

FINANCIAL MARKETS AND DEVELOPMENT

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I. INTRODUCTION

Earlier literature on the development process stressed the importance of capital accumulation, and the role of financial institutions in that process. This paper stresses the importance of the processes and institutions by which capital is *allocated*, and the resulting uses to which it is put.

My views on this subject have been greatly affected both by the experience of developing countries during the past quarter century and by the major shift—evolutionary if not revolutionary—in the economists' paradigm over that period. We have seen that capital accumulation is not enough: even the extremely high rates of savings of many of the socialist economies have not managed to compensate for their lack of ability in allocating capital, and

these countries have, for the most part, not fared well. But extreme free market solutions have fared little better, perhaps best illustrated by the experience of Chile. True believers in the doctrines of the left and the right have this in common: they both claim that if the patient had only followed the doctor's orders more precisely, the medicine would have worked.

The shift in the economists' paradigm can be described in several different ways. The earlier literature paid only limited attention to problems of incentives. Managers managed well because that is what they were supposed to do. The notion that some individuals might be better managers than others was not even noted; and accordingly, the problem of how to choose good managers was not addressed. While the possibility that the interests

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of the manager and those of the shareholders might diverge was entertained, it was quickly dismissed: the discipline of the market place would ensure a congruence between the two.

The new paradigm stresses the importance of imperfect and costly information in the economy; and the difficulties of enforcing contracts, of choosing good managers and projects, and of providing them with incentives—not only to work hard and to take appropriate risks, but also, more generally, to act in the interests of the shareholders. (Within the literature, these are referred to as the problems of enforcement, adverse selection, and incentives.) Much of the behaviour of the economy, the nature of economic relations and institutions, can be interpreted through this perspective.

Capital markets and financial institutions, in particular, can only be understood from this perspective. As we have come to understand capital markets and financial institutions better within developed countries, it has become clear that what is remarkable is not that they do not work perfectly, but that they work at all.

Thus, I will argue that the LDCs should not set their sights on imitating the capital markets of the most developed countries, but rather should adapt themselves to the reality that capital markets will most likely, if not necessarily, work poorly within their country. Adopting this view suggests a major redirection of several policies which have been widely adopted within the third world. After outlining in the next section the reasons for my belief that capital market imperfections are endemic, and that governments are not capable of correcting this 'market failure', I tentatively put forward several proposals.

II. ON THE IMPORTANCE OF CAPITAL MARKETS

Capital markets perform several critical roles: they aggregate savings and they allocate funds. In the process of performing these functions, they choose not only among competing sectors, but also among competing management teams (firms). Having

allocated the funds, banks continue to perform an important task, in ensuring that the funds are used in the way promised by the borrower, and that the borrower, in responding to new contingencies, takes into account the interests of the providers of capital. At the same time they provide these services, they reduce the risks facing savers by allowing for diversification.

The funds required for undertaking investments of any scale are beyond the means of most entrepreneurs. Banks and other financial institutions take the relatively small savings of large numbers of individuals, aggregate them together, and thus make funds available for larger-scale enterprises. This is socially desirable because of the importance of scale effects: if each individual was limited to the investments he himself could finance, returns would be correspondingly limited. This would be an important role, even if all individuals were identical, and the bank could, accordingly, allocate the funds simply by randomly choosing one individual to receive the loan.

But individuals are not identical. Some are better managers than others, and some have better ideas. A central function of financial institutions is to assess which managers and which projects are most likely to yield the highest returns. Moreover, those who have funds are not necessarily those who are most capable of using the funds; financial institutions perform an important role in transferring funds to those for whom the returns are highest.

Moreover, once the loan has been made, it is important to monitor that the funds are spent in the way promised, and that the project is well managed.

These two functions of financial institutions are referred to as their *screening* and *monitoring* roles.²

III. ALTERNATIVE FINANCIAL INSTRUMENTS

The form in which capital is provided has consequences both for how these screening and monitoring functions are performed and the behaviour of those to whom the capital has been provided. The

² See Stiglitz and Weiss (1989).

three most important forms in which capital is provided are *equity*, *long-term loans*, and *short-term loans*.

From the perspective of the entrepreneur, equity has two related distinct advantages. Risk is shared with the provider of capital, and there is no fixed obligation for repaying the funds. Thus, if times are bad, payments to the providers of capital are suspended. The firm will not face bankruptcy, and will not be forced to take the extreme measures intended to stave off bankruptcy. From a social point of view, equity has a distinct advantage: because risks are shared between the entrepreneur and the capital provider, the firm will not normally cut back production as much as it would with debt finance, if there is a downturn in the economy. (See Greenwald and Stiglitz, 1988b.)

