

# 2

## Collecting revenue, pooling risk, and purchasing services

*Countries need to mobilize sufficient resources to provide essential health services for their populations, reduce inequalities in the ability to pay for those services, and provide financial protection against impoverishment from catastrophic health care costs through explicit policies affecting the three financing functions: collecting revenues, pooling risks, and purchasing goods and services. In managing their health financing functions, countries also need to ensure adequate fiscal space to scale up health spending. Developing countries, particularly low-income countries, face severe challenges in mobilizing sufficient resources to meet even basic service needs. Middle-income countries focus more on providing universal coverage to their populations. Various mechanisms for risk pooling and prepayment are possible for countries at all income levels, but options are heavily constrained by the structure of a country's economy, as well as its financial, institutional, and political capacities.*

This chapter contains a discussion of the basic health financing functions of revenue collection, risk pooling, and purchasing. It describes how health financing systems are affected by social, economic, demographic, environmental, external, and political factors.

Developing countries face the following key policy challenges in financing their health systems:

- Raising sufficient and sustainable revenues in an efficient and equitable manner to provide individuals with both essential health services and financial protection against unpredictable catastrophic financial losses caused by illness and injury;
- Managing these revenues in a way that pools health risks equitably and efficiently
- Ensuring the purchase of health services in an allocatively and technically efficient manner;
- Securing the financial sustainability of reforms through the creation of fiscal space by obtaining additional revenues through tax measures or by strengthening tax administration; reducing lower-priority expenditures to make room for

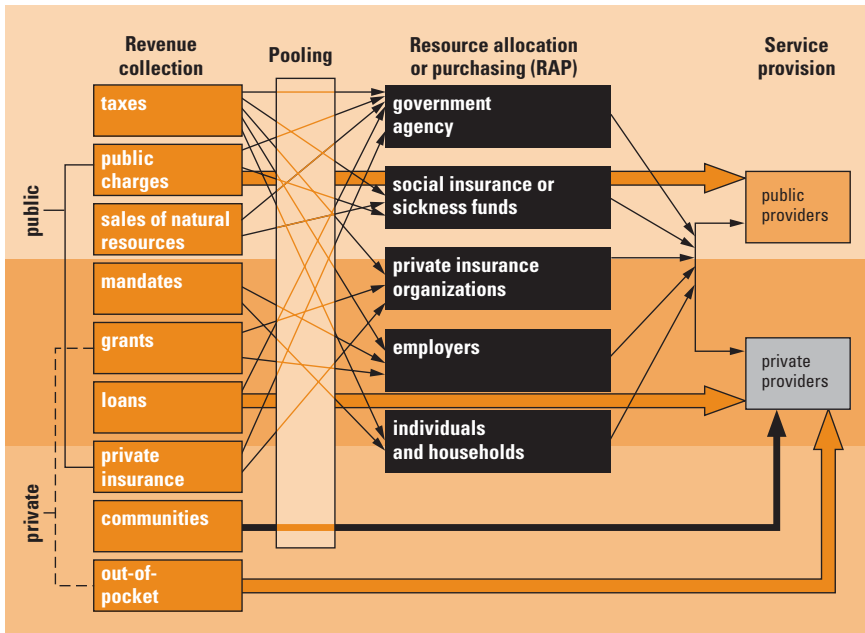
more desirable ones; borrowing resources from domestic or external sources; prudently using their ability to print money (seignorage) to lend it to the government; and receiving grants from outside sources.

### Health financing functions: definitions and implications

Health financing involves the basic functions of collecting revenue, pooling resources, and purchasing goods and services (WHO 2000). These functions often involve complex interactions among a range of players in the health sector (figure 2.1). Therefore, policies concerning these functions provide an opportunity to effectuate reforms throughout the health sector.<sup>1</sup>

*Revenue collection* is the way health systems raise money from households, businesses, and external sources. *Pooling* deals with the accumulation and management of revenues so that members of the pool share collective health risks, thereby protecting individual pool members from large, unpredictable health expenditures. *Prepayment* allows pool members to pay for average expected costs in advance, relieving them of uncertainty and ensuring compensation should a loss occur. Pooling coupled with prepayment enables the establishment of insurance

FIGURE 2.1 Health financing functions



Source: Schieber and Maeda 1997.

and the redistribution of health spending between high- and low-risk individuals (risk subsidies) and high- and low-income individuals (equity subsidies).

By breaking the link between expected health expenditures and ability to pay, prepayment is a critical mechanism for attaining equity objectives. Prepayment in the absence of pooling simply allows for advance purchase or purchase on an installment basis, a useful financial device when dealing with large predictable expenses or expenses that do not correlate with income flows (see the discussion below on medical savings accounts). With neither prepayment nor pooling, the service is simply purchased like any other at the time the consumer demands it, a modality not well suited to many health services on the grounds of equity, predictability, and financial protection. *Purchasing* refers to the mechanisms used to secure services from public and private providers.

How these various functions are arranged has important implications for the way health systems perform, relative to

- Amounts of funds available (currently and in the future) and concomitant levels of essential services and financial protection (the depth and breadth of coverage) for the population;
- Fairness (equity—who bears the tax/revenue burden) with which funds are raised to finance the system;
- Economic efficiency of such revenue-raising efforts in terms of creating distortions or economic losses in the economy (the “excess burden” of taxation);
- Levels of pooling (risk subsidization, insurance) and prepayment (equity subsidization);
- Numbers and types of services purchased and consumed with respect to their effects on health outcomes and costs (the cost-effectiveness and allocative efficiency of services);
- Technical efficiency of service production (the goal being to produce each service at its minimum average cost);
- Financial and physical access to services by the population (including equity in access, benefit incidence).

It is clear from these performance considerations that efficiency and equity are critical aspects of all health financing systems and are relevant for all financing functions. There are important equity considerations regarding financing sources, levels of prepayment and pooling, services provision, provider payment, and physical access to care.<sup>2</sup> There are three broad types of efficiency concerns: efficiency of revenue collection (distortions in the economy that result from various taxes), allocative efficiency (resources being allocated to maximize the welfare of the community by producing the desired health outcomes), and technical efficiency (services being produced at the lowest possible cost).

Complicating this situation are potential equity and efficiency trade-offs (i.e., the least distorting revenue sources may be the least equitable—e.g., a poll tax). Such trade-offs are more problematic in low- and middle-income countries, because, as discussed below, they are far more constrained than high-income countries in their choice of revenue mobilization instruments. The efficiency issues have been dealt with in some detail in various studies (Schieber and Maeda 1997; WHO 2000, 2001; Preker and Langenbrunner 2005), and equity considerations have been receiving increased attention because of the public focus on the Millennium Development Goals and global poverty reduction. Whereas global inequities in need and ability to pay are dealt with in chapter 1 and in the development assistance chapters, the equity aspects of health financing within individual countries are discussed in detail here.

From a broad policy perspective, basic health financing functions are generally embodied in the following three stylized health financing system models:

- *National health service*: compulsory universal coverage, national general revenue financing, and national ownership of health sector inputs;
- *Social insurance*: compulsory universal (or employment group-targeted) coverage under a social security (publicly mandated) system financed by employee and employer contributions to nonprofit insurance funds, with public and private ownership of sector inputs;
- *Private insurance*: employer-based or individual purchase of private health insurance and private ownership of health sector inputs.

