

The Role of the State in Financial Markets

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This paper reexamines the role of the state in financial markets and identifies seven major market failures that provide a potential rationale for government intervention. In practice, government interventions in capital markets, even in industrial countries, have been pervasive. The paper provides a taxonomy of those interventions with respect to both the objectives they serve and the instruments they employ.

There is a role for the government in financial markets, but the success of government interventions has been mixed. It is important that interventions be well designed. The paper sets out principles of government regulatory interventions and applies them to prudential regulation. It then examines three other areas of intervention—directed credit, financial repression, and competition policy—and identifies circumstances in which some amount of financial repression may actually be beneficial.

The role of the government in financial markets is a long-standing debate that has engaged economists around the world. There are certain recurrent themes in this debate.

- The history of modern capitalism has been marked by the linked phenomena of financial crises and economic recessions. Although bank runs are not as prevalent as they were in the nineteenth century, the economic costs of finan-

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cial debacles—such as those associated with the collapse of the savings and loan associations in the United States—are no smaller. Nor is the United States the only country beset by problems; in recent years government intervention has been required in Japan, in a number of European countries, and in numerous developing countries. What action, if any, should the state take to ensure the solvency and stability of financial institutions?

- The past decade has been marked by important financial innovations. New technologies record transactions at record speed; partly with the aid of these new technologies, new instruments and institutions have been created. Do these changes necessitate a reevaluation of the role of the state?
- Sophisticated and well-developed capital markets are seen as the hallmark of a developed economy. Not surprisingly, as the developing countries move toward more sophisticated financial systems, they have sought to create the requisite institutions. What role should the government play in creating such systems?
- Finally, the spirit of deregulation that has been a dominant theme in economic policy discussions during the past two decades is increasingly being felt in financial markets as well. The claim is that market liberalization will enable the financial system to perform its main function of allocating scarce capital more efficiently and will thus benefit the rest of the economy. I argue that much of the rationale for liberalizing financial markets is based neither on a sound economic understanding of how these markets work nor on the potential scope for government intervention. Often, too, it lacks an understanding of the historical events and political forces that have led governments to assume their present role. Instead, it is based on an ideological commitment to an idealized conception of markets that is grounded neither in fact nor in economic theory.

A basic thesis of this essay is that financial markets are markedly different from other markets; that market failures are likely to be more pervasive in these markets; and that there exist forms of government intervention that will not only make these markets function better but will also improve the performance of the economy. Of course, the existence of market failure need not, by itself, justify government intervention; financial operations are complex, and regulators are beset by a variety of problems. It is argued, for instance, that the U.S. savings and loan debacle is a manifestation not of market failure but of regulatory—or government—failure. To some extent, this view is correct, but to conclude from this experience that there should be less government regulation is incorrect. I argue that the problem arises because the regulations are poorly designed. It is necessary to appreciate the limits—as well as the strengths—of government intervention. Although views of the precise role of the government will differ from country to country, some general principles can be identified.

Before beginning the formal analysis, some preliminary observations may be useful. First, massive interventions in financial markets are common. In the

United States these include banking and securities regulations as well as direct government involvement in lending activities. Indeed, throughout the 1980s about 25 percent of all loans were either originated by government agencies or carried government guarantees (see Schwarz 1992). There are government loan programs for students, for small businesses, for housing, for exports, and for a host of other worthy causes.

Second, financial debacles are ubiquitous. In recent years crises in financial institutions have rocked Chile, Hong Kong, Malaysia, and many other economies. While popular discussion has focused on the budgetary costs of, say, the U.S. savings and loan bailout, these costs are only part of the problem. The financial institutions lent money on projects the returns from which were insufficient to repay the borrowed funds. A central function of financial institutions is to direct resources to the activities with the highest returns. Evidently, however, they failed to do this: returns in many cases were not only negative but massively so. The problem arises from misplaced incentives, partly due to inappropriate government policies.

Third, the extensive media coverage of the stock and bond markets makes it tempting to conclude that these markets are the central institutions of capitalism. But in fact, as is shown in table 1, a relatively small fraction of total investment is financed by new equity or bond issues. There are good theoretical reasons for this, which I discuss at greater length below. For now, I simply note that if raising funds were the primary function of equity markets, we would have to judge them to be an extremely costly way of doing so: the transaction costs (the resources involved in running the financial markets) amount to 25 percent of all new investment—not just new investment financed through the equity market.

The stock market is, first and foremost, a forum in which individuals can exchange risks. It affects the ability to raise capital (although it may also contribute to management's shortsightedness), but in the end, it is perhaps more a gambling casino than a venue in which funds are being raised to finance new ventures and expand existing activities. Indeed, new ventures typically must look elsewhere.

Finally, many of the widely touted financial innovations contribute little to economic efficiency; indeed, they may be welfare-decreasing. For instance, financial technology permits a faster recording of transactions, but it is doubtful whether this yields significant efficiency gains, and to the extent that greater resources are required, welfare may actually be decreased.

The last point is illustrated by a simple parable (see Summers and Summers 1989). Assume that a number of people are engaged in a productive activity—say, listening to a lecture. By some fluke, a hundred-dollar bill falls at the feet of each person present. Each individual has a choice: to stop paying attention and grab the bill at once, or to wait until the end of the lecture and then pick up the money. Although the latter option is more efficient (since it does not entail the disturbance of productive activity), it is not a Nash equilibrium. Given that

Table 1. Net Sources of Finance of Nonfinancial Corporations

<i>Economy</i>	<i>Retentions</i>	<i>Bank finance</i>	<i>Trade credit</i>	<i>Bonds</i>	<i>Equity</i>	<i>Capital transfer^a</i>	<i>Other^b</i>	<i>Statistical adjustment</i>
<i>Thailand</i>								
1970-76	51.41	31.94	-1.74	12.59	9.25	—	0.25	-3.59
1977-80	52.80	30.12	-2.32	11.28	12.40	—	0.00	-4.31
1980-83	50.40	32.80	-2.42	12.65	8.62	—	0.97	-3.22
<i>Korea, Rep. of</i>								
1985-89	40.20	27.66	—	14.35	17.63	—	—	—
1980-84	36.40	37.15	—	12.79	13.62	—	—	—
1970-79	27.60	52.50	—	4.75	14.75	—	—	—
<i>Malaysia</i>								
1986-91	61.00	34.00	—	—	2.00	—	3.00	—
<i>Taiwan (China)</i>								
1965-80	37.70	34.31	8.63	1.72	24.11	—	5.60	-11.80
1981-85	36.35	27.91	0.32	8.59	25.42	—	2.34	—
1986-90	23.59	38.11	0.95	3.87	31.92	—	1.32	—
<i>France</i>								
1970-85	66.30	61.50	-0.70	0.70	-0.40	2.6	-14.90	-5.10
<i>Germany, Fed. Rep.</i>								
1970-89	80.60	11.00	-1.90	-0.60	0.90	8.50	1.50	0.00
<i>Japan</i>								
1970-87	17.70	28.00	-7.80	4.00	2.70	—	1.30	0.10
<i>United Kingdom</i>								
1970-89	98.00	19.80	-1.60	2.00	-8.00	2.10	-4.10	-8.20
<i>United States</i>								
1970-89	91.30	16.60	-3.70	17.10	-8.80	—	-3.80	-8.70

— Not available.

a. Data for Asian economies are not available but are likely to be included in the Other column or in the statistical adjustment.

b. Refers to sales of assets.

Source: For Organization of Economic Cooperation and Development (OECD) country data, unpublished flow-of-funds figures from the Center for Economic Policy Research (CEPR), International Study of the Financing of Industry.

everyone else is waiting, it pays each individual to bend down to gather up not only his hundred-dollar bill, but also that of his neighbor. But there is no real *social* gain from picking up the bill a few minutes earlier, and there is a real social cost. Many financial innovations that involve faster recording of transactions do little more than allow some individuals to pick up hundred-dollar bills faster, “forcing” others to follow suit (for a formal model see Stiglitz and Weiss 1990). Better financial markets *may* contribute to economic efficiency, but the extent to which they do so requires careful scrutiny. Improvements in secondary markets do not necessarily enhance the ability of the economy either to mobilize savings or to allocate capital.

Earlier discussions of financial markets, particularly in developing countries, have focused on their role in mobilizing savings for industrialization. We now

recognize that financial markets do much more and that how well they perform these other functions may affect not only the extent to which they can mobilize savings but, more broadly, the overall efficiency and rate of growth of the economy. (For a more extensive discussion see Fama 1980; Stiglitz 1985; Stiglitz and Weiss 1990; Greenwald and Stiglitz 1992b.) The principal roles of financial markets are transferring capital from savers to borrowers; agglomerating capital; selecting projects; monitoring; enforcing contracts; transferring, sharing, and pooling risks; and recording transactions, or, more generally, "running" the medium of exchange. In this description, capital markets deal not only with intertemporal trade but also with risk and information. The three are inexorably linked; since intertemporal trade involves dollars today for promises of dollars in the future, there is always the risk of default, and information about the borrower's likelihood of repayment is critical. Thus even if we would like to separate the exchange, risk, and information roles, we cannot.

The various functions are linked, but in ways that are not inevitable. For instance, banks link the transactions functions and the functions of selecting and monitoring. With modern technologies, the transactions function can be separated. In the cash management accounts offered by various U.S. brokerage firms, money is transferred into and out of "banks" instantaneously. The brokerage house handles the transaction, but no bank balances are kept, and accordingly, no loan function (such as selecting and monitoring projects) is performed.

Market Failure

Financial markets essentially involve the allocation of resources. They can be thought of as the "brain" of the entire economic system, the central locus of decisionmaking; if they fail, not only will the sector's profits be lower than they would otherwise have been, but the performance of the entire economic system may be impaired.

The standard theories of the efficiency of competitive markets are based on the premise that there is perfect information or, more precisely, that the information held by individuals or firms is not affected by what they observe in the market and cannot be altered by any action they can undertake, including acquiring more information. Thus the fundamental theorems of welfare economics, which assert that every competitive equilibrium is Pareto efficient, provide no guidance with respect to the question of whether financial markets, which are essentially concerned with the production, processing, dissemination, and utilization of information, are efficient. On the contrary, economies with imperfect information or incomplete markets are, in general, not constrained Pareto efficient (Greenwald and Stiglitz 1986); there are feasible government interventions that can make all individuals better off. Thus not only is there no presumption that competitive markets are efficient, but there is a presumption that they are inefficient. Moreover, even with no other barriers to entry, in the

presence of costly information there is a presumption that markets will not, in general, be fully competitive. This strengthens the presumption that markets, in the absence of government intervention, are not constrained Pareto efficient. Determining whether or how government interventions can improve matters is a more subtle question. But first it may be useful to discuss why costly information gives rise to market failure.

