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New directions in Indian financial sector policy

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1 MOTIVATION

There is growing consensus amongst economists that a sound financial system is essential for an economy to achieve a high and stable rate of growth. There have been a wide variety of financial sector reforms undertaken in India over the last decade. Many of these reforms have been undertaken in response to the needs of the moment, rather than as part of a well-articulated strategy. While they may generally have been in the right direction, it is time to take stock.

The financial sector reforms in India in the last decade have enjoyed many important successes. The equity spot and derivatives market enjoy a sophisticated market design, widespread retail participation, and resilient liquidity. In these respects, other developing countries seek to emulate India. The banking system has a low proportion of distressed assets, when compared with some other Asian countries. At the same time, India's financial system has many glaring shortcomings. This paper seeks to outline the key elements of a financial system that India will need in the quest for higher growth over the next five years.

In pondering reform, one cannot avoid immediate problems. Perhaps the most serious concern for many is the fragility of some of our financial institutions. For others, it is the growing liabilities of the government, not just through its direct debt claims, but also through its guarantees, implicit or otherwise, to the financial sector, and its ownership, explicit or otherwise, of large chunks of it. Yet others worry that our arm's length securities markets have not taken off, and seem to be periodically laid low by scandal after scandal.

These problems may be linked. At a conceptual level, because of a variety of institutional deficiencies, there appears to be too little private risk bearing capacity in the economy. The stance of public policy, in numerous aspects, has served to stifle the ability of regulated finance companies to bear risk. What this means then is that even though the liberalization of the economy has increased competition and hence the level of risk in the economy, the risk is not being allocated well. Because risk is concentrated in the wrong places, incentives of key players are distorted, and economic outcomes are sub-optimal.

For example, the moribund state of the markets for corporate securities may have resulted in many projects being funded with excessive amounts of bank debt. Since financial institutions cannot themselves bear all this risk, and the inadequate markets do not allow them to hived the risks off or obtain more risk capital to bear them, the government increasingly becomes the repository of all risk. Soft political decisions further accelerate this process.

The private sector then enjoys one-way bets, where gains are privatized and losses are socialized via financial institutions to the government. While we have finally overcome hurdles in privatizing state-owned industrial firms, we are in the process of nationalizing financial risk.

How do we prevent these short term problems from becoming long term problems? Where does one start? In our view, the key to resolving many of these problems may lie not with our financial institutions (even though they may seem at the epicenter of our problems) but with our public financial markets. They (especially equity markets) are also the areas where significant reform has already taken place. If trust in these markets can be restored despite recent scandals, and their capability to evaluate and control risk be improved, risk capital will flow in. This new but discriminating capital can then be the means by which our other

problems can be solved. It can help spread the banking system's risks more widely, it can allow the government to be prised out of a direct operational role in both the financial and industrial sectors, and it can offer private sector firms prospects for growth, thus giving them the incentive to manage well.

Short term problems may, in fact, be an opportunity - when the system is not working in the old ways, perhaps India should fix the system in a way that we leapfrog intermediate levels of development. The United States did this in the midst of the Great Depression when it laid the framework for the strong system it has today (despite recent scandals).

Alternatively, we could become overwhelmed by the short term problems and decide on incremental changes for fear of making the problems worse. Japan has tried this for the last decade without much success.

In sum then, this paper seeks to tackle the following questions: How should India's financial system grow to meet industry's needs? Are the problems in India symptoms of systemic deficiencies? What are the detailed steps that need to be taken? Are these steps politically feasible?

1.1 The main directions of reform

As competition in the industrial sector increases, and as Indian firms move from being asset based to becoming knowledge based, they will have to increasingly obtain finance from arm's length markets. Firms and institutions will need a greater equity cushion because of greater risk they will face. Similarly, as margins become tighter and old monopolies lapse, it will be harder for investors to stay confident about the safety of their investments. They will need more information. Markets can help in generating information, and providing incentives for agents to generate information.

With a greater frequency of failures likely, there will be need to recognize failing firms and to take resources away from them quickly before they are dissipated. If the system is not transparent enough so that potential problems can be recognized quickly, and efficient enough that they can be isolated and dealt with, losses can mount and feed on themselves. When the government plays a major role in finance and industry, these losses will often eventually be transferred to the government. Economic growth and equity will both suffer.

We therefore need a program for reform that will enable the financial sector and its activities to keep pace with changes in the environment. Before we describe one such program, in the next section we will present some data suggesting that Indian financial markets may still have some way to go to provide adequate financing to firms. We will then describe the main issues a reform program will have to focus on. These include improving transparency and governance; resolving failure in the industrial and financial sector; de-linking government and private sector; fostering innovation; and improving the supervisory and regulatory infrastructure. These steps will clearly enhance the development of the financial sector.

When a financial sector runs amok, it can wreak serious damage. Hence, financial sector stability is a desired goal in its own right. There is some concern that financial development can itself lead to instability. For example, some have expressed satisfaction that India, unlike

the East Asian economies, had not opened up to foreign capital flows to the extent they did, and therefore escaped damage during the Asian crisis in 1997-98.

Internationally, the number of banking crises per year increased by 5 times in the 1980s and 1990s while the frequency of currency crises remained constant. In 18 of the 26 banking crises, the financial sector was liberalized in preceding 5 years. Some observers have interpreted the impressionistic evidence from the Asian crisis and some more systematic evidence to mean that financial development is very risky. Thus they argue there is a trade-off - liberalizing the financial sector will bring growth, but the increased competition will increase the chance of crisis.

In our view this is a false trade-off. Well-developed financial sectors are precisely the ones which do not collapse in the face of an adverse shock. This suggests that competition or foreign investors do not cause a financial system to collapse, they simply expose or accentuate weaknesses in the system that ultimately leads to its collapse.

For example, consider the failure of a large bank or firm. In a developed financial system, investors know who has exposure to the loss and how much, they have confidence that the loss will not be shared arbitrarily by the government among healthy institutions, and they know a proper bankruptcy procedure will ensure that what can be salvaged will be paid to those who are exposed. In an underdeveloped financial system, however, there is little transparency, so no one knows who has exposure. The government is prone to enter and play favorites, so that some healthy institutions are gently nudged to foot the bill. Bankruptcy procedures are slow and opaque, so that the promoters of the failed entity use the cover of the courts to rob the entity bare.¹ For these reasons, significant losses in an underdeveloped system lead to widespread panic and systemic collapse as investors flee, not knowing how much the bill is and who will foot it. Foreigners get blamed, but studies have shown that savvy domestic investors precede them out.

Excessive caution over undertaking financial sector reform can be as risky as a blind belief that market forces will find a way. The prolonged Japanese banking crisis is an example of what can happen if regulators are unwilling to undertake deep-rooted reform quickly. Instead of getting better over time, the crisis has engulfed more and more of the economy.

Stability is best ensured by improving financial infrastructure quickly so that the financial sector becomes resilient and capable of absorbing shocks. Indeed, resiliency of liquidity in the face of negative shocks is the hallmark of a well functioning financial market. India has had one extremely positive episode in 2003, where the stock price of Infosys fell sharply by 41% over a two-day period, owing to the release of weak accounting results. Yet, through this period, the spot and derivatives markets on Infosys stayed vibrantly liquid. Investors and speculators were able to sell shares, hedge using the derivatives, etc. with confidence through this entire episode. This is in contrast with episodes of negative shocks in previous years, where liquidity was more inclined to dry up. This is also in contrast with the bond market in India today, where market liquidity tends to be sharply reduced in the face of small negative shocks.

Improving stability also requires steadily increasing the level of competition in the sector. When the financial sector is not healthy, it should be recognized that financial sector problems

¹Recent work on the Asian crisis suggests that promoters increased stealing as their firms got into trouble.

simply cannot be wished away - moral hazard ensures that these problems tend to multiply if ignored. It is better to quickly isolate areas of sickness and to work them out before sickness spreads. In successful clean-ups of banking crises (Norway, Sweden, the U.S. (at least post 1989)), the authorities have recognized the magnitude of the problem, moved quickly to isolate problem banks, and worked out innovative ways to restructure them.

With this introduction, let us now turn to examining some data on corporate financing and liquidity in India.

Table 1 Sources of funds in the 1990s

	All firms			Large firms		
	92-94	95-97	98-00	92-94	95-97	98-00
Internal sources	25.6	34.0	35.6	30.9	42.8	50.5
Capital markets	26.1	21.1	17.7	24.3	17.8	12.3
Banks	7.0	11.8	13.6	5.5	10.8	10.1

Source: CMIE Prowess database.

2 FIRMS AND THE FINANCIAL SECTOR – WHERE DO WE STAND?

The debates on financial sector reforms in the 1990s have focused on questions *inside* the financial sector, such as NPAs of banks, stock market trading mechanisms, etc. From the viewpoint of the economy, however, it is useful to treat the financial sector as a black-box, and focus on the *outcomes*.

One of the most important aspects of this is the perspective of firms. How have firms changed in their utilisation of financial markets over the decade of the 1990s? How do firms differ in their access to financial markets today? An empirical examination of these questions can guide us in understanding the success (or lack thereof) of India's financial system as a tool for information processing and resource allocation.

2.1 Changes over the 1990s

The growing maturity of a financial system should normally be associated by a *greater* reliance on external sources of funding. In general, the best investment opportunities in the system are not located in the firms with the best cashflow. In a good financial system, firms with good opportunities for growth should not be constrained by their internal access to resources, and should be able to grow faster by access to external finance, even though they may not have internal resources.

Table 1 summarises the sources of funds of firms in the CMIE Prowess database over the 1990s. The evidence presented is striking. The importance of internal sources went *up*, from 25.6% in the 1992-1994 period to 35.6% in 1998-2000. Even in the case of the largest firms, who should ideally have the best access to equity and debt financing from the formal financial sector, this fraction went up from 30.9% to 50.5%. This evidence suggests that over the 1990s, India's financial system has failed in decoupling investment opportunities from free cash flow.

An equally disturbing change, shown in this table, is that this increased reliance on internal financing seems to have been accompanied by a change in the financing mix, away from anonymous, public markets for debt and equity to bilaterally contracted debt (with banks). The growing maturity of a financial system should normally be associated with disintermediation, where firms bypass the banking system and directly access the anonymous securities markets. For the entire Prowess sample, this has not taken place. Instead, the fraction of banks in the sources of funds has gone up from 7% to 13.6% over the decade. In the case of the largest firms, this fraction rose from 5.5% in 1992-1994 to 10.8% in 1995-1997. It is only in the period after that where we see a slight drop, to 10.1% in 1998-2000.

Table 2 Debt financing across size deciles (2001)

	All	Large	2	3	4	5	6	7	8	9	Small
<i>Sources of borrowing (%)</i>											
Institutions	23	17	34	42	33	26	36	29	27	35	31
Corporate bonds	21	25	15	10	10	11	6	7	4	2	11

Source: CMIE Prowess database.

Financial sector policy in India in the 1990s has had many successes. The problems in banking have not reached the scale seen in many East Asian countries. The equity market has reinvented itself. However, viewed as a blackbox, firms in India seem to have lost ground in terms of the sophistication of their financing patterns over the decade. In coming years, the impact of the revolution in securities markets of the 1994-2000 period might gradually generate a corresponding transformation in corporate finance. However, as of yet, the evidence is dismal.

2.2 Variation by size in debt financing

How does debt financing vary across large and small firms? Table 2 shows the variation, across size deciles, of the role of DFIs and of the corporate bond market, in the borrowing of firms. The largest one-tenth of firms have the least dependence (17%) on DFIs. At the same time, they have the highest dependence on corporate bonds (25%). This suggests that for the largest firms, the securities markets have become a major source of capital, and that they are able to dis-intermediate financial institutions by directly accessing the markets.

However, as we go beyond the top decile of large firms, the fraction of debt funding that comes from corporate bonds drops off very rapidly. This suggests that the corporate bond market is only an effective venue for the largest 10% to 20% of firms. This is, once again, a symptom of a poorly developed financial system, where the public securities markets are not able to play a large role.

2.3 Variation by size in stock market liquidity

How does stock market liquidity vary across large and small firms? Table 3 shows evidence for companies trading on NSE. These companies are first sorted by market capitalisation, and then broken up into deciles, each of which has roughly 93 companies. The turnover ratio (i.e. turnover of latest one year expressed as percent of latest market capitalisation) is used as a measure of liquidity.