Although these stylized models provide a general framework for classifying health systems and financing functions, they are not useful from a detailed policy perspective, because all health systems embody features of the different models. The key health policy issues, as discussed below, are not whether a government uses general revenues versus payroll taxes, but the amounts of revenues raised and the extent to which they are raised in an efficient, equitable, and sustainable manner. Similarly, there is nothing intrinsically good or bad about public versus private ownership and provision. The important issue is whether the systems in place ensure access, equity, and efficiency.

Nevertheless, these models and the various attempts to classify health financing functions in a more detailed manner provide useful information on the linkages with the rest of the health system and macro economy. The models also provide the frameworks for a better understanding of the incentives at play. Bassett (2005) has summarized several of these taxonomies (annex 2.1). Detailed operational assessments of the financing arrangements of national health services and social insurance systems are contained in chapters 3, 7, 8, and 9. The discussions that follow on revenue collection, risk pooling and prepayment, and purchasing elaborate on these basic financing concepts.

## Revenue collection and government financing of health services

Governments employ a variety of financial and nonfinancial mechanisms to carry out their functions. Health sector functions entail directly providing services; financing, regulating, and mandating service provision; and providing information (Musgrove 1996).

The key fiscal issues for low- and middle-income countries are for their financing systems, both public and private, to mobilize enough resources to finance basic public and personal health services without resorting to excessive public sector borrowing (and the creation of excessive external debt), to raise revenues equitably and efficiently, and to conform with international standards (Tanzi and Zee 2000). A substantial literature is devoted to the various public and private sources for financing health services and the economic and institutional impacts of using these sources in terms of efficiency, equity, revenue-raising potential, revenue administration, and sustainability (Schieber 1997; Tait 2001; Tanzi and Zee 2000; WHO 2004; World Bank 1993). Efficiency gains are also receiving increased attention as a “revenue” source for financing health services (Hensher 2001). In low-income countries, tax credits are rarely used as a financing source for government spending in health or other sectors (Tanzi and Zee 2000).

From a practical, public finance perspective, all taxes (and indeed, other revenue sources as well) should be judged by the following criteria (IMF and World Bank 2005):

- *Revenue adequacy and stability*: the tax should raise a significant amount of revenue, be relatively stable, and be likely to grow over time.
- *Efficiency*: the tax should minimize economic distortions.
- *Equity*: the tax should treat different income groups fairly.
- *Ease of collection*: the tax should be simple to administer.
- *Political acceptability*: there should be transparency, broad diffusion, and clarity about the uses of the tax to promote acceptability.

Although policy makers must be aware of the potential trade-offs among these criteria, they must also be aware of the underlying institutional and macroeconomic constraints that preclude many less-developed countries from using the most efficient and equitable revenue raising instruments (box 2.1).

Institutional constraints tend to preclude low- and middle-income countries from using the most efficient and equitable revenue-raising instruments. The high level of inequality in most low- and middle-income countries also means that governments face the difficult situation of needing to tax politically powerful and wealthy elites to raise significant revenues in an equitable manner, but being

### **BOX 2.1** *Institutional realities affecting taxation in low- and middle-income countries*

- Much of the population is widely dispersed in rural areas.
- The bulk of the population is self-employed in small-scale subsistence agriculture and receives income in kind.
- Transactions are difficult to trace.
- High rates of illiteracy, poor accounting standards, and lack of records on expenses limit the use of personal income or profits taxes.
- In urban areas there is a large informal sector of small and transient firms.
- Large firms tend to be government enterprises or extractive industries that are frequently foreign owned.
- Both agricultural products and mineral resources face unstable and unpredictable world prices.
- Dualism (a modern urban sector and a traditional rural sector) and the resulting market segmentation create distortions in terms of both commodity and labor markets, which increase tax burdens.
- There is a greater level of income inequality, which may result in higher tax rates, greater tax avoidance, and higher efficiency losses.
- Trade distortions abound in the form of import tariffs, quotas, export taxes, differential exchange rates, and foreign exchange rationing, resulting in misallocations of resources and inequity.
- The greater importance of state-owned enterprises coupled with nonoptimal user charge structures often results in inefficient public versus private investment decisions.
- Tax administration capacity is quite limited.

*Source:* Schieber and Maeda 1997, p. 20.

unable to do so easily. As Tanzi and Zee point out, “Tax policy is often the art of the possible rather than the pursuit of the optimal” (2000, p. 4).

Although revenue-raising ability varies by country, in general low-income countries face many more constraints because of their low levels of income, limited overall resources, large informal sectors, and poorly developed administrative structures (box 2.2). However, in general, as a country’s income increases, so too does government revenue. Estimates from the IMF (table 2.1) show that in the early 2000s, central governments in low-income countries collected 18 percent of their GDP as revenues, on average, while lower-middle-income countries collected 21 percent, and upper-middle-income countries collected 27 percent. At the top of the income spectrum, high-income countries were collecting 32 percent of GDP as revenues. It is important to keep in mind that, although tax revenues form the bulk of government revenues in all regions and income class groups, other types of government revenues, such as sales of natural resources, are also important revenue sources in certain countries and regions (for example, the Middle East and North Africa).

Available information suggests that most countries actually collect a fairly small portion of their overall and tax revenues as social contributions.<sup>3</sup> Because in principle social insurance schemes are primarily funded through social contributions, their viability and self-sufficiency are highly linked to whether there is

### BOX 2.2 *Domestic spending and resource mobilization issues for low-income countries*

Given the calls from the international community for increased investments in health, low-income countries have themselves proposed targets for domestic spending. In the 2001 Abuja Declaration on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases, African leaders pledged to increase health spending to 15 percent of their government budgets (UNECA 2001; Haines and Cassels 2004). However, obtaining sufficient public revenues to meet such budgetary targets raises difficult political, economic, and equity considerations (Schieber and Maeda 1997; Gupta and others 2004). As shown in table 2.1, the ability of a low-income country to raise enough revenue to meet population health needs and demands is generally quite limited.

Both the Commission on Macroeconomics and Health and the UN Millennium Project suggest that low-income countries might be able to mobilize an additional 1–4 percent of GDP in revenue domestically. However, revenue performance over the past few decades, as Gupta and others point out, has been fairly disappointing, even stagnant in some regions (Gupta and others 2004). In addition, given that revenue-raising ability is closely linked to future economic growth, low-income countries in particular will face difficult challenges unless they can outpace the modest income growth projections forecast in several developing regions.

Source: Authors.

TABLE 2.1 Average central government revenues, early 2000s

	Total revenue as % of GDP	Tax revenue as % of GDP	Social security taxes as % of GDP
<b>Region</b>			
Americas	20.0	16.3	2.3
Sub-Saharan Africa	19.7	15.9	0.3
Eastern Europe and Central Asia	26.7	23.4	8.1
Middle East and North Africa	26.2	17.1	0.8
East Asia and the Pacific	16.6	13.2	0.5
Small Islands (population < 1 million)	32.0	24.5	2.8
<b>Income level</b>			
Low-income countries	17.7	14.5	0.7
Lower-middle-income countries	21.4	16.3	1.4
Upper-middle-income countries	26.9	21.9	4.3
High-income countries	31.9	26.5	7.2

Source: Gupta and others 2004.

