I merely note the criterion for the rich replicating coverage of a lower-quality public intervention in their voluntary package.

Suppose enhanced quality under private coverage for intervention  $i$  enters the utility function through the “health” argument. Denote the associated benefits by  $b_i^p > b_i$  and the costs by  $x_i^p \geq x_i$ . An intervention already in the statutory package will also be included in the private supplementary package if and only if the additional benefits  $b_i^p - b_i$  are sufficiently valued in relation to the additional costs  $x_i^p$ —that is,

$$\frac{b_i^p - b_i}{x_i^p} \geq \frac{\partial U^Z}{\partial y} \bigg/ \frac{\partial U^Z}{\partial h}.$$

This formulation assumes the full cost of private insurance falls on the individual. However, a system of publicly funded health care vouchers may be used. Under this system, patients are offered a cash payment equivalent to some proportion  $\phi_i \leq 1$  of the cost of the intervention in the public sector if they secure treatment through a private insurer. In these circumstances, individuals need to secure supplementary insurance coverage only for the incremental private cost not covered by the value of the voucher. Procedures included in the supplementary package will then satisfy

$$\frac{b_i^p - b_i}{x_i^p - \phi_i x_i} \geq \frac{\partial U^Z}{\partial y} \bigg/ \frac{\partial U^Z}{\partial h}.$$

Note therefore that the quality of the public sector (relative to its private counterpart)  $\{b_i^p / b_i\}_{i=1}^n$  and the set of voucher payments  $\{\phi_i\}_{i=1}^n$  potentially offer the government further policy instruments, in addition to the tax payments and the statutory package specification  $\{\lambda_i\}_{i=1}^n$  that are the focus of this chapter.

## The Government

The government must decide which interventions to include in a statutory package of health care available to all at no direct charge. It wishes to maximize a social welfare function  $W(\rho U^R, (1-\rho)U^P)$  subject to the constraint that the costs of the chosen statutory package must be funded by tax payments by all citizens.<sup>2</sup> First assume that no voluntary insurance exists. Then the government’s problem is to choose interventions  $\{\lambda_i\}_{i=1}^n$  and taxes  $t^R$  and  $t^P$  for the rich and poor so as to

$$\text{maximize } W\left(\rho U(h_0^R + \sum_i \lambda_i \pi_i^R b_i, y_0^R - t^R), (1-\rho)U(h_0^P + \sum_i \lambda_i \pi_i^P b_i, y_0^P - t^P)\right)$$

$$\text{subject to } \sum_i \lambda_i \{\rho \pi_i^R + (1-\rho) \pi_i^P\} x_i = \rho t^R + (1-\rho) t^P$$

$$\lambda_i \in \{0, 1\}.$$



First-order conditions yield the result that intervention  $i$  is selected if and only if

$$\frac{b_i}{x_i} \geq \frac{\mu \left[ \rho \pi_i^R + (1-\rho) \pi_i^P \right]}{\left[ \rho \pi_i^R \frac{\partial W}{\partial U^R} \frac{\partial U^R}{\partial h} + (1-\rho) \pi_i^P \frac{\partial W}{\partial U^P} \frac{\partial U^P}{\partial h} \right]} = \frac{\mu \Pi_i}{\left[ \rho \beta_R \pi_i^R + (1-\rho) \beta_P \pi_i^P \right]},$$

where  $\mu$  is the opportunity cost of tax funds and  $\beta_Z = \frac{\partial W}{\partial U^Z} \frac{\partial U^Z}{\partial h}$  is the marginal social value of an improvement in health for group  $Z$ . This equation effectively adjusts  $\mu$  for variations in the social importance of the two population groups, reducing the hurdle rate for interventions with a high incidence in the poorer group if a pro-poor equity concern exists. This observation is consistent with the policy recommendation of adjusting the cost-effectiveness ratios of clinical interventions according to their equity implications (Williams, Tsuchiya, and Dolan 2005).

The tax contributions satisfy the marginal conditions:

$$\frac{\partial W}{\partial U^R} \frac{\partial U^R}{\partial y} = \frac{\partial W}{\partial U^P} \frac{\partial U^P}{\partial y} = \mu.$$

A crucial role of the tax payments is to equalize social marginal utility of wealth across social groups. The special case of a linear wealth tax constrains the government's options for effecting transfers,<sup>3</sup> and the marginality condition becomes

$$\mu = \left( \rho \frac{\partial W}{\partial U^R} \frac{\partial U^R}{\partial y} \gamma_0^R + (1-\rho) \frac{\partial W}{\partial U^P} \frac{\partial U^P}{\partial y} \gamma_0^P \right) / \left( \rho \gamma_0^R + (1-\rho) \gamma_0^P \right).$$

Suppose now that private complementary insurance is available. If neither group chooses to insure, the situation remains as just examined (no voluntary insurance). If both groups choose to insure, the marginal conditions are those discussed above with no statutory insurance, although tax contributions will have effected a cash transfer between groups. However, the analytically interesting case arises when the rich group chooses to insure and the poor group chooses not to insure.

Assuming the rich choose a complementary package  $\{\theta_i\}_{i=1}^n$ , the government's optimization problem becomes

$$\begin{aligned} & \text{maximize } W \left( \begin{array}{l} \rho U(h_0^R + \sum_i (\theta_i + \lambda_i) \pi_i^R b_i, \gamma_0^R - t^R - \sum_i \theta_i \pi_i^R x_i), \\ (1-\rho) U(h_0^P + \sum_i \lambda_i \pi_i^P b_i, \gamma_0^P - t^P) \end{array} \right) \\ & \text{subject to } \sum_i \lambda_i \{ \rho \pi_i^R + (1-\rho) \pi_i^P \} x_i = \rho t^R + (1-\rho) t^P \\ & \quad \lambda_i \in \{0,1\} \end{aligned}$$

For an intervention to be in the statutory package

$$\frac{b_i}{x_i} \geq \frac{\mu (\Pi_i - \rho \pi_i^R)}{\left[ (1-\rho) \pi_i^P \frac{\partial W}{\partial U^P} \frac{\partial U^P}{\partial h} \right]} = \frac{\mu}{\left[ \frac{\partial W}{\partial U^P} \frac{\partial U^P}{\partial h} \right]} = \frac{\partial U^P}{\partial y} / \frac{\partial U^P}{\partial h},$$

and for an intervention to be included in the complementary package purchased by the rich

$$\frac{\partial U^P}{\partial y} \bigg/ \frac{\partial U^P}{\partial h} \geq \frac{b_i}{x_i} \geq \frac{\partial U^R}{\partial y} \bigg/ \frac{\partial U^R}{\partial h}.$$

The policy maker's decision rule is straightforward: choose the statutory package by a simple ranking of interventions on the basis of their cost-effectiveness ratios and make post-tax preferences of the poor the cut-off rate. This case differs from the "no statutory insurance" case only in the sense that through the existence of the statutory package, the poor implicitly receive a tax transfer from the rich in line with social preferences. Compared with the purely private case with no such transfers, the "statutory insurance case" relaxes the implicit threshold for accepting technologies into the insured package for the poor. The rich use the statutory package and secure additional complementary insurance up to the point at which the marginal intervention is represented by

$$\frac{b_i}{x_i} = \frac{\partial U^R}{\partial y} \bigg/ \frac{\partial U^R}{\partial h}.$$

The rich may still wish to purchase complementary insurance. However, the total coverage enjoyed by the rich is less than that under the "no statutory insurance" case, because the transfer to the poor reduces their wealth and therefore their willingness to pay for private coverage. The benefit/cost ratio remains the criterion for selecting both the statutory and the voluntary package, and the system of combined statutory and voluntary insurance replicates the first best solution to health insurance after a socially optimal transfer between wealth groups.

Thus the main role of the statutory package under these circumstances is to effect a financial transfer from rich to poor, allowing the poor access to a broader package of care than would otherwise have been the case. At first glance, the absence of reference to the epidemiology of diseases in the choice of statutory package is surprising, as it is commonly argued that a government concerned with redistribution should concentrate on insuring diseases with high prevalence among the poor. This argument holds when a country relies solely on public insurance but not when complementary private insurance is available. If treatments with relatively high use among the rich are included in the statutory package (because they are highly cost-effective), the associated insurance costs can be recouped in the taxes levied on the rich. Health care payments of the rich comprise (a) an element of tax required to fund their own part of the statutory package, (b) an element of tax required to subsidize poor individuals' part of the statutory package, and (c) the voluntary insurance premium. Elements (a) and (c) merely reflect in aggregate the costs of their preferred insurance package. The real policy choice is the size of (b), the transfer to the poor.

The implications of excluding procedure  $i$  from the statutory package are as follows:

- For a poor person, the procedure is no longer available, so there is an expected health loss  $\pi_i^P b_i$ .
- For the rich, the procedure must now be covered through voluntary insurance at a cost of  $\pi_i^R x_i$ .
- For both groups, the tax payment is reduced by a sum equal to  $\Pi_i x_i$ .

For the marginal procedure, the welfare losses associated with (a) and (b) will be balanced against the gains (c). An equivalent way of formulating the conditions for the marginal intervention  $k$  is therefore as follows:

$$(1 - \rho) \frac{\partial W}{\partial U^P} \cdot \frac{\partial U^P}{\partial h} \pi_k^P b_k + \rho \frac{\partial W}{\partial U^R} \cdot \frac{\partial U^R}{\partial y} \pi_k^R x_k = \mu \Pi_k x_k.$$

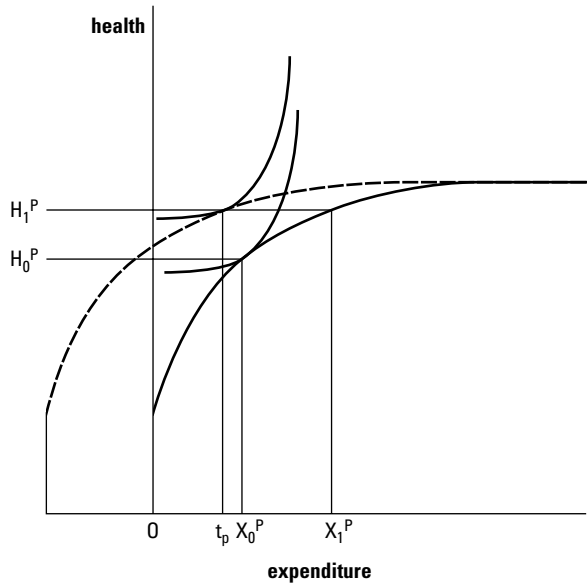
On the left-hand side, the first expression gives the health benefits to the poor of including intervention  $k$  in the statutory package. The second expression gives the financial benefits to the rich of removing intervention  $k$  from the voluntary package. The right-hand side gives the incremental tax cost to both rich and poor of including intervention  $k$  in the statutory package.

The solution can be illustrated diagrammatically. Figure 5.1 shows the health production function for a poor person. This function is constructed by computing the cumulative impact on health of all potential interventions, ranked in decreasing order of cost-effectiveness. With no subsidy, expenditure  $X_0^P$  is chosen. The statutory insurance package's implicit subsidy from the rich effectively moves the production function to the left by the amount of the subsidy. This shift leads to a revised choice of expenditure by the poor (which is effectively their tax contribution  $t_p$ ). Total expenditure on statutory insurance for the poor is then  $X_1^P$ , and the tax subsidy from the rich is  $X_1^P - t_p$ . Both utility and health outcomes are higher than in the "no statutory insurance" case.

Figure 5.2 shows the health production function for a rich person. With no subsidy, expenditure  $X_0^R$  is chosen. The implicit subsidy to the poor introduced by a statutory insurance package moves the production function to the right by the amount of the subsidy. This shift leads to a revised choice of expenditure by the rich  $T_R$ , which comprises the tax contribution  $t_R$  and any voluntary insurance expenditure. Total expenditure on insurance for the rich is then  $X_1^R$ , and the tax subsidy to the poor is  $T_R - X_1^R$ . In general, the insurance coverage of the rich will comprise a mix of the statutory package and some complementary voluntary coverage. Utility and health outcomes are lower than under the "no statutory insurance" case.

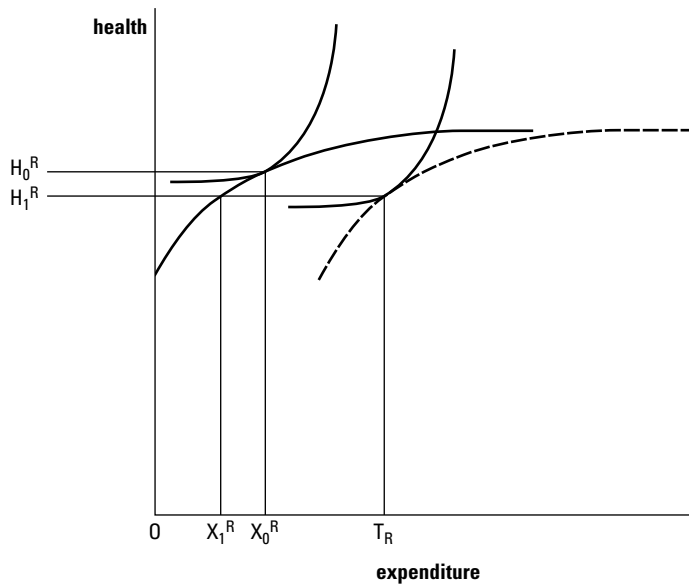
A rich person can be induced to withdraw entirely from the public coverage of a given statutory package (with a voluntary supplement) if paid a suitable

**FIGURE 5.1** Extent of the Statutory Package for the Poor



Source: Author.

**FIGURE 5.2** Expenditure Choices of the Rich



Source: Author.

transfer  $\hat{y}$ . The minimum value of the transfer is such that utility with statutory plus supplementary insurance is equal to utility with purely private insurance plus the transfer, after all taxes and insurance premiums have been paid. In the context of figure 5.2, the minimum transfer—a form of compensating variation—is calculated by constructing the indifference curve through the outcome  $(X_1^R, H_1^R)$ . The personal production function then shifts to the right until tangency is secured; the magnitude of the shift indicates the required transfer.

Note that payment of transfers suitable to induce the rich to withdraw from public coverage dilutes the redistributive role of statutory health insurance. If the rich “opt out” of the statutory package, the tax base available for that package is reduced. In general, the net tax revenue lost by the exit of the richest citizens in the statutory scheme will exceed the reduction in costs associated with the liability of their statutory health care expenditure. Under these circumstances, an equilibrium social provision is lacking, and the statutory package is unviable (Ireland 1990).

If the costs and benefits of health care secured under private insurance differ from those under statutory care, the rich face a different health production function, depending on which insurance arrangement they choose. The government can affect the relative shape of this function by adjusting the benefits of selected statutory treatments (such as allowing waiting times to increase under public provision) or by altering the costs of private treatment (through specific taxes or subsidies in the form of vouchers). For example, under a given statutory package, the rich can be induced to insure intervention  $i$  privately through receipt of a voucher  $\hat{\phi}_i$  such that the additional benefits of private coverage balance the additional costs  $x_i^P - \hat{\phi}_i x_i$ . Clearly, vouchers have policy relevance only if private coverage offers a quality advantage over statutory coverage, and the required size of  $\hat{\phi}_i$  is inversely related to the magnitude of that advantage  $b_i^P - b_i$ .

The preceding discussion assumed that a government can effect a redistribution from rich to poor by levying the required tax rate in accordance with its chosen social welfare function. In practice, particularly in low-income countries, the extent to which a tax base can be exploited might be limited, because those paying taxes greatly in excess of the benefits they receive may resist the implied redistribution. Such resistance might take many forms—from increased difficulty and cost of collecting the tax from the wealthy to tax evasion or emigration by the wealthy.

Loss of the tax base can readily be modeled within the framework set up above. Assume that tax collection costs  $f(\cdot)$  among the rich increase with the difference between tax payment and an actuarially fair premium,  $f = f \left\{ t^R - \sum_i \lambda_i x_i \pi_i^R \right\}$ , where  $f'(\cdot) \geq 0$ . That is, the effective size of the tax base depends to some extent on the mix of interventions included in the statutory insurance package. Under these circumstances, the priority-setting rules should be amended to mitigate the loss of tax revenue associated with a more redistributive statutory package.

For example, under the benchmark case of no private insurance, the budget constraint becomes

$$\sum_i \lambda_i \{ \rho \pi_i^R + (1 - \rho) \pi_i^P \} x_i = \rho t^R + (1 - \rho) t^P - f \left\{ t^R - \sum_i \lambda_i x_i \pi_i^R \right\},$$

and the associated decision rule is

$$\frac{b_i}{x_i} \geq \frac{\mu \left[ \rho \pi_i^R \{ 1 - f' \} + (1 - \rho) \pi_i^P \right]}{\left[ \rho \beta_R \pi_i^R + (1 - \rho) \beta_P \pi_i^P \right]}.$$

The additional term  $\{ 1 - f' \}$  on the top line reduces the hurdle rate for procedures with a relatively high prevalence among the rich and may to some extent counteract any pro-poor implications of the bottom line.

### A PUBLIC CHOICE PERSPECTIVE

The preceding discussion considered a dichotomous distribution of rich and poor. This representation highlights some of the key issues underlying the policy problem and may reflect reality in many low-income countries. However, the representation is less realistic in higher-income countries with large middle-income groups. It also conceals important subtleties underlying policy choices. In particular, the analysis above has assumed that a government can secure any preferred redistribution of wealth. In practice, the range of tax instruments is often severely restricted. Under these circumstances, governments will not, in general, be able to secure a first-best solution from a social welfare perspective and will have to be cognizant of different attitudes toward tax expenditure and health gains among different wealth groups.

Now consider a situation with a continuous distribution of wealth  $y$ , distributed as  $\gamma(y)$  and a linear wealth tax. The incidence of disease  $i$  is distributed as  $\pi_i(y)$ . Then a given statutory package  $\{ \lambda_i \}$  will generate total costs

$$\sum_i \lambda_i x_i \int_0^\infty \pi_i(y) \gamma(y) dy.$$

Assuming a linear wealth tax rate  $t$ , this package will be financed by tax revenue

$$\int_0^\infty t y \gamma(y) dy = tT,$$

where  $T$  is the tax base. The results can be readily generalized. For example, the social welfare function could be written as an additive function:

$$\int_0^\infty w(y) \gamma(y) U(h(y), y) dy,$$

where  $w(y)$  is the social weight attached to someone with wealth  $y$ . Therefore, in the absence of voluntary insurance, procedures are included in the package if and only if

$$\frac{b_i}{x_i} \geq \frac{\mu \int_0^{\infty} \gamma(y) \pi_i(y) dy}{\int_0^{\infty} \gamma(y) \beta(y) \pi_i(y) dy},$$

where  $\beta(y)$  is the marginal social value of an improvement in health for a person of wealth level  $y$ . Assuming a pro-poor social welfare function, other factors being equal, this criterion favors procedures with the highest prevalence among the poor. Note that the opportunity cost of public funds is

$$\mu = \frac{\int_0^{\infty} \alpha(y) \gamma(y) y dy}{\int_0^{\infty} \gamma(y) y dy},$$

where  $\alpha(y)$  is the marginal social value placed on wealth.<sup>4</sup>

Suppose now that complementary voluntary health insurance is available, and the market in private insurance is complete. Define the set  $S \subseteq [0, \infty)$  to be the subset of wealth values at which voluntary insurance is declined. The statutory package comprises procedures for which

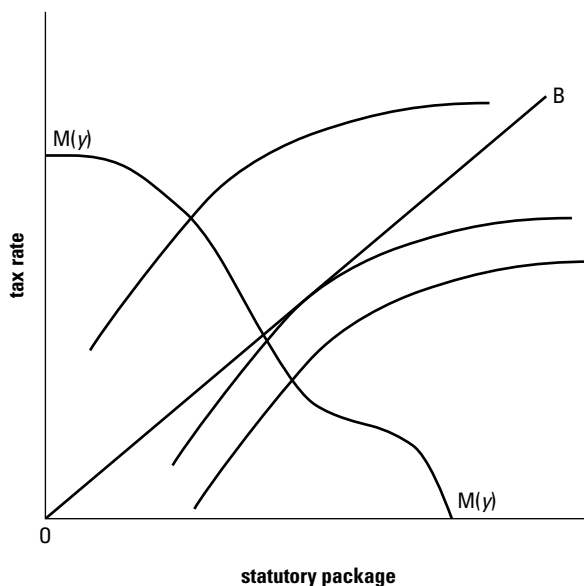
$$\frac{b_i}{x_i} \geq \frac{\mu \int_S \gamma(y) \pi_i(y) dy}{\int_S \gamma(y) \beta(y) \pi_i(y) dy}.$$

That is, the statutory package is determined by the characteristics of the population that declines voluntary insurance, and it favors conditions concentrated among the poorest who decline voluntary insurance. Those who accept voluntary insurance will seek a complementary package that comprises all procedures that do not fall within the statutory package and for which

$$\frac{\partial U}{\partial y} \bigg/ \frac{\partial U}{\partial h} < \frac{b_i}{x_i}.$$

A utility map, shown in figure 5.3, illustrates individual preferences in very broad terms. This map indicates utility indifference between tax rates and expenditure on the statutory package for an individual with wealth  $y$ . For that individual, the tax cost of including intervention  $i$  in the package is  $x_i \Pi_i y / Y$ , where  $Y$  indicates total national wealth, and health benefits are  $\pi_i(y) b_i$ . The individual therefore ranks interventions for inclusion in the statutory package according to

FIGURE 5.3 Indifference Curves with Voluntary Insurance



Source: Author.

the ratio  $b_i \pi_i(\gamma) / x_i \Pi_i$ . In the first instance, the assumption is that the incidence of disease  $i$  relative to the population average,  $\pi_i(\gamma) / \Pi_i$  for wealth group  $\gamma$  is the same for each disease  $i$ . This assumption ensures that all groups agree on the ranking of treatments for inclusion in the statutory package and that the government can therefore choose the package solely on the basis of cost-effectiveness  $b_i / x_i$  (without weighting for the diseases of the very poor).

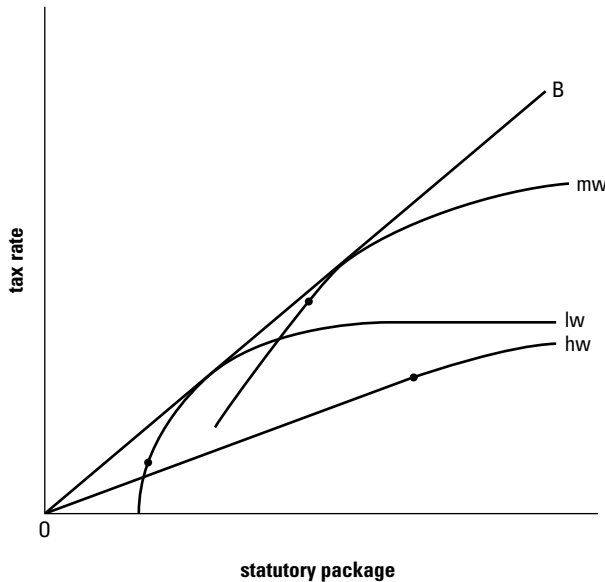
The indifference curve for wealth group  $\gamma$  is constructed as follows. At each tax rate, the individual prefers a unique critical level of expenditure  $x^*$  on the statutory package above if he or she is to forgo voluntary insurance. Below that level of expenditure, the cash benefits to the individual of the marginal removal of a procedure from the statutory package are proportional to the individual's wealth (the basis for his or her contribution to the tax cost). So the local slope of the indifference curve is proportional to  $1/\gamma$ . Beyond the critical level of expenditure, the indifference curve reflects the trade-off between additional tax payments and health gains  $\pi_i(\gamma)b_i$ . The assumption of constant  $\pi_i(\gamma) / \Pi_i$  ensures that this segment is concave. The curve  $M(\gamma)$  indicates the locus of critical values  $x^*$ . To the left of the curve, voluntary insurance is purchased; above the curve, the citizen relies solely on the statutory scheme. The curve has a negative slope everywhere. The feasible expansion of the government package is indicated by the budget line  $OB$ .



Given the above assumptions, for any level of tax rate  $t$ , the critical value of expenditure on the statutory package at which voluntary insurance is abandoned increases with wealth. That is, the curve  $M(y_1)$  will lie strictly to the right of the curve  $M(y_2)$  for all  $y_1 > y_2$ . Figure 5.4 illustrates some possible implications of the preferred statutory package. It shows the utility-maximizing indifference curves for three individuals; the solid dot indicates critical expenditure levels for each. The poor person (lw) switches to reliance on the statutory package at low levels of provision but has low tolerance for tax payments. The high-wealth individual (hw) suffers a loss of utility at all levels of social provision (as tax payments exceed the cost of voluntary insurance) and would therefore prefer zero statutory expenditure. The middle-wealth person (mw) is better able to tolerate tax expenditure than the poor person and enjoys benefits in excess of tax payments for lower levels of the statutory package. He or she therefore prefers a larger statutory package than either the rich or the poor person. Thus, if the size of the statutory package is chosen through majority voting, the crucial determinant of the outcome will be the distribution of wealth—specifically, the extent to which middle-income voters (who prefer higher expenditure levels) dominate an alliance of the rich and the poor (both of whom prefer lower levels) (Epple and Romano 1996b).

The assumption of constant  $\pi_i(y) / \Pi_i$  implies that for each wealth group, procedures enter the statutory package in strictly decreasing benefit/cost order

**FIGURE 5.4** Preferences of Low-Wealth, Middle-Wealth, and High-Wealth Citizens



Source: Author.

Note: lw = low wealth, mw = middle wealth, and hw = high wealth.

$b_i / x_i$  as expenditure increases. But in general, wealth group  $y$  ranks interventions for inclusion in the statutory package according to the ratio  $b_i \pi_i(y) / x_i \Pi_i$ . Therefore, the group's ranking of an intervention also depends on the intervention's relative incidence  $\pi_i(y) / \Pi_i$ , which is not in general constant between interventions  $i$ . So, although an individual's indifference curve will have a non-negative slope and is likely *on average* to exhibit decreasing marginal benefits of treatments (as  $b_i/x_i$  decreases), local variations in the relative prevalence of diseases  $\pi_i(y) / \Pi_i$  may render the curve nonconcave. Moreover, consensus on which interventions to include in a statutory package for a particular budget is lacking. So even in the absence of pro-poor equity concerns, a government sensitive to voter preferences may not follow the simple cost-effectiveness criterion in choosing the statutory package, as assumed in figure 5.4. The expansion path of the statutory package is in general unpredictable.

This rudimentary exploration indicates that there may be no unique level of expenditure on the statutory package at which the individual abandons voluntary insurance. Even when voluntary insurance is purchased, the individual may wish the statutory package to include certain additional treatments for illnesses for which he or she suffers the relatively high incidence  $\pi_i(y) / \Pi_i$ , because the personal tax cost of including these treatments is less than the cost of purchasing risk-rated voluntary insurance. The introduction of nonconcavity complicates the technical analysis considerably and implies the existence of multiple social equilibriums. However, nonconcavity is unlikely in practice to alter the general pattern of results shown here.

## CONCLUSIONS

A conventional welfare economics perspective might suggest that—setting aside concerns of moral hazard or adverse selection—a first-best solution in health insurance can be secured by implementing a competitive insurance market; no government package would be required. Suitable financial transfers from the rich to the poor, or from the healthy to the sick, could address equity concerns. In practice, this view appears to be untenable. Most developed countries offer some basic guarantee of health care to all citizens, regardless of their personal preferences. The arguments for such a policy include market failures (often due to information weaknesses), transaction costs, altruism, solidarity, and merit goods. Assuming that such a policy is required, the issue for policy makers is choosing the optimal statutory package.

The analysis indicates that—under some limiting assumptions—a social planner can replicate the preferred first-best outcome by implementing a statutory package alongside complementary insurance for the rich. However, deployment of substitute private insurance alongside a statutory package is more problematic. It requires either a transfer to the rich (diluting the redistributive function of the statutory package) or reduced quality in the public sector, neither of which is

likely to be an attractive policy. Moreover, mobility of the tax base and electoral considerations may constrain the planner's ability to secure a preferred outcome.

These conclusions imply that a concern with equity may not be a major concern when choosing which technologies to include in a statutory package if the rich are able to purchase complementary insurance. The relevant instrument for addressing equity concerns in this case is through the tax system rather than through the health care package. However, equity concerns may become important if voluntary insurance does not exist.

The models presented here are highly stylized and may need to be amended according to policy interests—for example, a policy imperative to allow only community-rated voluntary insurance premiums, or inadequate information for insurers to set fair voluntary premiums. In the latter case, the models should be amended to accommodate the potential for adverse selection. Other possible extensions of the models include use of copayments in statutory and voluntary schemes and variations in health within a single wealth group.

The results presented here offer a framework for thinking about the provision of voluntary health insurance alongside a statutory package of health care. Psychological and sociological considerations may affect policy as much as economic considerations. The sustainability of social health insurance hinges on citizens' willingness to tolerate large transfers from rich to poor and from healthy to sick. Failure to explicitly reflect citizens' equity concerns in the health system may compromise support for the mix of statutory and voluntary insurance that empirically appears to be associated with high-performing health systems (WHO 2000).

## NOTES

Comments by participants at a conference organized by the World Bank at the Wharton Business School are gratefully acknowledged, as is support provided by Economic and Social Research Council research fellowship R000271253.

1. Some efforts have been made to confine receipt of statutory health benefits to the poor. However, such means testing has often been found to be impractical and is not commonly used. See Bitrán and Giedion (2002).
2. The nature of the social welfare function appropriate for modeling health care has been a matter of debate (Fleurbaey forthcoming). Much of the literature in health economics merely seeks to maximize (equity weighted) health, but some literature argues that health is merely one aspect of an individual's utility function and that it should not be privileged. This chapter adopts an intermediate position that remains reasonably general.
3. This formulation ignores the potential distortionary costs to the economy associated with an income tax, but if necessary these costs are readily incorporated into the analysis.
4. In principle, under a distortionary income tax, the cost of public funds should also be increased to capture the deadweight loss of tax funding. This refinement is not germane to this chapter.

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## CHAPTER 6

# Economics of Private Voluntary Health Insurance Revisited

*Philip Musgrove*

This chapter examines some of the questions and conclusions in chapters 2–5. First, why is demand for insurance so low in low-income countries? Rather than address this question directly, chapter 2 considers whether such demand could and should in principle exist and notes that affordability cannot alone account for the lack of voluntary insurance. It follows that governments or donors seeking to expand insurance coverage will have to deal with the cultural and other factors that hold back demand.

Second, what kind and amount of regulation are appropriate for private voluntary insurance in a relatively poor country? Chapter 3 on supply and chapter 4 on market outcomes address this question. Chapter 4 emphasizes regulation to minimize the risk of insurer insolvency, but the idea that regulation should otherwise be minimal is mistaken. Overregulation, particularly of both prices and coverage, is a real danger, but regulation must be sufficient to ensure that insurers comply with their promises, that the insured are protected if they need to change their coverage, and so on.

Third, what is the proper role of a subsidy in the insurance market? Who should be subsidized, for what, and to what extent? These questions are closely related to the subject of chapter 5, because governments have a choice between implicitly insuring people by providing care or explicitly subsidizing private insurers. If the government chooses which services to provide solely on the basis of cost-effectiveness, it can apply that criterion at very different levels of overall expenditure. These levels may depend on private insurers' offerings, which subsidies can affect. The main unresolved issues are the relative importance of ensuring coverage of cost-effective interventions—whether financed publicly, privately, or publicly and privately—and of protecting people from financial risk. The amount of desired protection against unlikely but potentially costly events affects both the demand for private insurance and the degree to which a government may depart from the cost-effectiveness criterion even in the presence of private coverage.

## INTRODUCTION

Three questions appear particularly important to consider in analyzing proposals or projects to expand private voluntary health insurance in countries where

public coverage is incomplete or otherwise inadequate. First, why is demand for insurance so low? Second, what are the right kind and amount of regulation for private voluntary insurance in a relatively poor country? Third, what is the proper role of a subsidy in the insurance market? Who should be subsidized, for what, and to what extent?

Chapters 2–5 address each of these questions in turn. The questions are revisited here in the interests of re-examining some of the previous chapters' assumptions, especially on the question of regulation, and of addressing some issues left aside, particularly with respect to demand.

### **WHY IS DEMAND FOR INSURANCE SO LOW?**

Private insurance in nonrich countries is usually confined to the upper classes. The very poor cannot afford insurance, but as chapter 2 notes, poverty or lack of resources cannot alone account for the lack of insurance in developing countries. People spend often-substantial amounts out of pocket for health care—amounts that in a given year may easily exceed the cost of an insurance premium—so why are they not clamoring for insurance? The answer is unlikely to be simply lack of risk aversion. The poor are more exposed to risk than those better off and have every reason to be risk averse. But risk aversion does not readily translate into demand for insurance, even though insurance could improve welfare and do so even when it costs more than the average cost of medical care.

Cultural or sociological reasons help explain low demand. Earlier chapters omitted these factors and instead focused on economic theory; a comparable theory of noneconomic factors probably does not exist. But anyone desiring more private insurance in developing countries cannot afford to ignore culture and beliefs, which may trump considerations arising in a purely rational approach to the connection between risk and insurance. Being averse to risk is not the same as attempting to estimate risks and confront them rationally. Moreover, if people buy insurance and do not get sick or hurt, they may feel cheated. They may want their money back or may decide not to renew their insurance. Getting medical care more cheaply, through insurance or any other mechanism, is appreciated; paying and then not getting any care is not. (This problem differs from the moral hazard problem of people demanding superfluous care to get some good out of the insurance for which they have already paid.) Similarly, people are sometimes willing to buy insurance for care that is, in theory, uninsurable because it is, or should be, perfectly predictable. Insurance for immunizations or well baby care makes no economic sense, if people are nearly certain to use such care. But people may demand that kind of insurance in the belief that they are sure to get value from it. They may not buy protection against rare, catastrophic health events, because they may get nothing from their insurance against these events.

When people think and behave as just described, they are showing that they do not fully understand insurance—in particular, that they should expect, more



often than not, to subsidize those less lucky than themselves. People also may not accept the idea of subsidizing complete strangers. If they are accustomed to dealing with medical emergencies by obtaining grants or loans from family members or friends, they cannot readily grasp the idea of impersonal relations, and they may fear that people they don't know will take advantage of them. Community insurance schemes, in principle, help mitigate this problem by creating pools of people who know one another or who can see who is sick and who is not. But such schemes can run into another difficulty, which is resentment of those who get sick or hurt "too often." People may become unwilling to go on contributing to a scheme that appears to benefit only a few chronic or repeat sufferers. This attitude is not so different from that of people who fully understand insurance but who expect to remain healthy and therefore are unwilling to buy insurance sufficient to cover those who are, or are likely to be, unhealthy. Community schemes organized among relatively poor people are, of course, likely to need a subsidy to provide meaningful coverage. The point here is that the poor may also require a change of attitude if community schemes are to operate over the long term.

Even less rational factors may dampen demand for insurance. They include the superstition that buying insurance makes one more likely to become sick and the fear that taking on insurance is tantamount to declaring oneself unhealthy and therefore putting oneself at risk of stigma.

Whatever the noneconomic reasons for the lack of private voluntary insurance in developing countries, they must be understood and overcome, if insurance is to appeal to people who, in strictly economic terms, need it and would be better off with it.

One last point about the economics of demand is important. Chapter 2 argues that because people actually pay large sums out of pocket for health care, they can *afford* the cost of insurance. In narrow economic terms, that conclusion is correct: if someone buys a good or service, he or she thinks that purchase is a good use of money and one that he or she can afford. But out-of-pocket payments for health care are a frequent cause of impoverishment of households, and not only poor households, in poor countries. In India, such impoverishment occurs even in the second-highest income quintile. To say that people can afford such payments is only to say that they would rather be ruined economically than die.

If affordability is defined as "leaving no one impoverished," many people probably can afford insurance but do not now buy it—the insurance, to be worthwhile, must cost considerably less than the possibly catastrophic medical expense against which it is meant to protect. Nevertheless, redefining affordability in that way means that the maximum potential market for insurance—the total revenue that might be obtained from consumers—cannot be equated to the actual out-of-pocket payments they make, or even to payments for obviously insurable conditions. The market could be much smaller than spending, if people pay for most of the care that, medically speaking, they need. The market can also be larger

than spending, because many needs go unmet. Insurance would allow people to use more medical care than they can now afford. To call that additional care “moral hazard” makes it sound like a bad idea, when in fact additional care is exactly what is needed. Uncertainty about the true potential size of the market, including the potential for moral hazard, cannot fail to limit the supply of insurance. Anyone attempting to promote insurance should carefully estimate what is affordable and how big the market might be.

### WHAT TO REGULATE AND HOW TO REGULATE IT

Chapter 3, on insurance supply, recognizes that insolvency of an insurance scheme is a major threat and that some regulation is needed to reduce that risk—but not to zero. (The financial cost of never allowing bankruptcy would be too high and would reduce the incentive of insurance managers to run their businesses economically.) The emphasis on regulation in this book is on the amount of reserves to require insurers to hold. Other kinds of regulation, particularly specifying health care interventions to be included in policies, are undesirable according to this book’s *laissez-faire* approach. According to the other contributors to this volume, insurers should be free to offer whatever products they think best, and consumers should choose among them according to their means, current and expected health state, and degree of risk aversion. Nonregulation of the content and price of insurance packages is desirable, according to these contributors, because governments will not have to deal with adverse selection: each person who buys insurance will buy the package that suits him or her best. Insurers will have no incentive to “skim the cream,” because it will be profitable to sell to (nearly) everyone, and consumers will have no incentive to stay out of the market. Community rating generates perverse incentives, requiring more regulation and enforcement to offset cream skimming and discrimination.

Overregulation is an easy trap into which to fall; one regulation may create the need for another and overstretch a government’s supervisory capacity. But avoiding any regulation of price and content appears sure to create more problems. Consider that a large market will be needed to support policies of sufficient variety to appeal to every potential consumer. Too few customers for any one policy would make it hard to keep the policy on sale, determine the correct price, and so on. The “tyranny of choice” is likely to be especially severe when consumers are choosing a product to protect themselves from unknown future risks. The uncertainties involved affect not only the ignorant or illiterate: even the educated and well-informed find making a rational choice among the policies offered under the Medicare Part D drug benefit in the United States a difficult task.

Another problem is that the greater the differentiation of insurance policies, the greater the likelihood that people will want to change policies as their circumstances change. A consumer who feared heart disease and bought a policy that generously treats that problem could discover that he or she has cancer and

wish to switch to a cancer-generous policy. Without regulation of such moves—no control of waiting periods, preexisting conditions, and the like—he or she may be unable to obtain another policy, except at too high a price, or may lack coverage in the interim. At a minimum, regulation is needed to protect the clients of a bankrupt insurance scheme, so they could easily move to another supplier and not be left without coverage.

In short, chapters 3 and 4 do not appear to pay adequate attention to the reasons that regulation often determines a basic package that private insurers must offer or that it specifies that they must provide a package with the same coverage as public insurance (whether that means the ministry of health or the social security system). A universal basic package reduces uncertainty, simplifies choice, and facilitates transfers from one policy to another. Given such a universal basic package, insurers need not be prohibited from offering a variety of supplementary benefits, whether coverage of additional diseases or conditions, allowance for more amenities or greater choice of providers, or other provisions. Arguments for little regulation appear much more persuasive for coverage beyond some legally imposed minimum than they do for all kinds of insurance in general.

Nonetheless, two serious problems are associated with regulating by reference to what is insured (and often provided) publicly. The first problem is that the public sector does not have to make a profit, so regulation may make it nearly impossible for private firms to sell nominally comparable policies at a profitable price. When competition between the public and private sectors is not on the basis of price, it will occur on the basis of quality of care, and perceived high-quality but high-priced care will severely limit the market. This problem is apparent in middle-income countries and is made worse, as contributors to this volume acknowledge, when governments regulate both the content and the price of private insurance, because the price may then be unrealistic. The second problem is that the public sector may be very small, especially in low-income countries, and unable to deliver all that it nominally guarantees. In that case, it cannot reasonably hold private insurers to a standard that it does not meet.

Whatever the economics of this issue, what actually happens in the private insurance sector will depend strongly on political factors. Consumers are likely to value what they view as protective regulation more than they notice the costs of excessive or ill-advised regulation. It makes sense, in devising or expanding private voluntary insurance, to curb overregulation, but that probably requires educating the public to understand the costs and benefits of the regulatory regime. Given the difficulties of switching policies or insurers, the most important regulation of all, after that for controlling insolvency, is that allowing consumers to make claims against insurers when they are denied promised coverage or given inadequate care by providers tied to the insurer. The free-market solution of taking one's business elsewhere is simply insufficient in that case. For both ethical and political reasons, governments have little choice but to regulate some aspects of contracts and arrange for the resolution of conflicts over them.

Finally, a solution of minimal regulation, particularly one in which neither content nor price is regulated, is incompatible with subsidies that pay the full cost of insurance and leave the choice of policy to the consumer. If the government allows private insurers to charge what they please, it must protect itself by carefully regulating any subsidies. A sensible solution might be a hybrid solution in which insurers can sell any package they like, but only certain combinations of content and price will be eligible for subsidy—or the subsidy will operate at a fixed price and apply only to policies that include some basic or minimal coverage. Unsubsidized private policies would then have to be essentially supplemental policies and would be limited to consumers who can afford them. Alternatively, they would have to offer care from higher-quality providers, more amenities, or both, to compete with the subsidized package(s).

### **WHAT IS THE OPTIMAL SUBSIDY?**

Some subsidy is probably necessary to ensure a larger uptake of private insurance, as the authors of chapter 4 note. This subsidy is essential for consumers too poor to afford any meaningful insurance, and it would probably help overcome the noneconomic or cultural obstacles to demand. Additional efforts to change people's understanding of risks and insurance might still be needed, as argued above.

Subsidies bring up two questions not explicitly considered elsewhere in this volume. The first question is whether the government can save money by spending less on its own public insurance and shifting funds to the subsidy. Put another way, for the same amount of resources, can it ensure higher coverage, greater utilization, and better health outcomes? A government might decide to increase substantially what it spends on health care and to direct the additional resources into subsidization of private insurance. The welfare-increasing effects would be directly related to the degree to which insurance reduced catastrophic out-of-pocket spending. A government that could not easily raise more revenue, because of a weak tax system or considerable tax-induced economic inefficiency, would probably be more interested in knowing whether it could save money or make its money go further. In principle, it could do both if the subsidized consumers pay more for their insurance than they pay out of pocket for publicly financed or provided care. In principle, they ought to be willing to pay more, even if not the full price of insurance, if they could thereby increase their access to care. Making limited government funds go further by increasing total spending by consumers while reducing catastrophic out-of-pocket expenses is particularly germane to very poor countries.

The second question is whether the government has the capacity to regulate and supervise insurers to the degree that the subsidy will require. The answer depends, in part, on financial costs, but more so on the government's ability to specify and enforce sound regulations. Such capacity might have to be created or enhanced before introduction of a subsidy scheme to prevent waste and fraud. A

government that was not already doing a good job of regulating its own providers and managing its resources initially might be unable to take on the task of managing a subsidy.

The point of a subsidy is to promote insurance better than that provided by an unsubsidized market and to carry the subsidy to the welfare-maximizing point, which depends on the contribution by consumers. Therefore, the optimal insurance is the insurance that leads to the optimal level of care, and the optimal subsidy is the subsidy that motivates consumers to buy that insurance. Aside from fiscal cost, the chief difficulty of defining and implementing the optimal subsidy may be that consumers vary so much, in terms of income and health risks, that the subsidy would have to differentiate among them—increasing the difficulty of regulation. This difficulty, more than any other issue, prompts definition of a universal, subsidized basic package, beyond which consumers could buy supplemental insurance according to their incomes and known or anticipated risks.

Two problems complicate simultaneous implementation of the optimal insurance, subsidy, and regulation. One is that the ideal subsidy would be inversely related to income, which implies means testing and much greater administrative costs than with the same subsidy for everyone. Efforts to charge user fees for publicly provided medical care, while exempting those too poor to pay or adjusting the fees according to income, have not been very successful, so the ease of charging different people different amounts for their insurance is questionable. The other problem is that the “optimal level of medical care” is unknown, except perhaps for a few universal and relatively simple interventions like prenatal care and some immunizations. In effect, the definition of a basic package corresponds to some idea of the care that everyone should have, or have access to, but consensus on just how much of each kind of care anyone should be allowed or encouraged to use is lacking. The best possible achievement may be to define an affordable package, to subsidize it entirely for the poorest part of the population and partially for everyone else, and to require that the subsidy be used only to purchase the approved package. Supplementary insurance would be relatively free of regulation and unsubsidized, and progressive taxation would be used to offset the relative lack of progressivity in the subsidy.

For a subsidy to reduce significantly the risk of catastrophic out-of-pocket spending, the fees and copayments for the subsidized insurance would have to be regulated. The object would not be to eliminate out-of-pocket payments but to cap them at the level of individual interventions and—perhaps just as important or more so—over intervals of a year or more. The information requirements of such regulation are substantial, particularly in environments where private insurance does not cover catastrophic events and where medical and financial record keeping is primitive at best.<sup>1</sup> The countries that would benefit most from such regulation may be precisely those least capable of delivering it.

The subsidy would have to be supervised by a regulatory body, whether that was independent or associated with a ministry, and the supervision would be nearly meaningless if the supervisors could not keep track of money flows, care

utilization, and the cost of that utilization to the insured. This capacity often needs to be created or enhanced before a subsidy is launched. Middle-income countries with subsidies to competitive insurance (Colombia), with supervision of private insurance (Chile), and with contractual arrangements for public payment to private providers alongside private insurance (Brazil) offer relevant experience. How readily poorer countries can adapt any lessons remains to be seen.

## **HOW MIGHT VOLUNTARY INSURANCE AFFECT THE PUBLIC PACKAGE OF CARE?**

Chapters 2–4 take as given the existence of a public package of care that is inadequate in one or more respects and therefore consider the potential market for complementary or supplementary private insurance. Public expenditure enters the discussion only with respect to subsidy for private coverage. The analysis in chapter 5 assumes the existence of private voluntary insurance that is unsubsidized—so the insured pay the actuarially fair price—and asks how such insurance affects the choice of health care interventions to include in the universal public package. The analysis further assumes that taxes finance the latter and that patients are not charged at the moment of use. The zero price for public care and the full price for private insurance simplify the analysis by avoiding intermediate cases in which care is paid for both by taxes and out-of-pocket contributions. In addition, the analysis assumes that taxes can be levied so as to promote an equitable transfer of resources from the rich to the poor. People pay for the public package entirely according to their economic capacity, not their need for health care. They pay the full cost of private insurance, so they also buy it according to their capacity—but because they can choose among different packages in a competitive market, they also decide how much to spend according to their estimate of health care needs. Consequently, private insurance, but not the public package, takes into account different degrees of risk aversion as well as any other relevant preferences. The final simplifying assumptions are that both the cost of any intervention and the health benefit it yields are constant and equal in the public and private sectors. Like the analysis of chapters 2–4, the analysis of chapter 5 does not explicitly consider the noneconomic reasons that consumers do or do not buy insurance; all such reasons are subsumed in the existence of the private voluntary market.

Under these conditions, the analysis leads to the conclusion that the choice of health care interventions to include in the public package can be based exclusively on the cost-effectiveness ratios for these interventions. Different assumptions about the tax schedule and about whether richer people buy supplementary insurance (to cover what is not in the public package) or complementary insurance (duplicating the public package in part) lead to different limits on the cost-effectiveness ratio. But the logic remains the same: interventions are included in the tax-funded package according to the ratio of health benefits to costs. Because the rich pay higher taxes as well as the cost of whatever insurance they buy, they have

less coverage than if no public package existed: what they pay in taxes reduces what they can afford in private insurance. Their loss finances the gain to the poor, who depend exclusively on the public package in the absence of a subsidy.

This solution describes a social optimum. The crucial element of this solution is that the tax system alone takes care of income-related equity so that the design of the public package can ignore that question and concentrate only on costs and health benefits. If the tax system cannot achieve a socially optimum redistribution of wealth, the conclusion has no basis, and the government is left with the problem of how, and how far, to balance considerations of equity with those of economic efficiency. Both approaches, those of chapter 4 and of chapter 5, describe a socially desirable situation that can only be reached through fiscal instruments—taxes, subsidies, or both—that may be difficult or impossible to implement, especially in a poor country with limited economic and administrative capacity. In both cases, the ideal includes both a public package and private voluntary insurance; the former is available in principle to everyone, whereas the latter may be taken up by only part of the population, which may or may not continue to use the publicly funded services.

The point of insurance is to protect people from two kinds of risk: that of not getting health care when they need it and that of suffering catastrophic financial loss to get care that is too expensive to afford out of pocket. Whether the combination of a public package and some voluntary private insurance can actually provide both kinds of protection appears to depend on two features that none of the previous chapters in this volume explore systematically. One, alluded to above, is whether people will voluntarily buy insurance against rare but costly risks. If they misjudge those risks or think that insurance is not worth having unless they are fairly sure to use it in the short term, they may buy protection against low-cost, high-probability risks and remain exposed to the possibility of catastrophic loss. The other feature is that a public package based on cost-effectiveness criteria, meaning health effectiveness only, may exclude interventions that present the greatest financial risk to consumers, because the health benefits are not large enough to pass a cost-effectiveness test. Thus, it may be that neither public nor private insurance offers enough protection against financial catastrophe, although for noncatastrophic risks, a social optimum could be approximated. Simply requiring that private insurers offer catastrophic protection would probably not ensure adequate coverage, and such detailed regulation would raise the difficulties treated in chapter 3. Compensating for this deficiency by including costly, low-risk interventions in the public package would reduce that package's overall cost-effectiveness and require a balance between the two kinds of protection. Economic theory does not say what the optimum balance is, so analytically deriving the best coverage for either kind of insurance in the real world is impossible.

From the perspective of anyone interested in promoting private voluntary insurance where it hardly exists, the value of chapters 2 and 3 is that they start with straightforward economic theory, setting aside many political and cultural

issues, and work their way toward recommendations for expanding and improving private voluntary insurance in low- and middle-income countries. Chapter 5 complements these recommendations by demonstrating that the existence of a robust market for private voluntary insurance can, under certain conditions, simplify the task of defining what a universal public package of care should include. The difficult questions requiring case-by-case research are, How easily could private insurance be introduced? What adjustments to publicly financed care would be needed? What would the cost be in public expenditure, supervisory capacity, and economic inefficiency through waste, fraud, superfluous care, and residual financial risk?

## NOTES

The author is grateful for comments by participants at the Wharton Conference in March 2005 and for additional insights by Mark Pauly and Peter Smith.

1. Household surveys, which might provide some valuable information about insurance coverage and use, typically include data on health problems and health care only for individual recent episodes because of the difficulty of constructing longer-term histories from interviews. One consequence is that these surveys seldom describe the health and cost consequences of chronic conditions or repeated needs for care.



## PART 2

# Empirical Evidence

**7. Scope, Limitations, and Policy Responses**

*Denis Drechsler and Johannes P. Jütting*

**8. Lessons for Developing Countries from the OECD**

*Francesca Colombo*

**9. Trends and Regulatory Challenges in Harnessing Private  
Voluntary Health Insurance**

*Neelam Sekhri and William D. Savedoff*



## CHAPTER 7

# Scope, Limitations, and Policy Responses

*Denis Drechsler and Johannes P. Jütting*

This chapter assesses the significance of private health insurance in different regions of the developing world. On the basis of trends in the development of such insurance, characteristics of insurance schemes, and instances of market failure, the chapter identifies clusters of countries with similar challenges concerning integration of private health insurance into the national health system. In Latin America and Eastern Europe, the insurance industry has developed but is susceptible to market and policy failures. In the Middle East and North Africa and in East Asia, the industry's expected growth requires efficient regulation. In South Asia and Sub-Saharan Africa, private health insurance will play a marginal role for the foreseeable future. In these two regions, scaling up of small-scale non-profit insurance schemes is urgently needed. In general, the analysis suggests that private health insurance can complement existing health financing options if countries carefully manage and adapt it to local needs and preferences.

### INTRODUCTION

Sustainable instruments for health financing are needed to reduce the high amount of out-of-pocket payments and the incidence of catastrophic health shocks in the developing world (Bennett and Gilson 2001). Although private health insurance (PHI) is becoming an increasingly important tool to finance health care, surprisingly little is known about its role in national health systems in low- and middle-income countries (Sekhri and Savedoff 2005). In the case of developing countries, the literature reveals controversy concerning the pros and cons of shifting to private insurance (Preker, Scheffler, and Bassett 2007). Critics of such insurance argue that it will divert scarce resources away from the poor; escalate health costs; and allow cream skimming, adverse selection, and moral hazard behavior. According to this view, private health insurance largely neglects the *social* aspect of health protection.<sup>1</sup> Proponents of private health insurance claim that it can bridge financing gaps by offering consumers value for money and helping them avoid waiting lines, low-quality care, and under-the-table payments—problems often observed when households can use public health facilities for free or participate in mandatory social insurance schemes (Zweifel 2005).

Although neither camp is short of anecdotal evidence to substantiate its arguments, both fail to take into account the current development and diversity of health financing options. The essentially categorical discussion does not acknowledge regional differences based on people's values, a country's institutional capacity, and previous patterns of economic development.

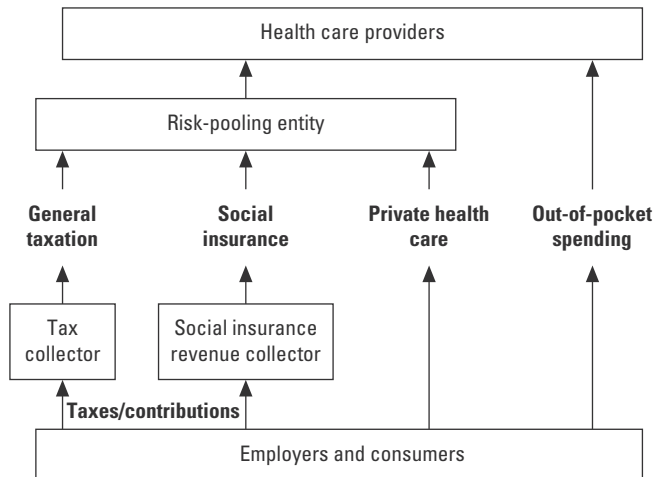
The analysis presented below goes beyond previous studies, which have focused on specific types of private health insurance (for example, community-based programs [Preker and Carrin 2004; Ekman 2004] and microinsurance [Dror and Jacquier 1999]) or included only those countries with a well-established insurance industry (for example, Latin American countries [Barrientos and Lloyd-Sherlock 2003; Iriart, Merhy, and Waitzkin 2001] and Southeast Asian countries [WHO 2004]). The chapter describes the current contribution and problems of private health insurance throughout the developing world and identifies clusters of countries that share structural characteristics and face similar challenges in integrating private insurance into the national health system.

## DATA AND METHODOLOGY

For the purpose of this analysis, private health insurance, which can take various forms in the developing world, is defined by channeling of financial resources directly to the risk-pooling institution with no or relatively little involvement of the state. The main distinction between social and private health insurance is the type of contract between the risk-pooling entity and the insured individual or group. Whereas social insurance relies on tax-like contributions, private health insurance rests on a private contract between the insurance company and its clientele in which the level of insurance premiums for a given benefit coverage is set (figure 7.1).

According to the Organisation for Economic Co-operation and Development (OECD 2004), health financing through insurance involves both prepayment and risk pooling. Health care can be financed through private prepaid contributions in several ways. In developing countries, private health insurance ranges from large commercial to small nonprofit schemes, which can be run by private entities, nongovernmental organizations (NGOs), or communities. The schemes might offer individual contracts or cover particular groups of people, for example, employer-based schemes that rarely extend beyond the formal labor market.