The turnover ratio drops off sharply from 351% in the top decile with the biggest firms (which have an average market capitalisation of Rs.4,068 crore) to 45% in the 7th decile (where firms have an average market capitalisation of Rs.112 crore), to lower values beyond. For an international comparison, on the NASDAQ exchange in the US, firms seem to be at turnover ratios of around 100% even in the smallest decile, where firms have a market capitalisation of around Rs.25 crore.

Table 3 Turnover ratio by size deciles on NSE (January 2001)

Decile	Mean market capitalisation (Rs. crore)	Mean turnover ratio (percent)
Small	5.7	10.38
2	12.2	14.01
3	19.0	5.25
4	30.1	9.96
5	47.3	17.00
6	73.8	25.84
7	112.5	45.26
8	202.9	127.54
9	504.6	88.69
Large	4068.7	351.43

Source: IGIDR.

This suggests that India's equity market has a serious gap in liquidity, when compared with the best markets internationally, for companies with a market capitalisation below Rs.100 crore or so. In other words, the Indian equity market is now successful in delivering high levels of liquidity to large companies (defined in this fashion), but for smaller companies, there is still a gap when compared with the best markets internationally.

2.4 The issues

This evidence suggests that the securities markets are not as deep as one might want, and banks are bearing more of the financing needs than one might like, especially as investment and growth have slowed. From a policy standpoint, we should reverse this trend. We need to address a number of issues that might be responsible for this trend.

In this paper, we organise our discussion about the problems in the financial sector as follows:

1. Improving transparency and governance (Section 3),
2. Resolving failure in the industrial and financial sector (Section 4),
3. Delinking the government and private sectors (Section 5),
4. Fostering innovation (Section 6),
5. Supervising and regulating risk taking (Section 7).

We now turn to examine each of these issues in detail. Finally, Section 8 looks at quantitative, monitorable metrics of the state of health of the financial system.

3 IMPROVING TRANSPARENCY AND GOVERNANCE

Justice Brandeis, a justice of the U.S. Supreme Court, wrote “Sunlight is the best disinfectant”, a phrase picked up by Franklin Roosevelt in justifying the extensive financial sector reforms in the United States in the 1930s. Transparency - making public the activities and the state of a financial or industrial firm - has a number of positive consequences.

The process of speculation and price discovery is driven by information disclosure, and a regime where accurate information is plentiful is more conducive for price discovery. A regime with poor transparency innately generates informational asymmetries (where insiders to the firm know more than others). This has an adverse impact upon the liquidity of securities markets. Poor mechanisms for information disclosure and dissemination amongst smaller companies are likely to be a key explanation underlying the drastic dropoff in stock market liquidity, that is seen in Table 3.

Transparency allows investors to react more quickly, thus nipping problems in the bud. It also allows them to have more confidence while investing because they can tell rogues from honest players. Furthermore, the fear of exposure makes managers more wary of wrongdoing, and the fear of being shown up by the public makes regulators more alert. Government actions - such as closing a bankrupt bank - are also less subject to accusations of impropriety if the data upon which it acts is there for all to see. Finally, as we will see below, a more transparent system allows much better financial contracting.

There are three arguments *against* transparency:

1. It is feared that managers who are subject to the glare of public scrutiny will start taking actions that put them in a good light, rather than actions that are in the best interest of their institution. Window dressing of accounts is one such example. While there is some casual evidence of such actions, such actions have not been shown to be economically important.
2. The second argument is one that is implicitly held by many in power. It is the belief that most investors in the market cannot possibly understand the complex nature of a firm or bank's accounts/state, and to reveal the details to him would only serve to confuse him.

This argument gives inadequate credit to the powerful *incentives* that are in the play when private speculators work on producing and processing information. The gains from successful speculation are large enough to pay for substantial sophistication in the analysis of information. Numerous studies from the behaviour of markets, abroad and in India, testify to the enormous sophistication of markets in impounding information into prices.

3. The third argument is one of privacy. While it is true that certain privacy rights deserve to be respected, there are ways to build safeguards into the system so that transparency can be had for the matters that are of public interest, without sacrificing privacy.

An international organization, CIFAR, computes a measure of transparency by tallying how many of a list of 100 items are disclosed in corporate annual reports in a country. The number, despite being a crude measure, tends to be a very good indicator of financial development, and very strongly correlated with the size of equity markets, or the extent of equity issues in a country.²

²Moreover, the higher a country's accounting standards, the greater the subsequent growth of its industries that are dependent on finance (Rajan & Zingales 1998). Accounting transparency seems to matter.

3.1 Accounting information

Accurate accounting information is critical for good corporate and financial governance. While accounting standards are a good proxy for how much a country cares about informing investors, adopting international standards is just the first step in the battle to improve the quality of accounting information, not the last.

3.1.1 Empirical evidence on the consequences of improvements in accounting standards

Careful studies of individual countries have suggested that simply moving to a stricter accounting standard such as U.S. GAAP or the International Accounting Standard (more compatible with English accounting) is far from sufficient. Malaysia, for example, regularly keeps up with IAS standards, and requires accounting statements to reflect a “true and fair” picture of the firm. Nevertheless, Malaysia falls far behind Singapore and Hong Kong in whether accounting statements are timely and whether they report negative information quickly (Ball et al. 2000). All these countries fall behind the United States and the United Kingdom. The reason is that those participating in the accounting process in the U.S. or the U.K. have a number of market, reputational, and legal incentives to make sure it is done right.

Similarly, a 1998 UNCTAD study of accounting practices in Korea, Thailand, Indonesia, Malaysia, and Philippines indicated that accounting practices deviated from published statistics. Typical deficiencies were in accounting for related-party transactions, foreign currency debt, use of derivative instruments, and potential contingent liabilities. India may be no better. A recent study (Bertrand et al. 2000) suggests there are extensive unaccounted related-party transactions within Indian conglomerates.

3.1.2 Improving accounting standards

Improvements in information technology have led to sharp reductions in the cost of storing and processing information. This opens up new opportunities for us to move towards high standards for the release of accounting information, particularly considering that most Indian firms do not have deeply entrenched legacy systems and processes.

Completeness In most jurisdictions, firms release quarterly results which have the full audited profit & loss and balance sheet. In India, we are, as yet, only producing highly abbreviated quarterly information, for listed firms only.

In some respects, India is faring well on disclosure. For example, the rules requiring disclosure of information about physical capacity, output, stock and sales by product are ahead of world standards. This is also the case with rules about details about liabilities, energy consumption by product, conservation measures. There is a consensus that accounting disclosures in India are weak in the areas of segment reporting, consolidated group reporting, disclosure about derivatives positions, detailed statements about terms of outstanding bonds and loans, and details about employee stock option programs. There is also a good case for firms to be required to publicly disclose defaults on debt obligations.

Frequency In a fully automated environment, the incremental cost of producing more frequent statements drops to near-zero levels. Hence, it is possible to move on to *monthly* unaudited P&L and balance sheet information, coupled with quarterly audited statements.

Timeliness From the viewpoint of securities markets, the *timeliness* of information release is extremely important. Delays in information release create a situation with asymmetric information, where insiders to the firm have substantially better knowledge about the firm as compared with outside speculators.

In India, there is a need for tighter standards governing the delay between the end of an accounting period and the release of results. CMIE has estimated that a normative goal which is attainable for a normal, well-run accounting department, should involve delays of 1 day for quarterly disclosure and 60 days for annual reports. Most firms in India, today, do worse than this. From a public policy standpoint, there may be a case for establishing upper bounds on these delays, with an accompanying structure of penalties.

One simple path through which accounting standards in India could be improved would be to explicitly adopt one international standard, and then implement a time-bound program for its implementation, in every detail. This has the advantage of reducing the information processing cost associated with Indian accounting data, as seen by foreign investors. Alternatively, there can be a process of policy analysis and adaptation, leading to a uniquely Indian definition.

Clearly, the largest corporation should be asked to adhere to the new standard first. They will also provide the impetus for smaller firms to move to the standard. One possibility might be to mandate the stronger standards for all those with assets over Rs.1000 crores starting from the year ended 31 March 2004.

3.1.3 Implementation

Of course, accounting statements of the rigorous standards are of little value if they are falsified. The recent difficulties with Enron in the US have highlighted the problems of supervision of the accounting profession, an area where India has experienced many problems. A nodal agency, which could possibly be SEBI, will have to perform this supervision function. If SEBI is to perform these functions, the capabilities present at SEBI in detection of accounting misrepresentation or fraud, as well as the ability to penalize or prosecute need to be augmented.

The process of building up confidence in accounting has two major steps: (a) audit and (b) prosecution. The nodal agency should check the accounts of a number of firms at random (with the largest firms getting more attention). This should be distinct from the tax collection process, since the objective (of ensuring that public financial markets obtain sound information) is different. It could employ private sector resources so as to avoid allegations of more bureaucracy or corruption. The objective will be to ferret out accounting discrepancies so as to make balance sheets more meaningful. Failure to disclose appropriately could be penalized in a variety of ways ranging from a warning (to the firm and its accountants), disclosure of erring promoters through public web sites and to rating agencies, disbaring directors from being able to serve on boards and accountants from conducting further audits, and quite possibly, criminal penalties. The following might be kept in mind:

- Ideally, the whole range of participants in the accounting process should be liable for negligence, including the accounting firm that certifies the accounts, the investment bank that brings the promoter to market without due diligence, and the members of the audit committee on the board.
- The more the penalty is pecuniary (fines, de-listing, loss of board privileges) rather than incarceration, the easier it will be to see penalties actually being imposed at first. We will have to battle against the

belief that accounting fraud is not really fraud or theft but a temporary lapse of memory.

- While administrative penalties could be initially applied, eventually, judicial penalties should be applied for gross and intentional deception, within the lifetime of the violator. One way this process is facilitated in the United States is by allowing shareholders the right to sue based on outcomes. For example, there are many lawsuits against Enron, its directors, and its auditors in court today. There is probably a middle ground between the excessively litigious United States, and India where white collar crimes seem to take forever to prosecute. Whether the answer is special commercial courts or tribunals, more courts, or less opportunity for lawyers to delay is beyond our brief. But as we will repeat often, a speedy legal system is critical to a modern financial sector.
- In improving the quality of accounting, it also helps to give accountants the right incentives. Two suggestions seem eminently practicable: First, to have the accountants for large firms rotate on a 3 year basis. This will ensure that overly cozy relationships do not build up. Second, conflict of interest rules should be adopted that prevent firms in sensitive roles, such as audit firms, from obtaining fees from non-audit business.

A closely related issue is that of transparency in corporate governance problems. There are many avenues for progress in improving the transparency of governance of firms. Shareholders should be made aware if there are any items being voted where the management has an interest in the transaction (e.g., a sale of a subsidiary to a firm owned by management). All matters that are substantial (say of a value above 10 percent of the firm's assets) and where there is a possibility of self-dealing should be placed before the shareholders.

3.2 Credit information

Credit information is central to well functioning credit markets. In India today, there tends to be a bias in favour of equating credit information with credit ratings. However, there is a much broader range of information inputs that need to be brought to bear upon decisions in a well functioning credit market. These include:

1. The simplest information is basic financial and demographic information about the borrower.
2. The second level comprises information about the track record of the borrower in terms of transactions on the credit market.
3. The third level consists of assessments of failure probability, which typically come from sources such as scoring models, information embedded in the secondary market for debt and equity, or credit rating agencies.

There is a need to focus on all elements of this information infrastructure of the credit markets, and not just credit ratings. Information about a borrower's credit record can be vital in enabling the borrower to gain access to credit, and in preserving his incentive to repay. Not only can potential lenders distinguish serial defaulters from those who have a history of repaying, thus enabling those with good credit records to obtain credit, a credit history becomes an asset worth preserving. A borrower will not default lightly when he knows that it will be a permanent adverse mark on his credit record. Thus the sharing of credit information among potential lenders creates a culture of borrowing and repaying.

The sharing of credit information can also facilitate transactions in other markets. Renting becomes easier when the landlord knows the renter is trustworthy, and the renter himself becomes more trustworthy when he knows a missed rent can have adverse consequences for his credit history. Finally, because credit records are portable, the borrower has mobility,

in the sense that he can move from one lender to another or one geographical location to another.

Credit bureaus are institutional arrangements to share borrower credit information amongst potential lenders. Some countries have bureaus that share only black information - information about defaults. Others share both black and white information (information about how many loans the firm has taken, what collateral it has offered, etc.). A recent cross-country study finds that correcting for a number of other influences, the existence of information sharing arrangements increases bank lending by about 20 percent of GDP.