Information and Market Failure

Information differs from conventional commodities in several important ways. Information is, in a fundamental sense, a public good. The two essential features of a pure public good are nonrivalrous consumption (the consumption of the good by one individual does not detract from that of another) and nonexcludability (it is impossible, or at least very costly, to exclude anyone from enjoying the public good). Information possesses both of these attributes. (For instance, if I tell someone something I know, I still know it; his knowledge of that fact does not subtract from mine.) As is well known, competitive market economies provide an insufficient supply of all public goods—including information. Because of the difficulties of appropriating the returns to information, there are often externalities associated with its acquisition. Others benefit from the information acquired by an individual.

Moreover, expenditures on information can be viewed as fixed costs; they do not need to increase with the amount of lending (although lenders may spend more on acquiring information when larger amounts are involved). Because of the fixed-cost nature of information, markets that are information-intensive are likely to be imperfectly competitive. There may, in fact, be many firms engaged in similar activities, but it will not pay firms to obtain exactly the same information—say, concerning a particular borrower (see Stiglitz 1975b; for a brief discussion of the implications for credit markets see Jaffee and Stiglitz 1990).

Without perfect competition, markets will not, in general, be efficient. Finally, if there are to be incentives to gather information, markets *must* be, to some extent, informationally inefficient; not all information can be transmitted from informed to uninformed investors (Grossman and Stiglitz 1976, 1980). Accordingly, financial markets—whose essential role is to obtain and process information—are likely not only to differ from markets for conventional goods and services but to differ in ways that suggest that market failure will be particularly endemic in financial markets.

Seven Market Failures in Financial Markets

We now turn to a description of several of the key manifestations of market failure in financial markets.

MONITORING AS A PUBLIC GOOD. Problems of information as a public good arise in at least two contexts in financial markets: information about the solvency of financial institutions, which is obviously of great value to investors (or depositors) who are considering entrusting funds to or withdrawing funds from a particular financial institution; and information about the management of these institutions, which affects the risk and return on investments.

Monitoring solvency can be viewed as one aspect of the more general problem of monitoring the use of capital. How well an economy functions depends on the efficiency with which its capital is allocated. It is management's responsibility to allocate resources efficiently and to monitor the firm's workers. But who monitors the managers? In principle, the answer is the board of directors. This only pushes the question back one step: who monitors the board of directors? And what incentives do they have to do a good job?

Monitoring, like other forms of information, is a public good. If one shareholder takes actions that enhance the value of the shares of the firm (for instance, by improving the quality of management), all shareholders benefit. If one lender takes an action that reduces the likelihood of default—for instance, by monitoring management more closely—all lenders benefit. As in the case of any public good, there is an undersupply; too little effort is expended on monitoring financial institutions—with the expected consequences. First, because the managers know that they are not being monitored, they may take inappropriate risks or attempt to divert funds to their own use. Second, because investors cannot rely on financial institutions, fewer resources will be allocated through the institutions, and they will not be able to perform their functions as well as they might otherwise.

EXTERNALITIES OF MONITORING, SELECTION, AND LENDING. One of the most important functions of financial institutions is to select among alternative projects and to monitor the use of the funds. The observation that another lender is willing to supply funds reassures the potential investor. It confers an externality, the benefit of which is not taken into account when the first lender undertakes his or her lending activity. By the same token, the second lender may confer a negative externality on the first lender. (Because the likelihood of default is a function of the total amount borrowed, lenders may try to restrict borrowers from securing funds from other sources; Arnott and Stiglitz 1991.)

There are other “within market” externalities. Investors, too, have imperfect information. When a bank fails, they may conclude that similar events may have adversely affected other banks as well and may decide to withdraw their funds, possibly inducing a run.

The presence of a large number of “bad” firms seeking to raise equity makes it more difficult for good firms to raise capital because potential investors find it difficult to sort out the two. This is an example of the familiar kind of externality associated with selection problems: the existence of firms that are

bad risks imposes screening costs and can even “spoil” a market (see Stiglitz 1975c).

Some externalities extend across markets. Actions in the credit market affect the equity market, and vice versa. For instance, the fact that a bank is willing to lend money affects the firm’s ability to raise equity capital, both because it has a positive signaling effect and because potential stockholders know that it is more likely that the firm will be supervised by the bank. In recent years equity owners have exerted strong negative externalities on creditors by restructuring; by increasing debt, they have reduced the market value of outstanding debt.

Under modern capitalism, at least for large firms with widely diversified ownership, there is a separation of ownership and control that gives rise to an important class of monitoring problems and externalities. Shareholders exercise effective control neither directly, through the proxy mechanism, nor indirectly, through the takeover mechanism. Banks, through their threat not to renew credit, often exercise far more influence. This view can be traced back to Berle (1926) and was revived by Stiglitz (1985). In either case, those exercising control have significant effects on others; for instance, bank monitoring, while it may reduce the likelihood of insolvency, may also reduce the upside potential of equity.

The design of financial institutions and regulations may affect the extent and form of monitoring as well as the extent to which externalities are internalized. The close relationships between banks and their borrowers observed in Japan may facilitate monitoring (see Aoki 1992), and the fact that banks may own shares in the firm may reduce the potential scope for conflicts of interest between the banks and shareholders. In the United States such links are prohibited by the Glass-Steagall Act, and banks that are involved in the management of firms which have borrowed money may lose their seniority status as creditors in the event of bankruptcy.

EXTERNALITIES OF FINANCIAL DISRUPTION. The macroeconomic consequences of disruptions of the financial system provide one of the more important rationales for government intervention. The failure of even a single financial institution can have significant effects. It is often argued that the cost of bankruptcy is greatly overestimated because the assets of the firm do not disappear but merely change ownership. Although there may be some truth in this contention, the essential asset of a bank—its information capital—is not easily transferred. In the event of bankruptcy, this information capital may be largely dissipated. Thus the bankruptcy of a single bank—and even more so the bankruptcy of multiple banks—may disrupt the flow of credit to particular borrowers.

Bank insolvency has indirect effects as well. Borrowers may have to curtail their activities, with further repercussions on customers and suppliers. This may lead to a cascade of effects familiar to students of general equilibrium theory (see Stiglitz 1987a). There are also signaling effects: for instance, even if a bankruptcy does not trigger a financial panic, some depositors will withdraw

funds from other financial institutions because of a perceived risk of default. These withdrawals may have an adverse effect on other financial institutions by leading investors to question their viability. When institutions make decisions, however, they do not take these externalities into account; they only look at their private costs and benefits. Thus the public interest in the solvency of financial institutions may exceed the private interests of the owners and managers.

Governments cannot sit idly by when faced with the impending collapse of a major financial institution. Moreover, both banks and investors know that the government will step in because it cannot commit itself *not* to intervene in the economy. There have been isolated cases in which the government has not intervened, but these cases have usually involved small banks whose failure posed no threat. The difficulty of holding the government to specific commitments is one of the central ways in which the government differs from the private sector. The private sector relies on the government to enforce its contracts. But who can enforce government commitments?

The government thus performs the role of an insurer, whether or not it has explicitly issued a policy. The provision of insurance tends to alter behavior, giving rise to the well-known problem of moral hazard; that is, the insured has a reduced incentive to avoid the insured-against event. In this case, banks, knowing that they are effectively insured, may take greater risks than they otherwise would. In particular, they may undertake risks similar to those being undertaken by other banks, since they assume that although the government might ignore the problems of a single bank, it could not allow the entire financial system to go belly-up. So long as the bank does what other banks are doing, the probability of a rescue is extremely high.

Most insurance gives rise to moral hazard problems. Insurance firms attempt to mitigate the moral hazard problem by imposing restrictions. For instance, fire insurance companies typically require that sprinklers be installed in commercial buildings. Once we recognize the role of government as an insurer (willing or unwilling), financial market regulations can be seen from a new perspective, as akin to the regulations an insurance company imposes. The effects of some versions of financial market liberalization are similar to an insurance company's deciding to abandon fire codes, with similar disastrous consequences.

MISSING AND INCOMPLETE MARKETS. It is surprising that equity markets, even in industrial countries, are so weak, since equity provides a mechanism for sharing risks and there is considerable evidence that individuals (and firms) are risk averse. In some important sense, therefore, these markets are not working well. (See Greenwald, Stiglitz, and Weiss 1984. Contrary to the Modigliani-Miller theorem, when information is imperfect, financial structure matters, as does the range of available financial instruments; see Stiglitz 1988.) Similarly, the prevalence of credit rationing suggests the existence of fundamental problems with credit markets. Not only are certain key markets (such as those

insuring a variety of risks) missing, but even long-term contracts that would seem desirable were not available until relatively recently (in a historical sense). In many countries their existence was the direct result of government actions (see Rey and Stiglitz 1992).

Recent theories provide a single set of explanations for these well-documented imperfections in the capital market: information is imperfect and costly to obtain. Problems of adverse selection and moral hazard imply that the effective costs of transactions in certain markets may be so high as to limit trade or to lead to the demise of those markets (see Akerlof 1970; Greenwald, 1986; Stiglitz 1982).

The government has several marked advantages in risk-bearing. First, because it can force membership in insurance programs, it can avoid the adverse selection problems that plague risk markets in general and insurance markets in particular. Adverse selection has a social cost as well. Insurance firms must spend large amounts to improve the quality of their pool of insured policyholders, and the prices (premiums and interest rates) of insurance reflect these expenditures.

A second advantage is the government's ability to mitigate the effects of moral hazard that arise because lenders lack information. The government has the power to compel the disclosure of information through a range of indirect instruments, including taxes, subsidies, and regulations (for a discussion see Arnott and Stiglitz 1986). Information available in the income tax system, for instance, can be used to reduce the risks of loan default and to design loan payments contingent on income.

A third advantage is that private markets cannot handle the kinds of social risk associated with macroeconomic disturbances. Markets are good at insuring individuals against accidents. But if all individuals are similar, who is to absorb the social risk? It can be spread across generations, but only the government can engage in such intergenerational transfers of risk.

Offsetting these advantages, however, the government is at a marked disadvantage in assessing risks and premiums, in part because such assessments are, to a large extent, subjective. The government inevitably has to employ relatively simple rules in risk assessments—rules that almost surely do not capture all the relevant information—and political considerations will not allow it to differentiate on bases that the market would almost surely employ. By contrast, the market converts the subjective judgments of a large number of participants into an objective standard. If a bank, say, complains about the risk premium charged by the market (in the form of the rate it must pay to attract uninsured depositors), there is a simple answer: show the market the evidence that the risk has been overestimated. The jury of the market renders a verdict. If the information is credible, the risk premium will reflect that information.

The difficulties of determining whether interest rates are actually appropriate exacerbates an ever-present problem with government lending programs: the opportunity to provide (often hidden) subsidies. Students in the United States

and large farmers in Brazil, for example, have been the beneficiaries of hidden subsidies. The temptation to use such subsidies for political purposes is one that many governments have found difficult to resist.