Despite recent efforts of the World Health Organization (WHO) and other international entities to collect information on the quantity of financial resources used for health, data on health care financing, especially in low- and middle-income countries, remain scarce. The data sources for the analysis presented in this chapter are WHO's National Health Accounts (NHAs), country case studies, and reports from actuarial firms and reinsurance companies (table 7.1). Some findings of the analysis, which may underestimate the extent of private health insurance, should be treated with caution given the lack of reliable time-series data.

**FIGURE 7.1** Systems of Health Care Financing

Source: Adapted from Normand and Busse 2000.

The analysis consists of three steps (figure 7.2). First, the significance of private health insurance in low- and middle-income countries is assessed on the basis of the share of spending on such insurance relative to total health expenditure (THE) as recorded by WHO. The analysis considers 154 of the 192 WHO member countries; of these 154 countries, 73 recorded spending on private prepaid programs in 2002 (WHO 2005).

Countries with relatively high spending on private health insurance are the focus of the second step of the analysis, which employs overviews of regions (as reflected by the World Bank's classification of countries), country case studies, and in-depth analyses of specific risk-sharing programs.<sup>2</sup> This portion of the analysis considers the dominant structure of schemes as well as price-setting mechanisms and methods of premium collection.

The third step of the analysis establishes common patterns and trends of PHI development on the basis of countries' economic development and institutional capacity. This information is used to identify clusters of countries facing similar policy challenges in integrating private health insurance into the national health system.

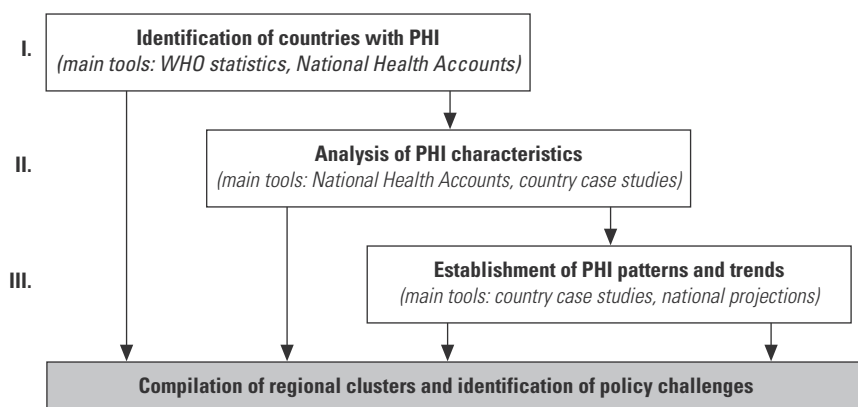
## **GROWTH OF PRIVATE HEALTH INSURANCE IN LOW- AND MIDDLE-INCOME COUNTRIES**

Private risk-sharing markets are comparatively small in low- and middle-income countries. Collectively, the six regions considered in this analysis account for

**TABLE 7.1 Main Data Sources and Evaluation**

<i>Data source</i>	<i>Information</i>	<i>Quality assessment</i>
World Health Organization: National Health Accounts	Spending on private risk-sharing programs	Quality varies largely and depends on the country collecting the information
World Health Organization: <i>World Health Report</i>	Data on health care systems and financing	Comprehensive compilation with no specific focus on health financing
European Observatory on Health Systems and Policies	Thorough analysis of health care systems in Europe and parts of Central Asia; describes health financing mechanisms, type of insurance schemes, coverage rates, etc.	Quality varies depending on country being analyzed; generally reliable and detailed information
La Concertation	Covers health insurance systems in West Africa with a focus on community-based financing	Reliable source, but limited scope; might miss many new schemes as development is dynamic
Swiss Reinsurance Company: Sigma publications	Data on and analyses of insurance markets around the world	Reliable source, but health is not a main focus; primarily pro-profit, commercial insurance
International Labour Organization STEP (Strategies and Tools against Social Exclusion and Poverty) program	Focus on community-based programs and the development of social insurance	High-quality country case studies with a focus on certain aspects of health insurance
Partnerships for Health Reform (PHR; now Partners for Health Reform plus)	Focus on community-based health financing and decentralization in Africa, Asia/Near East, Eurasia, and Latin America and the Caribbean.	Reliable source but potential bias toward private mechanisms of the U.S. Agency for International Development
World Bank	Issue-specific information on health care financing in many countries	Reliable information but no systematic collection of country data

Source: Authors.

**FIGURE 7.2 Analytical Framework**

Source: Authors.

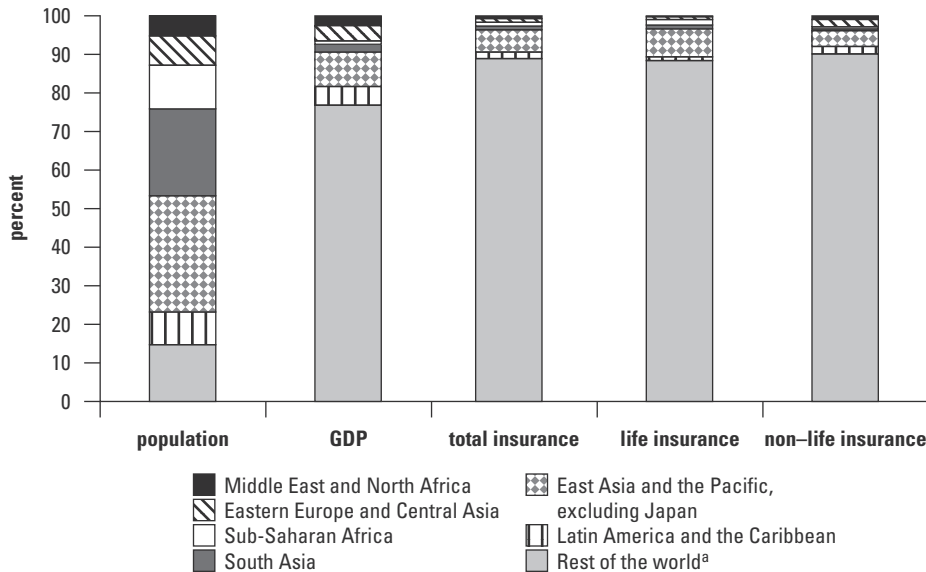
a mere 10 percent of global insurance premium income (figure 7.3). This small share is striking, considering that these regions host more than 85 percent of the world’s population and account for some 23 percent of global GDP (Swiss Reinsurance Company 2004b).

But the 10 percent share may soon increase. Measured in terms of premium volume, the insurance industry in low- and middle-income countries grew more than twice as fast as in industrialized economies during the past 10 years (10.4 percent as compared with 3.4 percent in the life insurance sector and 7.3 percent as compared with 2.6 percent in the non-life insurance sector, respectively<sup>3</sup>). This development has been particularly strong in Asia and Eastern Europe, where the industry expanded by 10.5 percent and 13 percent, respectively, between 1998 and 2003 (Swiss Reinsurance Company 2004a, 15). Even though growth rates have recently dropped below their long-term average, analysts consider the development potential of the insurance industry to be significant.

### Private Health Insurance in Latin America and the Caribbean

Latin America has experienced tremendous growth in the private insurance industry. The volume of insurance premiums increased significantly after regulatory

**FIGURE 7.3 Relative Importance of Private Insurance Markets, 2003**  
(percentage share of global insurance premium income)



Source: Authors’ calculations using data from Swiss Reinsurance Company 2004b.  
a. Primarily countries of the Organisation for Economic Co-operation and Development.

changes and liberalization efforts in the 1990s brought private health insurance to many Latin American countries. However, demand has not risen in step with the high inflow of capital and the increased presence of foreign insurance providers.

### *Significance of Private Health Insurance*

The private health insurance industry in Latin America and the Caribbean has benefited from overall development of the insurance market. In 2002, spending on private health insurance was recorded for 22 countries, and PHI expenditure amounted to more than 5 percent of total health spending in 10 countries (table 7.2). The industry is particularly significant in Uruguay, where over 60 percent of the population is covered through private schemes (Sekhri and Savedoff 2005, 131). High coverage is also reported for Colombia, where half of the population is estimated to have private health insurance (U.S. Department of Commerce 2000, 43–7). Measured in terms of total expenditure on health care, private health care is important in Chile and Brazil because of the insufficiencies of publicly financed

**TABLE 7.2 Relative Importance of Private Health Insurance in Latin America and the Caribbean, 2002**

<i>Country</i>	<i>PHI expenditure as a percentage of total health expenditure</i>
Argentina	15.5
Barbados	7.2
Bolivia	3.8
Brazil	19.4
Chile	28.2
Colombia	5.4
Costa Rica	0.3
Dominican Republic	0.3
Ecuador	1.5
El Salvador	3.4
Guatemala	2.7
Honduras	3.6
Jamaica	13.8
Mexico	3.0
Nicaragua	2.0
Panama	5.2
Paraguay	7.1
Peru	8.6
Suriname	0.2
Trinidad and Tobago	4.7
Uruguay	53.3
Venezuela, R.B. de	2.2

*Source:* Authors' calculations using data from WHO 2005.



insurance schemes. About one-quarter of the population is covered through private health insurance in each country (U.S. Department of Commerce 2000). Similar observations apply to Argentina and Jamaica, where PHI spending accounts for around 15 percent of total health expenditure. Although not yet reflected in coverage rates (which are estimated at 3 percent of the population), private health insurance has also gained significance in Mexico, where the industry is experiencing “vigorous growth” (Swiss Reinsurance Company 2002, 35).

### *Characteristics of Private Health Insurance*

Many Latin American countries have adopted PHI schemes that are based on the principles of managed care. In this respect, the private insurance market is primarily influenced by U.S.-type health maintenance organizations (HMOs). HMOs are private, prepaid health programs in which members pay monthly premiums to receive maintenance care (medical checks, hospital stays, emergency care). Consumer choice is limited, because care is often provided through the organization’s own group practice, contracted health care providers, or both. Moreover, HMOs do not allow members to consult a specialist before seeing a preselected primary care doctor who serves as a gatekeeper to health care.

Although managed care can be an effective way to control health care spending (U.S. Department of Commerce 2000; Phelps 1997), HMOs’ capacity to contain cost escalation in Latin America is doubtful. With the North American market nearing saturation, foreign investors have targeted the growing upper-middle class in Latin America to maximize profits. Stocker, Waitzkin, and Iriart (1999, 1132) point out that the main motive for HMOs to enter the Latin American market is financial reward. Other goals (preventive care or quality control) that have traditionally been valued by some HMOs in the United States have received minor attention. Mandatory copayments have further deteriorated the situation for vulnerable groups (Stocker, Waitzkin, and Iriart 1999).

### *Prospects for Development of Private Health Insurance*

Multilateral lending agencies strongly supported entry of private, and particularly international, insurers into Latin America and the Caribbean. The result was increased and often predatory competition, which was characterized by hostile takeovers of local insurers as well as mergers and acquisitions. Although market concentration recently decreased as some small start-up companies entered the market, the industry remains noncompetitive and the level of premiums high. Consequently, families in the upper income percentiles are the primary PHI purchasers. Poor families must remain in social insurance schemes or go without insurance. Such inequities have been reported for Argentina, Chile, and Colombia (Barrientos and Lloyd-Sherlock 2003), Brazil (Jack 2000, 26), and Peru (Cruz-Saco 2002, 17).

Private health insurance often faces both the inherent problems of health insurance markets and “the administrative weakness and political conflicts present in the health sector in Latin America” (Barriento and Lloyd-Sherlock 2003,

189). Previous failures raise concerns about the capacity of private schemes to solve problems of health care financing in Latin America. In many countries, virtually all relevant indicators of a successful health insurance system have remained unimproved or deteriorated since introduction of private schemes. These schemes have failed to contain health costs, promote equity, and reduce vast disparities between coverage in urban and rural areas (ILO 2000).

Many countries have reported problems with introduction of private health insurance. In Chile, a large part of the wealthy population has opted out of the social insurance system, making public health care de facto an insurer of last resort (Barrientos 2000). Chile's highly fragmented insurance market<sup>4</sup> is characterized by superfluous coverage (Jack 2000), and a stop-loss clause has allowed insurance companies to limit the extent of coverage in the event of catastrophic health care costs. Cream skimming is a common phenomenon: only 6.9 percent of people older than 65 are members of the private scheme ISAPRE, compared with 26.7 percent in the 25–54 age group (Jack 2000, 28; Baeza 1998, 18). The regulatory framework in Argentina, Brazil, and Colombia could not prevent inequalities and inefficiencies from arising, either because it was not in place when private health insurance was introduced into the market or because it was ill adapted to the local situation. Moreover, implementation of adequate legislation is costly—for example, regulation-induced transaction costs might account for 30 percent of the total premium revenue in Chile (Kumaranayake 1998, 16).

Although PHI expenditure continues to increase in most Latin American countries (figure 7.4), identifying a development trend is difficult. Sustained expansion of the health insurance industry is primarily due to escalating health care costs in the private sector and the consequent increase of PHI premiums. After the insurance industry flourished in the 1990s (Cruz-Saco 2002), its growth slowed.

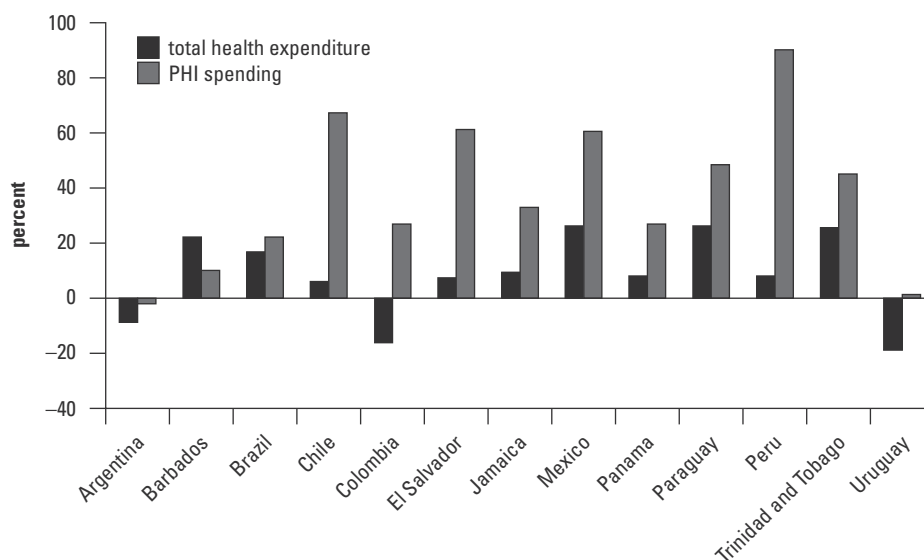
### **Private Health Insurance in the Middle East and North Africa**

Private expenditure is an important source of health care finance in the Middle East and North Africa. Nonetheless, private health insurance is a relatively new phenomenon in most of the region's countries. Private funds are predominantly used for out-of-pocket expenditure; only Morocco, Lebanon, and Saudi Arabia have a sizeable PHI industry. Furthermore, a large share of private health expenditure is used for prepaid programs in Oman and Saudi Arabia.

#### ***Significance of Private Health Insurance***

Nine countries in the Middle East and North Africa have recorded PHI spending; five of these countries channel more than 5 percent of their total health expenditure through private prepaid programs (table 7.3). The country with the largest share of population covered by private health insurance (around 15 percent or 4.5 million people) is Morocco, where public insurance does not exist. Half

**FIGURE 7.4 Total Health Expenditure and PHI Spending in Latin America and the Caribbean**  
(percentage change between 1998 and 2002)



Source: Authors' calculations using data from WHO 2005.

Note: Only countries in which PHI spending exceeded \$10 per capita in 2002 are included.

**TABLE 7.3 Relative Importance of Private Health Insurance in the Middle East and North Africa, 2002**

Country	PHI expenditure as a percentage of total health expenditure
Algeria	1.2
Egypt	0.4
Iran, Islamic Rep. of	1.5
Jordan	3.8
Lebanon	12.2
Morocco	15.5
Oman	8.9
Saudi Arabia	9.2
Tunisia	7.8

Source: Authors' calculations using data from WHO 2005.

a million people (12.6 percent of the population) are reported to have coverage in Lebanon. In other countries, private health insurance is restricted mainly to foreigners (5–6 million expatriate workers in Saudi Arabia) or high-income individuals (around 250,000 in Tunisia and Jordan, which corresponds to 2.5 percent and 5 percent of each country's population, respectively).

### *Characteristics of Private Health Insurance*

Some countries in the region have a surprisingly diversified health insurance market. Apart from public sources, various private providers, including private non- and for-profit companies, mutual benefit societies, and mutual funds for private and public sector companies, offer health care coverage. In Lebanon, a country with fewer than 5 million inhabitants, 70 insurance firms provide private health insurance (WHO, Lebanon Ministry of Health, and World Bank 2000). Furthermore, insurers offer both comprehensive and supplementary coverage; participation in these schemes primarily depends on the extent of available public insurance.

Insurance markets in the region often lack policy harmonization and institutional accountability. In Jordan, coordination between the Ministry of Industry and Trade, which is responsible for PHI regulation, and the Ministry of Health is lacking (Jordan Ministry of Health and others 2000). In Lebanon, each branch of the insurance industry is associated with a distinct supervising ministry. Evidently, these shared responsibilities impede public oversight, which may lead to market inefficiencies such as overlapping health care coverage (which is also reported for Jordan and the Islamic Republic of Iran). Better coordination mechanisms between respective ministries could decrease citizens' uncertainty about crucial coverage and thereby improve market outcomes. Similar objectives can be attained by clearly defining areas in which private health insurance may support, complement, or substitute for other forms of health care coverage. Particularly important is a clear distinction between private and public responsibilities in health care financing.

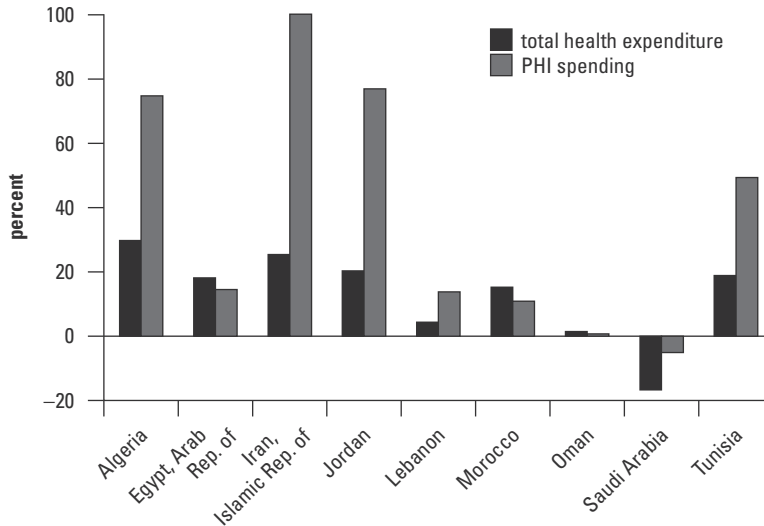
### *Prospects for PHI Development*

PHI schemes reportedly exclude high-cost/low-income individuals in Jordan, Lebanon, Morocco, and Tunisia. Furthermore, these schemes are mostly concentrated in urban areas and often do not extend to the rural population.

Some countries have begun to promote PHI development, either through liberalization of insurance services or extension of existing schemes to a wider population. For example, Saudi Arabia requires private coverage for expatriate workers. But the main drivers of PHI development in the Middle East and North Africa are increasing health care costs, which the state can no longer finance, growing and more diversified consumer demand, and overall economic growth (figure 7.5).

Without efficient regulatory instruments, cream skimming, health care cost and insurance premium escalation, and fraud (widespread in the region) will be difficult to prevent, and equity targets will be missed. In Lebanon, lack of effective control mechanisms contributed to recent increases in health care costs and

**FIGURE 7.5 Total Health Expenditure and PHI Spending in the Middle East and North Africa**  
(percentage change between 1998 and 2002)



Source: Authors' calculations using data from WHO 2005.

insurance premiums. Moral hazard behavior led to oversupply of health care coverage and provision, which could partly explain the highly uneven distribution of health care costs (WHO, Lebanon Ministry of Health, and World Bank 2000). In Lebanon, low-income individuals spend on average 20 percent of their household income on health care but the highest-income individuals spend only 8 percent of household resources on health care.

Insufficient public oversight and, in particular, inappropriate incentive structures cause inefficiencies in resource allocation. Reimbursement policies in Lebanon, for example, have channeled too many resources into development and prescription of high-tech curative treatment. Primary and preventive care, however, have been neglected by health financing institutions, including private health insurers. Apart from contributing to the general escalation of health care costs, the focus on curative care may also fail to meet the health care needs of the local population, which might require preventive measures such as vaccination and immunization. PHI schemes also appear to be maladjusted to local requirements in Morocco. If these schemes were to become a major pillar of the country's health financing system, they would need to take into account the specific situation of the poor. Their current design, which primarily covers minor health care risks, does not provide sufficient protection against impoverishment, even though catastrophic health care costs could arise in the event of major treatment.

## Private Health Insurance in Eastern Europe and Central Asia

Despite a relatively developed non-life insurance market (per capita spending of \$52.60, which is the highest rate of all regions analyzed in this study), private health insurance in Eastern Europe and Central Asia is in its infancy. In many countries, PHI schemes entered the market as part of the general transition to market-based economic systems. This development was often supported by health sector reforms and government-driven PHI pilot programs that attempted to establish private health insurance as a pillar of health care financing (for example, in Estonia, Hungary, and Moldova).

### *Significance of Private Health Insurance*

In Eastern Europe and Central Asia, private health insurance has thus failed to become a significant channel of health care financing in all but one country with recorded PHI spending (the exception is Slovenia, which is not considered in this analysis). Although expenditure on private health insurance has increased in many countries, a substantial PHI expansion has not occurred. Average per capita spending on private health insurance in all 11 countries with available data amounted only to 7.16 international dollars in 2002, which is less than 1 percent of total health expenditure in most countries of the region (WHO 2005). Only the Russian Federation (6.5 percent), Turkey (4.1 percent), and Romania (1.9 percent) surpass the 1 percent threshold (table 7.4), but even in these countries the extent of private health insurance is limited. Only 650,000 people (1 percent of the population) have private coverage in Turkey (Colombo and Tapay 2004, EOHCS 2002c).

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**TABLE 7.4 Relative Importance of Private Health Insurance in Eastern Europe and Central Asia, 2002**

<i>Country</i>	<i>PHI expenditure as a percentage of total health expenditure</i>
Belarus	0.1
Bulgaria	0.4
Estonia	1.0
Georgia	0.9
Hungary	0.4
Latvia	0.4
Lithuania	0.1
Romania	1.9
Russian Federation	6.5
Turkey	4.1
Ukraine	0.7

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*Source:* Authors' calculations using data from WHO 2005.

### *Characteristics of Private Health Insurance*

In Eastern Europe and Central Asia, PHI schemes cater to high-income individuals who seek additional or superior coverage to supplement public coverage. As in Romania, private health insurance is often offered by large multinational employers or is used by residents traveling abroad because out-of-country services are not covered through compulsory social insurance (EOHCS 2000b). Except in Hungary, private health insurance is predominantly for profit and is generally unaffordable for a large share of the population.

Market exclusion of the poor can be extreme. In Azerbaijan, private health insurance covers approximately 15,000 people—less than 0.1 percent of the country's population. Insurance premiums vary from \$600 for hospital treatment in insurance-owned facilities to \$17,000, depending on the insurance package (EOHCS 2004a). The average per capita income in Azerbaijan is about \$700. Insurance companies do not appear to believe “that there is a viable market among the general population” (EOHCS 2004a, 24). This observation holds for Belarus (EOHCS 1997), Estonia (EOHCS 2000a), Georgia (EOHCS 2002b), and Hungary (EOHCS 2004b).

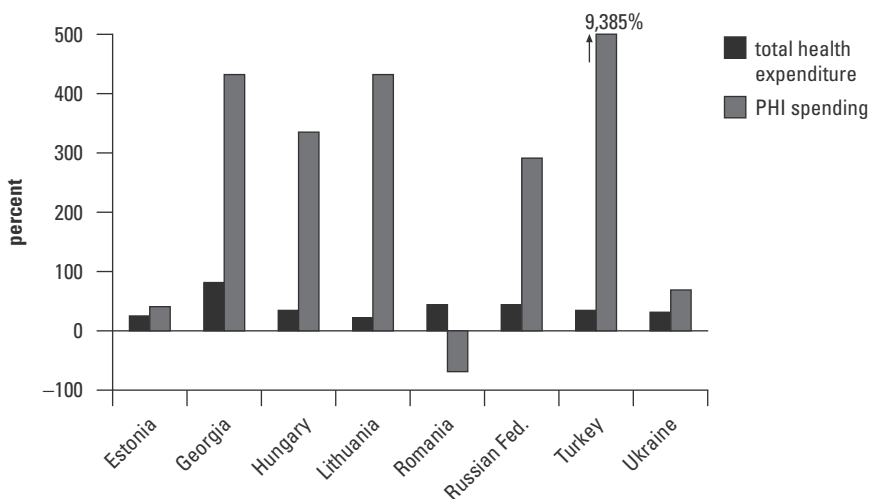
### *Prospects for PHI Development*

In an environment of overall escalating health care costs, contributions to private prepaid schemes have increased tremendously in many countries (figure 7.6). But PHI schemes have not become an important source of health care financing in Eastern Europe and Central Asia.

Dixon, Lagenbrunner, and Mossialos (2004) report that many countries experienced severe difficulties when markets were opened for private health insurance; for example, in Kazakhstan, most insurance companies went out of business shortly after their market entry. The failures owed mainly to lack of public regulation and to lack of oversight of the companies' solvency. In other countries, privatization has not been thoroughly accomplished (for example, government joint stock companies sell private health insurance in Uzbekistan) or is limited to certain sectors of the health insurance market (that is, private insurance only covers copayments under the public health insurance regime). Albania opened the market for private health insurance in 1994 but failed to attract PHI suppliers. As of 1999, only one insurance company had entered the market, and it offers private insurance services mostly to people traveling abroad (EOHCS 1999). The private insurance industry has still not consolidated, and the country's social health insurance scheme is becoming the primary purchaser of health care services (EOHCS 2002a).

Apart from regulatory deficiencies, the lack of non- or low-profit insurance companies may also have contributed to the relative insignificance of private health insurance. Hungary appears to be the only country to have succeeded in promoting the development of private health insurance through a mix of institutional reforms and public subsidies. It created the legal framework for establishment of nonprofit private health insurance in 1993. The framework is primarily based on the model of the French *mutualité*.

**FIGURE 7.6 Total Health Expenditure and PHI Spending in Eastern Europe and Central Asia**  
(percentage change between 1998 and 2002)



Source: Authors' calculations using data from WHO 2005.

Note: Estonia, 1999 and 2002.

Another dynamic market may develop in Turkey, which witnessed an increase of coverage from 15,000 to 650,000 people between 1990 and 2002. During this period, subscribers to private schemes were primarily people acquiring higher-quality service to supplement their public coverage. The significant increase of insurance companies offering and people buying private health insurance was mostly due to the country's economic development, which allowed diversified consumer demand. High premiums, however, have recently reduced the growth of private health insurance. The average annual premium per person increased from \$200 to \$800 between 1994 and 2002.

Whether private health insurance will gain a more prominent role is above all a political decision. Support of PHI development varies greatly across countries. The Ministry of Health in Belarus is "broadly in favor of the extension of voluntary [private] health insurance" (EOHCS 1997, 42), but Estonia has renounced all policy attempts "to increase the share of private insurance" (EOHCS 2000a, 18).

### Private Health Insurance in Sub-Saharan Africa

Private health insurance, like other forms of insurance, is not significant in Sub-Saharan Africa. Such insurance is a niche product or takes the form of small community-based schemes offering limited coverage and financial protection. Only in South Africa is private insurance a major pillar of the health care system.



### *Significance of Private Health Insurance*

PHI spending is recorded for 20 countries and is 5 percent or more of total health expenditure in 7 of these countries (table 7.5). The health insurance market is particularly well established in South Africa, where 46.2 percent of all expenditure on health care was channeled through private health insurance in 2002 (WHO 2005). (Because South Africa is an exceptional case, it is not included in the analysis; the interested reader is referred to Söderlund and Hansl 2000). Measured in financial flows, private health insurance also plays a significant role in Namibia and Zimbabwe; the latter is the only low-income country in which PHI spending exceeds 10 percent of THE. Because private pro-profit health insurance is almost exclusively reserved for high-income individuals, the large share of PHI spending is not reflected in equally significant coverage rates; for example, only 8 percent of the population in Zimbabwe is estimated to have private health insurance (Campbell and others 2000, 2), although PHI expenditure accounts for 19 percent of the country's THE.

Innovative approaches have begun to increase the significance of private health insurance in other African countries and among other income groups.

**TABLE 7.5** Relative Importance of Private Health Insurance in Sub-Saharan Africa, 2002

<i>Country</i>	<i>PHI expenditure as a percentage of total health expenditure</i>
Benin	5.0
Botswana	7.6
Cape Verde	0.0
Chad	0.2
Côte d'Ivoire	4.2
Ethiopia	0.2
Kenya	3.9
Madagascar	5.0
Malawi	1.0
Mozambique	0.2
Namibia	22.4
Niger	2.7
Nigeria	5.0
Rwanda	0.1
Senegal	1.9
South Africa	46.2
Swaziland	8.1
Tanzania	2.0
Togo	2.1
Uganda	0.1
Zimbabwe	18.8

*Source:* Authors' calculations using data from WHO 2005.

The increasing emergence of community-based health insurance (CBI), which usually operates on a nonprofit basis, has been particularly strong in Sub-Saharan Africa (Jütting 2004). New schemes have been implemented in Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Guinea, Mali, Nigeria, Senegal, Tanzania, Togo, and Uganda (ILO 2000).

### *Characteristics of Private Health Insurance*

In the foreseeable future, private pro-profit insurance will not become a significant pillar of the health care system of African countries. Community-based health insurance promises far greater development potential. CBI schemes are established through “local initiatives of rather small size . . . with voluntary membership” (Wiesmann and Jütting 2000, 195) and have been initiated by health care providers (for example, hospitals), NGOs, or local associations (Atim 1998; Criel 1998). The schemes are generally limited to a specific region or community and thus reach a small number of people. Moreover, insurance packages are not comprehensive but generally offer supplementary coverage for certain medical treatments.

A survey of health insurance systems in 11 francophone West and Central African countries (La Concertation 2004) identified 324 CBI schemes—nearly 90 percent of the 366 registered insurance programs that were considered operational. In addition to offering moderate premiums, CBI schemes can generally better adapt to the specific needs of their clientele. Although health coverage through the schemes will typically remain low, recent research (for example, Jütting 2005) suggests that they can increase households' access to health care and reduce periodic expense shocks that would otherwise be induced by unanticipated out-of-pocket spending (Ekman 2004).

### *Prospects for PHI Development*

One advantage of CBI schemes could be problematic for their development—and not only in Africa but around the world (Baeza, Montenegro, and Núñez 2002). The schemes' small size ensures sufficient flexibility to adapt to local conditions, but it deprives them of financial stability (La Concertation 2004, 79). In West African countries, 8 of 10 schemes cover fewer than 1,000 people; half of them cover fewer than 650 individuals. Small size, although preferable from organizational and participatory perspectives, will not be sustainable in the future. Greater cooperation and possibly partnerships among existing programs,<sup>5</sup> as well as targeting of many clients by new schemes, therefore appear advisable. Public policies could support consolidation of programs through the collective effort of the communities running the schemes.

CBI schemes should operate on a more professional basis by increasing risk pools and disposing of security mechanisms like guarantees or reinsurance funds. Moreover, they should gradually move from low premiums to contributions that allow both financial stability and a true insurance-based health care coverage. Most schemes cover only small risks and rely on copayments; expenses for

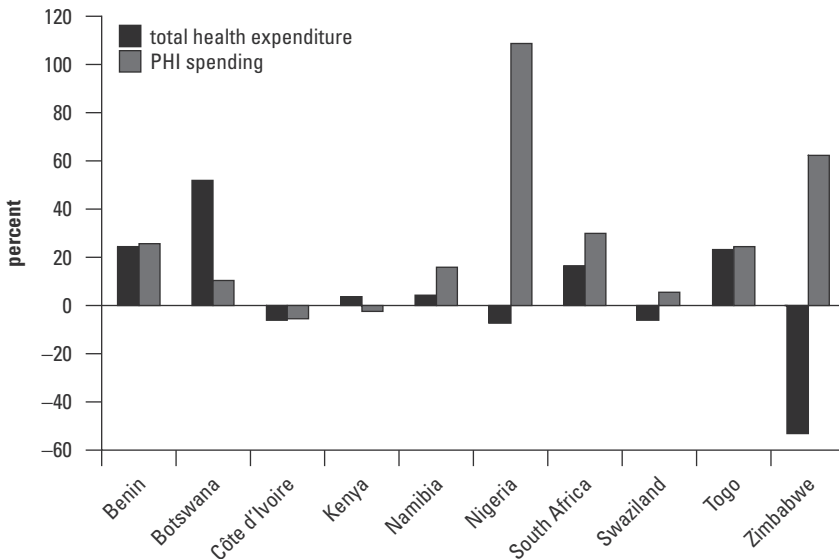
specialists or hospital treatment are rarely included. This situation is particularly unsatisfactory because such coverage does not protect individuals from catastrophic health costs.

Considering the institutional weakness of many Sub-Saharan African countries and the limited financial resources of the African people (46.5 percent of the population live on less than \$1 a day), private health insurance will mainly evolve in the nonprofit, CBI segment. In francophone countries, 142 new schemes are being implemented, and 77 are planned for the near future. Because of the low contribution level of CBI schemes, this dynamic development will not be accompanied by a significant increase in PHI spending (figure 7.7). Implementation of schemes that offer only limited coverage is obviously not an end in itself. But it can serve as a building block for the development of more-efficient forms of health insurance in Sub-Saharan Africa.

### Private Health Insurance in East Asia and the Pacific

Considering the region’s large population and economic potential, private insurance is surprisingly insignificant in East Asia and the Pacific. However, economic growth, escalating health care costs, and recent pandemics like severe acute

**FIGURE 7.7 Total Health Expenditure and PHI Spending in Sub-Saharan Africa**  
(percentage change between 1998 and 2002)



Source: Authors’ calculations using data from WHO 2005.

Note: Only countries in which PHI spending exceeded \$1 per capita in 2002 are included.

respiratory syndrome (SARS) have intensified the quest for new health financing options and increased demand for private health insurance.

### *Significance of Private Health Insurance*

Private health insurance clearly plays a secondary role in health care financing in East Asia and the Pacific. In 2002, PHI spending was recorded for seven countries but surpassed 5 percent of total health expenditure in only one—the Philippines (table 7.6). Given the region's high rate of out-of-pocket spending, private health insurance could nevertheless become an important source of future health care financing if resources for direct payments can be channeled to prepaid schemes. Furthermore, high levels of household saving might underpin the growth of the insurance market (Swiss Reinsurance Company 2004a, 7).

### *Characteristics of Private Health Insurance*

In East Asia and the Pacific, PHI schemes cater to niche markets. The schemes run the gamut of arrangements, from private for-profit to HMO, nonprofit, and community-based health insurance (WHO 2004). Depending on the efficiency and outreach of mandatory social schemes, private programs offer both comprehensive and supplementary coverage. In some countries (for example, China and Vietnam), rural areas, which are often insufficiently served by public insurance, have witnessed the emergence of CBI schemes similar to those found in Sub-Saharan Africa. Urban areas typically are served by private for-profit schemes that provide additional coverage to high-income individuals.

### *Prospects for PHI Development*

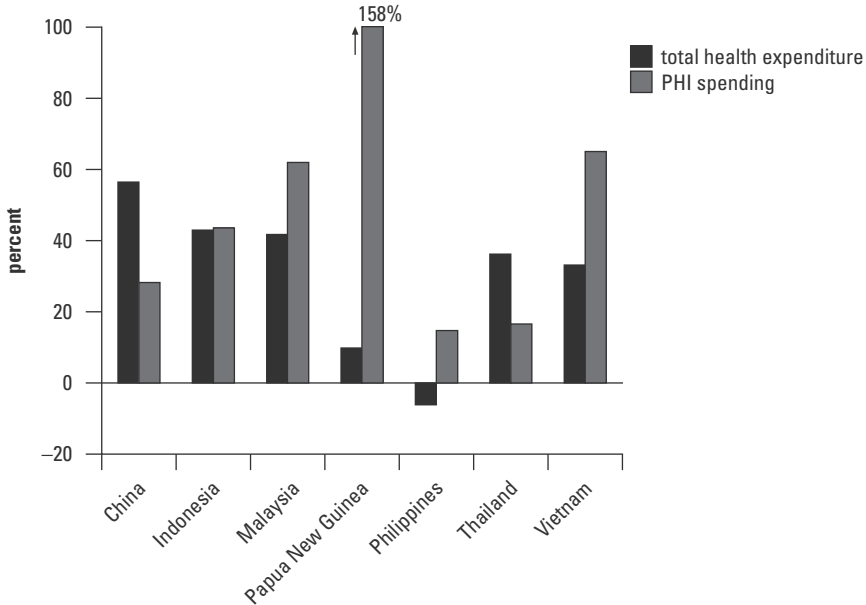
Private health insurance has already begun to realize some of its growth potential in East Asia and the Pacific (figure 7.8). As a response to increasing health costs that overburdened social security systems, many countries are developing private risk-sharing programs. Thailand's Health Card Program attracted 28.2 percent of the Thai population (WHO 2004, 179) with subsidized premiums and an extensive

**TABLE 7.6** Relative Importance of Private Health Insurance in East Asia and the Pacific, 2002

<i>Country</i>	<i>PHI expenditure as a percentage of total health expenditure</i>
China	0.3
Indonesia	3.3
Malaysia	3.3
Papua New Guinea	1.1
Philippines	10.9
Thailand	4.3
Vietnam	3.0

*Source:* Authors' calculations using data from WHO 2005.

**FIGURE 7.8 Total Health Expenditure and PHI Spending in East Asia and the Pacific**  
(percentage change between 1998 and 2002)



Source: Authors' calculations using data from WHO 2005.

publicity campaign. Vietnam has begun to investigate new policy tools to finance health, including user fees, health insurance, and health care funds. Adams (2005, 16) argues that scope for PHI provision in Vietnam is increasing. In Indonesia, where social insurance does not cover large segments of the population, the government is considering various forms of private health insurance, including managed care and community schemes. However, the contribution of PHI schemes to universal coverage in Indonesia remains small, because the number of people insured and services covered under the schemes remain small (WHO 2004).

Given regulatory reforms in rural areas in 1998 and in urban areas in 2002, China is expected to become a dynamic market for insurance providers (Swiss Reinsurance Company 2004a). The Chinese health care system is being restructured in the wake of significant drops in coverage rates of social insurance in the 1980s and 1990s, by the end of which 64 percent of the rural population and 15 percent of the urban population had no health or accident insurance (Swiss Reinsurance Company 1998, 21). Health care costs increased tremendously after implementation of trade liberalization and open-market policies in the 1980s. In the process of reform, "China has carried out some of the most interesting experiments with new forms of health insurance financing" (van Ginneken 1999, 18). At the same time, the government is decreasing its provision of medical

insurance to make room for increased private provision (Swiss Reinsurance Company 2003, 24).

In the process of developing a market for private health insurance, East Asian countries face a trade-off between promoting a new industry with supportive policies and ensuring ample regulation and consumer protection. Sekhri, Save-doff, and Tripathi (2004, 4) note that measures to increase competition among insurers may encourage innovation, efficiency, and responsiveness of private schemes but also may “lead to higher administrative costs, small risk pools that are not economically viable and aggressive pricing practices that can create market instability and insolvency.”

### Private Health Insurance in South Asia

Of the regions analyzed here, South Asia represents the smallest and least significant insurance market. Although the region is home to 22.7 percent of the world’s population and contributes 2.1 percent of the world’s GDP, its share of the world’s total insurance premium income was a mere 0.6 percent in 2003 (Swiss Reinsurance Company 2004b).

#### *Significance of Private Health Insurance*

WHO data indicate PHI spending in only three of the region’s countries: Bangladesh, India, and Sri Lanka (table 7.7). Even in these countries, per capita PHI spending is negligible (between 0.01 and 0.17 international dollars in 2002).<sup>6</sup> Other countries had no PHI spending at the time the data were collected in 2002, or the spending was too small to be recorded in national statistics.

The insurance industry in South Asia was largely marginalized during a period of nationalization in the twentieth century. It has begun to regain some of its vitality as countries reopen their markets for private insurance companies. However, “poverty, lack of awareness, and, perhaps, strong belief in fatalism” (Pereira 2005) still prevent development of private insurance markets. India, with a relatively developed economy and a strong middle-class population (roughly 300 million people), offers the most promising environment for development of private health insurance. Not surprisingly, India has the largest market for private

**TABLE 7.7** Relative Importance of Private Health Insurance in South Asia, 2002

<i>Country</i>	<i>PHI expenditure as a percentage of total health expenditure</i>
Bangladesh	0.1
India	0.6
Sri Lanka	0.5

*Source:* Authors’ calculations using data from WHO 2005.

health insurance: PHI schemes cover 33 million people or 3.3 percent of the Indian population (Sekhri and Savedoff 2005, 130).

### *Characteristics of Private Health Insurance*

India presents an interesting case study of private health insurance. India not only dominates the region in terms of population size and economic potential, it also offers a wide selection of health financing options, including innovative forms of private health insurance. In fact, the country is moving away from a state-financed health care system; public expenditure on health as a percentage of GDP decreased from 1.3 percent in 1990 to 0.9 percent in 2004. This process involved exploration of different forms of health insurance, including private pro-profit, community-, and employer-based schemes as well as mandatory public insurance. After passage of the Insurance Regulatory Development Authority Bill in 1999, foreign and domestic providers' entry into the market sparked PHI development.

Public insurance schemes have only recently started to emerge and serve only a small segment of the Indian population. Consequently, the market leaves considerable room for alternative programs, including PHI schemes, to evolve. Private schemes already cater to various health insurance needs, regions, and income groups. Large for-profit insurance companies and employer-based schemes primarily cover upper-middle- and high-income groups in urban centers and people working in the formal sector. CBI schemes and insurance offered by NGOs, however, typically target poorer populations living in rural areas. As in Sub-Saharan Africa, these schemes reach the population by adapting the services they offer and the premiums they charge to the economic capacities of the local population. In the long run, such programs could become an important foundation on which to construct more comprehensive health insurance. Even some of the larger insurance companies target poor population groups. (Jan Arogya Bima insured around 7.2 million people in 2001.) However, such schemes generally employ risk-rated (for example, age-based) premiums and preexisting disease clauses that allow exclusion of bad-risk individuals (WHO 2004).

### *Prospects for PHI Development*

Private health insurance is unlikely to play an important role in South Asian health systems, other than those in India, in the near future. Without further reforms and political determination to establish a sizeable PHI market—and in the absence of economic development and a considerable reduction of poverty—private health insurance will remain a niche product for a few privileged individuals. As in Sub-Saharan Africa, small community-based schemes and insurance offered through NGOs and other nonprofit organizations will have the greatest development potential.

Because of lack of time-series data for South Asian countries, no patterns for PHI spending can be derived. Although such spending increased in Bangladesh,

India, and Sri Lanka between 1998 and 2002, it did so at less than \$1 per capita, making inferences difficult to draw.

## **REGIONAL CHALLENGES TO INTEGRATING PRIVATE HEALTH INSURANCE INTO A HEALTH SYSTEM**

The previous discussion has revealed important regional differences in the development of private health insurance. These differences are reflected in the problems that countries have experienced in introducing such insurance. On the basis of these problems, three groups can be distinguished:

- countries in which the PHI industry grew significantly after liberalization of markets and that must better integrate private health insurance into the health system (Latin America) or establish alternative insurance mechanisms (Eastern Europe);
- countries in which the socioeconomic environment will likely foster nascent PHI development (East Asia and the Middle East and North Africa); and
- countries in which private health insurance will probably remain a niche product in the foreseeable future, but in which innovative approaches may induce development of health insurance mechanisms (Sub-Saharan Africa and South Asia).

### **Reducing Market and Policy Failures: Latin America and Eastern Europe**

The track record of private health insurance in most of Latin America and Eastern Europe is disappointing. Many countries have realized that introduction of private insurance does not cure every problem of the health care system: health costs have not decreased, quality of care mostly has not improved, and coverage rates have not increased. On the contrary, many countries have experienced deteriorations in the health sector, especially as regards equitable access to financial protection. Most problems have originated from a regulatory framework insufficient to effectively integrate private health insurance into existing structures.

Chile, where private ISAPRE schemes first entered the market in 1981, only gradually responded to regulatory demands and established a supervising agency 10 years after its initial reforms. Similar delays were observed in Argentina, Brazil, and Colombia. In Brazil, regulation of the private insurance market was virtually nonexistent until 1998 (Jack 2000, 26)—a state of affairs that reflected negatively not only on the efficiency of the system but also on the reputation of private health insurance.

In Eastern Europe, countries have learned that implementation of private health insurance goes beyond opening markets for private providers. Many gov-



ernments have failed to provide proper risk-sharing and risk-adjustment mechanisms, undertake strategic planning, or communicate the pros and cons of private insurance to the public. Insufficient policy coordination has left the health sector highly fragmented. The radical move toward market structures has confused the population about the need and ways to obtain private health insurance for treatments not otherwise covered.

Although Eastern Europe and Latin America have had similar experiences with the introduction of private health insurance, their responses have differed significantly. While most countries in Latin America are determined to maintain private health insurance, countries in Eastern Europe are shifting back to other forms of health financing—most notably, social health insurance. The challenge in Latin America will be to improve integration of private health insurance into the health care system, which will not be an easy task given policy failures that have weakened trust in private insurance. The challenge in Eastern Europe will be to explore alternative ways to organize health care spending and to use experience with private insurance to structure other forms of health financing.

### **Controlled Growth through Efficient Regulation: East Asia and the Middle East and North Africa**

Private health insurance can be expected to grow in East Asia and in the Middle East and North Africa, largely because of high private spending on health and recent economic development. These regions are in a good position to influence the future growth of private health insurance. If they understand the lesson from the experience of Eastern Europe and Latin America, they will modify regulatory frameworks to allow efficient integration of private health insurance into existing structures before introducing such insurance.

China, Indonesia, Saudi Arabia, and other countries view establishment of private health insurance as a way to release pressure on overburdened health financing systems. These countries must find a balance between promoting a new industry with supportive policies and ensuring ample regulation and consumer protection.

Strategies to develop PHI markets in East Asian countries vary significantly from those in the countries of the Middle East and North Africa. Whereas the state has traditionally had an active role in providing social insurance in East Asia, countries in the Middle East and North Africa have relied on public health care (Saudi Arabia, Yemen) or had no health insurance mechanisms (for example, Morocco). In this respect, development of a functioning PHI system will probably be less challenging in East Asia, because governments can rely on existing know-how in dealing with insurance systems.

East Asian governments are already promoting development of a private insurance system. Programs similar to the Thailand Health Card program could succeed in other countries of the region, and close cooperation between the public and private sectors (for example, public-private partnerships) might prove particularly beneficial.

In the Middle East and North Africa, private health insurance has sometimes developed in an institutional vacuum. Lack of policy harmonization, little institutional accountability, and insufficient coordination among ministries have obstructed public oversight. Making up for these shortcomings should be easier in this region, given the early stage of PHI development, than in Latin America.

### **Small-Scale Programs Could Be a Good Start: Africa and South Asia**

In many African and South Asian countries, private health insurance is the only available form of risk pooling. The fact that such insurance currently reaches only a small number of people is therefore not necessarily a reason for concern. Many PHI schemes are, however, designed as supplementary insurance: they cover better-quality treatment and charge premiums that only high-income individuals can afford. Such schemes, and private commercial health insurance in particular, appear ill-suited to the needs of large parts of the population. However, PHI schemes can meet the needs of low-income groups when adjusted to local conditions, as the experience of Ghana illustrates (Okello and Feeley 2004). In Ghana, information campaigns persuaded the poor to purchase only relatively cheap premiums covering inpatient health care. Although hospital services are rarely needed, they pose a high risk of impoverishing those who use them.

Dror and Jacquier (1999) identify a mismatch between supply and demand for private health insurance. Microinsurance programs can increase coverage by harmonizing accumulated reserves with community-specific risk and benefit priorities. NGOs (a “leading force in health insurance provision for the informal sector” [GTZ 2003, 29]), communities, voluntary associations, hospitals, firms, or even private financial institutions (for example, the Grameen Bank) can operate such programs.

Health care providers, including hospitals and local medical centers, offer small insurance schemes. These schemes can bring insurance closer to the target population, but evidence from Zaire (Jütting 2004; Criel, van der Stuyft, van Lergerghe 1999) and from the hospital-based Lacor Health Plan in Uganda (Okello and Feeley 2004) indicates that they fail to integrate the chronically poor into their coverage.

Small insurance programs need to balance the limited financial capacities with the health needs of their prospective clients. They are consequently merely a starting point for the development of more efficient insurance mechanisms. Furthermore, schemes that limit coverage to high-cost/low-frequency events may not be the best option when local conditions demand large-scale preventive care (for example, immunizations and vaccinations). Such coverage could impede development of PHI schemes (La Concertation 2004, 79). Community-based schemes will become a viable alternative to other forms of health financing only if they can expand their services and coverage. In summary, community-based schemes offering low-cost/low-coverage programs eventually must attract larger parts of the population by offering an attractive product and maintaining affordable premiums.

## CONCLUSIONS AND OUTLOOK

Private risk-sharing programs are gradually gaining importance in health care systems of low- and middle-income countries. Five factors justify an optimistic outlook for development of private health insurance in these countries. First, many of the countries have experienced difficulties with traditional means of financing health care and are looking for alternative ways to achieve universal coverage. Second, economic growth leads to increased income and diversified consumer demand. Third, public entities frequently lack people's trust and confidence, increasing the popularity of private health insurance, which is generally associated with private health care providers. Fourth, globalization and economic openness increase trade in the health care sector. Fifth, private health insurance can be innovative and flexible in approach and therefore could reach marginalized individuals and overcome weaknesses in state institutions.

Introduction of private health insurance is not an end in itself. The impact of that introduction demands careful consideration as it will not cure all shortcomings of the previous system and could have negative consequences on existing structures. Private risk-sharing programs are an alternative way to finance health care; as such, they expand a country's options to cover health care costs, lay the foundation for development of universal coverage, or both. Countries must determine what role private health care should play in the existing health care system or how that insurance should develop to better serve future health care needs.

The role of private health insurance varies significantly according to a country's economic development and institutional capacity. To realize the potential benefits of private insurance, countries must consider these factors and adapt their PHI development strategy to local needs, preferences, and conditions. These recommendations also apply to international donor agencies or NGOs that seek to support development of alternative health financing mechanisms.

Private health insurance is neither the only alternative nor the ultimate solution to alarming health care problems in the developing world. But as an option it warrants—and already receives—increased consideration by policy makers around the globe. The question is not if this tool will be used in the future, but whether countries can tap its potential to meet the needs of their health care systems.

## NOTES

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1. In 2005, a joint conference of the World Health Organization, the International Labour Organization, and the German Agency for Technical Cooperation on social health insurance in developing countries (<http://www.shi-conference.de/>) concluded that extending social protection in health is the key strategy to reduce financial barriers to health care access and to move toward universal coverage.

2. In this analysis, high spending is considered 5 percent or more of THE.
3. According to the conventions of the European Union and the Organisation for Economic Co-operation and Development, health and accident insurance belong to the non-life segment of the insurance industry (Swiss Reinsurance Company 2004a, 28).
4. In 1995, 35 private insurance companies offered nearly 9,000 distinct insurance programs in Chile.
5. The UMASIDA (Mutual Society for Health Care in the Informal Sector) health insurance schemes in Tanzania resulted from the regrouping of five associations of the informal sector (Kiwara 1999, 131).
6. Coverage rates can nevertheless be quite significant, as indicated by the Grameen Bank health insurance program in Bangladesh. WHO (2004) reports that about 140,000 people are covered by the program, which was initiated to reduce defaults of the bank's microcredit loan program (Desmet, Chowdhury, and Islam 1999).

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## CHAPTER 8

# Lessons for Developing Countries from the OECD

*Francesca Colombo*

**P**olicy makers often look to private health insurance as a possible means of addressing some health system challenges. This chapter presents evidence from a study by the Organisation for Economic Co-operation and Development (OECD) on the role of private health insurance in OECD countries and on the impact of that insurance on health system performance between 2001 and 2004. On the basis of that evidence, it articulates implications for less developed economies.

Private health insurance has enhanced choice and responsiveness of health systems in many OECD countries, but access to coverage for high-risk and low-income individuals remains a key challenge. Moreover, private health insurance has not significantly reduced the cost pressures faced by public systems.

In the context of developing economies, private health insurance can help provide more complete coverage and increase satisfaction of middle-class consumers. However, private health insurance is unlikely to address the financial protection and health needs of the poor. It may induce inequities in access to care on the basis of insurance status and distort allocation decisions for scarce resources, such as doctor time and treatment capacity. The impact of private health insurance on health system performance will depend on the role that such insurance plays and the way governments regulate aspects of that role, including interaction with other coverage systems and provider markets.

### INTRODUCTION

The role of private health insurance (PHI), and of appropriate health financing mechanisms in general, is a key policy question in member countries of the OECD.<sup>1</sup> In these countries, health systems are well established, and most provide universal coverage. Health spending averages nearly 9 percent of GDP, and its share is rising (OECD 2005a).

Policy makers in some OECD countries are looking to private health insurance to improve the performance of health systems and in particular increase their cost-effectiveness. They may consider private health insurance a mechanism to supplement public financing, and, in some cases, replace it. Or they may regard such

insurance as a means to achieve other health policy goals, such as more responsive health systems and greater individual responsibility for health care funding.

Developing countries may be confronted with more urgent health needs, but they face health financing challenges similar to those of OECD countries. A poorly performing health financing system can be a threat to adequate pooling and equitable financing. Moreover, such a system can reduce economic growth potential and undermine attainment of broader social goals. Because developing countries have relatively low financial and other resource levels, increasing value for money may be a more critical task for them than for developed economies. In this context, governments may look to private health insurance as an alternative or additional source of resources for health, an opportunity to achieve universal coverage, or a way to increase the capacity of impoverished health systems.