Turning to the Indian situation:

Firms A wealth of information about roughly 7,000 firms is observed in the CMIE Prowess database. The state of information access for the remaining 150,000 companies in the country is much weaker. The CMIE 'First Source' database, which tracks these firms, is constrained by regulations from carrying information about the income and expenditure statements for these firms.

One project aimed at creating a credit bureau, the Credit Information Bureau of India (CIBIL), is under implementation. The hurdle that is presently faced is the legal barriers faced by creditors in releasing information about delinquent borrowers into the public domain. Once the initial framework of CIBIL has been proven, the credit information industry will grow in the direction of information providers such as trade creditors and finance companies. To begin with, only black information could be shared outside the network of banks, but this could be enhanced over time.

The credit rating industry is now over ten years old. It has so far been restricted to the highest rated bonds. There is relatively limited experience with making subtle distinctions below AA. Credit rating of derivative instruments such as securitisation paper has commenced.

Individuals India's financial system is right now experiencing very high growth rates of personal credit. This industry would function much better if individuals who defaulted were identifiable. This would reduce the average price of credit, and generate better incentives for non-default.³

A major problem faced in this field is a unique identifier for each individual. This would make possible the aggregation of credit information about an individual that emanates from multiple sources. It will be an important step forward when all citizens, right from birth, obtain an identification number that can serve to track credit history, pension benefits, wealth, tax liabilities, etc.

There are several initiatives presently underway which seek to achieve this: these include the Voter ID card, the PAN number of the income tax department, the citizen's ID card project of the Ministry of Information Technology, and the Social Security Number project of the EPFO. The success of one of these initiatives in achieving nation-wide acceptance will have an important impact upon the ability of the financial sector to process information about individual credit risk, and hence extend credit to individuals.⁴

³There are some initiatives of this nature currently underway. MasterCard International is in the process of tying up with even non-credit card issuing banks, non-banking finance companies and mobile operators to share its database on credit card defaulters. Around 25 MasterCard-member banks had initiated the negative file project in 1999, which involved setting up of a combined database of delinquent cardholders pooled in by member banks. This database currently has information about 350,000 defaulting individuals.

⁴An economy where each payment, each deposit, and each securities transaction is tracked by a citizen identification number is one where tax compliance is likely to be much better as compared with the present situation. This reiterates the importance of working towards 3 goals:

1. The creation of a nation-wide and pervasive citizen's ID number.
2. The mandatory capture of this number for a wide variety of transactions on labour markets and financial markets.
3. The linkage of these databases into the monitoring of compliance on the part of the direct tax authorities.

Property A modern credit market also has institutions that can register a lender's security interest in a property. This means they have first claims on the property before other creditors. The idea of registering the security interest is so that the same property is not offered as security to multiple lenders. However, the registry also allows for second and third mortgages against the same property with the second lender standing behind the first lender in his claim on the property. There would be a big boost to the cause of credit, especially in rural areas where credit histories may not have had time to develop, if these public registers of security interest started being maintained.

One big problem in making property the basis for borrowing is that legal title can be quite murky in many parts of India. A clear certificate of legal title may be hard to obtain. A giant step forward in this regard would be to computerize land records throughout the country so that the process of getting title and using the land to borrow will be facilitated.

Eventually, real time links between credit registries, collateral registries, and property registries can be envisaged.

3.3 Policy intent

A final area where transparency is needed is in the arena of framing policy for the financial sector. While it may often happen that the details of policy may yet have to be debated, it should be possible to signal broad directions so that the market knows what to expect, as well as a timeframe for announced policy initiatives. This would produce better project management in terms of implementation of policies, and reduce policy risk as viewed by market participants.

A prominent and ironic example of these problems was seen in July 2001, when the equity market moved to rolling settlement and *badla* was abolished. For the preceding five years, the securities regulator had argued in favour of perpetuating weekly settlement and *badla*. This generated a structure of expectations in the market, and drove investments in human capital and process design on the part of market participants.

When the reforms process succeeded in eliminating weekly settlement and *badla* in July 2001, this came as a surprise to market participants, and made obsolete many decisions which had been taken earlier in terms of investments in skills and process engineering. These costs could have been reduced if SEBI had always exhibited clarity on the importance of rolling settlement, and established a roadmap towards it well ahead of time.

4 RESOLVING FAILURE IN THE INDUSTRIAL AND FINANCIAL SECTOR

Financial contracts are worthless if they are not enforced speedily. In Italy, it takes approximately 4 years (1992 data) to repossess a house through the courts under a mortgage foreclosure. In the United States, the comparable time is less than one year. The fraction of the house value that one can obtain as a loan (the Loan to Value Ratio) is commensurately higher in the United States (80 percent) than in Italy (50 percent). This is a simple illustration of a very important point. Better judicial procedures for repossession and recovery ultimately help the borrower because they enhance the flow of credit.

There are three concerns about contract enforcement in India:

1. The laws in India are typically skewed against turning out current management (if a firm) or current possessors (if a house or other property). This may have worked well when the economy was not changing very fast. But in the modern economy, the law should facilitate change, especially in the face of underperformance. Laws have to be strengthened to give the ultimate owners (whether a bank after a default, or shareholders in a company run by a promoter with a small stake) full rights in determining the future use of their assets.
2. Another factor enhancing the status-quo bias in the Indian context is the slow speed of the judicial system. Because the time value of money is so critical to financial contracts, justice delayed is not just justice denied, but it also renders impossible many kinds of financial contracts. Clearly, the speed of the judicial system is something beyond the scope of this paper. The question one can ask is how much can be done without the intervention of the judicial system? Perhaps a lot can be done through arbitration, through negotiated out of court settlements, by giving more powers to lenders, to new judicial mechanisms like SEBI and SAT.
3. Finally, even if the laws exist, and even if the judicial system becomes speedy, contracts will be unevenly adhered to unless minority investors find champions simply because they do not have the time and money to go after sleazy promoters. In developed countries, the cause of minority investors is taken up by four different agencies. The first is the regulatory authorities who seek to ensure even treatment. Second, trustees (for debt issues) and board members (for equity) have a fiduciary duty towards investors, including minority investors. Third, NGOs and the press also play a role in highlighting abuse of minority investors, which then triggers off action by the regulatory authorities. Finally, lawyers are allowed to take up class action suits on behalf of investors where they get paid only if they win.

These arguments suggest a few broad courses of action.

We need to enhance shareholder and creditor rights, bringing in appropriate legislation. On the shareholder side, we need comprehensive legislation outlawing a variety of practices (including those that are peculiar to Indian markets and so do not find counterpart legislation elsewhere), and mandating a variety of good housekeeping practices by firms, management, directors, auditors, and investment bankers. Self-dealing, unless disclosed and approved by shareholders, should be outlawed. Good corporate governance practices should be adopted and given the weight of law.

We also need comprehensive legislation on appropriate market practices, including what does and what does not constitute insider trading, and what does constitute market manipulation. Of course, all legislations will have to be refined by the courts over time, but a start should be made.

In all this, the ability of shareholders to sue promoters after the fact should be enhanced (with the assets of promoters and their collaborators being subject to seizure if the court verdict is adverse), as should the ability of SEBI to investigate and inflict penalties.

The political difficulties that will ensue, when SEBI takes on powerful business families on questions of corporate governance, cannot be overstated. It would not be farfetched to elevate the position of the market supervisory agency to that of the Central Bank or the Election Commission. Certainly, in the years to come, financial markets will become critical to our economy, perhaps as much as elections. It is hence important to empower the head of the supervisory agency, and insulate him from political influence.

On the creditor side, foreclosure of mortgaged assets should become accepted practice, requiring merely the assent of a judge or administrator after verification of documents. Of course, some protections for borrowers will have to be built in so that the process does not become abusive. Also, some personal bankruptcy exemptions (assets a failed individual borrower gets to keep) may have to be legislated once the foreclosure system starts working. Finally, a bankruptcy court stay of proceedings against unsecured assets may be available to allow a firm to develop a workout plan (see later).

4.1 Resolution of failure

A good financial system must have a very well defined process of dealing with failures. If the process is poorly specified, it leads to numerous problems:

- Instead of resources being withdrawn from areas of poor performance and redeployed in areas where they can be used better, poor performers not only waste the resources they have, but new ones as they lobby for more resources.
- Fearing that they will be sucked in, private creditors flee at the slightest hint of failure, making it very hard for a distressed firm to recover.
- Since it is uncertain who will get what in distress, no one will want to offer long term credit to an enterprise, unless backed by solid guarantees.
- Since private parties are unwilling to support distressed or risky firms, the government intervenes to support them, extending its reach to areas it is quite incompetent at managing, and furthering the process of socialization of private losses.
- When the financial system is unwilling to extend debt capital to firms, firms are forced to use low levels of leverage.

In a properly functioning market, debt and equity play different roles. A firm issues debt when the market demands a relatively safe instrument with a strong commitment to pay out. By contrast, equity is issued when investors have an appetite for risk, see high growth, and want to share in the growth potential. Equity investors accept the risk of losing all their money for the potential bonanza of sharing in the firm's upside.

Debt also plays a role as a tripwire in corporate governance. If the firm cannot make its debt payments, it is a signal for investors to reevaluate management's performance. Some of the underperformance may be due to uncontrollable economy wide conditions (a recession) but some may be because management is incompetent. A default should then be an opportunity for investors to reevaluate whether the original owners and managers should be left in charge of the precious economic resources the firm controls.

In order for debt to be distinguishable from equity, a good bankruptcy code is essential. First, it helps creditors recover their money from failing enterprises, and helps reallocate their resources to better uses. Second, it performs an essential role in governance by disciplining

incompetent management and removing them from the control of precious societal resources. Without a proper bankruptcy system, debt is like equity but without any upside. Debt holders are at the mercy of owners and management who can keep them at bay indefinitely when things go bad, but debt gets none of the upside when things are going well. Faced with such a one-sided bet, it is no wonder investors will shun debt - public debt issues as a fraction of corporate financing have been on a steady decline in India over the 1990s.

Nothing arouses as much indignation among populist politicians as the sight of the state helping creditors get their money back. Somewhat paradoxically, however, there may be few activities that help the public more. Credit will flow more easily when investors have the expectation of getting their money back. The retired bureaucrat can buy the debt issued by the textile magnate when the former knows the latter will not default with impunity. More important, however, a bankruptcy system helps the workers in the firms also. For those in terminally ill firms, it extracts a severance payment, and forces society to find ways to re-deploy their talents. For those in potentially viable firms, it removes the burden of an incompetent or crooked management, as well as the incentive-killing effect of an overhang of debt or unviable contracts.

4.2 Components of a bankruptcy code

A fully thought out bankruptcy code must contain the following elements:

- Define what happens, when, and by whom: Does existing management remain in control? For how long? Under what circumstances? Who proposes reorganization plans? How is voting conducted on them? Can the court cram down a vote? What seniority schemes have to be respected? What is the priority of labor, taxation authority, lawyers, etc. in the final distribution?
- Allow for coordination between creditors so that if the firm can be salvaged as a going concern, it should. Nevertheless, the overriding priority should be to deploy the assets in the best use possible so that the maximum value can be realized.
- There should be time-limits for each step so that the process does not drag on interminably.
- The resolution of the failure of a firm always raises issues of equity: What, for example, to do about the employees? In our view, this should be handled by securing employees reasonable benefits, and not by assuring them a job for life. Also, employees should have a minimum severance pay, which should be senior to all other obligations. But ultimately, there has to be an understanding that the considerable benefits of modern capitalism go along with these risks. This is a political message that needs to be sold more widely.
- As with many of the situations in which the judiciary is invoked in this paper, there is a strong case for having courts specialized only in commercial matters - for instance, courts devoted to bankruptcy - with judges and lawyers drawn from the ranks of the professionals who not only have legal experience but also have experience in business matters. Such expertise may take time to build up, but it can be enhanced by creating a special commercial judge cadre with its own salary scale.

4.3 Towards a new bankruptcy code

As discussed above, the attributes that a good bankruptcy system should have may be summarised as follows. It should aim to reallocate the firm's resources to their best use, whether that use is piecemeal liquidation or a change of management and ownership. It should also not be costless for incumbent management, so that they do not have an incentive

to run to bankruptcy court to protect them from their mistakes. Finally it should be low-cost, quick, simple, and predictable.

