



2 *Why does finance matter?*

Financial systems provide payment services. They mobilize savings and allocate credit. And they limit, price, pool, and trade the risks resulting from these activities. These diverse services are used in varying combinations by households, businesses, and governments and are rendered through an array of instruments (currency, checks, credit cards, bonds, and stocks) and institutions (banks, credit unions, insurance companies, pawnbrokers, and stockbrokers). A financial system's contribution to the economy depends upon the quantity and quality of its services and the efficiency with which it provides them.

Financial services make it cheaper and less risky to trade goods and services and to borrow and lend. Without them an economy would be confined to self-sufficiency or barter, which would inhibit the specialization in production upon which modern economies depend. Separating the timing of consumption from production would be possible only by first storing goods. The size of producing units would be limited by the producers' own capacity to save. Incomes would be lower, and complex industrial economies would not exist.

Finance is the key to investment and hence to growth. Providing saved resources to others with more productive uses for them raises the income of saver and borrower alike. Without an efficient financial system, however, lending can be both costly and risky. Self-financed investment is one

way to overcome these difficulties, but profitable investment opportunities may exceed the resources of the individual enterprise. Investment by the public sector is another answer; in this case additional savings are mobilized through the tax system. But excessive centralization brings its own difficulties, especially in gathering the information needed to make sound investments. Efficiency therefore requires a balance among internally generated resources, centrally organized saving and investment, and market-based financial arrangements.

Market-based arrangements are voluntary. As such they are driven by the desire for profit, tempered by concerns about risk. Competition ensures that transaction costs are held down, that risk is allocated to those most willing to bear it, and that investment is undertaken by those with the most promising opportunities.

Such arrangements may take many forms but tend to mirror an economy's complexity and political orientation. Informal finance, such as loans within families and between friends or from pawnbrokers and moneylenders, is still important in many countries. But as economies grow, these arrangements need to be augmented by the services that only formal institutions—commercial banks, collective investment institutions, and capital markets—can supply. For example, by transforming the size and maturity of financial assets, formal

Box 2.1 Life without money

“Some years since, Mademoiselle Zelie, a singer . . . gave a concert in the Society Islands . . . in exchange for a third part of the receipts. When counted, her share was found to consist of three pigs, twenty-three turkeys, forty-four chickens, five thousand cocoa nuts, besides considerable quantities of bananas, lemons and oranges . . . as Mademoiselle could not consume any considerable portion of the receipts herself, it became necessary in the meantime to feed the pigs and poultry with the fruit.”

W. S. Jevons
Money and the Mechanism of Exchange
(Jevons 1898, p. 1)

Even in modern economies many transactions do not involve money. For example, barter is used to escape taxation and regulation. In developing countries most exchanges within extended families are handled without cash. The multiple incomes of an extended family offer a substitute for insurance, pension plans, and social security. In many areas of the world, sharecropping involves a series of nonmonetary transactions concerning inputs, land tenure, crop sales, and so on.

In some countries neighbors help one another to build their houses without payment (*gotong royong* in Java, barn raising in the United States).

The economy of ancient Egypt operated for 2,000 years before the invention of money (although precious metals served as a medium of exchange for some transactions). Even after several surrounding states adopted coinage, the government of Egypt opposed the use of money. The Inca Empire of Peru may not have used money as a medium of exchange, despite being exceptionally rich in gold and silver. Some religious societies (including the almost self-sufficient Jesuit Republic of Paraguay in the sixteenth and seventeenth centuries) and authoritarian or paternalistic communities (such as the large *haciendas* of Latin America) make little or no use of money, at least for internal transactions.

Nonmonetary transactions tend to be aspects of a longstanding social compact, whose individual parts cannot be valued separately. But in advanced economies most exchanges are impersonal. As Mademoiselle Zelie discovered, trade can be quite costly without a widely accepted medium of exchange.

institutions can mediate between the many small depositors who prefer liquid assets and the few large borrowers who need long-term loans to finance investment. They can provide other useful services too: insurance, hedging (using options and futures contracts), and so on. In a diversified market-based system, governments retain a key role as prudential regulators, because experience has shown that financial markets—essential though they are—can be prone to instability and vulnerable to fraud.

Finance and growth

Malthus predicted that growing populations and fixed amounts of land and other natural resources would ultimately stifle economic growth. But natural resource endowments have declined in importance in most high-income countries. In Great Britain, for example, the value of land and minerals was 60 percent of the value of all tangible assets in 1688 but only 15 percent in 1977. In fact, natural resources have not determined wealth. In 1870, Australia, a country rich in natural resources, had twice the per capita income of Switzerland, which has few; today Switzerland’s per capita income exceeds Australia’s by more than half. During the

past three decades Hong Kong, Japan, the Republic of Korea, and Singapore have had among the world’s highest per capita income growth rates despite their relatively poor resource endowments. Resource-rich Argentina has hardly grown at all.

The biggest difference between rich and poor is the efficiency with which they have used their resources. The financial system’s contribution to growth lies precisely in its ability to increase efficiency.

Finance and trade

The financial system makes its biggest contribution to growth by providing a medium of exchange. In a barter economy, trade requires a “mutual coincidence of wants.” It is therefore limited by the costly search for trading partners. Specialization is discouraged in economies with no medium of exchange, so their productivity is low. Money facilitates specialization by reducing trading costs and linking different markets. The adoption of a standard unit of account serves the same goal (see Box 2.1).

Historically, economies moved first from basic self-sufficiency to barter trade and then to trade against commonly accepted commodities such as

Table 2.1 Saving and growth in developing countries, 1965 to 1987

Country group by GDP growth rate	Gross national savings/GDP	Gross investment/GDP	Change in GDP/investment	M2/GDP
<i>High growth (over 7 percent)</i>				
Seven countries	28.0	28.6	26.3	43.0 ^a
Excluding China	23.2	26.7	33.1	..
<i>Medium growth (3-7 percent)</i>				
Fifty-one countries	18.5	22.6	23.6	31.2
<i>Low growth (less than 3 percent)</i>				
Twenty-two countries	19.0	19.0	10.1	23.8

Note: Data are weighted averages times 100 and are based on a sample of eighty developing countries. M2 is currency in circulation plus demand, time, and savings deposits at banks. Investment is gross domestic investment.

a. Because of lack of data, average is for 1977-87 only.

Source: IMF, *International Financial Statistics*, and World Bank data.

gold. Maintaining inventories of commodity money was costly, and the safekeepers of gold and other commodity monies soon learned the advantages of allowing the direct exchange of deposit certificates. Such economizing on the use of commodity money gave birth to deposit money and banking. The continuing search for cheaper means of payment led to paper money, credit cards, and electronic transfers.

Most developing countries have a widely accepted medium of exchange, although they will need more advanced payment systems as their economies become larger and more complex. But, some countries, particularly in Latin America, have failed to provide a currency with a stable value. In inflationary economies local currency becomes less acceptable as a medium of exchange. Inflation also undercuts money's use as a unit of account: it makes financial contracts riskier, reduces the information imparted by relative prices, and distorts the allocation of resources.