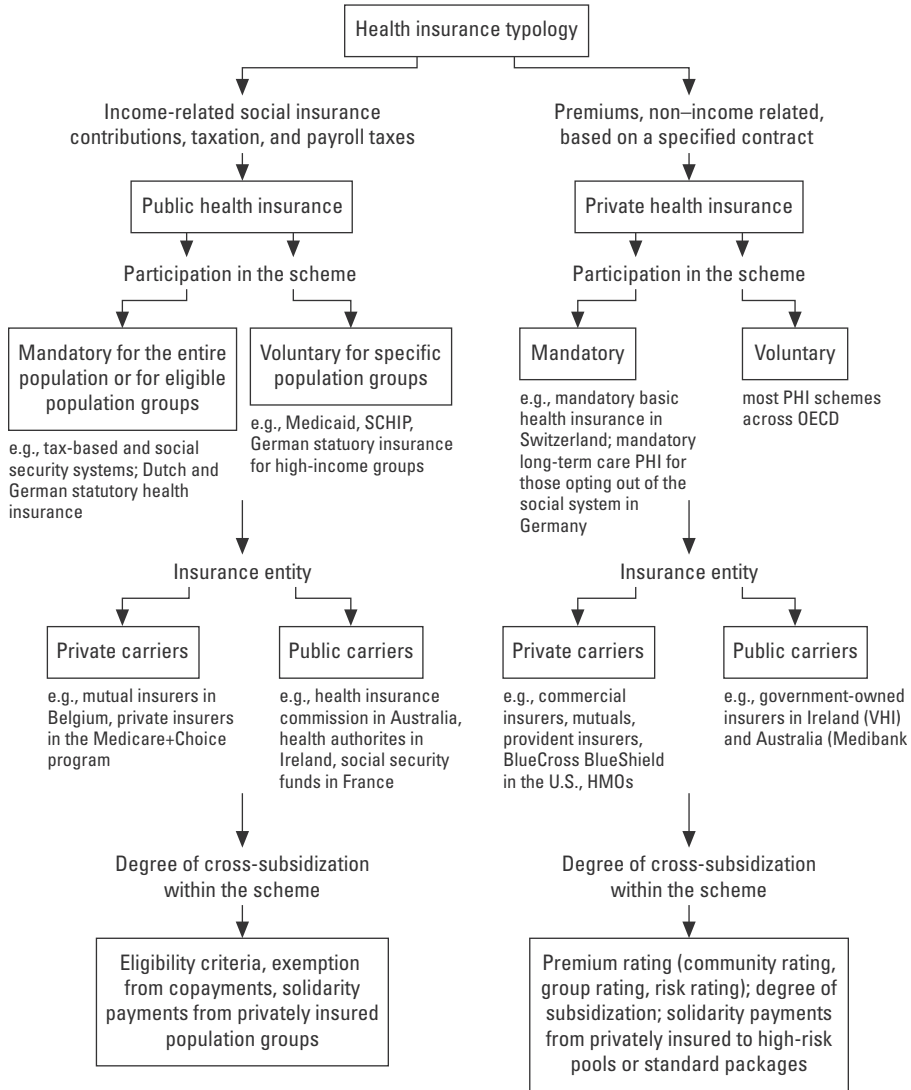
Private health insurance is among the most debated health policy issues in many countries. Policy discussions and decisions have often been driven by belief in or disillusionment with extensive state intervention in the market. A 2001–04 OECD study of private health insurance in OECD countries sought to provide an empirical basis for such discussions and decisions. It assessed evidence on the effects of private health insurance in different national contexts and identified the strengths and weaknesses of such insurance in key areas of health system performance (OECD 2004a; Colombo and Tapay 2004a).<sup>2</sup> The OECD study offers some lessons for policy makers engaged in the challenging quest of increasing resources for health and strengthening pooling in developing countries.

## **ROLES AND SCOPE OF PRIVATE HEALTH INSURANCE IN OECD COUNTRIES**

Health insurance arrangements vary in several respects: degree of cross-subsidization (across time, risks, and income groups) they promote, scheme management, participation (compulsory or voluntary), and funding sources (figure 8.1). The OECD study focused on insurance arrangements financed mainly through private non-income-related premiums, which are paid to an insuring entity that assumes much or all of the risk for paying for contractually specified services (OECD 2004a and 2004c).

The experience of individual OECD countries with private coverage markets is strikingly heterogeneous. Take market size. Private health insurance accounts, on average, for less than a quarter of private sector financing of health expenditure.<sup>3</sup> Private financing from all sources represents just a quarter of health spending in OECD countries (figure 8.2). Averages do conceal sizeable variation: PHI spending exceeds 10 percent of total health expenditure in only four countries (in one of these countries, the United States, it equals 37 percent) (figure 8.3) and is less than 2 percent of total health expenditure in 10 countries (table 8.1). Similar heterogeneity exists in the size of the population covered by private health insurance. In a third of the OECD member countries, at least 30 percent of the population has private health insurance; PHI market size is negligible in another third.

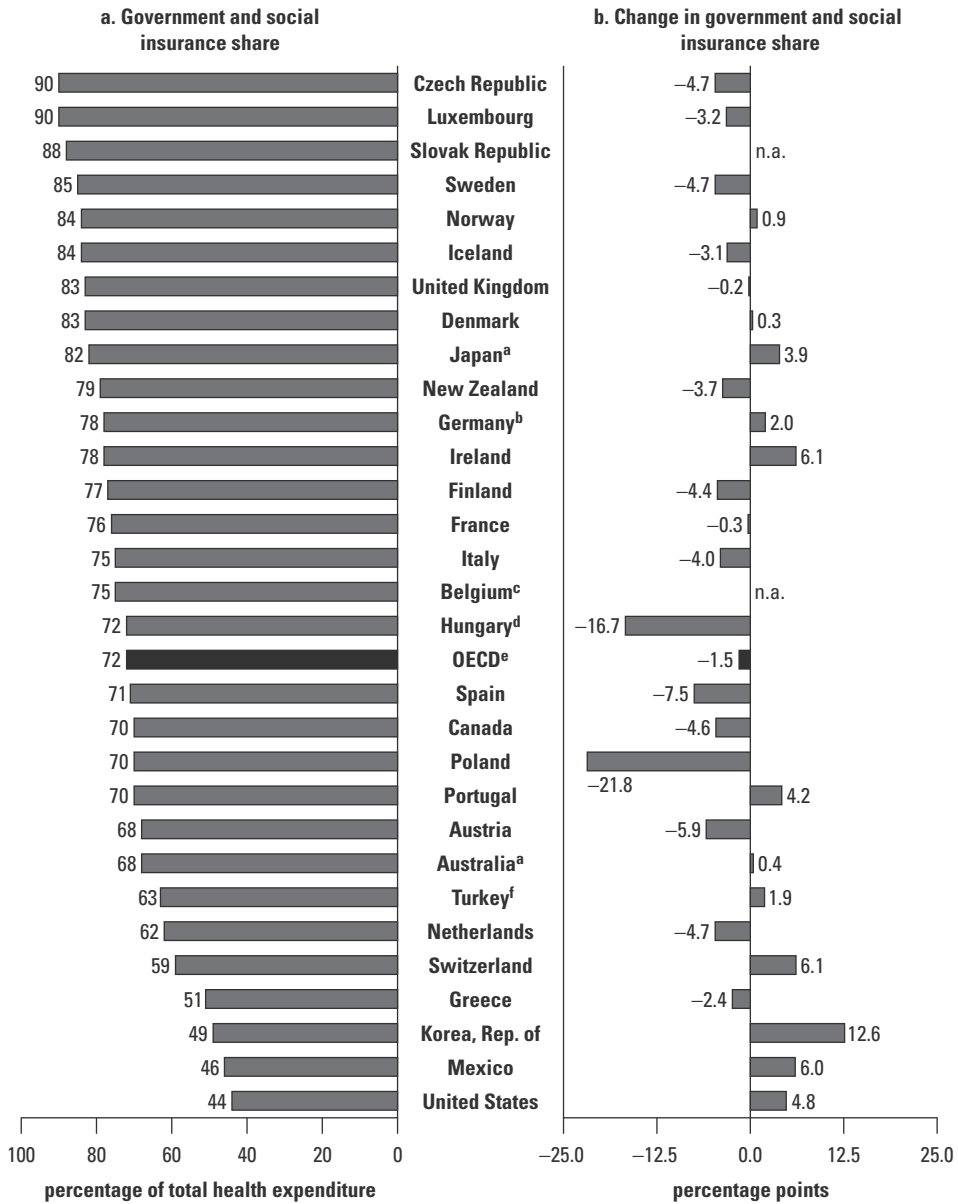
Figure 8.1 Typology of Health Insurance Arrangements



Source: OECD 2004a.

Private health insurance plays a variety of functions vis-à-vis basic (usually public) coverage programs, ranging from primary coverage for particular population groups to a supporting role for public systems (table 8.1) (Colombo and Tapay 2004a; OECD 2004a). Such insurance is a source of *primary* coverage for population groups without access to government or social health programs in Germany, the Netherlands, and the United States.<sup>4</sup>

**Figure 8.2 Government and Social Insurance Share of Total Health Expenditure, 2003**



Source: OECD 2005a, 2005b.

Note: n.a. = not applicable.

a. 2002.

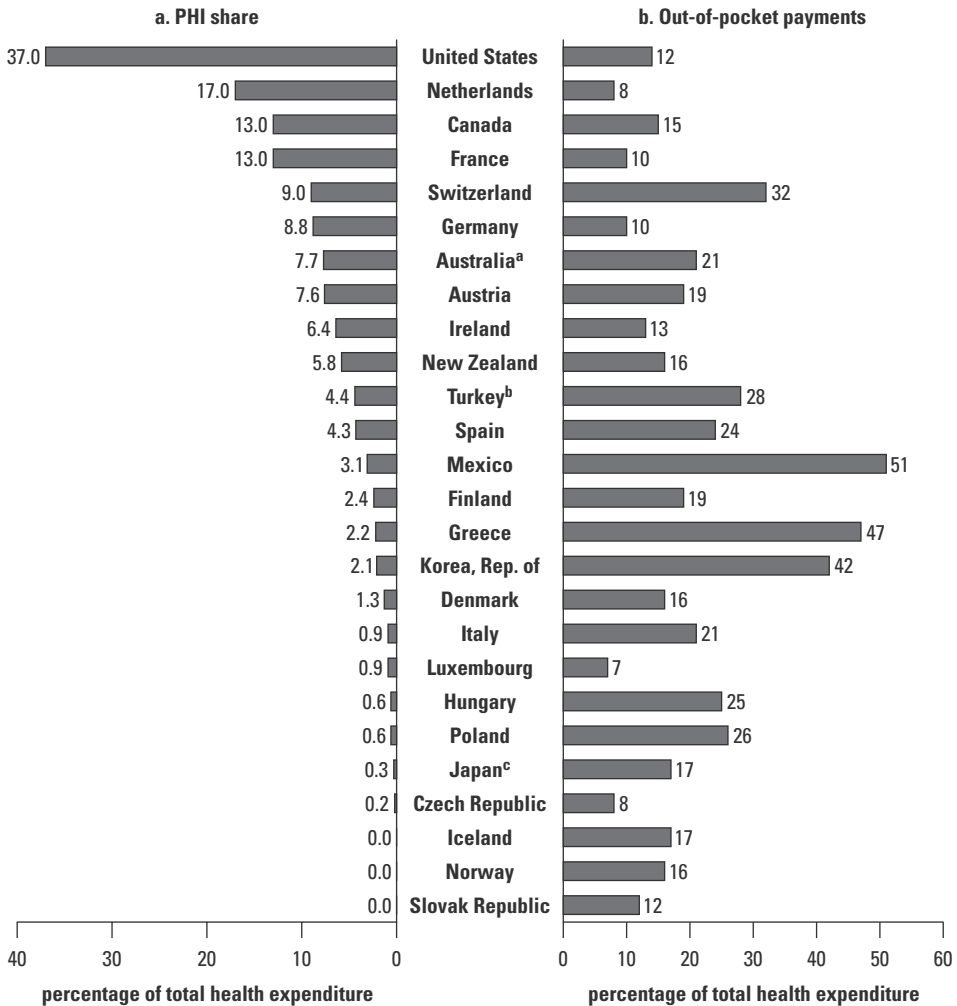
b. 1992.

c. current health expenditure.

d. 1991.

e. OECD average excludes Belgium and Slovak Republic.

f. 2000.

**Figure 8.3 Private Health Insurance and Out-of-Pocket Payment Shares of Total Health Expenditure, 2003**

Source: OECD 2005b.

a. 2001.

b. 2000.

c. 2002.

In the United States, 68 percent of the population had some form of private health insurance in 2004; employer-sponsored plans covered 60 percent of the population (U.S. Census Bureau 2005). A minority of the population, including the elderly, the disabled, and certain poor groups, are eligible for public coverage through Medicare, Medicaid, and the States Children's Health Insurance Program (CHIP) (Docteur, Suppanz, and Woo 2003).<sup>5</sup> Despite widespread private coverage and targeted public programs, 16 percent of the population had no form of coverage against health care cost in 2004 (U.S. Census Bureau 2005).

**TABLE 8.1 Private Health Insurance in OECD Countries: Market Size and Roles**

<i>Country</i>	<i>PHI, 2003 (percentage of total health expenditure)<sup>a</sup></i>	<i>Population covered by PHI, 2000 (percent)<sup>b</sup></i>	<i>Types of private coverage<sup>b</sup></i>
Australia	7.7 (2001)	44.9 40.3	Duplicate, complementary supplementary
Austria	7.6	0.1 31.8	Primary (substitute) complementary, supplementary
Belgium	—	57.5	Primary (principal) complementary, supplementary
Canada	12.7	65 (e)	Supplementary
Czech Republic	0.2	..	Supplementary
Denmark	1.3	28 (1998)	Complementary, supplementary
Finland	2.4	10	Duplicate, complementary, supplementary
France	12.7	92	Complementary, supplementary
Germany	8.8	18.2 of which: 9.1 9.1	Primary (substitute) supplementary, complementary
Greece	2.2	10	Duplicate, supplementary
Hungary	0.6 (e)	..	Supplementary
Iceland	0 (e)	..	Supplementary
Ireland	6.4	43.8	Duplicate, complementary, supplementary
Italy	0.9	15.6 (1999)	Duplicate, complementary, supplementary
Japan	0.3 (2002)	..	—
Korea, Rep. of	2.1	—	Supplementary
Luxembourg	0.9	2.4	Complementary, supplementary
Mexico	3.1	2.8	Duplicate, supplementary
Netherlands	17.2	92 of which: 28.0 64 (e)	Primary (principal) supplementary
New Zealand	5.8	35	Duplicate, complementary, supplementary
Norway	0 (e)	..	—
Poland	—	..	Supplementary
Portugal	1.5 (1997)	14.8	Duplicate, complementary, supplementary
Slovak Republic	0 (e)	..	Supplementary
Spain	4.3	13 of which 2.7 10.3	Primary (substitute, principal) duplicate, supplementary
Sweden	—	..	Complementary, supplementary
Switzerland	9	80	Supplementary
Turkey	4.4 (2000)	< 2	Complementary, supplementary
United Kingdom	3.3 (1996)	10	Duplicate
United States	36.7	71.9	Primary (principal) supplementary, complementary

*Source:*

a. OECD 2005b and other information obtained from the country.

b. OECD 2004a.

*Note:* — = not available; (e) = estimated; .. = negligible, or a proportion covered of less than 1 percent; and PHI = private health insurance.

In the Netherlands, nearly a third of the population—those in the upper-income cohort—is ineligible for social sickness funds insurance. Almost all of those excluded buy primary private health insurance. The current dual system of primary social-private coverage is being reformed into a Swiss-style mandatory health insurance system for the entire population (Ministry for Health, Welfare and Sport of the Netherlands 2002 and 2004).

Germany is the only OECD country in which individuals above an income threshold can opt out of social health insurance provided by sickness funds. An estimated 10 percent of the population had opted out by 2002 (PKV 2003). Another 14 percent of the population, while eligible to opt out, chose not to do so. One reason is the prohibition to opt back into the social health insurance system, which tends to be comparatively cheaper for sick people and large families (Thomson 2002).

In Australia, Ireland, New Zealand, the United Kingdom, and some other OECD countries, private health insurance *duplicates* government-provided universal coverage by supplying parallel funding for the same set of health services. In these Beveridge-style or tax-funded OECD health systems, privately funded hospitals and doctors in private practice operate outside the public delivery system. Private health insurance represents an alternative to public systems and offers the insured greater choice of provider and faster service. Nearly half of the Australian and Irish populations purchase a PHI policy, making Australia and Ireland the largest duplicate markets in the OECD. The insured receive treatment in private hospitals, or as “private patients” in public hospitals (that is, with choice of doctor and superior hospital accommodation). In both countries, many surgeons have appointments in both the public and the private sectors, representing different income streams (Colombo and Tapay 2003, 2004b).

Private health insurance also *complements* financing from public programs by covering cost sharing under those arrangements. Most OECD countries require copayments, deductibles, or coinsurance for services provided by public coverage programs (OECD 2004b, table 2.2), although most have relatively small complementary PHI markets (Colombo and Tapay 2004a). In France, complementary insurance reaches over 90 percent of the population. Individuals make copayments ranging from a modest per diem for inpatient care to 30 percent of physicians’ conventional fees and up to 65 percent for some drugs (OECD 2004b). Private health insurance reimburses patients for services not included in the social benefit package or for which social security reimbursement is well below market prices (Buchmueller and Couffinhal 2004). Like France, the United States has a significant complementary PHI market. Individuals eligible for Medicare can buy PHI policies (so-called Medigap) covering copayments and other service gaps in the public program. Over two-thirds of Medicare beneficiaries receive such coverage through individual policies, employer-purchased policies, or both (OECD 2004a).

Finally, in many OECD countries, private health insurance *supplements* public systems by financing goods and services excluded from public coverage. These

PHI markets can be significant. In Canada, where most provinces forbid private health insurers from covering medically necessary inpatient and outpatient physician services, which are provided by the publicly financed system, the supplementary role is the only one private health insurance is allowed to play (Flood and Archibald 2001).<sup>6</sup> Two-thirds of the population has private insurance, mostly obtained through employer-sponsored policies (Colombo and Tapay 2004a). In the Netherlands, about two-thirds of those with social health insurance supplement their coverage with a policy bought in the private sector (Tapay and Colombo 2004). In Australia, ancillary health insurance is purchased by 41 percent of the population (PHIAC 2005). In Switzerland, 80 percent of the population supplements basic mandatory health coverage with a voluntarily purchased PHI policy, mostly to obtain private or semiprivate hospital accommodation. Supplementary health insurance covers a wide range of services, reflecting what is not provided within government coverage systems. Typical services include optical, dental, certain new high-technology, and luxury or medically unnecessary treatments.

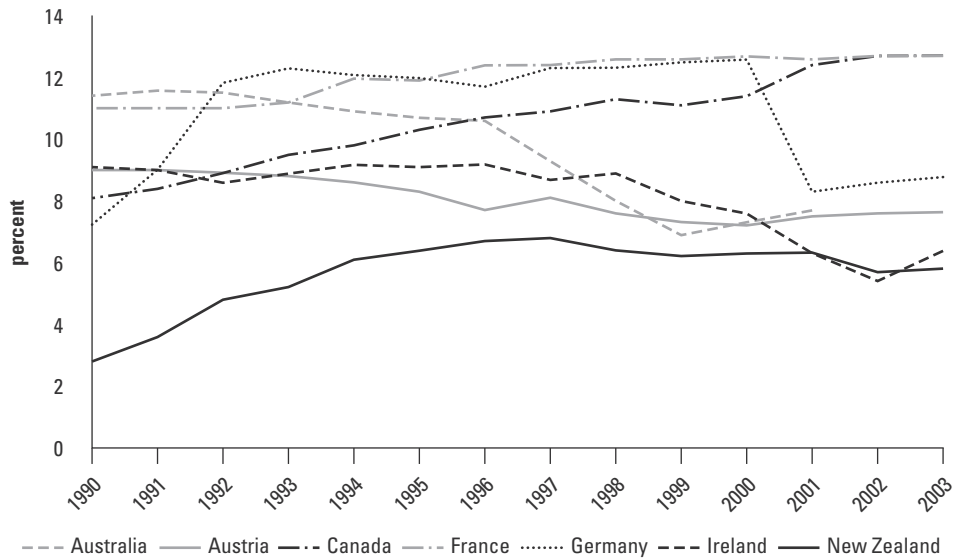
### **Market Development Linked to Factors Other than GDP and Out-of-Pocket Spending**

The contribution of private health insurance to total health financing has increased a little between 1990 and 2003 (OECD 2005b).<sup>7</sup> The large cross-country variation in this contribution reflects relative PHI growth and public health expenditure (figure 8.4). Some countries, such as Austria and New Zealand, have experienced fast PHI growth rates. Others, such as Australia and Ireland, have experienced more rapid growth in public expenditure (table 8.2).

A country's economic development does not appear to drive market development. The contribution of private health insurance to health spending is weakly linked to the level of GDP (figure 8.5) as well as its real growth (OECD 2004a). In New Zealand and a few other countries, the increased share of private health insurance in health spending has accompanied economic growth, but in other countries it has not. Similarly, strong economic growth has coincided with an expansion of the population covered by private health insurance in Ireland but not in other fast-growing economies, such as some Eastern European countries or Luxembourg (OECD 2004a; Colombo and Tapay 2004b). Despite increased importance of private health insurance in financing total health spending, the percentage of the population with such insurance in New Zealand has been decreasing (OECD 2004a).

Public sector gaps, as measured by the importance of out-of-pocket expenditures, are one reason that individuals in some countries purchase private health insurance. However, out-of-pocket spending is not correlated to PHI market size in the OECD area (figure 8.6). Countries with the highest shares of private health insurance (above 10 percent) have a somewhat lower-than-average share of out-of-pocket expenditure. However, countries with small PHI markets can have high or low levels of direct spending by families. Overall, the importance of



**Figure 8.4 PHI Expenditure as a Share of Total Health Expenditure, 1990–2003**

Source: OECD 2005b.

**TABLE 8.2 Growth in Public Expenditure on Health and Private Health Insurance, 1990–2001**

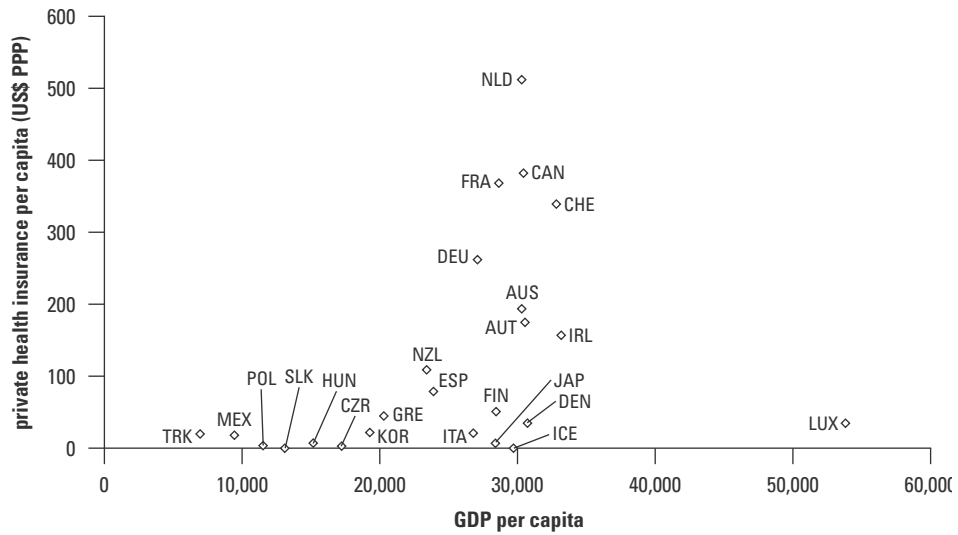
Country	Average real growth rates	
	Public expenditure on health	Expenditure on private health insurance
Austria	2.1	5.1
Australia	5.2	4.9
Canada	2.6	4.7
France	2.7	3.1
Germany	5.1	3.9
Ireland	8.7	6.8
New Zealand	3.4	6.9
United States	5.7	3.7

Source: OECD 2005b.

private health insurance and that of out-of-pocket payments in financing health spending are not inversely related in the OECD.

Level of satisfaction with publicly funded services does influence demand for private health insurance, particularly in countries where people wait a long time for elective surgery, like Australia and Ireland (Colombo and Tapay 2003, 2004b; Hurst and Siciliani 2003). However, waiting times for elective surgery do not explain the growth of PHI markets. These markets are relatively small in some

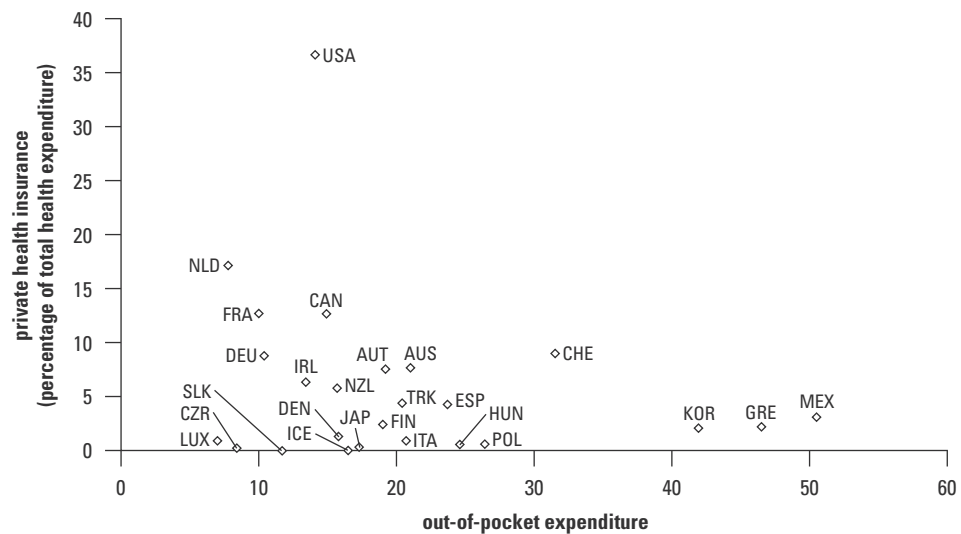
**Figure 8.5 Private Health Insurance and GDP Per Capita, 2003**



Source: OECD 2005b.

Note: PPP = purchasing power parity. Countries are AUS = Australia, AUT = Austria, CAN = Canada, CHE = Chile, CZR = Czech Republic, DEN = Denmark, DEU = Germany, ESP = Spain, FRA = France, FIN = Finland, GRE = Greece, HUN = Hungary, ICE = Iceland, IRL = Ireland, ITA = Italy, JAP = Japan, KOR = Republic of Korea, LUX = Luxembourg, MEX = Mexico, NLD = Netherlands, NZL = New Zealand, POL = Poland, SLK = Slovak Republic, and TRK = Turkey.

**Figure 8.6 Out-of-Pocket Payments and PHI as a Percentage of Total Health Expenditure, 2003**



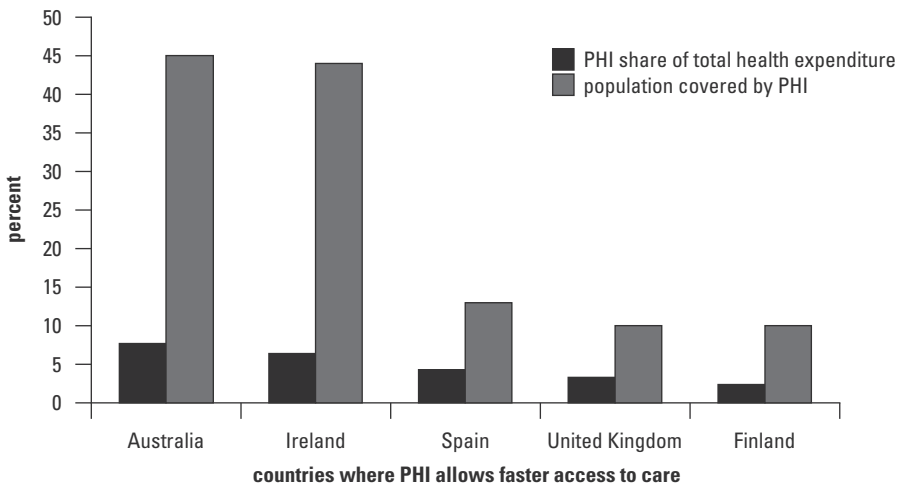
Source: OECD 2005b.

Note: See note in figure 8.5 for country names.

countries with considerable waiting times in government health systems, such as the Nordic countries, Spain, and the United Kingdom (figure 8.7).

Three factors are primarily responsible for PHI market development in OECD countries (Colombo and Tapay 2004a). First, many countries with large markets have a tradition of private health financing and mature insurance markets. In Australia, France, Ireland, and the United States, development of a PHI market predated establishment of universal public coverage programs (OECD 2004a). Second, government policies can foster PHI markets. The services, providers, and population groups covered by statutory health programs affect the scope for these markets. Governments can shape their structure and dimension by, for example, providing subsidies, fixing the boundaries of the market, or intervening to build consumer confidence and protection, as in Australia, Canada, Ireland, and the United States. Third, employers have sponsored high levels of private coverage by subsidizing or paying PHI premiums for their employees—a significant nonwage benefit—in Canada, the Netherlands, and the United States. In France, private health insurance provides a significant group market (Buchmueller and Couffinhal 2004). In Ireland, employers, particularly multinational companies, have increasingly sponsored private health insurance as a work-related benefit. In smaller OECD countries, such as Belgium, Portugal, and the United Kingdom, group coverage prevails over individual policies (OECD 2004a).

**Figure 8.7 Variation in PHI Expenditure and Coverage in Countries with Waiting Times for Elective Surgery**



Source: OECD 2005b.

## PHI-Related Challenges and Opportunities

Private health insurance can help governments attain health system performance goals but can also put them at risk. The effect depends, in part, on the role of private health insurance in terms of market size and function with respect to public systems. In countries where private health insurance plays a prominent role, it can be credited with injecting resources into health systems and helping make them more responsive. However, it has also given rise to considerable equity and cost control challenges in most of those same countries.

### *Access to Coverage and Care*

Private health insurance helps improve access to health coverage and care. However, its performance has varied depending on how large a private market has developed and how broad a pool of risks it covers. For example, public health insurance markets have not developed enough to provide significant financial protection in Greece, Mexico, the Republic of Korea, or Turkey, despite large gaps in the population or services covered by government systems (OECD 2003a; OECD 2004c). This PHI market failure is the result of several factors, ranging from lack of history of health insurance markets to premium affordability considerations.

Even where private markets have developed, access to coverage remains a challenge for some population groups. Where private health insurance is under little or light regulation, higher-risk individuals have often faced difficulty in obtaining policies at an affordable price, as is evident in the primary health insurance market of the United States (Docteur, Suppanz, and Woo 2003). In about a quarter of OECD countries, governments have implemented policies, ranging from universal to targeted interventions, to improve the availability and affordability of insurance (OECD 2004a). Australia and Ireland have regulated the entire PHI market. In Switzerland, the basic health insurance market, in which insurers are required to apply community rating of premiums, enroll any willing individual and guarantee coverage renewability. Other countries have preferred to regulate only a niche of their PHI markets, either targeting high-risk individuals or certain coverage types, such as primary private health insurance. Germany and the Netherlands offer standardized PHI policies at regulated prices to eligible high-risk individuals. Primary coverage in Germany must be offered on a lifetime basis, and access-related regulation applies to primary insurance policies in many U.S. states. Governments have also granted tax advantages to enrollees, employers, or insurers to stimulate the purchase of private health insurance in about half of the OECD countries. However, the extent to which they have boosted expansion of the market has depended on the price elasticity of demand for private health insurance. In Australia,<sup>8</sup> Ireland, Spain, and the United Kingdom, PHI coverage decisions appear to be price insensitive to premium inflation and to changes of fiscal incentives for the purchase of insurance (OECD 2004a).

Governmental interventions have helped increase access to PHI markets but raise their own problems. In the United States, access requirements, high-risk

pools, and tax incentives have mitigated coverage problems for some individuals. Yet the number of the uninsured has been growing (U.S. Census Bureau 2005); the share of the nonelderly population with health insurance coverage has steadily declined in recent years, reaching a post-1994 low of 82 percent in 2004 (EBRI 2005). Fiscal incentives and subsidies have not been the most cost-effective intervention to increase the purchase of insurance among high-risk and low-income populations. Tax advantages for private health plans are more likely to benefit the relatively well-to-do (Adema and Ladaïque 2005). In addition, when large incentives are needed to spur purchase of private health insurance, the cost to public revenues has been large, as in Australia and the United States (Colombo and Tapay 2004b; Adema and Ladaïque 2005).

Employer PHI coverage presents several advantages. Employers usually negotiate better coverage packages than nonemployers and promote risk pooling within the firm and sometimes across firms. In several countries, PHI premiums are deductible from income tax for employers and employees. However, employer-sponsored insurance raises labor market costs. It may contribute to division of the pool into group and individual markets, reducing solidarity within the latter, as some evidence from the Netherlands indicates (Schut and van Vliet 2001). In addition, tax advantages for group policies are sometimes not balanced with those for individual markets, as in the United States, leaving firms to compete on uneven playing fields.

When private health insurance has had a large role in systems with otherwise partial or nonuniversal government coverage programs, access to care has increased. In the United States, where uninsured individuals become sicker and poorer (Hadley 2002), PHI coverage of Medicare's gaps, such as prescription drugs and cost sharing, has increased health service use and beneficiaries' timely access to medically needed care (OECD 2004a; Neuman and Rice 2003). In France, by reducing (and in some cases eliminating) out-of-pocket costs, private health insurance has significantly increased use of physician services and prescription drugs (Buchmueller and Couffinhal 2004; Imai, Jacobzone, and Lenain 2000). However, PHI coverage of cost sharing in public systems has pitted improvements in access to care against control of moral hazard from overuse of services. For example, by expanding complementary coverage through the *couverture maladie universelle*,<sup>9</sup> the French government chose to enhance equity of access to care at the expense of cost control (Buchmueller and Couffinhal 2004).

PHI coverage has led to inequities in access to care. For a start, high-income groups and those with relatively high education levels and employment conditions are the typical buyers of private health insurance (OECD 2004a). In most systems with large PHI markets, differences in access to care are linked to insurance status. Evidence from comparative studies on use of health services indicates that, after adjusting for need, private health insurance encourages greater use of physician services by wealthier population groups in France, Ireland, and the United States; these groups are more likely than poorer groups to visit a specialist in Ireland, Italy, Portugal, Spain, and the United Kingdom (van Doorslaer and

others 2004; Jones, Koolman, and van Doorslaer 2002). In duplicate systems, private health insurance provides a level of care, choice, and speed of access to health services greater than that offered by public systems—to those who can afford to pay for it. Privately insured patients may benefit, in particular, by waiting less time for elective surgery. But whether waiting times are also reduced in the public sector, often the only choice for those on lower incomes, is unclear, as in Australia and Ireland (Hurst and Siciliani 2003; Colombo and Tapay 2003 and 2004b).

In most OECD countries the private health care sector pays providers more than they could earn in the public system. Although the higher compensation encourages high service volumes and productivity in the private sector, the quality and quantity of publicly financed services might suffer, especially when providers' responsibility and obligations to public patients are not clearly defined and monitored. Private payments might encourage doctors to reduce their availability and maintain long queues in the public system to sustain their private practice (Hurst and Siciliani 2003; OECD 2004a). Diverse payment systems may result in preferential treatment being accorded on the basis of patients' insurance status even where systems are designed to avoid such risk. These equity concerns prompted Canada's ban on duplicate coverage of doctors and hospital services insured by the government systems and Australia's prohibition of duplicate private health insurance for ambulatory care services (OECD 2004a).

### *Choice and Health System Responsiveness*

Private health insurance has enhanced consumer choice and the responsiveness of health systems in most OECD countries where it has a role (OECD 2004a). First, the opportunity to buy private health insurance offers consumers an additional level of choice with respect to financing health care services and providers on an out-of-pocket basis, although this opportunity has not solved the coverage problem in Mexico, Turkey, and the United States. Second, most PHI markets in OECD countries offer a wide array of products to consumers, allowing them to tailor their risk and product preferences. Third, private health insurance has enlarged individuals' alternatives with respect to health providers and care options. In the duplicate markets of Australia, Ireland, and the United Kingdom, for example, individuals with private health insurance enjoy greater flexibility regarding timing of care and choice of specialist and have the option of being treated in hospitals not accessible within the public system. Private insurers have been reluctant to restrict individual choice and contract selectively with providers, because of a backlash against restrictive managed care practices (as in the United States), because of the high cost of itemized contracting with providers, or simply because provider choice is the reason that individuals purchase private health insurance (Docteur, Suppanz, and Woo 2003; Colombo and Tapay 2004a). Ultimately, the scope of PHI-sponsored choice depends on the flexibility of public insurance systems. In France and Switzerland, where social health insurance offers unrestricted choice of provider with virtually no waiting time for elective surgery, greater flexibility in coverage arrangements is not the main

reason that individuals purchase private health insurance (Buchmueller and Couffinhal 2004; OECD 2006).

If consumers are to exercise meaningful choice, insurers' marketing and product information materials must be clear and enable cross-market comparisons. In some countries, governments or private organizations have intervened to disseminate comparative information on the quality, features, and cost of health plans. For example, the employer-supported Health Plan Employer Data and Information Set (HEDIS) produces report cards comparing plan performance according to standardized measures in the United States. In Switzerland, the federal government makes comparative information on the premiums of basic health insurance plans widely available to consumers (OECD 2006). Other OECD governments publish brochures and illustrative material to help consumers understand the PHI market and assess plan options. Nevertheless, consumers have complained about the quality of product information at the point of sale in some OECD countries. In Australia, understanding of the terms and conditions of private coverage is weak, despite government initiatives to enhance transparency and product information dissemination (Private Health Insurance Ombudsman of Australia 2002). Furthermore, an abundance of product choices can reduce consumer understanding of the market and the financial consequences of alternative options.

Too large a choice of products can even make it harder for patients to obtain coverage by promoting segregation of the market according to risk level. Consumers in Australia can choose among a much greater number of plans than their New Zealand neighbors, which encourages the former to self-select themselves into the product best matching their risk. This phenomenon has led to a certain fragmentation of the insurance pool despite community rating requirements (Colombo and Tapay 2003; Vaithianathan 2002, 2004).

To keep vulnerable groups from being priced out of the PHI market, some policy makers have limited insurers' flexibility and innovation (Pearson and Martin 2005) by regulating the minimum benefits that insurers must cover, as in Ireland and most U.S. states; requiring insurance products to be standardized, as in the U.S. Medigap market; or restricting the extent to which insurers can refuse coverage and rate premiums on the basis of individual risk, as in Australia and Ireland.

Such measures pose trade-offs. For example, regulation to protect certain groups may limit other groups' opportunities for choice, and standardization of benefit packages, although promoting consumers' ability to make informed choices, restrains insurers' capacity to respond to market developments. If statutory or regulatory rules do not enable standardized packages to be readily updated, innovation in response to market changes might be inhibited (OECD 2004a).

### *Impact of Private Health Insurance on Cost Pressures of Health Systems*

Private health insurance has added to total health expenditure (OECD 2004a). This expenditure increase may be appropriate and desirable to the extent that it enables individuals to purchase needed health goods and services or reflects a

societal choice about where resources should be allocated. However, the increase has undermined the expectations of those OECD governments that viewed private health insurance as a policy tool to achieve better control of health costs and to shift expenditure away from public budgets stretched to capacity.

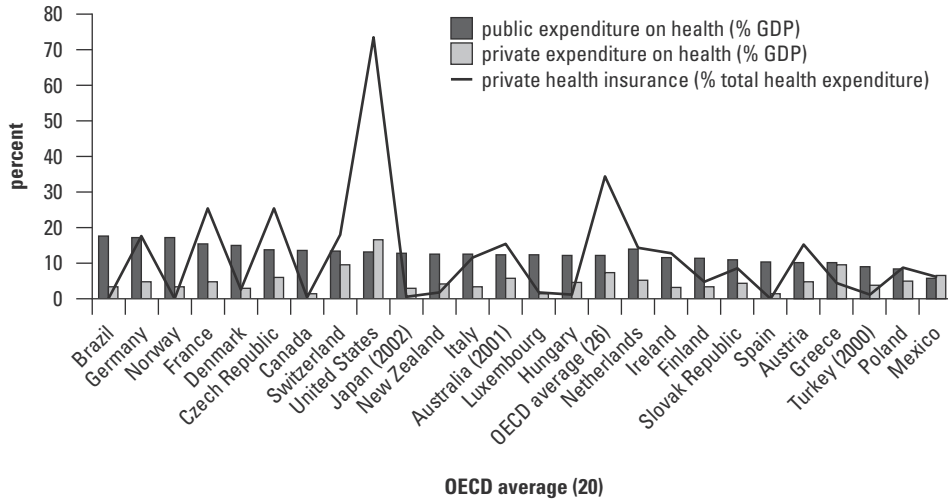
Control of activities and prices is weaker in the private sector of many OECD countries than in the public sector. Private insurers tend to have less bargaining power over the price and quantity of care than public insurers, particularly single-payer ones (Hussey and Anderson 2003). For example, over the period 1970 to 2000, enrollee payments for comparable baskets of services grew faster in the PHI market than in the U.S. Medicare program, reflecting the higher payment rates to providers paid by private insurers (Boccuti and Moon 2003). Countries with multiple sources of primary coverage, including those where the PHI market is large, tend to be those with the highest total health spending levels per capita, such as France, Germany, Switzerland, and the United States. In the United States, managed care had promised to reduce growth in private insurance premiums in the 1990s by reducing use of expensive resources and promoting shorter hospital stays. In fact, its cost-control performance proved short-lived, in part because of consumer and provider resistance to managed care practices (Docteur, Suppanz, and Woo 2003). With premiums resuming double-digit growth since 2001 (Levit and others 2004), insurers have turned to demand-side measures of cost control, such as the offer of less comprehensive health insurance coverage and greater use of cost sharing (Tollen and Crane 2002).

Private health insurance has also failed to significantly reduce public financing burdens by shifting expenditure from the public to the private sector. People with private insurance often continue to rely on publicly financed hospital services in duplicate markets, as in Australia and Ireland. Privately financed hospitals have focused on a few elective services, leaving responsibility for more-expensive treatments or populations to public programs. In OECD countries that restrict eligibility for government coverage programs to lower-income and vulnerable groups (Germany, the Netherlands, and the United States), public spending on health as a percentage of GDP is not lower than that of many countries that provide universal public coverage (figure 8.8). One reason is the high concentration of health care cost among a small fraction of the population—generally publicly insured—such as the elderly, chronically ill, and long-term disabled (Berk and Monheit 2001). De-listing of services from public coverage, another strategy to shift cost to the private sector, has often been confined to less expensive services (dental and optical services, alternative medicine, physiotherapy) that may be paid for out of pocket or through supplementary PHI policies. On average, only about 60 percent of drug spending is publicly financed in OECD countries; 40 percent of that spending represents out-of-pocket payments (OECD 2005b; Orosz and Morgan 2004).

Although counterintuitive, private health insurance can increase public costs or public expenditure on health. Where private health insurance covers cost sharing in public coverage systems, as in France, the resulting increases in use of services



**Figure 8.8 Public and Private Health Spending as a Share of GDP and Expenditure Financed by Private Health Insurance, 2003**



Source: OECD 2005b.

raise the cost of those systems (Imai, Jacobzone, and Lenain 2000). In addition, countries that grant significant public subsidies to private health insurance have experienced a reduction in government revenue or an increase in public cost.

### *Impact of Private Health Insurance on Health System Efficiency*

As a tool to enhance health system efficiency, private health insurance leaves much to be desired (Colombo and Tapay 2004a; OECD 2004a). Several factors explain its lackluster performance.

First, private insurers incur high administrative costs to attract and retain clients, offer diverse insurance options, and negotiate contractual relationships with multiple providers.<sup>10</sup> No wonder overheads of private health insurers exceed those of government health coverage programs, as in Australia, Canada, Ireland, the Netherlands, and the United States (Woolhandler, Campbell, and Himmelstein 2003; Davis and Cooper 2003; OECD 2004a). Administrative costs tend to be higher where pooling is less efficient and transactions more frequent, as in systems with multiple payers and fragmented coverage.

Second, private insurers have done little to pursue efficiency gains from managing care cost-effectively (Colombo and Tapay 2004a; OECD 2004a, 2006). Few insurers manage care, and those that do, primarily in the United States, have begun to withdraw from this activity (Docteur, Suppanz, and Woo 2003). Outside the United States, most carriers act as indemnity insurers and control their cost and risk exposure through demand-side instruments, such as reimbursement limits, cost sharing, and coverage exclusions.

Lack of significant efforts to influence care delivery can be explained by the cost of such measures, their unpopularity among providers and the insured, and regulatory disincentives.

Instead of engaging in selective contracting, which should enhance efficiency by rewarding the best-performing providers, purchasers typically pursue negotiations with providers on a collective basis, either because of legal obligations, as in Switzerland, or because of reimbursement practices, as in the Netherlands (OECD 2006; Schut, Greß, and Wasem 2003). Even where insurers negotiate individually with providers, they often apply standard contractual formulas. Insurers could enhance cost-effectiveness by managing high-risk and high-cost cases but tend not to do so if their risk exposure is low, such as when, for example, private health insurance plays no primary role or makes only a minor contribution to financing costly care. In short, managed care techniques require substantial investment, which insurers have few incentives to finance if expected returns are small, consumers are concerned about reduced flexibility of cover, and providers oppose third-party involvement in decisions about how care is administered to patients—all of which have underpinned the managed care backlash in the United States.

Third, where insurers have managed care, their success in containing cost and use has been mixed. In the United States, managed care plans influence care delivery through selective contracting, restrictions on treatments, clinical practices guidelines and special programs for high-risk individuals, and use of incentives and information to promote use of cost-effective providers or services by consumers (Docteur, Sappanz, and Woo 2003). Such plans have not fundamentally changed clinical processes, and their influence on care performance and clinical outcomes is nonsystematic (Miller and Luft 1997, 2002). Of course, health systems, whether inspired by private or public management mechanisms, have a lot to improve in this area. Value for money is lamentably low in most OECD countries. A combination of reforms, such as performance-based payment incentives that reward payers' or employers' efforts to improve quality and cost-effectiveness, systematic use of performance measurement and reporting systems, the practice of evidence-based medicine, and widespread adoption of automated health data systems could result in better-performing health systems (OECD 2004b).

Fourth, difficulties in extracting efficiency improvements from PHI markets can emerge from the way in which insurers compete. In several OECD countries, insurers face few competitive pressures, because consumer switching of insurers is infrequent. High transaction costs hinder such switching, as is evident in Switzerland and other countries (Colombo 2001; Laske-Aldershof and others 2004). In some cases, switching is constrained by lack of portability of private coverage, as is the case with supplementary private health insurance in the Netherlands (Tapay and Colombo 2004), or by lack of a large number of competitors, as in Ireland (Colombo and Tapay 2004b; Health Insurance Authority 2005).

Even where competition is lively, lower cost and better value for money do not necessarily ensue. "Vibrant" price and quality competition among providers

is a prerequisite for efficiency improvements. A study of 60 communities in the United States revealed that market forces driving efficiency are inhibited if the PHI industry has weaker market power than providers (Nichols and others 2004). Providers in a dominant market position can enforce high health service prices and are sheltered from insurer pressure to enhance cost-effectiveness of care (OECD 2004a).

To be competitive and protect themselves against adverse selection, insurers would rather employ cost shifting and risk selection than improve the value of care provided to clients (OECD 2004a). Regulatory instruments to prevent “unfair” competition and limitations on insurance access could reduce incentives for insurers to manage care. Mandatory pooling or risk equalization arrangements can help spread the cost of caring for less healthy populations (van de Ven and Ellis 2000), but they impose trade-offs and raise technical challenges. Although they promote equitable risk pooling across insurers and dissuade competition on the basis of risk selection, they do not encourage managed care if they compensate inefficient insurers for their higher costs.

## **LESSONS FOR DEVELOPING COUNTRIES**

In OECD countries, as compared with less developed economies, private payments represent a lower share of total health spending, and financing sources are often less fragmented. Nevertheless, OECD countries have relevant lessons to offer to other nations in terms of the role that private health insurance could play and its possible contribution to health system performance. Specifically, the experience of the OECD countries offers insights on the financial and real resource interactions between the public and private sectors that create behavioral incentives that affect the demand for and the supply of health care in both desirable and undesirable ways.

### **Different PHI Roles Create Different Policy Challenges**

PHI markets can be a mechanism for providing primary health coverage, as in South Africa and Chile (van den Heever 1997; OECD 2003b). But, as the experience of the United States shows, high-risk persons may find private coverage unaffordable even when access-related regulation and government safety net programs target vulnerable groups. Mandating private coverage, as in Uruguay (Sekhri and Savedoff 2005), is a solution. But competing insurers may seek to attract good risks if they are inadequately compensated for costly cases, or they may lack incentives to engage in care management if they are entirely compensated for those cases through mechanisms for pooling insurers.

Where private health insurance plays a supporting role to government health services, policy makers face distribution and efficiency challenges. When private health insurance parallels public coverage, as in Mexico, it can provide additional

funding to providers operating across the public and private sectors but will have undesirable implications for access to the government health system if it distorts the allocation of human resources in favor of those consumers (typically the most well-to-do) buying private health insurance. Complementary PHI markets can support government systems by reducing cost-sharing burdens and increasing the comprehensiveness and completeness of coverage in systems where low reimbursements apply to covered services, as in Korea. However, any increase in the volumes of privately insured services will result in a corresponding increase in public sector consumption. Guaranteeing a minimum level of cost sharing is probably desirable to preserve incentives for efficient consumption. Finally, supplementary health insurance provides a tremendous opportunity for supplementing basic health coverage systems, provided the former does not draw real resource inputs away from the latter.

### **Private Health Insurance Is Unlikely to Address the Needs of the Poor**

Unlike out-of-pocket payments, private health insurance offers a source of pooling and prepayment of health expenditure. It can help extend population coverage where public systems are not universal. It can also increase the depth of coverage where social systems have large service gaps. However, it does not necessarily replace high out-of-pocket spending for the most deprived population groups. The OECD countries' experience suggests that individuals facing higher health care costs, such as the elderly and those with chronic conditions, are less likely to have private coverage than those facing lower health care costs (OECD 2004a). Similarly, some of the most pressing health needs of vulnerable and impoverished people in developing countries may not be easy to insure privately. For example, private health insurance is unlikely to cover the cost of antiretroviral treatments for HIV/AIDS.

Private health insurance appeals predominantly to higher-income people residing in urban areas, or precisely those who may already benefit from government coverage or have resources to pay for health services. Population groups at higher risk of catastrophic health expenditure tend to be left out. In South Africa, 80 percent of those in the two highest income quintiles are insured privately, compared with 2 percent in the lowest quintile. In Zimbabwe and Namibia, PHI coverage mostly benefits formal sector workers (Sekhri and Savedoff 2005). In Mexico, PHI purchasers belong to population groups already covered by the social security system, and virtually no one lacking public coverage buys private coverage (OECD 2005c). The government is expanding health coverage for the 50 percent of the population that is uninsured through an alternative, publicly financed and administered, voluntary health insurance system (*Seguro Popular*).<sup>11</sup> Mexican policy makers judged a government-sponsored insurance program to be the most cost-effective way to move toward universal population coverage (Secretaría de Salud 2004).

## Conditions in Developing Countries May Not Allow Scaling Up of Voluntary Coverage

Private health insurance can be a transitional step toward universal coverage. In Australia, Japan, and many European countries, for example, voluntary coverage programs predated establishment of universal insurance (OECD 2004a; Colombo and Tapay 2004a; Carrin and James 2005). These countries achieved universal coverage by a progressive expansion of insurance to additional population groups—a government-led process in some cases, as in France and Korea—or by a government mandate for individuals to purchase regulated private health insurance—as in Switzerland and the Netherlands<sup>12</sup> (Colombo 2001; Buchmuelner and Couffinhal 2004; OECD 2003a). But transforming fragmented coverage systems into a comprehensive, universal program may be a lengthy and costly process. A large degree of formality in the labor market is needed for governments to enforce and effectively monitor mandates to purchase insurance. In addition, an adequate level of income and rate of income growth are needed to effectively mobilize resources. Finally, governments must have the willingness and capacity to monitor, regulate, and govern the transition. Developing countries should perhaps accord priority to creating these preconditions.

## Private Health Insurance Could Create Inequities in Access to Care

In several low- and middle-income countries, access to care and fair financial protection is challenged by “hidden phenomena,” such as informal payments, nonexplicit rationing, and poor accountability. Policy makers in some of these countries welcome development of a private coverage market to replace under-the-table payments and informal waiting with open queues, transparent fees, and open rationing, as is the case in Slovakia and other Eastern European countries (Colombo and Tapay 2004c). However, a PHI market would not make access problems disappear. In fact, it may accentuate inequities in the distribution of care—for example, when providers allocate treatment and time to individuals with private health insurance rather than to those with the most needs. Higher-income groups may use private health insurance to bypass waiting lists or capacity constraints, thereby skewing access to care. Left to the market, allocation decisions for scarce resources, such as doctor time and treatment capacity, will not necessarily be aligned with the goal of equal access for equal need.

## Efforts to Reduce Risks of PHI-Induced Inequities Could Offset Potential PHI-Related Benefits

Private health insurance furnishes a financing reward to dissatisfied and poorly paid doctors but increases the risk of increasing inequities on the basis of insurance status. Different payment levels and mechanisms across the public and

private sectors can prompt disparities in treatment and encourage providers to privilege more remunerative private activities at the expense of public practice. In low- and middle-income countries, where shortages of health care staff are a critical issue, private health insurance may pull human capital away from the public sector, often the only alternative available to the poorest citizens.

Policy makers in some OECD systems have regulated doctors' engagement in public and private practice, or limited opportunities for private health insurance to offer a superior level of care and choice to minimize risks of inequities. The Netherlands, for example, has regulated prices in the private sector at the same level as in the public system and has enforced the same rules of access to care for all (Tapay and Colombo 2004). In Ireland and the United Kingdom, consultants' collective contracts in the government sector specify rules of commitment to public practice (OECD 2004a). These interventions minimize the risk of creating two levels of health care according to insurance status and, in a majority of cases, ability to pay. Yet they require an effective monitoring system that has thus far been inadequate in even the most developed economies. In addition, the interventions diminish the potential of private health insurance to compensate providers for poor payments in public systems and to supply greater care flexibility to the privately insured.

### **Private Health Insurance Can Increase Satisfaction of Wealthier Consumers**

Although private health insurance is unlikely to offer affordable financial protection to the most distressed people living in remote areas, it can offer a financing option to an emerging middle-income class in urban settings, particularly in middle-income countries. With improving economic conditions, some population groups that have already satisfied basic needs become more demanding in terms of coverage, providers, and timing of care. As evidenced in OECD countries, private health insurance can provide the comparatively flexible and responsive coverage arrangements and the choice options demanded by higher-income individuals. Moreover, the PHI market's dynamism and capacity to innovate can increase public-private contestability, thereby stimulating improvements in public sector responsiveness.

Clearly, the choice options afforded by private health insurance can create some undesirable effects. If policy makers allow middle-income classes to opt out of public systems—and stop paying contributions to the systems' financing—the pool in the public sector could be impoverished. To minimize this risk, Germany constrains the opportunity for individuals to opt back into the public system when their health risk increases (OECD 2004a). The Netherlands, however, has established cross-subsidization whereby a portion of contributions from the privately insured help fund the public system covering higher-risk individuals (Tapay and Colombo 2004).

### **Private Health Insurance Does Not Necessarily Increase Value for Money**

Some 1.3 billion people have difficulty accessing adequate health care (Drechsler and Jütting 2005). By injecting new financial resources into health systems, private health insurance could increase access to care. Specifically, they may finance productivity increases through greater service volumes in the private sector and create extra income flows for providers in that sector, thereby helping retain in the public sector those doctors allowed to have a double practice. But increased resources will not necessarily solve the problems of an inadequate or inefficient supply response. Providers need an appropriate level of inputs to functions. Unless the additional revenues are invested in productive inputs, such as essential drugs and supplies of material, efficiency in provision is likely to remain low.

### **PHI Growth Can Entail Opportunity Costs**

Even in some middle-income OECD countries with partial health coverage or high out-of-pocket spending, a PHI market is struggling to emerge. In other OECD countries, PHI markets have difficulty expanding in rural and other areas with less prosperous economic conditions. Although government interventions can stimulate market growth or expansion, they impose opportunity costs. Fiscal incentives and tax breaks can reduce the net price of insurance, encouraging acquisition of private health insurance if demand is price elastic, but they can reduce tax revenues or increase public cost. Moreover, government resources might earn a bigger return if used to establish a new public coverage program for the uninsured, as in the case of the Seguro Popular in Mexico, or to strengthen existing health systems and increase the supply of real inputs.

Government interventions to stimulate or expand PHI markets have significant implications for administrative costs. Multiple-payer and fragmented systems tend to have the highest such costs. A PHI market can increase pooling fragmentation and thus administrative cost, diverting scarce resources from more productive employments. This consideration convinced Korea to transform its multiple-insurer system into a single-payer social insurance scheme (OECD 2003a).

Promotion of certain PHI roles may also be undesirable from a cost-efficiency perspective. As noted above, complementary private health insurance can increase access but also encourage inefficient consumption. Stimulating duplicate PHI markets may not reduce resource pressures on public systems if wealthier buyers of private health insurance go back to public systems when they require treatment for a catastrophic illness.