Low-cost and quick are both obvious attributes. In India, we have to count on enormous ingenuity and tenacity on the part of criminals. Hence, simple rules are the ones which will have the fewest loopholes and opportunities for creative regulatory arbitrage. Finally, a predictable system is very important for this is what gives investors confidence and the ability to price instruments. We now describe a proposal for such a system. In many ways it resembles The Companies (Amendment) Bill 2001 bill before Parliament and a proposal by Omkar Goswami (CII), but it departs in some key respects.

First, what is the triggering event for a bankruptcy filing? Some have argued that it should be based on a completely eroded net worth. But net worth is hard to measure and by the time it is obviously eroded, there is little left for creditors. The clearest event is the violation of a debt covenant, including non-payment of principal or interest. In many situations, the borrower and the creditor may be able to negotiate around the default. But if the borrower cannot find ways to remedy the default within a week or two of the default being brought to the notice of the court, this is prima-facie evidence that the borrower is unable to service its debt and it should be forced into bankruptcy. A code that allows any legitimate aggrieved creditor to put the firm in bankruptcy will prevent the selective defaults that are so common nowadays. The court can also levy costs to prevent frivolous filing by creditors. Of course, the borrower himself can also file for bankruptcy, and once bankruptcy courts work well, we will see more of this.

Once the court satisfies itself that the borrowing firm is in default, it should immediately replace the firm's management with an administrator from a panel it maintains - the administrator should be a qualified business person such as an accountant or a business lawyer rather than a retired judge or bureaucrat. The administrator's job is to sell the firm (with all its debts and long term contracts wiped out) for the highest cash price. The primary creditors of the firm should approve of the administrator (a vote among the senior creditors with a simple majority in favor should suffice), but the administrator's responsibility will be to get maximum value for the firm's assets and not favor specific creditors. Her first step should be to have a quick audit done of the firm's assets and liabilities. As a reservation price, she should obtain bids from potential liquidators or assessors for the assets. She should then advertise the firm widely to potential bidders. These may be the original management, competitors, industry outsiders, and even liquidators. Under an oath of confidentiality, these potential bidders should be able to examine the firm's books. The auction should be simply a sealed bid for how much the bidder will pay in cash.

The administrator should pick the highest bid, so long as it exceeds the reservation price. By forcing the bids to be in cash, we are taking away from the administrator any responsibility for judging the viability of the bidder's business plan or even mandating that the bidder should keep the firm as a going concern. That responsibility would now lie with the bidder and his financiers. Any proposal that requires bidder plans to be vetted would require excessive skills and incentives from the administrator, and make the system prone to allegations of corruption.

While the firm is in bankruptcy, the administrator should make only the most essential business decisions, necessary to preserve the value of the firm. The law should allow for the

firm to obtain post-bankruptcy financing which will be senior to existing claims, but only minimal use of such financing should be made. The court should set an outer time limit by which the administrator should dispose off the firm so that administration does not become an alternative career for the administrator. The administrator should be paid a fraction of sale or liquidation proceeds so that she has the incentive to get the best price possible. She also has reputational incentives to do a good job so that creditors in future bankruptcies will vote for her.

Once the cash is deposited with the administrator, the firm should be turned over to the bidder. In many situations, the successful bidder will be the original management, with the bid financed by its bankers. This should not be a source of concern. The original promoters often have the best knowledge about how to run the firm, and may hence come up with the most aggressive bids. Bankers may often indicate their continuing confidence in the old management through their willingness to finance the bid. For some firms, there may be no bidders other than the original management, and the administrator will essentially be conducting a negotiation between creditors and management. In fact, the experience in other countries with similar systems is that for the smallest firms it is rare that an alternative bidder emerges and firms are typically sold back to incumbent management or liquidated. This is as it should be.⁵

The next step is to pay the cash out to claimants. Clearly, the administrator should be paid first, followed by secured creditors, senior creditors, tax authorities, and unsecured creditors such as trade credit. While one could dispute the relative placement of one or the other of these claimants, the most important question in India is what to do with labor's claims. Making labor a senior claimant for both wages and pensions may absorb too much of the firm's assets, making the process a non-starter. However, leaving them entirely at the end of the queue along with other unsecured creditors is not reasonable either. A compromise would be to have back wages of up to say six months paid out of the proceeds of the auction (hopefully, in the future, a speedier system will reduce the extent of unpaid wages at the time of filing) and the rest of worker claims be treated on par with unsecured creditors. It may also make sense to have a transition period with the new system when more worker claims are senior.

The virtues of the proposed system are that it is simple and should be easy to operate. Some expertise is required of administrators and of the bankruptcy court, but there is no reason why these cannot be acquired quickly through experience. A worry some may have is that the administrator demands nothing from the bidder other than cash (this is also how we differ primarily from other proposals). Again, this is as it should be. The successful bidder owns the firm and should be able to do what he wants with it. Any safeguards for the workers should be built into the labor laws but more are not needed. In the rare case that the bidder sells shoddy products or violates environmental standards, the criminal system and not the bankruptcy system should deal with it. And if the bidder does not have a viable plan for

⁵Our proposal here is similar to the 'one time settlements' which are presently taking place on credit markets. Yet, it has one enormous difference: the use of a transparent auction. One time settlements are presently negotiated in private, and are fraught with concerns about the extent to which banks are effective in negotiating a sound price with the management team. In practice, many times, the *outcome* of the auction proposed above may be the reinstatement of the erstwhile management team. However, the *price* at the one-time settlement would have been discovered out of a competitive and transparent process, without room for personal negotiations by employees of banks.

running the firm, the losses will be sustained by his own money and those who financed his bid.

In sum, a bankruptcy system like this can go a long way in freeing distressed corporate assets from the phantom zone in which they now lie, and enhancing the flow of credit to corporations.

4.4 Pre-emptive closure of financial firms

In the case of financial firms, supervisors have to be much more pro-active in identifying incipient failure, and acting to close down/take over a firm before it wastes more resources.

They also have to have the political will not to bail out small, influential, operators either because they are well connected, or because their failure shows up regulators in a poor light. In general, the decision to close a financial firm is often very political.

India has scored one important success, in the case of stock broking firms, where the clearing corporation now regularly forces closure of brokerage firms while they are still solvent, based on clear rules. On average, roughly five firms per year are closed down by NSCC and BSE. This is a marked contrast with the regime that operated in previous decades, where exchanges and regulators were known to work together to avert broker default. This is a highly positive political development in terms of the development of a sophisticated financial sector.

To avoid the almost inevitably bad political decisions, a number of countries have implemented legislative arrangements that tie supervisors' hands. Prompt corrective action (PCA) in the United States require supervisors to take increasingly stringent actions vis a vis a bank as its level of capital falls.

The key insight is that *something must be wrong with a bank if it cannot convince shareholders to put in more capital when some is lost*, and such a bank is better shut down. While it is unclear that the government will not intervene when the largest institutions are threatened, PCA has clarified the rules for smaller institutions, thereby reducing moral hazard and political rent seeking.

The logic of PCA is good if capital markets function, and the new capital is truly at arm's length (and not obtained by the financial institution lending it to its promoters to invest, or by the government putting up the money or forcing other government institutions to put up the money). Private institutions should immediately be moved to a PCA regime, with increasing constraints on their activities as they fall short of capital. Explicit capital levels at which different actions will be taken, while crude, will take politics out of the decision, and allow investors to make appropriate calculations.

Of course, PCA becomes less of an option when banks are large enough to matter politically. This, unfortunately, seems to be the case with some PSU banks. While there is a case to be made for closing the worst ones, the consequences be damned, other options are also worth examining. This is the subject of the next section.

Table 4 Instability of the CEO of State Bank of India

This table shows the outcomes of the government-driven appointments process for the CEO of State Bank of India, India's largest bank, from 1990 onwards. This shows a mean tenure for the CEO of 18 months. In two episodes, the bank was headless for 7 months and 0.5 months. Such instability in leadership is unlikely to be conducive to effectively running the bank, and is a sharp contrast when compared with private banks. *Source:* 'Not just lonely at the top in PSU banks', by B. S. Srinivasalu Reddy, *Financial Express*, 23 December 2002.

Name	From	To	Tenure (months)	Period without head (months)
M. N. Goiporia	19-2-1990	31-7-1992	29	7
D. Basu	25-2-1993	31-8-1995	30	
M. K. Sinha	1-9-1995	30-9-1995	1	
P. G. Khakhodkar	1-10-1995	31-3-1997	18	
M. S. Verma	1-4-1997	30-11-1998	20	
M. P. Radhakrishnan	1-12-1998	31-1-1999	2	
G. G. Vaidya	1-2-1999	31-10-2000	21	
Janki Ballabh	1-11-2000	31-10-2002	24	0.5

5 DELINKING GOVERNMENT AND PRIVATE SECTOR

In the decade of the 1990s, the public sector became much less important in numerous industries, ranging from wrist watches to steel to telecom. India is relatively unique in that in the financial sector, the public sector continues to be extremely important.

Reforms have made the most progress on the securities markets, where the private sector now has a dominant position in securities intermediation, and a 60 per cent market share of mutual funds. It is not an accident that India's best success with *markets* forming prices is found on the equity market.

The private sector has a 20 per cent market share in banking, and a negligible presence in insurance and in pensions. This has many subtle but important consequences for the allocative efficiency of the financial system.

- Public sector entities are less oriented towards profit maximisation, and suffer from a greater moral hazard through a perceived immunity to bankruptcy.
- A host of difficulties ranging from human resource policies to political interference make it harder for public sector finance companies to perform the core function of finance companies, which is resource allocation based on information processing. Table 4 shows an example of the difficulties of obtaining sound management with PSU banks.
- The relationship between government as regulator and government-controlled finance companies is a particularly tricky one, as highlighted by the problems of UTI or IFCI. It is easier to establish a sound regulatory and supervisory capacity when dealing with explicitly private finance companies.
- The substantial shareholding by public sector finance firms in most listed companies has inhibited the market for corporate control.
- The small stock of assets controlled by private finance firms has inhibited the privatisation program.
- The practice of transferring unlimited liability from public sector finance companies to the government imposes important dangers for the fragile finances of the exchequer.
- The development of modern banking regulation in India has been impeded by the maze of conflicts

of interest that derive from the government owning banks, government regulating banks, the banking regulator performing debt management functions and selling bonds to banks, and the banking regulator also performing the role of crafting monetary policy.

All these difficulties suggest that policy initiatives should accelerate the reduction of public sector domination of banking, insurance and pensions. This can be achieved through easing entry barriers so as to foster new private and foreign entrants, and a program for privatisation of existing public sector finance companies.

5.1 How far does the safety net extend?

A core issue faced here is the incentive implications of a loosely defined safety net. Most countries have a safety net in the form of deposit insurance. However, the scope of deposit insurance is normally calibrated to cover the smallest deposits. The size of deposit insurance cover, expressed as percent of per capita GDP, is extremely high in India when compared with almost all other countries in the world. Presently, there are proposals to further extend this safety net by further doubling the size of insured deposits. In addition, recent events on Madhavpura Bank and IFCI have amplified moral hazard by extending the safety net of GOI well beyond a narrow definition of insured deposits.

Looking forward, a key goal of financial sector policy should be to accurately define and circumscribe the safety net, using a formal deposit insurance mechanism. Today, the Deposit Insurance Corporation (DICGC) plays a passive role of writing checks when banks are in distress. For all practical purposes, DICGC is a department of RBI.

We need to chart a course towards a regime where DICGC plays a central information-processing role in the banking system:

- It should be an independent organisation, with ownership, governance and decision making which is delinked from RBI.
- It should monitor the capital adequacy of banks, and charge them insurance premia based on their failure probability.
- In the spirit of the Basle Accord, it should ask banks with low (but positive) equity capital to improve their equity capital.
- When this does not take place, it should initiate bank closure. Banks should be closed early enough, so that closure takes place while they are still solvent.
- In this, it should operate the orderly processing of deposit insurance claims on the part of depositors.
- Then it should become the liquidator and receiver of the assets of the bank.

The focus of the deposit insurance corporation needs to shift from payouts after default, into the problem of identifying weak banks and stopping them. Progress in policy towards a well defined safety net would have three important positive implications: (a) Containing the implied public debt associated with financial sector difficulties, (b) Improving the incentives towards sound information processing for employees of finance companies, and (c) Reducing the distortions in bank versus non-bank finance induced by a preferential government treatment of one.