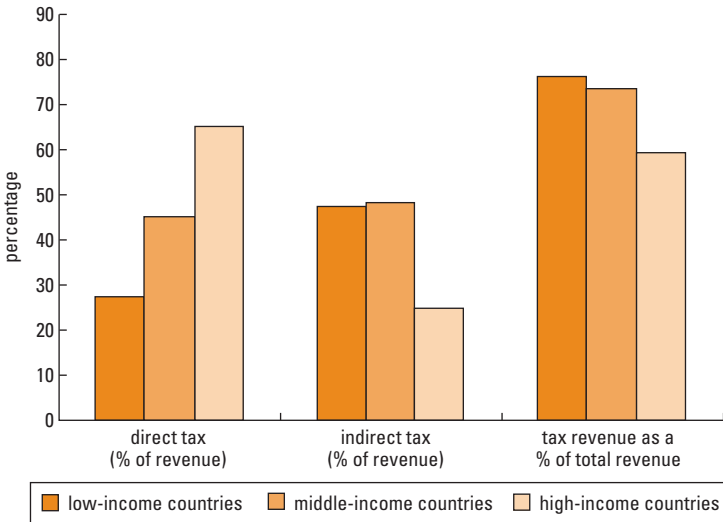
adequate capacity in place to both collect revenues and cover current and future benefit liabilities. As seen in table 2.1, even in high-income settings where one would expect social contributions to be significant, this may not be the case when social security taxes reach just over 7 percent of GDP. In the low-income setting, social security contributions make up only 0.7 percent of GDP, but they

reach 1.4 percent in lower-middle-income countries and just over 4 percent in upper-middle-income countries.

Even in countries where social insurance schemes exist, the contributions are often relatively low, which helps shed light on why social insurance schemes are often subsidized by general revenue. Thus even though many countries aspire to develop social insurance schemes, they need to consider many factors, including the fact that social contributions alone may not be enough to ensure long-term financial sustainability. Whether there is a greater willingness on the part of individuals to be taxed for payroll contributions, as there is an “earned right” to an earmarked insurance benefit as opposed to general taxes, is a largely hypothetical question worthy of further analysis.

Another important difference between low- and middle-income countries and high-income countries is the greater relative reliance on direct taxes (taxes on income and property, such as personal and corporate income taxes, capital gains, inheritances, death, wealth) by high-income countries. Low- and middle-income countries tend to rely more on indirect taxes, such as consumption taxes both on sales (general sales, value added, and excise taxes) and on factors of production (payroll, land, real estate) (Schieber and Maeda 1997). Developing countries choose the indirect option because of the economic and institutional constraints they face, particularly large rural and informal sectors and weak tax administration (figure 2.2).

**FIGURE 2.2** Share of direct and indirect taxes in total revenues in low-, middle-, and high-income countries



Source: IMF 2004b.

Unfortunately, empirical evidence is quite sparse on the equity and efficiency of government revenue structures in low- and middle-income settings. Thus there is only a limited basis for understanding the effects of excess burdens of taxation, the economic incidence of tax systems, and their implications for equity.

Empirical studies, largely from developed countries, show the importance of not only the type of tax used but also specific features of the tax, including the rates, ceiling, floors, and exemptions (Wagstaff and others 1999; Wagstaff and van Doorslaer 2001). Such features have rather important implications for the revenue-raising potential as well as the equity of the tax system. In a study of the redistributive effects of health care financing arrangements in 12 OECD countries, Wagstaff and others (1999) find that the direct taxes used to finance health care are progressive (that is, the burden of taxes is concentrated on the better off) in all countries.<sup>4</sup> The *EQUITAP* studies (O'Donnell and others 2005a, 2005b) confirm this result in a survey of 13 Asian territories that span high-, middle-, and low-income countries. The study found that in low- and middle-income countries only the richest households qualify to pay personal income tax and taxes on capital. There is also a great deal of tax evasion in the large informal economy, which tends to increase the progressivity of direct taxes to the extent that the informal sector is skewed toward the lower end of the income distribution. Despite such progressivity, the overall redistribution effect is generally very modest, because of the small share of direct taxes as a financing source for health care (O'Donnell and others 2005a, 2005b).

Indirect taxes, such as sales, value added taxes (VAT), excises, and import taxes, were found to have a more mixed redistributive impact, depending on the specifications of the tax base, rates, exemptions, and exclusions. For example, the study by Wagstaff and others (1999) of certain high-income countries finds that indirect taxes are regressive (the burden of the taxes is concentrated on low-income groups) in all countries in the sample. This is consistent with the notion that indirect taxes are mostly taxes on consumption, and because low-income groups spend more of their income on consumption than high-income groups, their tax payments are also proportionally higher. For the 13 Asian territories, however, O'Donnell and others (2005a, 2005b) find that indirect taxes are slightly progressive, but to a much lesser extent than direct taxes.

The difference in the distributional impact of indirect taxes in high-income countries and in low- and middle-income countries is partly because the tax base is more comprehensive in richer countries than in poorer ones. For example, a sales tax or VAT is often collected only from businesses that meet a minimum turnover threshold. To the extent that the poor buy from businesses that do not meet this criterion (such as market stalls), they are essentially exempt from this tax, which helps to alleviate the regressive character of sales taxes or VATs (Martinez-Vazquez 2004). A similar effect is achieved if goods that are relatively important in the household budget of the poor (such as food products) are exempt from the tax.

The distributional impact of excise taxes depends strongly on the consumption patterns by income group. For example, one study in Madagascar found that car and petrol taxes were strongly progressive, alcohol taxes appear quite progressive in most cases, and even tobacco taxes were reasonably progressive (Gemmell and Morrissey 2005). However, tobacco taxes in other country settings have been found to be regressive, because the poor spend larger shares of their more limited household incomes on tobacco than the rich. However, because the price elasticities of the poor tend to be higher than the nonpoor, an increase in tobacco taxes will result in a larger reduction in their consumption, and hence will be progressive in terms of the reduced tax burden (Jha and Chaloupka 2000; Cnossen 2005).

Thus in low- and middle-income countries, increasing revenue through taxation to finance increased health expenditure does not necessarily result in significant equity implications, if carried out primarily through well-designed indirect taxes, because these taxes can be structured to be generally progressive. Moreover, because both value-added and excise taxes are often associated with a more efficient collection of tax revenue—reflecting their broader base, lower price elasticities, and negative consumption externalities—relying primarily on indirect taxes as revenue sources may be more efficient than using other forms of taxation (Coady, Grosh, and Hoddinot 2004). Such results, however, are heavily country-specific and depend on the exact details concerning the tax base, tax rates, exclusions, exemptions, demand elasticities, and tax administration capabilities. All of these factors are essential determinants of the tax yield, equity, efficiency, and ease of administration.