## Governments Must Manage PHI Opportunities and Risks

Promoting development of a PHI market can raise equity considerations, not simply because it appeals to higher-income groups, but also because scarce resources might be better placed—that is, placed where the highest returns can be expected. To minimize the risks and realize the potential benefits associated with private health insurance, governments must manage the public-private sector relationship (including delivery markets) and address difficult trade-offs.

As PHI markets emerge, policy makers need to maximize the markets' potential for pooling and revenue generation while determining the desirable level of intervention in the market. Solvency requirements and minimal consumer protection mechanisms will always be needed,<sup>13</sup> but the importance of requirements regarding PHI contracts varies depending on the role played by private health insurance, the characteristics of buyers, and government capacity to solve regulatory problems. PHI markets are subject to failures, such as the tendency for insurers to select good risks and for healthy individuals to go without insurance, but state efforts to regulate PHI markets are fraught with information problems. Incentives structures need to be carefully designed to persuade insurers to reveal adequate information and behave as desired. Government interventions can generate loopholes and may give rise to conflicts of interest that require competent management. Different measures will interact in both desired and unwanted ways.<sup>14</sup> Enforcing compliance also has its costs, and can generate errors that require adequate dispute resolution and compensation mechanisms to be in place. In short, governments must ensure that interventions are justified on grounds of cost-effectiveness and allocative fairness and that desired goals are reached.

## CONCLUSION

Does OECD countries' experience with private health insurance provide a cautionary tale for developing nations, or does it suggest an opportunity for mobilizing resources and improving financial protection? In large part, the answer depends on the health service needs of the targeted population, the role that private health insurance plays in the system, and governmental responses to the opportunities and risks posed by that insurance. Overall, private health insurance is not likely to suffice for the sickest and the poorest of the poor. In fact, demand for PHI services, such as promptly available health care and an adequate degree of choice and comfort, is more likely to emerge from the middle-income urban class.

The impact of private health insurance on the performance of health systems depends on the role the insurance plays and the way governments regulate that role. Absence of clear rules for prioritizing access to care on the basis of need rather than ability to pay, for example, increases the risk of reduced access for those who have no private health insurance. The way governments manage interactions between public and private coverage and provider sectors will be a key determinant of the impact of private health insurance on pooling, as well as on fairness and value for money.



## NOTES

The first part of this chapter summarizes and draws on the results of an OECD study on which the author and Nicole Tapay, formerly with the OECD Directorate for Financial and Enterprise Affairs, were principal investigators. The author is grateful to Elizabeth Docteur for invaluable comments. The views expressed in this article are those of the author and do not necessarily reflect the position of OECD.

1. The Organisation for Economic Co-operation and Development is made up of 30 countries sharing a commitment to democratic government and the market economy. It provides policy analysis and recommendations, develops internationally comparable data and standards, and undertakes systematic examination and assessment of the performance of its member countries.
2. The study formed part of a larger OECD health project, which examined ways to move toward high-performing health systems (OECD 2004b). A taxonomy of PHI schemes was designed for the purpose of the PHI study (OECD 2004c). Two surveys, one gathering statistics on PHI markets and one assembling information on governmental interventions, were administered to officials of all OECD countries. In-depth country studies of selected countries with prominent or potential PHI markets were also completed (Colombo and Tapay 2003, 2004a, 2004b, 2004c; Tapay and Colombo 2004), as was an extensive literature review.
3. At the time the OECD project was conducted, the share of financing from private health insurance represented, on average for 22 OECD countries, 6.3 percent of total health expenditure (2000 data). The 2003 average for the same 22 countries has not changed. However, when considering data for all countries for which data are available for 2003 or 2002, the average drops to 5.7 percent.
4. Small population groups in Austria, Belgium, and Spain also have primary PHI (OECD 2004a).
5. Medicare is the U.S. social insurance program for the elderly. It provides hospital care, physician services, and other services to most people over age 65 and to disabled persons. Medicaid and SCHIP provide means-tested coverage to low-income individuals and families. Coverage by government programs was 27.2 percent in 2004 (U.S. Census Bureau 2005).
6. According to a recent Supreme Court decision in *Chaoulli v. Quebec (Attorney General)* in Canada, if the public health care system fails to provide quality services (because of undue delays in access to services), the private market should be allowed an opportunity to provide an alternative. For a discussion of this much-debated court decision, see Flood, Roach, and Sossin (2005).
7. In 15 countries for which data are available for 1990 and 2003, the contribution of private health insurance increased, on average, by 0.5 percentage point, representing a 7 percent increase during the period (OECD 2005b).
8. Most commentators have linked the sharp increase in PHI coverage in Australia to regulatory changes rather than to introduction of a 30 percent rebate on PHI premiums (Colombo and Tapay 2003).
9. The CMU is a government-sponsored program that provides public insurance for a small fraction of the French population without social security coverage, as well as subsidized private health insurance for low-income individuals. Since its introduction in 2000, PHI coverage increased from 86 to 92 percent of the population.

10. Marketing, policy management, and underwriting represent the largest fraction of administrative expenses, but insurers also incur the cost of billing, product innovation, agents' commissions, and distribution (OECD 2004a).
11. The Mexican reform aims to improve financial protection for those without social security coverage, inject new resources into the system, and rebalance the unequal financial transfers from the federal government to the states. The federal and state governments each pay contributions on a per family basis, and the insured pays a small income-tested premium. Enrollment in the Seguro Popular is voluntary. States have an incentive to affiliate as many people as possible, because the allocation of federal resources varies with the number of affiliated families. Money is intended to follow the patient to improve quality and efficiency (OECD 2005c).
12. On January 1, 2006, the Dutch health insurance reform instituted a system of mandatory health insurance similar to that in Switzerland (Ministry for Health, Welfare and Sport of the Netherlands 2002). In Switzerland, the 1994 Health Insurance Law (enacted in 1996) established a legal framework for mandatory health insurance, which is based on the following key principles: (1) mandatory affiliation for all residents, (2) nonprofit requirement of mandatory health insurance and separation of that insurance from other insurance, (3) standardization of the benefit package and cost-sharing requirement, (4) open enrollment and free choice of insurer within the canton of residence or work, (5) community rating of premiums by each insurer, (6) operation of a risk equalization mechanism across insurers, and (7) freedom for the insured to choose special insurance contracts (higher-deductible, HMO, bonus insurance) (Colombo 2001; OECD 2006).
13. See OECD (2004a) for an analysis of consumer protection and contract-related regulation in OECD countries.
14. Thus, for example, requirements relating to policy issuance, such as open enrollment, alone are inadequate to ensure affordable access to coverage. They need to be accompanied by requirements related to premium rating. Yet stringent underwriting and community-rating requirements may lead to adverse selection in PHI markets—that is, individuals whose premiums exceed the level of their individual risk may discontinue their insurance, thereby reducing risk pooling and increasing the costs of coverage.

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## CHAPTER 9

# Trends and Regulatory Challenges in Harnessing Private Voluntary Health Insurance

*Neelam Sekhri and William D. Savedoff*

**P**ivate health insurance (PHI) plays a significant role in health care financing in countries with widely different income levels and health system structures. This chapter contrasts trends in expansion of private health insurance across regions and discusses regulatory approaches and policies for structuring PHI markets in ways that mobilize resources for health care, minimize financial risk, protect consumers, and reduce inequities.

### BACKGROUND AND CONTEXT

Policy makers seeking financing mechanisms that will protect people from the financially catastrophic effects of illness have three broad options to consider: taxation, social security, and private health insurance, which includes both non-profit and for-profit plans (Cutler and Zeckhauser 2000).<sup>1</sup>

Unlike taxation and social security, which are commonly thought to promote equity, function in the general interest of society, and lead to universal health coverage, private health insurance often conjures up visions of unequal access, large numbers of uninsured people, and elitist health care for the rich. Experience indicates that unregulated or poorly designed PHI systems can indeed exacerbate inequalities, provide coverage only for the young and healthy, and escalate costs (Zigora 1998).

However, private health insurance can play a positive role in improving health and equity in developing countries for three reasons. First, out-of-pocket spending on health services represents a significant burden for households in developing countries and therefore limits access to necessary care, particularly for the poor and sick (WHO 2000). This problem is of particular concern to countries with large informal labor sectors and limited capacity to generate tax revenues. In these countries, private coverage is one way to move toward prepayment and risk pooling until publicly funded coverage can expand sufficiently. In addition, it allows policy makers to direct scarce public resources to the most vulnerable groups, while those who can afford to pay a portion of their medical costs do so.

Second, history shows that the social insurance systems of many high- and middle-income countries evolved from voluntary PHI schemes based on professional guilds or communities. These countries' experience in building institutional

capacity may be useful in informing policy debates in developing countries considering social insurance systems.

Finally, private health insurance continues to be important even in countries where universal coverage has been achieved. Countries that plan ahead for this supplementary role will be better prepared to ensure that private health insurance will complement public systems as they develop.

This chapter reviews some of the empirical evidence regarding the scope of private health insurance around the world. The first section examines patterns of health financing and defines private health insurance. The second section reviews the range of international experience with PHI coverage. The final section discusses the regulatory challenges that must be addressed if private health insurance is to serve the public interest.

## **PATTERNS OF HEALTH FINANCING**

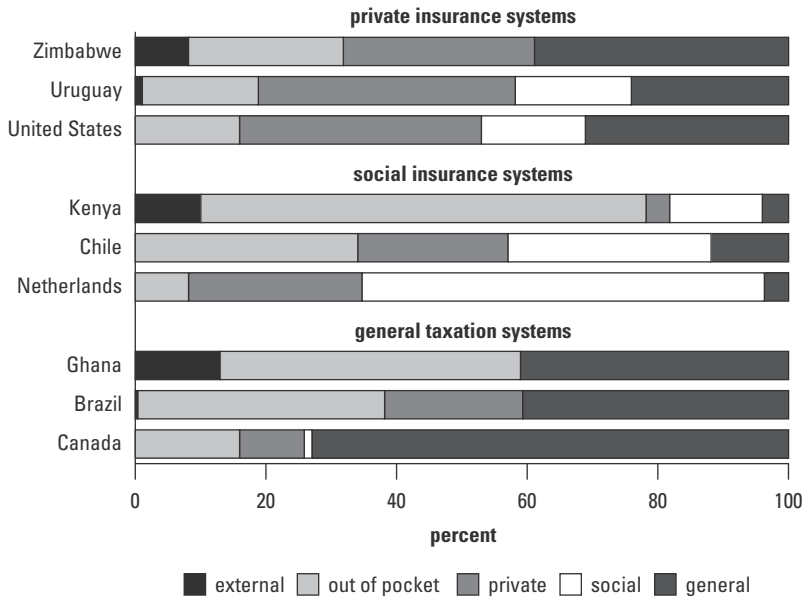
Although most countries have some type of PHI market, data on private insurance expenditure, populations covered, premiums charged, and impact on the health care system are limited. This study uses data on private insurance available through National Health Accounts.<sup>2</sup> These data have several limitations. First, they are not available for all countries and may lead researchers to underestimate the role of private insurance, particularly in developing countries, where the private market tends to be unregulated. Second, trend data for private coverage is not reliable, because reporting in this area began relatively recently. Third, little data have been systematically collected on insurance markets in developing countries.

### **Mix of Health Financing Sources**

Every country relies on a combination of public and private sources to fund its health care system. The outcome, in terms of population health, equity, and responsiveness, depends on how these sources complement one another. In most developed countries, one risk-pooling mechanism covers the majority of the population, and other mechanisms play secondary roles. The particular mix may involve different ways of financing different health care services for different segments of the population. For example, public health services such as disease surveillance are usually funded through general taxation, whereas personal health services may be funded through a combination of general taxes and social or private health insurance. Many countries use general taxation to fund or subsidize care for the poor; those employed in the formal sector may pay for some of their health care costs through payroll deductions for social insurance or private insurance. Even in countries that have achieved universal health coverage, out-of-pocket payments often finance noncore services, such as eyeglasses or dental services.

Figure 9.1 depicts the role that private health insurance plays in different health financing systems. Within each system, three countries illustrate how the



**FIGURE 9.1 Sources of Health Expenditure by System and Income**

Source: WHO 2002.

financial mix varies across income levels. These countries were chosen for illustrative purposes only, and the following discussion is qualified by the fact that rigorous conclusions cannot be drawn from such a sample.

Consider first the countries with general taxation systems. The tax-based source of health spending represents less than 50 percent of total spending in the lower- and middle- income countries—Brazil and Côte d'Ivoire—and 73 percent of total health spending in the high-income country, Canada. Out-of-pocket spending is smallest as a share of total health expenditure in Canada and highest in Côte d'Ivoire. Most of the difference in out-of-pocket spending is due to the expansion of tax-based financing, but a portion can be attributed to the emergence of private health insurance. For example, in Canada, private health insurance accounts for 11.5 percent of total health expenditure and is purchased by almost 70 percent of the population (WHO 2002; OECD 2000).

Now consider the countries with social insurance systems. Payments through social insurance account for a negligible amount of spending in Kenya, almost a third of spending in Chile, and two-thirds of spending in the Netherlands, where private health insurance maintains an important role. In both Chile and the Netherlands, private health insurance covers about 20 percent of total expenditures and provides primary coverage to people who are not covered under or who have opted out of social insurance.

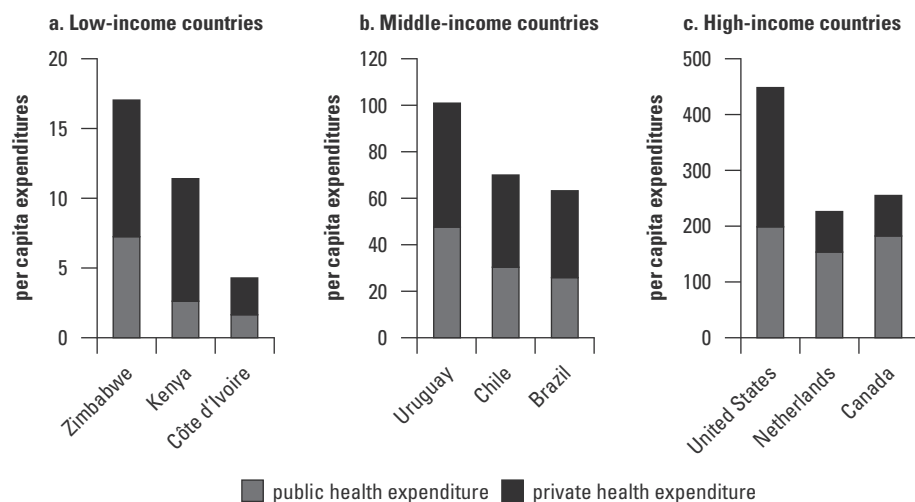
Among countries with high rates of private coverage, private health insurance never accounts for more than 40 percent of total health spending. Whether the United States, Uruguay, or Zimbabwe, the combined share of social insurance and tax-based health expenditures is larger than the PHI share. But in the United States and Uruguay, private health insurance provides the main source of coverage for over 60 percent of the population. Countries with significant shares of PHI coverage have higher spending per capita than countries at similar income levels with primarily tax-funded or social insurance-based systems (figure 9.2).

These few cases illustrate the main opportunities and dangers associated with PHI coverage. Private health insurance can inject additional resources into poorly funded health care systems, and private coverage exists even in high-income countries that have achieved universal coverage. But systems with significant shares of private health insurance tend to spend more per capita on health care than countries with other financing models at similar income levels, suggesting that cost containment in the former countries is harder to achieve. In addition, even in countries with high rates of private insurance, significant public expenditures are necessary to achieve universal coverage.

### What Is Private Health Insurance?

Private health insurance is often characterized as voluntary, for-profit commercial coverage. A review of insurance arrangements around the world, however,

**FIGURE 9.2 Public and Private Health Expenditures for Selected Countries**  
(US\$ per capita)



Source: Authors.

reveals that such insurance exists in a wide variety of forms and that the boundaries between it and public insurance are increasingly blurred (Jost 2001). Here, the term “public insurance” includes the full range of schemes described as social insurance or national insurance. Figure 9.3 identifies arrangements on the basis of three dimensions: (1) whether insurance is mandatory or voluntary; (2) whether contributions are risk rated (minimal risk transfer), community rated (transfers between healthy and sick), or income based (transfers between higher-income and lower-income groups); and (3) whether management of the scheme is commercial for-profit, private nonprofit, or public/quasi-public.

This continuum should not be construed as a causal or developmental model; it merely highlights the existing variety. Although private and public insurance are often discussed in terms of extremes, the most common arrangements are actually found in the center. Private insurance tends to be voluntary, and public insurance tends to be mandatory, but not always. In Switzerland and Uruguay, the purchase of private coverage is mandatory (as in public insurance systems), whereas in Mexico, the new public insurance scheme (Seguro Popular) is voluntary.

With respect to contributions, private insurance premiums tend to be risk or community rated, whereas public insurance contributions tend to be income based, but again not always. In Chile, individuals can purchase private coverage with mandated income-based contributions. Variations are even more pronounced in the management of insurance schemes. In Australia, India, and Ireland, for example, the largest “private” insurance companies are publicly owned, and in many social insurance systems, private entities manage publicly financed sickness funds.

**FIGURE 9.3 Continuum of Insurance Arrangements**

	Privately funded				Publicly funded			
Voluntary/ mandatory	Voluntary	Voluntary	Voluntary	Voluntary	Mandatory	Mandatory	Mandatory	Mandatory
Risk rated/ income- related contributions	Risk rated	Risk rated	Community rated	Community rated	Community rated	Community rated	Income rated	Income rated
Private for-profit/ public management	For-profit commercial (e.g., Aetna)	Nonprofit (e.g., BUPA in United Kingdom)	Nonprofit community (e.g., SEWA in India)	Public (e.g., Medibank in Australia)	Nonprofit (e.g., CHCI in Uruguay)	Private for-profit (e.g., Switzerland)	Private nonprofit (e.g., Netherlands)	Public

Private insurance

Private insurance

Source: Authors.

In addition to the three dimensions outlined above, private insurance can be classified by the different roles it plays in the health financing system. The Organisation for Economic Co-operation and Development (OECD) Ad Hoc Group on Private Insurance identifies four categories of private health insurance: primary, duplicate, complementary, and supplementary (Colombo and Tapay 2004). This discussion emphasizes the difference between systems in which private health insurance provides “primary coverage” (corresponding to the OECD’s category of the same name) and those in which it provides “secondary coverage” (corresponding to the other three categories).

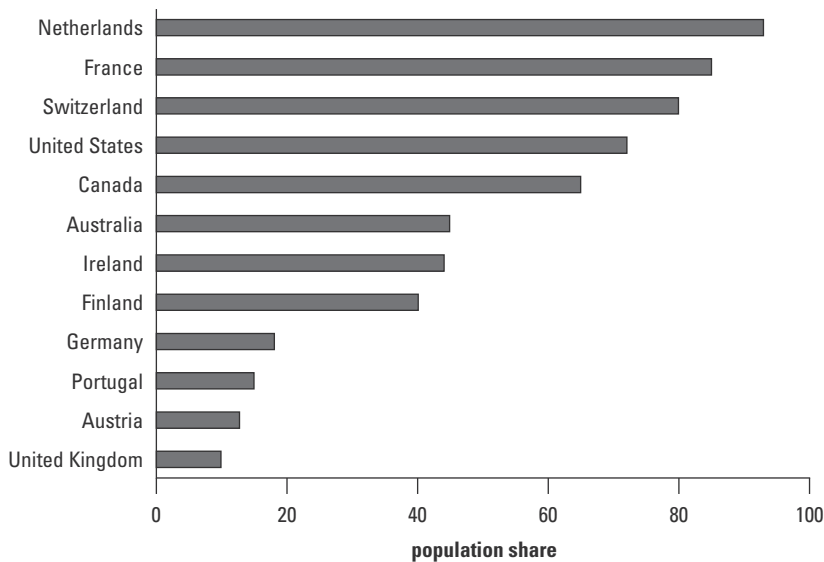
When it provides primary coverage, private insurance is the principal form of risk pooling for some portion of the population. For example, in the United States, private insurance provides primary coverage for the nonpoor who are younger than 65, whereas in the Netherlands, before recent reforms, households not eligible for public sickness funds purchased private coverage (Greß and others 2002). Primary insurance packages usually cover a broad range of health services, often mirroring those financed in a public system.

In secondary coverage, private insurance complements public insurance by covering residual health care costs, such as copayments, or services not included in the basic publicly funded package, such as outpatient drugs or dental care. Private insurance can enable subscribers to gain faster access to specialists and elective hospital care, as in Australia and the United Kingdom.

As countries move toward universal health coverage, the role of private health insurance may change. When public funding is low, private health insurance can serve as a transitional mechanism, building capacity and providing financial protection for certain segments of the population and allowing limited tax revenues to be directed to public goods and vulnerable groups. The institutional capacity, information systems, and skills involved in regulating private health insurance may also be useful in managing public funding schemes as they expand. Once a country has achieved universal financial protection, private health insurance may continue to provide supplementary coverage for noncovered expenses and services.

## **EXPERIENCE WITH PRIVATE HEALTH INSURANCE**

Because of the data limitations identified above, most studies of health financing ignore the significant populations served by private coverage and its role in national health systems. However, PHI coverage is becoming increasingly important in health financing. In France, private policies account for only 12.5 percent of national expenditures, but 85 percent of the population purchases them to pay for services not covered through the public system. In the Netherlands, over 90 percent of the population purchases either primary or secondary insurance plans (figure 9.4).

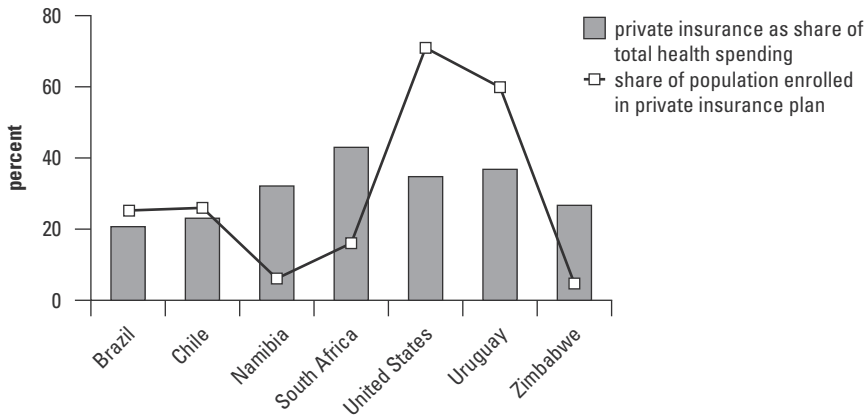
**FIGURE 9.4 Share of Population with Private Health Insurance, Selected OECD Countries, 2000**

Source: OECD 2000.

### Countries with the Highest PHI Expenditures

Seven countries fund more than 20 percent of their total health expenditures through private coverage (figure 9.5) and use private insurance to provide primary coverage for a segment of the population. These countries range from Zimbabwe, a low-income country that spends \$142 annually per capita (in international dollars) on health care and the United States, the world's biggest spender on health care (\$4,887 per capita) (WHO 2004). Three of the seven countries are in Sub-Saharan Africa (Namibia, South Africa, and Zimbabwe) and three are in South America (Brazil, Chile, and Uruguay). These six countries received significant numbers of European immigrants, but the countries in the Americas won their independence much earlier and consequently developed health insurance institutions over a longer period and at roughly the same period as Western Europe. By contrast, health insurance schemes in the African countries, which were established under colonial governments, have developed independently for only a few decades.

In the three African countries, private insurance covers a relatively small share of the population, despite representing a large share of total expenditure. In Zimbabwe in 2001, an estimated 8 percent of the population purchased private coverage (Campbell and others 2001), which accounted for 23 percent of total

**FIGURE 9.5 Countries with the Highest Private Health Insurance Expenditures, 2000**

Source: Sekhri and Savedoff 2005.

health expenditure. Formal sector workers benefited most from this coverage: 17 percent were insured through private schemes (Zigora 1998). In Namibia, private coverage also protects primarily those who are employed in the formal sector (Ministry of Health and Social Services 2001). South Africa has a history of more than 100 years of private insurance, primarily provided by mutual insurers called medical schemes or medical aid societies. Wealthier people benefit most from this insurance: 80 percent of those in the two highest income quintiles are covered, compared with only 2 percent of those in the lowest income quintile (Söderlund and Hansl 2000). In all three of these countries, public systems cover the poorest members of society, although quality and access to care vary. Only South Africa has a strong regulatory structure governing the private market. In 2002 the government proposed major reforms, aiming to achieve universal health coverage through evolution of the private insurance market into a mandatory social insurance system (Courtney and others 1997; Söderlund and Hansl 2000).

The three Latin American countries have much larger PHI markets than the three African countries. Uruguay is unique in having a mandatory private insurance system, which covers over 60 percent of the population. Publicly funded programs for the elderly and poor complement this system (Jack 2000). In Chile, private insurance allows those who can afford private coverage to opt out of the publicly funded health system (Barrientos and Lloyd-Sherlock 2000). In contrast, Brazil's PHI market has grown despite public policies aimed at establishing a single universal, publicly financed health care system. Uruguay's health insurance regulation is aimed at making insurers serve public policy goals. In Brazil and Chile, private insurers initially were little regulated. Since the late 1990s, both countries have attempted to impose more stringent regulations on insurers (Jack 2000).

The United States is the only high-income country to rely on voluntary subscription to private insurance to provide coverage for most of its citizens. More than 70 percent of the population obtains health coverage through private insurers; about 64 percent of this coverage is purchased through employment-based plans (Docteur, Suppanz, and Woo 2003). Yet per capita public expenditure on health in the United States is on a par with the total health expenditure of most OECD countries and covers the elderly, disabled, and poor through public insurance programs, such as Medicare and Medicaid, and a system of public hospitals and community clinics. The U.S. PHI market is heavily regulated, and many states mandate community rating or do not permit premiums that are fully risk rated. Three quarters of the states require insurers to offer coverage in certain segments of the population regardless of an individual's health status. Almost half of the states cover high-risk populations with insurance pools funded through assessments on insurers (Jost 2001).

Although these seven countries differ significantly in income levels, percentage of people covered by private insurance, and extent of effective regulations governing the private market, they have two similarities with regard to insurance coverage. First, private insurance is the primary form of financial protection available to formally employed individuals and their families. Second, publicly funded programs cover vulnerable populations.

### Variations in PHI Role by Income Level

In 2001, 39 countries (of which half are low income or lower-middle income) had PHI markets contributing to more than 5 percent of total health expenditure (Sekhri and Savedoff 2005). The role of private insurance depends on a country's wealth and institutional development. In many low- and middle-income countries, private insurance is the only form of risk pooling available and provides primary coverage, largely to those who are employed. This situation reflects that in Western Europe in the nineteenth century, when mutual associations, employers, guilds, or unions provided the only significant forms of insurance. For example, in 1885, voluntary private insurance schemes ("friendly societies") covered 10 percent of Sweden's workforce (Edebalk 2000), and in Germany, Bismarck established the first national social insurance system by knitting together voluntary and occupationally and industrially based sickness funds (ILO 2002).

In most high-income countries, private insurance provides secondary coverage to predominantly publicly funded systems. Australia and Ireland are unique in explicitly promoting private health insurance as a complement to public financing. Both countries have used private health insurance to provide primary coverage for significant segments of their population but now use it to relieve pressure on the public system by facilitating access to hospitals, allowing use of private providers, and covering gaps in public benefits. As a result of targeted interventions, nearly half the population in both countries purchase private

health insurance. Both countries have a strong regulatory framework to develop and manage the PHI market (Colombo and Tapay 2003).

### **Variations in PHI Role by Region**

Private health insurance has emerged in every region of the world, but its role varies by region. Africa and the Middle East, Asia, Latin America, Western Europe, and Eastern Europe and Central Asia are reviewed.

#### ***Africa and the Middle East***

Botswana, Côte d'Ivoire, Kenya, Madagascar, and Mali are among the African countries with PHI markets. Community health insurance schemes, such as the *mutuelles* in Senegal (ILO 2002; Atim 1999), are extensive in some countries in Africa, where private coverage has emerged as the result of market forces and *laissez faire* government policies. Regulation of insurers tends to be weak, increasing the risk of inequity and cost escalation.

In North Africa and the Middle East, several countries have significant PHI markets, including Bahrain, Lebanon, Morocco, Saudi Arabia, and Tunisia. Other countries are exploring opening their markets to domestic and foreign insurers to address the needs of their large immigrant workforces and to deal with increasing demand for health services—demand fueled by rising income levels (Schieber and Maeda 1997).

#### ***Asia***

Asia is the region in which out-of-pocket expenditures account for the highest share of total health spending and in which private insurance could increase prepayment and risk pooling. But because PHI markets have developed without an adequate regulatory framework in some countries, private coverage could raise costs and result in cream skimming (insurers' attempt to enroll low-risk clients only).

Data from National Health Accounts on private insurance are unavailable for many countries in Asia, but India probably has the largest PHI market, with 3.3 percent of the population, or 33 million, insured (Chollet and Lewis 1997). In terms of contribution to total health expenditures, the Philippines leads the region at 10.8 percent, followed by the Republic of Korea (9.5 percent), Australia (7.8 percent), New Zealand (6.2 percent), and Indonesia (6.1 percent). Other countries, such as China, are opening their markets to private insurers. Several successful community health schemes exist in Asia (ILO 2002).

#### ***Latin America***

Latin America has the highest proportion of countries in which private coverage contributes over 5 percent to total health expenditure. Many of these countries have used private health insurance to attract private funds to the health sector.



Several countries have encouraged investment from foreign insurers and managed care companies, but in opening their health insurance markets, many have failed to enact adequate regulatory controls to achieve equity and ensure consumer protection (Laver 2000). Despite efforts to remedy this situation, enforcement of regulations remains weak (Laver 2000).

### *Western Europe*

Secondary insurance exists in almost all European countries and is used to cover various gaps in public coverage. Private coverage varies from 5 percent of total health expenditures in Belgium to 18 percent in the Netherlands.

### *Eastern Europe and Central Asia*

Several countries in Eastern Europe and Central Asia are considering opening their markets to private insurers for supplementary coverage (Colombo and Tapay 2003). Slovenia has one of Eastern Europe's most well-developed private insurance systems. In 2001 it funded almost 15 percent of total health care expenditures. Albania's market funded 12 percent of its health expenditures in that year. The PHI market accounts for 7 percent of total health expenditure in Turkmenistan.

## **USING PRIVATE HEALTH INSURANCE TO SERVE THE PUBLIC INTEREST**

Private health insurance is clearly more widespread than public debates suggest. Many developing countries have PHI markets that are serving the needs of a growing middle class and in some cases those of the poor. Many developed countries use secondary private insurance to fill gaps in their publicly funded systems and to pay for increasing demand for health services. Both developed and developing countries appear to use private health insurance to pay rising health care costs and to increase risk pooling.

Through policies, incentives, and regulations, governments in most countries with well-established PHI markets essentially "conscript private insurance to serve the public goal of equitable access" (Jost 2001). The case for public intervention in health insurance is based on the need to regulate financial institutions in general, to prevent market failures specific to health insurance, and to serve the public interest in promoting good health and addressing inequities (Roberts 2004).

Governments regulate financial institutions to minimize systemic risks, correct instability, and protect consumers from unscrupulous insurers (Carmichael and Pomerleano 2002; Herring and Santomero 2000). Even the most laissez-faire governments establish policies regarding the kinds of businesses permitted to be active in financial markets. Insurance markets should be no exception.

Health insurance markets are subject to various market failures (Arrow 2001; Rothschild and Stiglitz 1976). Some stem from information asymmetry about health risks and costs, which leads to *adverse selection* and *risk selection*.

Adverse selection occurs because insurers have less information about an individual's health status than the individual. To protect themselves from this unknown risk, they tend to set high insurance premiums, thereby discouraging healthy individuals from buying health coverage that may have a cost higher than its benefits. Less than healthy individuals will buy the insurance, resulting in a higher-than-expected average level of risk in the insurance pool. Rating methods that are redistributive and promote equity, such as community rating, tend to exacerbate this problem, driving insurance prices even higher and increasing adverse selection, which can lead to collapse of the insurance market (Cutler and Reber 1998).

Risk selection (also referred to as cream skimming) occurs when insurers attempt to counter adverse selection or maximize profit by discouraging sick individuals from purchasing insurance or by finding ways to insure only low-risk individuals. Whereas adverse selection leads to rising premiums and a growing concentration of high-risk individuals in an ever-decreasing market, risk selection leaves those who are sickest without adequate insurance, even when they are willing to pay for it.

Without public intervention, PHI markets will not efficiently match supply to demand. Regulations that can mitigate adverse selection and risk selection include mandatory purchase of coverage, the requirement that insurers accept all applicants, a limit on exclusions and waiting periods, and schemes that equalize risks among insurers. In addition, the public sector can subsidize coverage for those at higher risk for ill health through high-risk insurance pools and public reinsurance.

Another problem that prevents insurance markets from functioning effectively is the tendency for insured individuals to use more services than if they were not insured. This tendency, called moral hazard, raises the costs of coverage. Copayments or other forms of cost sharing (deductibles, coinsurance) are often introduced to minimize this problem, but they may work against efforts to minimize financial barriers to necessary health services.

Like insured individuals, doctors can engage in moral hazard. They may over-prescribe medications or order unnecessary services in the knowledge that the insurer, not the patient, will be paying. This supplier-induced demand for health services decreases the affordability of coverage and dampens health insurance demand. Insurers may use different provider payment mechanisms, such as capitation and case rates, to provide an incentive for providers to control costs. But introducing such payments may affect the insurer's ability to attract clients or engage providers. These mechanisms may also encourage the provision of poor-quality care, potentially requiring quality assurance regulations to avoid under-provision of care.

Health insurance has one further characteristic that may provoke public action. Voluntary health insurance markets alone will not provide coverage sufficient to make health care services available to all members of society—that is, beyond effective demand. Societies may want to ensure universal access to

health services when the services are considered a merit good—that is, society as a whole values their provision more than any individual member—or when the services involve externalities—that is, their consumption by some individuals has benefits for other individuals. In the first case, the decision to ensure equitable access to care is a political one that reflects social values. In the second case, policies to ensure equitable access may be justified, for example, to reduce the spread of untreated contagious diseases, maintain productivity in workplaces, or protect hospitals from the costs of treating uninsured individuals. A government can address these concerns in several ways. It can produce certain health services (for example, public vaccination campaigns, dental care in schools); it can directly finance certain health services (for example, pay for contagious disease testing); and it can mandate that insurers offer a core package of health services considered to be in the public interest. For those who cannot afford coverage, government can subsidize premiums or directly provide services.

### **Balancing Act for Policy Makers**

In the case of PHI markets, government intervention could lead to a better outcome than a *laissez-faire* approach. However, public intervention is no panacea for market failures. Economists rightly caution that regulation inevitably raises the opportunity for unintended distortions in the efficient functioning of the market. Regulations also have costs that need to be evaluated relative to their benefits.

Overregulation can strangle a market as easily as *laissez-faire* approaches can undermine the market's capacity to serve public policy goals. Before creating an open market for trade in the European Union (EU), the European Commission examined whether governments should more or less stringently regulate insurers. The EU issued a directive that health insurance should only be subject to financial regulations except where a "general good" could be demonstrated (Mossialos and others 2002). A "general good" can be demonstrated in policies that provide primary coverage for the population, but in purely secondary policies, the concept of "general good" is less evident. Many developed countries have chosen to regulate secondary insurance more lightly than primary insurance; others apply stringent regulations to both. For example, in France, supplementary insurance contracts that adhere to a solidarity principle are granted specific tax exemptions on the basis of "general good" (Buchmueller and Couffinhil 2004).

Another aspect of insurance that affects the scope of regulation relates to the boundaries of private health insurance. Third-party indemnity schemes are universally recognized as "insurance," but many other organizational forms that assume health expenditure risks have emerged, including HMOs, prepaid plans, and community insurance schemes. Frequently the different organizational forms are subject to different regulations, but as long as they are insuring individuals against the risk of assuming large financial costs for medical care, they are operating in the same market. If all these forms are not brought within the

same regulatory framework, firms could evade controls by reconstituting themselves within the most weakly regulated segment of the market. Differentiation may also raise costs to consumers by protecting inefficient insurers and leaving certain classes of consumers with lower quality of care or weaker financial solvency protections.

In some cases, well-designed regulations will automatically accommodate differences among insurers. For example, reserve requirements can be related to the scale of potential claims and, by implication, the size of the insurer. In other cases, differentiation may be justifiable as a transitional measure—a pragmatic response to markets that are highly segmented or have extremely uneven distributions of providers or in which insurance institutions are yet to emerge.

Of particular concern to developing countries is how to regulate community, mutual, and nonprofit insurers. To encourage their growth and for a variety of historical and political reasons, policy makers have excluded these insurers from regulation or only lightly regulated them through differentiating capital and reserve requirements or have exempted them from standards for quality of care or financial disclosure. However, weak regulation can backfire if the insurers cannot fulfill promises to pay claims or lose credibility because of low-quality care. In 1993 Colombia established lower capital and reserve requirements for small cooperative insurers than for commercial for-profit firms, but this policy exposed consumers to greater risk (small insurers were comparatively more likely to have insufficient funds to pay claims) without necessarily improving the supply, equity, or efficiency of insurance services. Eventually the country subjected cooperative insurers to the financial standards for other segments of the market.

If community insurance schemes are to be integrated into a wider health insurance market, the schemes' insured will be best served by regulations that make their protections the same as those enjoyed elsewhere. In developed markets, regulations tend to be the same for all insurers, regardless of scale, ownership, or mandate (OECD Health Project 2004).

In regulating health insurance to achieve public policy objectives and correct specific market failures, policy makers must balance the sometimes competing goals of consumer protection and choice, equity, and cost containment. Table 9.1 summarizes these goals and tools to attain them.

### **Policy Objectives and Regulatory Questions**

In developing a regulatory scheme to address the issues noted above, policy makers must answer five key questions regarding the interaction of the principal actors in the health insurance market: insurers, consumers, and providers. Because in most developing countries, private insurance will serve as the primary form of coverage, the discussion below focuses on regulating primary insurance, not secondary coverage.

**TABLE 9.1 Policy Goals, Objectives, and Instruments**

<i>Goal</i>	<i>Objective</i>	<i>Instruments</i>
Protect consumers	Ensure financial solvency of insurers	Establish sufficient minimum capital and reserve requirements Review reserve requirements as insurance plans grow in size Establish financial reporting requirements and ensure transparency in reporting
	Promote manageable competition to promote affordability and consumer choice	Establish reserve requirements that allow different types of insurers (nonprofit, community, and managed care) to enter the market Establish publicly funded guaranty funds if insurers are not well capitalized Establish rules against monopolistic pricing
	Promote transparency and fairness in transactions between consumers and insurers	Establish disclosure requirements for policies and ensure that their content is understandable to consumers Monitor advertising and sales practices to ensure consumer protection Provide independent mechanisms to resolve consumer grievances
	Ensure insurance packages provide adequate financial protection	Define at least one standard benefit package that all insurers must offer, and require insurers to set premiums for this package in the same way (e.g., community rating)
	Address issues of merit goods and externalities in health care	Directly provide or purchase health care interventions that are defined as public goods through public funds Ensure that the minimum benefit package contains those items considered public goods Subsidize insurers through public funds to provide coverage for public goods
Promote equity	Minimize adverse selection and encourage broad risk pooling	Require insurance to be mandatory at least for certain categories of households Encourage group enrollment through employer groups, associations, cooperatives, and labor unions Create incentives for low-risk individuals to join the insurance pool (e.g., tax incentives, rebates, lifetime rating methods) Permit defined waiting periods for preexisting conditions Permit insurers to require enrollees to disclose their medical history
	Minimize risk selection or cream skimming and encourage broad risk pooling	Cover high-risk individuals through publicly funded programs Provide mechanisms (high-risk pools, reinsurance, and risk equalization schemes) to protect insurers Require guaranteed issue and renewal along with pricing guidelines that do not make premiums unaffordable for sicker individuals Limit exclusions and waiting periods to the first time that an individual purchases continuous insurance coverage

*(continued)*

**TABLE 9.1 Policy Goals, Objectives, and Instruments** *(continued)*

<i>Goal</i>	<i>Objective</i>	<i>Instruments</i>
Promote equity <i>(continued)</i>	Establish premium-setting guidelines that promote cross-subsidies on basis of health risk or income level	Require community rating to promote cross-subsidies between healthy and sick  Encourage income-based contributions where feasible to promote cross-subsidies between high-income and low-income individuals
Promote cost containment	Reduce supplier-induced demand	Encourage provider payment mechanisms (case rates, per diems, capitation) for risk and reward sharing among providers, and establish quality requirements and methods to monitor underuse of services
	Reduce consumer-induced demand (moral hazard)	Allow consumer cost sharing through deductibles and copayments  Monitor cost-sharing practices to ensure that they do not limit access to needed services and that they provide adequate financial protection

### ***Who Can Sell Insurance?***

Policies concerning which entities can sell insurance benefit both clients and firms, offering consumer protection and ensuring a viable insurance market. Carmichael and Pomerleano (2002) and the OECD's Insurance Committee Secretariat (1997) describe minimum regulatory requirements for private insurance institutions. In determining which regulations to introduce, policy makers must answer the following questions:

- *Will private insurers be an important source of health financing?* If the answer is "yes," more-extensive consumer protections may be indicated. Developed countries in which private insurance plays an important role often impose more stringent regulations than those in which private insurance covers fewer people (OECD Health Project 2004).
- *Is private insurance a way to provide greater choice to consumers or to make the public system more responsive?* If increased consumer choice is a priority, less regulation may be appropriate. However, opt-out mechanisms, which allow individuals to purchase private coverage with their public contributions, require considerable monitoring to prevent a negative impact on the overall health care system.
- *How much competition should be encouraged?* Managing the level of competition is important in emerging markets. Too many insurers make oversight difficult and can threaten the viability of the insurance pool, whereas insufficient competition can negate the benefits of a market.
- *How much insurer collaboration should be encouraged?* In general, insurers should not be allowed to collude in setting prices or to share information, particularly about clients' health risks. But the insurance market works better when opera-

tions are transparent and information about general costs and actuarial risks is available. In establishing reporting and disclosure requirements, regulations must strike the appropriate balance between protecting proprietary data and gathering information about the health needs of the population, use of services, and total health system costs.

### ***Who Should Be Covered?***

Choices regarding who should be covered by private health coverage allow policy makers to influence the breadth and diversity of the insurance risk pool, the level of participation in the market, and the pace of market growth. These choices also allow policy makers to address adverse selection and risk selection. The following policy questions should be addressed:

- *How broadly should coverage be extended? Will private insurance be mandatory or voluntary?* Although private insurance is traditionally characterized as voluntary, it can be made mandatory for the entire population or for certain segments, such as the formal sector. Mandatory coverage reduces the risk of adverse selection but may be politically unpopular and difficult to enforce in the informal sector.
- *What will be the basis of affiliation with insurers (group versus family or individual)?* Group affiliation is preferable because it spreads health risks more evenly across insurers. Affiliation through employment is common, because members are easy to identify and payments are readily linked to earnings. However, such affiliation may limit labor mobility and make coverage difficult to sustain during economic downturns and periods of high unemployment. Family or household insurance may be more suitable where a large informal sector exists and is preferable to individual coverage, which is more expensive to administer and runs the greatest risk of adverse selection.
- *If coverage is voluntary, how can low-risk individuals be encouraged to join the risk pool?* Voluntary markets in which rating methods or other mechanisms promote equity can increase the cost of coverage for low-risk individuals. Explicit incentives such as tax rebates, exemptions, penalties, or lifetime community rating, are often required to broaden risk pooling in the market.
- *How can private insurers be encouraged to cover high-risk individuals without the viability of the insurance market being undermined?* No developed country, including the United States, uses voluntary private insurance to cover the poor or elderly. Other categories of high-risk groups may be part of the risk pool, but in the absence of explicit safeguards for both insurers and individuals, these groups will be left without affordable coverage. If high-risk persons are covered by public programs and are not part of the private insurance market, fewer regulations are needed in this area.

### *What Should Be Covered?*

Requirements concerning basic benefits are intended to protect consumers from unreasonable exclusions and to address adverse selection and risk selection. In addition, they determine how much financial protection will be provided and can control for moral hazard. Policy makers must consider the following questions:

- *What benefits, if any, should be mandated?* Primary insurance often contains a core set of benefits to provide adequate financial protection for those who purchase coverage. These benefits may be the same as those included in a publicly funded package. Mandating benefits increases the costs of basic packages and can make insurance unaffordable for some.
- *How important are consumer choice and customization to meet the needs of different groups?* If consumer choice is a policy goal, fewer restrictions on benefits may be appropriate. Choice must be weighed against the confusion and inefficiency that can occur when myriad plans with minor differences are offered. Excessive customization can increase costs associated with administration of multiple benefit designs and can create fragmented and unsustainable risk pools.
- *What mechanisms will be used to curb unnecessary demand for services from consumers?* Cost-sharing mechanisms such as copayments or deductibles can address consumer-induced demand, but attempts to curb this demand must be balanced with measures to ensure that those who cannot afford to share in health care costs receive needed services.

### *How Can Prices Be Set?*

Regulating how private companies can price their products is a significant governmental intervention and can have unintended consequences. In health insurance markets, pricing policies are particularly difficult to design because of the many competing objectives: affordability, equity, and viability, as well as avoiding adverse selection, risk selection, and moral hazard. Rating policies can have a significant impact on equity and will guide the extent of risk pooling; they can protect the viability of the market by ensuring that insurers use the same pricing method for any stipulated standard benefit package. Otherwise, some insurers will use risk-rated premiums to attract low-risk individuals, potentially leading to market collapse. In setting pricing policies, policy makers must answer two questions.

- *To what extent is private insurance intended to promote equity through subsidization of high-risk individuals and the poor by low-risk individuals and the rich?* In efficient markets, insurers will wish to charge “actuarially fair premiums,” which are related to the amount of risk the insurer is assuming. These pre-



miums can accelerate expansion of voluntary PHI markets, but they do not provide the cross-subsidies necessary to ensure equity and can make insurance unaffordable for high-risk populations. Other forms of rating, such as community rating, are more equitable but decrease the attractiveness of coverage for low-risk individuals who are paying more than market value for the services they use.

- *Are premiums intended to cover current costs of care (“pay as you go”) or to provide reserves for future health care expenditures?* Instability in prices of insurance premiums is a particular problem where government intervention in provider prices and service use is minimal. Capital premium-setting mechanisms such as the one used in Germany (Greß, Okma, and Wasem 2002) can improve the predictability of premiums because, like life insurance policies, they include a reserve for future health care costs.

### ***How Should Providers Be Paid?***

How providers are paid will directly address supplier-induced demand. When insurers are passive, as in traditional third-party indemnity coverage, consumers tend to demand more health care and providers tend to induce more health care than might otherwise be justified (Söderlund and Khosa 1997; Peabody, Lee, and Bickel 1995; Barros, Vaughan, and Victora 1986).

Where passive insurance arrangements have contributed to cost escalation, a variety of active purchasing and risk-sharing arrangements between providers and insurers have emerged to better align incentives. These arrangements have led to integrated insurer and provider arrangements such as managed care plans in which insurers oversee the care provided to enrollees.

Policies and regulations governing provider fees are new in many developed insurance markets. These interventions address how providers are paid, how much they are paid, and how care is delivered. The following policy questions are relevant in this area:

- *What impact will prices in the private sector have on prices in the public system?* To the extent that the same providers serve both the public and private sectors, cost inflation in the private sector may increase overall prices in the health care system. However, comparatively higher charges in the private sector, subject to effective controls, can be used to subsidize the public sector.
- *How can price inflation resulting from insurance be constrained?* Provider charging practices can affect the amount of financial protection offered through insurance. Some studies show that rather than reducing out-of-pocket spending, insurance can lead to an overall increase in that spending when providers respond by raising their prices to insurers and patients (Gertler and Solon 2002). Price controls and individual insurance contracts can ensure that insurance actually provides financial protection.

- *How can provider-induced demand be reduced and access and quality maintained? How much risk can be appropriately moved to providers and how should this transfer be structured?* Considerable research has been done in the area of provider payment mechanisms and their impact on provider-induced demand (Abel-Smith 1992; Hastings and others 1973; Laffont and Tirole 1993; Pauly 1980; Ransom 2000; Stearns, Wolfe, and Kindig 1992). It indicates that sharing risks and rewards with providers and constraining supplier-induced demand may be even more important in controlling health care costs than reducing consumer demand. Aligning incentives of payers and providers gives providers a financial stake in the viability of the system. Mechanisms such as global capitation transfer significant amounts of risk from the insurer to the provider; policy makers must ensure that providers can manage this risk and remain solvent.
- *Is consumer choice of providers a key policy objective, or will insurers be free to select providers? Will private insurance be used to foster coordinated care delivery?* Encouraging insurers to purchase services from high-quality, cost-effective providers can limit cost escalation but also restrict freedom of provider choice. Introduction of private coverage can be used to create incentives for providers to form links or vertically integrate, thereby improving continuity of care for patients. Managed care plans that are vertically integrated with or otherwise linked to other plans have had a positive impact on cost and quality of health care (Sekhri 2000; Campbell and others 2001).

## CONCLUSIONS

Policy makers cannot underestimate the effect of a private insurance market on the publicly funded system. On the negative side, a PHI market may drive up prices for publicly funded services, lure providers away from the public system, and generate excessive demand that limits provision of needed medical services. On the positive side, a PHI market can provide financial protection for some segments of the population, strengthen the health system's institutional capacity, increase access to high-quality services, promote development of private provider capacity, foster providers' responsiveness, and introduce innovations that increase quality and cost-effectiveness. The key to minimizing the negative tendencies of the market and capitalizing on its potential is responsible government stewardship of market forces.

In developing countries, where often regressive out-of-pocket payments represent a majority of total health spending, private health insurance will be a factor in health financing—whether as a transitional measure on the road to a comprehensive publicly financed system, a predominant form of insurance coverage in the future, or an unwelcome but irrepressible guest. The challenge is to incorporate private insurance wisely.

## NOTES

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1. This section draws significantly on Sekhri and Savedoff 2005.
2. Except where otherwise indicated, all data on national health expenditures come from the National Health Accounts Unit at WHO and are reported in Sekhri and Savedoff 2005. For information on methods and other data, see Poullier and Hernandez (2000) and WHO (2002).

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## PART 3

# From Theory to Practice

**10. Financial and Management Best Practice in Private  
Voluntary Health Insurance**

*Roger Bowie and Gayle Adams*

**11. Opportunities and Constraints in Management Practices in  
Sub-Saharan Africa**

*Ladi Awosika*

**12. Facilitating and Safeguarding Regulation in Advanced  
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**13. Financial and Other Regulatory Challenges in  
Low-Income Countries**

*Hernán L. Fuenzalida-Puelma, Vijay Kalavakonda,  
and Mónica Cáceres*





## CHAPTER 10

# Financial and Management Best Practice in Private Voluntary Health Insurance

*Roger Bowie and Gayle Adams*

This chapter summarizes the financial and management practice of voluntary health insurance in Australia, Ireland, New Zealand, South Africa, and the United Kingdom, five countries with some form of universal public health entitlement. From a statistical perspective, it focuses on Australia, for which much information is publicly available. It concludes with general observations on best practices.

### INTRODUCTION

Economic orthodoxy supports the efficiency and effectiveness of single-payer national or social insurance schemes, but developing countries lack the capacity to provide sufficient tax-based funding for such schemes. Consequently, up to 80 percent of health care funding in these countries can be out-of-pocket expenditures. Could private insurance fill the gap, at least while developing countries are establishing sufficient institutional capacity to provide a mandatory funding stream?

Broadly speaking, the role of voluntary health financing can be characterized as duplicate, supplementary, copay, complementary, or substitutional. A duplicate role arises when voluntary funding entitlement cannot be combined with other funding entitlements (particularly mandated public entitlements) at the point of use, as is typically the case with voluntary health insurance in Australia, Ireland, New Zealand, South Africa, and the United Kingdom.

A supplementary role arises when funding entitlements can be combined at the point of use, without constraint, and for defined benefits in kind. In the Netherlands, for example, supplementary cover for costs associated with choice (for example, timing and location of health services) can be added to mandated coverage.

A complementary role arises when entitlements can be combined but in a restricted manner. In the Netherlands, the amount of additional funding that can be applied is limited. In Israel, complementary coverage can only be used for services not covered by the mandatory insurance fund.

A copay role exists when entitlements under one insurance plan can be used to pay for copayments under another, typically mandated, plan. In France,

entitlements can be accessed from private insurance to pay the copayment portion of publicly funded primary care. In New Zealand, entitlements can be accessed for pharmaceutical copays.

A substitutional role exists if the law allows a consumer to exit a mandated scheme and subscribe to a private or voluntary scheme, as in Germany. In the Netherlands, enrollment in a private scheme is obligatory for citizens at or beyond a certain income level.

Voluntary health financing can play all but the substitutional role in an environment where the predominant funder is a mandated government fund. This chapter focuses mainly on the duplicate systems found in the developed countries of the British Commonwealth, including South Africa. These systems cover the “gap” in financing, entitlement, or both between what a government-funded system purports or promises to deliver and what individuals must pay for themselves or choose to pay so that they perceive themselves to be sufficiently covered or so that they may decide the time, facility, and doctor for treatment.

Two other salient features of so-called gap insurance deserve note. First, gap insurance is like pre-health maintenance organization (HMO) indemnity insurance in the United States in that benefits and entitlements are clearly defined and identifiable. By contrast, coverage through publicly funded insurance (and indeed HMOs) is more loosely defined as “medically necessary.” Second, short-term (usually annual) contracts are the norm where premium rates can and do change frequently. Some countries have legislatively imposed guaranteed renewability, but most countries do not set new terms and conditions once a contract has been established.

### **What Defines the Gap?**

Four factors define the aspects of health care that are typically financed through gap insurance. They are government legislation, along with the scope of state-funded coverage; public/private sector interface for the provision of health care to gap insurance members; private sector capacity; and consumer demand.

#### ***Government Legislation and Regulation***

The role of gap insurance is primarily defined by government restrictions on coverage, the scope of coverage, or both and by the role of the state-funded system and the level of funding applied by that system to health coverage. For example, in Australia, Ireland, and the United Kingdom, the state system fully funds, or universally funds to a certain level, access to primary care physicians. Coverage for primary care is either forbidden by law (Australia) or considered an uninsurable risk by gap insurers. In New Zealand, by contrast, state funding has always been restricted, initially as a contribution to the costs of a general practitioner visit and, more recently, on targeted grounds.<sup>1</sup> Gap insurers in New Zealand choose whether to include coverage for primary care; not all choose to do so.

In Australia, gap coverage is defined by law to extend only to the gap between the government schedule of fees and what the government-funded system is prepared or able to pay (75 percent of schedule). This coverage has led to a further gap as doctors elect to charge more than the government-schedule fees.<sup>2</sup>

Rationing exerts a subtle influence on gap coverage. Although government-funded systems are seldom explicit in terms of what is covered, reduced or capped funding leads to waiting lists for certain procedures and sends a message to privately insured consumers that they should use their insurance to avoid the queue. It could be argued that the role of voluntary health financing in this context is to soak up excess demand and free up capacity in public systems for those who have no insurance or perceive they cannot afford it.

### *Public/Private Sector Interface*

Another factor that determines the role of gap insurance is whether or not payment by an insurer is permitted in a public hospital or provider setting. This factor can be directly related to whether or not coverage is determined by legislation or by consumer demand/insurer choice. In Australia, Ireland, and the United Kingdom, gap insurers cover chronic secondary care treatment as well as elective surgical treatment, and payment for services in a public setting is permitted, if not encouraged. In New Zealand, chronic care coverage is rare, because the vast majority of inpatient care occurs in a public setting, and private patients are rarely treated in a public hospital (a political rather than legal restriction).