5.2 Improving governance of PSU banks: A proposal

While the public sector has a dominant position in banking, insurance and pensions, it is with banking that the greatest difficulties are faced.

Despite the recent upswing in their profitability, PSU banks are in a bad way. PSU banks do have strengths: a core of excellent staff recruited in the days when jobs in PSU banks were indeed prestigious, a loyal set of depositors who see a deposit in a PSU bank as the only safe instrument in a market replete with scams, and branches in prime locations around the country. However, these assets are rapidly depreciating.

At the simplest, technology is rapidly eroding the importance of the branch network. ATMs and the Internet are making it possible for competing banks to obtain a large deposit base without incurring the costs of the PSU-style branch network.

PSU banks are profitable today, not because they are making good investment decisions but because they have an explicit guarantee from the government, which allows them to offer a safe haven to investors. In other words, they enjoy a hidden subsidy from public money. In a normal competitive market, money market mutual funds should have a level playing field against bank deposits. However, the safety net gives free protection to the latter. The safety net only runs to Rs.100,000 of deposits for private banks, but is effectively unlimited for PSU banks.

More fundamentally, the skills required of bankers have been profoundly altered. It is just not enough for senior bankers to be able to hobnob with important clients, they also have to be intimately familiar with concepts like option deltas, inverse floaters, and Value at Risk. This will require new recruitment, but current pay scales at PSU banks will not easily attract individuals with such skills.

In order to lend, banks require new competence (e.g., engineering feasibility studies and worldwide market potential), and the willingness to exercise business judgment and go beyond fixed rules (e.g., loans cannot amount to more than 80% of current assets). In an atmosphere where many loan defaults lead to criminal investigations, where the only safe path is to follow all the rules laid down by ancient committees, bankers will simply not lend.

What is a way forward for the PSU Banks? We believe that privatization is not a solution; that strategic sales of PSU banks are not a solution:

- It is hard to find domestic investors who can afford to pay for large strategic stakes (and politicians will not countenance most PSU banks being sold to foreigners),
- The unhappy experience of many countries is that in the absence of adequate supervisory systems and corporate governance, strategic investors use banks for self-lending. Disasters are likely, and the government ends up pouring public money to bail these banks out.

Privatizing by selling in the open market is not an answer either because without large investors exercising governance, bank management can become a law unto their own, feathering their own nests, rather than serving the public or shareholders. The sequencing must be such that governance structures fall into place before privatization.

The first step in this path – which is compatible with political constraints and with economic policy – is hence to corporatise PSU banks. Essentially, this means distancing PSU banks from

the constraints of government pay scales and government incentive systems (i.e., get banks out of interactions with the CVC and CBI) and, equally important, distancing them from government interference in lending and promotion decisions, while building new governance structures.

The distancing from government constraints is relatively easy - it requires changing a number of statutes that currently constrain public sector banks. Distancing from government interference is much more difficult. We have seen that the government has sought to impose its will even on companies it has a minority stake in. What ensures that it will refrain from interfering in PSU banks? How does one create an atmosphere where banks are run in the public interest rather than in the interests of bureaucrats, industrialists, and politicians?

We propose the following scheme. Create a number of holding funds (say 10) and appoint fund managers for them. These fund managers should be individuals or firms with expertise in running funds and a lack of conflicts of interest. The government will place its holdings in public sector banks in these holding funds. Initially, it will allocate its stake equally. So if the government's stake in Bank of India is 62% of total shares (with the rest held by the public), each fund will start out with 6.2% of BOI shares.

The fund managers have two main roles. The first is to manage the portfolio to maximize returns. They would do this by trading bank shares with each other. This trading will be distinct from trading in the stock market (where 38% of the bank's shares trade), but presumably, information will flow between markets. From the government's perspective, this is a zero sum game because what one fund makes, the other fund loses, and the government owns them all.

The virtue of allowing the funds to alter holdings is that it permits the second role: That of governance of banks and performance measurement of funds. It allows funds to obtain controlling stakes and impose some measure of governance on banks in their portfolio by electing appropriate directors and pressuring under-performing management. Simultaneously, funds can generate higher returns, both by trading astutely, identifying underperforming or undervalued banks, and by governing them well.

There are virtues of dividing up bank stakes among the funds (so no fund should be able to own more than, say, 20% of a bank's shares) and creating competition between them. Phone calls which seek to bring pressures on a fund will be less effective when voting is secret and no single fund has a controlling stake. Moreover, funds will be less willing to oblige when they know that bad decisions will affect the value of their stake, and reduce their fund's relative performance. This will make them look bad relative to other funds.

Finally, not only is fund performance a source of incentive (fund managers will be paid a significant bonus based on their fund's performance), it is also a source of security: Presumably, those who ignore political pressures the most will perform best. It will be hard for the government to fire a fund manager who is performing well.

This path offers the hope of distancing banks from government constraints and improving their performance. Parliament has argued in favour of retaining the *public sector character of public sector banks*. This path maintains the public sector character of banks while giving them the incentive to work in the public interest. In the long run, if governance improves and the national consensus in favor of making these organizations widely held private institutions

increases, the shares held by the holding funds can be traded with private sector funds, thus effectively privatizing these banks. In the short run, its greatest virtue is that it will cost little, and will, almost certainly, improve matters.

Table 5 Derivatives in India: A Chronology

14 December 1995	NSE asked SEBI for permission to trade index futures.
18 November 1996	SEBI setup L. C. Gupta Committee to draft a policy framework for index futures.
11 May 1998	L. C. Gupta Committee submitted report.
24 May 2000	SIMEX chose Nifty for trading futures and options on an Indian index.
25 May 2000	SEBI gave permission to NSE and BSE to do index futures trading.
9 June 2000	Trading of BSE Sensex futures commenced at BSE.
12 June 2000	Trading of Nifty futures commenced at NSE.
25 September 2000	Nifty futures trading commenced at SGX.

6 FOSTERING INNOVATION

One of the hallmarks of a first-class financial system is its ability to steadily create innovative new financial contracts and instruments to satisfy different risk appetites and needs. New institutions and methods of transacting may also be thrown up by a dynamic financial system. Each such innovation raises a number of issues:

- Who is the target? Is the target sophisticated enough to understand the instrument and benefit from it? Should the instrument be restricted only to a smaller set of sophisticated buyers?
- What risks does it pose to the system? Does the instrument/institution create uncontrollable or unmeasurable risks? Who will regulate its use (if that needs to be done)? How will the costs of regulation be paid for?
- What are the tax implications? How will the instrument be taxed? Is it an instrument merely to evade taxes?
- What new legislation does it entail? Is the act covering financial instruments broad enough to allow for the instrument? If not, does new legislation have to be brought in? How can it be framed broadly enough to allow the maximum contractual freedom?

Unfortunately, in the case of many innovations, a single private party does not have the incentive (prospective profits from a competitive instrument are small, even if prospective gains to the economy are large) to persevere to push the proposal through the various hurdles that stand in its way. The government has a role to play here in pushing through contractual and institutional innovations.

6.1 Examples of barriers to innovation in India

The process in the case of many recent innovations appears to be highly convoluted and time-consuming. Table 5 shows a chronology of how trading in the simplest possible equity derivative, cash-settled index futures, came about in India. This process took from 14

December 1995 to 9 June 2000, a delay of 4.5 years or so. A further three years elapsed in dealing with some of the difficulties of regulation and taxation.

The difficulties and delays faced in financial innovation are also illustrated by the first securitisation of corporate debt. We will describe this process in some detail:

1. As of 1997 or so, there were four impediments which made it difficult to undertake transactions involving securitisation of corporate debt:
 - (a) When an asset-backed loan is sold, the existing laws erroneously require a stamp duty to be charged on the 'transfer' of collateral from one lender to the next.
 - (b) In a securitisation transaction, it is difficult to handle withholding of tax, since it is not possible to decompose tax deduction at source (TDS) certificates amongst multiple investors.
 - (c) The special purpose vehicle (SPV) that would be the centrepiece of securitisation is not immune to income tax.
 - (d) The SPV needs to be made bankruptcy-remote from the sponsor, in two senses. If the sponsor goes bankrupt, then the creditors of the sponsor should not have a claim on the assets of the SPV. Conversely, financial profits or losses to the SPV should not impact on the sponsor.
2. In 1998 or so, it was understood that the mutual fund is the only structure in India which meets all but the first requirement. Elsewhere in the world, trusts are used for the purpose, but Indian law does not support this.
3. In 1999, an RBI committee endorsed the use of mutual funds as the vehicle for undertaking these securitisation transactions.
4. In 2000, the 'Rajasthan route' was designed, whereby local laws in the state of Rajasthan are conducive to not charging stamp duty on the 'transfer' of collateral when an asset-backed loan is sold. Using this, loans are now converted into 'pass through certificates' (PTCs) which can be traded.
5. In October 2000, ICICI attempted one securitisation transaction using the mutual fund vehicle and the Rajasthan route. Investors did not buy this product.
6. In March 2002, ICICI attempted an improved design for a product which securitises roughly Rs.500 crore of a bond portfolio and breaks it up into a three-tier seniority structure. The launch of this product faced four impediments:
 - (a) RBI regulations did not respect the bankruptcy-remoteness of the mutual fund. This would force banks to view these securities as ICICI credit risk, which would substantially distort their pricing and acceptance.
 - (b) IFC intended to purchase the middle tier of the three-tier seniority structure. RBI intended to forward this foreign investment application to the FIPB for approval.
 - (c) The existing SEBI regulations limited mutual funds from investing more than 5% of their corpus in other mutual funds. This impeded purchases by mutual funds in this securitisation transaction (which was being packaged as a mutual fund scheme).
 - (d) NSE's rules did not see PTCs as securities, and impeded listing of PTCs.

Unlike the case with SEBI and exchange-traded derivatives, where there was exactly one problem (obtaining approval of the securities regulator for trading index futures), this example illustrates the difficulties of complex financial products which have to deal with an outdated legal and tax environment, the need for creative solutions to tax and legal impediments, and the need for regulations to adapt to the solutions found for obtaining new products on the market.

As a third example, India made major breakthroughs on new concepts of market design in the period from 1994-1996, in terms of electronic trading, clearing corporation, depository, etc. These new ideas could have been rapidly deployed into the bond market, the currency market, and commodities. Instead, from 1996 onwards, there has been a slow process of navigating across turf boundaries, outdated legislation, lack of knowledge on the part of regulators, etc., in trying to exploit these gains. India has fared poorly when compared with many other countries, where the conversion of such ideas into vibrant markets has taken place much faster.

These three experiences highlight the hostile environment faced by innovation in India's financial system. The existing financial system hinders innovation, sends out strong incentives to individuals and plans to avoid business plans that involve innovation, and biases the labour market to disfavour high quality human capital. This is one of the most important weaknesses of India's financial system today.

6.2 An innovation-friendly policy environment

These experiences suggests three immediate steps.

First, there is need of a *broad, enabling legislation*, one that is unconnected with specifics about a product or an element of market design. Something along the lines of the Uniform Commercial Code in the United States may be contemplated, but this is of course a matter for legal experts. In a similar vein, there is much to gain in moving away from detailed investment regulation, by asset classes, towards a 'prudent man principle', in areas such as insurance, pensions, banking, etc.

Second, the *administrative process* through which a new instrument/institution is approved has to be streamlined. Whether this takes the form of regular meetings of a new apex body containing all the major relevant authorities who have decision making powers on the subject, or a cell in the finance ministry whose sole responsibility is to take ownership of new proposals and guide them through the administrative maze is something worth discussing. The streamlining of regulatory responsibilities (see below) will help accelerate the process since many of the delays today are a result of regulatory turf battles.

Third, a major source of delay is *fragmentation among regulators* and uncertainty about who will regulate new instruments. Commodity derivatives are regulated by the Forward Markets Commission (FMC). Equity spot and derivatives, and corporate bonds are regulated by SEBI, government bonds and currency by RBI. The consequence is that we do not have a single exchange trading all kinds of derivatives - it is fragmented across many trading venues and institutions. This is highly inefficient both in terms of spreading liquidity too thinly, and in increasing transactions costs as players have to work across different venues/regulatory regimes.

Given that financial markets are continuously evolving, it will be hard to specify up front regulators for all the possible instruments and institutions that might emerge. Nevertheless, there is scope for streamlining the number of regulators and redefining more precisely their turf. Regulatory responsibilities should not be based on historical accidents, but on the basis of perceived complementarities. We return to this issue in Section 7.3.