### **Risk pooling, financial protection, and equality**

The rationales for public intervention in financing health systems are well-known. The issues of public goods, merit goods, externalities, insurance market failures, interdependencies between demand and supply, and consumer ignorance have been well documented (Musgrove 1996). Health financing goals—which include reducing inequality, preventing individuals from falling into poverty as the result of catastrophic medical expenses, and protecting and improving the health status of individuals and populations by ensuring financial access to essential public and personal health services—also provide a strong “public goods” basis for public intervention. Public intervention may be needed because of market failures in private financing and provision (such as information asymmetries) or because of instabilities in insurance markets (such as favorable risk selection by insurers and moral hazard). Indeed, this has been the case with virtually all countries in the OECD, except the United States. In the vast majority of OECD countries, governments have decided to publicly finance or to require private financing (as in Switzerland) for the bulk of health services. Nevertheless, given both low income levels and limits on domestic resource mobilization possibilities in low-income countries and some middle-income countries, these countries face severe challenges in publicly financing essential public and personal health services. They are also often confronted

with difficult trade-offs with respect to financing these basic essential services and providing financial protection against catastrophic illness costs.

Ensuring financial protection means that no household contributes or expends so much on health that it falls into and cannot overcome poverty (ILO/STEP 2002). Achieving adequate levels of financial protection and promoting equity in a health financing system require maximizing prepayment for “insurable” health risks (risks associated with large and unpredictable expenses)<sup>5</sup>; achieving the largest possible pooling of health risks within a population, thereby facilitating redistributions among high- and low-risk individuals; ensuring equity in the system through prepayment mechanisms that redistribute costs from low- to high-income individuals; and developing purchasing arrangements that promote efficient and equitable delivery of quality services.

Ensuring financial protection and promoting equity requires a specific government policy focus that ensures contributions are based on ability to pay, prevents individuals from falling into poverty as a result of catastrophic medical expenses, and ensures equitable financial and physical access to services. Health policy makers, advisers, and researchers state that minimizing inequality is an objective of health policy, but government commitment to this goal is often lacking. Thus a special focus on the relationship among different elements of health financing (resource mobilization, pooling, and allocation) and health sector inequalities related to outcomes, outputs, and inputs is clearly warranted, because there are equity implications inherent in all three of the financing functions listed.

One can cluster assessments of inequality in the health sector around three general measures: outcomes, outputs, and inputs. Inequality analyses then can focus on the differential impact of a policy (on collection, pooling, and purchasing) on health outcomes (mortality and morbidity); health outputs (physical services use, financial burden, and expenditure benefits); and more directly on inputs such as direct financial, human, and physical resources. Outcome measures include child and infant mortality, maternal mortality, adult mortality, child stunting, micronutritional deficiencies, and life expectancy by age group, as well as measures that combine mortality and morbidity, such as the concepts of disability-adjusted life years and disability-adjusted life expectancy.

Outputs include service use, financial burden arising from the collection function (tax/revenue incidence), and benefits arising from the pooling and purchasing functions (benefits incidence). A fairly large and growing body of research has focused on the extent to which groups in society differentially use services financed by the public sector. The World Bank recently completed an analysis of more than 50 Demographic and Health Surveys with respect to inequality in both health sector outcomes and outputs (Gwatkin and others 2000). The analysis shows large gaps in both health outcomes and the use of health services between the poorest citizens in a country and their richer counterparts.

Measuring the overall financial benefits and burdens of households and families in accessing health services is somewhat more complex than measuring service use. The simplest element of such policy assessments looks at the direct and indirect out-of-pocket payments for health services and how they apply to different socioeconomic groups. Direct payments include user fees for publicly provided services, payments for drugs and supplies, payments for laboratory services, and insurance premiums and copayments. Indirect out-of-pocket payments include costs of transportation to and from clinics or hospitals and forgone income from taking off from work to seek care.

Unfortunately, there are few studies showing the tax/revenue or benefit incidence (the financial value of the benefits by socioeconomic group) of most health financing systems. A comprehensive evaluation of the equity aspects of a health financing system would look at the tax/revenue incidence, the benefit incidence, and the net incidence (the difference between the financial contributions and the financial benefits). Unfortunately, because of the lack of information on benefit and tax incidence, it is usually difficult to do such an analysis.

One of the critical issues in inequality analyses is the way that different groups in society are identified and grouped. Any measure of socioeconomic status can be used to measure inequality in health outcomes and service use. Income, gender, educational status, occupational categories, residence, ethnicity, tribal affiliation, and social strata affiliation all can and have been used to look at inequalities in the health sector. Most of these measures, but not all, have been used as proxies for the economic status of different groups in the absence of other direct measures of economic well-being. Where detailed household surveys do exist, more direct measures are used, including consumption, expenditures, and more recently, ownership of personal assets and access to societal or community assets.

Some potential equity impacts of health financing policies:

- Different resource-generating mechanisms (user fees with or without retention at the facility level, private health insurance, payroll tax, general tax financing) can have direct impacts on health outcomes by promoting or deterring the use of life-saving preventive or simple curative services for economically vulnerable groups. Different mechanisms can also affect the prevalence of poverty (or change the depth of poverty) by increasing or decreasing the numbers of people falling into poverty because of spending on health needs. Different revenue generation mechanisms have differential incidence impacts by income group.
- The nature of pooling mechanisms can also directly affect health outcomes by influencing who uses lifesaving services. These mechanisms (coupled with prepayment) also determine the differential financial risks faced by low-income groups. Both risk and equity subsidization have important effects on inequality.
- How resources are allocated (geographically, by level, and programmatically) reflects the emphasis policy makers assign to inequalities and the role of the health sector in reducing poverty and achieving equity goals.

A large-scale assessment of the impact of health financing policies in resource generation, pooling, and allocation, especially for developing countries, is seriously lacking and should be a priority for the international community. Box 2.3 provides some guidance on the types of information needed for designing and implementing schemes that favor the poor.

Thus, providing financial protection and promoting equality depend on how health systems arrange the three key health financing functions of revenue collection, risk pooling, and purchasing. Although all health financing functions play an important role in ensuring financial protection and reducing inequality, risk pooling and prepayment (whether through taxes or individual premiums) play the central and often least understood roles.

### **BOX 2.3** *Designing and implementing financing schemes that benefit the poor*

To address the equity concern in health financing strategies, it is useful to ask the following questions during the design of health financing policies.

#### **Are resource-generating options likely to**

- increase or decrease the financial access of low-income groups?
- create incentives or disincentives for the poor in seeking care?
- increase or decrease the financial burden on the poor?
- increase the extent or depth of poverty?
- provide a cross-subsidy from the rich to the poor or vice versa?
- improve or reduce the quality of services?

#### **Are risk pooling mechanisms likely to**

- increase the number and share of the poor who are covered under pooling arrangements?
- decrease the risk of catastrophic payments for the poor?
- increase access to preventive and simple curative care through pooling?

#### **Are purchasing and resource allocation mechanisms likely to**

- increase the number of facilities in areas where the poor live?

- increase mobile facilities that serve the poor?
- take into account population size in different areas?
- take into account health needs (especially of the poor)?
- take into account poverty levels in different regions?
- prioritize programs that serve the poor?
- prioritize programs that address demand generation for the poor?
- prioritize levels of care that serve the poor?
- include innovative demand-side approaches such as conditional cash transfers or vouchers?
- purchase services from providers that serve the poor?
- condition purchasing on incentives for providers to serve the poor?

Source: Yazbeck 2005.