Finance and saving

Saving determines the rate at which productive capacity, and hence income, can grow. On average, the more rapidly growing developing countries have had higher saving rates than the slower-growing countries (see Table 2.1). These rates are influenced by many factors. In analyzing them it is useful to distinguish between the flow of "saving" and the stock of "savings." In this Report, "saving" will always refer to the flow of real resources that are not consumed in the period under study and that are therefore available for investment. "Savings" will refer to the stock of accumulated saving, or wealth. An increase in the stock of financial assets will be called "financial deepening."

Many factors affect the saving rate: the rate of income growth, the age composition of the popu-

lation, and attitudes toward thrift. The services provided by government, such as social security, can affect saving, as can taxes and government deficits. Macroeconomic and political stability affect expectations and thus affect saving. Whether financial variables affect the saving rate is still an open question.

Liquidity and ease of access may make financial instruments a more attractive home for savings. And financial services may encourage saving if they raise the net returns. Higher interest rates raise the return, but they can also enable savers to achieve a target stock of financial wealth with a lower saving rate. The effect of higher interest rates is therefore ambiguous. Empirical estimates range from a large positive effect to no effect at all.

Although interest rates have an uncertain effect on the amount people save, their effect on the form in which people save is clear. High interest rates favor financial over nonfinancial forms of saving. A recent study using 1985 data for eighty-one developing economies found that the ratio of liquid liabilities to GNP (a measure of financial depth) rose by 0.75 percentage point in response to a 1.0 percentage point increase in the nominal interest rate paid on deposits. However, the ratio fell by 1.70 percentage points in response to a 1.0 percentage point increase in the rate of inflation. (This asymmetry may reflect the fact that some liquid liabilities—currency, for example—pay no interest and thus cannot fully compensate savers for inflation. It may also reflect a risk premium that rises with the inflation rate.) Overall, higher real interest rates are likely to lead to financial deepening as savers switch some of their saving from real to financial assets and from foreign to domestic assets. Conversely, the negative real interest rates that many countries saw during the 1970s discouraged the holding of financial assets.

Governments can influence financial saving in

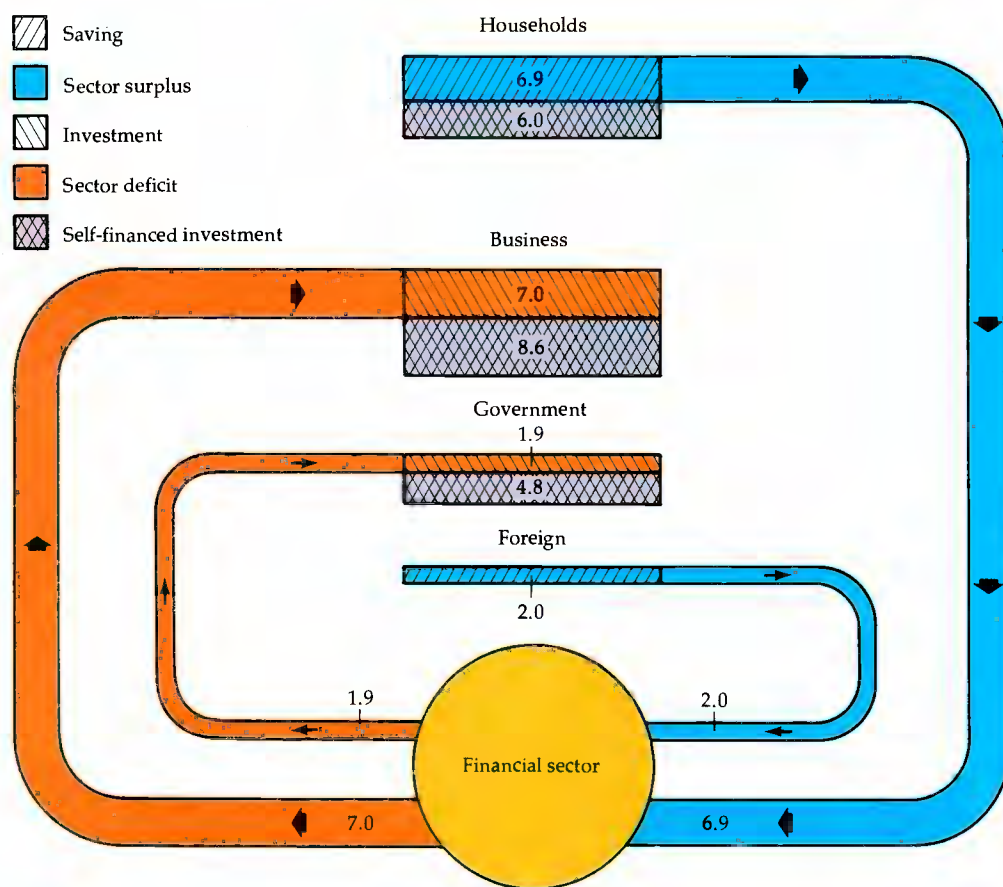
other ways too. By imposing direct taxes on banks, by requiring banks to hold noninterest-bearing reserves at the central bank, or by forcing banks to invest in low-interest government bonds, they reduce the return on bank deposits. Historically, governments raised finance by debasing commodity money. Today they do the same by granting themselves a monopoly in the creation of currency. The rent earned from this monopoly is called seigniorage (see Chapter 4). The more governments rely on it for revenue, the less savers are inclined to hold their wealth in financial form. As discussed

in the next section, the amount saved in financial form affects the productivity of investment.

Finance and investment

The financial system intermediates only part of a country's total investment, because firms and households finance much of their investment directly out of their own saving. Only when investment exceeds saving is it necessary to borrow, just as when saving exceeds investment it is necessary to lend. The financial system's task is to move ex-

Figure 2.1 Average saving and investment rates and sectoral surpluses and deficits for fourteen developing countries
(percentage of GNP)



Note: Data are based on the sample of fourteen developing countries listed in Table 2.2.
Source: Honohan and Atiyas (background paper).

Table 2.2 Average sectoral surpluses in fourteen developing countries, selected years
(percentage of GNP)

Country and period	Households	Business	Government	Foreign
Cameroon, 1980-84	4.0	-9.4	2.7	2.8
China, 1982-86	7.0	-8.1	0.3	0.8
Colombia, 1970-86	3.5	-4.6	-0.2	1.3
Côte d'Ivoire, 1971-78	1.5	-7.7	1.3	4.4
Ecuador, 1980-85	5.1	-6.8	-2.5	5.0
India, 1970-82	5.5	-1.2	-5.5	1.1
Korea, Rep. of, 1980-85	7.0	-13.4	1.1	5.2
Malaysia, 1980, 1985-86	16.8	-7.2	-12.2	1.7
Philippines, 1983-85	9.1	-7.0	-3.6	2.9
Portugal, 1977-79, 1981	14.3	-16.1	-7.3	7.6
Thailand, 1981-83	6.8	-6.5	-4.3	5.7
Tunisia, 1977, 1980-84	2.1	-13.7	2.5	9.1
Turkey, 1971-81	7.7	-11.0	-0.9	3.2
Yugoslavia, 1970-85	7.0	-8.2	0.7	1.2
Average (weighted)	6.9	-7.0	-1.9	2.0
Self-financing ratio ^a	215	55	72	—

Note: Sectoral surpluses may not sum to zero where figures have been derived from independent sources.

a. A self-financing ratio is a sector's saving divided by its investment, expressed as a percentage. This ratio overstates true self-financing to the extent that there is intrasectoral borrowing or lending. Data are derived from the weighted sectoral saving and investment averages shown in Figure 2.1.