But there are some distinct disadvantages of equity. Those entrepreneurs who are most willing to sell shares in their firms include those who believe, or know, that the market has overvalued their shares. There are, of course, good reasons for issuing equities—risk averse individuals with good investment projects, requiring more capital than they have will also issue shares. But these individuals and firms are mingled together with those who see an opportunity to cash in on the market's ignorance. And unfortunately, the market cannot easily distinguish between the two. As a result, there is an adverse signal associated with issuing new equities—on average, the value of firms' shares

decreases when they issue shares. This serves as an important deterrent to issuing shares.³

Because entrepreneurs do not have a fixed commitment (and because they must share the returns to their effort with the other shareholders) incentives are attenuated. Because shareholders only get a fraction of profits, managers have an incentive to divert profits to their own use (not only actions which border on the fraudulent, such as giving favoured treatment to suppliers or buyers in which managers have a strong financial interest, but also managerial perks and salaries considerably above the managers' opportunity costs).⁴ Recent literature has stressed how imperfect information and free rider problems provide theoretical explanations for why take-overs and other market mechanisms⁵ provide only limited discipline on managerial behaviour, and consequently, for why managers have considerable autonomy.⁶ These incentive issues have recently received considerable attention, as instance after instance of cash-rich oil companies squandering the extraordinary profits they received during the years of high oil profits come to light: in the US, Exxon with its half billion dollar loss on Reliance, and Mobil with its loss on Montgomery Ward are but two of many instances. Indeed, the increase in value which has been associated with corporate financial restructuring, increasing firm debt, is often partly attributed to the fact that with high debt, managers are forced to work hard—they have their backs to the wall.⁷

³ For empirical evidence, see, for instance, Asquith and Mullins (1986); for a development of these theoretical arguments, see Greenwald *et al.* (1984) or Myers and Majluf (1984).

⁴ Managers also often take actions which are directed more at their own welfare than the firms', e.g. the acquisition of knowledge and skills which improves their market position. Managers not only expend resources to increase their outside market value, but they also take actions which make it more difficult for the firm to replace them. This is referred to as managerial entrenchment. See Shleifer and Vishny (1988).

⁵ Three other mechanisms for ensuring that those who get funds from others treat the providers of capital in the manner promised should briefly be noted: (a) Reputation may be effective, if firms wish to re-enter the capital market to raise capital again in the future. But reputation mechanisms are only effective if firms do wish to raise additional capital, and the adverse signalling effect associated with new equity may make firms particularly reluctant to re-enter the equity market, at least for a considerable period. (See Gale and Stiglitz, 1989.) Moreover, reputation mechanisms become particularly ineffective as firms face threats of bankruptcy. (See Eaton *et al.* (1986) for a general discussion of these issues.) (b) Fraud and securities laws may impose important constraints on how firms treat their providers of capital. (c) In traditional societies, trust (ethnic ties) may provide an effective enforcement mechanism. In the process of development, however, these ethnic ties may be weakened, impairing the efficiency with which capital markets function.

⁶ See, for instance, Stiglitz, 1972, 1982; Grossman and Hart, 1980.

⁷ Robert Hall has, accordingly, referred to this theory of corporate finance as the 'backs-to-the-wall' theory of corporate finance. Early studies emphasizing the role of finance in affecting managerial incentives include Jensen and Meckling (1976) and Stiglitz (1974), who pointed out the close analogy between the traditional incentive concerns in the sharecropping literature, and similar problems in modern corporate enterprises. For a more recent survey, see Jensen (1988).

The disadvantages of equity seem, in most cases, to outweigh the advantages, even in more developed economies. Relatively little capital is raised by new equity issues, and even secondary equity issues (where a principal stockholder sells his shares, either so that he can diversify his portfolio or spend his wealth) are limited.⁸

But the more developed countries have several distinct advantages in issuing equities that are not available in most LDCs. The existence of well-organized secondary markets for securities makes equities particularly attractive. It increases liquidity and allows easy portfolio diversification.

Moreover, the standard accounting procedures (enforced, in part, by the taxing authorities and by government securities regulators) reduce the problems posed by outright managerial cheating. They make it more difficult for investors to be misled by shady practices, including Ponzi schemes. Managers can still rip off the firm—in one recent take-over episode, they walked off with more than \$100 million—but typically, the amount they take is but a small fraction of the firm's assets. In the early days of modern capitalist economies, there were numerous instances of stock-market scams. Given this history, and the apparent ease with which stockholders can be taken advantage of, it is per-

haps remarkable that equities markets work as well as they do.

None the less, we must bear in mind the quite limited role that they play in raising capital in developed countries. Hopes of raising substantial amounts of capital in this form within LDCs appear to me to be unreasonable.

(i) Short-term Loans

Short-term loans give the firm much less discretion: firms are on a short leash. They must make interest payments, and the bank can request its funds back at each of the due dates. Thus, while nominally shareholders control the firm, minority shareholders exercise no effective control, while banks often exercise considerable influence over the firm's actions. Their refusal to renew a loan can have serious adverse effects on the firm, and thus firms have a strong interest in complying with the demands of the banks.⁹ Overseeing loans is, of course, one of the bank's main economic roles—the role of monitoring noted above.