Another perspective, arguing the government *should* assume a significant amount of risk within financial markets, emphasizes the government's responsibility for dealing with the risks associated with the insolvency of financial institutions. If the regulatory structure is designed and enforced appropriately, insolvencies should be relatively rare. In practice, macroeconomic downturns are a major cause of insolvencies, and avoiding such downturns is the responsibility of the government. Making the government bear the costs of a failure to live up to its responsibilities provides a natural incentive for it to do its job well.¹

IMPERFECT COMPETITION. Earlier I noted that information naturally gives rise to imperfect competition. This is important because the underlying belief in the efficiency of market economies is based on the premise that competition not only exists, but is "perfect." Yet in most countries competition in the banking sector is limited.

The distinguishing characteristic of most markets is that any seller is willing to sell to any buyer at the preannounced price. This is true in deposit markets, but in loan markets borrowers may face a very limited number of suppliers and may find it difficult to switch from one to another. Each bank has specialized information about its customer base. A customer who has a long track record with one bank and therefore is viewed as a good loan prospect by that bank may be unknown to another bank and may therefore be considered a riskier prospect (see Stiglitz and Weiss 1983). Thus the fact that there are ten lenders supplying loans in a market does not mean that each customer has a choice of ten suppliers. Even when there are many banks, competition may be limited.

PARETO INEFFICIENCY OF COMPETITIVE MARKETS. As is true for many theorems, the proof of the fundamental theorem of welfare economics (the theorem that underlies economists' faith in markets) employs a large number of assumptions, some essential, some for simplification. Two of the assumptions are absolutely crucial; in their absence, the theorem is not in general true: there must be a complete set of markets, and information must be exogenous—that is, unaffected by any action a participant in the market can take. As should by now be clear, these assumptions are particularly disturbing in the case of financial markets. Gathering information is one of the essential functions of financial markets; sharing and transferring risk is another. Still, many risks remain uninsured, with the result that financial (risk) markets are incomplete.

Greenwald and Stiglitz (1986) note that when information is endogenous or markets incomplete, the economy is not constrained Pareto optimal:² there are government interventions that take into account the costs of information and of establishing markets that can make all individuals better off.

These particular market failures go beyond those referred to earlier. Even when there are markets, and even when they are competitive, private returns diverge from social returns. The failure of the standard results concerning the efficiency of markets can be approached in two ways: by looking at why the standard arguments fail or by looking at how government interventions might improve matters.

The standard argument is based on the assumption of market-clearing prices; prices then measure the marginal benefit of a good to a buyer and the marginal cost to the seller. But credit markets cannot operate like ordinary auction markets, with the funds going to the highest bidder. With imperfect information, markets may not clear. In credit markets those who are willing to pay the most may not be those for whom the expected return to the lender is the highest; the expected return may actually decrease as the interest rate increases because the probability of default may rise. As a result, there may be credit rationing: even though there is an excess demand for credit, lenders may not increase the interest rate. Rather, the interest rate will be set to maximize the lenders' expected return. Thus credit is rationed when, at this profit-maximizing interest rate, there exists excess demand for credit.

Moreover, social returns may differ from private returns. Lenders focus only on the expected return that *they* receive; the total return includes the (incremental) surplus (profit) accruing to the entrepreneur. The projects with the highest expected return to the lender may not be those with the highest total expected return, but they are the ones that get funded. Thus part of the rationale for directed credit is that good projects may be rationed out of the market. Several government programs reflect this perception of a discrepancy between social and private returns, although in some cases the view is that the market is excessively conservative and in other cases that it undertakes unnecessary risks.

In many countries the collapse of the real estate market has had far-reaching effects on the entire financial system. But even short of these effects, social returns to real estate may differ from private returns. This can be seen in a situation where banks, instead of rationing credit, lend to those willing to pay the highest interest rate. Consider the example of speculative real estate loans versus loans for manufacturing. Because the maximum returns in manufacturing are limited, there is a limit to the amount that borrowers are willing to pay. The returns on real estate, however, are highly variable; prices can—and frequently do—rise by more than 40 percent a year. (In any case, what matters is investors' perceptions about the possible returns, and these indeed may be high.) So long as there is limited liability and lenders are willing to make highly leveraged loans and accept real estate as collateral, it pays real estate speculators to take out loans even at seemingly exorbitant interest rates (more than 30 percent). They are in a "heads I win, tails you lose" situation. If their hopes are realized, they walk off with huge gains (particularly when viewed as a percentage of their invested equity); if not, the lender is left holding the bag. Thus even if there were no externalities associated with investing in manufacturing—no linkages outside

the investment itself—the social returns to manufacturing might exceed those resulting from real estate speculation. The interest rate charged does not reflect the social returns to investment.

These arguments establish that markets may not allocate capital to the uses with the highest return. There may be systematic deviations between social and private returns that direct government intervention—restricting some classes of loans and encouraging other classes—may partially address.

UNINFORMED INVESTORS. This final category of problems has motivated considerable government intervention but is not, in a formal sense, a market failure. What happens if individuals have information but do not process it correctly? What happens if a lender discloses the terms of the contract accurately but consumers cannot distinguish effectively between compound and simple interest, do not understand provisions concerning indexing, and so on?

Indeed, there is a more general problem: decisions concerning investments are based on probability judgments that are outside the province of economic analysis. As welfare economists, we make no judgment about whether an investor's calculation of the relative probabilities of different outcomes is right or wrong, as part of the general doctrine of consumer sovereignty, but for some probability judgments there may be objective data concerning relative frequencies. Of course, there is always a judgment call concerning whether past experience is applicable for inferring future likelihoods. Still, research (see Kahneman and Tversky 1974) has drawn attention to the fact that there may be systematic biases in most individuals' probability judgments. In that case, are policymakers to make judgments about resource allocations on the basis of misperceived subjective probabilities or on the basis of more relevant relative frequencies (where these can be obtained)? Should the government intervene to ensure that individuals' subjective judgments are determined with more complete knowledge of relative frequencies or in fact are in accord with the government's perception of the relevant relative frequencies?

Some of the disclosure requirements imposed by governments seem designed to make sure that firms do not take advantage of uninformed consumers. But information is at the heart of capital markets; much trading is based on differences in information. When someone buys shares, she or he is probably more optimistic than the seller. What information should traders be required to disclose? Some of the disclosure requirements imposed by government seem addressed to these problems, which, in terms of more conventional terminology, would fall under the rubric of "merit goods and bads" rather than outright market failures. There is a consensus that, by prohibiting unfair practices, government helps to create a more level playing field and promote investor confidence; if there is a widespread view that markets are rigged, trade will be thin and markets will not function well. Still, there is controversy over whether these practices benefit financial markets, whether the regulations attempting to

restrict these practices may actually make matters worse, and whether instead principles of “caveat emptor” should apply.

The Role of the Government

A useful taxonomy groups government interventions according to categories that relate to how these interventions are commonly discussed in the public policy arena. There are two alternative taxonomies, one focusing on actions, the other on objectives.

Government *actions* include creating and regulating financial market institutions, intervening in these institutions through other than regulatory means, and intervening directly in the capital market (providing direct loans). In addition, many government policies, including those pertaining to taxes, bankruptcy, and accounting, have an intentional or unintentional effect on financial markets. Some actions can be seen as improving financial markets or using them to accomplish other objectives; others substitute for financial markets. In pursuing these actions, governments may be attempting to address the kinds of market failure described earlier. But the government resolves market failure imperfectly. Some interventions motivated by, say, pressures from special interest groups actually impede the functioning of markets and redirect the allocation of capital in ways that cannot easily be related to any correction of a market failure. I do not have space here to comment on all of these roles, but in the context of developing countries, the first—creating market institutions—requires special comment.

One of the most important tasks in developing countries has been the creation of financial institutions to fill gaps in the kinds of credit provided by private institutions. In some cases the reason that the private market has not provided a particular category of financial service or loan may be clear: default rates are high, and at an interest rate high enough to cover these defaults, the market is simply not viable. Often the failure may be attributable to a lack of entrepreneurship, to a lack of creativity or an unwillingness to bear risks, or to the fact that the expected private returns to the institution may be markedly less than the social returns. And, because successes are quickly imitated, it may be difficult to appropriate the returns from novel ideas, including new financial institutions and instruments. In other cases there may be questions about whether a particular innovation is legal and an unwillingness to bear the costs and risks of finding out.

In some instances the government takes primary responsibility for creating new financial institutions or institutional arrangements; in others it takes actions that make the establishment of certain financial institutions viable or more likely. Let me mention three examples.

Viable equity markets require fraud laws and accounting standards to ensure that stockholders who do not control the company receive their share of the profits (see Greenwald and Stiglitz 1992b). The absence of these laws and accounting standards remains an impediment in many developing countries.

Beyond formal rules lies a gray area in which governments have attempted to create a level playing field so that investors are less likely to be taken advantage of by smart operators who avoid committing outright fraud. Regulations on insider trading and on cornering the market fall within this rubric. It may be necessary to establish a securities and exchange commission to create confidence in the stock market.

The “thickness” of a market is important; bid-ask spreads are typically larger in thin markets, and thin markets are more subject to manipulation, short squeezes, and high volatility. Governments can take actions to thicken equity markets; an example is the decision by the Korean government restricting the debt-equity ratio of large firms, which substantially increased the magnitude of equity issues. (Because the share issues were associated with a legal change, the usual asymmetric information concerns that impede the effectiveness of equity markets were less operative.)

In bond markets investors face two kinds of uncertainties, concerning the appropriate interest rate for the maturity of the debt and the appropriate premium to reflect default risk. Much of the uncertainty associated with the first type of risk can be resolved by a well-developed government bond market, which provides a yield curve. Governments may create these markets, even when they have no immediate need for the funds, simply for the information they provide.

Another way to categorize the activities of government in financial markets is by the stated social *objective*. Under this grouping, the six broad categories of government interventions are providing consumer protection, ensuring bank solvency, improving macroeconomic stability, ensuring competition, stimulating growth, and improving the allocation of resources.

Principles of Regulation

The government does have powers (arising from its ability to compel and proscribe) that the private sector lacks. At the same time, it is subject to constraints and limitations (including equity constraints and restricted ability to enter into commitments) that may make it less effective than private sector enterprises. The essential problem of public regulatory policy is to ascertain which interventions can bring to bear the strength of the government so as to improve the workings of financial markets.

Once regulations are put in place, governments must monitor banks to ensure compliance. Regulators should be guided by certain principles in choosing what should be regulated and what standards should be set.