Source: Honahan and Atiyas (background paper).

cess saving from economic units in surplus to those in deficit.

Figure 2.1 shows the average saving and investment rates for fourteen developing countries. Households saved 12.9 percent of GNP and invested 6.0 percent; that left them with a surplus of 6.9 percent of GNP. Businesses saved 8.6 percent of GNP and invested 15.6 percent; that left them with a deficit of 7.0 percent of GNP. The foreign sector was a net lender and the government a net borrower. The financial sector is the channel for all these flows. Note that the country-by-country sectoral balances which underlie these averages vary widely. Table 2.2 shows the balances for each of the countries that are aggregated in Figure 2.1. The surplus of the household sector, for instance, ranges from Côte d'Ivoire's 1.5 percent (in 1971-78) to Malaysia's 16.8 percent (in 1980-86).

Taking the fourteen countries together, Table 2.2 shows that businesses financed 55 percent of their investment from their own saving (in the form of depreciation allowances and retained earnings). Governments financed 72 percent of their investment from their saving (that is, from the excess of taxes and other income over consumption spending plus transfers). And households as a group financed all of their investment from their saving. Altogether, roughly half of all investment was self-financed.

An advantage of self-finance is that, in combining the acts of saving and investing, it internalizes

all the information, transaction, monitoring, and enforcement costs that would be involved if the resources were lent to someone else. No complex contracts, collateral, or other devices are required to reduce the risks inherent in lending. The shortcoming of self-finance is that an individual's investment opportunities may not match his or her resources or may be inefficiently limited by them.

Even though the financial system intermediates only part of total investable resources, it plays a vital role in allocating saving. In the early stages of development, relatives, friends, and moneylenders may be the only sources of external finance. As the financial system grows, local banks, then national financial institutions, and finally securities markets and foreign banks become sources of funds for investors. Smoothly functioning financial systems lower the cost of transferring resources from savers to borrowers, which raises the rate paid to savers and lowers the cost to borrowers (see Box 2.2). The ability of borrowers and lenders to compare interest rates across markets improves the allocation of resources.

Historically, the quality of investment has been at least as important for growth as the quantity. Although the fastest-growing countries had higher rates of investment than the others in Table 2.1, empirical studies generally find that less than half the growth in output is attributable to increases in labor and capital. Higher productivity explains the rest. Higher labor productivity reflects better

Box 2.2 Transaction costs and the supply of credit

The impact of financial intermediation and interest rate ceilings on credit can be demonstrated geometrically. In the diagrams in Box figure 2.2 the horizontal axis measures the quantity of borrowing or lending per unit of time (X), and the vertical axis measures the cost of borrowing (r) and the return for lending (i). The economy's demand for credit is depicted in the first diagram by the downward-sloping curve labeled D . Its negative slope reflects, in part, the increasing quantity (per unit of time) of profitable investment as the cost of borrowing declines. The upward-sloping curve labeled S depicts the economy's supply of credit, the amount of saving offered to others either directly or through intermediaries such as banks. Its positive slope reflects, in part, the increasing share of total saving provided for financial assets as their return rises relative to the return on real assets or investment abroad. If there were no transaction costs or interest rate regulations, the market-determined rate of interest would be $r = i$, and the amount of credit per period would be X .

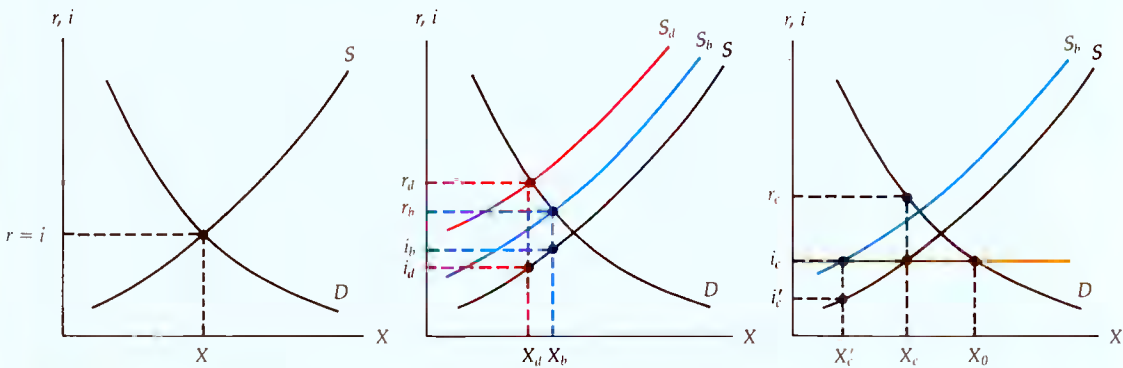
It is costly, however, for lenders to locate credit-worthy borrowers directly. In the center diagram, the amount lenders must charge borrowers to cover that cost is reflected in the curve S_d . The vertical distance between this curve and the supply of funds curve (S) is the amount of these transaction costs (including the cost of covering the expected defaults). If lenders had to find borrowers on their own, they would be willing

to supply X_d in the expectation of earning (after deducting expected costs) i_d . For that amount of credit borrowers would be paying r_d . Transaction costs introduce a wedge between the cost to borrowers and the return to lenders, which reduces the amount lent.

Banks or other intermediaries exist, in part, because they are able to reduce the transaction costs of borrowing and lending. This is reflected in the curve S_b . The wedge between the cost to borrowers and the return to lenders is now the banks' spread. Assuming that bank spreads are less than the costs of direct lending, the amount lent increases from X_d to X_b , the return to lenders increases from i_d to i_b , and the cost to borrowers falls from r_d to r_b . The better banks are at reducing transaction costs, the greater these effects. Reducing taxes on banking (such as unremunerated reserve requirements, which are a part of these costs) has the same effect.

The third diagram shows the effect of an interest rate ceiling (the horizontal orange line at i_c). If the ceiling is applied to deposit rates, it will reduce the amount lent (to X_c) and raise the cost to borrowers (to r_c). If the ceiling applies instead to lending rates, banks will set deposit rates at i'_c , deducting transaction costs. The amount deposited (and lent, when abstracting from reserve requirements) will be X'_c . The excess demand for credit ($X_0 - X'_c$) cannot be satisfied, and lenders will ration the available supply.

Box figure 2.2 The supply of and demand for credit



health, skills, education, and work effort; higher capital productivity reflects technical progress and the more efficient use of saving.