7 SUPERVISING AND REGULATING RISK TAKING

7.1 Resolving problems in the banking sector

There are two perspectives on the difficulties in banking. On one hand, there are concerns about the potential insolvency of banks, particularly PSU banks. In addition, there are concerns about the impact of the weak banking system upon economic growth: to the extent that banks buy government bonds or give loans based on poor information processing, this has an opportunity cost in terms of poor economic growth.

India seems to have avoided problems in banking on the scale of those seen in many other countries, such as China or Indonesia. At the same time, the magnitude of the problem is genuinely hard to assess. In the case of IFCI, the extent of distress as portrayed in public disclosures for several years is now known to have been highly over-optimistic. Such problems could exist in many other bank portfolios. The existing data on non-performing assets suffer from three weaknesses (a) NPA definition, (b) Rules for provisioning and (c) Evergreening. The stock market appears to believe that many major banks have a negative net worth (Shah & Thomas 2000).

The danger of letting a problem with non-performing assets go uncorrected is that the problem can only grow. There are three reasons why this happens. First, more good money goes in propping up non-performing assets, making the size of the hole even bigger. Second, poorly performing banks have the incentive to take greater risk, either because they are too incompetent to understand them, or because that is the only way they can make money and escape public opprobrium. The returns on these risks may be small, again leading to a bigger hole. Third, poorly performing firms that are kept alive through infusions from the public purse price overly aggressively (they have nothing to lose), and can thus take healthier firms down with them.

The natural tendency, however, is to not act and hope matters get better as economic conditions improve. Neither regulators, nor politicians, nor bank managers, nor their clients, have an incentive to recognize NPA problems and clean them up. Unfortunately, if the banking sector as a whole slows down because of concerns about NPAs, economic conditions may not improve without the problems being fixed.

Banking sector problems have typically been resolved when there is a recognition that matters cannot improve without drastic action, that action requires substantial resources, and that the alternative of inaction is worse. This happened in the United States in 1989 and in Sweden in 1992. Once they determined to fix banking sector problems, resolution was speedy. In Japan, by contrast, the will to fix the problems is always a little behind the rate of growth of the problems.

We believe that a reasonable strategy for dealing with the problems of banking requires a multi-pronged attack.

Addressing the stock of NPAs Unfortunately, there is no easy, tried and tested way to fix this problem.

To the extent that some of the defaults are strategic defaults, borrowers' willingness to pay can be improved by enhancing foreclosure powers and improving information sharing about defaulters. To the extent that some are in genuine distress, debt settlement tribunals and bankruptcy legislation should help recover what can be managed. Asset Recovery Companies and good bank-bad bank structures

can allow for specialization in recovery, and management incentive schemes to be targeted towards recovery. They can also be effective organizational ways for the recovery process to be separated from responsibility for the original loan, thus allowing for fewer conflicts of interest during the process of recovery.

Recapitalizing banks The process of cleaning up will require some capital. Some banks may have a fair amount of unrealized capital from the appreciation of bond holdings. These gains can help banks absorb the hit from recognizing the true size of NPAs. But a substantial source of capital will have to be the public markets.

In order for the capital to be forthcoming, it is important that banks come clean on the true size of NPAs (else investors will be reluctant to put up equity capital). This requires an independent audit. One attractive approach is:

- Use reputed new auditors (neither regulators nor the old audit firms) to audit the best banks (those that have the best ability to take the hit to capital).
- Identify the NPAs and place the NPAs in a liquidating bad bank (or ARC).
- Separate the bad bank from the good bank.
- Issue capital against the good bank so as to top up to reasonable levels of capital. This should be easier once the public understands what it is buying into.

Once a few strong, clean, banks have been established, the task of tackling the weaker banks can be taken up. This will probably require substantial quantities of public money. This may be politically more palatable if the case is made that a sustained reform effort is being undertaken to make sure the problems do not recur.

Downsizing banks Some state owned banks would already be candidates for closure under a PCA regime. While political considerations may inhibit closure there are many steps short of closure which can be undertaken. The sale of branches (along with customer accounts and staff), and the sale of loans are channels through which assets and liabilities can be downsized. Sometimes, it is efficient to sell good loans while isolating bad loans in a liquidating bad bank.

However, these changes often need to be preceded by a management takeover, since the existing management of a bank is unlikely to be effective in presiding over a downsizing effort. As of today, regulatory authorities in India have very little experience taking over a bank and selling off critical pieces. This expertise can be acquired. The basic objective of such an effort should be to engage in short, efficient interventions where regulators get out of the business of banking as quickly as possible.

While mergers are an option, they should not be encouraged without cleaning up the poorly performing bank, else the problems could spread to a larger institution.

Reducing mechanisms for contagion One of the problems as a banking system gets deeper into trouble is that risks can spillover from the good to the bad.

One channel for contagion is through banks holding each others equity or debt. This has been a common mechanism for implementing bailouts amongst public sector finance companies. It is highly damaging in terms of reducing the ability of policy makers to adopt sound policies in the future.

Market design can also play a significant role. An RTGS system reduces the exposure of banks doing transactions on each other. For transactions that are not settled instantly, the clearing corporation is a powerful tool for blocking contagion. When one entity fails, all counterparties are unaffected, since the clearing corporation is the legal counterparty of positions. Hence, regulations should be drafted so that any transaction which is not settled instantaneously must require novation at the clearing corporation.⁶

Market discipline When a bank has shares which are publicly traded on a liquid and efficient market, this is a powerful source of continuous information about the fragility of the bank. Regulators can utilise

⁶RBI's existing rules on CCIL are exactly the opposite of this: large positions, which are the most dangerous, are the ones exempted from the requirement of novation.

this as a mechanism to improve transparency, by requiring banks to go public with well-dispersed shareholding, and by requiring that banks issue large, liquid corporate bonds. This information can be useful to depositors, regulators and to the senior management of the bank itself. When the stock market disagrees strongly with the 'official' picture according to accountants and regulators, this serves as a valuable early warning. This was experienced in recent years in the case of both IFCI and IDBI, where the stock market was throwing up early warnings of distress well before regulators detected it.

A recent paper (Shah & Thomas 2000) utilises information from the equity market to assess the marked-to-market value of 20 Indian banks. It finds that many of these banks are technically insolvent; i.e. that the equity market perceives the banks to have much poorer assets as compared with those reported in the accounting disclosure. Similarly, a recent paper (Patnaik & Shah 2002) exploits information embedded in stock prices to obtain measures of the interest rate risk exposure of banks in India. In this area also, the stock market seems to be throwing up signals which differ from the stance of regulators.

Regulators can enhance the usefulness of this method of obtaining information about banks by pushing more banks to have large, dispersed shareholding across households in the country. This would ensure active trading and hence price discovery on the stock market.

This is related to the traditional prescription in banking regulation, where it is felt that if banks finance themselves by issuance of subordinated bonds, then the market-determined credit spread for these bonds would serve as a public signal, to depositors and to regulators, about the vulnerability of the bank. The difficulty with using subordinated *debt* to perform such functions lies in the fact that when a bank nears default on *debt*, there is significant political pressure in favour of a bailout. IFCI serves as a recent example of such pressures. Hence, as long as a bank is considered to be backed by the government, the observed credit spreads of the bonds issued by the banks will not be informative.

In contrast, there is no precedent of political pressure in favour of *dividend payouts* by a distressed bank in India. The stock price reflects the NPV of future dividends from a bank. A bank in distress will exhibit low values for the stock price, even if there is an expectation that the bank may benefit from a bailout so as to avoid default on *debt*.

This argument suggests the goal of market discipline would be better accomplished by obtaining a liquid market for the *shares* of a bank, rather than for subordinated debt that is technically outside the safety net. Recent experiences in India for the credit spread versus the stock price of IFCI, IDBI, etc. are consistent with this argument.

Improving bank supervision As the economy becomes more competitive and modern, bank supervision will have to keep pace. The experience from the United States is that while off-site supervision of banks (using self-reported data by the banks) can be useful, it is no substitute from regular, in-depth, on-site exams. It is alarming that the SBI, one of our more competent banks, was fined by U.S. regulators for poor maintenance of records.

- The capabilities of supervisory staff has to be enhanced, specifically their understanding of accounting, information technology, and modern finance. Investment in training cannot be overemphasized. Specialists such as lawyers and accountants have also to be hired. Skimping on supervisor salaries is the worst form of underinvestment in a modern economy.
- Since training will be a slow process, it may make sense to concentrate the best supervisory talent on the largest few banks. A permanent supervisory presence in the top 15 banks may also be desirable. It may also be useful to employ the services of professional accounting firms in certain supervisory exercises.
- As banks become more sophisticated in their functioning, the risks they take on will become harder to measure. Some amount of supervision will have to be on trust (allowing banks to use their own risk models, for example). Nevertheless, as a rule of thumb, banks that are distressed, or do not have a record of sound management, should not be allowed to enter areas that require sophisticated risk analysis and management (this prescription is in contrast to a well-established practice of letting those who demonstrate their incompetence at one activity to enter more activities in the hope that they will somehow find competence through diversification - this is a good recipe for disaster). On the other hand, there seems no reason why well run banks should not be allowed to

enter new areas, provided that the government is not forced thereby to extend the safety net to unwarranted activities. In other words, universal banking should be permissible to the best run entities, provided they can set up internal fire-walls between the various activities, and provided they fulfill the statutory requirements of each activity.

- There is an implicit belief that all government linked financial institutions come under the safety net. While too explicit a statement of which institutions are covered and which are not may trigger off undesirable runs, it should be made abundantly clear both through words and through deeds that financial institutions will be allowed to fail. While some institutions may indeed be too big to fail, this category should be as limited as possible, and supervised extremely closely.
- There are a number of financial institutions that are not being regulated at all, and others that are being regulated by many but with no one having primary responsibility. The nodal supervisory agency referred to earlier should allocate primary responsibility for these institutions.
- In this era of information, there is no excuse for supervisory authorities to not have weekly reports on the state of the largest banks, their largest exposures to specific clients, and their exposure to different risks and currencies. As much information as possible about the state of banks should be made available to the public (the Call Reports filed by US Banks are readily accessible on the Web). There is no reason why the quarterly reports of banks on their condition should not be made available in a public database. Moreover, the largest positions of banks should also be regularly reported to the public.
- Once a sound system of regulation is in place, and the current NPA problem resolved, competition in the banking sector should be enhanced by allowing more entry. Foreign entry should be permitted because foreign banks can be a source of best practice, as also a source of stability (During the Asian crisis, the only category of banks that increased their lending were foreign banks with a domestic presence - they had both the capital and the local knowledge to increase their lending).

7.2 Transactions costs

From the viewpoint of financial sector policy, transactions costs are a major point of focus. The design of markets and market mechanisms can have a profound impact upon transactions costs.

A traditional viewpoint has emphasised the role of the State in avoiding taxes, such as stamp duty, which tax financial transactions and directly drive up transactions costs. Hence, the limited role for public policy would be to identify and remove such taxes. However, there are many market imperfections, which make it difficult for uncoordinated economic agents to spontaneously redesign market mechanisms. This suggests a role for public policy efforts in market design.

To the extent that market design has a major impact upon transactions costs, it impacts upon market efficiency. When trading is frictionless, it is more likely that speculators will eliminate arbitrage opportunities and impound information into prices.

7.2.1 The equity market

Over the decade of the 1990s, the equity market has succeeded in building sophisticated institutions covering the entire life-cycle of the trade. The equity market started out as an informal club in 1994, without well-developed formal institutions. It has managed to

obtain a genuine revolution over these years, to a point where it now has the best functioning institutional arrangements in India's financial sector.

Today, orders are delivered electronically from over 10,000 trading screens spread across the country, and from the Internet. There is no entry barrier in the intermediation business, which has essentially ensured the absence of economic profits. Orders are matched on a transparent, anonymous, order-matching system. The typical turn around time from order placement to order execution is 2 seconds. On a typical day, roughly 1 million trades take place.

The largest exchange (NSE) has a clearing corporation which does intra-day, real-time monitoring, and adopts full legal responsibility for failed brokerage firms. Settlement takes place at depositories, which are also accessible to customers over the Internet.

The equity market today operates on a T+2 settlement system, where trades are netted within the day, and funds and securities are exchanged two working days later.