### *Private Sector Capacity and Consumer Demand*

Given restrictions on access to treatment in public settings through law, policy, or lack of capacity, gap insurance coverage is effectively determined by private sector capacity. As private sector capacity increases—through competition, rationing, or a lack of investment in the public sector—insurers are almost obliged to offer coverage, because consumers perceive that treatment in a private setting should be covered. Consumer demand plays an even more active role in determining coverage for lifestyle and preventive treatments, as well as for new technologies that remain unproven by randomized trials.

## **Gap Insurance: The Value Proposition**

The role of private health care financing, and its strengths and weaknesses, is broadly and frequently debated. For completeness, the negative aspects are outlined here, but the fact that gap insurance has survived with and without regulatory support and constraint would indicate its value. That value has seven components.

1. *More money.* Voluntary health care financing makes up 15 to 30 percent of total health care spending in most developed countries. The contribution directly attributable to health insurance (paid claims) is generally between

- 5 and 10 percent of total funding. But these figures mask both the impact of the pooling effect on out-of-pocket expenditure (much of which is directly related to partial payment of insured events) and the impact on overall spending for specific services covered by insurers.
2. *Choice.* Government-funded systems subjugate individual wants and needs to the needs of the population as a whole. Gap insurance allows individuals to view their own risk discreetly and to have choice with respect to facility, doctor, timeliness of access, and experiential quality.
  3. *Productivity.* Quick access to treatment has a direct impact on the economic well-being of individuals and their employers. A study by Southern Cross Healthcare in New Zealand revealed that people took an average of 16 days off work due to illness if they had insurance and 36 days if they had no insurance (New Zealand Institute of Economic Research 2001).
  4. *Freeing up capacity.* By facilitating access to private facilities, gap insurance frees up capacity in public systems to prioritize the type and extent of services provided as well as access for the uninsured.<sup>3</sup>
  5. *Innovation.* Gap insurers have to innovate to survive. Innovations in health plan structures have led to introduction of new technologies and wellness programs (which encourage prevention), in spite of challenges in defining a return on investment.
  6. *Maintaining a professional workforce.* Gap insurance gives medical professionals an additional source of income and, arguably, subsidizes the government-funded system.<sup>4</sup> Certainly the availability of privately funded work in smaller urban and rural centers is a factor in retaining professionals in the public system.
  7. *Consumer satisfaction.* In spite of the many challenges faced by gap insurers, consumer satisfaction with the concept and generic performance of health insurance is high. The perception of greater control of and a greater role in the process, if not the outcome, of a personal confrontation with illness and disease is considered a major advantage by those purchasing insurance.

### Gap Insurance: The Issues

Lack of clear differentiation between public and private systems and what each covers is a serious issue for gap insurers. The lack of explicit definition of coverage that typifies government-funded, universal coverage systems leads to a complex response from gap insurers as they struggle to avoid the subtle shifting of risk and responsibility from one pool to the other.

From one perspective, the difference between the two systems is quite clear: with gap insurance, one receives a comprehensive policy document outlining entitlements in great detail, whereas a public system claims to be able to provide

almost everything to everybody. When indemnity insurers became HMOs in the United States, the term “medically necessary” emerged as the new, consumer-friendly qualifier to universal coverage (Halvorson and Isham 2003). Public systems tend to shy away from even this degree of specificity, because of problems defining and defending “medically unnecessary.” However, gap insurer policy documents frequently become so complex that they defy easy interpretation, a fact noticed by consumer protection agencies in New Zealand and the United Kingdom.<sup>5</sup>

Lack of clarity with regard to the government funding entitlement leads to the phenomenon of underinsurance in the sense that consumers are never really sure of their rights to access until they are afflicted and cannot buy private coverage, because their preexisting condition is not accepted. This phenomenon is particularly evident in the case of elective or non-life-threatening conditions.

From an epidemiological point of view, the fragmenting of health risk among competing insurers means that data about health status are also fragmented. Hence, key decisions about future health risk are made from incomplete datasets. Although electronic health records can be standardized, political, ideological, and financial constraints stymie sharing of data and experience between public and private systems.

### *Consumer-Induced Demand*

Economists often criticize gap insurers for including coverage for health care that is entirely predictable and frequent. This criticism, raised on the basis of efficiency, ignores the demand induced by free care at the point of service that typifies government-funded systems. Gap insurers cannot easily determine their return on investment in wellness, preventive, or lifestyle coverage in terms other than customer service and retention. This return is a much more readily calculable equation in a single-funder environment, because the health risk to be managed is closer to the full risk than in gap systems.

Adverse selection is a problem for gap insurers. It can occur when the consumer has more knowledge about the likelihood of future risk than the insurer, as when a consumer takes out insurance with knowledge of an undeclared health condition or moves from a higher-priced, comprehensive or fully reimbursing policy to a high-deductible, lower-priced policy because he or she has a healthy lifestyle. The gap insurer’s reaction to what is often rational behavior on the part of the consumer is to impose waiting periods before claims can be made and carefully case manage early claims. The sanction of refusing coverage after having accepted the contract is often compromised by consumer protection legislation. However, consumers tend to be honest.

### *Administration Costs*

The cost of administering gap insurance schemes varies between 8 and 19 percent of premium income. Government-funded systems boast a much lower level

of spending, but enjoy both economies of scale and scope and do not have to incur marketing and claims adjudication costs.

### *Governance*

Because of their evolution as not-for-profit organizations “owned” by the members whom they serve,<sup>6</sup> gap insurers tend to be more conservative than shareholder-owned, for-profit entities. The gap insurers’ risk aversion is understandable in that, in the absence of a shareholder base, working and investment capital can come only from reserves. However, this risk aversion has led to a culture of benevolence and passivity and an implicit conflict of interest between service to members and aggressive action to contain rising health care costs.

### *Affordability*

Purchasers of health insurance are more likely to come from a high-income group or be part of an employer-subsidized or -facilitated scheme. They also tend to be older. Younger people generally feel they do not carry enough personal risk to justify allocating scarce discretionary income to health insurance. Rising premiums associated with age most strongly affect older people on fixed incomes.

### **Achilles Heel: Active Purchasing of Health Care**

Gap insurers have managed all the issues above to varying degrees and have survived, with or without regulation. However, they have not yet succeeded in moving from passive funding to active purchasing of health care, a transition that has also challenged traditional not-for-profit funds in the United States.

Gap insurers have traditionally used many tools to contain costs and manage risks. Plan and benefit design, fee schedules, and ownership of clinical facilities have all worked to a certain extent, but gap insurers have essentially been acting as agents for their members in facilitating access to and payment for health care.

Providers of health care have always zealously defended their rights as the principal in their relationship with patients. Efforts to intervene more directly in determining choice on behalf of members have led to a backlash from both consumers and providers.

Fee-for-service payment mechanisms prevail over fixed-price contracting. Gap insurance systems do not manage quality and consistency of health care. That failure must be addressed in promoting voluntary health financing in developing countries.

## **VOLUNTARY HEALTH FINANCING: INSTITUTIONAL CAPACITY FROM A MANAGEMENT PERSPECTIVE**

This section describes voluntary health financing from a functional and process perspective. It concentrates on those areas with specific applications to health

insurance as opposed to generic competencies in areas such as marketing, planning, human resource management, and finance and administration.

## Products

Products generally fit into two broad categories, depending on whether primary care coverage is included. The most common products offer coverage for hospital inpatient and surgical procedures. “Surgery” is most often described as elective rather than acute, although these definitions are misleading and often blurred. Medical benefits (for chronic diseases or noninvasive treatments) are covered, depending on the country.

Private sector capacity is one factor defining the boundary between acute or urgent services and elective services. From the consumer’s perspective, many procedures are considered both urgent and necessary. From a population-based view, the basis for defining services that are acute or urgent and those that are elective tends to be cost-benefit analysis or the distinction between life threatening and non-life threatening.

Comprehensive products contain coverage for surgery as well as primary care (or “ancillary care,” as defined by legislation in Australia). Products focused on wellness and occupational safety are appearing in Australia, Ireland, New Zealand, and the United Kingdom. However, delivery of these products is limited by the difficulty of understanding what the return on investment in them might be and, in Australia’s case, by the products’ exclusion from eligibility for risk equalization.

In Ireland, primary care products are only just emerging. In South Africa, medical savings plans have been in place for many years, and well-designed products are containing costs, particularly the rising costs of pharmaceutical use.

Product design reflects all the known instruments for containing risk: exclusions, waiting periods, copayments (typically in percentage terms), front-end deductibles or excesses, annual maximums, single-procedure maximums, and grants. These instruments, some or all of which may exist as options within a single policy, make products complex and difficult to compare. In Ireland, the risk management tools in product design are limited to exclusions and excesses.

## Pricing

Pricing practices in the countries under study vary because of the presence or absence of regulation. In Australia and Ireland, community rating has always existed through regulation. Community-rating systems attempt to spread risk and create equity by mandating a single premium, regardless of age, sex, epidemiology, or tenure. Because competition on this basis (very little underwriting) has been insufficient to equalize risk exposure among funds, both countries have postenrollment risk equalization regimens to “reinsure” funds against

competitive disadvantage arising from the subtle selection techniques of others. (Ireland's regimen has been designed but not yet implemented.)

In New Zealand and the United Kingdom, which have minimal regulation, funds have been free to price as they see fit, which has inevitably led to age-related premiums as the primary risk management tool. British United Provident Association (BUPA) in the United Kingdom prices on the basis of single-year age bands. Southern Cross in New Zealand moved from pricing based on three age bands (0–19, 20–64, 65 plus) to pricing based on one-year bands to be even more competitive with insurers that base pricing on five-year bands.

In the absence of regulation, control over supply, or both, voluntary health financing will gravitate to risk rating before, rather than after, enrollment. Another form of pricing evident in nonregulated environments is experience rating, usually for large and discrete groups, typically a large corporation. This practice, most common in general insurance markets, has the advantage of maintaining a predictable margin for part of the overall book of the insured, but the disadvantage of isolating that segment and losing the potential cross-subsidy.

In the United Kingdom, BUPA has recently introduced personal underwriting—that is, a degree of customization for the individual consumer that allows for greater premium and coverage trade-offs than traditional excess or deductible options in that existing conditions may be accepted for coverage as part of the trade-offs.

In Australia, recent legislation has modified the pure community-rating concept to lifetime community rating, whereby consumers are deemed to buy insurance at the age of 30 and are subject to an annual surcharge of 2 percent per year over base (30 years). The price depends on the age at which they joined the scheme.

## **Major Processes**

Nine processes are described below. They are distribution, claims handling, billing, risk management, provider relations, customer service and fulfillment, information technology, process management and quality assurance, and governance and organization.

### ***Distribution***

Insurers use direct-sales forces more than third-party agents or brokers because brokers traditionally earn large commissions, including renewal commissions. Most insurers sell insurance directly to individual consumers (and families) and as agents to corporate customers. Generally, the principal relationship remains between insurer and individual, unless the employer chooses to directly subsidize employees' membership. But increasingly, insurers are turning to telesales and the Internet as a low-cost complement to their direct-sales activity.



### *Claims Processing*

Insurers generally face a high volume of low-value claims and a low volume of high-cost, complex claims. Adjudication processes, unless automated, can be labor intensive.

Insurers are increasingly moving away from requiring members to pay for treatment and subsequently submit claims. In New Zealand, this process continues.

Direct payment to hospitals and surgeons on behalf of members is common, particularly when a preapproval process establishes cost estimates in advance. The lower volume, albeit higher value, of such transactions means that direct payment can be more easily managed than payment of members' claims.

As contracting with providers in both primary and secondary care becomes established, claims processes—receipt, adjudication, exception reporting/handling, and payment—can be fully automated, improving efficiency, customer service, and provider satisfaction with the insurer.

In spite of processing challenges, insurers generally promise fast payment of claims, particularly when making direct, posttreatment payments to members. In such circumstances, 90 percent of claims are paid within two to three weeks.

### *Billing*

Billing processes can be complex when corporate payroll systems serve as process engines for premium collection, as is often the case. A third party's administration of the frequent changes that occur as individuals switch coverage, add or subtract a family member, or leave employment creates complexities that do not exist in a direct-to-the-consumer relationship. Automation takes care of much of the complexity, although an "outsourced" relationship must still be managed.

### *Risk Management*

To examine the risks unique to health insurance in a gap environment, the following assumption is made: gap insurers appropriately manage generic business risk. This assumption is supported by evidence of sound commercial practice, improved governance, and existing regulation.

Gap insurers are particularly vulnerable to inflationary pressure. Claims escalation is often in excess of 10 percent per year and typically ranges from 5 to 8 percent. This escalation reflects real cost increases but also the impact of new technologies and health service use. For example, when government-funded systems ration access to certain procedures, or delay introduction of new technology, demand rises in the private and voluntary sectors.<sup>7</sup> Insurers can increase demand through gym memberships and other wellness initiatives. Consumer-induced demand can arise in response to a premium increase or in pursuit of a

new technology. Moral hazard of a more generic type arises when individuals treat their insurance policy as an entitlement.

Insurers use a variety of risk management tools:

- *Plan or product design* (combination of defined benefits, exclusions, waiting periods, copayments, annual limits, excesses, or deductibles). An emerging trend is to link the level of reimbursement to an explicit list of providers.
- *Price* (by age, sex, health status, and lifestyle). Most insurers in unregulated environments have only gone as far as age banding. Pricing for health status, history, or lifestyle is not yet widespread.<sup>8</sup> Conversely, pricing in regulated environments restricts the insurer's ability to "select" on the basis of price.
- *Underwriting*. Like pricing, underwriting is often regulated, but in an unregulated environment, insurers are free to exclude coverage or price it at a higher rate, which can make it unaffordable to the individual. This freedom is often constrained by umbrella regulation covering human rights, consumer rights, or both. Competitive pressure often leads to a relaxation of rules in favor of market share. In a regulated environment, insurers are obliged to accept cover, limit exclusion or waiting periods, or both.
- *Technology assessment*. Gap insurers tend to rely on external resources to evaluate the effectiveness of provided or requested care, although increasingly they must invest in assessment processes as an in-house capability.
- *Schedule of fees*. Insurers either publish a schedule of fee maximums against which they will reimburse consumers, or they resort to a less formal "usual and customary charges" regimen. In Australia, the government publishes a fee schedule and is committed to reimbursing 75 percent of fees; insurers are allowed to insure the gap between the two. Only recently have insurers been able to increase their coverage to bridge the additional gap between the government schedule and private providers' actual charges.
- *Drug formularies*. Insurers typically rely on drug formularies that are government researched and published to limit exposure to pharmaceutical inflation.

### ***Provider Relations***

A private health care transaction is principally between provider and consumer—that is, doctor and patient. The health insurer has traditionally been little more than a financial intermediary between the provider as principal and the patient as agent. This intermediary position has led to the essentially passive risk-management and cost-containment measures described above and encouraged gap insurers to pursue transaction-based processing rather than purchasing and quality control.

Notwithstanding opposition by consumers and providers, insurers have made some progress in moving from passive funding to active purchasing. In Australia, legislation has allowed insurers to contract with providers to bridge the gap

between market pricing and the government fee schedule. Providers have reluctantly acquiesced to establishment of fixed fees per procedure, because the benefit clearly lies with the consumer or patient, who otherwise would have to pay the difference out of his or her pocket. The insurer has to pay more but provides a better service as a result. In New Zealand, Southern Cross has rewarded providers who agree to price on a product basis (that is, relatively fixed pricing, with clear rules for price variability) by paying directly and electronically and allowing the introduction of new technology. BUPA in the United Kingdom uses both fixed-price contracting (mainly with hospitals) and incentives to practitioners who comply with BUPA's schedule of usual and customary fees. In Ireland, because of the monopoly until recently enjoyed by VHI Healthcare, purchasing power has increased, and virtually all private hospitals and practitioners negotiate contracts.

The value of purchasing is mainly realized in terms of the predictability of immediate costs to individuals, the insurer, or both and, to a lesser extent, of future costs. In other words, purchasing has not yet contained inflation. Insurers have yet to demonstrate value from purchasing in terms of cost containment or quality improvement.

Achieving these goals hinges in part on insurers' ability to create a productive relationship with health care providers, particularly clinicians. In such a relationship, clinicians' ability to select the most appropriate treatment is not compromised, and insurers support clinicians with streamlined processes and timely sharing of relevant information. The transition from passive funding to active involvement in outcomes requires insurers to educate clinicians about insurers' contribution to the pursuit of improved health care.

### *Customer Service and Fulfillment*

Customer service and fulfillment functions are mainly undertaken through call centers through which insurers respond to requests from customers and providers. Pursuit of advice is becoming more important as consumers struggle with the complexity of their policy, their illness, and information obtained from doctors or the Internet. Gap insurers increasingly play an advocacy role, often through dedicated help lines staffed by qualified nurses, a role that at times leads to tension with providers, who view advocacy and advice as their own core function.

### *Information Technology*

Call centers, customer relationship management, claims processing, billing, and risk management all rely on integrated systems providing accurate and timely information.

Because of the passive nature of their role, gap insurers have traditionally concentrated their information technology (IT) systems on in-house transaction processing. Only a minor percentage of claims transactions are fully automated through Electronic Data Interchange, the data requirements for which are limited to verifying what was done to whom, verifying claimant eligibility, and

matching costs to entitlement. As a consequence, datasets concerning health status and quality of health care do not exist or exist only in limited form. Aggregation of data in data warehouses tends to focus on price and price comparisons rather than on qualitative measures such as length of hospital stay or theater readmissions.

Collecting data for quality measurement is a big hurdle for insurers—it takes a long time, and the cost is hard to justify. Moreover, providers are reluctant to share data for fear of nurturing a managed care response. Nonetheless, some funds have been amassing qualitative datasets.

IT investments have focused less on data collection and more on improving the efficiency and accuracy of billing and claims processing. Both BUPA and AXA PPP in the United Kingdom outsource some of their processing to India to reduce costs.

### *Process Management and Quality Assurance*

Voluntary health insurance has now developed to the extent that market and regulatory environments, product features, risk management tools, and rising consumer interest and involvement have combined to create considerably complex processes. The management of process change and performance now requires considerable attention and time. At a minimum, organizations use internal audit or project-related approaches to review processes. Organizations such as BUPA in Ireland have developed comprehensive service and process specifications that permeate and drive day-to-day activities.

### *Governance and Organization*

Gap insurers have focused on governance capacity and capability as regulation (for example, new solvency standards in Australia), or the threat of regulation, increases and as the response required to changes in the market or the political environment becomes more complex. Governance mechanisms embrace all functions and processes associated with boards: regular meetings, audits, investment, remuneration, actuarial involvement in pricing, product design, setting of reserves, and medical involvement in review of new medical technologies.

Organizational structures focus on traditional functions, such as sales, marketing, operations (claims and payments), and customer service. These structures are evolving to respond to increasing consumer demand for information and advice and to acquisition of skill sets required for purchasing and contracting, knowledge-based risk management (actuarial and epidemiological skills), and process management and quality assurance.

## INSTITUTIONAL CAPACITY FROM A TECHNICAL, FINANCIAL, AND BALANCE SHEET PERSPECTIVE

Table 10.1 shows the major accounting items specific to a health insurer's balance sheet and revenue and expenditure account. Industry average figures for Australia show orders of magnitude, which can vary substantially among countries and among individual organizations. Tax, sale and purchase of subsidiaries, shareholder equity, and other accounting items are not included.

**TABLE 10.1 Australian Health Insurance Industry Averages for Major Accounting Items, Fiscal Year Ending June 2002**

<i>Item</i>	<i>Thousands of dollars (public funds)</i>	<i>Percent of premium</i>
<b>Income and expenditure</b>		
Premium income (less state government levies)	6,691,758	100
Incurred claims	6,027,966	90
Management expenses	766,747	11
Underwriting result	(102,955)	-2
Investment income	49,907	1
Other expenses	1,114	0
Profit before tax and extraordinary items	(54,162)	-1
Tax and extraordinary items	(25,826)	0
Profit	(79,988)	-1
<b>Assets</b>		
Investment assets and cash	3,185,853	48
Outstanding premium (net of doubtful debts)	59,737	1
Other	611,503	9
Total assets	3,857,092	58
<b>Liabilities</b>		
Outstanding claims (including claims incurred but not yet reported)	740,925	11
Unearned premium and unexpired risks	858,662	13
Other	322,780	5
Total liabilities	1,922,366	29

Source: PHIAC 2002a, 2002b.

## Revenue Items

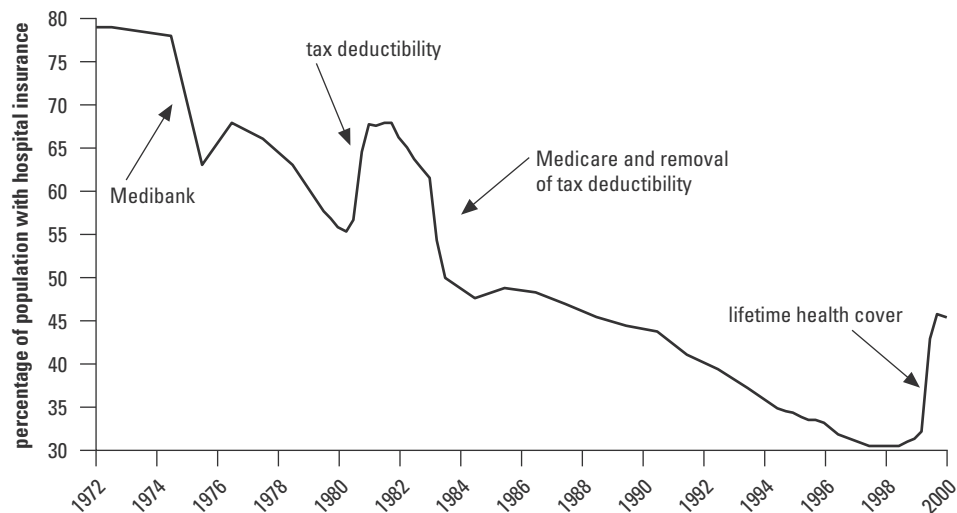
### *Premium Income*

The largest revenue item for a health insurer is premium income. The basic components of premium income are the number of insured lives, bad debts, and the average premium per member. Growth generally derives from membership growth, premium increases, and changes in membership mix.

*Membership growth.* Membership growth can be achieved by marketing and distribution activities, acquisition of other insurers, and regulatory or government health policy changes. Common marketing and distribution initiatives include introduction of new distribution channels and new products, changes in commission levels or sales remuneration, special promotions, brand or product advertising through the mass media or sponsorships, and direct sales. Indirect initiatives, such as speeding response to customer service claims, are also common.

Government policy concerning tax incentives and public health funding and provision can have dramatic impacts on the overall size of the market and therefore on premium income. Figure 10.1 shows how significant changes in government policy led to changes in market size in Australia from 1972 to 2000. Over this period, premium rates and claims increased in real terms, helping explain the general decrease in market size.

**FIGURE 10.1** Correlation of Government Policy Changes and Health Insurance Penetration in Australia, 1972–2000



Source: Gale and Adams 2000.

Note: Medibank and Medicare are national health schemes. The population with hospital insurance dropped from a high of 46 percent in 2000 to 44 percent in March 2003.

*Premium increases.* Revenue growth in the studied countries (with the exception of Australia) has come mainly from premium increases, which are driven by claims escalation, the need to maintain solvency ratios, or both. Consumer responses to premium increases have included increases in cancellation rates and downgrading of cover, both of which reduce revenue. Most insurers can correlate membership cancellations to levels of premium increase.

*Membership mix.* Membership mix can change as policyholders move from one class of product to another, as in New Zealand they have moved from comprehensive policies to less expensive, hospital-only coverage. In addition, policyholders can elect larger excesses or deductibles in exchange for a lower premium. In unregulated pricing environments, average premiums per member have increased as a result of the increase in average age.

### ***Investment Income***

Investment income as a percentage of premium income ranges between –1 percent and 6 percent of premium in the countries under consideration. The level of income is a function of the amount of technical and other reserves, short-term interest rates, an insurer's investment policy, and (for groups such as multiline insurers) the investment income allocation to the technical account.

For insurers, investment income is significantly higher than profits. Income from reserves does enable insurers to operate with higher loss ratios and is usually taken directly into account in determining the required level of premium rates.

Larger organizations are more likely to invest in equities and engage in merger and acquisition activity. However, their freedom to act may be curtailed by regulation (either of investment options, as in South Africa, or of solvency requirements, as in Australia) or the "trustee" nature of their articles of constitution.

A comparison of individual organizations' accounts must reflect differences in reserve levels and, when an insurer is part of a group, policies on allocation of assets to the health insurance unit. A stand-alone mutual with large free reserves will naturally have higher reported investment income and apparent solvency than a business unit of a conglomerate that keeps the minimum level of capital in that business unit.

### ***Risk Equalization Receipts***

Risk equalization receipts can be significant for some organizations. For example, in Australia those organizations with a high proportion of members over 65 years old will receive significant payments.

### ***Other Sources***

Some insurers have been able to derive income from selling services, data, or both to third parties.

## Expenditure Items

### *Claims*

The largest expense item is usually paid claims. Operational and management expenses are generally much smaller.

*Claims escalation.* Claims escalation is one of the most volatile and significant causes of inflation. It can vary from negative percentages to 20 percent or more for individual product types. Claims escalation is also notoriously difficult to predict but is nearly always higher than the local consumer price index and often higher than the health component of that index.

Both utilization and unit costs can increase rapidly. Specific causes include prostheses costs and use, specialists' fees, hospital charges, and exchange rates.

Aging and an increasing duration of a portfolio also cause increases in claim costs. However, these impacts are not always considered a component of claims escalation.

*Claims spirals.* "Claim" or "vicious" spirals (Industry Commission 1997) occur as claims inflation leads to premium increases that are higher than general inflation. Such increases lead low-risk policyholders to cancel policies. This rational consumer behavior leads to further increases in claims costs for the remaining policyholders, which results in further policy cancellations by low-risk members. These repeating spirals become more prevalent as the health insurance industry matures, and they present a particular challenge to established insurers and those insurers not growing as fast as the industry overall, because these insurers will be further ahead in the spiral.

*Business mix.* The age, gender, and geographic location of policyholders drive claims. A mix of policyholders in rural and urban locations primarily drives claims through the disparity between those locations in access to private facilities.

*Product design.* Product design affects both claims escalation and the level of claims. Members selecting products with higher levels of cover tend to be poorer risks than those selecting lower-priced products. Underwriting and other risk control mechanisms do not fully remove such self-selection. This concern is moot if antiselection disincentives are built into the premiums, and the premiums remain affordable.

Benefit limits can reduce the dollar impact of unit price escalation. The impact of the benefit limit is determined by the relationship of the benefit limit to the average claim size. Benefit limits have the most impact when they are close to or less than the average claim amount.

Employer-subsidized business tends to have lower relative claims than nonsubsidized or individual business because of the reduction in employee antiselection.

*Growth versus tenure.* During periods of rapid growth in membership, average claims per member can be misleadingly low because of benefit design and underwriting. This impact is more obvious when the relatively higher impact of claims that have been incurred but not yet reported (IBNR) is not taken into account. The average claim per member will increase rapidly once the portfolio matures.



Low average claims per member due to rapid growth can allow an insurer to undercut the more established insurers and still make profits. This phenomenon can undermine the stability of the industry by reducing the ability of established insurers to refresh their risk pools and thereby maintain a sustainable portfolio. For this reason, tenure in health insurance does not automatically mean competitive superiority. In community-rating environments, moreover, the new insurer will have policyholders on average much younger than those of established insurers, further decreasing relative claims costs.

The rapidly growing insurer must be prepared for the consequences of an inevitable slowing of growth and increase in claims. It cannot immediately increase premium rates when claims costs per member begin to rise.

*Claims and risk equalization transfer payments.* Claims and risk equalization schemes are compulsory risk-sharing schemes through which insurers share specific claims or risk according to some predetermined basis. They are usually aimed at standardizing the effect of differences in insurers' risk profiles (equalization) or providing some form of protection to individual insurers against high claims (reinsurance).

Compulsory equalization schemes are usually necessary when freedom to set premiums according to risk is restricted. In the absence of an equalization scheme, the absence of this freedom would give rise to inequities among funds and could cause viability problems.

By their nature, equalization schemes can only make imperfect broad adjustments and will invariably result in some member segments being more attractive than others. Thus the existence of the equalization scheme will distort incentives for insurers. For example, schemes that are based on actual claims can reduce incentives for insurers to manage claims. In Australia, investment in innovative alternative treatment programs for those over age 65 is discouraged, because insurers retain only a fraction of in-hospital claims costs for this age group.

The design of the equalization scheme can also result in incentives for insurers to improve their competitive position. They might do so by increasing their proportion of attractive member segments that fall outside the scheme—for example, young members in community-rated environments.

### ***Management Expenses***

Expense ratios, such as expense per member and expenses as a proportion of premium ratios, vary significantly among countries and among organizational structures. In Australia, the industry average expense to premium ratio is 12 percent and varies between 8 and 19 percent.

Somewhat counterintuitively, large organizations enjoy no more economies of scale than small organizations. Research by Australia's Industry Commission in 1996 showed that few insurers enjoyed economies of scale, because small organizations constrain their spending to fit with industry norms and large organizations invest heavily in new technology and capabilities.

The largest management expense is generally salaries, followed by information technology, marketing and distribution, and occupancy costs. The high expenditure on salaries reflects the labor-intensive membership and claims processing associated with health insurance products. Processing intensity is changing in Australia and the United Kingdom, where claims payments can be automated and arrangements with providers sometimes allow for point-of-service payments or bulk billing. These changes are often accompanied by an increase in IT expenditure.

Distribution methods can have a large impact on expenses. Broker-distributed business can attract significant commissions. The rate varies significantly even within countries.

### Assets

A large proportion of an insurer's assets are investment assets, which are needed to cover technical reserves and to provide a solvency buffer. The term of assets tends to be short.

Table 10.2 breaks down assets of the Australian health insurance industry. In June 2002, 88 percent of these assets were classified as "current." Investment assets and cash were equal to 48 percent of premium. This ratio will vary among countries and among insurers but is always likely to be significant in financially sound insurers. For this reason, insurers that wish to stop investing in purely short-term, capital-guaranteed government or bank instruments need to access external investment expertise.

#### *Investment Assets*

Investment assets are generally short-term, high-quality, and liquid. Table 10.3 shows the distribution of investment assets across sectors for the Australian health care industry. It shows that, on average, the industry has conservative, short-term, low-risk investment portfolios.

**TABLE 10.2 Breakdown of Australian Industry Assets (Public Funds), June 2002**

<i>Asset</i>	<i>Percent</i>
Investment assets	57
Cash	25
Other	9
Property, plant, and equipment	7
Provision for contribution in arrears	2
Total	100

*Source:* PHIAC 2002a, 2002b.

**TABLE 10.3 Australian Asset Sector Allocations (Public Funds), June 2002**

<i>Asset sector</i>	<i>Percentage of total investment assets<sup>a</sup></i>	
	<i>Including cash</i>	<i>Excluding cash</i>
Short-term, fixed interest (cash, term deposits, bills) <sup>b</sup>	52	32
Government stocks <sup>c</sup>	19	28
Shares	18	25
Debentures <sup>d</sup>	1	2
Property	0	0
Other	9	14
Total	100	100

*Source:* PHIAC 2002a, 2002b.

*Note:* Numbers may not sum to totals because of rounding.

- a. Showing assets with and without cash on hand illustrates the potential for cash reported outside investment assets to be higher than required.
- b. Bills and term deposits are short-term, fixed-interest assets. When health insurers invest in these instruments, they usually choose issuers with very high security such as banks.
- c. Longer-term, fixed-interest instruments that are issued by a domestic government are classified as government stock.
- d. Debentures are longer-term, fixed-interest assets, usually with regular coupon payments and a final repayment of capital. They are often issued by companies that need capital. The security of a debenture is dependent on the issuing organization and therefore can be risky.

### ***Investment Policy***

Three factors generally determine investment policy: regulation (Australia and South Africa), the nature of the organization (mutuals tend to be more conservative as they have no shareholder base on which to call), and the fact that claims are for episodes of care and are of short duration.

The size of a health insurer's technical liabilities has a large influence on the size of investment assets. These liabilities are generally short term—on average, from one to four months. The unearned premium provision is also inherently short term. The provision can vary from one to six months of premium, depending on the proportion of the insurer's business that is monthly direct debit.

The short-term nature of these liabilities, together with domination of market structures by mutuals, leads insurers to adopt investment policies that are conservative, short-term, low-risk, and liquid. Investment portfolios typically have a high weighting in cash and high-quality, fixed-interest instruments. The average term of assets is often longer than that for liabilities. In Australia, current investment assets make up 87 percent of all investment assets. Because these investment principles and the solvency buffer noted above provide adequate protection, health insurers do not usually practice highly sophisticated portfolio matching or immunization.

Some health insurers invest in equities. However, equity exposure is usually subject to conservative risk controls, such as limits on total exposures to a small proportion of total assets. Most insurers have conservative exposures; some

insurers have suffered losses from more aggressive policies. In 2001 one large Australian insurer had 50 percent of its investment assets in equities. After earning poor returns, the insurer divested itself of equities.

### *Other Assets*

Significant exceptions to the above generalizations include (1) investments in institutions such as hospitals and nursing homes (often run on an arm's-length basis); (2) ownership of the insurer's head office or branch premises; (3) ownership of dental, optical, or pharmaceutical outlets; and (4) for larger organizations, investment in subsidiaries such as life insurance, savings, or international operations.

### **Liabilities**

Significant liabilities for health insurers are outstanding claims, unearned premium, and unexpired risk provisions. Liabilities related to capital raising and employee benefits can also be significant, depending on the country and organization.

Liabilities not related to employee benefits or capital raising tend to be short term. In Australia, 99 percent of liabilities have a term of less than one year. The associated ratio of current assets to total assets is 83 percent.

### *Outstanding Claims*

The provision for outstanding claims consists of an estimate of the amounts that will eventually be paid for claims that have been incurred at the balance date but not yet paid. The two main components are IBNR claims and claims that have been reported but not yet paid. Future claim payments in relation to claims open but not yet finalized are generally very small. In several countries, an allowance is also made for claims administration expenses that will be incurred to pay the claims, and sometimes organizations include a prudential margin (either implicit or explicit) above expected costs to increase the probability that the provision will be sufficient to meet the liabilities.

In Australia, New Zealand, and the United Kingdom, outstanding claims provisions as a percentage of premiums are less than 25 percent and can be as low as 6 percent (the Australian average is 11 percent, reflecting a relatively high level of automation and electronic payments). The average liability term is probably less than a few months. Prudential margins on this provision generally vary between 0 and 20 percent, depending on the individual organization's policy and the accuracy of outstanding claims predictions.

Organizations with a high proportion of either providers under contracting arrangements or online or point-of-service payment facilities will have relatively lower outstanding claims provisions.

Organizations must have reliable methods for estimating "claims on desks" to ensure that technical reserves are appropriately determined and claims trends are properly interpreted. Proper execution of these tasks ensures that premium

rate increases can be implemented in a timely fashion to protect an organization's financial position. Keeping backlogs at a stable level allows organizations to detect claim trends with relative speed.

### *Unearned Premium*

Unearned premium—sometimes called “prepaid premium” or “premium in advance”—is the amount of received premium that relates to future time periods. The size of unearned premium as a percent of premium is primarily dictated by billing frequency; organizations that have a higher proportion of business paid monthly have the lowest ratios. For many years, the trend has been monthly premium paid by direct debit. This trend has led to a decrease in the significance of the unearned premium provisions in some countries. Unearned premium reserves in the United Kingdom and Ireland are between 40 and 55 percent of premium, compared with the 6 to 15 percent typical in Australia and New Zealand.

### *Unexpired Risk*

In some countries, an unexpired risk provision is held when current premiums are expected to be insufficient to cover expected expenses and claims relating to current contracts. The provision is the expected shortfall between the expected costs of future claims and the unearned premium reserve.

An unexpired risk provision may be required by accounting or actuarial professional standards or insurance or solvency legislation. Unexpired risk may be allowed for directly in the balance sheet or taken account of in the calculation of an insurer's minimum solvency requirement. The existence of an unexpired risk provision is a sign that at least some of the premium rates are inadequate. This item is rarely seen in an insurer's balance sheet.

## **Capital**

Insurers need much more free capital in excess of liabilities than many non-risk-based organizations. They need capital to absorb unexpected losses due to many factors: undetected deteriorating claim trends, unintentional underreserving for technical reserves, underpricing (including underestimating claims trends), poor or negative investment returns (including capital gains losses on shares or long-term, fixed-interest stock), unexpected need for cash flow, and new regulatory solvency standards. Yet another factor is government policy changes that alter profitability before the insurer can adjust rates or take other action. For example, in Australia and New Zealand, the change in level or availability of the government subsidy on pharmaceuticals can immediately and significantly affect claims costs.

Insurers may require capital for investments, including investments in information technology, development of new products, acquisition of companies, or provision of liquidity.

Shareholder companies have the normal range of options for and issues in attracting additional capital; mutual organizations are much more restricted in their options. Access to capital is a common reason for demutualization.

### *Obtaining Capital to Strengthen a Weak Financial Position*

Mutual insurers need to build their capital from premium rates that are set higher than claims and expenses less income from interest. When solvency has dropped below critical levels and suitable reinsurance cannot be obtained, a mutual insurer's only recourse is to arrange for another insurer to take it over or to cease writing business. Historically, both strategies have been employed before and after insurers actually become insolvent. Insurers occasionally use subordinated debt to strengthen the balance sheet, but accounting standards limit the extent of this practice.

Because insurers do not plan to have critically low solvency, they generally have insufficient time to demutualize a mutual. Even if they have time to do so, investors may not be interested in an organization that had unintentionally become in need of capital. Likewise, an insurer in financial difficulties will find obtaining a loan difficult. Reinsurers may also be wary of entering into an arrangement with an organization in these circumstances.

### *Raising Capital for Other Reasons*

An insurer wishing to increase capital for acquisitions, to cover an illiquid portfolio, to respond to profitable rapid growth, or to make a special investment is more likely to get a loan, attract additional shareholder investment, or be able to demutualize.

In many cases, it may be appropriate to deal with capital issues through appropriate reinsurance cover. Quota share is a common type of reinsurance treaty to address capital issues. Under a quota share arrangement, a reinsurer takes a set proportion of premium in return for a fixed proportion of all claims. Issues regarding choice of reinsurance structure to address capital needs are quite different from considerations regarding generic stabilization of claims experience.

## **SOLVENCY**

An insurer is insolvent when its assets are less than its liabilities. An insurer is technically insolvent when it fails to meet regulatory solvency requirements, whether or not its assets are greater than liabilities. Insurers in countries with minimum solvency-level regulations must hold additional capital to ensure they do not breach solvency standards.

Solvency and solvency measures can be defined in many ways. Methods are usually some form of the amount by which assets exceed either liabilities or the solvency level prescribed by legislation. This amount is often expressed as a

ratio of premiums or as the equivalent number of premium months. An alternate approach is to express total assets as a multiple of the minimum solvency requirement; this ratio does not appear to have widespread industry support. In Australia, where the minimum solvency requirement is defined as the sum of an insurer's liabilities plus an additional required solvency margin, the regulator publishes these ratios for all insurers.

A pragmatic definition of solvency level is the ratio of net tangible assets to premium. Refinements include reducing the accounts-recorded value of fixed assets, property, and items such as unpaid premium to reflect the substantially lower value of the assets if disposed of because an insurer is going out of business.

Appropriate solvency levels reflect the risk associated with assets, liabilities, and general business. In particular, they should be set on the basis of the following considerations:

- managers and board members' view of an acceptable risk of insolvency (the cost of capital required to guarantee solvency is generally prohibitively high);
- appropriateness of the asset portfolio—for example, a large organization with an investment portfolio heavily vested in equities or long-term, fixed-interest securities should have substantially higher solvency levels than a small organization;
- volatility and predictability of claims;
- future capital needs; and
- risk inherent in business plans.

## REGULATION

Insurers in Australia, Ireland, and South Africa operate in a highly regulated environment. Those in New Zealand and the United Kingdom enjoy a comparatively unregulated environment.

Insurers in all countries are subject to normal company and consumer legislation as well as relevant general insurance accounting and actuarial standards. Although Australia is the only country where the use of actuaries is mandatory, insurers in other countries are routinely using actuaries for pricing, reserving, budgeting, and product design. Large insurers are increasingly employing actuaries.

Countries that have significant restrictions on the full risk rating of premiums have a compulsory risk equalization scheme.

### Australia

In Australia, premium rate structures, premium increases, product design, and facility reimbursement are subject to strict regulation. The types of products that can be offered are restricted, and minimum benefit types and benefit levels are

defined. Particular product types and rating structures are prohibited; for example, discounts for nonsmokers or individuals with a healthy lifestyle are not allowed. Underwriting, including application of premium loadings and exclusions, is prohibited, and maximum waiting periods are dictated for most significant benefits.

The rating structure is defined as age at entry and family status. Premiums cannot vary by current age, health status, gender, or geographic location within a state. Premium rate increases can occur only once a year and must be government approved.

The financial stability of the industry is regulated, and insurers are required to supply substantial data to the regulator and to meet minimum solvency and capital adequacy standards. The regulator publishes information about individual insurers and the industry. Since the beginning of 2004, insurers have been required to appoint an actuary.

## **Ireland**

Like Australia, Ireland has mandated benefits and waiting periods and prohibits underwriting. It requires a minimum solvency level (20 percent of premium). Solvency standards are the same as those across the European Economic Community.

## **New Zealand**

New Zealand has no specific health insurance legislation. However, the Human Rights Act of 1993 affects premium rates, premium rate structures, underwriting, exclusions, and benefit design. Under the act, an insurer must justify on the basis of actuarial data or other reasonable grounds any variations in terms and conditions for particular contributors or groups of contributors.

Insurers are subject to no solvency standards other than the requirement to hold \$500,000 in trust in case of failure. To strengthen the industry, the government may someday require insurers to obtain a rating.

All health insurers are members of the industry body Health Funds Association of New Zealand, Inc. (HFANZ), which has a sales code of conduct as well as pricing guidelines with which members must comply. A self-regulatory solvency standard, based on the Australian compulsory regimen, is being introduced.

## **South Africa**

South Africa has requirements for community rating, minimum benefit coverage, open enrollment, and a minimum solvency level (25 percent of premium).

## **United Kingdom**

The United Kingdom has no specific regulations regarding price, product, or minimum provider or facility reimbursement levels and gives insurers a fair degree of free-



dom in product design, underwriting, and risk selection. Some prudential matters, including financial soundness and suitability of directors, are subject to regulation. A general insurance industry body (GISC) addresses some health insurance issues and is responsible for the industry's self-regulation, including codes of practice.

## **BEST PRACTICES FOR INDIVIDUAL INSURERS**

The key functional areas of a health insurer are claims processing and operations, distribution, business, and risk management services. Risk management is of particular importance in an insurance organization. Individuals with risk management skills are needed throughout the organization for budgeting, solvency management, provider relations, marketing, distribution, and so on. Technical risk is inherent in pricing, underwriting, provider contracting, risk selection, and product design.

### **Financial Management and Technical Control Cycle**

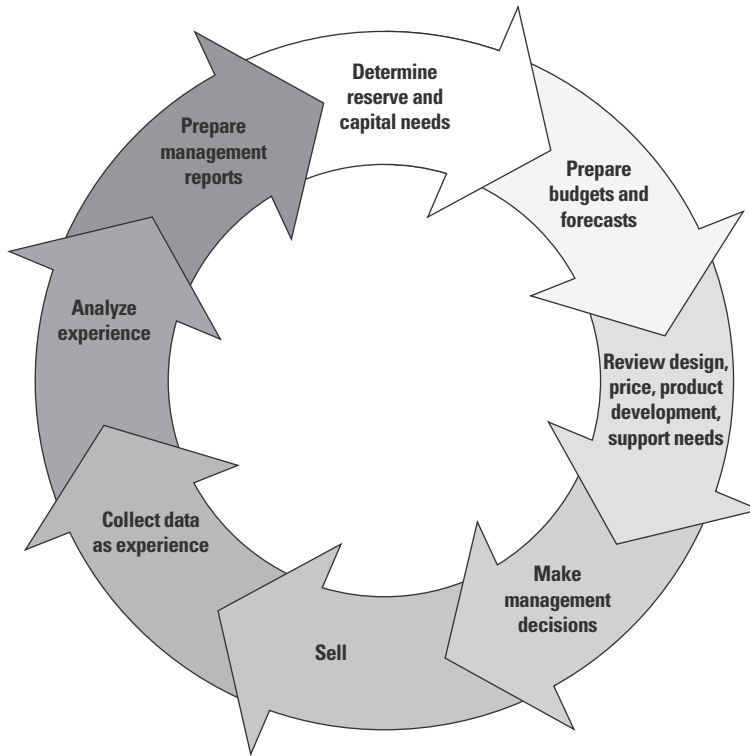
An insurer can increase its chance of success by establishing an integrated technical control cycle (TTC). The TCC describes an orderly and regular process of analyzing and an organization's experience and incorporating understanding of that experience into the organization's management and planning. The TTC links management reports, business plans, products, prices, budgeting, and other processes reliant on technical expertise (figure 10.2). The cycle allows an organization to respond quickly and effectively to prospective changes in the environment that could affect its performance, reduces the risk that units of the organization operate in relative isolation, and helps ensure that functional areas retain a focus on and understanding of the insurer's core business and processes.

### **Other Management Processes**

A best-practice insurer is likely to have seven other tools to manage risk:

1. *Internal governance.* Governance includes delegated authorities and exceptions processes for pricing, business rules and procedure changes, and products. The governance framework would include detailed manuals and change processes (including testing and contingency plans) for pricing, products, business rules, and computer changes. Signoff by an actuary or independent body might be required for changes to premiums and products and for financial projections and financial condition assessments.
2. *Investment policy.* The policy should require liquidity and monitoring linked to liabilities, solvency position, future plans, and the organization's level of risk aversion.
3. *Capital adequacy objectives.* These objectives reflect the organization's business plans and inherent risk of variation in financial forecasts.

**FIGURE 10.2** Technical Control Cycle



Source: Authors.

4. *Tools for managing legal and sovereign risk.* These tools allow the insurer to anticipate regulatory changes.
5. *Tools for managing public relations and member expectations.*
6. *Tools for managing information and technology risk.*
7. *General risk management process.* This process integrates management of the organization's risks from all sources. It includes identification of factors that could cause damage to the organization and development of contingency and risk management plans.

### **BEST PRACTICES FOR AN INSURANCE INDUSTRY**

An insurance industry might promote a healthy competitive environment with the following three tools:

1. *Sensitive and proactive regulator.* This regulator would provide detailed industry data and establish solvency and other standards.
2. *Active and intelligent industry body.* This body would lobby the government and educate the public and government; facilitate development of solutions to common industry problems; and develop standards that protect the industry, increase market size, and reduce the need for intrusive government regulation.
3. *Professional standards for actuaries and accountants.* Standards should be established for auditing, solvency management, liability estimation, and pricing.

### **SUMMARY OF THE CURRENT STATE OF VOLUNTARY HEALTH INSURANCE**

Voluntary health insurance has evolved in accordance with local political and legislative environments but is predominantly gap insurance. Gap insurance has high loss ratios, high inflation, low automation, a business model predominantly based on transaction processing, and a product focus primarily on secondary care.

Voluntary health insurance in a mandated public system environment tends to attract corporations and high-income individuals, because they have sufficient economic freedom to address their personal risk.

Voluntary health insurance has largely maintained a nonprofit organizational form, which is reflective of limitations in capital-raising capacity rather than of a tendency to be noncommercial in governance and management terms.

Voluntary health insurance has been extremely innovative in maintaining a value proposition despite three challenges: its own passive approach to risk management, criticism from supporters of mandated public systems, and regulators that put health insurers in the same category as general insurers without sufficient recognition of the differences between the two.

Voluntary health insurance has been unsuccessful in organizing health care delivery chains to respond to high inflation, new technologies, and evidence of quality. Some progress is being made in this regard.

Voluntary health insurers need to invest in robust control cycles, supply chain management, information systems, data warehouses, underwriting, and actuarial skills. The alternative appears to be frequent regulation to maintain sustainability.

A regulator can play a constructive role in the health of the industry. However, the trade-offs between stability and security from a consumer perspective and low margins and disincentives to innovate must be carefully considered.

### **VOLUNTARY HEALTH INSURANCE IN DEVELOPING COUNTRIES**

Can the essential elements of voluntary health insurance be created in a developing country? The answer depends on consideration of three factors: geographic

environment, regulation and reinsurance, and organizational and institutional capacity.

The specific features of each environment will shape the design of any health insurance scheme. These features include political, social, economic, and infrastructural conditions; the presence or absence of a functional public health system; and the epidemiological factors that determine health priorities. Tailoring a scheme to the particular environment will be critical to the scheme's success.

Regulation is advisable when fostering a sustainable voluntary insurance sector, attracting inward investment, or both are desirable. Reinsurance can serve both traditional functions, such as protection for catastrophic events or stop-loss arrangements, or nontraditional functions, such as risk equalization and technical assistance. Regulatory and reinsurance rules must have flexibility to reflect and respond to the maturity and institutions of a voluntary health insurance system as well as risks of disincentives and aberrant behavior.

Individual insurers must have organizational capacity if they are to implement and sustain a technical control cycle. Given the historical vulnerability of voluntary insurance schemes to high inflation and passive funding, institutional capacity is needed to ensure that insurers wishing to actively purchase or commission services on behalf of their members have willing and capable partners with which to do business.

## NOTES

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Much of this chapter relies on individual insurers' commercially sensitive information that cannot be published without consent. Because the chapter requires comparisons across countries and among insurers in different environments, it provides general information that can be supported without specific reference to confidential information. Therefore, the chapter is restricted to general comments.

1. New Zealand is moving toward a universally funded primary care system. Whether this system will become a contributory funding stream or a fully funded one is unclear.
2. Recent legislation has allowed insurers to contract directly with hospitals and clinicians to cover this gap, provided it is fully and contractually covered.
3. The Australian Health Insurance Association made these arguments in its June 2003 Submission to Senate Select Committee on Medicare.
4. See Gonzalez (2003) for further insight into this complex area.

5. Impending regulation in the United Kingdom focuses in part on reducing asymmetry of information between insurer and consumer.
6. For most not-for-profit organizations, ownership by the members is highly restricted and almost never beneficial ownership. Boards of directors or trustees wield considerable power in the absence of true “shareholder” rights of accountability.
7. In 1997 the Industry Commission in Australia identified cost shifting from the public to the private sector, rather than the impact of aging on the compulsory community-rating premium structure or other factors, as the most significant cause of claims escalation in Australia.
8. BUPA in the United Kingdom does so for the personal market. Southern Cross in New Zealand has announced a move in this direction.

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## CHAPTER 11

# Opportunities and Constraints in Management Practices in Sub-Saharan Africa

*Ladi Awosika*

This chapter summarizes the context and key characteristics of voluntary health insurance in Sub-Saharan Africa and identifies insurance issues specific to South Africa and the countries of West Africa and East Africa. Drawing on insights from chapter 10, the chapter identifies needed improvements in regulatory and institutional frameworks.

### INTRODUCTION

At independence, most African countries promised citizens free public health services but later found they could not even afford to subsidize such services. Many introduced user fees as a cost-recovery mechanism, but the expected improvement in access and service quality did not result. Nor has taxation increased allocation of resources to health care. The result is that in much of Sub-Saharan Africa, the relative share of health expenditures financed directly through households is as high as 80 percent.

Because governments have been unable to deliver on their promises, voluntary health insurance—both community and enterprise based—has begun to evolve in Sub-Saharan Africa. Botswana, Ghana, Kenya, Namibia, Nigeria, South Africa, and Zimbabwe are among the countries now funding some health care costs through private insurance. Benin, Côte d'Ivoire, Mali, Senegal, and other francophone countries in the region are using mutual health organizations. In some countries (notably, Nigeria, South Africa, and Zimbabwe), coverage is targeted at formally employed individuals and their families. Other countries (for example, Burundi, Congo, Ghana, and Guinea-Bissau) are using mutuals and community health insurance to provide coverage to the informal workforce, the poor, and rural populations. Table 11.1 provides an overview of health insurance in four countries of Sub-Saharan Africa.

The development and sustainability of voluntary health insurance (VHI) is far from ensured in Sub-Saharan Africa. As detailed below, VHI schemes face several challenges. VHI operators need to provide major financial risk protection, develop trust with consumers and providers, enlarge risk pools, provide attractive fees to providers and offer affordable premiums to consumers, transition to provider

**TABLE 11.1 Overview of Health Insurance in Four Sub-Saharan African Countries**

<i>Country</i>	<i>Type of insurance</i>	<i>Percentage of population covered</i>	<i>Percentage of total health expenses</i>	<i>Trend</i>	<i>Assessment</i>
Nigeria	Social	0.85	4.0	Recently commenced	Covers only the formal sector; compulsory by law; employers pay 10 percent of wage and employees pay 5 percent
	Private	1.0	4.5	Increasing	
Senegal	Community	< 0.2	< 0.2	Falling enrollment	Experiencing financial collapse owing to fragmented risk pools and inability to collect premiums
South Africa	Private	18.0	50.0	Increasing	Restricted to urban formal sector workforce; evidence of significant price inflation
Zimbabwe	Private	7.0	17.0	Number of beneficiaries doubled between 1980 and 1990 and tripled between 1990 and 1995	Scope for increasing coverage: only one-third of formal workforce covered and no plantation workers covered

*Source:* Compiled from Dunlop and Martins 1995.

payment mechanisms other than fee for service, and provide comprehensive coverage of HIV/AIDS and chronic diseases. Governments need to introduce reinsurance mechanisms; define an attractive and affordable standard minimum benefit package for the market; and create regulatory agencies to monitor benefit package design, financial reports, and governance. Both VHI operators and governments need to train insurance and management professionals and educate consumers about health insurance.

## **CONTEXT OF VOLUNTARY HEALTH INSURANCE IN SUB-SAHARAN AFRICA**

Chapter 10 suggests that some government oversight and support of private health insurance is needed if the industry is to thrive and provide a public good. In Sub-Saharan Africa, VHI schemes are typically self-regulated, and most lack not only government support but also internal capacities that would allow them to provide the range and type of coverage that governments cannot provide. Box 11.1 provides insurers' perspective on their regulatory environment in the context of risk management.



## Legal and Regulatory Environment

Government oversight of private insurance is required when a significant percentage of the population uses it to obtain health coverage. When private insurance becomes a public good, laws and regulation are needed to protect consumers, reduce inequalities, and prevent discrimination, but also to create an environment responsive to the needs of insurers at each stage of their development. The role that governments allow VHI schemes to play in mobilizing resources and extending access to health care usually determines the extent to which the environment fosters these schemes.

No countries in Sub-Saharan Africa have laws specifically addressing VHI schemes. In countries without such laws, the schemes operate under laws governing registration of businesses or cooperatives.

Most countries in Sub-Saharan Africa have no regulatory provisions for private health insurance. Therefore, regulation of the provision of health care determines the type of integration that is allowed or possible under a VHI scheme. In Nigeria, for example, insurance operators are required to be independent of health services providers. However, health sector reform in Nigeria is devolving autonomy to public health institutions, allowing these institutions to enter into provision contracts with insurers.

## Sustainability

VHI schemes may experience deficits if projected break-even enrollment levels are not attained or if service utilization and costs are higher than expected. Deficits may be resolved with adequate capitalization or a bank credit line. Neither is readily obtainable in some countries of Sub-Saharan Africa.

This situation emphasizes the need for reinsurance rules, which must have flexibility to reflect and respond to the maturity of the insurance system and its institutions and to the risks of disincentives and aberrant behavior. With the exception of South Africa, no Sub-Saharan countries have reinsurance arrangements.