There is an important difference between the contractual arrangements and the true economic nature of the relationship. For the lender can only force the borrower to repay the amount due if the borrower

⁸ The evidence is summarized in Mayer, 1989: new share issues, during the period 1970–85, as a percentage of net financing, were negative for Finland, UK, and the US, and only 2.2 per cent for Canada and 0.6 per cent for West Germany.

Critics may point out that at certain selected times, stock markets have raised appreciable amounts of finance. (See, for instance, Taggart (1985), who cites figures as high as high as 19 per cent for the period 1923–39.)

Taggart notes that the increase in equity issues, from 2+ per cent in the 1960s to 3 per cent in the 1970s, is largely accounted for by public utility preferred stock issues; preferred stock does not suffer from some of the 'enforcement' problems associated with common stock; moreover, utilities, because they are regulated and accordingly heavily monitored, do not suffer from some of the other control problems associated with equities in other industries.

Moreover, the temporary success of a financial instrument in raising capital provides little evidence for its long-run viability. It takes time for investors to learn about all the relevant attributes of a security, and it takes managers time to learn about all the ways by which they can manipulate securities. Thus, income bonds looked as though they had risk sharing advantages over traditional bonds, without the enforcement problems associated with common stock; yet investors eventually learned that firms could manipulate the value of income, and that they were inadequately protected. The income bonds thus grew out of favour. Junk bonds are an instrument which have recently enjoyed considerable popularity in the United States. They have higher nominal yields than ordinary bonds; the question is, are those yields high enough to compensate for the additional risks? Though experience with these bonds is sufficiently limited that one should be cautious in drawing conclusions, preliminary evidence suggests that default rates on junk bonds that have been outstanding for a number of years are so high that actual returns are no higher than on much safer bonds. A major recession in the United States, with a concomitant high default, would turn investors away from junk bonds. Scandals in the UK equity market at the turn of the century contributed to the decline in equity issues there. (See Kennedy, 1987, for an excellent account of these.)

Today, investors in LDCs bring to bear the full experience of how equities have been abused, even in societies with fairly well functioning legal systems. This should make them wary about what would happen in LDCs. See Greenwald and Stiglitz (1989b) for a more extensive discussion of the development of financial markets and its relationship with changes in the legal systems.

⁹ The view that banks may exercise more effective control over capital than minority shareholders is developed in Berle (1926) and Stiglitz (1985).

has the funds; if he does not, he can force the borrower into bankruptcy. But there are often significant economic costs of doing so, reducing the amount that the lender will eventually recover. Hence, the borrower can often 'coerce' the lender into extending more credit—or at least not forcing the borrower to repay what is due. The borrower knows this, and this may affect his behaviour. (This explains why banks are loathe to undercapitalize projects, knowing that they can be 'forced' to extend further credit later.) The experience with Third World Debt provides ample evidence of the importance of this phenomenon.¹⁰ The possibility of behaviour leading to subsequent 'forced loans' provides banks with further incentives to monitor the borrowers.

Loan markets are distinctly different from the kinds of 'auction' markets characterizing other goods and services. Traditional textbook expositions characterized loan markets like the market for chairs or tables, with the price (the interest rate) equilibrating supply and demand. But this view is incorrect. It misses the essential property of loans—they are not contemporaneous trade, but an exchange of funds by one party for a *promise* of a return in the future. It misses the essential heterogeneity of loan contracts—the differences in the probability of default. And it misses the essential informational problems—while the lender knows that different borrowers differ in the probability of default, he cannot perfectly ascertain which borrowers have high default probabilities; and while the lender knows that borrowers can undertake actions which affect the likelihood that he gets repaid, he cannot perfectly monitor those actions.¹¹ Three important consequences follow: first, the process of allocating credit (and monitoring its use) is not simply left to the market, with different borrowers competing for funds by offering to pay higher interest rates. Banks screen loan applicants. Secondly, because of adverse selection and adverse incentive effects associated with increases in the interest rate (that is, as the interest rate charged increases, the 'quality' of the mix of applicants changes adversely, and successful applicants undertake riskier projects),¹² banks may not raise interest rates even when there is an excess demand for credit. The interest rate does not

perform its market clearing role. Market equilibrium may be—and frequently is—characterized by credit rationing. Thirdly, loan contracts will have a variety of other provisions other than interest rates, which will affect both the actions undertaken by borrowers and the mix of loan applicants. While these non-price terms (such as collateral) may affect the extent of credit rationing, they do not eliminate it (see Stiglitz and Weiss, 1986, 1987). Moreover, banks may respond to defaults not by increasing the rate of interest charged on subsequent loans, but by cutting off credit (Stiglitz and Weiss, 1983).