Indirect Control Mechanisms

Not all variables are easily observable. Consider the requirement that banks take “prudent actions” and exercise faithfully their fiduciary responsibilities. Ascer-

taining whether a particular loan is or is not prudent is tricky. Having government regulators appraise every property to see whether the collateral is in fact adequate is feasible but expensive. Reviewing every action to see whether there might be a conflict of interest or a violation of a fiduciary responsibility would be prohibitively costly. Accordingly, regulators must rely on indirect controls. These take two forms, incentives and restrictions.

INCENTIVES. Incentive-based regulations provide an environment in which the incentives of managers are aligned with those of regulators. Adequate net worth requirements, for instance, provide an incentive to be prudent. If the bank goes bankrupt, the owners have more to lose; it is as simple as that. There is a general theorem showing that when net worth falls below a certain critical threshold, banks switch from a risk-averse to a risk-loving stance; that is, of two investments with equal total mean returns, banks would actually prefer the riskier loan.

RESTRAINTS. As noted earlier, insurance firms attempt to mitigate the moral hazard problem by imposing restrictions—we could as well call them regulations—on those they insure. Or they set different rates depending on whether the insured party conforms to some regulation; for instance, houses with sprinklers would qualify for lower rates for fire insurance. They thus try to mitigate the moral hazard problem by restricting behavior that will result in a higher probability of accident. Similar considerations apply to banking. Many banks, if not forbidden to do so, would make bad loans to their officers and to relatives of their officers. This may be a matter of fraud and deception: the bank officers may be attempting to transfer wealth to themselves by charging interest rates below the actuarially fair levels. Or it may be no more than bad judgment—the bank officers may be enthusiastic about their own projects and consider the probability of success very high. Because such errors are so common, because monitoring a project is so difficult, and because the opportunities for fraud and misjudgment are so rife, it is not unreasonable for regulators to restrict loans to insiders. But if the project is viable, the insiders should be able to get loans from other sources.

Restrictions on loans to insiders do not completely address the problem, however, because of “reciprocity.” The owners of bank A may make loans to the owners of bank B, and conversely, at rates that do not reflect the true actuarial risk of default. These problems are exacerbated when the owner of a bank is an industrial firm and the bank can be persuaded to give favorable treatment to the firm’s suppliers and customers. Again, the cost of detecting such abuses is very high. It is far simpler to stipulate that an industrial firm may not own a bank. (The firm’s shareholders would derive an advantage from ownership of the bank only if the firm were to take advantage of its ownership position or if the management of the firm—say, an automobile manufacturer—had some managerial comparative advantage in running a bank. The former is an argument *against* having industrial firms own banks; the latter seems unpersuasive.)

The problem we have just examined can be looked at from another perspective: banks provide their owners with a strong incentive for misjudgments that benefit themselves, and regulators need to correct such incentive problems.

In addition, a financial institution with a substantial amount of equity in a firm may have an incentive to lend the firm funds to “tide it over” a short-run shortage of cash. It will be inclined to interpret the problem the firm faces as minor, as a problem of liquidity rather than insolvency. A similar situation occurs when a financial institution sponsors an equity issue and recommends that its customers buy it. If the firm later faces a cash shortfall, the financial institution has an incentive to provide funds to shore it up in order to maintain its reputation as an issuer of equity. Its desire to maintain that reputation may conflict with its incentives to make prudent loans. There are, of course, many ways that a bank can aid a firm. It may provide a loan directly or make a loan to a major customer of the firm to enable the customer to buy more of the firm’s products. Because of the difficulties of monitoring all the possible forms of aid, it may make sense for regulators to restrain any institutions that make loans with government deposit insurance—either implicit or explicit—from undertaking certain other financial services.

Setting Regulatory Standards

The selection of the appropriate regulatory standard will depend on how well the variable in question can be measured. It is possible that the variable is measured with error, and, if the regulated firms have influence over what is measured, there may be systematic bias as well. Consider the problem of the net worth requirement. Ensuring that the bank does not become insolvent depends on the variability of the asset portfolio as well as on the frequency with which net worth is monitored. If net worth is monitored continuously, then as soon as a bank’s assets decrease in value, the decline in its net worth is registered, and any bank that falls below a certain threshold is instantly closed down. In that case a relatively low standard might be chosen. In practice, however, there are lags in detection and enforcement. The greater these lags, the higher the standard needed to ensure the probability that the true value of the variable in question will be above the desired level.³

The greater the variability in the value of the assets, the higher the probability that a problem will arise, given any particular set of lags. That is why it makes sense to have the type of risk-based capital standards that were developed during the 1980s. Although these standards recognize that there is less risk associated with a government treasury bill than with a commercial loan, the risk adjustments are far from perfect. Even with some risk adjustment, given the varying lags in and quality of information and the different degrees of volatility in asset prices, net worth and capital requirements should be tailored to the specific country. Thus while an argument can be made for a uniform minimum standard, in practice the standards of the Bank for International Settlements

ment (BIS) have become *the* standard. I would argue, however, that in some countries and during some periods standards should be higher—perhaps substantially higher.

The regulations must also be based on the recognition that there are important asymmetries of information between the bank and the regulators, since the “books” of the bank are largely under the bank’s control, so that the information presented to regulators may quite possibly be distorted. Thus banks are in a position to sell undervalued assets (and thereby record a capital gain over book value) but hold on to overvalued assets and carry them on their books at book value. When banks systematically engage in this practice, book value will systematically overestimate true value.

Resource and Incentive Problems

Limitations on resources and incentives often hamper the effectiveness of regulation. Governments should do more than just complain about these limitations; they need to recognize these limitations in the design of regulations and regulatory structures and try to take advantage of information and incentives within the marketplace.

The problem concerning resources is straightforward. The administrative resources available to the government are decisive for the effectiveness of its performance. The limitations on salaries of government employees, as well as other budgetary restraints, put government monitors at a marked disadvantage. Is it likely that a \$15,000-a-year (or even a \$45,000-a-year) civil servant will be able to detect the machinations of \$100,000-a-year accountants? The more complex the regulatory structure, the more likely that the differences in resources will come into play.

The problem of incentives is more complex and involves the design and enforcement of regulations. As noted earlier, private insurance firms have an incentive—provided by the profit motive—to look for regulations that are cost-effective; that is, regulations which reduce the occurrence of the insured-against event by enough to warrant the inconvenience imposed on the insured and are relatively inexpensive to enforce. The public sector often has no such direct incentive. Occasionally, competition among communities and governments provides such incentives. Many businesses are footloose and choose to locate where there is a favorable regulatory climate. This does not necessarily mean an environment that minimizes regulation; Singapore has established itself as a regional financial center, in part because of the effectiveness of its regulatory system. More generally, our task as public policy analysts is to look for cost-effective regulations.

Another concern is that incentives for enforcing the regulations may be insufficient. Bureaucrats and politicians often have an incentive to postpone the strong enforcement of banking regulations in the hope that problems with banks will disappear—or at least will not surface during their watch on the bridge. The costs of postponement, which have proved to be significant, are borne by others.

It may be hard to design effective incentive structures where consequences of actions today are realized only years into the future. At the very least, appropriate accounting systems that reflect the costs of assuming certain risks attract attention to what the government is doing and in this way help provide appropriate incentives. Thus the incentive to provide loans at less than actuarially fair interest rates is mitigated to some extent by the requirement that the actuarial value of the loss be included in the budget in the year in which the loan is made.

Since macroeconomic instability is one of the major causes of default, making sure that the government bears some of the consequences may be an effective incentive for stabilizing the economy. By the same token, making sure that the government bears some of the consequences for failed financial institutions provides it with greater incentives to monitor those institutions effectively.

Regulators do not always engage in regulatory forbearance. A significant problem in the United States in the aftermath of the savings and loan debacle is that regulators have been overzealous. Having been criticized for allowing too many banks to fail and for waiting too long, they have taken the opposite tack, and there have been widespread allegations that they have shut down banks prematurely. The full consequences for taxpayers or investors are not taken into account.

DISCRETION VERSUS RULES. One solution to the problem of regulatory forbearance (or of overzealous regulators) would be to reduce the government's discretionary judgment and establish strict guidelines under which intervention will occur. There is always a tension between rules and discretion. It is impossible to design rules that fit every situation. Less discretion therefore ensures a greater chance (at least compared with *perfectly exercised discretion*) of inappropriate action—say, closing a bank that should not be shut down or allowing a “bad” bank to stay open. Under any simple set of rules, these same two mistakes will occur. Tightening the standards will increase the probability of one type of error while reducing the other. Which point in the continuum is chosen depends on the costs of the two types of errors and the relative likelihood that each will arise.

Some regulatory structures are much simpler than others and leave relatively little scope for discretion. These include net worth and capital requirements, with simple adjustments for risk, and ownership restrictions. By contrast, ensuring that no transaction violates some fiduciary standard is costly and inevitably entails considerable discretion.

MULTIPLE MONITORING AGENCIES. Another standard objection to regulatory structures that provide considerable discretion is that they can breed corruption. In this connection it is useful to have more than one agency engage in monitoring. Corruption aside, all monitoring is fallible. Considering the large costs associated with allowing insolvent institutions to operate, one way of reducing the likelihood of that occurring is to have more than one independent monitor.

A more general problem is, who monitors the monitors? In principle, the monitors have supervisors. But often the supervisors are not well informed. If there is more than one monitoring agency, a system of peer monitoring can be employed; each monitoring agency in effect monitors not only the financial institutions but also each other (see Stiglitz 1990 and Arnott and Stiglitz 1991). Government's limited ability to monitor the regulators suggests that duplicative regulatory oversight may have strong advantages which are well worth the extra costs. Reformers who ignore the central importance of information and control may look at organizational charts and suggest streamlining them to end the allegedly wasteful duplication. Such reform efforts may, from this perspective, be fundamentally misguided.

USING THE PRIVATE SECTOR TO EXTEND THE REACH OF REGULATION. Government can take advantage of resources and incentives in the private sector to stretch its regulatory reach and make its monitoring more effective. The earlier suggestion that the government should focus on regulating such variables as net worth or capital, which it can observe at relatively low cost, falls into this category. Government is, in effect, using the force of private incentives; its only role is to see that those private incentives are operative by ensuring that the firm has enough of its own wealth at stake.

Governments need to remember too that the private market may serve as a regulatory mechanism. A party who has been hurt by fraudulent behavior can sue. Governments can enhance these incentives, as was done in the case of antitrust, with treble damages. The government can also employ information provided by markets to guide its regulatory behavior. Share prices and the prices of (uninsured) bonds of financial institutions convey information about the market's confidence in those financial institutions. A fall in those prices may provide important information for government regulators. And when the government sells off some deposit insurance risk through a reinsurance market, the prices on that market can provide it with valuable information concerning the risk of default.

Setting Prudential Standards

The three major principles of sound prudential regulation are to maintain high net worth and capital requirements, to restrict interest rates on insured deposits, and to restrict ownership and transactions where "fiduciary" standards are more likely to be violated. I have already said something about the first and third. After briefly elaborating on net worth requirements, I shall focus my remarks on the second.