## Administration Costs

The cost of administering VHI schemes varies between 8 and 19 percent of premium income. This cost is initially high but gradually decreases as markets mature. The cost of entry depends largely on the regulatory environment and the availability of trained personnel. It presents a formidable barrier for many countries in Sub-Saharan Africa.

## Risk Equalization

Many developed countries establish a risk equalization fund (REF) as a risk-adjustment mechanism. The regulatory agency managing the REF pays stipulated

**BOX 11.1 SURVEY OF RISK MANAGEMENT COMPETENCY**

A survey gauging perceptions of risk and of risk management competency was sent to health insurance funds in five Sub-Saharan African countries. Eight for-profit entities engaged in prepaid health maintenance (managed care) activities, medical scheme administration, or both completed the survey: five from Nigeria, two from South Africa, and one from Botswana. These respondents deal primarily with employer-based schemes and have or are preparing a strategic plan for time frames ranging from one to five years. Mutualité Française, which operates in francophone countries in West Africa, did not answer the survey but did provide commentary on the issues raised in it.

Respondents were asked to group risks into five categories, to rank them in importance, and to compare actual to ideal time spent on managing the risks.

Risks were grouped as follows:

- **Contextual:** economy, burden of disease, population growth/profile, regulatory burden and consistency
- **Product:** control over benefit package and pricing, availability of economies of scope
- **Operational:** overall pool size, control over utilization and providers, low versus high density of provision, horizontal versus vertical integration, consumer preferences
- **Market structure:** competitive threats, concentration of supply and provision, barriers to entry and exit
- **Behavior:** moral hazard, adverse selection, fraud, purchasing power.

A simple averaging technique produced a consensus that contextual risk poses the highest risk, followed closely by operational risk (see table). These two risk categories can be described as relatively high risk, according to the respondents. The one respondent from Botswana generally perceives the regulatory environment of that country to be stable (that is, to have infrequent policy changes); the two respondents from South Africa and the five from Nigeria believe their

*(continued)*

amounts to individual schemes, thus equalizing the schemes' risk profiles. An REF requires specific disease codes on the basis of which medical conditions are defined and categorized, allowing accurate data to be uniformly obtained and reported by VHI schemes. REF introduction requires a level of market sophistication and maturity yet to be attained in most of Sub-Saharan Africa. South Africa will introduce such a fund in 2007.

### Organizational Capacity

Capacity to implement and maintain the control cycle is strong in the comparatively mature VHI markets of South Africa but weak in the markets in the rest

**BOX 11.1** *(continued)*

respective regulatory environments are unstable. The respondents from South Africa consider the regulatory environment for private insurers to be competitive, but the respondents from Nigeria do not consider that environment to be competitive. Respondents from Botswana and South Africa are more concerned about the burden of disease than some respondents from Nigeria.

Respondents indicated that behavioral risk represents a moderate level of risk and that product risk and market structure risk represent relatively low risk.

Respondents generally feel that they spend too much time on contextual and operational risk and not enough time on market structure risk. This perception appears to reflect respondents' concern that their schemes are not sufficiently competitive.

The main concerns of Mutualité Française, which deals with the informal sector, are supply of services and a shortage of health facilities in rural areas.

**Summary of Survey Responses**

<i>Category of risk</i>	<i>Percentage of distribution of risk</i>	<i>Percentage of actual management time</i>	<i>Percentage of ideal management time</i>
Contextual	13 (5–20)	13 (4–30)	12.5 (3–30)
Product	8 (5–11)	8 (4–11)	8 (4–11)
Operation	12 (9–20)	12 (5–17)	10 (4–17)
Market structure	7 (2–10)	6 (1–10)	8 (3–10)
Behavior	10 (3–13)	11 (4–15)	10 (6–15)

*Source:* Bowie 2005.

*Note:* The range of individual responses is given in parentheses.

of Sub-Saharan Africa. The latter require greater organizational capacity as measured by financial performance indicators such as liquidity ratios, solvability, ratio of administration costs to income, and loss ratio. To date, few VHI schemes in Sub-Saharan Africa measure their financial performance against indices produced by the International Federation of Health Plans.

**VOLUNTARY HEALTH INSURANCE IN SOUTH AFRICA AND IN THE COUNTRIES OF WEST AFRICA AND EAST AFRICA**

In general, Sub-Saharan Africa has yet to adopt the best practices identified in chapter 10. South Africa stands apart from other Sub-Saharan countries in that it

has made provision for reinsurance and is taking other steps to foster its health insurance industry, which is relatively well established. By contrast, the English-speaking countries of West Africa have only recently begun to introduce health insurance, although the region's French-speaking countries have had mutuals for many years. The countries of East Africa have mutual aid societies, but the societies' survival is precarious. Issues specific to each area are noted below.

## **ISSUES IN SOUTH AFRICA**

Medical schemes reimburse their members for actual health expenditures. The schemes are run on a not-for-profit basis and are essentially mutual societies, governed under the Medical Schemes Act of 1998. Medical inflation, overuse by members, overservicing by health care providers, and fraud are of great concern to administrators of medical schemes.

### **Affordability**

As in other African countries, the issue of high unemployment is critical and determines the uptake of health insurance in South Africa. A report on the impact of prescribed minimum benefits (PMB) on the affordability of contributions (McLeod 2005) revealed that the industry has not been able to reduce prices to levels that would provide for the full PMB package. The challenge is for schemes to find ways to bring offerings to the market that are much closer to the PMB package prices. The Centre for Actuarial Research in South Africa recommends the following low-cost options:

- hospitalization in public facilities rather than private for-profit facilities,
- provision of specialist services in public hospitals,
- provision of medicine for the chronically ill in public hospitals or by primary care providers using a formulary, and
- provision of primary care in private sector networks that use a capitation payment mechanism.

### **Cost Control**

Delivery of health care through private-sector medical schemes has become excessively costly because of the for-profit nature of the hospital industry. Health care providers are remunerated primarily on a fee-for-service basis, and thus providing additional (often unnecessary) services is their major way of increasing income. This practice is considered the most important cause of price inflation in South African health care. Moreover, the industry has experienced a major increase in non-health care expenditure relative to contributions. Administration, reinsurance, and broker fees contribute the most to such expenditure after

adjusting for the effects of consumer price inflation. According to the Registrar of Health Schemes, the benchmark for non-health care costs should be 10 percent of total contributions.

### **Introduction of Managed Care**

In an effort to contain costs, schemes have adopted managed care initiatives. Almost all schemes practice chronic medicine management, hospital preauthorization, and case management. However, they have yet to work with networks of contracted providers. They have no incentives to use or share risks with preferred networks.

Most schemes concentrate on managed care services and tools that affect utilization but not on incentives to oversupply services. To remain viable, the industry needs to abandon fee-for-service reimbursement (except in isolated cases of out-of-network benefits) and fully embrace risk-sharing arrangements with networked providers.

### **Impact of HIV/AIDS**

The HIV/AIDS epidemic is a major public health issue. Antiretroviral therapy is expected to become a prescribed minimum benefit now that the public sector has finally agreed to provide it. The cost of triple therapy has fallen and continues to fall with continued pressure by activists on pharmaceutical firms. Thus the total cost of HIV/AIDS treatment is now less than that for many other chronic disease treatments.

### **Government-Mandated Social Health Insurance Coverage**

South Africa will begin implementing a government-mandated social health insurance scheme. Step one is introduction of a risk equalization fund that is expected to double the number of beneficiaries in existing health schemes, which will have to become innovative to control the administration costs that will result from the sudden influx of new members. Initially, the government will require membership of high-income earners and specific categories of employers in these schemes. Subsequently, it will establish a state-sponsored scheme to meet the needs of lower-income people who would not be able to afford conventional medical schemes. The state-sponsored scheme will use public hospitals as providers of choice but also offer primary health care services in the private sector.

### **ISSUES IN WEST AFRICA**

French-speaking West African countries such as Senegal and Mali have long embraced mutuals (community microinsurance health schemes), but their English-speaking counterparts have only recently introduced health insurance. Ghana

implemented a national mutual health insurance scheme. Nigeria established a social health insurance scheme made up of managed care schemes for the formal sector and community insurance schemes for the informal and rural sectors; all the insurance schemes use a mix of private and public health providers.

Mutuals and community insurance companies are not for profit, whereas managed care operators are commercial, even though they provide services for public programs.

Membership pools are relatively small. Larger risk pools are needed to enhance schemes' sustainability. Governments can promote membership growth by making schemes mandatory.

### **Poverty Impact**

Because unemployment is high, a relatively high proportion of health care expenditure is out of pocket. The challenge is to make contributions affordable to encourage people to move to prepaid pools. For the foreseeable future, however, a significant portion of the population will constitute a captive market for community health insurance schemes.

### **Regulation**

Many West African governments have established statutory organizations to provide oversight of health insurance schemes. The focus of regulation is service delivery, financing, product quality, and enforcement of public health laws.

The threat of overregulation looms large and is particularly worrisome, because governments have limited understanding of the practice and operations of health insurance schemes. They need to develop regulation in close cooperation with scheme operators.

### **Operations**

West African countries have a shortage of individuals with experience in the management of private and social health insurance systems. The National Health Insurance Scheme in Nigeria and the Mutual Health Insurance Scheme in Ghana will require significant personnel development. Health maintenance organizations (HMOs) require local capacity to track and analyze revenue and expenditure flows. Skilled personnel for actuarial analysis of the sustainability of health insurance schemes and programs are also needed.

### **Service Delivery**

Health service delivery systems are performing poorly in most West African countries. They do not adequately remunerate medical staff and are plagued by shortages of key medical staff (mainly due to emigration), lack of critical inputs for hospital services, and low staff and facility productivity.

To provide incentives for increased productivity and improved quality standards, West African countries need to introduce managed care provider payment mechanisms (see below). In addition, HMOs and district-level mutuals need to develop the capacity to manage relationships with providers.

### **Provider Payment**

The prevailing provider payment mechanism is fee for service. A better option is a capitation-based payment system that rewards performance and that will be simple enough for providers to understand and for operators to administer. In Nigeria and Ghana, capitation-based payment is used for primary care and secondary care services, whereas per diem and discounted fees are used for procedures and specialist services. Whatever the payment system, it must have checks and balances to avoid provider abuse and control cost inflation.

### **ISSUES IN EAST AFRICA**

In East African countries, the economic environment has been characterized by hyperinflation and loss of skilled workers, because of political problems. These circumstances have stifled membership growth in medical aid schemes through which most of the countries' health insurance is offered.

Medical aid schemes have not convinced people that they are efficient and provide good value. To attract members, the schemes have to be innovative. Specifically, they need to invest in new affordable products for different segments of the population, improve service quality, retain skilled personnel, and introduce information technology for scheme administration.

Initially, medical aid schemes paid fees for services following negotiations. This system broke down in the 1990s as a result of general inflation; at that time, medical providers began charging fees that the schemes deemed incommensurate with services rendered. The schemes resorted to paying 70 to 80 percent of claims. They need to introduce a payment mechanism whereby medical providers bear a greater share of risk.

### **CONCLUSION**

VHI schemes should play an increasingly important role in the provision of access to health care in Sub-Saharan Africa. Medical aid societies in South Africa and Zimbabwe and mutuals and private insurance schemes in West African countries could become vehicles for compulsory national social health insurance schemes. Policy makers in Ghana and Nigeria are already building informal community and rural social insurance schemes on the principles of voluntary health insurance.

Because African economies with low per capita GDP find support of social health insurance schemes to be a daunting task, governments have an incentive to create

an environment in which private voluntary health insurance can thrive—that is, to provide a policy framework that recognizes the complementary role of voluntary health insurance in attaining national health policy goals. Legislation should give VHI schemes legal recognition and operational guidelines but not allow governments to intervene directly in scheme management. Regulation should establish transparency, governance, and public oversight. Schemes should be made to compete according to cost of coverage, quality of service, and efficiency of delivery of prescribed minimum benefits but should not preclude the offering of other packages to suit the needs of consumers. In short, if governments are to use VHI schemes to promote access to health care for the general population, regulation should be directed at ensuring financial risk protection for the public but should not create barriers to schemes' market entry and efficient operation.

Because insurance schemes in Sub-Saharan Africa are mostly small scale with low coverage and restricted outreach, governments should assist them in scaling up their operations by providing or developing

- institutional capacity to correct market failures,
- institutional frameworks that allow efficient and stable market development, and
- public-private partnership policies that promote coverage of gaps in provision of services that are of public good—for example, immunization.

For their part, insurers need to reinforce their institutional, managerial, and administrative capacities. Of particular importance are implementation of information technology systems and development of expertise in and establishment of mechanisms for fund management, premium setting, risk management, communications, marketing, and quality assurance.

Finally, donors and other external stakeholders can help VHI schemes thrive by assisting governments to meet the need for reinsurance.

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## CHAPTER 12

# Facilitating and Safeguarding Regulation in Advanced Market Economies

*Scott E. Harrington*

This chapter provides an overview of regulation of private health insurance in advanced market economies, particularly the United States. It considers the implications of such regulation for low-income countries that seek to expand the role of private health insurance in financing medical care. Suggestions are offered for achieving an appropriate balance between “facilitating regulations,” which create a positive environment for private health insurance in low-income countries, and “safeguarding regulations,” which protect consumers and serve other public policy interests. Particular attention is devoted to regulation aimed at avoiding the destabilizing effects of potentially inadequate premiums in relation to insurers’ promised payments. A second focus is regulation of private health insurance rates and risk selection. Two approaches for dealing with high-risk persons are contrasted: (1) significant restrictions on rating and risk selection (community rating) that subsidize rates to the high-risk insured by increasing rates for the low-risk insured and (2) full risk rating apart from narrowly targeted limitations on risk selection, along with guaranteed-issue, high-risk pools with subsidized rates.

### INTRODUCTION

The discussion below assumes that the potential demand for private health insurance (PHI) in many low-income countries (LICs) is large enough in principle to support a voluntary PHI market and that economically efficient development of private health insurance is viewed as attractive in some LICs. The discussion largely ignores possible conflicts and tensions between public health insurance and private health insurance and the debate over whether certain levels or types of benefits should be required of private health insurance.

An underlying premise of the discussion is that appropriate economic regulation and “best” regulatory practices cost-effectively mitigate demonstrable market failures in relation to outcomes that would be likely in a reasonably competitive market characterized by (1) large numbers of sellers with relatively low market shares, low-cost entry by new firms, or both; (2) low-cost information to

firms concerning the cost of production and to consumers concerning prices and quality; and (3) an absence of material spillovers (that is, all costs are internalized by sellers or buyers).<sup>1</sup> Pursuit of other objectives, such as equity or solidarity, should at least strive to balance perceived benefits against attendant deadweight costs. (The problem of how to promote efficiency when regulation arises endogenously from a political process in which groups press for policies with private benefits less than social costs is considered in chapter 4.)

Market structure and ease of entry generally are conducive to competition in most modern insurance markets in advanced market economies. But costly and imperfect information and externalities justify several forms of PHI regulation. Concern with affordability of health insurance and associated access to medical care also influences regulation, as does the interplay between private and public health insurance in countries where private health insurance augments or substitutes for public coverage.

The successful development of a robust PHI market to help finance medical care in LICs that desire such a result, with or without public insurance, will require reasonably effective contract enforcement and an economic and political environment that encourages investment of domestic and foreign capital to back the sale of private health insurance.<sup>2</sup> This chapter's main message, presaged in the analyses and insights of Mark Pauly and Peter Zweifel in this volume, is that regulations that encourage demand for coverage and the entry and expansion of private health insurers will facilitate development of private health insurance. The major focus should be to establish a minimal system of solvency regulation and other regulations that likewise help ensure that buyers obtain what they have been promised. However, significant limitations on PHI pricing and risk selection should generally be avoided. Absent sufficient resources to fund basic public coverage for the poor or to subsidize their purchase of private coverage, the best achievable outcome for many LICs in the near and intermediate term is for private health insurance to expand among citizens willing and able to pay for coverage.

## OVERVIEW OF REGULATION IN ADVANCED MARKET ECONOMIES

PHI regulation in advanced market economies is administered by a government agency or agencies that implement statutory requirements, usually with the authority to establish administrative rules and procedures.<sup>3</sup> A brief description of the major regulated activities follows.

*Licensing of insurers and agents/brokers.* Governments grant, renew, and revoke licenses for insurers, agents, and brokers to conduct business. Regulation often stipulates conditions for unlicensed insurers to conduct certain business.

*Solvency.* Solvency regulation includes solvency monitoring, capital requirements, other controls on insurer behavior (for example, investment regulations),

and, in many cases, establishment of policyholder protection schemes to pay specified claims against insolvent insurers.

*Pricing and risk selection.* Many governments significantly restrict PHI pricing and risk selection (underwriting), including limits on rate differentials among different buyers, guaranteed-issue requirements, and guaranteed-renewability rules. Some governments require insurers to obtain prior regulatory approval of certain rate changes.

*Contractual provisions.* Many governments regulate most contract language by requiring certain contract provisions and prohibiting others. Some governments mandate minimum coverage provisions. Prior regulatory approval of health insurance policy forms is common in the United States.

*Market conduct.* Insurance regulators often enforce legislation dealing with market conduct and unfair trade practices, such as provisions related to unfair claim settlement practices and potentially deceptive sales practices by insurers and agents.<sup>4</sup>

*Information disclosure.* Many governments make available consumer buying guides and other information about PHI contracts. In the United States, many jurisdictions provide premium rate comparisons, and some publish counts of consumer complaints against health insurers.

Most of the above activities are generally viewed as “safeguarding.” Their main function is consumer protection or the achievement of related policy goals. Many safeguarding regulations, especially solvency regulations, also play a facilitating role: they promote consumer confidence and trust in private insurance and therefore increase the demand for coverage. Insurance firms that wish to prosper in the short and long run have significant incentives to support institutions and regulations that play such a role.

## **SOLVENCY REGULATION**

Private health insurers face a variety of risks, including underwriting risk, asset (market) risk, and interest rate risk. Underwriting risk can be significant for private health insurers, especially relatively small companies. Premiums are based on predicted claim costs; realized costs may be substantially higher due to unexpected increases in the utilization or cost of medical care. Once events giving rise to claims have occurred, health insurers’ provisions for unpaid claim liabilities may prove deficient. Asset risk is often modest, reflecting relatively large investments in government or high-rated corporate bonds. Credit (counterparty) risk largely arises from reinsurance transactions. Private health insurers and health maintenance organizations (HMOs) that contract downstream with medical care providers often face significant credit risk associated with provider promises to provide prepaid services, especially under capitation arrangements.

Given uncertainty about future claim costs and other risks, private health insurers often hold significant amounts of capital as a buffer against bad outcomes. Holding capital involves three types of costs, which increase premiums needed to supply coverage (by increasing premium loadings, see chapter 3): (1) required compensation to owners for bearing risk; (2) tax costs, which vary significantly across countries; and (3) agency costs. In advanced market economies, investors can diversify among numerous securities at relatively low cost. The expected risk premium necessary to compensate investors in private health insurance is likely small, given that variability in claim costs is generally diversifiable by investors. With immature capital markets in LICs, required compensation for risk bearing will tend to be higher, increasing the premiums private health insurers will need to charge. Depending on the country, double taxation of returns from investment of capital to support the sale of policies significantly increases the cost of capital and the prices needed to offer coverage.<sup>5</sup> Agency costs arise from the possible divergence between the interests of managers and those of investors. Managers may invest or appropriate funds for their own purposes, reducing returns to investors. As a result, investors are motivated to increase monitoring of management and to require higher expected returns. Given less developed governance mechanisms in LICs, agency costs will likely be higher than in advanced market economies.

Private health insurers in advanced market economies generally reduce their risk and thus economize on holding costly capital by diversifying underwriting risk across policies of a given type and region, across types of policies, and geographically. They also often transfer significant amounts of risk to reinsurers, thus achieving additional risk spreading, including across national borders, and reducing the aggregate amount of capital by insurers and reinsurers. Given these influences, an institutional and regulatory environment that promotes diversification by investors, reduces the agency and tax costs of capital, and encourages insurer risk reduction through diversification and reinsurance will greatly facilitate development of private health insurance in LICs.

All advanced market economies regulate the solvency of insurance entities. Many partially guarantee obligations of insolvent insurers, thus protecting policyholders from the full effects of insurer failure. Before elaborating on these arrangements, it is useful to highlight private market incentives for solvency in most advanced market economies. Those incentives ultimately determine the safety and soundness of private health insurance.<sup>6</sup> First, absent comprehensive government guarantees, policyholders generally prefer to deal with financially strong insurers and, up to a point, are willing to pay the higher premium rates that greater financial strength requires. Second, policyholders can be matched with financially strong insurers through insurance intermediaries (agents, brokers, advisers), private ratings of insurers' claims-paying abilities (and ratings on insurers' debt obligations, which generally are subordinated to policyholder claims), and (for business coverage) knowledgeable corporate staff who oversee risk management and insurance programs. Third, insurance investment, produc-

tion, and distribution often involve the creation of sizeable firm-specific assets, commonly known as franchise value, which could diminish or evaporate if the insurer experiences severe financial difficulty. Protecting those assets provides a significant incentive for adequate capitalization and other forms of risk management.<sup>7</sup>

In view of these influences, efficient risk management by insurers balances the benefits of holding more capital and more effectively managing risk (for example, higher premiums and preservation of franchise value) against the tax and agency costs of capital and frictional costs associated with other risk management methods.<sup>8</sup> Low risk of insolvency generally results, but eliminating insolvency risk is too costly (as is emphasized in chapter 3).

### Motivation for Solvency Regulation and Protection

Some form of solvency regulation is desirable, despite private incentives for safety and soundness because of costly and imperfect information and potential externalities, both to protect some consumers from excessive insolvency risk and to promote confidence in private insurance markets.<sup>9</sup> Consumers' willingness to pay premiums *ex ante* for private health insurance that promises future payments contingent on health outcomes depends critically on reasonable expectations that those promises will be fulfilled. The upfront payment of premiums in exchange for the insurer's promise to pay later also provides substantial opportunities for fraud and theft. Even advanced market economies with highly developed solvency regulation have experienced problems in this area. In the United States, for example, numerous private insurance entities that offered "self-funded" coverage to small employers claimed that they were exempt from state insurance regulation, simply engaged in fraud, or both and became insolvent in the 1990s (see Wells 2003). That experience continues to influence debate about proposed legislation to facilitate expansion of private health insurance offered by group or association plans to small employers (see American Academy of Actuaries 2005).

With solvency regulation, policyholders who would find it difficult to assess insurer insolvency (or who might have little incentive to do so on their own or using brokers or advisers) in effect delegate responsibility for monitoring solvency to regulators. Regulatory monitoring might detect insurer financial problems early enough to prevent insolvency. In other cases, monitoring can help regulators intervene before the deficit between an insolvent insurer's assets and liabilities becomes large. Some degree of regulatory restrictions on insurer risk taking (for example, investment limitations and capital requirements) could be efficient for this reason.

Limited, government-mandated protection of individual and small employers' claims against insolvent health insurers is also likely to be efficient in advanced market economies, at least in view of costly and imperfect information and possibly negative spillovers for other parties (such as public payers).<sup>10</sup> As suggested

above, insurers have a collective interest in bonding promises to pay claims. Given costly and imperfect information and in the absence of guarantees, insolvencies might damage some financially strong insurers' reputations, which could motivate insurers to participate in a joint guaranty system. Government-mandated guaranty systems reduce free-rider problems and obviate antitrust concerns that might otherwise arise with privately initiated and managed guarantees.

### Main Features of Solvency Regulation

Solvency regulation for private health insurance and other forms of insurance in the United States, the European Union, and other advanced market economies generally has most or all of the following features:

- monitoring of compliance with asset/liability valuation and financial reporting rules, including rules for allowing insurers to receive balance sheet credit for reinsurance purchases;
- enforcement of rules that restrict risk taking (for example, restrictions on permissible investments);
- enforcement of capital requirements;
- solvency monitoring (early warning) systems to identify troubled companies;
- guaranty systems to pay a portion of claims against insolvent insurers; and
- supervision, rehabilitation, and liquidation of financially troubled insurers.

The design of efficient solvency regulation necessarily confronts difficult trade-offs. Beyond some point, lowering insolvency risk through tighter regulatory constraints, such as higher capital requirements, inefficiently increases the total costs of insurance (as noted in chapter 3). Regulatory monitoring and controls to reduce insolvency risk involve direct costs, such as regulators' salaries and the costs of collecting, processing, and analyzing data. In addition, they produce indirect costs, for example, by distorting the decisions of some financially sound institutions in ways that increase their costs.

A trade-off also exists between protecting customers against loss when private insurers fail and creating incentives for private insurers to be safe. Protection against loss leads to some degree of moral hazard. It reduces policyholders' demand for lower insolvency risk and their incentives to seek out financially strong insurers, thus in turn dulling insurers' incentives to hold more capital and manage risk effectively. Even well-designed government (or government-mandated) guarantees may increase insolvency risk. Accurate risk-based premiums for guaranty protection in principle could mitigate the dulling effects of guarantees on incentives for safety and soundness, but they are infeasible in practice.

State-mandated guarantees of some of insurers' obligations began to develop in the United States in the late 1960s and expanded rapidly in the 1970s (in conjunction with proposed federal government guarantees). Almost all state guaran-



tees rely on ex post assessment funding mechanisms, which enhance incentives for financially strong insurers to press for effective solvency regulation if unexpected increases in the costs of assessments are borne in part by insurers rather than shifted to customers or taxpayers.<sup>11</sup> U.S. guarantees are limited, which helps reduce moral hazard. The health insurance guarantees generally provide coverage for up to \$100,000 per person, but most states exclude HMOs from coverage. In addition, self-funded group plans offered to employees by medium-size to large employers, which account for a large proportion of private coverage, are exempt from state regulation and guarantees.

### Capital Requirements

Traditional regulatory capital requirements for insurance specified absolute minimum amounts of capital necessary to conduct business. These amounts often varied by type of coverage (non-life versus life) and type of entity (stockholder-owned versus mutual). The modern trend has been to supplement these absolute minimums with risk-based capital requirements, which link minimum capital to measures of the insurer's risk. Current absolute capital requirements in the United States average around \$2 million, varying from several hundred thousand dollars to \$5 million or more. In the 1990s, the National Association of Insurance Commissioners (NAIC) developed U.S. risk-based capital requirements for property-casualty and life insurers. These requirements were followed by specific requirements for health insurance specialists (HMOs and health insurance companies subject to state insurance regulation).

Because government-mandated guarantees of health and other insurers' obligations are modest and market discipline is reasonably strong in most advanced market economies, the potential benefits of stringent capital requirements are small. Potential costs to insurers and policyholders of stringent requirements, which arise from distorting decisions of sound insurers, are comparably large. As a result, risk-based capital requirements generally should be designed not to bind the decisions of most insurers, and simple requirements are likely to be as effective as more complex rules.<sup>12</sup> As long capital requirements are sufficiently loose, however, unnecessary complexity is relatively harmless (although it does increase compliance costs).

U.S. risk-based capital requirements employ different formulas for property-casualty insurers, life insurers, and health organizations. Most states have adopted the property-casualty and life insurer requirements. The requirements are fairly loose; most insurers hold substantially more capital than the amounts that would trigger some form of regulatory intervention. Many states have yet to adopt the NAIC's risk-based capital requirements for health organizations. The reasons may be that the regulations were only recently developed and that their adoption is not required under the NAIC's program for accreditation (certification) of a state's solvency regulation. In addition, health-risk-based capital standards have produced lower ratios of actual capital to risk-based capital for many

more health organizations than for property-casualty and life insurers. In 2000, for example, 24 percent of health organizations subject to state insurance regulation had capital less than 200 percent of the risk-based capital standard, the percentage threshold for requiring an entity to submit a plan of action to regulators for improving its capital position, compared with 2 percent of life insurers (Bell 2003). However, in 2002 the fraction for health organizations had declined to 12 percent, and the aggregate risk-based capital ratio for health organizations was 460 percent, compared with 455 percent for property-casualty insurers and 649 percent for life insurers. The NAIC has periodically proposed raising the capital thresholds for increased regulatory monitoring or intervention, but insurers have generally opposed such a move.

The U.S. risk-based capital formulas are complex (Academy Joint Risk-Based Capital Task Force 2002). The NAIC's formula for health organizations specifies four major risk categories: asset risk, credit risk, underwriting risk, and miscellaneous business risks. The specific risk weights for items in each category and the formulas for aggregating the resulting capital charges are complex. The latter include nonlinear combination of various factors to allow crudely for diversification.<sup>13</sup>

For the present, European Union (EU) insurers' "solvency margin" requirements, which have been substantially harmonized across EU member states for many years, are much simpler than U.S. risk-based capital standards. The solvency margin requirements (as amended in 2002; see European Union 2002a, 2002b) are expressed as relatively simple proportions of relevant premiums, claims, or claim-related liabilities. Most EU insurers generally have held considerably more capital than the required solvency margin (Swiss Re 2000). Although the case can be made that the requirements' relative simplicity and lack of stringency are appropriate in view of the degree of market discipline in insurance (Harrington 2004a), the European Union is moving toward complex, risk-based capital requirements and regulation with many similarities to bank capital regulation.

### Implications for Low-Income Countries

Solvency regulation could play important facilitating and safeguarding roles in the development of private health insurance in LICs. In particular, some minimum level of solvency regulation will help establish trust and confidence in private health insurance, which in turn will increase demand and stimulate the supply of coverage.

If potential consumers have little education, the potential benefits of minimum solvency regulation may increase. As suggested elsewhere in this volume (chapters 3 and 4), however, the optimal level of insolvency risk could generally be higher in LICs, because quality in the form of lower insolvency risk is plausibly a normal good. Lower demand for coverage with negligible insolvency risk, given its higher cost, favors relatively low and simple minimum capital requirements for private health insurers in LICs, at least initially and in the absence of a government-mandated system of partial policyholder protection in the event of insurer failure.

Creation of regulatory environments that will attract financially strong insurers will require establishment of appropriate systems for informative financial reporting by private health insurers. Attention should also be paid to possible mechanisms for facilitating private health insurers' risk management, thus reducing their need for costly capital. That task might involve facilitating laws and regulations, such as a limited exemption from any otherwise applicable antitrust law, that permit and encourage private health insurers to engage in cooperative pooling and analysis of claims data to benchmark cost estimates. Such cooperation could increase the accuracy of claim cost forecasts that provide the basis for pricing and thus lower insurers' risk, reduce the likelihood of low but unsustainable prices, and facilitate entry by smaller insurers.<sup>14</sup>

Although insurer cooperation in developing benchmark cost estimates could create concern about possible noncompetitive behavior, that risk is likely of secondary importance in LICs compared with the risks and consequences of inadequate prices. Cooperative arrangements played an important role in facilitating development of stable property-casualty insurance markets in the United States and other advanced market economies. The arrangements' lack of importance in U.S. health insurance could reflect, in part, the dominance of health insurance provided by large employers and relatively large health insurers that were originally associated with medical care providers.

## **REGULATION OF PRICING AND RISK SELECTION**

Absent regulatory restrictions, private markets for health and other types of insurance produce premium rates commensurate with insurers' expected costs of providing coverage to a given policyholder. Competitive health insurance premium rates will continually adjust in an attempt to incorporate accurately all information that predicts claims costs (and that can be observed or obtained at relatively low cost), including age, gender, and health status. Although adverse selection might cause coverage to be completely unavailable in narrow circumstances, private insurance markets inherently gravitate toward offering coverage to all buyers who are willing and able to pay premiums commensurate with the insurers' expected costs of providing coverage.<sup>15</sup>

The philosophy and approach to regulation of PHI prices and risk selection vary widely across advanced market economies, in part due to variation in the scope of public versus private coverage. Although some regulation of prices and risk selection can plausibly be rationalized as a response to problems arising from asymmetric information, much of this regulation is intended to shield high-risk consumers, low-income consumers, or high-risk and low-income consumers from PHI rates that would otherwise be unaffordable or impose significant hardship. Two broad approaches for dealing with the tension between cost-based premium rates and affordability are (1) significant restrictions on pricing and risk selection, such as community rating, that subsidize the high-risk insured by

increasing rates for the low-risk insured and (2) full risk rating apart from narrowly targeted limitations on risk selection, along with guaranteed-issue, high-risk pools with subsidized rates.

### Diversity of Approaches in the United States

U.S. jurisdictions vary widely with respect to guaranteed-issue requirements, rating restrictions, limits on exclusion of preexisting conditions, and whether the state has mandated a subsidized high-risk pool. Beginning in the late 1980s, many states adopted restrictions on risk selection and pricing in small group health insurance markets, often requiring each insurer to offer coverage at a rate that does not reflect the health of individual employees, restricting the magnitude of rate increases at renewal, and limiting a new insurer's ability to exclude coverage for preexisting conditions. In 1996 the U.S. Congress enacted the Health Insurance Portability and Accountability Act (HIPAA), which (nominally) required guaranteed renewability in the small group market for employers with 2 to 50 employees (without restricting rate increases). HIPAA also required states to guarantee access of coverage for persons who lose coverage, and it contained restrictions on the use of preexisting condition exclusions.

Table 12.1 shows the number of U.S. jurisdictions that employed various restrictions on rating and risk selection in the *individual* health insurance market in recent years. Five states (Maine, Massachusetts, New Jersey, New York, and Vermont) required guaranteed issue of all products to all residents by all insurers. New Jersey, New York, and Vermont required pure community rating (rates can only vary by benefits provided and geographic location within the state, and thus not by age, gender, or health status). Maine and Massachusetts required adjusted community rating (rates can vary by age). Two other states (Oregon and Washington) required adjusted community rating; guaranteed issue is required for certain populations. Another 19 states had some guaranteed issue requirements, most often for persons eligible for coverage continuation under HIPAA,

**TABLE 12.1 Selected Pricing and Risk Selection Restrictions for Individual Health Insurance among 51 U.S. Jurisdictions as of 2005**

<i>Type of restriction</i>	<i>Number of jurisdictions</i>
Guaranteed issue of all products to all residents by all insurers	5
Guaranteed issue to selected residents	21
Pure community rating (cannot rate on age, gender, or health status)	3
Adjusted community rating (rating on age permitted)	4
Limitation on variation in rates due to health status	8
Guaranteed renewable at rates not based on individual health status	48
High-risk pool (guaranteed issue at subsidized rates)	32

Source: Abbe 2005; Georgetown University Health Policy Institute 2004; Patel and Pauly 2002.

and eight states significantly restricted (without prohibiting) variation of rates in relation to health status.

Guaranteed issue and rating restrictions may allow some individuals to purchase coverage who otherwise might find it difficult to find a willing insurer. But the restrictions' predominant motivation and function is to lower premium rates for buyers with relatively high expected claim costs by charging above-market premium rates for buyers with relatively low expected claim costs. This strategy helps higher-risk persons afford coverage and accordingly receive the types and quality of medical care that flow to insured persons.

However, significant restrictions on rating and risk selection in private health insurance can

- increase average premiums as some lower-risk buyers reduce or drop coverage (due to adverse selection induced by the restrictions);
- destabilize the market for coverage with a substantial reduction in coverage availability;
- require (a) additional restrictions and regulations that attempt to ensure a stable market where many or most insurers provide coverage to observably high-risk buyers despite inadequate premium rates and (b) potentially elaborate risk adjustment or other mechanisms to spread losses on higher-risk buyers broadly among insurers and lower-risk buyers (see van de Ven and Ellis 2000);
- require additional restrictions and regulations to keep insurers from tailoring coverage offerings and services to segment buyers according to risk—that is, to reduce regulatory-induced “cream skimming” (see, for example, Hall 2002); and
- reduce incentives for persons to purchase insurance while healthy and to behave in ways that improve their health and reduce their need for and cost of medical care.

An alternative approach is narrow targeting of government intervention to mitigate affordability problems, along with reliance on private insurer pricing and risk selection. In addition to narrow interventions related to preexisting conditions, important strategies in the United States include (1) establishing a high-risk pool to guarantee coverage to persons with chronic health conditions at subsidized rates and (2) promoting or mandating guaranteed renewability of coverage (at rates that do not reflect individual health status).

As shown in table 12.1, 32 U.S. jurisdictions had a high-risk pool as of 2005. These jurisdictions included all jurisdictions with no other guaranteed-issue requirements. The pools generally are designed to provide subsidized coverage to a relatively narrow, high-cost segment of the public. They typically provide coverage (through private third-party administrators, usually with a choice of plans) to persons who experience some difficulty finding an insurer willing to offer coverage, persons with specified medical conditions, and HIPAA-eligible

persons (Abbe 2005). Some pools allow purchase by any person facing increased nonpool premiums. Premium rates generally are capped at 12 to 150 percent of typical rates for comparable nonpool, individual coverage.

High-risk pools invariably experience large average deficits per enrollee. The deficits commonly are recouped through pro rata assessment of all health insurers in the state, sometimes with partial or full offsets against insurers' premium tax obligations. Employer-sponsored, self-funded plans cannot be assessed. Some pools receive small assessments from hospitals or other providers. A few pools receive direct government subsidies; some receive earmarked subsidies to reduce premiums charged to lower-income enrollees.

With guaranteed renewability, an insurer must renew coverage, regardless of the health of the insured. The premium rate can be increased to reflect the average experience for the insured's rating class. It cannot be increased on an individual basis to reflect possible deterioration in the individual's (or covered dependents') health. Thus, by preventing individual experience rating, guaranteed renewability provides insurance against rate increases due to deterioration in an individual person's health compared with the average health status for persons in the same rating group (average health status generally reflects age, gender, and perhaps other factors), albeit at a higher premium than for contracts without guaranteed renewability (see Pauly, Kunreuther, and Hirth 1995; Patel and Pauly 2002; also see Cochrane 1995). As shown in table 12.1, most U.S. jurisdictions require that individual health insurance be guaranteed renewable. A large proportion of individual health insurance was purchased on a guaranteed renewable basis in the United States before renewability was required (Patel and Pauly 2002).

In contrast to individual health insurance contracts, many small group health insurance contracts either were not guaranteed renewable or often resulted in large rate increases at renewal, reducing small employers' protection and incentives to offer group medical coverage. Why mechanisms that promote guaranteed renewable health insurance for individuals without a regulatory mandate (such as front-loading of premiums; see Pauly, Kunreuther, and Hirth 1995) are less effective for small group insurance is unclear. One possibility is that higher switch costs for individual policyholders than for small groups enhance the viability of guaranteed renewability by discouraging sufficient numbers of low-risk policyholders from switching insurers to obtain lower rates (see Harrington and Miller 2002; also see Crocker and Moran 2003).

### **Approaches in Other Advanced Market Economies**

Motivation to restrict pricing and risk selection of private coverage is greater in some U.S. jurisdictions than in many EU and Organisation for Economic Cooperation and Development countries. Countries with relatively small private health insurance markets nonetheless often require guaranteed issue and guaranteed renewability (lifetime coverage), prohibit rating based on health status, and employ risk-adjustment mechanisms.<sup>16</sup>

The European Union's third non-life insurance directive permitted insurers to provide coverage throughout the European Union and in effect prohibited various types of rating and risk selection restrictions for private health insurance; the focus of regulation was instead primarily on solvency. According to Thompson and Mossialos (2004), supplemental private health insurance is almost entirely subject to financial (solvency) regulation only. An exception is Ireland, which requires community rating, open enrollment, and lifetime coverage and may require private health insurers to participate in a risk-adjustment scheme.

Significant limitations on pricing and risk selection also are employed in the Netherlands (for coverage of high risks under the Medical Insurance Access Act, see Tapay and Colombo 2004) and Germany, where private coverage substitutes for public coverage for relatively high-income persons. These exceptions are linked to article 54.1 of the EU directive, which allows insurance regulation for the "general good" where private coverage "serves as a partial or complete alternative to health cover provided by the statutory social security system" (as quoted by Thompson and Mossialos 2004, 4). The Netherlands' two-tier public-private system is being replaced by universal basic coverage, subject to open enrollment, community rating, and a risk-adjustment scheme (Tapay and Colombo 2004).

### Implications for LICs

The costs of designing, administering, and enforcing significant restrictions on rating and risk selection in private health insurance would be considerable in LICs, even assuming sufficient administrative capacity and expertise.<sup>17</sup> Artificially high rates for lower-risk buyers would reduce their demand and push up average rates, further aggravating affordability problems and encouraging a greater number of low-risk persons to forgo coverage. Moreover, a move toward significant restrictions on rating and risk selection, including any requirement that insurers obtain regulatory approval of rates charged, would substantially slow or even kill PHI development as a result of compliance costs, reduced profit potential, and increased regulatory uncertainty.

Apart from restrictions that might be necessary in some countries to coordinate and align public and private coverage, restrictions on PHI rating and risk selection should be avoided in LICs. Once a viable market has been established, and as income grows, LICs may find it desirable to encourage guaranteed renewable coverage and to consider adoption of a narrowly targeted high-risk pool with subsidized rates.<sup>18</sup>

### CONCLUSIONS

Development of robust PHI markets in LICs will require a reasonably effective system for enforcing contracts. An economic and political environment that encourages the investment of domestic and foreign capital to back the sale of

insurance will facilitate establishment of such a system. Regulation of private health insurance in LICs should focus on encouraging demand for coverage and otherwise facilitating the entry and expansion of private health insurers. The central component of regulation should be a minimal system of solvency regulation. The second priority should be minimal oversight of contract language and claims resolution to help ensure that buyers generally obtain what they are promised when they purchase insurance. Significant limitations on PHI rates and risk selection generally should be avoided.

## NOTES

The author is grateful for comments by Brigit Hansl, Vijay Kalavakonda, and Nicole Tapay.

1. See Breyer (1982). Regulatory tools are necessarily imperfect, even apart from rent-seeking behavior by interested parties. Regulation always involves direct and indirect costs, and it risks unintended consequences.
2. Under suitable circumstances, multinational insurers will likely play an instrumental role in promoting the growth of private protection.
3. In many jurisdictions, the courts also have a significant effect on contractual relations between insurers, policyholders, and medical care providers through interpretation and enforcement of contract provisions.
4. Allegations of deceptive or misleading sales practices also may be subject to litigation and resolution by the courts.
5. See Harrington and Niehaus (2003) for detailed analysis of tax costs of capital in the United States.
6. See Harrington (2004b) for a detailed discussion in the context of insurance and banking.
7. The seminal theoretical treatment of this issue in the insurance literature is Finsinger and Pauly (1984).
8. Swiss Re (2000) emphasizes the trade-off between capital (safety and soundness) and capital costs.
9. Demand by some consumers is inherently insensitive to insolvency risk (even without government guarantees), due, for example, to legal requirements that compel judgment-proof parties to buy liability insurance or to cover workers for workplace injuries.
10. Because systemic risk is relatively low in insurance markets (see Harrington 2004a), the potential advantages of government guarantees of insurers' obligations are reduced.
11. Many states allow life and health insurers to offset all or a portion of assessments against state premium taxes, which likely reduces incentives for monitoring.
12. See Harrington (2004a) for a detailed discussion. This point obviously conflicts with the modern trend toward increasingly complex insurer capital requirements in advanced market economies.



13. Evidence suggests that the U.S. risk-based capital standards are not closely related to insolvency risk despite their complexity (Grace, Harrington, and Klein 1998).
14. See Hanson, Dineen, and Johnson (1974). As noted in chapter 4, Dror (2002) emphasizes problems of cost estimation for community-based insurance schemes. Sekhri, Savedoff, and Tripathi (2005) do not agree with the view that information sharing and cooperative analysis could be beneficial.
15. See chapter 2 for further and related discussion.
16. See Task Force on Private Health Insurance (2003, tables 2 and 3).
17. Peter Zweifel also makes this point in chapter 3.
18. As suggested in chapter 2, government-mandated basic or core benefits in LICs would likewise slow or even halt development of private health insurance. For a contrasting view, see Sekhri, Savedoff, and Tripathi (2005). They advocate mandatory core benefits if private health insurance is intended as a primary source of coverage.

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## CHAPTER 13

# Financial and Other Regulatory Challenges in Low-Income Countries

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**T**his chapter explores challenges that low-income countries face in regulating and supervising private voluntary health insurance. The focus is primarily on financial regulation.

### INTRODUCTION

This chapter reflects two assumptions. First, private health care financing should be regulated and supervised. Second, nonburdensome regulation could facilitate the emergence and development of private voluntary health insurance (PVHI) markets in low-income countries (LICs).

As noted in chapter 12, appropriate economic regulation can cost-effectively mitigate failures of private health insurance markets. Indeed, such regulation is a key condition for creating a favorable environment for investment in private health insurance products. Furthermore, lack of appropriate regulation can often result in high administrative and marketing costs, insolvency, low quality of care, public distrust of insurance, and difficulties in expanding coverage (World Bank forthcoming).

### OUT-OF-POCKET PAYMENTS AND PRIVATE VOLUNTARY HEALTH INSURANCE

In LICs, private health expenditures are predominantly in the form of out-of-pocket spending, including copayments and user fees, by consumers at the point of service (table 13.1). Even in countries with relatively large life and non-life insurance sectors, like the Arab Republic of Egypt, China, India, and Vietnam, little formal means of financial protection against financial health care risks (insurance) is available.

Various factors have stymied development of private health insurance markets in LICs. First, in most of these countries, understanding of the concept of insurance in managing personal and family financial risks remains weak, and

**TABLE 13.1 Size of PHI Market and Percentage of Coverage**

Country	Premiums (US\$ million)			Percentage of private health expenditures	
	Non-life	Life	Personal accident and health	Private insurance plans	Out of pocket
Bangladesh	117.60	236.70	n.a.	0.1	85.2
Brazil	6,810.60	5,543.70	3,064.20	35.8	87.6
Cambodia	9.08	n.a.	1.12	0.0	85.9
China	10,386.00	32,771.30	3,284.70	0.4	74.0
Egypt, Arab Rep. of	394.30	213.60	7.60	0.6	90.4
Ghana	78.30	24.60	n.a.	0.0	52.3
India	3,621.00	14,627.00	331.00	0.7	90.2
Lebanon	162.70	168.80	118.30	17.5	98.5
Morocco	877.20	324.30	173.50	23.0	80.0
Nigeria	294.60	58.30	n.a.	6.7	96.3
Uganda	41.90	2.70	n.a.	0.2	98.7
Vietnam	258.80	489.90	46.20	4.2	100.0

Source: AXCO 2005; WHO 2005.

Note: n.a. = not available.

education on insurance is deficient where it exists. Lack of attention to these issues usually explains the smallness of the health insurance sector as measured by insurance penetration (premiums as a percentage of GDP) and insurance density (premium per capita). Second, ability to pay premiums is seriously diminished by the lack of formal employment markets, among other factors. Third, insurance companies have shown little interest in and capacity to underwrite health risks and develop health insurance products. The insurance industry does not appear to consider the health insurance business profitable. Fourth, health care providers have not demonstrated willingness to contract with insurers; they prefer informal means of payments.

Regardless of these limitations, voluntary private health insurance is a policy option that LICs must explore, because social health insurance, which is usually based on employment-based contributions or taxes, simply lacks the economic base to work. The key issue is how voluntary private health insurance can capture as much out-of-pocket spending as possible, thus freeing public financial resources of some of the burden for health care and increasing the total amount of financial resources in the health care system.

## GENERAL CHALLENGES IN DEVELOPING A PVHI MARKET

Private voluntary health insurance is a commercial business—and an expensive business. In economies with limited formal employment and a large informal

sector, provision of health insurance is a costly challenge: marketing, distribution, and other systems must be put in place to underwrite the risk and to administer the benefits. Insurance companies become involved in health insurance only if profits are to be made, and they tend to focus first on middle- and higher-income groups that have capacity to pay and represent the lowest health risks. Not all out-of-pocket spending can be captured, especially through formal payments made by the poor and low-income individuals. Another challenge is finding reliable providers in terms of qualifications and quality that will commit to provide contracted services for formal insurance payouts, which could be taxable, rather than informal payments. For its part, government must train people to supervise and regulate health insurance as a specialized form of insurance. This may be difficult in LICs, where budget allocations to insurance regulation may be quite small. Even when the financing for supervision and regulation comes from a percentage of premiums funds (as in Georgia), resources are limited when the insurance market is small. Georgia, a country with low employment (most of it in the informal employment sector), will face all these challenges if its proposed reform of health care financing is approved (box 3.1).

#### **BOX 13.1 GEORGIA: PROPOSED HEALTH CARE FINANCING POLICY**

The Georgian government has proposed a universal package of health services financed by the state and available to the whole population. The package would be delivered through direct state contracting with providers or through insurance companies and private health intermediaries.

The package would include MediProtect, a package of goods and services intended to provide financial risk protection against the cost of illness. MediProtect would be purchased with state funds for the poorest of society. Better-off individuals and households could voluntarily purchase it with their own resources or with assistance from the state, depending on their particular situation and on the availability of public funds. MediProtect for the nonpoor would be supplied by private insurance companies (and perhaps also by other third parties) under government regulations that may include a uniform, standardized, and fixed-price insurance product. MediProtect for the poor would be purchased either directly by the government or through private insurance companies.

The goal of the proposed health care financing party is to give private health insurers incentives to serve the public interest and to implement regulations to mitigate insurance market failures so that private insurance might serve as a transitional form of health insurance while the public sector increases its own capacity to manage and finance health care coverage.

The private sector would supply supplemental health insurance under competitive market conditions.

*Source:* Authors.

**REGULATORY ISSUES AND CHALLENGES IN LICs**

Table 13.2 summarizes the regulatory challenges for private voluntary health insurance.

**Licensing of Insurers and Agents/Brokers**

Voluntary private health insurance should be a licensed financial activity; insurers, brokers, and other intermediaries should be licensed professionals. The purpose of licensing (a process typically entrusted to an insurance supervisory authority under specific regulations) is to ensure that the insurer and intermediaries have the financial means and technical expertise to enter and remain in the business.

Health insurance is usually part of non-life licensing. A question for LICs is whether to allow private voluntary health insurance to be part of a general (non-life) insurance license (as in India) or to require investors and established insurance companies to seek a specific health insurance license. If the latter, government could impose licensing terms and conditions reflecting the nature of the country's health insurance business and actual and potential health insurance market (as in Slovenia).

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**TABLE 13.2 Regulatory Challenges for Private Voluntary Health Insurance**

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Policies (government)	Promotion of formal means of financing to attract out-of-pocket spending: voluntary health insurance, prepayment schemes PVHI as supplemental insurance to social health insurance systems PVHI as comprehensive insurance for middle- and high-income consumers who opt out of social systems Tax incentives for businesses and policyholders
Legal framework (government)	Adequate general insurance legislation Special PVHI provisions (licensing, capital, solvency, and reporting) Regulations on health plans, health care providers, and consumer protection
Supervision and regulation (autonomous public authority)	Insurance supervisor Specialized supervisor and regulator
Insurance industry (private sector)	Market analyses (latent market, accessibility, capacity to pay) Health insurance products Marketing Self-regulation
Health care providers (government and private sector)	Licensing and accreditation Quality of care standards and control Financial management abilities Providers associations and self-regulation

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## Minimum Initial Capital

The requirement of minimum initial capital is one condition for granting a license. This requirement is different from the minimum capital requirement *to stay* in business.

In many developing countries, the minimum capital for private voluntary health insurance is set at a level similar to that required to start a non-life (or general) insurance business. The minimum capital should reflect the characteristics of the emerging health insurance business, the market structure, and the profitability or potential returns on investment for shareholders. A requirement for high levels of minimum initial capital may discourage entry into the market (table 13.3). Cambodia's minimum initial capital requirement of \$7 million may be unrealistic, given that the market for general insurance and health insurance combined is about \$10 million. In Egypt and Vietnam, the volume of premium that needs to be generated to justify the minimum initial capital requirement is more than the current private health insurance market. In India, the total health insurance premium during FY 2005 was estimated around \$331 million, but the current minimum initial capital requirement for a health insurance business is the same as that for general and life insurance business, the market for which is about \$22 million. The minimum initial capital requirement should be commensurate with industry development costs and should be attractive to investors.

**TABLE 13.3 Minimum Initial Capital Requirement and Required Premium Volume to Ensure Commercial Interest**  
(US\$ million)

Country	Premiums		Minimum capital requirements for non-life insurers	Expected to generate a premium to ensure commercial viability
	Non-life	Personal accident and health		
Bangladesh	117.6	n.a.	2.60	17.33
Brazil	6,810.60	3,064.20	2.40	16.00
Cambodia	9.08	1.12	7.00	46.67
China	10,386.00	3,284.70	24.15	161.00
Egypt, Arab Rep. of	394.3	7.60	5.10	34.00
Ghana	78.3	n.a.	1.00	6.67
India	3,621.00	331.00	22.00	146.67
Lebanon	162.7	118.30	0.80	5.33
Morocco	877.2	173.50	5.50	36.67
Nigeria	294.6	n.a.	1.43	9.53
Uganda	41.9	n.a.	0.58	3.83
Vietnam	258.8	46.20	7.00	46.67

Source: Figures in the first three columns are from AXCO (2005); figures in the fourth column reflect the authors' calculations.

Note: n. a. = not applicable.

## **Solvency**

Solvency regulation includes solvency monitoring, capital requirements, and establishment of technical provisions supported by investments. In many cases, solvency regulation also includes establishment of policyholder protection schemes to pay specified claims against insolvent insurers.

When applying solvency requirements, health insurance usually follows life or non-life requirements. In general, solvency regulations are based on formulas established for general insurance business or on the European Union (EU) solvency formula. In some LICs (Bangladesh and Cambodia), these regulations are based on outdated formulas that do not reflect the nature of business or the risk being insured. Some LICs (Estonia and Slovenia) have solvency requirements that take into account the nature of the business and its market characteristics. Table 13.4 presents solvency requirements and investment regulations in selected countries.

## **Pricing and Risk Selection**

Countries are abandoning fixed premium prices in favor of solvency and marketplace regulation. With respect to premium rate regulation, disclosure requirements are the main tool to protect consumers. These requirements allow consumers to compare products and prices. The insurance supervisory authority and consumer organizations (in India and Latin America, for example) provide this information.

## **Contractual Provisions**

Clear and explicit health insurance contracts are critical for sound development of the health insurance industry and to attract and keep PVHI customers. The supervisory authority typically maintains a registry and depository of health insurance policies. Market information companies may also keep records of health insurance policies. Many countries require insurers to submit such policies to the supervisory authority for approval before marketing.

## **Market Conduct**

Insurance regulators deal with market conduct by requiring transparency in the information provided to the insurance supervisor, consumers, and health care providers. The supervisor, in turn, provides information on insurer solvency and health products so that customers can make informed decisions. In some LICs (Chile, Mexico), the insurance supervisor (and consumer protection agencies) has offices to provide information on health plans and insurance companies and to offer advice on health plans. Some countries (including India) have established ombudsman offices to hear complaints about health insurers.