As more saving moves through the financial sys-

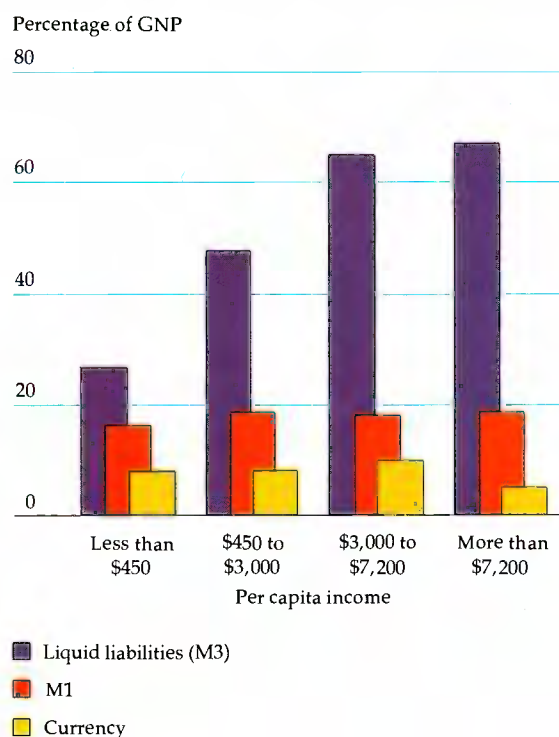
tem, financial depth increases. The financial systems of higher-income countries are usually deeper (as measured by the ratio of liquid liabilities to GNP) than those in poorer ones (see Figure 2.2).

They are also deeper in the most rapidly growing countries than in the slowest-growing countries (as shown by the ratio of M2 to GDP in Table 2.1).

Faster growth, more investment, and greater financial depth all come partly from higher saving. In its own right, however, greater financial depth also contributes to growth by improving the productivity of investment. Investment productivity, as measured by the ratio of the change in GDP to investment (the inverse of the incremental capital-output ratio—ICOR), is significantly higher in the faster-growing countries, which also have deeper financial systems (Table 2.1). This suggests a link between financial development and growth. How might this work? It was noted above that positive real interest rates favor financial saving over other forms of saving and therefore promote financial deepening. Provided that intermediaries are good at selecting viable projects, greater intermediation will ensure that the better investments are financed and will thereby increase the average productivity of investment. Table 2.3 groups the countries of Table 2.1 that had meaningful interest rate data according to their real interest rates: positive, moderately negative (0 to -5 percent), and strongly negative. The first group had lower inflation rates, deeper financial sectors, moderately higher investment rates, and significantly more productive investments than the others.

More important, the growth rates of the countries with positive real interest rates were considerably higher on average than those of the others. As the world economy adjusted to the first oil price shock of the early 1970s, productivity and growth fell nearly everywhere. But the fall was much

Figure 2.2 Indicators of financial depth



Note: Data are unweighted averages by income group. M1 is the sum of currency and demand deposits. Liquid liabilities are the sum of M1, time and savings deposits, and other deposits at financial institutions.

Source: Neal (background paper).

Table 2.3 Growth rates and other economic indicators for country groups with positive, moderately negative, and strongly negative real interest rates, 1965 to 1973 and 1974 to 1985
(average percent)

Indicator	1965-73			1974-85		
	Positive	Negative		Positive	Negative	
		Moderately	Strongly		Moderately	Strongly
Real interest rate	3.7	-1.7	-13.7	3.0	-2.4	-13.0
GDP growth rate	7.3	5.5	4.6	5.6	3.8	1.9
M3/GDP	28.9	27.0	29.1	40.3	34.0	30.5
Investment/GDP	21.4	19.7	21.4	26.9	23.2	23.0
Change in GDP/investment	36.7	31.1	21.7	22.7	17.3	6.2
Change in real M3/real saving	18.7	12.7	6.4	16.6	8.2	-0.9
Inflation rate	22.2	7.1	40.2	20.8	23.9	50.3
Volatility of inflation rate	17.1	5.3	27.2	12.2	9.1	23.5

Note: Real interest rates were calculated from nominal rates according to the following formula: $[(1 + r) / (1 + p) - 1] \times 100$, where r is the deposit rate and p is the inflation rate. Inflation is the percentage change in the consumer price index (CPI). M3 is currency plus the sum of nonbank deposits of the public at all identified deposit-taking institutions. Real saving is gross domestic savings deflated by the average annual CPI rate. Volatility of inflation is the absolute deviation of the inflation rate from its level the year before.

Source: Gelb (background paper).

Box 2.3 Real interest rates and growth

Most developing countries have periodically held their interest rates below market-clearing levels. These artificially low interest rates have "repressed" their financial systems, shrinking financial assets in real terms especially at times of high inflation. If financial depth promotes economic growth, artificially low real interest rates may be an obstacle to development.

A background study for this Report estimated the relationship between real interest rates and growth for the thirty-three developing countries with populations of more than 1 million and acceptable data for the period 1965-85 (the same countries that are grouped by interest rates in Table 2.3). When the data for these countries were averaged over each of two periods, 1965-73 and 1974-85 (to take into account the marked deterioration in growth of virtually all countries after the first oil shock), higher real rates of interest on short-term deposits were indeed associated with faster growth. In a simple regression where GY is the growth rate, R is the real interest rate, and $SHIFT$ is the dummy for the second period

$$GY = -0.12 + 0.20R + -0.02 SHIFT \quad \bar{R}^2 = 0.45 \\ (-2.5) \quad (5.2) \quad (-3.4)$$

However, assessing the impact of interest rates on economic performance is not straightforward. Causation could run in either direction. To analyze the association between interest rates and growth, this study decomposed the relationship into a chain of relationships more likely to run in one direction. The hypothesized chain ran from interest rates to financial depth and to saving and from financial depth to the productivity of investment.

The resulting estimates showed that higher real interest rates (obtained by raising repressed rates toward modestly positive levels) are associated with increased financial depth and with a modest increase in saving and investment. In the second link in the hypothesized chain, financial depth was strongly associated with more productive investment. When the estimates of each link are put together, they suggest that, although real interest rates have a smaller effect on growth than

indicated in the simple regression, the association is strong and appears to operate primarily through the effect of greater financial depth on the productivity of investment. (Note, however, that countries with repressed financial systems often suffer serious distortions in other sectors of the economy as well. The strong relationship between real interest rates and growth may therefore reflect the correlation between macroeconomic imbalances and price distortions, particularly the negative association between high inflation rates and growth, as well as financial repression.)

Box figure 2.3 plots some of the country data used in this study. The value of each country's average investment rate (horizontal axis) is plotted against its average growth rate (vertical axis) for the second period (1974-85). Although higher investment rates are associated on average with higher growth rates, the figure shows that the relationship is loose. The differences between growth rates and investment rates reflect differences in the productivity of investment. Any line drawn from the origin represents a given growth-investment ratio (the inverse of the incremental capital-output ratio); if all investments were equally productive, differences in growth rates would reflect differences in investment rates only, and all points would fall on a line that represents the average productivity of investment. In the figure that line—labeled "average productivity of investment"—corresponds to the sample average. Thus the position of points with respect to the line reflects differences in the productivity of investment among the sample countries, with those above the line being more productive than the average and those below it less.