Thus, loan markets face different aspects of the three problems of enforcement, selection, and incentives than equity markets face. So long as the firm does not go bankrupt, the 'enforcement' problem is not as serious: there is no necessity to have to ascertain what the firm's profits are. The firm has a simple commitment. But as we suggested, there are still enforcement problems: in the event of bankruptcy, the bank must see that the borrower does not subvert funds; and, as we have argued, the borrower may attempt to extract more funds from the lender, under the threat of bankruptcy.

The selection problem in the case of equity focused on firms with low expected returns; in loan markets, there is also a selection problem, now focusing on those with high probabilities of default.

The incentive problem in the case of equity markets focused on the attenuation of managerial incentives. Since borrowers can keep all of what the firm obtains in excess of what they have borrowed, effort incentives are good. (And, as we have suggested, these incentives may be reinforced by firms' concerns about bankruptcy.) But there are adverse risk-incentives: firms pay insufficient attention to returns in those contingencies where the firm goes bankrupt. When firms have a high likelihood of default, these incentive distortions can become quite large.

Finally, while in principle both providers of loans and equity have an incentive to monitor the actions of the borrower, lenders may be in a more effective

¹⁰ For an early theoretical discussion of these concerns with short-term debt, see Hellwig (1977) and Stiglitz and Weiss (1981). For an analysis of third world debt from this perspective, see Eaton *et al.* (1986).

¹¹ These arguments also apply to equities markets.

¹² See Stiglitz and Weiss (1981).

position for doing so, through their ability to withdraw credit. And while typically there are many equity owners, each firm has only one or, in any case, a few providers of loans. This means that the 'public good' problem associated with monitoring—of ensuring that the borrower takes actions which are in accord with the interests of the lenders—is less for loans than for equity.¹³

(ii) Bonds

Bonds represent a half-way house between short-term loans and equity. With a bond, a firm has a fixed commitment. It must pay interest every year, and it must repay the principal at a fixed date. As a result, all the problems we have discussed above arise with bonds.

Bonds have one significant advantage—and disadvantage. Because the lender cannot recall the funds, even if he is displeased with what the firm is doing, the firm is not on a 'short' leash, the way it is with loans. This has the advantage of enabling the firm to pursue long-term policies—but has the disadvantage of allowing the firm to pursue policies which adversely affect the interests of bondholders. Bond covenants may provide some restrictions, but these generally only foresee a few of the possible contingencies facing firms. The recent spate of take-overs and corporate financial restructuring have significantly adversely affected bondholders, and yet they had little or no say in the proceedings.¹⁴

There is a second reason that bonds play a relatively small role in raising capital, even in major industrial countries. There is an adverse signal associated with a firm expressing an unwillingness to be put on a short leash. A firm which knows that it will be undertaking safe actions, and that its projects are really good will be willing to subject itself to the continued scrutiny of its bankers. Those who do not want such close scrutiny include those who think there is a high likelihood that eventually they will fail to pass muster.¹⁵ Thus, even if there were some economies associated with long-term commitments, the market might not provide these commitments.¹⁶

(iii) Consequences of Alternative Financial Arrangements

Thus, the form in which firms receive their finance affects how risks get shared, how capital gets allocated, and most importantly, firm behaviour,¹⁷ and not just in the obvious ways. In textbook expositions, control of the firm rests with the shareholders; managers act in the shareholders' interests; and control is transferred to debt holders when the firm defaults on its loans. In practice, minority shareholders exercise little control or influence, while banks, through their threat of refusing to extend credit, can exercise considerable influence. The fixed obligations associated with debt finances reduce managerial discretion. At the same time, they make the firm—and its managers—bear risks, which in the absence of the control/information

¹³ That is, since all those who provide a particular form of capital are treated the same, if any one provider takes actions (e.g. monitoring the actions of the firm) which increases his returns, all other members of the class are benefited equally. This gives rise to a classic public goods problem: firm management is a public good (see Stiglitz, 1985). Shleifer and Vishny (1988) present evidence that firms in which equity ownership is concentrated actually do perform more in accord with the interests of shareholders.

¹⁴ Of course, in the future, bond contracts will include provisions designed to protect the bondholders against this kind of financial restructuring. But it is essentially impossible to protect bondholders against all actions which might be devised which would or could adversely affect bondholders. So long, however, as managers/equity holders retain powers of residual control, innovative entrepreneurs will continue to find ways by which they can 'rob' bondholders; and as these practices spread, bond covenants will be devised to protect the bondholders against these particular abuses.

¹⁵ In the more developed countries, the bond rating agencies provide a monitoring function akin to that provided by banks for short-term credit. However, the bond rating agencies often have access only to publicly available information, while banks may require borrowers to disclose much more information before they will be willing to extend further credit. Moreover, a reduction in a firm's credit rating is important mainly if the firm wishes to raise additional credit by issuing new bonds or equity. (Presumably banks, because they already have access to superior information, would find little additional information conveyed by a reduction in the firm's credit rating.)

¹⁶ At the same time, it must be recognized that the focus on short-term performance may have adverse long-term effects.