**TABLE 13.4 Solvency Requirements and Investment Regulations, Selected Countries**

<i>Country</i>	<i>Solvency requirement</i>	<i>Investment regulation</i>
Bangladesh	Insurers must have assets invested in Bangladesh exceeding their liabilities by at least \$8,803 or 10 percent of the net premium income, whichever is higher.	Must have assets invested in Bangladesh that exceed liabilities to policyholders
Brazil	20 percent of the annual average over the past three years of 100 percent of net written prepaid premiums and 50 percent of net written premiums paid by other means, or 33 percent of the annual average over the past five years of 100 percent retained claims under prepaid policies and 50 percent of retained claims under policies paid by other means	n.a.
Cambodia	50 percent of registered capital for the first operation year, \$3.5 million where total premium revenue does not exceed \$15.6 million net of all reinsurance premiums in the previous year, 20 percent of total written premium revenue in the previous year where premium revenue exceeds \$15.6 million but not more than \$77.9 million net of all reinsurance plus, or \$15.6 million plus 10 percent of premium revenue in excess of \$77.9 million net of all reinsurance premiums in the previous year	Must employ at least 75 percent of the reserve funds in Cambodia
China	Difference between a company's admissible assets and liabilities; must be the greater of 18 percent of the last year's premium up to \$12.08 million plus 16 percent of the last year's premium in excess of \$12.08 million, in both cases net of ceded reinsurance and business tax, or 26 percent of the average of the last three years' incurred claims up to \$8.45 million plus 23 percent of the average of the last three years' incurred claims in excess of \$8.45 million, in both cases net of reinsurance recoveries	n.a.
Egypt, Arab Rep. of	Assets should exceed liabilities by 20 percent of net premiums or 25 percent of net outstanding claims for the previous financial year, whichever is the greater and subject to a maximum deduction of 50 percent in respect of reinsurance ceded.	Insurance companies are required to hold in Egypt funds with a value at least equal to the value of their technical reserves
Ghana	Assets must exceed liabilities by at least 10 percent of the premium income	Within Ghana
India	Highest of the following amounts: \$11.6 million, a sum equivalent to 20 percent of net premium income, or a sum equivalent to 30 percent of net incurred claims	n.a.
Lebanon	10 percent solvency margin calculated for domestic companies as the total of capital and free reserves divided by gross written premium and for foreign companies as the guarantee fund divided by gross written premium	Only restriction is that 50 percent of assets supporting technical reserves should be invested in Lebanon
Morocco	EU solvency model	n.a.
Nigeria	Maintain a margin of solvency in excess of the value of admissible assets over liabilities, which are unexpired risk reserves, outstanding loss reserves, IBNR reserves, and funds to meet other liabilities; margin must be not less than 15 percent of gross premiums less reinsurance premiums or the minimum paid-up capital, whichever is greater; unpaid premiums are not considered admissible assets	Admissible assets in Nigeria
Vietnam	Solvency margin is the balance between the value of assets and outstanding liabilities of not less than 20 percent of retained premiums; value of assets calculated as all capital contributions to other insurance enterprises less bad debts.	No overseas investment permitted

Source: AXCO 2005.

Note: IBNR = incurred but not reported; n.a. = not available. Currency is U.S. dollars.

## **Information Disclosure**

Familiarity with and understanding of insurance is critical to development of a health insurance industry. Many LICs must address lack of information on insurance and mistrust in private financial institutions. In many countries, the insurance supervisory authority provides information on insurance companies, health plans, and prices (Chile, Slovenia).

## **Fraud and Abuse**

Preventing fraud and abuse is a major regulatory task and challenge. In the case of health insurance, the collusion of providers and the insured is not uncommon. In many countries, the insurance supervisor issues regulations requiring that the managers and staff of health insurance companies meet “fit and proper requirements.”

## **REGULATORY AND SUPERVISORY AUTHORITY**

Health care reforms that include a relevant private sector role in financing and delivery pose a dilemma for ministries of health. The ministry of health is not a financial ministry, and it has neither the mandate nor the tools to regulate voluntary public health insurance. The insurance supervisor has the mandate to regulate and supervise health insurance as part of general or life insurance. If health insurance is categorized as a special type of insurance, the supervisor may deal with it in a specialized manner (one example is managed care supervision by insurance supervisors in the United States).

Health insurance oversight can be entrusted to the insurance supervisor (India, China, the United States). Prepayment schemes can be supervised and regulated by specialized autonomous supervisors (Colombia, Peru), or they can be defined as insurance and be subject to special joint insurance and health supervision (Mexico, the Philippines) (box 13.2). Public and private health care financing and private and health care providers can be supervised and regulated by one entity (Chile, Ghana) (box 13.3). Ministries of health (Indonesia) or municipalities (Thailand) supervise community-based financing schemes.

## **Specialized Health Insurance Supervisor and Regulator**

In Chile and Slovakia, a single regulatory and supervisory structure oversees health care providers, health insurers, and consumer protection. The Health Superintendence in Chile supervises and regulates financing (both public, the National Health Fund, and private, the prepayment insurance entities or ISAPRES) and health care providers and has a mandate for consumer protection. In Slovakia, the Health Care Surveillance Authority supervises and regulates public

**BOX 13.2 THE PHILIPPINES: SUPERVISION AND REGULATION OF HEALTH CARE FINANCING**

On February 14, 1995, Republic Act No. 7875 established the National Health Insurance Programme for all Filipinos and created the Philippine Health Insurance Corporation (PhilHealth) to administer it. The act required the SSS (social security system for private sector employees) and the GSIS (for public sector employees) to transfer their medical operations to PhilHealth to create one uniform system.

Decree 1460 (Insurance Code of 1978) gives the insurance commissioner the authority to regulate and supervise private medical insurance companies.

Draft legislation approved by the House of Representatives would regulate health maintenance organizations under the joint supervision of the Department of Health and the Insurance Commission. Senate Bill No. 1466 makes similar provisions.

*Source:* Authors.

health insurance companies and health care providers. Its consumer protection mandate is weak. In South Africa, the statutory body supervising medical schemes is the Council for Medical Schemes.

**Specialized Unit**

In the United States, where insurance is a state rather than a federal matter, specialized health insurance departments supervise and regulate health insurance.

**BOX 13.3 CHILE: SUPERVISION AND REGULATION OF HEALTH CARE FINANCING**

Chile has regulated the supply of prepayment schemes and special private health insurance since 1981, when it created prepayment health institutions (ISAPRES or Instituciones de Salud Provisional), and allowed workers to place their mandatory contributions either into the public system (the National Health Fund) or into an ISAPRE. Supervision and control was entrusted first to the National Health Fund; in 1990 the Superintendence of ISAPRES was created. Operational since January 2005, the Health Superintendence, legal successor of the Superintendence of ISAPRES, manages the supervision and regulation of the private prepayments system, the National Health Fund, and all health care providers (public and private) with respect to accreditation, licensing, and compliance with licensing and accreditation standards. Pertinent regulation and the Ministry of Health establish these standards. The superintendence has one intendent-provider and one intendent-funds and insurance.

*Source:* Authors.

## **Joint Regulation and Supervision of Health Insurance by the Insurance Supervisor and the Health Authority**

In Mexico, health prepayment financial management companies (Entidades Administradoras de Medicina Pre-pagada) are specialized health insurance entities supervised and regulated by three organizations: the National Commission on Insurance and Bonds (Comisión Nacional de Seguros y Fianzas); the Insurance Supervisor on solvency, actuarial matters, and market conduct; and the Secretariat (Ministry) of Health, which has an exclusive mandate to supervise, inspect, and oversee “health services and products” offered by health insurance entities and to establish, monitor, and supervise health standards.

### **CONCLUSION**

Experience shows that private voluntary health insurance can bring out-of-pocket resources into the formal health insurance regime when a system of insurance supervision helps ensure that insurers will have the financial resources required to pay all claims as they become due (solvency) and treat consumers in an equitable manner in all financial dealings (consumer/marketplace supervision). Both high- and middle-income countries have focused their regulatory strategies on solvency and market conduct.

In LICs, incremental development of private voluntary health insurance appears to be a reasonable option to capture some out-of-pocket spending, to increase the total volume financial resources for health care, and to provide risk protection to middle- and upper-income consumers if not the poor. Insurers will participate insofar as incentive regulation and solvency control are in place and profits can be made. Consumers will participate if they have incentives such as premium subsidies or tax incentives and if they perceive the health insurance industry to be sound, well regulated, and fair.

### **NOTE**

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## APPENDIX

# Review of the Literature on Voluntary Private Health Insurance

*Mark C. Bassett and Vincent M. Kane*

This appendix examines the published and “gray” literature on the role of private voluntary health insurance in low- and middle-income countries. It reviews, selectively and descriptively, the nearly 200 major studies (in English, since 1989) on the demand for and supply, performance, and impact of private voluntary health insurance on specific outcome indicators. The appendix also examines frameworks for analyzing health financing and health insurance, with references to the literature, and assesses the internal and external validity of studies.

### INTRODUCTION

Researchers have extensively studied private health insurance schemes in developed countries but have amassed comparatively little evidence regarding the performance of such schemes in developing countries. This appendix evaluates this evidence as reflected in the literature published since 1989.

### Recent History of Research on Health Financing

The World Bank (Dror and Preker 2002; Schieber 1997; Preker and Carrin 2003; Gottret and Schieber 2006), the World Health Organization (WHO 2000, 2003; Murray and Evans 2003; Sachs 2001), the International Labour Organization (ILO 2002a, 2002b, 2003), and the Organisation for Economic Co-operation and Development (OECD 2004b) have published extensively on health financing issues over the past 15 years.

The Harvard School of Public Health (Roberts 2004), the London School of Hygiene and Tropical Medicine (Mills 2000; Mills and Ranson 2001), and Abt Associates Inc. (Bennett, Crease, and Monasch 1998), among others, have made important contributions to conceptualizing and analyzing developments in health financing in low- and middle-income countries (LMICs). In addition, members of the European Observatory on Health Care Systems (Mossialos 2002) have made notable contributions to conceptualizing and analyzing developments in health financing in high- and middle-income countries in Europe.

## Out-of-Pocket Expenditure and Catastrophic Expenditure

Affordable health care systems with wide coverage and consistent quality are needed to achieve and sustain at least three of the Millennium Development Goals. Efficient, fair, and sustainable methods of financing are a critical, but insufficient, component of such health care systems.

Out-of-pocket private expenditure is a major source of health financing and, in 2000, was estimated to account for 19.7 percent of spending globally: 24.1 percent in Africa, 24.5 percent in Eastern Europe and Central Asia, 35.6 percent in the Americas, 38.8 percent in the Middle East, 59.3 percent in Asia and the Pacific, and 74.1 percent in South Asia (Murray and Evans 2003).

Out-of-pocket expenditure appears to be the most regressive form of health financing (de Graeve and van Ourti 2003). Xu and others (2003) provide estimates of the proportion of households with catastrophic health expenditure—defined as 40 percent of a household's income after basic sustenance needs have been met—in 59 countries, including Argentina (5.7 percent), Ghana (1.3 percent), Peru (3.7 percent), and Vietnam (10.7 percent). They conclude that the strong relationship between the proportion of households with catastrophic health expenditures and the share of out-of-pocket payments in total health expenditure supports the hypothesis that prepayment and risk pooling can help protect households from the catastrophic financial consequences of illness.

*World Health Report 2004* (WHO 2004) provides country-by-country estimates of out-of-pocket expenditure as a proportion of total expenditure and private expenditure (for the period 1997 to 2001). *World Health Report 2000* (WHO 2000) provides such estimates in international dollars for 1997.

Musgrove, Zeramini, and Carrin (2002) systematically examined the basic patterns of health expenditure for the 191 WHO member states in 1997. They concluded that the share of out-of-pocket spending in GDP falls modestly as countries become richer and that such spending takes a decreasing share of non-subsistence income and becomes less of a burden on average. They also found that as income rises, the relative variation in health spending among countries narrows; the public share becomes more uniformly high, and out-of-pocket spending becomes more uniformly low.

Out-of-pocket expenditure can take three forms: direct payments (for private goods), cost-sharing and user charges (for public or otherwise insured services), and “informal payments” (see WHO's Health Evidence Network at [www.euro.who.int/HEN](http://www.euro.who.int/HEN)). All three forms are insurable, albeit by different instruments.

Table A.1 presents WHO and World Bank data on the overall composition of health financing in 2001 by World Bank region and country income level. Since the late 1990s, researchers have begun to consider how community health financing can “complement” public (or otherwise government-mandated) funding. Hsiao (2001) has defined community health financing as any scheme that has “community control, voluntary membership and prepayment for health care by the community members” and has classified such schemes into five broad types.

**TABLE A.1 Composition of Health Financing by Region and Country Income Level**

<i>Indicator</i>	<i>Per capita GDP (current US\$)</i>	<i>Per capita GNI (current US\$)</i>	<i>Per capita health expenditures (US\$)</i>	<i>Per capita health expenditures (international dollar rates)</i>	<i>Total health expenditures (% GDP)</i>	<i>Public health (% total health expenditures)</i>	<i>Social security expenditures (% total public health expenditures)</i>	<i>Private (% total health expenditures)</i>	<i>Out-of-pocket (% private health expenditures)</i>	<i>External (% total health expenditures)</i>
<b>Region</b>										
East Asia and the Pacific	1,170.04	1,195.70	96.14	198.72	5.86	61.76	8.32	38.24	80.73	11.44
Eastern Europe and Central Asia	2,432.28	2,380.18	152.11	434.02	5.79	61.24	45.06	38.76	94.31	3.42
Latin America and the Caribbean	3,445.66	3,269.69	217.78	431.18	6.62	55.47	26.20	44.53	81.78	3.47
Middle East and North Africa	2,708.87	2,613.70	143.71	290.41	5.29	47.57	15.41	52.43	78.32	2.46
South Asia	767.90	735.86	27.50	95.11	4.81	46.67	6.91	53.32	93.75	11.32
Sub-Saharan Africa	954.93	806.64	47.34	133.07	5.08	51.36	3.17	46.64	79.59	19.44
<b>Country income level</b>										
Low	452.74	348.29	26.76	82.44	5.16	48.39	4.07	51.61	85.26	19.63
Lower middle	1,514.00	1,504.44	94.19	282.64	5.89	55.82	21.94	44.18	81.34	4.73
Upper middle	5,152.12	4,950.51	308.38	578.45	6.10	63.59	34.75	36.41	84.09	1.85
High	22,794.32	22,918.68	1,921.64	2,256.50	7.94	70.51	36.68	29.48	74.66	0.16

Source: Gottret and Schieber 2006, table A.1.2.

Note: GDP = gross domestic product; GNI = gross national investment.

Some researchers have evaluated the effectiveness of community health financing schemes (Preker and others 2001; Preker and others 2002; Preker and Carrin 2003). Preker and others (2002) concluded that “Most community financing schemes have evolved in settings of severe economic constraint, political instability and unsatisfactory governance . . . . In such circumstances, community involvement provides a first step toward improved financial protection against the cost of illness and improved access to priority health services.”

This appendix considers evidence that additional forms of voluntary health financing, not limited to community-based health insurance (CBHI) or community financing in general, may help countries improve access, increase financial security, and expand insurance coverage to a wide array of member groups. These additional forms include private voluntary health insurance (PVHI)—for-profit or nonprofit—and voluntary forms of social health insurance (SHI). As the literature attests, the success of any comprehensive health care financing option relies heavily on the latter.

## **METHODS AND RESULTS**

This appendix takes the form of a selective and descriptive review of literature published since 1989 (see Lewis-Beck, Bryman, and Liao 2004). Some reference is made to pre-1989 material that remains the most recent or definitive established literature.

The bibliographic search strategies reflect those recommended by Mann (1998). The searches include the subject matter expertise of scholars; articles in specialized encyclopedias and dictionaries; searches in the U.S. Library of Congress and British Library catalogs; and combination keyword and Boolean searches in the World Bank Imagebank, the World Bank Joint Online Library Information Service online databases, and other online databases. The main online resources searched were Pub Med, Econ Lit (via Online Compute Library Center), and Social Services Citation Index (through the Institute for Scientific Information’s Web of Science).

A total of 190 items were identified and referenced. Tables A.2 and A.3 categorize the most salient items (63 articles and 23 papers) by principal topics and other attributes. Note that table row totals do not equal total references because many publications covered multiple topics.

### **Gaps in Topical Coverage**

If the items selected for categorization are representative of the entire literature (as suggested by the degree of cross-referencing within them), gaps in recent studies of voluntary health financing in LMICs are evident. These gaps include quantitative evaluation of demand for voluntary health insurance by organization type, contribution type, and distribution (that is, method of sales);



**TABLE A.2 Summary of the Topical Coverage, Scope, and Nature of 63 Journal Articles on Voluntary Health Financing**

<i>Indicator</i>	<i>Total</i>	<i>Theoretical</i>	<i>Quantitative</i>	<i>Qualitative</i>	<i>Descriptive</i>
<b>Articles</b>	<b>63</b>	<b>15</b>	<b>38</b>	<b>4</b>	<b>15</b>
<b>Scope</b>					
Global	6	1	5	1	1
Multicountry: cross-regional	3	1	2	0	2
Multicountry: regional	6	2	2	3	4
Country market	23	4	20	0	6
Subnational market	7	1	7	0	1
Scheme or schemes	3	1	2	0	1
<b>Context</b>					
Political	4	2	3	0	3
Economic	5	2	2	1	2
Demographic	3	2	3	0	3
Epidemiological	1	0	0	0	1
<b>Public policy</b>					
Scope and nature of public health financing	17	5	10	1	7
Allowed roles of VHF/VHI	6	3	3	0	3
Nature of regulation	3	2	0	0	2
Financial incentives and disincentives	8	4	4	0	3
Risk adjustment	2	0	0	0	2
<b>Demand</b>					
Products by role or roles	8	3	5	0	1
Products by consumer type	9	1	9	0	0
Products by organization type	1	1	1	0	0
Products by contribution type		3	1	3	0
Products by distribution channels	1	0	0	0	1
Price elasticity by product role and types	2	0	2	2	0
<b>Market structure</b>					
Concentration	2	0	1	0	2
Effective competition, risk of substitution, or both	2	1	1	0	2
Organizational distribution of financing functions	1	1	0	0	1
Wide vertical integration, horizontal integration, or both	0	0	0	0	0
Insurance administration and risk management	2	1	0	0	2

*(continued)*

**TABLE A.2 Summary of the Topical Coverage, Scope, and Nature of 63 Journal Articles on Voluntary Health Financing** *(continued)*

<i>Indicator</i>	<i>Total</i>	<i>Theoretical</i>	<i>Quantitative</i>	<i>Qualitative</i>	<i>Descriptive</i>
<b>Structure and character of provider and factor markets</b>					
Hospitals	3	0	2	0	2
Doctors and nurses	2	1	1	0	1
Pharmacy	1	0	0	0	1
<b>Behaviors</b>					
Insurers: cream skimming	2	2	0	0	1
Providers: moral hazard, informal payments	4	2	0	1	3
Consumers: moral hazard and adverse selection		8	4	5	0
Government: crowding out	1	0	1	0	0
Brokers	1	0	0	0	1
<b>Performance and impact</b>					
<b>Health</b>					
Impact on health status	2	1	1	0	1
<b>Health services</b>					
Impact on access to services	12	2	8	2	0
Impact on clinical quality of services provided	1	0	0	1	0
Impact on unit cost of services provided	2	0	2	2	0
Impact on transparency of financial and clinical information	1	1	0	0	1
Impact on innovation	0	0	0	0	0
<b>Financial</b>					
Impact on financial protection	7	1	5	1	0
Impact on distribution of contributions and benefits (equity)		5	2	3	1
Impact on distribution of financial risks	4	1	2	0	2
Impact on scale and distribution of consumption and profits	2	1	0	0	1
Impact on scale and distribution of capital formation	0	0	0	0	0
<b>Economic</b>					
Sustainability of market	5	3	3	0	1
Impact of insurance as an institutional investor	0	0	0	0	0
Impact on labor market productivity	0	0	0	0	0

*Source:* Authors.

*Note:* VHF = voluntary health financing; VHI = voluntary health insurance.

**TABLE A.3 Summary of the Topical Coverage, Scope, and Nature of 23 Papers on Voluntary Health Financing**

<i>Indicator</i>	<i>Total</i>	<i>Theoretical</i>	<i>Quantitative</i>	<i>Qualitative</i>	<i>Descriptive</i>
<b>Papers</b>	<b>23</b>	<b>9</b>	<b>14</b>	<b>7</b>	<b>16</b>
<b>Scope</b>					
Global	6	2	3	2	2
Multicountry: cross-regional	5	0	2	2	2
Multicountry: regional	8	1	6	4	8
Country market	2	1	2	0	0
Subnational market	0	0	0	0	0
Scheme or schemes	0	0	0	0	0
<b>Context</b>					
Political	3	1	1	0	0
Economic	2	0	1	1	2
Demographic	1	0	0	0	1
Epidemiological	2	0	1	1	2
<b>Public policy</b>					
Scope and nature of public or mandated health financing	6	2	4	2	2
Allowed roles of VHF/VHI	4	1	3	3	3
Nature of regulation	3	1	3	2	3
Financial incentives and disincentives	3	1	2	3	3
Risk adjustment	0	0	0	0	0
<b>Demand</b>					
Products by role or roles	3	0	3	2	3
Products by consumer type	4	0	4	3	4
Products by organization type	2	0	1	1	1
Products by contribution type		2	0	1	1
Products by distribution channels	0	0	0	0	0
Price elasticity by product role and types	3	0	3	2	3
<b>Market structure</b>					
Concentration	0	0	0	0	0
Effective competition, risk of substitution, or both	2	0	2	2	2
Organizational distribution of financing functions	1	0	1	1	1
Wide vertical integration, horizontal integration, or both	2	0	2	2	2
Insurance administration and risk management mechanisms	3	1	3	1	1

*(continued)*

**TABLE A.3 Summary of the Topical Coverage, Scope, and Nature of 23 Papers on Voluntary Health Financing** *(continued)*

<i>Indicator</i>	<i>Total</i>	<i>Theoretical</i>	<i>Quantitative</i>	<i>Qualitative</i>	<i>Descriptive</i>
<b>Provider and factor markets</b>					
Hospitals	2	1	1	2	2
Doctors and nurses	0	0	0	0	0
Pharmacy	0	0	0	0	0
<b>Behaviors</b>					
Insurers: cream skimming	2	0	2	2	2
Providers: moral hazard, informal payments	2	0	2	2	2
Consumers: moral hazard and adverse selection	2	1	2	2	2
Government: crowding out	0	0	0	0	0
Brokers	0	0	0	0	0
<b>Performance and impact</b>					
<b>Health</b>					
Impact on health status	3	0	3	3	3
<b>Health services</b>					
Impact on access to services	3	0	3	3	3
Impact on clinical quality of services provided	0	0	0	0	0
Impact on unit cost of services provided	1	0	1	1	1
Impact on transparency of financial and clinical information	0	0	0	0	0
Impact on innovation	1	0	1	1	1
<b>Financial</b>					
Impact on financial protection	4	0	4	3	4
Impact on distribution of contributions and benefits (equity)		4	0	4	3
Impact on distribution of financial risks	3	0	3	2	2
Impact on scale and distribution of consumption and profits	4	1	2	3	3
Impact on scale and distribution of capital formation	2	1	2	2	2
<b>Economic</b>					
Sustainability of market	1	0	1	1	1
Impact of insurance as an institutional investor	0	0	0	0	
Impact on labor market productivity	0	0	0	0	0

*Source:* Authors.

*Note:* VHF = voluntary health financing; VHI = voluntary health insurance.

of the effects of market structure and the structure of provider and factor markets; and of the impact of voluntary health insurance on financial protection and the quality and cost of services.

Topics comparatively well covered by the literature include demand for voluntary health insurance by consumer type, elasticity of demand, and impact on access to services.

The literature on voluntary health financing is at a formative stage. Key definitions vary from text to text; data sources and sets change from year to year; and analytical tools are often partial, theoretical, or both.

Table A.4 summarizes the literature on health care financing options, starting with country studies and followed by regional studies. The table indicates significant coverage in the literature on LMICs only for community-based health insurance or community financing in general. Little literature specifically relates to private health insurance (PHI) in LMICs, which is usually referenced in non-LMIC articles and papers. Virtually no empirical evidence on the impact of private health insurance in LMICs appears to exist. The bulk of the references to such insurance are either stand-alone references or are related to social health insurance in non-LMIC countries (Australia, Canada, European Union member states, and the United States, among others).

Of particular interest in the topical literature is the feasibility of various forms of voluntary private health insurance in addition to basic coverage available through social health insurance. Such articles represent the largest share of cited references (31). Sixteen of the 86 references were global in scope, and 12 of the articles were primarily theoretical or conceptual and had no specified geographic context. In country-specific analyses, the United States had the most references (10), followed by Australia (4) and the United Kingdom (3).

## **DEFINITIONS AND FRAMEWORKS**

Clear definitions and robust frameworks are essential to avoid confusion and flawed or incomplete analysis. Some good work has been done on both definitions and frameworks, but neither is yet widely adopted in either primary or secondary research on this and related topics.

### **Definitions**

PHRplus has prepared an excellent glossary of health reform terms ([www.phrplus.org/Pubs/tools1.pdf](http://www.phrplus.org/Pubs/tools1.pdf)). The World Bank ([www.worldbank.org/hnp/hsd/](http://www.worldbank.org/hnp/hsd/)), the European Observatory on Health Care Systems ([www.euro.who.int/observatory/Glossary/Toppage?phrase=A](http://www.euro.who.int/observatory/Glossary/Toppage?phrase=A)), and Folland, Stano and Goodman (2004) have developed similar glossaries.

**TABLE A.4 Summary by Region and Type of Voluntary Health Financing or Insurance**

<i>Reference</i>	<i>CBHI and SHI</i>		<i>PHI and SHI</i>		<i>CBHI and SHI reinsurance</i>		<i>Community financing</i>	<i>Financing in general</i>	<i>Grand total</i>
<b>Country</b>									
Australia			2	2					4
Belgium				1					1
Burkina Faso	1								1
Cambodia					1				1
Canada				2					2
Chile				1					1
Congo, Dem. Rep. of	1								1
Croatia				1					1
Germany		1	1						2
India	1								1
Israel				1					1
Jamaica				1					1
Netherlands			1						1
Senegal	1								1
South Africa			1						1
Spain				2					2
Taiwan (China)				1					1
Thailand	1								1
United Kingdom			1	2					3
United States			5	5					10
Vietnam				2					2
<b>Region (or group of countries)</b>									
Africa, Asia		1					3		4
Africa, Asia, Latin America							1		1
Argentina, Chile, and Colombia				1					1
Asia, Latin America					1				1
Benin, Kenya, Zambia							1		1
Denmark, Finland, Iceland, Norway, Sweden								1	1
European Union			2					1	3
European Union and United States				1					1
Ghana, Cameroon	1								1
Latin America								1	1
Sub-Saharan Africa	3								3
Uganda, Philippines						1			1
<b>Global</b>	2	1	2	3	2	2	1	7	16
<b>Unspecified</b>	1		2	5		1		3	12
<b>Grand total</b>	<b>12</b>	<b>3</b>	<b>17</b>	<b>31</b>	<b>2</b>	<b>2</b>	<b>6</b>	<b>13</b>	<b>86</b>

Source: Authors.

Note: CBHI = community-based health insurance; PHI = private health insurance; SHI = social health insurance.

### *Voluntary Health Financing*

In this appendix, the phrase “voluntary health financing” is used to describe a group of financing functions (financing), undertaken for a particular purpose (health), in a particular manner (voluntary). “Financing” is used as a generic term for four functions: the collection, allocation, and pooling of funds and the purchasing of services with those funds. These functions are examined below.

“Health” is used to describe personal health care services (that is, curative and preventive interventions). Thus, financing of public health interventions and personal care are not the principal focus of the appendix.

“Voluntary” is defined as actions that are not compulsory. “Compulsory actions” are defined as those required (for example, mandated or commanded) by any arm of government. This definition reflects one of the definitions of “voluntary” in the *Oxford Concise Dictionary* (Sykes 1976). Voluntariness is considered a defining characteristic of the topic for analysis for two reasons. One, it is an important characteristic of the economic principal (the consumer) rather than a characteristic of an economic agent. Two, the characteristic as defined has a clear boundary and therefore can be empirically analyzed.

Public organizations and private organizations can provide voluntary health financing products (both insured and noninsured). Private organizations can be “for profit” (that is, profit distributing), “not for profit” (not profit distributing), or charitable. In high-income countries, private organizations providing voluntary health financing products are often subject to government (or government-mandated) regulation.

### *Insurance and Health Insurance*

Outreville (1998) defines insurance as “a technique for financing risks by combining a sufficient number of loss exposure units to make the loss predictable.”

Health insurance has been defined variously as “a mechanism whereby the risks of incurring health care costs are spread over a group of individuals or households” (Arhin-Tenkorang 2001), “[an instrument] to provide an individual with financial coverage against the risk of illness,” and “access to care with financial risk protection” (Kutzin 2001).

An “ideal” insurable risk is simple and static and has the following additional characteristics: loss results from an accidental hazard not under the control or influence of the insured; individual “exposures” are unpredictable; population “exposures” are predictable and consistent; and “loss exposure” is calculable, and the resulting premium is economically feasible to people “at risk” (Outreville 1998).

Health care risks are complex, dynamic, influenced by lifestyle and behaviors; in part predictable (preexisting disease or identified predisposition); financially calculable but informed by a high labor cost component and potentially high levels of technical innovation and change, both inducing inflationary pressure; and not economically feasible, at the individual or household level, for all people “at risk.”

These characteristics make the financing of health care risks technically challenging and imply trade-offs between meeting present needs and making prudent investments for the future. Trade-offs also exist between providing larger volumes of service or providing fewer services at a potentially higher quality.

The OECD has suggested that prepayment is also a defining characteristic of health insurance; but theory suggests this may not be the case. Insurance can be regarded as a binding contract between an agent and a payer. Such a contract can, in principle, be paid for in advance, in installments, or retrospectively.

“Voluntary health insurance” (VHI) can be defined as insurance-based “voluntary health financing” products.

“Private health insurance” can be defined as any health insurance provided by a “private” (nongovernment) organization. Such insurance could be either compulsory or voluntary. The latter is referred to here as “voluntary private health insurance” (VPHI). In Ireland and Denmark, voluntary health insurance has been provided by public agencies.

In this appendix, “community financing” and “community-based health insurance” fall under the umbrellas of voluntary health financing and voluntary health insurance, respectively. However, such community-based arrangements are not generally considered “private,” except perhaps to the extent that government involvement is totally absent (which the literature shows has been detrimental to the arrangements’ success). Even in the case of government exclusion, such arrangements are typically not considered private, though if initiated without mandate, they are clearly voluntary.

### ***Social Health Insurance***

As defined above, voluntary health financing often includes some types of social health insurance, which *A System of Health Accounts* (OECD 2000) defines as insurance in which “the policy holder is obliged or encouraged to insure by the intervention of a third party.” An insurance program is designated an SHI program if at least one of the following conditions is met: (1) participation in the program is compulsory either by law or by the conditions of employment, (2) the program is operated on behalf of a group and restricted to group members, or (3) an employer makes a contribution to the program on behalf of an employee. Thus SHI programs designated under the second half of condition 1 or under conditions 2 or 3 would fall within the orbit of voluntary health financing.

*Interaction of Private Health Insurance and Social Health Insurance.* Much of the literature on the economic theory of health insurance assumes that such insurance becomes the *principal source* of funding of health care for beneficiaries, thereby “crowding out” other out-of-pocket expenditure. But the situation becomes more complicated when a person obtains or becomes eligible for two or more types of voluntary health insurance or becomes eligible for mandatory insurance (perhaps social insurance) and also obtains voluntary insurance. Such a situation is common.



The OECD has developed a typology of the roles or functions of “additional” health insurance that proposes that second or subsequent insurance can play one of four main roles: to duplicate, substitute, supplement, or complement the principal source of insurance (OECD 2004b). The OECD definitions are reproduced in box A.1. A perceived weakness of the OECD definitions (principally the definition of supplementary insurance) is that they do not distinguish types of insurance that can be combined at the point of use from those that cannot.

#### **BOX A.1 OECD DEFINITIONS OF THE FUNCTIONS OF PRIVATE HEALTH INSURANCE**

**Primary PHI:** private insurance that represents the only available access to basic health cover because individuals do not have public health insurance. This could be because there is no public health insurance, individuals are not eligible to cover under public health insurance, or they are entitled to public coverage but have chosen to opt out of such coverage:

**Substitute:** private insurance for health costs, which *substitutes for cover which would otherwise be available* from a social insurance or publicly financed insurance or employer’s schemes.

**Principal:** private insurance for health costs, which for the insured individual represents the *only available access* to cover where a social security scheme does not apply. This includes employer’s compulsory schemes if cover is privately insured or self-insured.

**Duplicate PHI:** private insurance that offers cover for *health services* already included under public health insurance. Duplicate health insurance can be marketed as an option to the public sector because, while it offers access to the same medical services as the public scheme, it also offers access to different providers or levels of service, such as: i) access to private health facilities that are not accessible through public insurance when the full cost of the service is paid by private insurance; ii) access to fast/privileged cover by bypassing queues in public system; iii) access to care independent from referral and gate-keeper systems; iv) choice of doctor, hospital, or other health provider. It does not exempt individuals from contributing to public health insurance.

**Complementary PHI:** private insurance that complements coverage of publicly insured services or services within principal/substitute health insurance, which is intended to pay only a proportion of qualifying care costs, by covering all or part of the residual costs not otherwise reimbursed (e.g., co-payments).

**Supplementary PHI:** private health insurance that provides cover for additional health services not covered by the public scheme. Depending on the country, it may include services that are uncovered by the public system such as luxury care, elective care, long-term care, dental care, pharmaceuticals, rehabilitation, alternative or complementary medicine, etc., or superior hotel and amenity hospital services (even when other portions of the service (i.e. medical component) are covered by the public system).

*Source:* OECD 2004b, 18.

The OECD has proposed that health insurance be classified according to source of financing, level of compulsion, group or individual schemes, and method of premium calculation.

WHO has recently published a figure illustrating the range of types of voluntary health insurance/private health insurance (figure A.1). WHO regards the key dimensions as level of compulsion, nature of premium contribution, and nature of management.

## Frameworks

Frameworks inform the scope, content, and organization of analysis and evaluation. The frameworks most relevant to the present discussion are described below.

### *Framework for Health Economic Analysis*

Culyer and Newhouse (2000) have developed a schematic of health economics (figure A.2). This appendix is principally concerned with the literature on issues in domains C (demand), D (supply), and E (market analysis) that relate specifically to voluntary health financing. The schematic illustrates that issues in domains F (microeconomic appraisal) and G (planning, budgeting, regulation, and monitoring) also need to be addressed if the entire system is to be evaluated (see domain H).

### *Frameworks for Analyzing Health Financing*

Kutzin (2001), Mossialos and Thomson (2002), and Preker (2003) have developed frameworks for analyzing health financing and health insurance. This appendix evaluates outcome indicators derived from Preker's framework, which is presented in chapter 1 of this volume.

*Kutzin's Framework.* Kutzin (2001) follows Normand, as reported in Carrin, de Graeve, and Deville (1999), by asserting that evaluation of health financing options cannot be separated from consideration of wider health policy objectives. Kutzin seeks to analyze policy options "in terms of the extent to which the *function* [of health insurance] is enhanced." Kutzin defines this function of health insurance as "access to care with financial risk protection." To this end, Kutzin attempts to develop a "generic framework" ("unfettered by attachment to any particular organizational form of health insurance") to "conceptualize the disaggregated components of health financing sources, resource allocation mechanisms, and associated organizational and institutional arrangements."

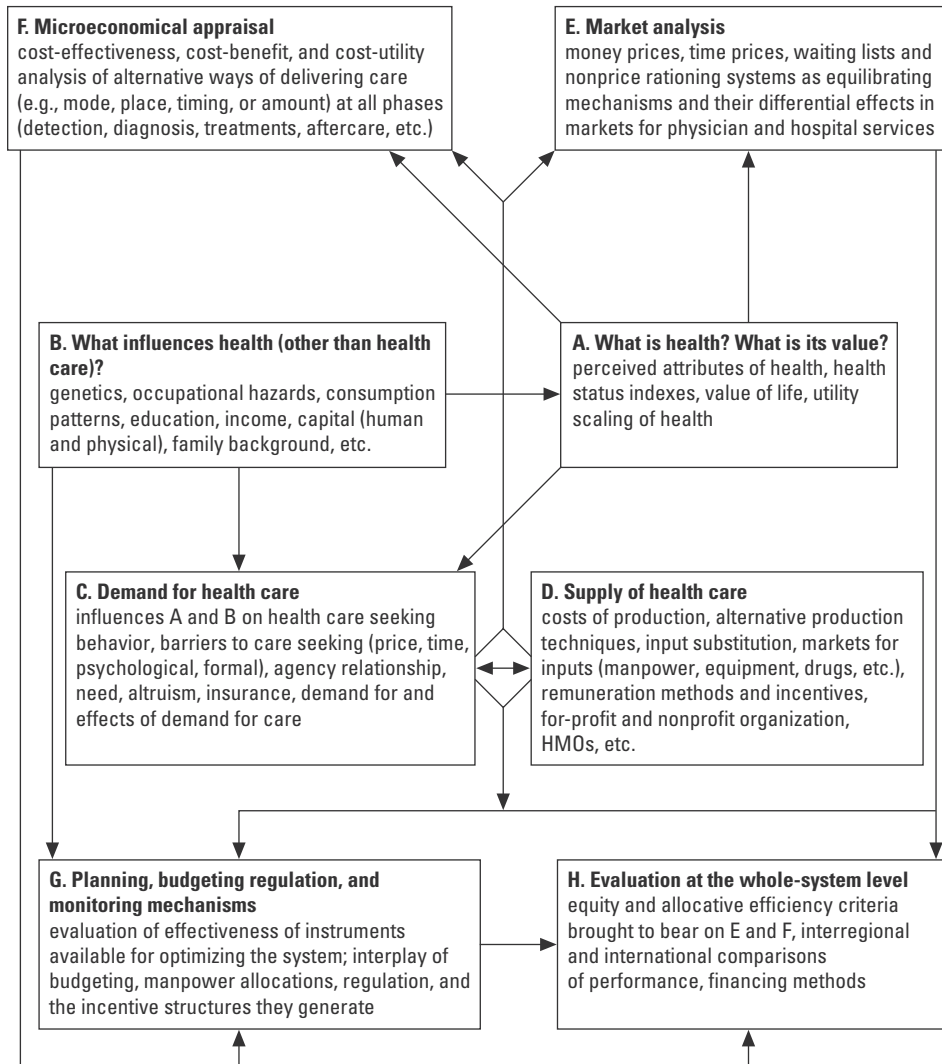
Figure A.3 presents Kutzin's framework. Note that Kutzin identifies three distinct "allocation" or redistribution mechanisms and two distinct "points" of payment ("contribution" or prepayment and "cost sharing" at point of use).

**FIGURE A.1 Types of Private Health Insurance**

	<i>Privately funded (private insurance)</i> ←					→ <i>Publicly funded through some form of taxation (public insurance)</i>				
<b>Type of enrollment</b> (voluntary–mandatory)	Voluntary	Voluntary	Voluntary	Voluntary	Mandatory	Voluntary	Mandatory	Voluntary	Mandatory	Mandatory
<b>Type of contributions</b> (risk rated–community rated–income based)	Risk rated	Risk rated	Community rated	Community rated	Community rated	Income based	Community rated	Income based	Income based	Income based
<b>Type of management</b> (private for-profit–non-profit public)	For-profit commercial	Nonprofit	Nonprofit community	Public	Nonprofit	Nonprofit	For-profit commercial	Public	Nonprofit	Public
<b>Examples</b>	Tata American International Group (AIG) in India	British United Provident Association (BUPA) in the United Kingdom	Self-Employed Women's Association (SEWA) health insurance in India	Medibank in Australia	Collective Health Care Institutions (CHCI) in Uruguay	Some private health insurance plans (known as ISAPRES) in Chile	Various in Switzerland	Seguro Popular in Mexico	Various in the Netherlands	Slovakia

Source: Figure produced by the World Health Organization and reproduced from Sekhri and Savedoff (2005).

**FIGURE A.2 Schematic for Health Economics**

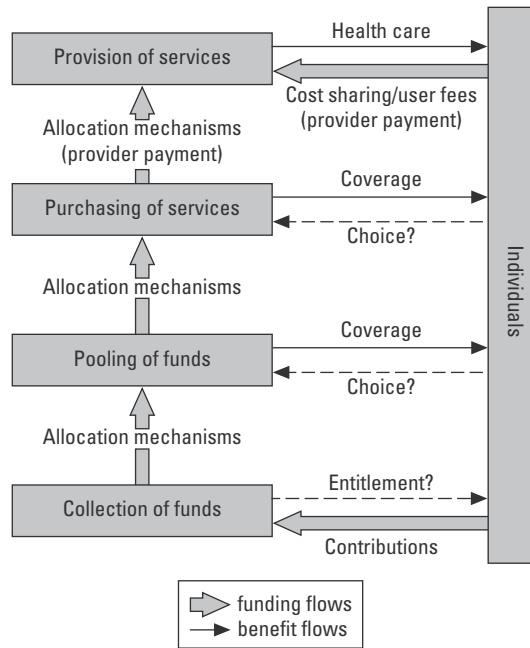


Source: Culyer and Newhouse 2000.

Mapping of bilateral or multilateral subsidies to pools, purchasers, or providers would be necessary to build a complete picture of the resource allocation and distribution process.

Kutzin clarifies conceptual distinctions among initial funding sources, contribution mechanisms, collecting organizations, pooling organizations, allocation mechanisms, and purchasing organizations, as well as categorizes options under each function.

FIGURE A.3 Kutzin's Framework of Health Financing Functions



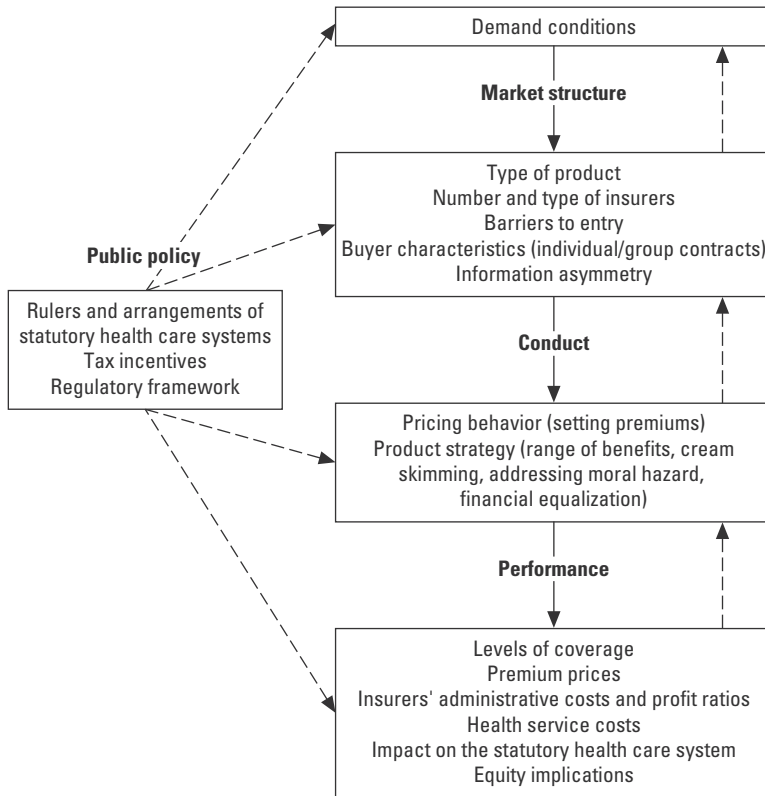
Source: Kutzin 2001.

Collecting, pooling, and purchasing functions can be undertaken by different organizations, or the functions can be undertaken by one or more organizations in different combinations. For this reason, Kutzin calls for analysis of how functions are “integrated within or separated across organizations” (that is, the extent of both vertical and horizontal integration). Kutzin draws no conclusions about the costs and benefits of competition between purchasers and insurers but summarizes the cases for and against such competition.

Kutzin also highlights the interdependence of regulation and information as key policy tools to enhance the insurance function and asserts that “it is in the interests of the system for regulatory and informational activities to be implemented for the population as a whole.” Kutzin makes general recommendations about such activities.

*Mossialos and Thomson Framework.* Mossialos and Thomson (2002) use a not dissimilar framework to undertake a major evaluation of voluntary health insurance in the European Union. Five features of their framework, summarized in figure A.4, are worth highlighting. First, the public policy or *institutional* context directly affects every component of the framework. Second, the framework recognizes the importance of market structure. Third, it highlights the importance

**FIGURE A.4 Framework for Analysis of the Market for Voluntary Health Insurance in the European Union**



Source: Based on Mossialos and Thomson 2002.

of *conduct*, though the principal focus is the conduct of the suppliers of insurance rather than the conduct of consumers or providers of health care services. Fourth, the framework includes feedback mechanisms (for example, performance affects conduct and conduct affects market structure, which affects demand). Fifth, the framework does not consider the effects that market structure and the conduct of health services providers and producers of key resources (such as pharmaceuticals and medical schools) can have on the supply of and thus the demand for health insurance.

*Preker's Framework.* Preker has developed a similar framework to analyze health care financing arrangements. This framework is depicted in chapter 1 of this volume.

Preker covers much the same ground as Kutzin (2001) and Mossialos and Thomson (2002) but uses a different vocabulary. What Mossialos and Thomson call the

“public policy” domain, Preker calls the “institutional environment.” What Mossialos and Thomson call “market structure,” Preker calls “organizational structure.”

Preker’s framework introduces two dimensions not covered (at least in the same way) by the previous frameworks. One is “management attributes” of the suppliers of insurance—attributes that allow for detailed consideration of what health insurers do and how they do it. In a sense, these attributes approximate the “conduct” of the insurance domain in the Mossialos and Thomson framework. The second dimension is a set of “intermediate performance indicators”—that is, indicators of progress in achieving health, protecting people from impoverishment, and combating social exclusion. Preker notes that experts are still debating which indicators best capture such progress (see chapter 1). Ekman (2004) concurs: “To improve the reliability and validity of the evidence base, analysts should agree on a more coherent set of outcome indicators and a more consistent assessment of these indicators.”

This appendix examines the robustness of the empirical evidence supporting the effects that voluntary health insurance has had on five intermediate performance indicators put forth by Preker:

- providing financial protection against the cost of illness,
- expanding coverage and including a wide range of client groups,
- increasing disposable income and household consumption “smoothing,”
- increasing access to affordable health care, and
- improving labor market participation.

Researchers have evaluated VHI schemes on the basis of a wide range of indicators, systematically scrutinizing financial viability, benefit design, and administration and management of VHI offerings. An ILO discussion paper (2002a) found that many references to CBHI success reference increasing membership, increasing utilization, reduced out-of-pocket expenditures, scheme sustainability, and improved quality of care. The paper cautions that, particularly when considering the welfare impact on society at large, the more prevalent success indicators in the literature may not be indicative of superior performance. That Preker’s intermediate indicators are of greater value in assessing the impact of voluntary health insurance than his “ultimate” indicators is also evident from the demand-side story (box A.2) put forth by Wiesmann and Jütting (2001).

Intermediate indicators of overall performance in the 86 reviewed papers and articles are assessed below on the basis of Preker’s framework. Many of the articles are descriptive or anecdotal in nature and are not sufficiently analytically detailed to assess the five indicators. Some of the more theoretical papers lack empirical grounding. Those with econometric approaches of an empirical nature bring little conclusive insight into the effects of voluntary health insurance because of data limitations, flawed model design, or use of a research approach with little internal validity (although perhaps the best available approach given

**BOX A.2 A DEMAND-SIDE STORY FROM WIESMANN AND JÜTTING**

Assume that a health insurance scheme has been set up and that some people are willing to test the new financing option and demand health insurance, that is, they decide to pay the premium and become members for one year. A certain proportion of the insured will fall ill during that time and need care at the hospital or health post. Financial barriers to access are removed for them by the insurance: in spite of possibly lacking cash income at the time of illness and of user fees being relatively high with respect to their income, they can readily get treatment at the health facility. As a consequence, they do not have to search for credit or sell assets, and they recover more quickly from their illness because there are no delays in seeking care. Considering the fact that people in rural areas rely mainly on their labor productivity and on assets like livestock for income generation, a serious decline in income can be prevented as productive assets are protected and people can return to work sooner. Income is stabilized or, taken the sum throughout the year, may even be increased. Consumption will be more stable and probably even higher, which consequently would have beneficial effects for the health of all household members. Both increased consumption and better health contribute to overall welfare. Furthermore, the positive experience of some households or community members with health insurance in terms of immediate access to care and benefits for their health may create trust in the new institution, and will convince people to prolong their membership and lead others to join the scheme.

*Source:* Wiesmann and Jütting 2001.

constraints). Many articles simply do not objectively address any of the five indicators but focus instead on conceptual determinants for program success, likely reasons for failure, determinants of demand, or policy and regulatory issues.

Consideration of the evidence driving performance indicators is prefaced by a comprehensive summary of demand and supply factors for voluntary health insurance, with references to the literature for both LMICs and non-LMICs.

**DEMAND FOR VOLUNTARY HEALTH INSURANCE**

This section examines demand for voluntary health insurance—why, what, and how such insurance is purchased and why some people do not buy it.

**History of the Theory of Demand for Voluntary Health Insurance**

Nyman (2003) has described the evolution of the theory of demand for health insurance, since 1944, with admirable clarity. He chronicles and explains the contributions of, among others, von Neumann and Morgenstern, Friedman and



Savage, Arrow, Pauly, Feldstein, Manning and Marquis, and the RAND Health Insurance Experiment.

Folland, Stano, and Goodman (2004) have, following Pauly's broad approach, summarized "conventional" theory with respect to the demand for and supply of health insurance. In addition, they have addressed the related issues of consumer choice and demand, information asymmetry and agency, and imperfect information.

### **Why People Buy Voluntary Health Insurance**

Chapter 2 describes the principal motivation for purchase of health insurance as protection from financial shocks. However, it notes that evidence suggests a willingness by consumers in high-income countries (HICs) to pay a premium "loading" for voluntary health insurance in excess of the value usually attributed to risk aversion alone. "Loading" is defined as the excess for the price over a premium equal to the expected value of benefits.

Nyman (2003) has proposed an additional motivation for purchase of voluntary health insurance—namely, access to services that would otherwise be unaffordable to individual subscribers. The assumption is that such services are of high utility, high cost, and low frequency.

Development of managed care and managed competition (Schieber 1997), particularly in the United States and the European Union, suggests two related motivations. First, customers value additional advice regarding the appropriateness and technical quality of proposed clinical interventions, as well as advice about where to obtain optimal value for money. Second, customers value protection from supplier-induced demand and poor-quality clinical services.

Conventional economic theory focuses on the financial protection motivation. In practice, other motivations may support or dominate the decision to purchase: the desire for an agent to guide decisions about health services and providers; the desire to use the purchasing capability of an insurer to gain access to services of higher quality, more quickly, or both; and the desire (especially by employers) to use the informed purchasing agency of health insurance to manage sickness absence and improve labor productivity. These motives are consistent with Preker's intermediate performance indicators.

### **Global Analysis of Demand for Voluntary Health Insurance/Private Health Insurance**

The literature review revealed one global analysis of demand for private health insurance. Datamonitor (2004) reported that the global health insurance market reached a value of \$352 billion in 2002; the compound annual growth rate (CAGR) was 5.7 percent for the period 1998 to 2002. This growth was driven by the U.S. market (CAGR 8.8 percent) but dampened by a stagnant Asia-Pacific market (CAGR 0.01 percent).

Datamonitor reported the following regional market shares (by value) for 2002: United States, 57.7 percent; Asia-Pacific, 23.9 percent; Europe, 13.2 percent; and the rest of the world, 5.2 percent. In 2002 Japan was the second largest country market after the United States, but the report noted that China might become the largest market.

Datamonitor also reported that the Asia-Pacific market (Japan and China in particular) is characterized by individual and family policies, which are often linked to life insurance. At present 12 million Chinese nationals (approximately 1 percent of total population) are estimated to depend on “commercial health policies,” the main provider of which is the China Life Insurance Company.

Datamonitor projects that the global market for private health insurance will grow by a CAGR of 6.0 percent in the period 2002–07, with a CAGR of 5.1 percent in Asia-Pacific (the latter rising from 2.3 percent in 2002 to 6.6 percent in 2007). Over the same period, the CAGR of private health insurance in Europe will vary by country (for example, France, 2.1 percent; Germany, 4.0 percent; United Kingdom, 8.3 percent), reflecting different roles and market conditions.

### **Analysis of Demand by Characteristics**

This section examines demand by role, consumer type, and organization or supplier type.

#### ***Demand Analyzed by Role***

Mossialos and Thomson (2002) made an attempt to describe some of the markets for substitutive, supplementary, and complementary voluntary health insurance within the European Union. Their analysis includes some information on demand in these markets (Mossialos, Thomson, and Busse 2004).

Building on the work of Mossialos and Thomson, Colombo and Tapay (2004) published a groundbreaking analysis of private health insurance in OECD countries. Their analysis includes a country-by-country summary of the percentage of the population covered by private health insurance, such insurance as a percentage of total health expenditure, and types of private coverage. They also provide country-by-country examples of benefits covered by each type of private health insurance.

In all OECD countries except Belgium, Germany, Mexico, the Netherlands, Switzerland, and the United States, private health insurance does not play a substantial role as the primary (principal or substitutive) source of funding. In Belgium and Germany, it plays a substitutive role, and in the other four countries, a primary role.

The literature review revealed no comparable empirical analyses of demand by PHI type in LMICs. In many LMICs, the existing or potential markets would probably be for private health insurance or voluntary health insurance in a principal or duplicate role. The review did identify an article that theorizes about welfare comparisons among mandatory, voluntary, and mixed markets in health

insurance where voluntary health insurance plays a supplementary role (Hansen and Keiding 2002).

### ***Demand Analyzed by Consumer Type***

Studies of consumer type by country and type of product are examined below.

*Subscriber Characteristics in HICs.* Mossialos, Thomson, and Busse (2004) describe subscriber characteristics in Austria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. They confirm that most subscribers to complementary and supplementary as well as substitutive VHI coverage are from higher-income groups, and they identify age, gender, occupational status, educational status, and area of residence as determinants of willingness to purchase such coverage. Colombo and Tapay (2004) also summarize evidence regarding the characteristics of PHI subscribers across 22 countries in the OECD. Wallis (2004) deals with characteristics of PHI subscribers in the United Kingdom.

*Group Policies in HICs.* Both Mossialos, Thomson, and Busse (2004) and Colombo and Tapay (2004) highlight important differences between the subscriber, product, and pricing characteristics of individual policies and those of group policies. Mossialos, Thomson, and Busse (2004) highlight work that suggests that group policies tend to cover younger, healthier, and more homogeneous populations (Gauthier, Lamphere, and Barrand 1995). Colombo and Tapay (2004) stress some of the more positive characteristics of group policies: lower price, group rating, and “an important role” in fostering insurance portability. In addition, group schemes, because of their size and capacity to negotiate contracts, may play a role in leveraging increasing efficiency and other positive characteristics of VHI markets (for example, “active purchasing” and quality assurance).

*Demand by Consumer Characteristics in LMICs.* Three articles offer particularly thorough and rigorous analyses of the characteristics of PHI or VHI subscribers or consumers in LMICs. In an analysis of demand for private voluntary health insurance, Liu and Chen (2002) examine methods to undertake such analysis. Jowett, Contoyannis, and Vinh (2003) analyze consumer characteristics in an exploration of the impact of public voluntary health insurance on private health expenditures in Vietnam. Supakankunti (2000) highlights the risks of adverse selection in flat-rated schemes targeting the rural poor in an analysis of the characteristics of enrollees in the Thai Health Card Fund scheme.

### **Demand by Organization or Supplier Type**

No quantitative analysis of demand by supplier type exists. Mossialos and Thomson (2002) distinguish VHI organizations in terms of their legal status (mutual, provident, or commercial) and degree of specialization in health. Colombo and

Tapay (2004) provide a fuller discussion of supplier types along similar lines, highlighting, for example, the existence of state-owned VHI insurers in Australia and Ireland and the various models of relationship (vertical integration) between insurers and health services providers. But neither set of researchers analyzes the distribution of demand among various organization types. Atim (1999) attempts a typology of nonprofit VHI organizations in Sub-Saharan Africa but does not assess the impact of organization type on demand.

### *Price Elasticity of Demand for Voluntary Health Insurance*

Like many other goods, voluntary health insurance exhibits modest price elasticity. In some contexts, it has been able to introduce major annual price increases without major decreases in demand. This ability implies high user satisfaction or consumer acceptance of inflation in the price of covered services, nondecreasing utilization rates, and coverage of new medical technologies that consumers perceive to be more necessary than discretionary (that is, inelastic).

Mossialos and Thomson (2004) report evidence on price elasticity in voluntary health insurance in the United States, Spain, and the United Kingdom:  $-0.03$  to  $-0.54$ ,  $-0.44$ , and  $-0.003$  to  $-0.044$ , respectively. They suggest that the smaller effect of price on demand in the United Kingdom may be attributed to the wealth of U.K. subscribers.