## Risk pooling and prepayment

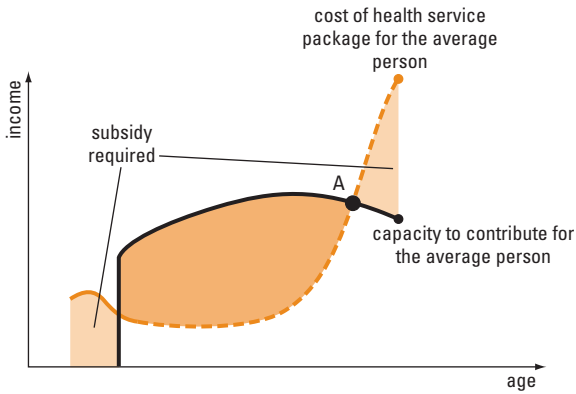
Risk pooling refers to the collection and management of financial resources so that large, unpredictable individual financial risks become predictable and are distributed among all members of the pool. The pooling of financial risks is the core of traditional insurance mechanisms. Whereas pooling ensures predictability and the potential for redistribution across individual health risk categories, prepayment provides various options for financing these risks equitably and efficiently across high- and low-income pool members. Public and private risk pooling arrangements observed today—social health insurance, national health service arrangements, and private insurance—are the result of cultural, economic, and historical decisions about how to organize risk pooling and prepayment, as well as implicit and explicit decisions about income redistribution and social solidarity. Each embodies different means for the creation of risk pools and the financing of such pools through prepaid contributions.<sup>6</sup>

In most low- and middle-income countries, multiple public and limited private arrangements coexist, making system fragmentation the norm rather than the exception. This increases administrative costs, creates potential equity and risk selection problems (for example, when the wealthy are all in one pool), and limits pool sizes. Moreover, health care risks change over an individual's or household's life cycle, but because generally little correlation exists between life-cycle needs and capacity to pay, subsidies are often necessary and are facilitated by risk pooling.

Figure 2.3 represents the evolution of the average cost of financing a given package of health services during the lifetime of an average individual, his or her capacity to pay, and his or her need for subsidies.<sup>7</sup> The dotted line shows the relationship between actual average costs and age. The solid line represents the relationship between the capacity of an individual to pay for the services and the individual's age. To the right of point A, the individual or household would need a subsidy to be able to finance and gain access to the services required without incurring an excess expenditure. It is possible that households or individuals with higher incomes never reach this point. It is also possible that lower-income households or individuals may need a subsidy from the beginning of their lives to access health care services at the levels and in the conditions specified by society as minimally acceptable. In this situation, the individual or household will require subsidization. Risk pooling plays a central role in facilitating such cross-subsidization. Because of economies of scale, risk pooling potentially reduces the average cost of the package, delaying reaching A. In contrast, the absence of a system for spreading risks results in high and unexpected out-of-pocket expenditures for the individual who needs health care services.

Risk pooling and prepayment functions are central to the creation of cross-subsidies between high-risk and low-risk individuals (risk subsidy), as well as between rich and poor (equity subsidy). The larger the pool, the greater the

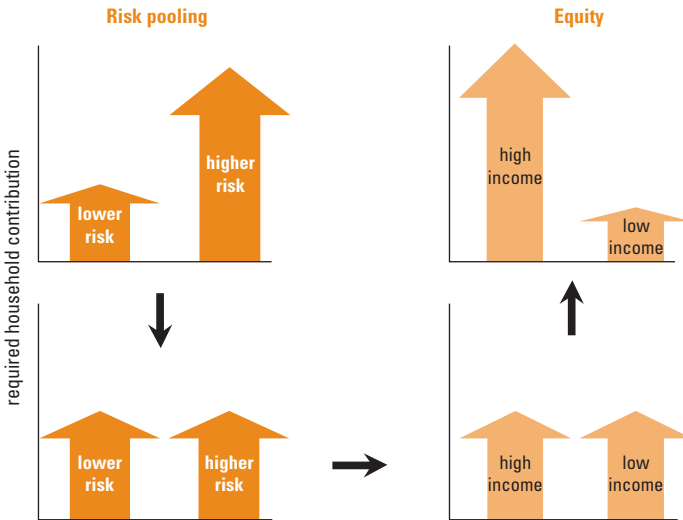
**FIGURE 2.3** Cost of health services, capacity to pay, and need for subsidies over the lifetime of a typical individual



Source: ILO/STEP 2002.

potential for spreading risks and the greater the accuracy in predicting average and total pool costs. Placing all participants in a single pool and requiring contributions according to capacity to pay rather than individual or average pool risk can facilitate cross-subsidization and, depending on the level of pooled resources, can significantly increase financial protection for all pool members (figure 2.4).

**FIGURE 2.4** Models of cross-subsidization for pooling risk and increasing equity of household contributions for health services



Source: ILO/STEP 2002.

However, spreading risks through insurance schemes is not enough to ensure financial protection, because it can result in low-risk, low-income individuals subsidizing high-income, high-risk members. Furthermore, significant portions of the population may not be able to afford insurance. For this reason, most health care systems are intended not only to spread risk, but also to ensure equity in the financing of health care services through subsidies from high- to low-income individuals. Equity subsidies are the result of such redistribution policies.

There are at least four alternative organizational arrangements for risk pooling and prepayment: ministries of health or national health services, social security organizations, voluntary private health insurance, and community-based health insurance. Each is linked to distinctive instruments for revenue collection (general revenues, payroll taxes, risk-rated premiums, and voluntary contributions) and for purchase of health services. Within these organizational structures, three alternatives often coexist for generating revenues and financing equity subsidies: subsidies within a risk pool, subsidies across different risk pools, and direct public subsidies through transfers from the government. Although medical savings accounts (with or without public subsidization) are also sometimes referred to as a risk pooling mechanism, they do not pool risks across individuals and therefore are far more limited in their scope for predictability and equity subsidization. They are simply intertemporal mechanisms for smoothing health risks over an individual's or household's life cycle.

Subsidies within a risk pool, whether financed through general revenues or through payroll taxes, are prerequisites for pooling risks in traditional national health services and social security systems. The goal of collecting revenues through an income-related or general revenue-based contribution (in contrast to a risk-related contribution, as is generally the case with private insurance) is to generate subsidies from high- to low-income individuals. These systems are effective when payroll contributions are feasible or the general revenue base is sufficient, and a large proportion of the population participates in the same risk pool. However, in a system with multiple competing public or private insurers and a fragmented risk pool, payroll contributions may increase incentives for risk selection. In the case of a national health service or social security system, financial resources might be insufficient or inappropriate for spreading the financial risks or for creating an equity subsidy, particularly if the general revenue or payroll contribution base is regressive.

Subsidies across different risk pools involve the creation of funds, often called solidarity or equalization funds, financed by a portion of contributions to each risk pool. This mechanism is found in systems with multiple insurers—for example, in Argentina, Colombia, Germany, and the Netherlands. A key element of this mechanism's success is the implementation of adequate systems of compensation among different risk and income groups.

Finally, in many OECD countries, direct public transfers funded by general taxation are made to insurers for subsidizing health care for certain groups or for the entire population. Such transfers are also used in some low- and middle-income countries, although at a limited level because of low capacity to collect revenue.