There has been much discussion about the move to 'straight through processing' (STP), and then a shortening to a T+1 settlement system. These are difficult areas to obtain progress in, particularly given the antiquated payments infrastructure. In restricted ways, some finance companies are able to offer customers completely integrated Internet trading facilities. These involve frictionless integration of trading system access, funds transfers and depository instructions, and deliver on the objectives of STP on a modest scale.

The transactions costs imposed by the equity market infrastructure in India are modest, by international standards. India is in a fairly remarkable situation in that the largest exchange (NSE) has a transaction intensity of around 2 million trades per day, which is comparable with that of the largest exchange in the world (NASDAQ). At the same time, NSE has a much smaller revenue stream in terms of fees per transaction. The challenge ahead lies in continually dropping costs based on exploiting new technology, and scale economies.

One of the most important tools for achieving these cost reductions could be a globalisation effort of the securities infrastructure. If the core institutions of the equity market play a greater role in securities markets outside India, and are thus exposed to greater international competition, this would produce better incentives for technological improvements and high levels of efficiency, which would feedback into the Indian market.

7.2.2 The payments system

As emphasised above, the biggest bottleneck faced by the securities industry today is the antiquated payments system. The transactions costs faced in doing the most elementary financial transaction (movement of funds) are onerous, and have an impact upon efficiency in the country which go well beyond the financial sector.

RBI has made attempts at improving these systems for many years. Important improvements in the payments system are believed to be around the corner. At the same time, on the ground right now, there is a striking contrast between our ability to use the Internet to transfer shares, from across the country, but our inability to undertake a comparable transaction for INR.

There may be much merit in attempting to deal with the problem of the payments system through multiple avenues. Some examples of small efforts in improving payments can be

offered here:

- One small electronic system can easily do real-time settlement between the clearing banks of the equity market.
- There may be a much bigger role for the Post Office Savings Bank, which has had much success in introducing modern IT into the processing of money orders. This effort could grow into a 'giro' system, as is prevalent in many countries.
- The NSDL system already does settlement for securities, it could additionally do settlement for funds.

Through these multiple initiatives, we may find many new ideas, new synergies, and obtain progress on improving the payments infrastructure.

7.2.3 Fixed income, currencies, commodities

In the the fixed-income, currency and commodity markets, there has been relatively little accomplished in terms of moving from informal trading relationships towards market institutions. Through the decade of the 1990s, there were considerable efforts in reform in these markets. However, they have failed to yield results in the form of public, transparent markets, with active trading, nationwide price discovery, etc.

In all three markets, today, trading takes place bilaterally, without anonymity. The search for a counterparty is labour intensive, there is no best-price guarantee through a computer system which matches orders, there is the possibility of strategic behaviour by market participants, and there are the consequential difficulties of supervision.

Commodity markets have made significant progress in establishing some physical floors and some electronic exchanges. The commodities regulator, FMC, has made much progress in policy analysis, and has squarely argued in favour of moving away from OTC trading to trading on exchanges. However, as of yet, the bulk of the market remains an inefficient and non-transparent OTC market, similar to the fixed income and currency markets.

The Clearing Corporation of India (CCIL) is an attempt at improving post-trade mechanisms on the fixed income and currency markets. It has had a significant impact in terms of reducing transactions costs for fixed income settlement. CCIL is a pioneer, by world standards, in delivering netting efficiency on the currency market. However, it faces two problems: the use of DVP-2 (where netting does not take place on securities), and the inability to admit new market participants.

The essence of the idea of a clearing corporation is to widen market access by offering credit enhancement, and thus bringing in new firms into the market who were previously considered poor credit. As of today, CCIL is restricted to the existing members of the 'club' of bond market participants. The opportunity for greatly expanding market access by using a clearing corporation has not been harnessed.

The post-trade systems of the fixed-income market are a striking contrast with those seen on the equity market. The depository run by RBI (SGL) has many technical infirmities when compared with the functionality offered by NSDL and CDSL. The equity market has millions of participants, and routinely processes over a million trades a day. The fixed income market offers inferior transaction processing, while facing a tiny fraction of this throughput.

NSDL today holds dematerialised balances in 3,000 securities and supports buy/sell transactions in all of them for 4 million investors.

It is possible to break new ground in lowering transactions costs by having one additional security, “the Indian rupee”, at NSDL, where balances can be held in electronic form. This ‘security’ would have an ISIN, and the transaction flow for this security should proceed *exactly* as is presently the case for the securities. Using this, benefits to holders of shares or bonds (such as dividends, interest payments or principal payments on bonds) would be highly efficiently handled. The issuer of the security would make one high-value payment to NSDL, which would credit these to each individual security-owner. NSDL would hold all outstanding INR funds in an interest-free RBI current account.

Investors would be able to flexibly use these balances to either transfer them to an electronic bank, or to make payments for their securities transaction related functions.

This proposal eliminates the overheads and errors of billions of cheques per year, and drops the transactions costs associated with delivery of benefits to near-zero levels. In addition, it has an extremely useful side effect for the credit market. It allows a clear definition, and public disclosure, of default on the corporate bond market.

Every corporate bond has a clear schedule for paying interest and the principal. Once this system is implemented, NSDL would be able to monitor the compliance of the company in terms of actually effecting payments on time. NSDL would know that on date T , there are N bondholders who expect an interest payment of Rs.12 each, so that the company should give NSDL funds measuring to Rs.12 N on date T .

If the payment is delayed beyond date T , NSDL would issue a press release announcing the default after checking with the firm that the default was not inadvertent, and giving it a grace period of a few days to remedy the default.

Box 1: Better processing of interest and dividend payments

For some years, there have been efforts on improving liquidity and market efficiency on the fixed income market, by having GOI bond trading on stock exchanges. This would allow the fixed income market to harness the market design that has developed for equities. So far, the transparent exchange has not become a significant venue for bond market transactions.

The bullion market is a particularly important market, in India, which has also languished in informal market structures. There are many avenues through which modern institutions can be brought to bear upon trading of bullion also.

7.2.4 Other areas

This subsection has briefly touched upon opportunities for moving from informal market structures to formal market institutions, and harnessing modern technology. These are powerful tools for reducing transactions costs, and thus improving market efficiency.

There are many related areas where innovative use of technology can have a major impact on transactions costs. Box 1 offers one example, in the area of processing of benefits associated with securities.

7.3 Regulatory architecture

The issues discussed above constitute a formidable challenge for public policy. We now turn to the question of seeking a regulatory capacity which would be best equipped for attaining these goals.

1. *Reserve Bank of India (RBI)*
 - Monetary policy, the balance of payments.
 - Bond issuance for the government.
 - Supervision of some kinds of finance companies (banks, primary dealers).
 - Supervision of one kind of market design (OTC trading) for government bonds and currencies.
 - Operation of the payments system.
 - Operation of the depository for government bonds.
2. *Securities and Exchanges Board of India (SEBI)*
 - Supervision of one kind of market design (exchange trading) for securities, excluding derivatives based on commodities.
 - Supervision of some kinds of finance companies (mutual funds, brokerage firms).
3. *Insurance Regulation and Development Authority (IRDA)*
 - Supervision of one kind of finance company (insurance companies).
4. *Department of Company Affairs (DCA)*
 - Regulation of limited liability firms.
5. *Forward Markets Commission (FMC)*
 - Supervision of exchanges trading futures with one kind of underlying (commodities).
6. *CM division, Department of Company Affairs*
 - Operation of the 'HLCC' mechanism for inter-agency coordination.

Box 2: Financial regulation in India today

At the simplest, there has been considerable criticism of existing regulatory agencies, and there is certainly a need to sharply upgrade the human capacities found in these agencies. Given the accelerating pace of introduction of new technology and new ideas into finance, the gap between the skills found in private sector finance versus that found at RBI, SEBI etc. is growing.⁷ This constitutes a fundamental problem in Indian finance. This requires basic institutional reforms on the human resource policies of each of these agencies.

However, going beyond the *implementation* problems of each regulator, there appear to also be problems at the level of *architecture*.

Today, the regulation of firms and markets in India is composed of numerous agencies. Box 2 summarises the names of the entities, and the *functions* they currently perform. In the interests of brevity, numerous functions that are also placed in these agencies have not been listed.

The choice of what functions are placed in what agency has typically been made many decades ago, well before the rise of modern finance in India. If a *de novo* design effort was undertaken today, many of these choices would be made very differently. It is important to begin an analysis of these questions.

In many cases, these architectural design choices are embedded in Acts of Parliament which came about many decades ago. One example of this is the regulatory framework for commodity futures, which is embedded in the Forward Contracts Regulation Act (1956), and enshrines the lack of unity between derivatives on financials as opposed to derivatives on

⁷One interesting litmus test which highlights the difficulties of human capital with RBI and SEBI lies with certification examinations. There are two major certification alternatives today in the financial sector, NCFM (from NSE) and FRM (from GARP). The incidence of certified individuals at RBI or SEBI is near zero. This is in contrast with regulated entities, where tens of thousands of individuals have obtained certifications.

commodities.

In other cases, there are functions which have been done in a certain way in previous decades, but architectural changes can be achieved without requiring legal changes. One example of this is found with the trading system and settlement functions of the bond market, which are presently placed inside RBI. There is increasing clarity that securities infrastructure is best placed outside of government. The clearing function for the OTC bond market is already outside RBI, at CCIL. The trading system (NDS) and the settlement system (SGL) can also benefit from a similar movement.

7.3.1 Difficulties

This fragmented structure of regulation, and the turf conflicts that go along with it, has led to many infirmities in financial sector development. Some example of these difficulties are as follows.

Overheads of pension regulation The pension sector consists of an accumulation phase – where pension funds are exactly like mutual funds – and a benefits phase, where pensioners are customers of insurance companies. Under the current regulatory regime, the logical path is to have regulation of the pension sector under SEBI, until a worker reaches retirement, at which point he becomes the customer of an insurance company (which is regulated by IRDA). This generates a potential for turf conflicts, and requires a sound design of the regulatory interface.

Difficulties in enforcement In many episodes of market malpractice in the recent decade, there has been a need to combine information from banks, securities firms and listed firms in putting together the full picture. This has been limited by the fact that banks are regulated by RBI, securities firms by SEBI, and firms by DCA.

Hurdles faced by exchange-trading Anonymous, electronic trading on an organised financial exchange is perhaps the most efficient method of organising markets, and goes along with high transparency and an ease of market supervision. However, securities exchanges are regulated by SEBI. This has led to regulatory conflicts in the adoption of exchange-trading on interest-rate and currency markets.

Anti-competitive policies A core goal of economic policy should be to have vibrant, competitive markets, where weak products and firms are rapidly displaced by superior products and firms.

As an example, internationally, Money Market Mutual Funds (MMMFs) are an important competitor to bank deposits. In many countries, MMMFs have access to the payments system, and hence offer customers cheque-books and ATM cards. This would make MMMFs, which are regulated by SEBI, competitors to bank deposits, which are regulated by RBI. In India, regulations have been drafted so as to block this possibility. A sound regulatory architecture should be one which is neutral between alternative technologies for production of goods and services.

Unutilised economies of scope The National Securities Clearing Corporation (NSCC) is a success story in the creation of a new kind of risk management institution - the clearing corporation. The National Securities Depository (NSDL) is a success story in the creation of a depository. However, the extent to which these institutions could be applied into the interest-rate and currency markets has been limited.

The exchange institutions of the securities markets could readily play a major role in trading of commodity futures, as is the case in many countries. However, securities exchanges are regulated by SEBI; hence the field of commodity futures is being developed through an entirely distinct set of exchanges, and the rapid flow of successful ideas and technology is not taking place.

One possible alternative architecture for financial regulation could envisage three classes of functions: (a) *Central banking*, which comprises monetary policy and the balance of payments, (b) *Government of India Treasury*, which focuses on the fund-raising and risk management of the government, and (c) *Regulation and supervision* of financial markets and firms in a single, integrated regulator, similar to the FSA of the UK. This would be achieved by the following changes:

Treasury management for GOI Bond issuance for the government, and a holistic risk management for the assets and liabilities of the government – both local and offshore – would belong in a Government of India Treasury which would report to the Ministry of Finance. These functions would move out of RBI.

A regulator of markets and companies The supervision of markets and companies would be unified into one agency. This would help yield a unified approach and obtain a level playing field between banks, mutual funds, insurance companies, pension funds, primary dealers, brokerage firms, etc. It would help obtain a level playing field between OTC and exchange-traded derivatives, or between commodity derivatives and equity derivatives. This new integrated regulator would combine functions of banking supervision, interest-rate markets and currency markets from RBI, and all the existing functions in SEBI, DCA, FMC and IRDA.