¹⁷ Note that in the standard neo-classical theories, issues of control just do not arise: the manager simply takes actions which maximize the expected value of the firm. We have seen, however, that the interests of managers and those of shareholders may conflict. By the same token, the interests of debtors and equity may differ (see, for instance, Stiglitz, 1972), and even the interests of different equity owners are likely not to coincide (see Grossman and Stiglitz, 1977, 1980b).

problems, should and presumably would have been spread through the market. And consequently the firm (and its managers) act in a more risk averse manner than they otherwise would have, with obvious deleterious consequences for the firm's expected return, and not so obvious but no less important deleterious consequences for the macroeconomic behaviour of the economy.¹⁸

IV. POLICY IMPLICATIONS

Allocating capital is thus a much more complicated matter than the simple 'supply and demand' paradigm suggests. Unfortunately, much of the simplistic advice given by 'Chicago' economists is based on the hypotheses that markets for capital are just like markets for chairs and tables; that free markets—whether for chairs, tables, or capital—ensure Pareto efficient resource allocations; and that policies that move the economy closer to free market solutions are welfare enhancing. All three of these presumptions are incorrect. We have already argued against the first. And there is no intellectual foundation for either of the other two.

The second best theorems of Meade (1955) and Lancaster and Lipsey long ago showed that in economies in which there were some distortions, removing one distortion may not be welfare enhancing. While they did not have in mind the kinds of problems with which we are concerned here, the basic lesson remains valid in this context as well.

More fundamentally, Greenwald and Stiglitz (1986, 1988a) showed that economies in which markets are incomplete or in which information is imperfect—that is, all economies—are, in general, not constrained Pareto efficient; that is, there almost always exists some form of quite limited government intervention (e.g. taxes and subsidies, which respect the limitations on markets and information) which is Pareto improving.¹⁹

Thus, an analysis of government policies towards capital markets needs to take into account the fundamental problems (enforcement, selection,

incentives) to which we have called attention. There may exist government policies which will enhance the capability of the market economy to raise and allocate capital. With this view in mind, I want to discuss several possible policies. I want to emphasize the tentative nature of this discussion: the central thrust of my paper is that alternative policies need to be evaluated from a perspective which takes into account the central features of capital markets, as I have described them.

Banks versus securities markets as sources of funds.

The first, and most obvious implication of our analysis is that the LDCs must expect that firms within their economies will have to rely heavily on bank lending, rather than securities markets, as sources of funds. While it may do little harm for governments to try to promote the growth of securities markets, both markets for equities and long-term bonds, these are likely to provide only a small fraction of the funds firms require. If investors are inadequately protected, by strong securities and fraud laws, and a judiciary which can fairly and effectively enforce such laws, there is a high likelihood of abuses; the resulting loss of investor confidence may have repercussions well beyond the securities directly affected.

Since reliance almost inevitably will be primarily placed on bank lending, it is important for governments to take actions which improve the efficiency of the banking system. For instance, having well-defined property rights (say in land) provides a source of collateral, which facilitates bank lending. A judiciary which can quickly deal with defaults, at low costs, allowing the lender to seize and dispose of the collateral again enhances the willingness of banks to lend. Such reforms may seem relatively uncontroversial, compared to the suggestions below.

Government Credit Markets. Many governments have seen the task of allocating capital as being too important to be left to the private sector. The socialist platform typically has the nationalization of banks and other financial institutions high on its agenda.

¹⁸ In particular, the economy will be more sensitive to a variety of shocks which it may experience; small shocks may be translated into large macroeconomic fluctuations. See Greenwald and Stiglitz, 1988b. The long-run growth path of the economy may also be adversely affected. See Greenwald and Stiglitz, 1989a.

¹⁹ They show that several widely discussed examples in the literature (e.g. the Arrow-Debreu model, or the Diamond (1967) stock market model) represent special cases in which the market is Pareto efficient.

The central problems which I have discussed are no less problems within the public sector than in the private. But to make matters worse, the government often does not have the incentives to ensure that it does a good job in selecting and monitoring loans. The deep pocket of the government means that any losses can easily be made up. Moreover, since economic criteria are often supplemented with other criteria (saving jobs, regional development), losses can be blamed not on an inability to make judgements about credit worthiness, but on the non-economic criteria which have been imposed. The absence of the check provided by the market test means that credit can be allocated on the basis of political favouritism: the subsidy associated with charging a lower rate of interest than the riskiness of the loan merits is hidden.²⁰

Foreign investment and banks. Many governments of LDCs have been particularly loath to allow foreign banks to play a major role. I want to suggest that this policy *may* be misguided, but in any case, needs to be re-examined from the perspectives provided in this paper.

In all countries, the ratio of banks' net worth to their liabilities is usually very small. In a sense, banks can be viewed as highly leveraged firms. Highly leveraged firms are particularly prone to undertaking risks which are not in the interests of their lenders—here those who have deposited funds with them.