NET WORTH REQUIREMENTS. How important it is to measure net worth accurately depends on the standards that are chosen. When net worth standards are low, small errors may have broad consequences: a bank that is viewed as viable

may actually have a negative net worth. If the net worth requirement is 20 percent of deposits and banks are closed when their net worth falls below that level, it is less likely that the true net worth is negative, and less likely that the government will be left holding the bag. The controversy over whether bank assets should be marked to market needs to be viewed from this perspective. The consensus among economists is that this would be beneficial; otherwise, a bank may have a negative net worth even though its book value is positive. But the bank's behavior is driven by its true net worth, not its book value. Banks claim that marking to market results in a biased estimate because some assets are difficult to mark to market and these assets may be undervalued. But, as noted above, if there is a bias, it goes the other way: banks are always in a position to realize any capital gains. In the absence of marking to market, banks may sell assets whose market value has increased and hold assets whose market value has declined, so that the book value of the assets systematically exceeds their true net worth. With sufficiently high net worth requirements, the whole issue of whether we mark to market becomes less important. By the same token, failure to adjust deposit insurance premiums to reflect risk will be less important because the premium need only reflect the probability that the net worth of the bank becomes negative, and this probability (with appropriately high net worth standards) will be quite low.

INTEREST RATE RESTRICTIONS. There is a wide body of opinion that opposes restrictions on interest rates. But when the government is providing insurance, it has the responsibility of any insurer to reduce the likelihood that the insured-against event will occur. Limitations on interest rates should be viewed in this context. Allowing banks to pay high interest rates when explicit or implicit deposit insurance exists results in perverse incentives: banks compete for funds, and those offering the highest interest rates (effectively guaranteed by the government) attract funds. But to pay those high interest rates, they have to take high risks—augmenting the already-present incentive to take excessive risks. A process I have described elsewhere as the Gresham's law of financial markets takes place; risk-loving banks drive out more prudent ones.

It makes no sense for the government to allow the private sector to take advantage of its implicit subsidy. If we believe that government insurance is as credible as a government guarantee that it will pay back a treasury bill, then there is no justification for paying higher interest rates than on treasury bills. Since banks may be providing additional services, rates could be lower. To repeat: the regulation on insured deposit rates is intended not to restrict competition but to restrict the ability of banks to take advantage of any implicit subsidy.

Financial Repression

For the past quarter century governments of developing countries have been warned to avoid financial repression. Financial repression provides one of the

classic examples of welfare-decreasing government interventions in the market. The standard argument against it is that low interest rates reduce savings and thus inhibit economic growth. It is argued that because financial institutions are essential to the efficient allocation of capital, free competitive markets are needed to ensure that resources go to those who value them the most. The borrowers who are willing to pay the highest interest rates on loans are those whose projects will yield the highest return. If governments restrict interest rates and replace efficient market allocation mechanisms with capricious public selection processes, the result is less capital, and what capital there is will be less efficiently allocated.

These theoretical arguments have been buttressed with convincing empirical and anecdotal evidence. Countries that abandoned financial repression did well, and cross-sectional and time-series studies confirmed that there was a positive relationship between growth and real interest rates. More recently, however, this relationship has been reexamined. Studies of savings seem to indicate little relationship between national savings and interest rates. This should not be surprising, since theory suggests that, at least at the household level, income and substitution effects go in opposite directions. Most econometric studies show low interest elasticities. It is worth noting that Japan's postal savings banks paid relatively low interest rates and yet were able to raise huge amounts of money, suggesting that other factors (such as convenience and safety) may far outweigh interest rates in determining the level of savings.

Recent theoretical work has emphasized the importance of the corporate veil: the fact of imperfect information implies that funds do not move costlessly between the household and corporate sectors. Lowering interest rates can be viewed as a transfer from the household sector to the corporate sector. Of course, if there were no corporate veil, such a transfer would have no consequences, but if there is a corporate veil, it may make a large difference. If the marginal propensity to save is higher for corporations than for households (and there are a variety of reasons why we might expect this to be so in a world of credit and equity rationing), this transfer of wealth results in an *increase* in aggregate savings.

The argument that financial repression leads to inefficient allocation is equally suspect. It is based on the failure to recognize the distinction between credit markets and other markets. The analogy between the allocation of credit and the allocation of other goods is fundamentally inappropriate. Closer examination suggests that financial repression can actually improve the efficiency with which capital is allocated, or more broadly, the total expected returns per dollar of capital. There are several reasons for this.

First, as Stiglitz and Weiss (1981) emphasize, higher interest rates adversely affect incentives and the mix of applicants, even when these effects are not so strong as to outweigh the direct benefit of higher interest rates. Even if the government selected projects at random, lowering the interest rate could increase the expected quality of borrowers, and this effect would be even greater if it were assumed that the government had some positive selection capabilities.

Second, financial repression increases firm equity because it lowers the cost of capital. Equity capital has several advantages over loan capital, leading to investments with higher expected returns. The firm reduces the prospect of bankruptcy that occurs when it cannot meet its debt obligations. (This prospect of bankruptcy acts as a major deterrent to undertaking high-yield, high-risk investments.) And firms are more likely to select good projects when they have more of their own capital at stake.

Indeed, financial repression can be used as the basis of an incentive scheme to encourage higher savings and more efficient allocation of capital. Financial repression creates a scarcity. Some will get the capital they want at the interest rate being offered, while others will not. The government can set up a contest so that those who perform well (as measured by, say, exports) get more access to capital. Such contests can have strong positive effects.

The arguments against financial repression are based on a number of errors in previous empirical studies.

- *Failure to distinguish between small and large repressions.* There is little doubt that high negative rates of return can have significant deleterious effects on the economy. These large repressions seem to have driven earlier econometric studies. When countries with negative real interest rates are excluded from the sample, higher real interest rates seem to be associated with lower rates of growth.
- *Failure to identify the problem.* High negative rates of return are symptomatic of a wider range of government failures. If “good government” brings about a more efficient allocation of resources and avoids severe financial repression, there will be a negative correlation between financial repression and growth, but it would be incorrect to infer from this that the low level of economic growth is caused by financial repression.

Without ways of measuring “good government,” it is difficult to identify the correct causal structure. One hint at an answer is the rate of inflation. High rates of inflation can be thought of as a reflection of “bad government,” or at least bad macroeconomic policies. The question is, correcting for the rate of inflation (the overall quality of government), does financial repression have a negative effect on growth? Our preliminary studies suggest that it does not (Murdock and Stiglitz 1993).

- *Failure to take account of demand-curve shifts.* High real interest rates can be a result of good investment opportunities (high demand for capital) rather than of a lack of financial repression. Unless the economy is completely open, domestic interest rates do not provide a good measure of the extent of financial repression. A better measure is the difference between the curb market and ordinary rates of interest. Regressions for the Republic of Korea that include this variable show no evidence of a significant effect of repression on growth (or on incremental capital-output ratios). The estimated coefficients suggest that financial repression has a slightly

positive effect, perhaps for the reasons cited above (Murdock and Stiglitz 1993).

Directed Credit

Programs of directed credit attempt to intervene in the way that banks allocate credit. The theoretical rationale for such interventions in the market has been outlined earlier: without government intervention, the bank will not allocate funds to those projects for which the social returns are the highest. This is true even in the absence of technological spillovers. Thus DeLong and Summers (1990) argue that there is a strong positive correlation between investment in machinery and economic growth—a relation that can perhaps result from learning-by-doing and technological spillovers. But these are benefits that conventional banking might simply ignore.

By the same token, the widespread problems many banks faced when real estate markets collapsed provide strong evidence that financial institutions failed to take social returns into account in making real estate loans. Directed credit—this time, restrictions on certain categories of loans—may be desirable.

Rationale for Directed Credit

Most of the successful economies of East Asia have relied on directed credit programs. There are perhaps four arguments for undertaking such programs, as opposed to, say, providing subsidies for sectors the government wishes to encourage or taxing those it would like to discourage. These rationales are discussed below.

UNDERDEVELOPED TAX SYSTEMS. Directed credit, in contrast to subsidies, does not require the use of government to raise revenues. Because developing countries have traditionally faced budgetary constraints, they have seen directed credit as a marked advantage. There may be less to this than meets the eye: governments have been persuaded that they should operate like ordinary businesses, with cash coming in equal to cash going out. Governments are in the business of making sure that the total expenditures of society match total output. Fiscal restraint, attained by making sure that cash coming in meets cash going out (ignoring for the moment complications arising from international resource flows), is one way of making that more likely to happen, but it is neither necessary nor sufficient. The magnitude of the monetary-credit stimulus must also be taken into account.

If loan markets were nothing but auction markets, the interest rate would equate the demand for new funds (loans) with the supply. But credit markets are not auction markets. Rather, banking regulations give banks the right, in effect, to issue money—that is, claims on goods. The bank issues these claims on the

basis of its judgments concerning who is creditworthy. Individual banks do not ask whether the sum total of these claims is consistent with macroeconomic equilibrium. And because the interest rate is being used for purposes other than market clearing—it affects both the mix of borrowers and the actions they take—the price system may not ensure macroeconomic equilibrium either. Ensuring such equilibrium becomes the task of the central bank (see Stiglitz and Weiss 1990).

If, through one mechanism or another, governments manage to suppress consumption, resources are made available for investment. For instance, credit can be supplied at low interest rates, or investments can be subsidized. The difficult part is not raising taxes but suppressing consumption.

PUBLIC FINANCIAL INSTITUTIONS IN EAST ASIA. This brings me to the second reason that some governments, at least in East Asia, undertook extensive government lending programs: they were able to reduce consumption, in part by providing safe and convenient vehicles for savings (for example, Japan's postal savings system). The government thus had a cash flow to be allocated. Again, to a large extent, governments were misled by the analogy with the business sector—although here the error was perhaps smaller than that discussed above. Thinking as a business would, the government assumed that it had to invest these funds well. Since it had, in effect, borrowed the funds from consumers, it had to be sure to earn a return on the funds to repay the amount promised. In fact, though, government is different from business. The government could use the funds and subsequently “capture” the amount required to repay depositors through taxation (an option not open to private firms). The funds flowing into the postal savings banks provided an indicator of the resources available for investment, but the government could have stimulated that amount of investment in other ways; it did not have to get the returns directly through loan repayments.

THE EFFECTIVENESS OF DIRECTED CREDIT. In any country the relationship between the magnitude of the subsidy provided and the level of investment that firms undertake is uncertain. The price system appears to be a highly unreliable control mechanism when economies are in a recession. And it is equally likely to be unreliable in developing countries, where conditions are constantly changing. Thus, controlling the *quantity* of credit is a surer way of providing for macroeconomic stability than controlling the price (interest rate) and is even more effective than controlling the price through subsidies. (In the latter case two sources of uncertainty are introduced: the relationship between the magnitude of the subsidy and the price that borrowers will have to pay, and the relationship between the price that borrowers have to pay and the amount of credit that will be issued; see Weitzman 1970.)