The blue squares depict countries with positive real interest rates, the white squares those with moderately negative rates, and the red squares those with strongly negative rates. Investments in all the countries with positive real rates were more productive than average. Investments were generally less productive than average in the countries with strongly negative real rates, four of which actually had negative growth rates over the period.

greater in the countries with negative real interest rates. Overall, output grew almost three times faster, on average, in the countries with positive real interest rates than in the countries with strongly negative rates. Further analysis suggests that positive real interest rates helped growth mainly by improving the quality of investment and not just by increasing the quantity of investment (see Box 2.3). Although the rate of investment was only 17 percent higher in the countries with positive real rates, the average productivity of their

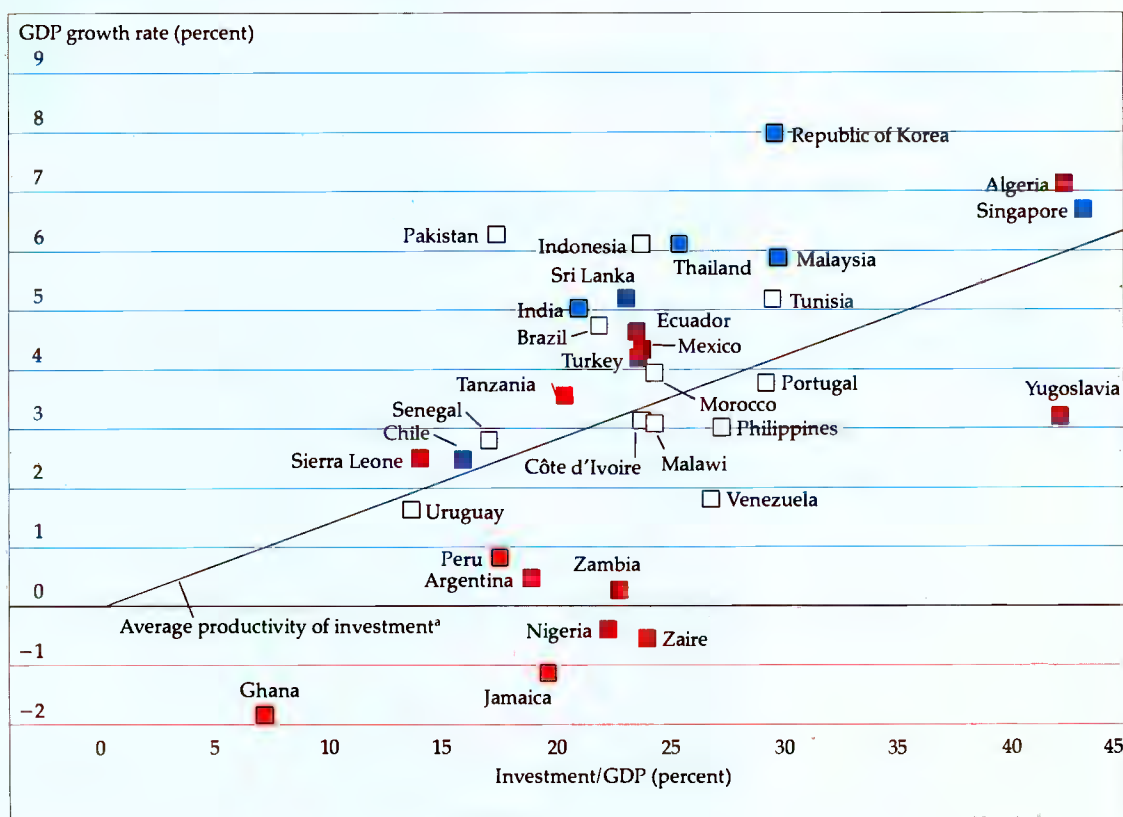
investment was almost four times higher. Note, however, that many of the countries with positive real interest rates also had more stable macroeconomic policies and more open trading systems, which should also raise growth rates.

Risks and costs of finance

Lending is risky. Intermediaries must cover the costs of devising contracts that limit risk, of monitoring and enforcing those contracts, and of losses.

Box figure 2.3 Real interest rates, investment, productivity, and growth in thirty-three developing countries in 1974–85

- Positive real interest rates
- Moderately negative real interest rates (0 to -5 percent)
- Strongly negative real interest rates (less than -5 percent)



a. Line represents sample average.
Source: Gelb (background paper).

The extent of financial contracting depends on the extent to which cultural, legal, and institutional arrangements can reduce these costs. If they remain prohibitive, businesses will prefer to rely on self-finance.

Risks

Financial contracts involve credit risk, price risk, and liquidity risk. Credit risk is the danger that the borrower will default. Price risk is the risk of loss

caused by unexpected changes in prices—in interest or exchange rates, for example. Liquidity risk is the risk of being unable to sell financial assets quickly, except at a steep discount. In addition, there is the risk that the default of one or a few large borrowers will endanger the whole financial system. This is called systemic risk.

Informational asymmetries are one source of credit risk. Entrepreneurs have “inside” information about their own projects and creditworthiness. Lenders can reduce credit risk either by de-

Box 2.4 Swapping risk

All economic activities are subject to a wide variety of technical, economic, and financial risks. Many risks are amenable to actuarial calculations and can be covered by straightforward insurance policies, but others are not. Financial systems can help to overcome some risks by redistributing them among market participants.

Some types of risk can be limited through portfolio diversification; other risks can be hedged by using an appropriate instrument, such as a forward contract or option. The key to any hedge is to find a counterparty willing and able to take the other side of the contract. Financial institutions have become adept at inventing hedging instruments and arranging hedging contracts between different parties.

One hedging instrument has become quite popular in the 1980s and has contributed greatly to the growing integration of national financial markets. It is the "swap." Swaps involve the exchange of future streams of payments between two or more parties and enable the participants to convert debt servicing obligations from one currency into another or from fixed to floating interest rates. Swaps exploit the segmentation of financial markets that causes differences in the markets' perception of different borrowers. Thus, although a triple-

A-rated firm may be able to borrow in both dollars and yen at a lower rate than a B-rated firm, it may have a comparative advantage in borrowing in yen because of its greater name recognition. Yet the second firm may desire yen debt, perhaps because it exports to Japan. A currency swap allows both firms to borrow where they have a comparative advantage (thus reducing market segmentation), swap loans and repayment streams to match their desired risk profiles, and end up with a lower cost of funds. The same principles are at work when a firm borrowing at fixed interest rates swaps payment streams with one borrowing at floating rates.

The importance of hedging devices is clearest when there are none. For example, in many developing countries firms—including those with foreign currency liabilities—are prohibited from holding foreign currency assets and cannot buy forward contracts; this limits their ability to hedge their foreign exchange risk. Similarly, developing country farmers, who cannot participate in world futures markets, are unable to hedge the substantial risks associated with fluctuations in the "world" prices of their crops. In these circumstances producers are likely to invest less and produce less.

veloping their own expertise in the selection of borrowers or by relying on information from institutions such as credit rating agencies. Measures that increase the information available to lenders, such as the strengthening of accounting and auditing requirements, improve lenders' ability to identify the borrowers with the best investment opportunities. When information is poor, lenders can discriminate between borrowers only in very broad terms.