In the United States (and many other countries) the government provides depositors with insurance. When the idea of such insurance was first broached to President Roosevelt, he reacted strongly negatively, pointing out (to use our modern terminology) the moral hazard (incentive) problems to which that insurance gives rise. Though he eventually relented, with hindsight, we can see how right he was!²¹ Banks which undertake greater risk can offer greater interest rates to depositors, who can, with impunity, turn over their funds to the bank. These banks attract funds away from more prudent banks. A kind of Gresham's Law works with a vengeance.

What is at issue is not just corruption (though that plays a role as well), but rather judgements about prudent risks. It is evidently extremely difficult for bank regulators to monitor banks effectively. One must largely rely on market forces to ensure that banks take prudent actions. What regulators can do is to try to ensure that the banks have an incentive to take prudent actions. The maintenance of reputation is one such incentive. But the cost of losing one's reputation is obviously larger for a large international bank, than for a small local bank. High equity (net worth) also may be effective. Local banks may find it difficult to raise the required equity.

These arguments suggest that foreign banks and firms may be more reliable in allocating capital efficiently than domestic banks and firms. To put it another way, establishing a reputation is like any other investment. The process of allocating capital—when due concern is taken for the requisite incentives if it is to be done well—is a capital intensive process, and foreign banks (and other international companies) may have a comparative advantage in that process.

At the same time, there may be an infant industry argument for protection, and, in particular, for limiting external capital flows (which allow foreign institutions to serve the role of intermediation)²² and the operation of foreign banks domestically. So long as savers have a choice between domestic and foreign banks, at comparable terms, they will choose the latter. (Lack of) reputation serves as an effective entry barrier for domestic banks: to compensate for the lack of reputation they cannot pay a higher interest rate, for that (in the by now familiar way) would exacerbate both the moral hazard and adverse selection problems.

Domestic firms are not only at a reputation disadvantage; they are also at a risk disadvantage. International firms can diversify over a wide portfolio. Even if the domestic banks have a portfolio of assets that is widely diversified among domestic risks, the common (country) risks which affect all

²⁰ Moreover, even in the absence of corruption, if rationing is optimal (as Stiglitz and Weiss (1981) show it may be), the ability to choose among loan applicants gives the government an enormous amount of power.

²¹ In the United States, at the present time, not only do a majority of savings and loan institutions have negative net worth (if their assets were valued at current market value), but so do a significant fraction of the major banks.

²² In several LDCs, capital outflows roughly equal capital inflows. It is as if funds went to international banks to be intermediated, and then were returned to the country of origin.

of them (exchange risks and other macroeconomic risks) make their portfolios riskier. Hence, even with the same 'reputation' and the same equity, investors might prefer foreign firms.

While foreign firms may thus have an advantage within the capital market, they may have an informational disadvantage—they may find it more difficult to respond to the particular situations which arise in the country.²³ That is why there is much to be gained from a country having its own entrepreneurs.²⁴ But entrepreneurship is, in part, learned, and to undertake the learning requires capital. And we have explained why it is that domestic entrepreneurs and banks may find it difficult raising the requisite capital.

Note that a standard argument against the infant industry argument simply does not apply in this context: if the idea is a good one, the firm should be willing to sell at a loss, until its costs are down to a level at which it could compete effectively. For to sell at a loss, the firm must borrow or raise equity, and it is precisely the inability of firms to borrow or raise equity which is our concern here.

Moreover, there may be a distinct difference between private and social returns, both to entrepreneurship and to providing capital to new entrepreneurs. Private investors (banks), for instance, are only concerned with that fraction of the total returns which they can appropriate; society, more broadly conceived, is concerned with the total returns to the project which accrue within the country (thus excluding the surplus returns which may accrue to foreign investors.)^{25, 26}

More broadly, foreign banks, in allocating capital, will have different objectives than those of domestic banks, so that the disparity between social and private returns may be particularly large. Foreign banks may be particularly concerned with nationalization, and thus may provide capital to sectors which appear relatively immune from nationalization, and in forms (with restrictions) that

make nationalization less likely and that make it more likely that, should nationalization occur, they can recover their capital.

While these arguments might suggest a role for government credit markets, the caveats we expressed earlier suggest that other forms of indirect subsidy may be more effective. Restrictions on foreign banks and on capital flows out of the country (impeding the efficiency of the secondary capital market) may be one way of channelling funds to domestic entrepreneurs and of subsidizing domestic banks and corporations. Such broad restrictions provide domestic investors with incentives to allocate funds to the best domestic projects/entrepreneurs, and if there is broad enough competition within the domestic economy, the rents obtained by domestic firms will be limited.

Another caveat is in order: as always, a concern needs to be expressed that restrictions are not used simply to protect domestic monopolies. Thus, if one or two banks dominate the domestic banking industry, restrictions on foreign banks may simply serve to protect those firms' monopoly rents. Those firms may not be particularly efficient allocators of capital, and the disparity between their interests and a broader sense of national interest may be no less than the corresponding disparity for foreign banks. Since in many LDCs the domestic banking sector is far from competitive, policies aimed at locking out foreign owned banks located within the country may be particularly inadvisable.