ECONOMIES OF SCOPE. Given that banks must carefully scrutinize loan applications in any case, it may not be that difficult to screen for a broader set of

objectives. Will the project yield high *social* returns, and are there positive linkages with other sectors? Sectors of the economy that satisfy these criteria (provided that the difference between the private and social returns is large enough to merit intervention) may be targeted with directed credit. Once these sectors have been identified, there should be little incremental cost associated with a bank's including these criteria in its selection mechanism.

The Targets of Directed Credit

Although much of the popular criticism of directed credit programs focuses on the difficulty of picking winners, most of the successful economies of East Asia chose broadly based objectives, traditionally focusing on export promotion and, more recently, on technology. (Besides directing credit *toward* these areas, credit was directed *away* from other areas, such as real estate and consumer durables.)

TECHNOLOGY. The reasons for the emphasis on technology are easy to see; there are standard "public goods" arguments that the nature of knowledge results in marked discrepancies between social and private returns (see Stiglitz 1987b). Firms may be unable to capture the social returns generated by their innovations because of competitive imitation. As a result, the economy is likely to underinvest in the development of new technologies. Directing credit toward technology-intensive industries can be an effective tool for promoting innovation.

EXPORT-ORIENTED CREDIT. Why these countries focused on export orientation—and why such a focus should have been so successful in promoting economic growth—may seem more problematic; after all, standard economic theory says that countries should promote their comparative advantage. In some cases, this should entail producing import substitutes, in some cases, exports, and in some cases, nontradables. In the process of growth, to be sure, comparative advantages would change; in any case, comparative advantage should not be defined only in relation to current resources and competencies. One has to focus on dynamic comparative advantage. As an economy grows, the mix of products it produces may well change, but there seems no a priori reason (at this level of generality) why this mix should consist primarily of goods that are exported rather than substitutes for goods that are currently imported. Why the seeming bias toward exports? And why has this bias been so successful?

There are several possibilities. The standard analysis focuses on a shortage of foreign exchange. By increasing exports, the shortage is relieved. For instance, in the post-World War II era the government of Japan overvalued the yen and so faced a shortage of foreign exchange. (If the foreign exchange rate had been set at an equilibrium level, the scarcity of foreign exchange would have been no different from the scarcity of any other resource.)

But there is a more fundamental reason: exports provided a rational criterion for allocating credit. Government has only limited information concerning

which firms are performing well. This problem is particularly severe in the context of development because relatively few firms may be engaged in similar activities, and officials have only limited bases for comparison. A related problem is that in the early stages of development short-run profits provide an imperfect indicator of long-run performance. The profits that accrue as a result of imperfect competition in the domestic market accrue at least partially at the expense of consumers. By contrast, if a firm succeeds in the export market, it is more likely that it is able to provide a product at a lower price than its foreign rivals or a product that appeals to the world market. It is more likely that export markets are competitive. And even if they are not, it is of no concern to the country; the profits of the firm then come at the expense of foreign consumers, about which governments of developing countries are much less concerned.

Accordingly, from a social perspective, success in exporting may be a better indicator of whether a firm merits additional funds than success in domestic markets. Banks, however, typically prefer domestic to foreign lending, and for a simple reason: to the bank, whether a firm's returns are social or private is irrelevant; the bank just wants to be sure that there will be returns, and more risk is associated with lending for export projects. Consequently, banks will underutilize the informational content of successful exports.

Thus export-oriented policies were desirable because they provided a good measure of performance—a better measure than profits—and there were, in addition, technological spillovers. Government intervention was required because of the difference between private and social (risk-adjusted) returns to lending for exports.

Competition Policy

Competition policy poses a difficult quandary. Ideologues of the right, as well as certain special interest groups within the financial community, have an easy prescription: because markets are naturally competitive, all the government has to do is to remove the barriers that it has placed in the way of the competitive process.

To be sure, financial sector regulations in effect reduce competition (although the reduction is often an unintended side effect of regulations imposed to ensure financial solvency or prevent abuse by financial intermediaries). Competition policy represents a balance between conflicting concerns. Alternative views of competition policy are based on differences not only in the weights associated with these concerns but also in judgments about how well the banking sector functions in the absence of government intervention.

Advantages and Disadvantages of Competition

There is a consensus that competition is important in promoting efficiency. Not only does competition lead to lower costs, but it also provides incentives for

firms to discover unserved niches in the market. The returns that can be obtained reflect the values that consumers place on these services.

These arguments are standard for any industry. In credit markets an additional argument is that competition affects credit availability—not so much the total amount of credit (which may be more related to macroeconomic considerations) as the pattern of allocation. The larger the number of banks, the greater the likelihood that there may be more than one bank willing to lend. This is important. When there is only one bank, the borrower may not be able to obtain funds, and this poses an impediment to the entry of firms into a market. For this reason, lack of competition in the banking sector has a deleterious effect on the producing sector that goes beyond the higher interest rates its monopoly position confers.

But competition is a two-edged sword. Lack of competition leads to higher interest rates (one of the standard concerns with limited competition), but it also leads to higher profits. And higher profits increase the strength of financial institutions and reduce the risk of insolvency.

The United States may have had the most competitive banking sector in industrial countries. It is not surprising that it has, as a result, been a source of innovation. The incidence of bank insolvencies, however, has been higher than in many other countries. This may be partly a consequence of improper regulation, but it is also a reflection of the high levels of competition that have reduced the spread between deposit and lending interest rates and cut into profit margins.

In most sectors of the economy insolvencies resulting from excessive competition are not viewed as a problem. If too many firms enter an industry, prices drop, profits decline, and the weakest firms leave. Some of the capital is transferred to other sectors. Other, sunk, capital is “lost,” but the loss is borne by the investors.

In the banking sector, however, there are further ramifications. As profits decline, the net worth of all banks is eroded, with adverse effects on depositors and borrowers. If net worth is reduced only slightly, banks will lend less, and borrowers will suffer. With larger reductions in net worth, some banks take on more risk, and the savings and loan syndrome sets in. Depositors (or the agency that insures deposits) bear the cost. In either case, the ramifications of excessive entry are borne not by the investors but by others.

If banks could instantly raise new equity capital to offset the erosion of equity resulting from excessive entry, the damage done to the surviving banks would be easily undone, and the market would not suffer. (To be sure, the original investors in the surviving banks, as well as in the banks that had to leave the market, would suffer.) But, in fact, banks cannot raise new capital so easily. A depletion of equity cannot be easily undone. And even if aggregate equity were to remain unchanged—with the reduced equity of incumbent financial institutions being offset by the new equity of entrants—particular borrowers, attached to the disadvantaged financial institutions, would suffer.

Moreover, profits in financial institutions may arise not only from providing needed services more efficiently but also from exploiting market imperfections

more effectively. Financial institutions seem perfectly willing to offer essentially identical accounts that pay markedly different interest rates, hoping (realistically) that at least some uninformed customers will accept a lower-than-competitive interest rate.

Limitations on Competition

Many of the curbs on competition are by-products of other objectives. The gains from the purported achievement of these other objectives have to be weighed against the possible costs (and benefits) of restricted competition. Three examples will illustrate the point.

FIDUCIARY RESPONSIBILITY. It is clear that financial institutions are entrusted with the care of other people's money and should not use the funds for the benefit of, say, the officers of the institution. If information were costless, investors could withdraw their funds from any institution that engaged in such practices. But information is imperfect, and there is evidence that even when informed of an impending collapse, many depositors—including those who are only partially insured—do not withdraw their funds. Markets provide, at best, limited discipline.

The next line of defense is regulation. Regulations prohibit untoward behavior, but regulators can only imperfectly monitor the actions of banks. As a result, they must rely on indirect control mechanisms. They can make sure that there are no conflicts of interest that would tempt banks. This perspective explains many of the observed restrictions on banks and owners. The temptation, even in good faith, to make favorable judgments concerning insiders' creditworthiness is overwhelming.

Most countries impose restrictions on who can own a bank. These are partly concerned with the *character* of the owner—the owner should not be a person who has a record of abusing trust. But they are also concerned with incentives; there are advantages to restricting ownership to those who have less incentive to abuse the fiduciary relationship.

One of the principal justifications of the Glass-Steagall Act in the United States, which establishes a division between investment banks and commercial banks, is that it lessens the likelihood of abuse of the fiduciary relationship. An investment bank which has recommended to its customers that they buy the shares or bonds of a particular company may be tempted to shore up that company with loans (which other banks either would not make or would offer only at a far higher risk premium) if, a short while down the road, it runs into financial difficulties.

It is easier to impose restrictions on the categories of activities in which different financial institutions can engage than to monitor individual actions undertaken by each institution. As always, there are tradeoffs. The reduced likelihood of malfeasance incurs a cost, often of reduced competition. How

significant the cost is depends on the particular regulation. For instance, it is argued that the barriers between investment and commercial banks restrict competition and interfere with economic efficiency. Here, the principal question concerns the magnitude of the economies of scope. If they are significant, then forcing these different economic activities into different organizations interferes with the ability to take advantage of economies of scope. There are probably *some* economies of scope. The question is, how significant are they? Indeed, the economies of scope that are observed may be closely linked with the possible abuses that arise when the barriers are eliminated.

REGIONAL RESTRICTIONS. The United States has imposed strong restrictions on interstate banking. Perhaps the political force was provided by the concern that small local banks would be driven out by large national banks—a typical example in which a class of firms that cannot survive in the competition of the marketplace turns to government for protection.

Yet there may be a grain of truth in some of the arguments (besides rent protection) in favor of restrictions. One argument is that they may make actual competition more effective—with these restrictions, many local banks might stay in business; without them, only one large bank might survive.

Another concern is that, without restrictions, there will be a diversion of funds toward the larger centers. Local information is important in lending activity but not in deposit activity. Large banks may tend to garner funds from a wide range of sources but to concentrate the allocation of funds in the areas about which they have more information and where they can monitor borrower activity at lower cost—usually, large metropolitan centers. From both an economic and social perspective, such concentration of lending activity—and thus of economic activity more generally—may not be desirable (see Greenwald, Levinson, and Stiglitz 1993).

Again, there are tradeoffs: geographic restrictions on banking have, as we have noted, ambiguous effects on competition, but they do limit the extent of portfolio diversification of banks, thus amplifying the effects of local shocks on lending activity and increasing the solvency risk of banks.

At least some of the objectives may be accomplished as (or more) effectively at less cost in other ways. For instance, the concern about diversion of funds toward the money centers may be addressed by tying lending activity to the locations of deposits (although such constraints raise the possibility that funds will not be allocated in a way that maximizes—at least, private—returns.)