### **Factors Affecting Demand for Voluntary Health Insurance**

Much of the economic theorizing on demand constraints focuses on problems that may arise due to the conduct of different parties within a health system. Such conduct is invariably referred to in disparaging terms in economic and policy analyses even though it may be rational in light of an actor's endowments and incentives.

#### *Cream Skimming by Insurers*

Insurers may constrain demand by cream skimming—setting prices or reserves at levels perceived to be too high or too low, while implementing policies to control use of existing and new technologies. Pauly (1992) has defined cream skimming as selection of individuals at low risk of health problems—an economically rational behavior by insurers if, and only if, the net profitability, predictability, or both of such consumers is likely to be higher than that for high-risk consumers. If the premiums and loading paid for the latter is proportionate to their anticipated benefits, high-risk individuals should, ipso facto, be the preferred risk, because they bring in a higher per capita income. Any attempt, on equity grounds, by governments to require departures from a risk-rated approach to premium collection from VHI payers is likely to benefit from establishment of risk equalization, public subsidy mechanisms, or both to remove, or at least attenuate, the economic distortions that underlie this behavior. The literature presents little evidence of the presence of cream skimming.

### *Setting of Reserves*

The setting of reserves at too high or too low a level can, in theory, significantly affect demand. If set too high, the consumer pays the opportunity cost of unnecessarily tied up capital. If set too low, the consumer is likely to perceive the scheme's risk of failure and the consequent loss of paid-for entitlements. The literature presents no evidence that reserves set too low constrain demand.

### *Controls on Benefit Utilization and Risk Recalibration*

Insurer or regulatory policies that seek to control utilization of both existing and new technologies can constrain demand if they are perceived to be too tight or too lax. If control is too tight, the perceived use value of the insurance will diminish. If control is too lax, the consumer might become concerned about the risk of moral hazard altering the behavior of other beneficiaries.

An associated matter with similar effects on demand is how insurers treat the recalibration of risk at the end of each insurance period. Insurers may seek to anticipate some component of recalibration in the initial premiums—that is, to overprice in the first instance to avoid the impression of premium inflation when risks actually increase. Again, the literature presented no evidence of these effects.

### *Moral Hazard by Consumers*

Nyman (2003) defines moral hazard as “a change in behavior due to becoming insured.” Chapter 2 distinguishes two types of moral hazard. Type 1 arises if the presence of insurance affects the actions of the insured in a manner that influences his or her risk of illness. Type 2 arises if the presence of insurance affects the amount and cost of care used. Type 2 moral hazard may be induced by consumers, providers, or both and may be beneficial if preinsurance use of health care services was clinically suboptimal.

Concerns about both types of moral hazard when characterized by overconsumption may, at least in theory, increase demand for voluntary health insurance. However, both types of moral hazard may be attenuated in health insurance, because the benefits of insurance are often associated with discomfort, pain, or even risk of injury or death. Moreover, consumers in rural areas of LMICs often incur significant transportation costs to reach a physician or hospital provider. Even if such consumers had 100 percent coverage (with zero user fees at the point of service), the presence of direct and unavoidable nonmedical costs would deter any additional price-induced demand.

Various researchers have commented on type 2 moral hazard, but the empirical basis of their remarks is often unclear. Ahuja and Jütting (2003) have argued that such moral hazard is “unlikely to pose any great difficulty” in low-income settings where the supply of health care services is, and is expected to remain, low. However, Ekman (2004) cites evidence from a study by Atim and Sock (2000) asserting that “moral hazard does lead to irrational use of resources.”

Sapelli and Vial (2003) report on a cross-sector analysis of moral hazard in mandated health insurance in Chile, where coverage can be taken with public or private carriers (those in formal employment tend to favor private carriers). The analysis indicates that, in this case, moral hazard is marginally less of a problem for private carriers than for public carriers. However, the findings suggest that the employment terms or educational status of workers may be a more important determinant of moral hazard than type of carrier.

### *Adverse Selection by Consumers*

Folland, Stano, and Goodman (2004) define adverse selection as “a situation often resulting from asymmetric information about which individuals are able to purchase insurance at rates that are below actuarially fair rates plus loading costs.” Adverse selection tends to arise when consumers know more about their health status than insurers and do not disclose the facts necessary for the insurer to offer them an actuarially fair premium. Schemes suffering from adverse selection exhibit losses and falling reserves. In these circumstances, low-risk individuals tend to exit a scheme, the market, or both, leaving the high-risk individuals in a scheme that becomes unsustainable. Within the industry, such a dynamic is known as a death spiral.

Many mechanisms can ameliorate adverse selection: full underwriting (prior clinical examination of the insured’s health status), targeted benefit exclusions, and waiting periods prior to benefit entitlement. The only way to prevent adverse selection is to mandate or promote risk-rated premium collection and full disclosure of medical records/histories to insurers.

Many researchers have examined the risks of adverse selection in health insurance. Belli (2001) has explored (in theory) the equilibrium of various health insurance policy options in the presence of adverse selection. He concludes that standard contracts and premium rate restrictions can exacerbate the problem of adverse selection and lead to market instability.

Van de Ven and van Vliet (1995) note the difficulty of untangling moral hazard and adverse selection in their review of major empirical analyses of adverse selection in health insurance in high-income countries. They observe that adverse selection can sometimes be ameliorated, but not extinguished, by requiring household rather than individual coverage. They also observe that the products and carrier switching characterized by high adverse selection can be attenuated (at the cost of reducing effective choice) by increasing the transaction costs of switching plans.

Barrett and Conlon (2003) and Butler (2001) suggest that adverse selection is reemerging in the Australian health insurance market following revisions to community rating provisions in 1995 and simultaneous increases of tax relief. Supakankunti (2000) has collected evidence on the prevalence of adverse selection in Thailand’s Health Card PVHI scheme.

Many researchers have addressed regulatory approaches to managing the adverse selection death spiral that may undermine the market equilibrium between

low- and high-risk consumers. Two sets of researchers have approached the topic from a purely theoretical perspective. Hansen and Keiding (2002) use equilibrium refinements of Rothschild and Stiglitz (1976) to show that compulsory basic coverage (for example, social health insurance) alongside voluntary competitive insurance is at least as welfare enhancing as compulsory or competitive alternatives alone. Feldman, Escibano, and Pellise (1998) use Rothschild and Stiglitz's equilibrium refinements to demonstrate that mandated government pools with comprehensive coverage are not as efficient as partial compulsory coverage in a market in which private firms sell supplementary voluntary insurance.

### **SUPPLY OF VOLUNTARY HEALTH INSURANCE**

Chapter 3 groups factors that determine the supply of voluntary health insurance into four main categories:

1. factors affecting the composition and scale of proposed benefits packages;
2. factors affecting the price that can be charged for the proposed insurance;
3. factors affecting the health insurance market's degree of vertical integration, which affects the quality and cost of benefits; and
4. degree of concentration in the market.

Zweifel, Krey, and Tagli (2005) provide a detailed economic commentary on each of these factors. But their thesis is that supply is determined by insurers' perception of their control over risks assumed in relation to product, price, and market conditions.

The analytic approach taken in this review is close to, but distinct from, the approach taken by Zweifel, Krey, and Tagli. The underlying thesis is that the supply of voluntary health insurance is dependent on a business organization's positive assessment of

- its ability to manage income, expenditure, asset, and liability risks;
- its ability to maintain a competitive position; and
- the cumulative effects of the organization's behavior and the behavior of other actors in the same and related markets.

### **Risk Management**

This section deals with income, expenditure, asset, and liability risks.

#### ***Income and Expenditure Risks***

A fundamental distinction can be made between income and expenditure risks, though some components of risk have both income and expenditure implications.

The extent to which health insurance organizations address and reduce these risks can be regarded as a measure of their management competence. When reduction of these risks is unambiguously aligned with the interests of consumers, suppliers (especially health services providers), and the general public, public policy will tend to support insurers' efforts. When provider and consumer interests, the public interest, or both are perceived to conflict with insurer interests, controversy often arises. For example, many commentators have sought to defend adverse selection by people with chronic illness, a form of economic free-riding, on equity rationales drawn from egalitarian liberalism. This attempt underlines the point that explicit ethical perspectives should inform policy.

### *Asset and Liability Risks*

Asset risks are risks to working and capital assets of a business; liability risks are perceived or known future risks. Sound management of asset and liability risks are rarely considered, certainly not in any depth, in the economic literature.

### **Market Structure and Business Behavior in Theory**

Scherer (1987) has summarized economic theory about relationships among market structure, price competition, and technological innovation. Key issues relating to market structure are the definition of the relevant "product market" and the definition of that market's "geographic boundaries." The simplest index of a market structure is the "concentration" of each side (sellers and buyers).

The "seller concentration ratio" is often defined as the ratio of the (generally four) leading sellers' sales to total market sales. Scherer reports that comparison of seller concentration ratios for similarly defined industries in various countries reveals that the ratios are positively correlated, suggesting common variables. Scherer posits four key variables: economies of large-scale production, maturity and stability of relevant technologies, stability of consumer preferences, and constraints on inter-enterprise mergers.

### *Concentration and Innovation*

Kamien (1987) has reviewed recent economic theory on the relationship between market structure and innovation. He reports that seminal work by Joseph Schumpeter (1942) led, in the 1960s and 1970s, to empirical investigation of the hypotheses that innovation is greater in monopolistic industries than in competitive ones and that large firms are more innovative than small ones. These investigations came to the conclusion that, on one hand, too much competition can damage innovative activity, because innovators are unable to capture enough of the reward, but on the other, too much monopoly leads to complacency.

### *Horizontal and Vertical Integration*

Within the market structures of voluntary health insurance in numerous countries, competitive advantages can arise from strategies of horizontal and vertical



integration into related markets. Integration in either direction may be “hard” or “soft.” Hard integration entails direct acquisition and control of an element of the related market. Soft integration can entail related markets’ alignment of business processes; active management, “sharing,” or redistribution of particular risks; or simply reciprocal sharing or selling of information and data.

Strategy, structure, and principal objective are often closely connected within VHI organizations and are often related to the background of the organizations. Horizontal integration into other insurance markets is often a preferred strategy for organizations with a financial services/insurance background and for which risk diversification and increases in the scale and scope of insurance activities are major objectives. Vertical integration into provision and related health services markets is often a preferred strategy for health insurance organizations with a health services background. For such organizations, a major objective is often to increase the perceived and actual value of benefits. Neither strategy is exclusive, and both can be related to drives for competitive advantage, market share, and profit. Bowman and Faulkner (1997) have provided a simple but effective framework for analysis of the “strategic pathways” available to firms in complex competitive environments.

### *Distribution of Financing Functions and Risks*

Related but often neglected issues are distribution of VHI financing functions among different organizations and distribution of VHI financing risks beyond the primary health insurance organization. In principle, nothing prevents a health insurance company from contracting out collection of premiums, administration of benefits, and development of provider relations (including negotiation of provider payment arrangements). Third-party administration organizations sometime carry out the second function (and occasionally the third). In such arrangements, the principal financing risk (both in terms of income and expenditure risk) must remain with the primary health insurance company. But this company does not bear all of the financing risk. Two principal instruments exist to redistribute part of this risk: provider payment mechanisms and reinsurance.

*Provider Payment Mechanisms.* Provider payment mechanisms can be used to pass unit-of-service price risks, quality-of-service risks, and even a certain volume of service risks to health services providers. Provider payment mechanisms should not be used to “dump” risks on providers in an arbitrary manner. Used judiciously, however, these mechanisms can place specific financial risks where the actual risk is incurred, thereby providing incentives to avoid or mitigate such risks. Langenbrunner and Liu (2005) provide a useful overview of this topic.

*Reinsurance.* Various types of reinsurance can mitigate the impact of unexpectedly high claims levels (Dror and Preker 2002). Commercial reinsurance, like primary insurance, uses the law of large numbers to protect individual books of insurance from the occasional incidence of high claims. It is not designed to

provide systemic cross-subsidies on a regular and ongoing basis. Reinsurers offer their products only to insurance businesses with actuarially sound books.

### *Information about Market Structures in HICs*

Bärnighausen and Sauerborn (2002) have written a carefully researched history of the evolution of health insurance in Germany from 1794 to 2000. Their paper examines how universal coverage took 118 years to achieve, how the voluntary system became a mandated system, and how the number of health insurance institutions increased and then consolidated as the market matured. The paper also examines how equity in financing was improved and costs were contained and attempts to abstract lessons from the German experience for LMICs.

Mossialos and Thomson (2002) report evidence of the increasing concentration of European health insurance markets in the 1990s, noting that 25 companies wrote 54.8 percent of VHI premiums in 1998. They report that the share of the three largest insurers was 100 percent in Ireland, 92 percent in Luxembourg, 84 percent in Austria, 85 percent in Sweden, and 75 percent in United Kingdom. VHI markets are less concentrated in Portugal (31 percent), Italy (33 percent), and Belgium (49 percent).

Mossialos and Thomson also report that the 1994 EU Council Directive 92/49/EEC (commonly known as the third non-life insurance directive) has reduced price and product definition regulations and appears to have stimulated an increase in product innovation but not a decrease in premium prices. Mossialos and Thomson reflect on the possible impact of this product innovation on market segmentation and information asymmetry.

Colombo and Tapay (2004) offer a useful summary of product variation and substitution within and around the VHI market in OECD countries and comment specifically on medical savings accounts, long-term care insurance, disease-specific insurance, income replacement, and cash plans. With respect to the last three variants, Colombo and Tapay note that data are often missing or poor even in OECD countries.

### *Information about Market Structures in LMICs*

With one exception, the literature presents little consolidated information about the national market structure of VHI markets in LMICs. Work by Bennett, Creese, and Monasch (1998) on health insurance schemes for people outside the formal sector provides a rich source of primary data about 82 health insurance schemes in Africa and South and East Asia. Sara Bennett at Partnerships for Health Reform continues to build a global database of schemes and source material that perhaps could be consolidated into national market overviews.

The above-noted exception is Pramualratana and Wisbulpolprasert (2002). Their book reveals the complexity of providing a comprehensive account of health financing systems, delivery systems, and reform directions in a middle-income country. The chapter by Pityarangsarit and Tangcharoensathien describes the Thai

policy context and trends in demand and supply in “private” health insurance, including product innovation and market structure trends. In Thailand, as in other Asia-Pacific countries, a significant segment of PHI contracts are offered as extensions to group and individual life insurance products. According to Pityarangsarit and Tangcharoensathien, in 1999 Thailand had 6 composite (life/non-life) insurers (5 domestic, 1 foreign) and 20 domestic non-life insurers (14 miscellaneous insurers and 6 health-only insurers) offering health insurance. In addition, one foreign non-life insurer offered health insurance as one of many products.

### **Other Voluntary Health Financing Mechanisms**

This section describes the major literature on medical savings accounts and employer insurance and third-party administration.

#### ***Medical Savings Accounts***

In a thorough and judicious review of experience with medical savings accounts (MSAs) in China, Singapore, South Africa, and the United States, Dixon (2002) notes that such accounts are usually combined with some form of health insurance against catastrophic costs (public or private). MSAs are compulsory in Singapore and China (for urban workers) but voluntary in South Africa and in the United States, where they have evolved into health savings accounts. In Singapore, MSAs are state run; in the United States, they were offered as part of private health insurance. Regulations in different settings control contributions and eligible spending. Dixon concludes from a theoretical perspective that in the absence of risk pooling—and given weak controls over resource allocation, fee-for-service payments, and financial barriers to access—MSAs are inefficient and inequitable (compared with mandated health insurance), but she does not comment on whether they represent a positive step forward from the perspective of out-of-pocket expenditure.

#### ***Employer Insurance and Third-Party Administration***

None of the reviewed literature quantifies or evaluates the role of employer-borne insurance in LMICs. Nor did any literature systematically analyze the role played by third-party administrators (TPAs) in LMICs. As noted above, TPAs can play at least two distinct roles in health insurance: they can administer claims on behalf of an insurance company, and they can administer claims on behalf of an employer (or other entity) that carries the insurance risk.

TPAs could be of considerable interest to the World Bank and International Finance Corporation. They offer a pathway for insurers from HICs to enter an LMIC market, and gain market knowledge, without undue risk. In addition, establishment of high-quality TPAs that “service” the administration of many insurers could increase the “purchasing capability” of multiline insurers in LMICs without requiring those insurers to bear the full capital costs of developing such expertise.

### Provider Behaviors

As noted above, strategic behavior by consumers and insurance brokers, insurers, service providers and factor markets, and government and regulators can have negative effects on both demand for and supply of voluntary health insurance. Strategic behavior is an attempt to gain advantage from information asymmetry or positional market power (statutory, monopsony, monopoly, or oligopoly).

The reviewed literature presents relatively limited evidence about the nature, extent, and effects of supply-side strategic behavior by service providers, factor markets, governments, and regulators on the VHI market. This is not the case with respect to insurers.

Policy commentators often assert that insurers are tempted to cream skim low-risk individuals, but the literature review failed to identify any research that analyzed this topic in depth and furnished evidence that insurers do anything more than seek to protect themselves (using legal methods such as underwriting) from adverse selection and type 1 moral hazard. Van den Heever (1998), reporting on proposed developments in South Africa, is the only author in the review who comments, albeit briefly, on the possibility of strategic behavior by insurance brokers.

## PERFORMANCE AND IMPACT OF VOLUNTARY HEALTH INSURANCE

This section examines the available evidence on the impact of voluntary health insurance on health and other intermediate performance indicators.

### Impact on Health

The most relevant observations for LMICs regarding the relationship between voluntary health insurance and health may come from the United States because of the predominantly “primary” role that voluntary health insurance plays in that country. However, the distance between the United States and LMICs in terms of expenditure levels and use of technology could not be greater.

In a major review of the relationship among health insurance, health work, income, and education in the United States, Hadley (2002) concluded that “a mid-range estimate of the effect of extending health insurance coverage to all in the United States would be a 10–15 percent reduction in mortality rates of the uninsured.” Focusing on the impact of health insurance on health outcomes, he noted that the primary threats to the validity of observational studies are (1) reverse causality between health and either high or low use of medical care and (2) unobserved heterogeneity (that is, the effects of unobserved differences between insured and uninsured persons) that may affect whether individuals have insurance and their resulting health outcome. As noted below, the reviewed literature lacks the econometric techniques required to isolate and correct for the endogeneity attributed to self-selection into insurance.

Hadley's report also examines the Medicaid conundrum—that is, why expansion in Medicaid eligibility to low-income women and children failed to have positive effects on birth outcomes, children's health, or maternal health. Hadley asserts that to a large extent these anomalous findings can be attributed to reverse causation, temporal changes in Medicaid provider payments, substitution effects, and the fact that health insurance alone may be insufficient to overcome the effects of socioeconomic deficits. The last factor is significantly different from the preceding three if it implies that health insurance may be a necessary, but insufficient, intervention for improving the health status of the poor. If this is the case, the additional interventions need to be identified.

### Impact on Intermediate Performance Indicators

Rather than focusing on health outcomes exclusively, the analysis below summarizes the evidence in the literature pertaining to the above-noted intermediate performance indicators from Preker's framework. The analysis seeks to assess how robust the evidence is that private voluntary health insurance, of the types defined earlier,

- provides financial protection against the cost of illness,
- expands coverage to many client groups,
- increases disposable income and household consumption smoothing,
- increases access to affordable health care, and
- improves labor market participation.

Table A.5 categorizes assertions of the 86 items selected for further scrutiny in the literature review. These assertions are summarized whether or not a robust analytical approach was employed. If an item asserts that one or more of the above effects is probable or evident, the item has been assigned a plus (+) (some evidence for the indicator) or a minus (–) (some evidence counter to the indicator). Items with assertions that have more significant backing, whether case-study driven or empirically evident through a more analytical approach, have been assigned a ++ (moderate evidence for the indicator) or -- (moderate evidence countering the indicator). “For” implies that the indicator is realized (for/+ if, for example, private health insurance increases financial protection); “against” implies that the assertion runs counter to the indicator (against/– if, for example, private health insurance decreases access to affordable health care). The assignment +/- indicates some assertion both for and against the performance indicator in question.

Table A.6 presents the same categorization as that in table A.5 but excludes all papers and reports that are purely case studies, or otherwise anecdotal, descriptive in nature, or observational, as well as theoretical papers not based on some data analysis and simulations that are assumption driven. Thus table A.6 reflects only the “data-analytic” subset—that is, literature that attempts to use available

**TABLE A.5 Summary by Performance Indicator and Evidence Score (All Items)**

<i>All references</i>	<i>Overall performance indicator</i>				
	<i>Increasing financial protection</i>	<i>Expanding insurance coverage</i>	<i>Income and consumption smoothing</i>	<i>Increasing access to health care</i>	<i>Improved labor market participation</i>
<b>Evidence score</b>					
Moderate evidence supporting ++	5	3	0	5	0
Some evidence supporting +	4	17	2	15	0
Evidence for and against +/-	2	11	1	8	0
Some evidence countering -	3	8	1	10	0
Moderate evidence countering --	0	1	0	1	0
No evidence either way	72	46	82	47	86
<b>Total</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>
<b>Percentage</b>					
Evidence supporting indicator	10.5	23.3	2.3	23.3	0
Evidence counter to indicator	3.5	10.5	1.2	12.7	0
Evidence for both	2.3	12.7	1.2	9.3	0
No evidence either way	83.7	53.5	95.3	54.7	100

*Source:* Authors.

**TABLE A.6 Summary by Performance Indicator and Evidence Score (Data-Analytic Subset)**

<i>Data-analytic subset</i>	<i>Overall performance indicator</i>				
	<i>Increasing financial protection</i>	<i>Expanding insurance coverage</i>	<i>Income and consumption smoothing</i>	<i>Increasing access to health care</i>	<i>Improved labor market participation</i>
<b>Evidence score</b>					
Moderate evidence supporting ++	3	2	0	5	0
Some evidence supporting +	0	4	1	5	0
Evidence for and against +/-	0	1	0	0	0
Some evidence countering -	2	6	1	5	0
Moderate evidence countering --	0	1	0	1	0
No evidence either way	28	19	31	17	33
<b>Total</b>	<b>33</b>	<b>33</b>	<b>33</b>	<b>33</b>	<b>33</b>
<b>Percentage</b>					
Evidence supporting indicator	9.1	18.2	3.0	30.3	0
Evidence counter to indicator	6.1	21.2	3.0	18.2	0
Evidence for both	0.0	3.0	0.0	0.0	0
No evidence either way	84.8	57.6	94.0	51.5	100

*Source:* Authors.

data and a statistical or econometric approach to arrive at substantive conclusions. Of the 86 items referenced in table A.5, only 33 are referenced in table A.6. Of the 53 items not included, 20 are case studies; 6 are theoretical and grounded in expected utility theory; 5 are literature reviews; 3 are simulation driven; 2 summarize survey data; and the remaining 17 are anecdotal, conceptual (for example, framework analysis), or related to policy or benchmarking.

A comparison of tables A.5 and A.6 reveals that roughly the same proportion of items provide no evidence either way for any of the intermediate performance indicators, regardless of whether a data-analytic approach was taken. Among the data-analytic subset in table A.6, roughly 9 percent of items indicate that the VHI mechanism in question increased financial protection among plan members; 6 percent suggested that it did not. About 18 percent of items provided evidence that the presence of insurance expanded coverage in the target population; 21 percent provided evidence to the contrary (often due to public sector impact or consideration of nonmembers). About 30 percent of items provide evidence that insurance increases access to health care; 18 percent suggest the contrary. Contrary evidence on the “access” indicator is usually premised on the fact that the poorest of the poor are often excluded from voluntary health insurance—that is, from a societal rather than plan member viewpoint.

Of the 33 items in the data-analytic subset, the breakdown by type of insurance is as follows (counts in parentheses): community-based health insurance (3), private health insurance (7), private health insurance and social health insurance (16), social health insurance (1), community financing (1), and financing in general (5).

Of the five data-analytic items that provide evidence on increasing financial protection, the breakdown by type of insurance under consideration and evidence score is as follows: community-based health insurance + + (1); private health insurance – (1); private health insurance and social health insurance + + (1), – (1); and community financing + + (1).

Of the 14 data-analytic items that provide evidence on expanding insurance coverage, the breakdown is as follows: private health insurance + + (1), + (1), – (1), – – (1); private health insurance and social health insurance + + (1), + (2), +/- (1), – (5); and financing in general + (1).

Of the two data-analytic items that provide evidence on income and consumption smoothing, the breakdown is as follows: private health insurance and social health insurance + (1) and financing in general – (1).

Of the 16 data-analytic items that provide evidence on increasing access to health care, the breakdown is as follows: community-based health insurance + + (1), + (1); private health insurance + + (1), – – (1); private health insurance and social health insurance + + (2); + (2), – (5); social health insurance + (1); community financing + + (1); and financing in general + (1).

Evidence on the effects of insurance on income and consumption smoothing is little, and no evidence in the reviewed literature concerns the productivity-enhancing or labor market effects of voluntary health insurance. Wagstaff (2002)

notes that often the “broader issue of impoverishment associated with income loss through ill health is not considered, because the creation of schemes to protect people from such loss goes beyond the area of health policy as currently interpreted.”

### **VHI Performance and Impact in HICs**

This section of the review examines additional evidence regarding the impact of voluntary health insurance on access to health services and the resulting effects on the quality, efficiency, and responsiveness of such services in HICs. Also considered is the effect of insurance on protection against financial loss associated with health care shocks.

#### *Access to Health Services*

In the European context, Mossialos, Thomson, and Busse (2004) make two important observations. First, the extent to which voluntary health insurance affects access to health care depends in part on the characteristics of the statutory health system. Second, increased access is dependent on service availability, relevance and effectiveness, and utilization, and their equity effects on the overall distribution of services.

Mossialos, Thomson, and Busse note that supplementary VHI schemes often enable people to bypass waiting lists in the public sector and receive services from a wider range of providers but that if the schemes do not operate independently of the statutory health system, they “may distort the allocation of public resources for health care, which may restrict access for those who are publicly insured.” The authors do not explain why distortions might occur. (Perhaps they occur because of overall shortages of doctors, hospital beds, or both in the statutory health system.) Nor do they indicate that such shortages may be significant (and rectifiable) indicators of government failure.

Treatment of the efficiency of voluntary health insurance by Mossialos, Thomson, and Busse (2004) also suggests similar methodological gaps. They assert that such insurance is inefficient, because its published administration costs are higher than the published costs of statutory health services, but they do not adjust their calculations to reflect the benefits of the financial reserves of VHI organizations. They also appear uncritical of some of the apparently implausible figures given for the administration costs of statutory health services (for example, Italy, 0.4 percent). In addition, they only make passing remarks about the quality of services provided through voluntary health insurance and the levels of innovation found within the sector. Despite these shortcomings, the authors’ work must be acknowledged as groundbreaking in its attempt to systematize analysis of a complex market.

More recent work by Colombo and Tapay (2004) treats the topics of access, efficiency, quality, and responsiveness (choice and innovation) in more detail



and with more rigor. The following are indications of their summary assessments as distilled in the *OECD Observer* (2004):

- “When public cover is not comprehensive or universal, private health insurance enhances access to care. But such access is often inequitable...”
- “Private health insurance has had only minimum impact on the quality of care in most OECD countries since private insurers have not usually been engaged in significant efforts to influence the quality of the services they finance.”
- “Lack of vibrant price and quality competition amongst providers inhibits market forces and insurance markets, for example if providers dominate market power, leading them to demand high prices for health services and shielding them from insurers’ pressures to improve quality or cost effectiveness of care.”
- Regarding responsiveness, “private health insurance has improved individuals’ choice over health providers and timing of care in most countries with duplicate markets,” and “most private health insurance markets offer a wide array of products to consumers, allowing them to tailor their risk and product preferences.” But “an abundance of product choices can make it harder for higher-risk patients to find cover, to the extent it results in segregation of the market by risk level.”

### *Financial Protection and Insurance Coverage*

Several researchers have examined voluntary supplementary PHI schemes offered alongside social health insurance. Borrell (2001) considers social class inequalities that result from the crowding out of public insurance by supplemental private insurance in Spain. Costa and Garcia (2003) and Jowett (2003), in separate studies focused on Spain and Vietnam, respectively, also find evidence that private insurance crowds out government-sponsored insurance.

The literature review revealed one reference, Gabel (2003), that focuses specifically on the financial protection provided by individual and group voluntary health insurance in an HIC (the United States in 2000). The study quantifies conventional wisdom in the United States that group schemes offer broader coverage, fewer deductibles, and lower costs. The percentage of likely incurred expenses averaged 63 percent in individual insurance and 75 percent in group insurance. For the lowest-income 50 percent of users, individual insurance covered about 30 percent of incurred expenses compared with 67 percent under group coverage.

### *Distribution of Contributions and Benefits*

De Graeve and van Ourti (2003) have compiled a table of Kakwani indexes of sources of health care financing in selected European countries. The table reveals direct taxes as the most progressive source of funding, and social health insurance as the second. However, indirect taxes are almost invariably a regressive

source of funding. This finding is important, because indirect taxes are often a major source of government revenue in LMICs.

In every country in de Graeve and van Ourti's table, private health insurance is a less regressive source of funding than out-of-pocket expenditure and is in fact a progressive source of funding in seven of the selected countries. Private insurance is more progressive or less regressive than indirect taxes in eight of the selected countries (Denmark, Finland, Germany, Italy, the Netherlands, Portugal, Spain, and the United Kingdom) but more regressive in three (Belgium, Switzerland, and the United States). These findings challenge the assumption that (at the margin) public finance is always more progressive than private finance.

### *Economic Impact*

As Colombo and Tapay (2004) have observed, demand for private or voluntary health insurance appears to be linked to gaps in mandated health financing systems and fostered by employers. They also observe that market sizes are not correlated to GDP levels and are weakly related to total spending on health.

Given the perceived attractiveness of voluntary health insurance to employers, an assessment of the impact of such insurance on labor market productivity might be valuable. The literature review revealed no major market or country study on this topic.

The direct and indirect economic impact of voluntary health insurance will depend on the functions that the government allows it to play and the impact it has on both financial protection and access to health services. The latter will be influenced by the overall levels of health services provision within a country and the effect that privately funded services have on the scale and distribution of such provision.

### **VHI Performance and Impact in LMICs**

Studies on Africa and Asia (Preker and others 2001), Vietnam (Jowett, Contoyannis, and Vinh 2003), and Senegal (Jütting 2004a) provide moderate evidence in support of an increase in financial protection and an attendant increase in access to health care services due to PHI or CBHI schemes.

Much of the evidence countering the impact of voluntary health insurance on access, financial protection, and insurance coverage comes from the literature covering supplementary private health insurance offered alongside social health insurance. With the exception of Jowett (2003), none of the 16 data-analytic items that provide countering evidence (with no offsetting supporting evidence) pertain to LMICs.

### *Access to Health Services*

The literature review revealed little empirical evidence about voluntary health insurance in LMICs that has not already been identified in the more specific

work undertaken on community-based health insurance. The most important empirically based analyses are those undertaken by Preker and others (2002) and Ekman (2004). But these studies focus on relatively informal CBHI schemes.

A notable exception is a report on the impact of a publicly administered VHI scheme on private health expenditures in Vietnam (Jowett, Contoyannis, and Vinh 2003). The authors found that health insurance reduced out-of-pocket expenditure by approximately 200 percent. They also found that insurance reduced the health expenditure of the poor significantly more than that of the rich and enabled the poor to access care that would otherwise be unaffordable. In the lowest-income quartile, insured people spent more on health services than uninsured people; the former leveraged their insurance by making copayments at the point of use.

### *Financial Protection and Insurance Coverage*

In another empirically based analysis, Gertler and Sturm (1997) model the impact of extending private health insurance among the upper-income groups in Jamaica and using the consequent savings to better target public expenditures for the poor. If such insurance is extended to 50 percent of the population, they estimated that the poor would capture 25 percent more public expenditure. Noting that their results should be treated with caution, Gertler and Sturm identify three effects requiring investigation: that increases in private demand would drive up all prices, that increases in private health insurance might reduce public support for provision of publicly financed health services, and that employers might not be able to pass off mandated PHI payments in the form of lower wages.

Jütting (2004a) provides moderately robust evidence that private health insurance increases financial protection and access to health care services. In a study of a CBHI scheme in rural Senegal, Jütting showed that membership in the scheme increased the probability that people would seek hospital care and reduced out-of-pocket expenditures at the point of care.

### **Assessment of Economic Validity in the Literature**

The data-analytic subset of the literature categorized in this review excludes those items that have no empirical grounding and that do not employ a data-analytic approach. A validity assessment of this subset follows.

Schram (2005) provides insight into the meaning of economic validity in the context of assessing the robustness of empirical evidence in the economic literature. Citing Loewenstein (1999), Schram states that internal validity of an experiment refers to the researcher's ability to confidently draw causal conclusions from the research. External validity refers to "the possibility of generalizing the conclusions to situations that prompted the research." Commenting on the tensions between the two concepts, Schram points out, "Where internal validity often requires abstraction and simplification to make the research more tractable, these concessions are made at the cost of decreasing external validity."

“Artificiality” of the experimental setting is the largest obstacle to achieving high external validity, according to Schram (2005). The lack of experimental setting in much literature on private voluntary health insurance leads to a significant deficiency in internal and external validity. Therefore, no validity can be attributed to case studies or methodologically deficient analyses of insurance schemes that are conducted within a specific economic, political, historical, and social context. Nonetheless, such analyses are often considered “natural experiments.” Given the elusiveness of external validity, Schram points out that economists tend to focus on internal validity: “The long tradition of deductive reasoning and modeling in economics relies strongly on internal validity.”

### *Prevalence and Degree of Internal and External Validity*

No formulaic method for making a validity judgment exists. Consequently, the data-analytic subset of the reviewed literature reflects a subjective judgment, but one based on whether the item analyzed data of sufficient sample size (and, if applicable, data randomly sampled), had clear dependent relations in the econometric model, and controlled for confounding effects or endogeneity issues that might bias any inference from the results. Items that met these criteria and that demonstrated statistically significant evidence of the desired dependent relationship were judged to possess “moderate” or “high” internal validity. (None of the items reviewed were judged to have high internal validity, because none were studies designed as randomized controlled experiments.) Those that did not meet these criteria, due to the research question posed, the study design, the data collected, or the statistical or econometric approach utilized, were credited with “no” or “low” internal economic validity.

Table A.7 summarizes findings with regard to the data-analytic subset. Items are distinguished on the basis of whether evidence was provided to support or counter the effects for which Preker identified intermediate performance indicators.

Table A.7 reflects the dearth of internal and external validity in the reviewed literature. Only 10 items, representing 30 percent of the items in the subset (33) and less than 12 percent of the total number of items (86), were judged to have demonstrated reasonable (“moderate”) internal validity. The majority of moderately valid studies introduce evidence supporting one or more of the performance indicators associated with voluntary health insurance. No studies were judged to have a “moderate” or “high” degree of external validity.

### *Methods of Analysis in the Data-Analytic Subset*

Table A.8 lists the types of data and empirical approach used in the data-analytic subset of the reviewed literature and the associated validity judgment.

All 10 studies with moderate internal validity used primarily survey data and a multivariate analysis (often in a discrete choice context to evaluate insurance uptake and subsequent expenditures). Table A.9 profiles these studies in greater detail.

**TABLE A.7 Internal and External Economic Validity of the Data-Analytic Subset**

<i>Data-analytic subset</i>	<i>Assessment of economic validity</i>					
	<i>Internal validity</i>				<i>External validity</i>	
	<i>None</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>	<i>None</i>	<i>Low</i>
<b>Increasing financial protection</b>						
Moderate evidence supporting ++			3	0		3
Some evidence supporting +						
Evidence for and against +/-						
Some evidence countering -	2				2	
Moderate evidence countering --						
No evidence either way	3	18	7		4	24
<b>Total</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>27</b>
<b>Expanding insurance coverage</b>						
Moderate evidence supporting ++			2			2
Some evidence supporting +		4			1	3
Evidence for and against +/-		1				1
Some evidence countering -		4	2			6
Moderate evidence countering --			1			1
No evidence either way	5	9	5	0	5	14
<b>Total</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>27</b>
<b>Income and consumption smoothing</b>						
Moderate evidence supporting ++						
Some evidence supporting +			1			1
Evidence for and against +/-						
Some evidence countering -		1				1
Moderate evidence countering --						
No evidence either way	5	17	9	0	6	25
<b>Total</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>27</b>
<b>Increasing access to health care</b>						
Moderate evidence supporting ++			5	0		5
Some evidence supporting +	1	4			1	4
Evidence for and against +/-						
Some evidence countering -	1	4			1	4
Moderate evidence countering --			1			1
No evidence either way	3	10	4		4	13
<b>Total</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>27</b>
<b>Improved labor market participation</b>						
No evidence either way	5	18	10	0	6	27

*Source:* Authors.

**TABLE A.8** Validity of Data-Analytic Subset by Type of Data and Empirical Analysis

<i>Type of data analyzed</i>	<i>Empirical approach</i>	<i>Assessment of economic validity</i>					
		<i>Internal validity</i>				<i>External validity</i>	
		<i>None</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>	<i>None</i>	<i>Low</i>
Case study	Statistical data analysis		1				1
Interview data	Observational/descriptive	1				1	
National statistics	Bivariate analysis	1	1			1	1
	Exponential regression; costing analysis; production frontier analysis		1				1
	Multivariate analysis (OLS)		1				1
Program experience data	Multivariate analysis (OLS with controls)		1				1
Survey data	Multivariate analysis (two-part discrete choice with controls)		1				1
	Multivariate analysis (two-part discrete choice with controls); simulation		1			1	
	Multivariate analysis (two-part discrete count data models with controls; controls for self-selection and endogeneity)			1			1
	Multivariate analysis (two-part Poisson and negative binomial with controls); simulation		1				1
	Multivariate analysis (discrete choice with controls)		2	2			4
	Multivariate analysis (discrete choice with controls; instrumental variables)			1			1
	Multivariate analysis (discrete choice)		1				1

	Multivariate analysis (OLS with controls); contingent valuation (bidding game)	1					1
	Multivariate analysis (OLS with controls; two-part discrete choice with controls)	1	1				2
	Multivariate analysis (OLS with controls; two-part discrete choice with controls; controls for self-selection and endogeneity)			1			1
	Multivariate analysis (OLS with controls; difference-in-differences with controls; instrumental variables)			1			1
	Multivariate analysis (OLS with controls; discrete choice with controls)	1					1
	Multivariate analysis (OLS with controls; discrete choice with controls; instrumental variables; treatment effects)			1			1
	Multivariate analysis (OLS with controls; Heckman models; controls for self-selection)			1			1
	Multivariate analysis (OLS with controls; pre-post)			1			1
	Multivariate analysis (OLS with controls; treatment effects)	1					1
	Multivariate analysis (OLS; instrumental variables)	1					1
	Simulation	1				1	
	Statistical data analysis	2				2	
Survey data;	Multivariate analysis (discrete choice with controls); statistical data analysis	1					1
health plan data	Multivariate analysis (OLS)	1					1
	<b>Grand total</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>27</b>

Source: Authors.

Note: OLS = ordinary least squares.

**TABLE A.9 Characteristics of the Studies of Moderate Internal Economic Validity**

<i>Reference title</i>	<i>Author and date</i>	<i>Region</i>	<i>Topic</i>	<i>Theory</i>	<i>Data</i>	<i>Empirical approach</i>
Minimum Standards and Insurance Regulation: Evidence from the Medigap Market	Amy Finkelstein (2002b)	United States	PHI: impact of binding minimum standards for elderly	Utility analysis for welfare changes	National Health Interview Survey (NHIS) and National Medical Care Expenditure Survey (NMCES) datasets	Multivariate analysis (OLS with controls; pre–post)
Role of Communities in Resource Mobilization and Risk Sharing: A Synthesis Report	Alexander S. Preker and others (2001)	Africa, Asia	Community financing (multiple forms): community health financing (evaluation and synthesis)	Two-part demand model	Literature review, case studies; micro-level household surveys screened for community financing data	Multivariate analysis (OLS with controls; two-part discrete choice with controls)
Adverse Selection and the Decline of Private Health Insurance Coverage in Australia: 1989–95	Garry F. Barrett and Robert Conlon (2003)	Australia	PHI: determinants of PHI take-up in Australia, evidence of adverse selection spiral between 1989 and 1995	None (observed trends)	Australian Bureau of Statistics National Health Surveys 1989–90, 1995	Multivariate analysis (discrete choice with controls)
The Demand for Private Health Insurance: Do Waiting Lists Matter?	Timothy Besley, John Hall, and Ian Preston (1999)	United Kingdom	PHI and SHI: longer waiting lists for National Health Survey (NHS) treatment lead to increases in PHI	Expected utility theory	Cross-sectional panel data from 5 years of British Social Attitudes Surveys (BSASs); NHS regional trends data	Multivariate analysis (discrete choice with controls)
Does Public Insurance Crowd Out Private Insurance?	David M. Cutler and Jonathan Gruber (1995)	United States	PHI and SHI: impact of Medicaid crowd-out of PHI	Expected utility theory, observed trends	March Current Population Surveys (CPSs) for 1987–92	Multivariate analysis (discrete choice with controls; instrumental variables)
The Effect of Private Insurance on Measures of Health: Evidence from the Health and Retirement Study	Avi Dor, Joseph J. Sudano, and David W. Baker (2003)	United States	PHI: health status effects of PHI	Previous literature	Health and Retirement Survey Data, 1992 and 1996	Multivariate analysis (OLS with controls; discrete choice with controls; instrumental variables; treatment effects)



The Impact of Public Voluntary Health Insurance on Private Health Expenditures in Vietnam	Matthew Jowett, P. Contoyannis, and N. D. Vinh (2003)	Vietnam	Voluntary SHI: impact of voluntary government-sponsored insurance coverage on health expenditures; comparison of members vs. nonmembers	Expected utility theory, observed trends	1999 randomly sampled household survey data (three provinces)	Multivariate analysis (OLS with controls; Heckman models; controls for self-selection)
Do Community-Based Health Insurance Schemes Improve Poor People's Access to Health Care? Evidence from Rural Senegal	Johannes P. Jütting (2004a)	Senegal	CBHI: are members of the rural scheme better off than nonmembers with respect to utilization and expenditures?	Expected utility theory, observed trends	Randomly sampled household survey data	Multivariate analysis (OLS with controls; two-part discrete choice with controls; controls for self-selection and endogeneity)
Self-Selection and Moral Hazard in Chilean Health Insurance	Claudio Sapelli and Bernadita Vial (2003)	Chile	PHI and SHI: impact of adverse selection and moral hazard in public and private health insurance	Expected utility theory (intertemporal two-period), observed trends	Household survey data from 1996 National Characterization Socioeconomic Survey (CASEN Survey)	Multivariate analysis (two-part discrete count data models with controls; controls for self-selection and endogeneity)
Medicaid Expansions and the Crowding Out of Private Health Insurance	Esel Y. Yazici and Robert Kaestner (1998)	United States	PHI and SHI: impact of Medicaid crowd-out of PHI	Expected utility theory, observed trends	1988 and 1992 National Longitudinal Survey of Youth (NLSY)	Multivariate analysis (OLS with controls; difference-in-differences with controls; instrumental variables)

*Source:* Authors.

*Note:* CBHI = community-based health insurance; OLS = ordinary least squares; PHI = private health insurance; SHI = social health insurance.

Only 3 of the 10 studies focus on LMICs; the remaining 7 studies are specific to the United States (4), the United Kingdom (1), Australia (1), and Chile (1). With regard to theoretical support, seven studies are grounded in expected utility theory and three are based on the theory of demand, observed trends, or previous literature. All use large-scale, survey-based datasets. The majority focus on private health insurance, often in addition or related to social health insurance in some context. Two of the studies specific to LMICs, Vietnam (Jowett, Contoyannis, and Vinh 2003) and Senegal (Jütting 2004a), provide some evidence that voluntary health insurance increases financial protection against the costs of illness and increases access to health care.

### *Potential Reasons for Deficiency of Evidence*

A discussion paper by the International Labour Organization (ILO 2002) on community-based health organizations (CBHOs) concludes that lack of data is the main reason for an absence of internal validity. This problem is evident in the reviewed literature: over 60 percent of the 86 papers and articles collect no data or otherwise identify a dataset for their analysis. Given that credible data are more likely to be readily available in developed countries than in developing countries, the focus of the majority of the data-analytic subset (24 of 33 items) on non-LMICs or regions is not surprising.

The ILO paper identifies the problems that most commonly account for lack of internal validity when data are available. These problems are related to “sample selection and the existence of control groups, source of information for comparing utilization and the lack of control for possible confounding variables, particularly by health status/risk of member and non-members (key to account for the possible distortion resulting from adverse selection in a voluntary scheme)” (ILO 2002a).

The paper notes that the small number of documents and case reviews pertaining to CBHOs and CBHI schemes “may be explained by the lack of research in this field and by the difficulties of the small scheme in publishing and publicizing [its] experience” (ILO 2002a). Another problem is that CBHOs and CBHI schemes in LMICs often involve small populations with unreliable means of data collection. Thus researchers tend to focus on issues related to financial viability, determinants of demand, benefit design, or management rather than on the impact of insurance on a set of performance indicators for members and nonmembers alike.

In a study focusing on private health insurance and social health insurance in Latin America, Bertranou (1999) suggests that the lack of health economics research has been largely due to economists’ lack of interest, which owes to two factors. One is “the limited role of private insurers in health markets, and the relatively greater importance of social insurance arrangements,” and the other is “the unavailability of adequate health micro-data.” According to Bertranou, “The generation of more and better datasets, both population- and supply-based,

should be a priority in order to expand and improve the quality of research in health economics." Thus if private carriers or governments were to develop a credible data infrastructure, more economically valid studies of private voluntary health insurance could be conducted.

In examining evidence of demand-side financing on expanding insurance coverage and increasing access to health care, Ensor (2003) considered three main categories of analytical studies: "controlled evaluations, impact evaluations without control, and descriptive 'evaluations' with some estimate of impact." He indicates that the greatest validity lies with controlled evaluations:

Best practice in assessing impact requires before and after intervention comparison...made with careful baseline measurements and adjustments for confounding factors. If possible the intervention should be selected at random and matched with a similar area where there is no intervention. While these standards are routinely applied in the assessment of new treatments their application is much more difficult in the field of public policy (Ensor 2003).

The absence of randomized experiments in the present literature review speaks to the difficulty of implementing controlled evaluations. In a literature review of CBHI schemes, Ekman (2004), referring to Kristiansen and Gosden (2002), notes that "internal validity of nonrandomized designs is low due to the difficulties in blinding study subjects and behavioral changes of the subjects."

In an evaluation of the substitution of Medicaid for private insurance, Cutler and Gruber (1997) indicate that conducting a controlled evaluation represents a "major hurdle." If attempted, "we would randomly make some persons eligible for public insurance and others ineligible. We then would examine how many of those eligible for public insurance moved from private to public insurance and compare that with the change in private insurance in the control group." However, reasonable proxies based on large survey datasets can often be used, particularly when policy or regulatory changes have set the stage for a natural experiment. Devereaux and others (2004), in their analysis of for-profit versus not-for-profit hospitals, indicate that in the absence of randomized controlled trials, the strongest realistic design, at least with respect to their research question, was an observational study. Of course no experiment of this form has ever been conducted, because randomly referring patients to care at the two different delivery systems would be impractical.

Finally, Ekman (2004) provides some commentary on the lack of external validity in his review of CBHI schemes in LICs:

The general context in which the scheme operated was not always clearly defined, leading to difficulties in assessing the replicability of the experiences . . . many factors that have an effect on the functioning of these schemes have a tendency to change not only across space but across time. The fact that very few schemes have been studied for longer periods of time or have been subjected to systematic follow-up studies, in which the performance of the same outcome indicator of interest is assessed, would seem to reduce the validity of findings, and thereby, compromise the scope for drawing on these experiences.

Consistent with Ekman's review, the present literature review revealed very low external validity in the data-analytic subset.

## CONCLUSIONS AND RECOMMENDATIONS

Commentators have sought to define private health insurance from economic, ownership, and equity perspectives. None of their definitions is entirely satisfactory. The National Health Accounts definition of social health insurance, which seeks to categorize all types of social health insurance as public expenditure, lies at the heart of the problem. From a policy-making perspective, voluntary health insurance is most helpfully defined as all forms of health insurance not mandated by government.

### Conceptual Frameworks

Numerous taxonomies of health financing have been proposed. Perhaps the best is that published by the OECD (2004a). A definitive taxonomy of health financing, in general, and of health insurance, in particular, has yet to be produced.

Many related products can in part substitute for voluntary health insurance if market conditions, public policy, or regulation become too onerous. These products include medical savings accounts, critical illness insurance, and cash plans.

The potential intermediate benefits to consumers of voluntary health insurance (compared to out-of-pocket expenditure) are increased financial protection; increased access to health services; benefits from insurance carriers' influence on the appropriateness, quality, and efficiency of health services providers; and wealth transfer through the sharing of risks.

Using the industrial economics approach, VHI markets can be analyzed and evaluated in terms of institutional context, demand conditions, supply (market structure and conduct), and performance and impact.

From a management perspective, voluntary health insurance (and perhaps health insurance more generally) can be conceptualized as a set of income risks, expenditure risks, asset risks, and liabilities.

### Demand for Voluntary Health Insurance

Motivations to purchase voluntary health insurance are directly related to the intermediate benefits noted above. The presence of high levels of out-of-pocket expenditure in LMICs suggests high levels of latent demand for voluntary health insurance, but actual levels of coverage are comparatively low. Identifying the factors constraining both demand and supply is therefore important.

The absence of insurance carriers or of health services providers of consistent quality is each sufficient to inhibit development of a VHI market.

In an LMIC context, voluntary health insurance tends to constitute a primary source of funding (or a duplicate source if the quality of services funded by government mandate is perceived to be low). As countries move toward universal coverage, voluntary health insurance tends to provide additional (supplementary or complementary) coverage.

### Supply of Voluntary Health Insurance

The supply of voluntary health insurance is dependent on a carrier's positive assessment of (1) its ability to manage income, expenditure, asset, and liability risks; (2) its ability to maintain a competitive position; and (3) the cumulative effects of its own behavior and the behavior of other actors in the same and related markets.

Comparatively little aggregate information on the global market for voluntary health insurance/private health insurance exists. Three principal sources of information are a global industry report by Datamonitor (2004), a book by Jütting (2004b), and a report by Colombo and Tapay (2004). Other potential sources of information include Best's International Insurance Reports and the International Association of Insurance Supervisors.

Further work to quantify the size and nature of global VHI markets would be desirable once a definitive taxonomy for analysis of health financing and insurance has been developed.

Voluntary health insurance tends to be concentrated in LICs and HICs. Such concentration may increase organizational competence and innovation, but it reduces competition. High levels of product differentiation can sometimes mask high concentrations of ownership.

VHI carriers tend to exhibit strategies of either horizontal or vertical integration. Carriers use horizontal integration with other insurance lines (for example, property, auto, and life) to diversify their risks. "Single line" specialist health insurers often use vertical integration (for example, acquisition of hospitals) to increase control of their expenditure risks.

The sustainability of voluntary health insurance can be put at risk by inappropriate behavior on the part of consumers, service providers, insurers, regulators, and policy makers. The principal risks arise from moral hazard (by consumers and service providers), adverse selection (by consumers), cream skimming (by insurers), rent seeking (by regulators), and arbitrary or sudden policy change (by policy makers and politicians).

### Performance and Impact of Voluntary Health Insurance

Possibly the most important and reliable recent source of analysis of the impact of voluntary health insurance in a principal role (albeit in an HIC context) is by Hadley (2002). He concluded that "a mid-range estimate of the effect of extending

health insurance coverage to all in the United States would be a 10 to 15 percent reduction in mortality rates of the uninsured.”

Most recent commentators on voluntary health insurance in HICs concur that it has a positive effect on access to personal health services. No overall consensus exists on the impact of voluntary health insurance on the quality, innovation, and efficiency of those services or on the impact of voluntary health insurance on public health activities. The OECD (2004b) regards the impact of “managed care approaches” by VHI carriers in Australia, the United Kingdom, and the United States as “important exceptions” in having positive effects on these services and activities.

Aggregate evidence concerning the financial protection effects of voluntary health insurance is lacking. Bundorf (2005) has presented preliminary evidence that suggests that in the United States these effects might be concentrated in the lowest-income quintile.

### **Advantages and Disadvantages of Voluntary Health Insurance**

Voluntary health insurance tends to increase access to and use of health services. It may play a financial protection role for poorer subscribers, preventing them from falling into poverty. It may also play a significant store of value function in economies with high inflation.

If insurers adopt an active approach to purchasing and contracting services for their customers, voluntary health insurance can have a positive effect on the quality and efficiency of health services providers. However, active purchasing has been slow to develop in established VHI markets in HICs.

Voluntary health insurance can help establish the risk management competencies necessary for countries to successfully operate mandated health financing schemes.

Voluntary health insurance can, through the creation of reserves, establish substantial capital that can be used for diverse purposes later in the evolution of a health system (for example, PPP Foundation and Nuffield Trust in the United Kingdom).

Voluntary health insurance, like all forms of health insurance, is at risk of inducing moral hazard as consumers and providers change their behavior in the presence of insurance. VHI carriers regard adverse selection (the nondisclosure of known risks by customers at point of purchase) as a major constraint on development of successful markets. Unchecked, adverse selection will (other factors being equal) cause low-risk customers to leave the market, or their existing book, and will create unstable market conditions. Adverse selection is less of a problem where risks are fairly uniformly spread through a population, so long as a coherent package of services remains affordable.

VHI carriers with a poor capital base or carriers that receive less than an actuarially fair premium (plus proportionate “loading”) for high-risk subscribers may be tempted to cream skim low risks.

VHI markets that collect contributions on a risk-rated basis are simpler to regulate and are more likely to be financially secure than those that collect contributions on other bases. Group schemes also tend to be more efficient and stable than schemes dependent on individual subscriptions.

Risk-rated schemes are most likely to maximize demand for voluntary health insurance, but in the absence of internal or external subsidies, they invariably render such insurance inaccessible to the poorest.

A tapered premium subsidy from general taxation may be the most equitable and efficient way to make voluntary health insurance accessible to low-income or high-risk groups. Such a subsidy might lead to development of mandated social health insurance or tax-based schemes when these mechanisms become economically viable.

### **Recommendations**

Policy makers in LMICs should not ignore the presence of out-of-pocket expenditure and voluntary health insurance in their health systems. When the supply of health services providers and key resources such as doctors and pharmaceuticals is highly constrained and inelastic, out-of-pocket expenditure and voluntary health insurance can, at worst, divert scarce resources from achievement of public policy objectives.

When the supply of health services providers and key resources is elastic, well-managed and appropriately regulated voluntary health insurance has the potential to increase the accessibility, quality, and efficiency of personal health services to at least a segment of the population. If a tapered public subsidy is feasible, voluntary health insurance might be used to increase access to services and financial protection to groups of the population that otherwise would be excluded or forced to pay out of pocket.

Policy makers should reflect carefully on the conditions necessary to attract domestic and international VHI carriers to the market and keep them there. Even for government agencies and nonprofit carriers, the expected surplus or profit should exceed the “weighted” cost of capital employed and should be sufficient to build or maintain appropriate reserves.

Policy makers should consider the practicality of the role or roles they wish voluntary health insurance to play. In determining the desired scope, term, and payment basis of such insurance, they should be mindful of the views of potential carriers. Policy makers should shape and regulate the market to achieve their desired goals.

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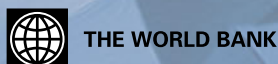
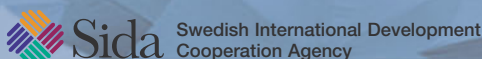
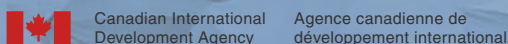
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