To cover risk, lenders raise the interest rate they charge on loans. But this may be partially self-defeating, because the more creditworthy borrowers may choose not to borrow, which would leave the lender with less creditworthy clients. (This is the problem of adverse selection.) Furthermore, to cover the higher cost of borrowing, clients may take on riskier projects. (This is the problem of moral hazard.) Because of their limited ability to identify risks and monitor behavior, lenders tend to require collateral and to ration credit to the most creditworthy borrowers rather than to charge higher interest rates on riskier loans. Borrowers with little collateral are likely to be the most affected by credit rationing.

Financial risk can be reduced by improving the

availability and quality of information about borrowers (individuals, enterprises, or financial intermediaries), by improving the design and enforcement of loan contracts, and by enlarging the range of instruments so as to permit greater diversification of portfolios. Risk cannot usually be eliminated altogether, but the irreducible risk can often be transferred to those more willing to bear it. Loan maturities, the choice of adjustable or fixed interest rates, equity and venture capital arrangements, and collateral or cosigner requirements are all examples of different risk assignments. Much recent financial innovation has been driven by attempts to exploit comparative advantage in risk bearing (see Box 2.4).

Transaction costs

The services offered by financial institutions require the collection and processing of a great deal of information and the design, monitoring, and enforcing of contracts. Providing these services is expensive. Financial institutions must cover administrative costs (essentially payroll and rent), taxes, the cost of capital and of adhering to government regulations, and losses from default. They do

so by charging fees for specific services and interest on loans.

The burden of costs will shift between the parties according to the arrangements adopted. Informal financial entrepreneurs rely on personal knowledge of borrowers; their information costs are low. In more advanced systems information and enforcement become more expensive. In the early stages of financial development, banks build the cost of gathering credit information into their spreads. Later, firms supply more information on their own behalf. A corporation issuing bonds or equities must provide investors with information about itself. Firms send audited accounts to their shareholders and to the tax authorities. They may pay a credit rating agency to grade their securities.

Transaction costs are also borne by depositors, investors, and government agencies. Depositors incur costs in visiting bank branches and waiting in line to cash checks. Investors devote resources to analyzing information. Government agencies usually bear some of the costs of monitoring and enforcement. A securities and exchange commission may be called upon to certify the accuracy of information provided in corporate prospectuses; deposit insurance corporations may assume responsibility for monitoring deposit institutions. Government agencies generally cover their costs by levying fees on issued securities or collecting premiums from insured institutions.

Spreads between borrowing and lending rates and between buying and selling prices reflect the intermediary's costs, expected loan and trading losses, reserve requirements, and taxation. Commercial banks' spreads vary with the size and risk of loans. The average spread between lending rates and the cost of funds in a high-income country is between 2 and 3 percentage points. In noninflationary developing countries, spreads are similar to those in industrial countries, but because the range of services offered may be more limited and operating procedures more cumbersome, depositors' and borrowers' combined transaction costs may be higher. Spreads in inflationary countries can be more than 10 percent, although that reflects the burden of high reserve requirements as well as transaction costs. Prime borrowers may be able to acquire funds through international markets for a fee as low as one-tenth of 1 percent of the amount raised. Although spreads tend to be narrower in direct transactions than in intermediated ones, the difference is partly offset by the additional costs borne by the principals.

High accounting standards and strong contract

enforcement help to reduce the risk of loss. Competition, however, is the most effective way to keep transaction costs low. Access to a wide range of institutions and markets, including international markets, stimulates competition.

Government intervention

Governments intervene in the provision of financial services for many reasons. Historically, they have controlled the means of payment, both to guarantee its soundness and to collect seigniorage. More recently, governments have tried to use their control of money creation to influence the level of economic activity and their control of the allocation and pricing of credit to influence the composition of investment. (Chapter 4 discusses the recent experience of the developing countries with policies of this sort.) They have also intervened to ensure that financial intermediaries behave prudently.

Fractional reserve banking systems (in which banks hold only partial reserves against liabilities and lend out the rest of their deposits) have suffered from occasional instability, excessive risk taking, and fraud. The liabilities issued by banks in response to the demands of depositors are short-term, highly liquid, and supposedly low-risk. Loans, by contrast, are usually longer-term, less liquid, and riskier. This difference is one reason banks charge borrowers more than they pay depositors. But because banks are so highly leveraged, relatively small losses on loans can leave them unable to honor their liabilities. When the public suspects that a bank is insolvent, the result is often a run on the bank, which sometimes spreads to other, solvent, banks. The drain of bank reserves causes a multiple contraction in bank credit. When runs become widespread, as they occasionally did in the nineteenth and early twentieth centuries, financial panic can trigger a collapse of the credit-payment process and a sharp recession.

Governments have devised ways of dealing with bank runs. When they occurred, central banks—acting as lenders of last resort—provided liquidity by rediscounting sound loans. In several high-income countries the government provided deposit insurance. By guaranteeing the value and liquidity of deposits up to a certain size, deposit insurance was designed to prevent runs from starting (see Box 2.5). The lender-of-last-resort facility was designed to prevent them from spreading.

Although prudential regulation has a different rationale than economic regulation aimed at alter-

Box 2.5 Deposit insurance

Most high-income and a few developing countries have established deposit insurance schemes. Deposit insurance guarantees the nominal value and liquidity of deposits up to a certain size. The insurer is an institution, generally government-owned, established for that purpose, and funded with premiums paid by the institutions whose deposits are insured. Deposit insurance can help to establish confidence in the safety of saving with banks (or other covered institutions) in countries with limited banking habits. The principal targets of deposit insurance are small, unsophisticated depositors who are least able to assess the soundness of a particular depository. By assuring depositors that their money is safe even if the depository is not, deposit insurance supplements the central bank's lender-of-last-resort role in forestalling bank runs.

Like all insurance, deposit insurance suffers from the risk of moral hazard. Because insured depositors no longer need to be concerned about the quality of their depository's assets, market regulation of bank behavior is reduced. A considerable degree of market regulation can be retained if deposit insurance coverage is limited to relatively small deposits. The interbank deposit market, which has become an important source of short-term liquidity for all advanced banking systems, can impose a significant measure of discipline on banks

and should never be insured. This contrasts with the savings and loan associations in the United States, which, in addition to having insured deposits, do most of their short-term borrowing from the Federal Home Loan Bank System, which lends according to less demanding standards (see Box 5.4 in Chapter 5). An inescapable fact of deposit insurance is that it places greater responsibility on government to see to it that insured institutions behave prudently.