In most low- and middle-income countries, risk pool fragmentation significantly impedes effective risk pooling, while limited revenue-raising capacity precludes the use of broad public subsidies as the main source of finance. Therefore, targeting scarce public subsidies across different risk pooling schemes is probably the most feasible way to finance equity subsidies for the poor and those outside formal pooling arrangements.

However, this method has important transaction costs. Because a significant portion of the population is excluded from the formal sector, the method's use to ensure universal financial protection is limited, particularly in low-income countries. Even if significant subsidies are available from general taxation, the lack of insurance portability restricts the method's effectiveness as a subsidization mechanism among risk pools, because individuals may lose their coverage when they change jobs. Low-income countries and certain middle-income countries will be challenged both to publicly finance essential public and personal health services and to ensure financial protection through equity subsidies. Thus low- and middle-income countries must strive to achieve the best value for publicly financed health services in terms of health outcomes and equity and facilitate effective risk pooling for privately financed services. Providing public financing for cost-effective interventions is one critical aspect of determining which services to finance publicly.

## **Purchasing**

Purchasing, which is sometimes referred to as financing of the supply side, includes the numerous arrangements used by purchasers of health care services to pay medical care providers. A large variety of arrangements exists. Some national health services and social security organizations provide services in publicly owned facilities where staff members are public employees. Sometimes individuals or organizations purchase services through either direct payments or contracting arrangements from public and private providers. Other arrangements combine these approaches.

The framework for resource allocation and purchasing highlighted in table 2.2 provides a taxonomy of the numerous issues surrounding purchasing decisions. Resource allocation and purchasing procedures have important implications for cost, access, quality, and consumer satisfaction. Efficiency gains (both technical and allocative) from purchasing arrangements provide better value for the money and therefore provide a means of obtaining additional "financing" for the health system (Hensher 2001). Although a full discussion of this issue is beyond the scope of this chapter, we note that concomitant reforms in this area have been important in the

**TABLE 2.2 Framework for analyzing the policy options for voluntary health insurance**

Key policy options	
<b>Policy framework</b>	<p><b>Revenue collection mechanisms</b></p> <ul style="list-style-type: none"> <li>• Level of prepayment compared with direct out-of-pocket spending</li> <li>• Extent to which contributions are compulsory compared with voluntary</li> <li>• Degree of progressivity of contributions</li> <li>• Subsidies for the poor and buffer against external shocks</li> </ul> <p><b>Pooling revenues and sharing risks</b></p> <ul style="list-style-type: none"> <li>• Size</li> <li>• Number</li> <li>• Redistribution from rich to poor, healthy to sick, and gainfully employed to inactive</li> </ul> <p><b>Resource allocation and purchasing (RAP) arrangement</b></p> <ul style="list-style-type: none"> <li>• For whom to buy (demand question 1)</li> <li>• What to buy, in which form, and what to exclude (supply question 2)</li> <li>• From whom to buy—public, private, NGO (supply question 1)</li> <li>• How to pay—what payment mechanisms to use (incentive question 2)</li> <li>• What price to pay—competitive market price, set prices, subsidized (market question 1)</li> </ul>
<b>Institutional environment</b>	<ul style="list-style-type: none"> <li>• Legal framework</li> <li>• Regulatory instruments</li> <li>• Administrative procedures</li> <li>• Customs and practices</li> </ul>
<b>Organizational structures</b>	<ul style="list-style-type: none"> <li>• Organizational forms (configuration, scale, and scope of insurance funds)</li> <li>• Incentive regime (extent of decision rights, market exposure, financial responsibility, accountability, and coverage of social functions)</li> <li>• Linkages (extent of horizontal and vertical integration or fragmentation)</li> </ul>
<b>Management attributes</b>	<ul style="list-style-type: none"> <li>• Management levels (stewardship, governance, line management, clinical management)</li> <li>• Management skills</li> <li>• Management incentives</li> <li>• Management tools (financial, resources, health information, behavior)</li> </ul>

*Source:* Preker and Langenbrunner 2005.

financing reforms in many middle-income countries, most high-income countries, and some low-income countries. Preker and Langenbrunner (2005) also document a number of these efforts. Central to these reforms have been the separation of purchasing from provision, money following patients as opposed to historical provider budgets, and the use of incentive-based payment systems. Many of these incentive-based payment systems rely on capitation and managed care, case-based payments to hospitals, and related mechanisms to ensure a more equitable sharing of financial risk between the purchaser and provider.

This issue has taken on increased importance because donors want to be assured that new funding to scale up services in low-income countries is being used efficiently. No one wants to pour money into inefficient health systems. Moreover, the efficiency of a system has important financial implications for long-term fiscal sustainability and for governments to find the “fiscal space” in highly constrained budget settings for large increases in public spending. Indeed, health financing policies (collection, pooling, and purchasing) must be developed in the context of a government’s available fiscal space.

### **Health financing policies and fiscal space to increase health spending**

GDP growth is a necessary condition for facilitating domestic resource mobilization, but it is only one of several macroeconomic elements that provide the fiscal space for countries to undertake meritorious investments. In its broadest sense, fiscal space can be defined as the availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government’s financial position (Heller 2005). The issue of fiscal space is at the center of the current debate concerning the purported negative impact of IMF programs that preclude countries from using the increasing amounts of grant funding available for health sector investments and recurrent health expenditures (such as hiring additional health workers). In principle, there are several ways in which a government can create such fiscal space (Heller 2005):

- Additional revenues can be raised through tax measures or strengthened tax administration.
- Lower-priority expenditures can be cut to make room for more desirable ones.
- Resources can be borrowed from either domestic or external sources.
- Governments can use their power of seignorage (that is, having the central bank print money and lend it to the government).
- Governments may also be able to create fiscal space from the receipt of grants from outside sources.

Note that this definition of fiscal space implies that fiscal sustainability—the capacity of a government, at least in the future, to finance its desired expenditure programs as well as service any debt obligations—is a necessary but not sufficient condition for the existence of fiscal space. This suggests that exploitation of fiscal space requires a judgment that the higher expenditure in the short term and any associated future expenditures can be financed from current and future revenues. If financed by debt, the expenditure should be assessed according to its impact on the underlying growth rate or its impact on a country's capacity to generate the revenue needed to service that debt.

The IMF has emphasized its flexibility in allowing for absorption of additional external grant inflows for spending on meritorious programs (IMF 2004a). Yet its guidelines raise three caveats regarding fiscal space and increasing expenditures. First, analysis must take into consideration that higher levels of spending in a sector, even if financed from external grant flows, may have a ripple effect on spending in other sectors that may not have grant financing; this is a concern regarding wages for health workers. Second, increases in expenditures today may need to be limited even if grants are available for financing today, because funds may not be available to cover the implied increased expenditures in the future, when grant financing dries up. Third, changes in accounting rules cannot, by themselves, create additional scope for expenditure on the provision of basic social services or infrastructure.