Secondary and primary financial markets. Financial markets consist of a host of interrelated institutions. Much of the activity of financial markets is centred around the exchange of ownership claims. I refer to these as 'secondary financial markets'. A small fraction of the resources of the financial industry is directed at its primary function, raising and allocating capital (the primary financial market). The latter has important economic effects, but, still, only a relatively small fraction of all investment funds are raised through the market.

²³ This argument may not be a compelling one against foreign banks located within the LDCs.

²⁴ There are undoubtedly other reasons as well, such as national pride.

²⁵ Stiglitz and Weiss (1981) argued that in their model of credit rationing, there was a distinct disparity between social and private returns.

²⁶ Hoff (1988) argues, for instance, that when an entrepreneur undertakes a new project, it conveys information to other entrepreneurs about the idiosyncratic properties of the country's production technology, returns which that entrepreneur cannot appropriate.

Keynes likened the secondary financial market (the stock market) to a beauty contest, in which the judges were concerned not with judging who was the most beautiful contestant, but who the other judges would think would be judged the most beautiful contestant (or, perhaps more accurately, he should have said, who the other judges would judge the other judges to judge to be the most beautiful contestant . . .). Others (Stiglitz, 1982) have suggested that the stock market might be thought of as a gambling casino. It is impossible to reconcile behaviour in this market with rational, risk averse individuals.

While the ability of individuals to trade on the secondary market undoubtedly makes securities more attractive, Keynes, as well as many more recent authors (such as Hirschleifer, 1971, and Stiglitz, 1971) have suggested that much of the short-term speculative activity has zero or negative net social value. While it is true that the stock market may be efficient, reflecting all available information,²⁷ that information has little effect on resource allocations. Firms do not and cannot rely on the information (whatever that is) communicated by the stock market for making their production and investment decisions (see Stiglitz, 1989*a*). One individual, by getting the information earlier than the other, may be able to 'trick' another individual into buying a share from him, or selling a share to him, but these trades only affect who gets society's resources; they do not affect the level of production. They represent, in other words, private rent-seeking activities.

I stress this because the two aspects of financial markets are often confused. Much of the recent innovations in financial markets have been concerned with the secondary market. New instruments have been invented. Transactions can be recorded more quickly. But improvements in the secondary markets do not necessarily mean that the economy functions more efficiently. (Indeed, Stiglitz and Weiss (1989) have shown that some of the financial innovations, such as faster recording of transactions, may actually be unambiguously welfare reducing.) In particular, the primary financial markets may not perform their roles any better.

²⁷ Though if it were truly efficient in that sense, no one would have any incentive to collect information, and thus the only information which would be reflected in the market price would be free (although in this case, that may not mean completely worthless) information. See Grossman and Stiglitz (1976, 1980*b*).

In the previous section, I argued that restrictions on the secondary capital markets—on the free flow of funds abroad—may have some advantages in encouraging the development of a domestic financial sector. To economists used to hearing the contention that governments should try to 'free up' markets, this argument may seem strange.

One of the important lessons of the theory of the second best, to which I referred earlier, is that when there are some important distortions in the economy, removing one distortion may not be welfare enhancing. In most LDCs, there are many distortions. Indeed, as we argued earlier, in economies with incomplete risk markets and imperfect information—that is, in all economies—there is no presumption that market allocations will be (constrained) Pareto efficient, and a fortiori, there is no presumption that making one market work more nearly like the 'ideal' market is welfare enhancing.

For instance, McKinnon (1988) has argued persuasively that flexible, unmanaged exchange rates have imposed enormous risk burdens on producers engaged in international trade, risks which they cannot divest adequately through futures markets. Our analysis of limited equity markets suggests that these risks may have real—and deleterious—effects. See, for instance, Newbery and Stiglitz (1981, 1984).

By the same token, it is not apparent that 'freeing up' capital markets, allowing funds to flow freely abroad, is necessarily welfare enhancing. This is not the occasion to enter into a full-scale policy debate on that issue. I want to emphasize, however, that economic theory provides no presumption that freeing up secondary capital markets is necessarily welfare improving.

All of this suggests that there are no easy policy answers. In some cases, governments have (perhaps unintentionally) served to exacerbate the problems we have identified rather than reduce them, by subjecting the domestic banking industry to high taxes and arbitrary and capricious regulation. In these cases, 'freeing up' the market would seem to make good policy sense.

Multinationals. Many of the same arguments for why foreign banks may be able to perform an important role in allocating capital apply to multinationals. They have one advantage over banks: they typically provide capital in the form of (what is in effect) equity. While equity has distinct advantages over debt—it provides more effective risk sharing, and thus leads firms to act in a less risk averse manner, resulting, in turn, in the economy being less sensitive to a variety of shocks—we have seen that LDCs are likely to face particular problems in establishing well-functioning equity markets. Thus, it may be desirable for governments in LDCs to recognize the important role that multinationals can play in the development process, rather than putting impediments in their way.