With or without insurance, depositors would be fully protected if banks were closed and liquidated the moment their capital fell to zero. This is not a practical possibility: the condition of a bank cannot be known to inspectors minute by minute and, because liquidation takes time, asset values can decline before liquidation can be completed. However, up-to-date market accounting, frequent inspection, and swift action by inspectors to close insolvent banks are clearly important in minimizing losses. In some countries the laws establishing deposit insurance provide the mechanisms for exactly such steps. Furthermore, the enhanced supervisory capability that sometimes accompanies the establishment of deposit insurance can and should be used to spot problems in bank management and in banks' portfolios well before insolvency occurs and to compel banks to take corrective action.

ing the allocation of resources, it too affects the structure and efficiency of the financial sector. For example, many governments have honored the liabilities of insolvent financial institutions even when there was no formal insurance. Government guarantees and lender-of-last-resort facilities, however, changed the behavior of both depositors and bankers. Depositors and other buyers of bank liabilities that were either explicitly or implicitly insured no longer had to monitor banks to protect the value of their deposits. Bankers no longer had to worry about runs, so they could make riskier loans. Governments therefore had to regulate and supervise the system.

Deposit insurance, coupled with regulation and supervision, has reduced the problem of bank runs but has been less successful in preventing fraud and excessive risk taking by banks, as the present widespread insolvency among the financial institutions of the developing countries makes clear (see Chapter 5). And high-income countries have not been exempt (see Box 5.4). It is often argued that government supervision is not an efficient substitute for market supervision—in the form, for exam-

ple, of monitoring and control of bank managers by stockholders and depositors. Innovative financial entrepreneurs have often been able to evade the rules; those intent on deceiving bank examiners have often succeeded in hiding losses for some time.

Many countries have therefore moved in recent years to strengthen the role of the private sector in monitoring and controlling financial enterprises. Some have set higher capital requirements for financial institutions. This ensures that the owners have an adequate stake in the efficiency with which depositors' resources are used. Similarly, stringent audit and reporting requirements make an institution's financial condition visible to depositors and investors. And yet some governments have also covered losses that in the past would have been borne by market participants. This runs counter to the principle of allowing market signals a greater role in supervising the system.

The task of balancing efficiency, which requires freedom to act, and stability, which evidently requires a degree of government regulation, is extremely difficult. Some theorists argue for an un-

compromising market-based approach, but in practice all governments have chosen some form of supervision. If markets are to judge, price, and allocate risk correctly, governments must clearly define the areas in which they have taken responsibility—and allow losses to be incurred in those that are not insured. (Chapter 6 discusses prudential regulation in more detail.)

The structure of the financial system

The financial system consists of many institutions, instruments, and markets. Financial institutions range from pawnshops and moneylenders to banks, pension funds, insurance companies, brokerage houses, investment trusts, and stock exchanges. Financial instruments range from the common—coins, currency notes, and checks; mortgages, corporate bills, bonds, and stocks—to the more exotic—futures and swaps of high finance. Markets for these instruments may be organized formally (as in stock or bond exchanges with centralized trading floors) or informally (as in over-the-counter or curb markets). For analytical purposes, the system can be divided into users of financial services and providers.

Users of financial services

Financial institutions sell their services to households, businesses, and government. The boundaries between these sectors are not always clear-cut.

HOUSEHOLDS. The household sector includes small, mainly unregulated firms and individuals. Their main financial needs are for payment services, for liquid assets in which to save, and for relatively small amounts of credit. They seek convenience (nearby branches, for example), simplicity, liquidity, and security.

After making their own investments, households as a group have surplus resources to lend (Figure 2.1). Hence, they demand convenient assets to hold. This demand, as well as the demand for a medium of exchange, may be met by currency. To a lesser extent it may be met by bank deposits, although hoarding commodities or participating in informal saving arrangements are alternatives. Accumulated investment in housing is a large part of the nonliquid wealth of households at all but the poorest income levels. As incomes rise, insurance and contractual savings schemes (life insurance and pensions) also become important.

Households also need credit. Street vendors, for example, need short-term finance to purchase daily stocks. Small farmers need seasonal or medium-term credit to buy capital. Would-be homeowners need long-term mortgage financing. Households are often unable to convince financial institutions that they are creditworthy. So they turn to lenders who do not require formal business records or collateral—to family and friends or to local pawnbrokers and moneylenders. (Chapter 8 examines informal finance in greater detail.)

BUSINESSES. Wealthier households and corporations have more complicated financial needs. They require check and wire transfer payments; deposits in larger amounts and at longer maturities; letters of credit; guarantees; purchase and sale of foreign exchange; underwriting; advice on financial, accounting, and tax matters; and so forth. The business sector is invariably a net borrower; it needs short-term credit to finance inventories and long-term funds to finance capital expansion. Nevertheless, it also holds a substantial share of gross financial assets. For example, in 1984, businesses held 48, 49, and 64 percent of demand deposits in Korea, Malaysia, and Tunisia respectively.

The business sector includes public as well as private enterprises. Public enterprises are generally in capital-intensive industries such as utilities and transportation. In developing countries many of the larger manufacturing firms are publicly owned as well. Many public enterprises have been run not to generate profit but to provide employment and to supply goods and services at reasonable prices. Because many have incurred losses, they have been unable to finance their investment from retained earnings. Public enterprises have been heavy borrowers in both domestic and foreign markets. Their losses have been a drain on national saving.

Some of the largest corporations can meet most of their demand for financial services by themselves and may even be able to supply financial services to others: trade credits to their customers, for instance. They can also tap financial markets directly by issuing their own financial instruments (commercial paper, bonds, equity securities, and so on). Yet direct financing has been negligible in most developing countries and unimportant in most high-income ones. In France, Italy, Japan, and the United Kingdom, for example, stocks and bonds financed an average of less than 9 percent of corporate investment; 30 percent of it was financed with bank loans and the rest from internally generated funds.

GOVERNMENT. As well as being regulators of their financial systems, governments are among their clients. All governments use payment services. In most developing countries, governments, like businesses, are net borrowers, and they use the financial system as a source of funding for current and capital spending. In industrial countries, government deficits are financed mainly by selling securities to the public. In developing countries they are usually financed by borrowing from banks. In Sierra Leone, Zaire, and Zambia, for example, more than 70 percent of bank credit has gone to the government in recent years, and in Mexico 55 percent. Much of that credit was supplied by the central banks, which thereby increased the stocks of reserve money in these countries. The inflation caused by excessive monetary growth has greatly retarded the development of the financial sector in developing countries, especially since interest rates have often been held down.

Governments have also used the financial sys-

tem to serve development or other goals. They have directed credit, often at subsidized interest rates, to priority sectors. Many developing country governments own banks or other financial institutions and thus play a direct role in allocating resources. Monetary policy is conducted through the financial sector (see Box 2.6). The influence of governments on the amount and pattern of investment has therefore been much greater than their own investment spending would suggest.

Providers of financial services

Financial systems differ from country to country, yet there are many similarities. In addition to the central bank, most countries have five main classes of financial institution: deposit and credit institutions, contractual savings institutions, collective investment institutions, securities markets, and informal financial enterprises. (Chapters 7 and 8 discuss the services provided by these parts of the financial system in more detail.) Casualty insur-

Box 2.6 Monetary policy

Governments intervene in finance partly to control the supply of money and credit. When the budget deficit is large, governments often cover it by creating money. Excessive creation of money to cover budget deficits is the most common cause of inflation. When the fiscal deficit is not a consideration, the objective of monetary and credit policy is usually to maintain stable prices.