COMPETITION FROM FOREIGN BANKS. Competition from foreign banks is a third realm in which government policies designed at least in part for purposes other than reducing competition may nonetheless have had that effect. These policies have been the subject of extensive controversy. Industrial countries have put considerable pressure on developing economies to open up their financial markets to foreign competition. Those who repeat the mantra that markets work

well in the absence of government intervention see no reason why the government should impede competition in the market in this way. I contend that there are at least three good arguments for these restrictions. The first is a variant of the infant industry argument (see Dasgupta and Stiglitz 1988). Because there is considerable "learning by doing" in the financial sector, protection may be even more important in this industry than in others. Depositors may feel greater confidence in the security provided by a large international bank, thus putting a small, new domestic bank at a marked disadvantage.

Free trade arguments suggest that one remedy is for the domestic bank to lower interest rates and increase its loans to strengthen its learning. This requires attracting additional funds from depositors. But depositors may be relatively price-insensitive; the additional safety of the larger international bank implies that the domestic bank would have to pay substantially higher interest rates to attract funds. In some cases government guarantees may offset this advantage. Certainly Japan was able to gather deposits through its postal savings system while paying relatively low interest rates, presumably because depositors had a great deal of confidence in these accounts. But in other countries investors may actually have more confidence in a foreign bank. At the deposit interest rates domestic banks would have to pay to be competitive, they would lose substantial amounts of money, and imperfections in capital markets mean that without government subsidies, the institutions may not be able to finance this deficit. Because the governments of developing countries do not have the funds for subsidies (or, more formally, the shadow price on government funds is extremely high), protection is more desirable.

A second reason that protection may be more important in this industry than in others is the discrepancies between social and private returns to lending. Those discrepancies may be different, and larger, for lending by foreign banks. Foreign banks may be at an informational disadvantage in relation to domestic banks, and this may bring about a different pattern of investment. Foreign banks may, for instance, be relatively better informed concerning multinational firms and may direct funds to the local subsidiaries of these firms, thereby reducing the flow of funds to local entrepreneurs.

A third reason is that international banks may be less sensitive than local banks to "window guidance" and other indirect pressures. In several countries, local bank officials have complained that they did not mind foreign banks' entering their market if they entered on a level playing field and, in particular, if they entered subject to the same rules, explicit and implicit, that face domestic banks. But, in fact, foreign banks are less vulnerable than domestic banks. The maximum punishment that the government can normally mete out is to close the bank. For a large international bank, that may be a relatively small punishment; for a domestic bank, it is the economic equivalent of death. Thus national banks will inevitably be more sensitive to the wishes of the government. Moreover, there is likely to be a stronger sense of social cohesion between domestic banks and the government.

Here, too, there are tradeoffs: the presence of foreign banks may decrease the government's control of the economy. Different countries, in different situations, will inevitably balance these considerations differently.

Imperfect Competition in the Banking Sector

This paper suggests that the banking sector is not well described by the model of perfect competition with well-informed buyers. Those countries that have not actively promoted competition have relatively few banks. The reasons for this are not entirely well understood. There appear to be some economies of scale and of scope, but not enough to justify the extremely small number of firms in many economies. In the United States there is evidence that many small banks can be highly profitable, exploiting their greater knowledge of local markets and avoiding the diseconomies of scale arising from managerial problems. (Large banks, may, however, realize economies of scale arising from advertising and name recognition, quite distinct from the economies arising from the more central functions of financial institutions.)

This view contrasts markedly with the view popularized in the last decade under the rubric of the contestability doctrine, which holds that what is relevant is not the actual level of competition but the presence of potential competition. Even if there is only one firm in the market, it cannot exercise market power, lest entrants come into the market. It is claimed that entry barriers are small for banks and that, accordingly, the contestability doctrine applies. Neither evidence nor theory has been kind to the contestability doctrine, as popular as it has been with naive advocates of market liberalization. Theory has shown that even small sunk costs can result in very large barriers to entry, negating the implications of the contestability doctrine (Stiglitz 1987c). Although many sectors of the economy (including the banking sector) are too complex to provide a clean test of the contestability doctrine, the U.S. airline industry has provided convincing evidence against it. Thus if governments wish to have a competitive banking sector, they may have to take deliberate actions to promote competition, sometimes compromising other objectives of banking policies.

Conclusion

There is a role for the state in financial markets; it is a role motivated by pervasive market failures. In most of the rapidly growing economies of East Asia government has taken an active role in creating financial institutions, in regulating them, and in directing credit, both in ways that enhance the stability of the economy and the solvency of the financial institutions and in ways that enhance growth prospects. Although limitations on markets are greater in developing countries, so too, many would argue, are limitations on government. It is important to design government policies that are attentive to those limitations.

The extent to which the success of the rapidly growing economies of East Asia is attributable to extensive government intervention in financial markets, the relative importance of particular interventions, and whether other countries can successfully imitate these interventions remain questions for research and debate. What is clear is that a simple ideological commitment to liberalization of financial markets cannot be derived either from economic theory or from an examination of a broad base of experience and cannot provide the basis for an intelligent discussion of an absolutely central set of policy issues that face developing countries today.

Notes

1. An important caveat is that changes in government mean that those who bear the costs of misguided government policies are often not those who perpetrated the mistakes.
2. The term "constrained" is added simply as a reminder that the costs of information or of establishing markets have been taken into account.
3. To put the matter formally, assume that the government wishes to make sure (with probability 0.95) that a variable x is greater than some threshold level x^* . It does not observe x directly; rather, it observes y , a noisy measurement of x ($y = x + \epsilon$). It then sets a standard for y , y^* such that if $y > y^*$, the probability that x exceeds x^* is 0.95. The greater the noise (the greater the variance of ϵ), the higher will y^* be.

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COMMENT ON "THE ROLE OF THE STATE IN FINANCIAL MARKETS," BY STIGLITZ

Jaime Jaramillo-Vallejo

I find it amusing that we begin by assuming that we have a can opener while being stranded on a lonely island with nothing more to eat than canned food. In his paper Stiglitz is asking us to assume that governments all over the world—especially in developing countries—are wise, fair, and efficient enough to carry out the kind of “perfect” intrusive intervention suggested by him. It is as if the world of the second best had just been discovered and we had not learned from the experience with the different forms of government intervention that we have seen in this century.

On a more fundamental level, I agree that there is a need for intervention in financial markets through prudential regulation and adequate supervision. But I find it difficult to agree with the kind of intrusive intervention suggested by Stiglitz, or with his reasoning for it, or with the allocation of scarce governmental resources that such intervention would entail. Moreover, while I appreciate Stiglitz’s contributions regarding information theory and market imperfections, I do not see a clear connection between most of the specific interventions suggested in the paper and the imperfections which he highlights—that is, there is a non sequitur in this regard within the paper. Furthermore, these policy suggestions do not differ in any way from what used to be the gospel of agencies such as the United Nations Economic Commission for Latin America under Raul Prebisch in the 1950s, 1960s, 1970s, and early 1980s—a gospel that was painstakingly implemented without success in Latin America during several decades.

Regardless of whether or not there are market failures, the state’s role in financial markets is necessary because of the “fiat” nature of monetary and financial instruments. Today’s financial economy is nothing more than a “great big fantasy,” where promises made by people, firms, or even computers are

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taken so seriously that they are regarded as wealth. This fantasy eases economic transactions and enhances efficiency only to the extent that the instruments used in it are trusted by economic agents, and the entire system ceases to function when faith in these instruments collapses. Monetary and financial instruments are assets simply because they are somebody else's debt, and, given that there are incentives to elude keeping up with financial promises, intervention is required to ensure that the financial and monetary fantasy lives on and continues to grow (see McKinnon 1973; Shaw 1973; World Bank 1989). This paradigm suggests a kind of state intervention that is more directed toward leveling the playing field and nursing and shepherding the development of the fantasy, which is in marked contrast with most of the intrusive interventions suggested by Stiglitz.

From another viewpoint, the real world is far from the black-and-white picture of "perfect" competition, "perfect" government intervention, and market "failures." And in a world of gray tones with monopolistic competition, ordinary governments, budgetary and human constraints, and some market imperfections, we are better off relying on competition and private microeconomic decisions within certain prudential guidelines, steering clear of financial repression.

Just as "perfect" competition does not exist and market "failures" are always present, experience suggests that relying heavily on the wisdom and goodness of government in microeconomic decisions is a major mistake—witness Africa, Eastern Europe, Latin America, and South Asia. The failure of governments to exercise discretion is perhaps more prevalent and damaging in developing countries than the so-called market failures and imperfections themselves. As a matter of fact, government failure has been present in all of the financial crises of recent decades, either because regulations were faulty or because supervision was poor. In Colombia the financial crisis of the early 1980s came at a time when the authorities were actively pursuing the kinds of policy suggested by Stiglitz in his paper. They were so involved with those policies that they failed to stop the conflicts of interest that brought about the crisis (see Montenegro Trujillo 1983 and Caballero Argáez 1987). Furthermore, as Lawrence Summers indicated in his keynote address at the 1991 meeting of this conference (Summers 1992), the kind of intervention that so lures Stiglitz has already been tried extensively. It has been mildly successful in East Asia but nowhere else; rather, it has led everywhere to a burst of corruption and other undesirable effects.¹ Remedying the ill effects has not been easy.

On the specific policy advice offered by Stiglitz, I found it surprising that a recommendation for financial repression would ignore completely a number of issues that experience suggests as very relevant. Let me mention a few.

- Although aggregate savings may not be sensitive to interest rates, can we say the same thing about disintermediation and financial savings? How does one transform savings in the form of minor physical assets—such as chickens or hogs in developing countries and full cupboards in Eastern Europe—into physical productive capital?

- What is the impact on investment and growth of high spreads between lending and deposit interest rates—spreads that reach 70 percentage points in Slovenia and 90 in Peru? Within this context, should Stiglitz not supply us with the data to back his statement that there is empirical evidence that financial repression has a positive impact on growth? Recent empirical work by King and Levine (1993) would indicate quite the contrary.
- What prevents banks from distributing profits stemming from wide spreads instead of capitalizing them as Stiglitz hopes would happen? Would capitalization not require, in any case, strict rules on capital adequacy and their rigorous enforcement? Why, then, is a wide spread needed?
- What are the efficiency gains of using implicit taxes and subsidies through the financial sector instead of using explicit and transparent ones? In what way are the distributive effects of an indirect system preferable? Moreover, do these effects not bias income and wealth distribution? Is the use of implicit taxes and subsidies neutral from a political viewpoint?
- Why would credit rationing and allocation stemming from financial repression yield better results than the kind of credit rationing that Stiglitz sees as a market failure? Does experience not suggest quite the opposite as a result of the favoritism and corruption that is bred by repression?
- Within the credit allocation system suggested by Stiglitz, would it not pay firms to use bank credit more intensively than their own capital? Why would this outcome be desirable? Is this not what happened in France?² Was not this one of the key factors that killed the budding capital markets of Latin America in the 1950s and 1960s? The importance of these markets may be overstated on average terms, but not on marginal terms.