Risk sharing by government. For the reasons I have explained, equity markets are unlikely to provide effective risk-sharing opportunities. Many governments, by their tax policies, exacerbate the effects of limited equity markets, for the government shares in the profits, but shares in the losses to a much more limited extent. As Domar and Musgrave (1944) long ago recognized, if the government fully shares in gains and losses, it can actually encourage risky investment; in effect, the government enters into every investment as a silent partner.²⁸ Though this is not the occasion to provide a detailed technical proposal of how this may be done, I should note that there are several ways in which governments can share risk much more effectively than they do at present.²⁹

Government risk reduction strategies. In addition, there are policies which the government can undertake which reduce the riskiness of the environments in which firms operate, and given the limited opportunities for risk sharing provided by markets, this can provide a strong stimulus for the economy. In particular, it can increase both the willingness of

firms to borrow (since the lower the riskiness of the environment, the more they can borrow while still facing a particular probability of bankruptcy), and the willingness of banks to lend.

These policies can be both microeconomic and macroeconomic in nature. Stabilizing the price of export crops will not only have a direct effect on the producers of export crops (assuming that price and quantity are not too negatively correlated), but will also have an indirect effect: the variability of income of the producers of export crops gives rise to variability in the demand for non-traded goods. Stabilizing incomes within the rural sector will thus result in increased production of non-traded goods. (See Newbery and Stiglitz, 1981.)

V. CONCLUSIONS.

In the past two decades there has been a major shift in the prevailing economic paradigm, reflected in our views of economic policy in general, and development economics and policy in particular.

Earlier discussions focused on the debate between those who believed in efficient, competitive markets—for developing as well as developed countries—and see government as a major impediment to the efficient functioning of the economy; and those who saw pervasive market failures requiring government intervention. Among the central market failures which they cited was the absence of a complete set of futures and risk markets,³⁰ and accordingly one of the central responsibilities of the government was to plan and co-ordinate investment activities. In the years following the Second World War, governments of newly independent countries set up Ministries of Planning to fulfil their responsibilities and to facilitate the development process.

²⁸ More recently, Auerbach and Poterba (1987) have emphasized the importance, within the United States, of the provisions limiting loss deductibility.

²⁹ The important difference between the government acting as a silent equity partner, through the tax system, and the government acting as a source of credit (as described above) needs to be recognized: in the latter case, the government is given *discretion*; in the former case, the 'partnership' arrangement is automatic. While this partnership arrangement obviously affects incentives (attenuating effort incentives, accentuating risk incentives), the question is, on balance, are these incentive effects positive, or, if negative, sufficiently small to outweigh the government's revenue gain?

³⁰ As noted earlier, the Fundamental Theorem of Welfare Economics, which represented the formalization of Adam Smith's notion of the Invisible Hand, requires that there be a complete set of risk and futures markets. Only under those conditions will competitive markets ensure economic efficiency.

But the absence of futures and risk markets was not pure happenstance. It reflected more fundamental problems—including problems of imperfect information and costly contract enforcement—which affected all economies. The recognition of the limitations of the development planning process coincided with the recognition of these limitations of the standard economic paradigm. Within developed countries, it was recognized that labour, capital, and product markets worked—in many instances at least—in a manner markedly different from that depicted by the conventional competitive demand and supply analysis. While this paper has focused on the problems associated with financial markets, leading to credit and equity rationing, similar analyses have been conducted of labour and product markets. These problems are, if anything, more pervasive and more prominent in LDCs than in developed economies.

We now recognize that, particularly for small open economies, the problems of macro-economic coordination stressed in the earlier development planning literature may be far less important than the microeconomic problems of selecting (quite specific) projects and choosing good managers to manage those projects. One of the functions of the economy's financial institutions is not only to raise capital, but to channel funds to the most profitable

opportunities (the selection or screening function), and to ensure that those funds are well used (the monitoring function). We need to think more about what kinds of institutions can most effectively perform these functions. Centralized government bureaucracies and large public credit institutions may be poorly situated to perform those functions. But there may be ways in which the government can assist in the development of a variety of institutions which can play an important role.

But much of this paper is predicated on a more pessimistic appraisal of the potential role of financial institutions in the development process. It has argued that they play a limited role even within well-organized developed countries, and that their role within the LDCs is likely to be even more circumscribed. Hence, government policies should be directed at mitigating the consequences of these inherent—and important—limitations of financial institutions within LDCs. What might be called 'second' or 'third' best policies have to be developed. Many current government policies fail to recognize these limitations which face both the government and the private sector. I have put forward some quite tentative proposals which suggest some ways in which government policy can be designed to reflect the broad set of concerns which I have raised.

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