Governments have various tools to control the monetary aggregates. Perhaps the most common technique in developing countries is for the central bank to specify credit ceilings for each commercial bank. Such ceilings have been criticized because they discourage competition and the mobilization of deposits.

Another approach is for the central bank to fix the amount of deposit liabilities that can be created by the banking sector by imposing reserve requirements and controlling the quantity of reserves available to banks. Central banks often control the level of reserves through the refinancing facilities they provide to commercial banks. But if refinancing is used to channel credit to preferred sectors, it cannot easily be used for monetary control as well. Other countries use the movement of government deposits between commercial banks and the central bank to control the level of reserves. In countries with more developed financial systems, central banks adjust bank reserves, and hence the money supply, through the purchase or sale of government securities. These transactions are called open

market operations. When the central bank buys a security, it pays with a check drawn on itself, thereby increasing its liabilities. Open market operations cannot be used in a system without an established government bill market. Monetary control with open market operations leaves the allocation of credit to market forces.

The degree of integration with world financial and capital markets also affects the execution of monetary policy. An open and fully integrated economy that chooses to maintain fixed exchange rates would have to maintain the money supply at the level demanded at the "world" price level and interest rate. Any other quantity of money would result in changes in the foreign exchange reserves of the central bank. The central bank's purchase or sale of foreign exchange would replace open market operations as the tool for determining bank reserves and, hence, the money supply.

A fixed exchange rate constrains the central bank's ability to create money and is thus a potential source of monetary discipline. A market-determined exchange rate restores a measure of domestic monetary independence. With either fixed or floating exchange rates, central banks will need to set reserve requirements at levels comparable to those in other countries if banking business is not to be driven abroad. Noninterest-earning reserve requirements are a tax on banks and as such will affect their competitiveness.

Table 2.4 The institutional structure of selected financial systems, 1985

Country	Assets as a percentage of total gross assets of the financial system						As a percentage of GNP	
	Central banks	Deposit banks	Specialized lending institutions	Contractual savings institutions	Collective investment institutions	Long-term debt securities and equities ^a	Net financial assets	Total external debt
<i>Developed markets</i>								
Australia	5	31	14	17	1	33	..	—
Canada	1	33	2	26	8	30	165	—
France	6	56	10	7	5	16	109	—
Germany, Fed. Rep. of	4	41	14	9	2	30	158	—
Japan	2	45	9	6	7	30	300	—
Sweden	4	27	18	16	1	35	..	—
United Kingdom	1	35	1	26	3	34	188	—
United States	2	28	7	19	4	40	210	—
Average	3	37	9	16	4	31	188	—
<i>Emerging markets</i>								
Argentina	32	43	11	5	0	10	..	80
Brazil	27	32	12	2	4	23	59	50
Chile	14	44	1	11	1	28	75	145
India	10	47	6	12	1	24	65	19
Korea, Rep. of	9	53	14	4	10	10	66	57
Malaysia	7	34	12	13	3	32	247	52
Nigeria	23	46	2	3	7	19	49	26
Pakistan	21	65	1	2	1	11	45	39
Philippines	30	38	14	3	3	14	38	82
Portugal	20	72	1	2	1	4	124	85
Thailand	16	55	12	1	0	17	89	47
Turkey	33	54	4	6	0	3	27	50
Venezuela	20	46	25	1	0	8	65	74
Average	20	48	9	5	2	16	79	62

Note: Total financial system assets are the assets of all the institutions shown in this table plus the stock of outstanding securities and equities. To eliminate double-counting caused by the assets of one institution being the liabilities of another, net financial assets have been approximated by the sum of total liquid liabilities (IFS, line 551) plus securities and equities. To deflate these stocks by the flow of GNP, five-quarter arithmetic averages are constructed from year-end data for 1984 and 1985, assuming constant exponential growth during the year.

a. The sum of government bonds, corporate bonds, and corporate equity.

Source: IMF, *International Financial Statistics*, and World Bank data.

ance companies are also generally considered part of the financial sector, but they are not discussed in this Report.

Table 2.4 compares the structure of the financial sector in high-income countries with its structure in some of the more advanced developing countries. Banks in developing countries hold a bigger share of all financial assets (48 percent) than they do in industrial countries (37 percent). The table understates this dominance, because the developing countries included are those with the most sophisticated financial systems. When central banks are included, the predominance of the banking sectors of most developing countries is even greater, for the central banks in the sample hold 20 percent of the financial sector's assets in developing countries compared with only 3 percent in developed markets. In addition to issuing currency and overseeing the operation of the payment system, the central bank acts as banker to the government and to other banks. In contrast, nonbank in-

termediaries and contractual savings institutions hold a much larger share of financial assets in high-income countries than they do in developing ones. The relatively small domestic financial sectors of the developing countries stand in sharp contrast to their relatively large reliance on foreign financing.

Different financial institutions provide services that are both complementary to and competitive with each other. Deposit institutions offer payment and liquid deposit facilities, and contractual savings institutions provide illiquid savings opportunities that cater to the longer-term needs of customers. Collective investment institutions offer small investors the benefits of professional management and low-cost risk diversification, encouraging them to diversify their savings into marketable securities. On the lending side, commercial banks have traditionally provided working capital and trade finance, but longer-term lending is gaining with the spread of universal banking. Factoring companies specialize in financing inventories

and receivables, whereas development banks and leasing companies provide long-term investment finance.

Money and capital markets provide investment instruments appropriate for contractual savings and collective investment institutions, whose services to the saving public are thereby improved. The efficient functioning of financial markets also depends on institutions that lend and borrow little on their own account: investment banks, securities brokers, and credit rating agencies. Commercial banks also improve the working of financial markets by providing credit and payment facilities to market makers and other market participants.

Different financial institutions and markets compete for a limited pool of savings by offering different instruments. Money and capital markets increase competition between suppliers. Money markets give merchant banks, or commercial banks with limited branch networks, greater access to funds. Because such banks specialize in lending to larger corporations, the corporate loan market may be highly competitive, even though a few large domestic banks may continue to dominate the retail deposit market.

Money markets also provide large corporations and nonbank financial institutions with efficient short-term instruments for investing their liquid funds and thus compete directly with commercial banks' traditional deposit facilities. They also enable large corporations to issue short-term securi-

ties in the form of commercial paper and thus further reduce the market power that large banks may have in the domestic banking sector. Finally, capital markets enable contractual savings and collective investment institutions to play a more active role in the financial system.

The complementary and competitive interaction of financial institutions has policy implications. To promote an efficient financial system there must be competition, but the system must also offer an array of services. Rather than restrict the growth and diversification of the main banking groups, governments in the larger economies would be wise to promote greater competition by encouraging money and capital markets, specialized credit institutions (such as leasing and factoring companies), and contractual savings and collective investment institutions. Economies too small to support such specialized institutions can spur competition by allowing economic agents to buy financial services abroad.

The financial systems of many developing countries are inadequate, or less efficient than they could be, or both. Efficient financial systems help countries to grow, partly by mobilizing additional financial resources and partly by allocating those resources to the best uses. As economies develop, so must the financial systems that serve them. The next chapter illustrates the central role of finance in development by reviewing the evolution of financial systems since preindustrial times.