Moreover, there is a political dimension underlying all this discussion in developing countries. When we pushed through the financial and exchange liberalization in Colombia, we did so because we believed that the basic economic human rights of a large segment of the population—particularly the low- and middle-income groups—were being “overlooked” to the extent that there was favoritism in the intervention in these markets. Furthermore, my own country may be a good example of how intrusive state intervention in the economy can eventually be used to effectively curtail true democracy by managing the benefits of the intervention. Can we as economists and public servants ignore blatantly the impact of our policy prescriptions on basic economic human rights and the development of democracy? I, as a public servant of a developing country, would be very concerned if the officials from the U.S. administration were to start peddling economic policies that were to hamper democracy.

Despite Stiglitz’s contribution, I feel that much remains to be done in terms of working through the real relevance of the market failures highlighted by him and the actual intervention needed to deal with them. In the meantime we must emphasize intervention through prudential regulations and supervision to keep the monetary fantasy alive and growing, using regulations that factor in the

limitations facing the authorities and the country, focusing on controls that can be enforced easily and precisely, and creating incentives so that financial institutions and other private agents act prudently. And, from this viewpoint, I feel that most of Stiglitz's policy prescriptions do not fulfill these requirements.

To sum up, I wonder whether the following quote from Stiglitz's own paper could not be applied squarely to his paper and his policy advice:

[It] . . . is based neither on a sound economic understanding of how [financial] markets work nor on the potential scope for government interventions. Often, too, it lacks an understanding of the historical events and political forces that have led governments to assume their present role. Instead, it is based on an ideological conception of markets that is grounded neither in fact nor in economic theory. (Stiglitz, in this volume)

Note

1. Conventional wisdom would suggest that the key reasons for the mild success of intervention in East Asia are the authoritarian character of their political regimes and the cultural habit of obedience (see World Bank 1993). By the same token, one should expect corruption to be more noticeable in those countries with a free press and with a cultural tendency to question the leadership.

2. See Stiglitz, in this volume.

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COMMENT ON "THE ROLE OF THE STATE IN FINANCIAL MARKETS," BY STIGLITZ

Yung Chul Park

Many policymakers in Korea, as well as those who have long been uncomfortable with liberal financial doctrine, will be relieved by Professor Stiglitz's support for repressive financial policies. Almost every financial activity in Korea, including access to the banking sector, the determination of interest rates, and the allocation of credit, has been heavily regulated by the government. Financial experts and international organizations have argued that unless Korea's financial markets were substantially deregulated and opened to competition, the economy would crumble under the accumulated inefficiencies of the financial sector. Korea's economic performance for at least the past two decades, however, suggests that this argument is suspect, although it is possible that economic growth could have been higher under a more deregulated financial regime.

I agree with most of the points made in the paper, but drawing on my experience in designing financial policies, I would like to touch on several issues that are not discussed.

First, the structure of competition in the banking sector is largely influenced and often shaped by the structure of its nonfinancial sectors. An economy whose manufacturing sector is dominated by a few large conglomerates or industrial groups is a case in point. It is particularly important for each of these groups to establish a long-term relationship with a bank and to rely on its bank for long-term credit at the nascent stage of its financial development. In such an economy it is not difficult to imagine that the banking sector will be dominated by a few large banks that could collectively meet the financial needs of the industrial groups. Furthermore, in the absence of government intervention, these large banks are quite likely to be owned and controlled by the industrial groups. Other factors also inhibit competition and invite government control over finan-

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cial markets. For instance in many developing countries, trade, labor, and agriculture are all heavily regulated and protected. A competitive financial regime may not be compatible with controlled sectors and may not even be possible.

My second point is related to the consequences of maintaining low interest rates, which, according to Stiglitz, promotes economic growth while increasing profits. In many countries, including Japan and Korea, banks that are subject to regulated lending rates below the equilibrium rate charge a compensating balance as a condition of the loan. As a result, the difference between the regulated rate and the equilibrium rate has been borne in part by the borrowers. If the use of compensating balances is as prevalent as it is in Korea, it will be difficult to assess the extent to which borrowers benefit from the low interest rates.

The third point is related to the effectiveness of indirect control mechanisms in the form of incentives and restrictions. One difficulty with preferential regulation is that it may not lessen the moral hazard problem. The public anticipates that it is the government's responsibility to keep the financial system safe and individual banks sound and therefore believes that the government would not let a bank, particularly a large one, fail. Worse yet, the exercise of indirect control by the government is often perceived as ensuring the health of the financial industry. Given these perceptions, it is unlikely that the net worth requirement and deposit insurance system that adjust premiums on the basis of the quality of each bank's portfolio could make banks more prudent in their lending activities. Another issue is how to phase out a direct control system and replace it with an indirect one. Unless a new system is installed overnight, which is highly unlikely, the government will drag its feet in changing the system and will vacillate between a greater or a lesser degree of governmental control.

The last point is a rather casual explanation of why Korea's repressive financial system did not undermine its growth potential to the extent claimed in the literature. In my view the economy was able to avoid much of the inefficiency problem because export performance was the main criterion for bank loans. Firms that compete and succeed internationally are likely to be more efficient than those that operate in regulated and sheltered domestic markets, and most of the loanable funds were in fact allocated to these firms.

FLOOR DISCUSSION OF THE STIGLITZ PAPER

A participant from the Brookings Institution asked Yung Chul Park (discussant) to speculate on what Korea's economy might have looked like today had the policy of financial repression not been followed during the past twenty to thirty years. Would the growth rate for that period have been lower without the policy? If so, why? Would the economy have been less export-oriented? Would there have been, for example, more investment in housing?

Park said his sense was that financial policies would not have made much difference so long as the manufacturing and service sectors were efficient. He thought that the efficiency of Korea's trade and industrial policies was far more important than its financial policies.

Stiglitz, however, said that he believed the Korean government's intervention in the financial market had boosted economic growth. The government had not allowed a great number of real estate loans, for example. Had more capital gone into real estate and less into manufacturing, there might have been significantly less growth. One could well ask whether using the allocation of financial resources to promote exports is the best approach, said Stiglitz, but it was certainly effective in Korea, and not many countries have used other instruments as effectively.

A participant from Harvard noted that Stiglitz had mentioned in passing the possibility of government failures but that most of his research and discussion focused on market failures. Advocates of privatization would not be surprised to learn that private markets were imperfect, but government intervention is generally believed to be even worse because of either corruption or inappropriate objectives and interventions. The participant wondered whether Stiglitz should devote more of his considerable prowess to theorizing about what governments actually do, what objectives they actually further, and what kind of corruption emerges and compare that reality with the optimal policy designs he discusses. Another participant observed that in Latin America, which has a far more liberal

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financial sector than Southeast Asia, there are more complaints about government corruption than in Southeast Asia. One participant questioned whether, if we compared the fifteen years of financial liberalization that started in 1975 with the fifteen years before 1975, we would find that savings and productivity in the world economy were down.

Stiglitz said that Alfred Hirschman, in his well-known book *Shifting Involvements*, talks about the constant search for balance between the public and private sectors and the continual debate about their appropriate roles. Stiglitz was trying to identify some problems with unfettered market solutions and to argue that some forms of government intervention might address those problems. That does not mean that every government intervention, no matter how badly designed, is going to improve things.

There is considerable evidence, Stiglitz went on, that in an array of countries, especially in East Asia, strong government intervention had improved the effective allocation of society's resources and, more broadly, had promoted accumulation and growth. In a major project carried out in the past year, the World Bank tried to identify the salient properties of the successful interventions that guided the "East Asian miracle." Analysts looked at what the governments had done that was so successful. For example, what structures within government reduced corruption and other problems that plagued many Latin American countries when they tried similar policies? A number of lessons were learned, said Stiglitz, about which government interventions were welfare enhancing and which government structures reduced the likelihood of corruption. A broadly based policy to allocate credit to firms that succeed in exporting, as Park discussed, was one example of an objective criterion that is relatively immune to political influence. It is a government intervention based on well-defined rules. The nature of government interventions, including regulatory interventions, would be different for different countries. When one balances out the strengths and weaknesses of a particular government and market, one might well conclude, for many countries, that the appropriate intervention is no intervention.

One must be careful to ask, Stiglitz continued, whether there are forms of intervention that can address market failures. Some government interventions are likely to be more prevalent than others. Prudential regulation is likely to be desirable in almost all countries, although the exact design of the regulations will differ. Obviously, more provocative interventions, such as directed credit or financial repression, may not be suitable for many countries, and the form those interventions take will be more controversial.

Stiglitz noted that in the last four years of the Reagan administration, in a country with relatively little corruption, there was considerable corruption in government housing programs. So we cannot ignore the possibility of government failure and government corruption, he said—but one hears the mantra of government failure from many people, and we needn't all sing the same tune. Governments can also succeed; the question is one of design. A reduced-form regression saying that, on average, governments are bad or governments are

good doesn't tell you anything; it is irrelevant. The questions are, rather, can we design governments to be more effective? Can we find particular programs that make government corruption less likely and government success more likely?

A participant from the World Bank said that Stiglitz had identified the need for government interventions to offset problems of imperfect information. He asked Stiglitz to comment on the possibilities for learning in financial markets. Does every transaction and transactor start out anew, or, because many agents regularly participate in financial transactions, is there a process of maturity in the financial market? Presumably the rationale for government intervention is related to the question of imperfect information. Has Korea reached the stage at which it does not need the same intensity of government regulation in financial markets? If there were no information problems, Stiglitz said, the standard competitive paradigm would apply as much to capital allocation as to allocation of any other factor of production. Most of the reasons for market failure are related to information failures. His arguments for government intervention would be less persuasive if there were no corporate veil to create information problems.

It may well be true that some of the conclusions reached through this new view are similar to conclusions one reaches through very old views, said Stiglitz. That goes back to Hirschman's point about shifting involvement. But it is to be hoped that in revisiting this issue we have learned something in between—that we are not returning full circle to the discredited theories of the 1950s. As Patel said in his keynote address, we come back to some positions that are similar, but with important differences. When we say that the government ought to be involved, for example, we recognize government's limitations much more explicitly, and we are far more aware of how the government uses markets than we were before. Nobody would say that the government ought to replace markets. An essential part of the new view is that governments should interact with and use the power of markets.

Jessica Einhorn (chair) closed the discussion by quoting something she had heard recently: you can never argue somebody out of a position that they weren't argued into.