Certainly, appropriate fiscal analysis at the country level must take into consideration any spillover effects that expenditure decisions in one sector may have on other sectors. The same is true for decisions with effects that carry over several years. Countries must ensure that decisions that are made today and that have expenditure implications in the future also have, under reasonable assumptions, financing mechanisms in the future. This is especially important in health, where commitments regarding coverage of certain health needs may carry expenditure commitments over the next few years as a result of the projected aging of the population and changes in morbidity. This cross-temporal implication of health expenditures must be taken into consideration especially when downsizing expenditures will be politically difficult. This is, for instance, the case for anti-retroviral treatment of AIDS patients: donor assistance may be readily available today but is not guaranteed to finance the cohort of AIDS patients for the duration of their lives, and in many low-income countries, the total public sector health budget may not be sufficient to finance such treatments.

It is relevant in this context to note that changes in accounting rules do not produce fiscal space. Recently, there has been a lot of discussion regarding the accounting of grants in IMF programs. Donors have interpreted sector expenditure ceilings resulting from IMF programs as “inflexibility in IMF programs.” The fact is that IMF accounting practices measure overall fiscal deficits both with and

without grants. Where grants are included, they are accounted for as part of the revenue stream. As mentioned earlier, fiscal space can be generated only by finding additional financing (through taxes, grants, or loans), by reallocating expenditures, or by improving the efficiency of current expenditures. Thus all policies implementing the basic health financing functions must be considered in the context of fiscal space. Although revenue collection activities are very directly related to fiscal space, so are pooling and purchasing policies.

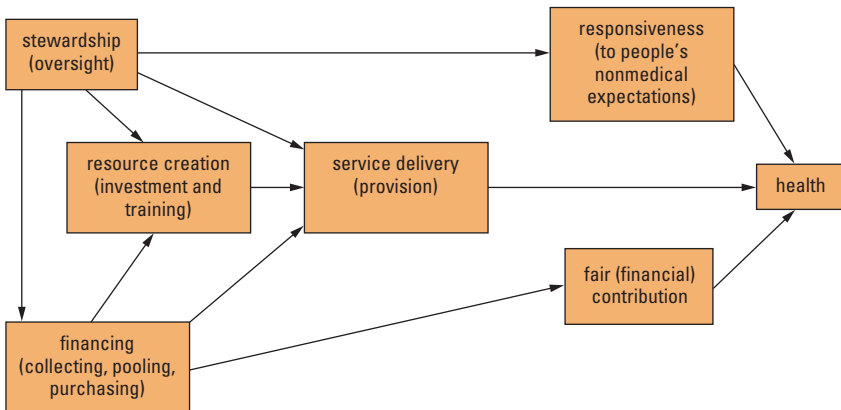
### Annex 2.1 Classifications of health financing systems

In the *World Health Report 2000*, the WHO categorizes health systems as having four principle “functions” (stewardship, resource creation, service delivery, and financing) and three principle objectives (health, fair financial contribution, and responsiveness to people’s nonmedical expectations). This categorization and the relationships among the seven elements are shown diagrammatically in annex figure A2.1. Financing is a principal system function that comprises collecting, pooling, and purchasing.

The determinants of health financing are indeed a complex amalgam of institutional, demographic, socioeconomic, environmental, external, and political factors. Mossialos and others (2002) have summarized these factors (annex figure A2.2). Demographic profiles, social values, environmental factors, and economic activity are import determinants of both mandated and voluntary health financing, but political structures and external pressures are also particularly important determinants of the nature, scale, and effectiveness of mandated health financing. Political structures will also play some role in determining the nature and effectiveness of voluntary health insurance because such insurance is dependent on government regulation.

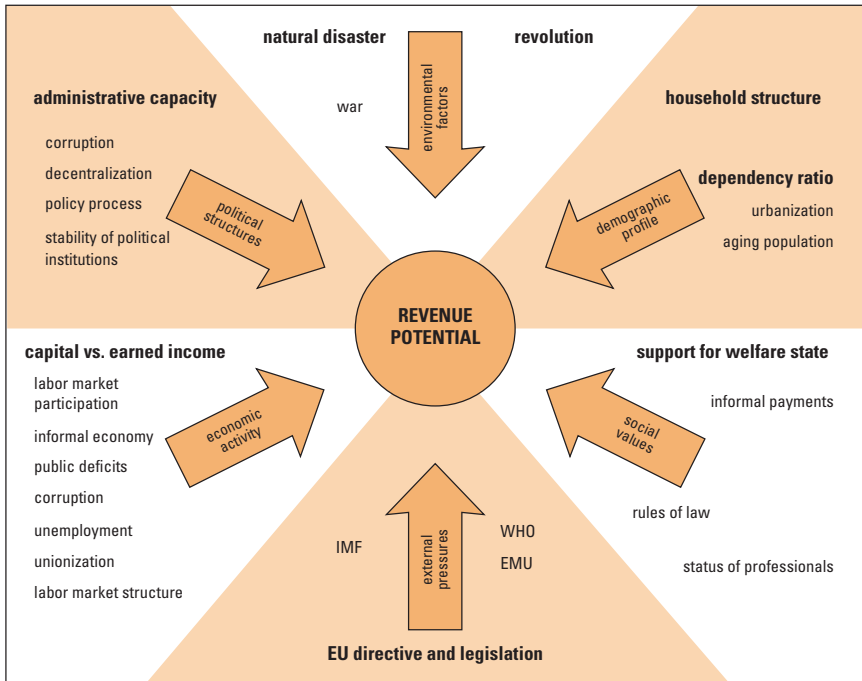
Kutzin (2001), Mossialos and Thomson (2002), and Arhin-Tenkorang (2001) have developed more specific frameworks for analyzing health financing and health insurance. Kutzin’s framework analyzes policy options in terms of the extent to which the function of health insurance is enhanced. He defines this

**FIGURE A2.1** Relations among functions and objectives of a health system



Source: WHO 2000.

FIGURE A2.2 Determinants of health financing

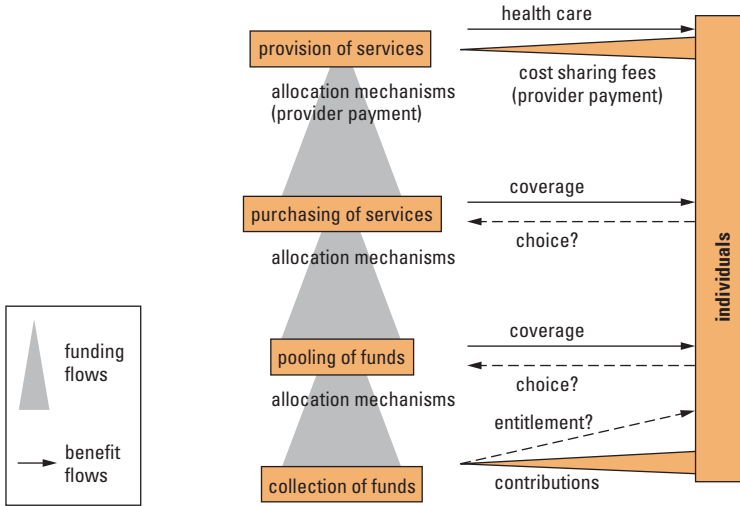


Source: Mossialos and others 2002.

function of health insurance as “access to care with financial risk protection” and 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 (annex figure A2.3). This framework, which is equally applicable to public and private financing approaches, clarifies the important conceptual distinctions among initial funding sources, contribution mechanisms, collecting organizations, pooling organizations, allocation mechanisms, and purchasing organizations, and it categorizes options under each function (Kutzin 2001).

It is important to note that the collection, pooling, and purchasing functions can be undertaken by different organizations or by one or more organizations in different combinations. For this reason, Kutzin specifically calls for an analysis of how functions are integrated within or separated across organizations (that is, the

**FIGURE A2.3** Kutzin’s framework of health financing functions



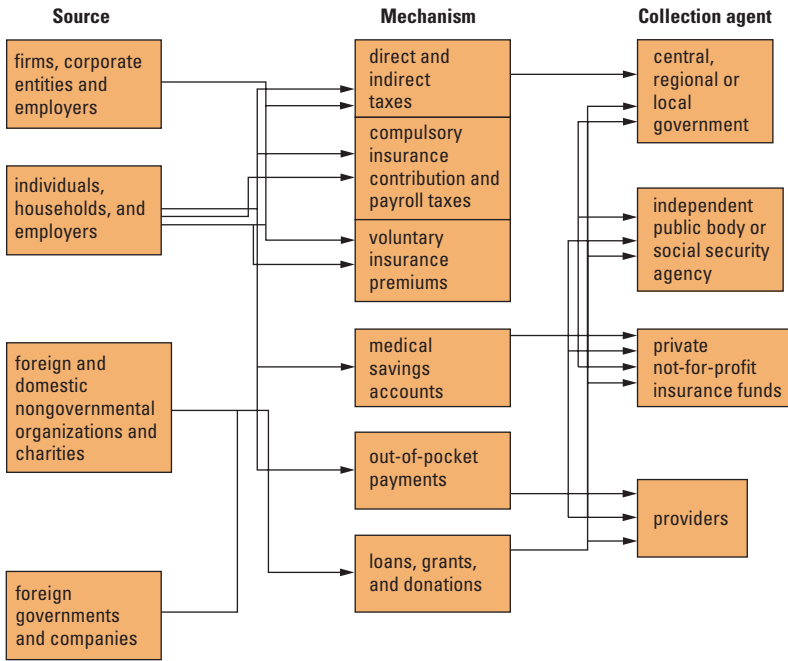
Source: Kutzin 2001.

extent of vertical and horizontal integration). He also highlights the interdependence of regulation and information as key policy tools to enhance the insurance function, and he 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’s analysis also highlights the importance of active purchasing, indicating that it is not desirable to simply minimize administrative costs. Administrative costs resulting from effective utilization, management, and provider payment policies can result in substantial reductions in inappropriate benefit payments.

Mossialos and Thomson (2002) have graphically represented Kutzin’s main options regarding funding sources, contribution mechanisms, and collecting organizations (annex figure A2.4). Employers might be added to the diagram as an additional collection (and pooling) organization.

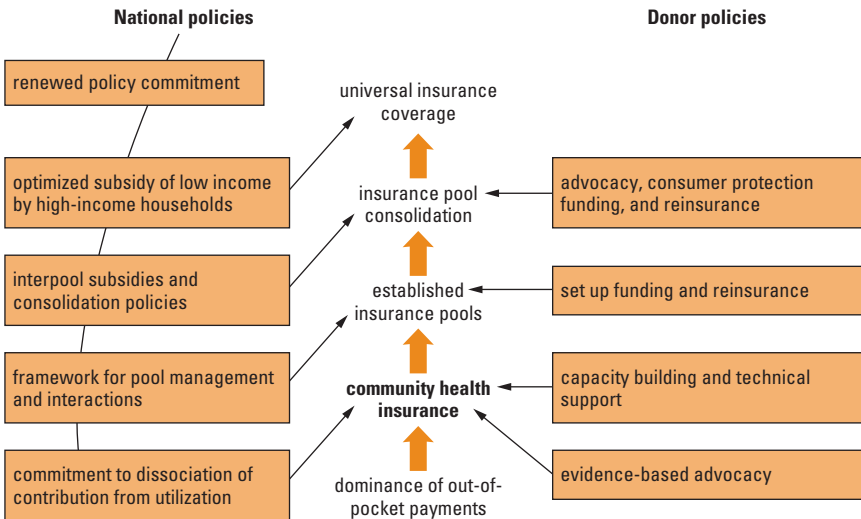
Arhin-Tenkorang (2001) has developed a framework based on the evolution of financial protection from community-based insurance through established insurance pools and through insurance pool coordination to universal insurance coverage. This evolution of stages is linked to certain national and donor policies (annex figure A2.5). This alternative framework provides a detailed picture of conceptual issues, basic design issues, and the critical interactions embodied in a health insurance system.

**FIGURE A2.4 Funding sources, contribution mechanisms, and collection agents**



Source: Mossialos and Thompson 2002.

**FIGURE A2.5 Stages of financial protection and supporting policies**



Source: Arhin-Tenkorang 2001.

## Endnotes

1. Roberts and others (2004, p. 238) identify five key “control knobs” for health reform: financing, payment, organization, regulation, and persuasion.

2. The concept of equity used in this chapter refers to redistribution and fairness. In our treatment of equity, we also assess inequalities in access, use, and outcomes. The *World Development Report 2006* (World Bank 2005) uses a very broad concept of equity, which is defined in terms of equal opportunity and avoidance of absolute deprivation and which attempts to capture the multidimensional nature of inequality of opportunity.

3. The IMF defines social contribution as “a payment to a social insurance scheme by the insured persons or by other parties on their behalf in order to secure entitlement to the social benefits of the scheme. The contributions may be compulsory or voluntary. A general government unit can pay social contributions on behalf of its employees (an expense) or receive social contributions as the operator of a social insurance scheme (either revenue or the incurrence of a liability)” (2002, p. 20).

4. In some countries, though, the degree of progressivity is lowered by reliance on local income taxes, which are often close to proportional.

5. One function of “insurance” systems is as a prepayment mechanism against large unexpected medical expenses. Although, in theory, prepayment for predictable expenses offers no risk pooling benefits in an insurance sense and can undermine a health insurance system if they are a significant part of covered benefits, individuals in most countries appear to prefer prepayment even for routine services. Although inclusion of prepayments for predictable expenses in the insurance benefit package can perhaps be justified on redistribution grounds, the trade-offs in terms of undermining the insurance function must be considered. Insurance also creates moral hazard, whereby individuals tend to overconsume services for which they do not pay the actual costs at the point of consumption. The richer the benefit package and the more services included on a prepaid basis, the greater the potential for moral hazard in both public and private insurance systems.

6. Although all insurance mechanisms (because of the law of large numbers) provide for better predictability of expenses related to large unpredictable individual risks, private insurers relate individuals’ premiums to this average risk and create separate risk categories to avoid the phenomenon of adverse selection (in which the enrollment of sicker-than-average individuals can destabilize premiums). By separating individual contributions from this average cost, public insurance mechanisms (both national health service and social security) can promote much more effective redistribution across high- and low-income individuals, depending on the progressiveness of the payroll contribution and general revenue base of the country. Nonetheless, private health insurance has the advantages of not relying on coercive taxes that distort the economy and providing greater flexibility in choice of insurance than the usual “one size fits all” public system.

7. Capacity to pay is defined as the level of contribution that would keep an individual from being pulled below the poverty line. As the risk of requiring services increases with time, it may reach a level equal to the capacity to pay.

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