Monetary policy at the central bank Drawing upon our successes with securities infrastructure being efficiently handled by agencies outside government, the operations tasks of the payments system and the depository, which are currently inside RBI, could usefully move out into external agencies. This would allow RBI to become a focused central bank, with exclusive attention on core functions in monetary economics and the external sector.

This ‘FSA approach’ does seem to offer many advantages in dealing with the difficulties described in the text, when compared with the existing regulatory structure, which is spread across the five agencies. At the same time, it has flaws. The most important of these is the concentration of power in the unified finance regulator, which would pose significant governance challenges.

Box 3: The ‘FSA approach’ to Indian regulatory architecture

A two-tier approach can be taken, as follows:

Specific Regulators A structure with distinct regulators for insurance, pensions, etc. would be utilised.

System Supervisory Authority This would be charged with the following functions:

1. Directly monitor the 25 largest finance companies. This is based on the argument that the largest finance companies are likely to have activities spanning every regulator.
2. Monitor for overlapping areas, or for areas that fall between the jurisdiction of specific regulators.
3. Have ultimate responsibility for crisis management. This is based on the argument that important crises are always likely to span the activities of any one regulator.
4. Serve as a single-window clearance mechanism for any innovation that spills between two regulators. This is based on the need to avoid turf considerations which block innovation.

Box 4: Two-tier approach to Indian regulatory architecture

7.3.2 Alternative approaches

There is an urgent need for a full rethink of the architecture of regulation in India, comprising questions of redefinition of agencies and functions, and re-evaluating the role of the State as a systems operator for key financial infrastructure.

Two examples of alternative architectures are sketched here:

“FSA approach” In some countries, such as UK, there has been an effort to combine financial supervision into one agency (which is called the Financial Services Authority, or FSA, in the UK). Box 3 shows the implications of such an approach, applied to India.

Two-tier approach The existing agencies, one per sector, can be supplemented by a *System Supervisory Authority* with certain, sharply defined functions.

Regardless of the final form that is adopted, a fundamental reshaping of the architecture of financial regulation is long overdue. The reforms of the 1990s have given the financial sector a new primacy in shaping resource allocation in the country. At the same time, the architecture of regulation has been circumscribed by legislation which was drafted many decades ago, and a certain piecemeal creation of new institutions. There is an urgent need to embark upon rationalisation of regulatory architecture.

Box 3 or Box 4 are not offered as finished proposals; instead they are offered as examples of how alternative thought processes could yield extremely different designs when compared with what we have in India.

8 METRICS OF A HEALTHY FINANCIAL ECOSYSTEM

The financial sector is a complex set of contractual relationships, prices and products. What are the mechanisms through which we can measure the extent to which we have a sound and well-functioning financial sector? There is a need for quantitative, monitorable parameters using which the health of the financial sector can be judged.

Conventional measures such as the level of stock prices, or securities market turnover, or bank deposits, are unsatisfactory insofar as they reflect a combination of macro-economic outcomes and financial market quality.

8.1 Desirable features of metrics

Parsimony It is possible to have a very large number of measures. Myriad plausible alternatives can be proposed. However, anything more than a “one-page report card” will be incomprehensibly complicated, and will not achieve its purpose. The key issue is that of focusing upon a *few* useful and key ideas in the choice of metrics.

Reliance on public information The metrics should not make demands upon non-public information.

Complete objectivity The metrics should not rely on the opinions of a few people; they should be completely objective.

Focus upon the financial sector and not macroeconomics Conventional measures such as the level of stock prices, or securities market turnover, or bank deposits, are unsatisfactory insofar as they reflect a combination of macro-economic outcomes and financial market quality. Fluctuations in metrics should reflect developments in the financial sector and not in the macroeconomy.

Should not be easy to rig If a set of metrics gets well established, then there may be incentives in the system to focus on “obtaining a good score” instead of building a sound financial sector. We should have a “Project Tiger” approach, where obtaining a large headcount of tigers (the quantitative monitorable benchmark) innately involves having a sound underlying ecosystem.

8.2 Proposed metrics

In this section, we seek to isolate five tests which should be used as the key indicators of health in the Indian context.

The advantage of these five metrics of health is that each of them, in turn, depends on myriad issues in market design, errors of regulation, and motivations of participants. Hence, focusing on these five as litmus tests would effectively yield feedback on the progress obtained on these issues in the underlying web of relationships between markets, participants and regulators. It would also focus attention upon financial market *outcomes*, instead of the conventional focus on new policy measures.

These five metrics are summarised in Box 5, and described in greater detail in the following subsections.

1. *Is there sound stock market liquidity for the top 1000 firms?* By international standards, the top 1000 firms in India should enjoy turnover ratios of roughly 100%. In India today, the turnover ratio drops to roughly 15% for ranks 300 to 1000. This reflects an unhealthy concentration of liquidity in an extremely narrow set of firms.
2. *Are C rated bonds being issued and traded actively?* In India today, the corporate bond market is primarily accessible to firms with low failure probabilities. A well functioning credit market should offer market access (at appropriate prices) to a much larger range of firms.
3. *Do the stock price for the largest ten banks reflect distress?* The stock market is an effective tool for inferring the (unobserved) value of assets of a bank. It can be a valuable early warning tool, signalling banking distress.
4. *Do the derivatives markets satisfy no-arbitrage?* In India today, the currency and equity derivatives markets suffer from significant unexploited arbitrage opportunities. Measuring and monitoring the extent of market inefficiencies on these markets would be a window on the regulations governing the spot and derivatives markets, and the accumulation of human capital and IT systems amongst participants.
5. *How important is the private sector in the assets of banking, insurance and pensions?* This is a traditional measure of financial repression.

Box 5: Five litmus tests about the health of the financial sector

8.3 Dropoff of stock market liquidity for small firms

Table 3 showed that there is a sharp dropoff in stock market liquidity that we see in India, beyond the largest 300 firms. Firms of the same size as those found in India, from roughly rank 300 to rank 1000, are likely to obtain better liquidity on stock markets elsewhere in the world (such as NASDAQ). This has important allocational consequences, where small firms in India are facing a higher cost of equity capital.

Many sources of this sharp dropoff of liquidity outside the top 300 firms can be conjectured – including poor information disclosure, the difficulty in short-selling owing to the lack of a stock-lending facility, poor information processing on the part of poorly motivated finance firms, etc. However, from a policy perspective, this is one outcome which should be actively monitored.

8.4 The lack of a junk bond market

The corporate bond market in India is restricted to a small number of products which are deemed AA or AAA by the credit rating agencies. Bonds which are inferior to an AA credit tend to have no market - neither a primary nor a secondary market. Table 2 shows that corporate bonds, expressed as a fraction of total borrowing, drop from 25% for the top decile (by size) to below 10% for below-median companies.

This is inconsistent with economic principles and international experience. Bonds which are riskier than AA *should* command higher interest rates than those which are AA; however, it should be possible to issue and trade these bonds. Internationally, 'junk bonds' (which command extremely high rates of return) are a highly active market. A junk bond market does not exist in India.

Once again, many sources of this absence of a market can be conjectured: these include CAG/CVC monitoring of defaults for public sector finance companies, poor creditors rights and hence extremely low recovery rates after default, limited market confidence in credit

ratings, poor information disclosure, the lack of a liquid stock market for these very firms, errors in regulations for banks, pension funds, and insurance companies, etc.

This phenomenon has served to block off access to bond financing, for all but a few low-debt and low-risk companies. So the indicator we propose is the number of issues that, at issue, obtain a rating of below investment grade. The higher the number of such issues (correcting for economic conditions), the greater the access to financing in the Indian market.

8.5 Distress in the top 10 banks

Equity can be viewed as a call option on the underlying assets of the firm. Using option pricing theory, it is possible to obtain estimates of the value of assets of a firm using the observed stock price and stock volatility. Some recent evidence suggests that the stock market is considerably faster than credit rating agencies in its information processing (Thomas et al. 2002).

In the case of banks, this allows us to infer the market's expectations about the extent to which the assets of a bank are ahead of the liabilities (Laeven 2000, Shah & Thomas 2000).

Through this channel, daily data can be obtained for the health of each of the top 10 banks. This would lend itself to a transparent, continuous evaluation of the health of the banking system.

Banks may be vulnerable for numerous reasons, such as macro-economic distress, weak creditors rights, infirmities of regulation and supervision, etc. Monitoring signs of distress for the top 10 banks in the system, through this independent channel, would offer a simple summary statistic of the state of health of banking.

8.6 Market inefficiencies on derivatives markets

The fourth area which serves as a valuable litmus test about the behaviour of India's financial sector is the derivatives markets. Today, there are two areas where we have fairly liquid derivatives markets : currency and equity. In both these areas, it is easy to measure the extent to which market prices for derivatives diverge from those expected from theoretical models.

These deviations are failures of market efficiency. In an ideal, efficient market, a large pool of clever arbitrageurs should rapidly exploit every deviation from market efficiency, and thus produce prices which closely track those implied by theoretical models. However, in India, so far, this has proved to not be the case.

Many sources of this absence of a market can be conjectured: these include poor market design (in the case of currency), a lack of access to information feeds and low-level computer interfacing to the exchange (in the case of equity), regulatory strictures against arbitrage affecting banks and mutual funds, a lack of profit-orientation on the part of public sector finance companies who fail to step forward to exploit arbitrage opportunities, etc.

From a policy perspective, measuring market efficiency on the derivatives markets would serve as a test of the extent to which these flaws have been addressed. Further, until the derivatives markets enjoy a profuse participation of arbitrageurs, and enjoy high levels of

market efficiency, they cannot perform their function of supporting speculative and hedging activities of households and firms.

Why should a small set of metrics choose to focus upon market efficiency in derivatives but not on the spot market? The key reason is the complete objectivity and unambiguous understanding of derivatives arbitrage. If the Nifty spot deviated from “fair value” it is not possible to objectively know this (though there may be many plausible symptoms). In contrast, finance theory clearly pins down numerous measures of mispricing of options on Nifty or futures on Nifty. These can be measured without controversy. A market that is unable to do the (easy) work of arbitraging away mistakes in derivatives pricing is likely to face much more difficult problems in removing mispricings on the spot market.

8.7 Private assets as a fraction of total assets in banking, insurance and pensions

Insurance companies, banks and pension funds are often easy targets for governments seeking to augment their resources beyond tax revenues. Numerous facets of financial sector regulation can be distorted to disfavour private assets in the portfolios of these regulated entities.

Hence, measuring financial repression is an important part of obtaining metrics of the health of a financial system. This can be done by expressing private assets (loans, bonds or equity) as a fraction of the total assets under management in the banking, insurance and pension sectors. This would be a useful summary statistic reflecting the extent to which intermediated funds flow to the private sector in the economy.

9 CONCLUSION

The financial sector reforms of the last decade have often been responses to short-term problems. In this article, we have tried to refocus on the two fundamental issues in thinking about finance: *information processing* and *incentives*.

A sound financial system should ultimately be judged on sound information processing. In this paper, we have offered some proposals for metrics, which can be used to create a 'report card' about how the financial sector is faring, which is focused on these issues.

Information processing takes place well when economic agents have sound *incentives* for engaging in information processing. Every aspect of financial sector policy should be judged in terms of its impact upon the incentives of actors and the impact upon information processing.

Over the last 50 years, countries all over the world have increasingly come to rely on the arms length public securities markets as a tool for obtaining good information processing, owing to the good incentives that drive individuals and firms in these transparent, speculative markets. India has a sound foundation of institutional capacity and market design on the equity spot and derivatives markets. There is a large mass of economic agents which participate in these markets, who have a capacity for information processing and for risk-taking.

These markets will function much better when placed in a more conducive environment of information disclosure and well-designed regulation. These markets can be increasingly harnessed to perform numerous other roles in the system, and can play a role in solving many problems which are faced today.

There are considerable problems in the regulation of banks, insurance companies and pension funds. In these areas, there is a complex combination of problems including the moral hazard of government guarantees (implicit or explicit), public sector ownership, and a regulatory stance which stifles innovation, information processing and risk-taking. There is a need to initiate a broad range of initiatives in disentangling these problems of these three groups of finance companies, obtaining a sound regulatory architecture, and obtaining world class regulations and regulatory capacity.

Addressing these problems will improve systemic integrity, ease the fiscal problems of the centre, augment the flow of risk capital in the system, and improve information processing in the financial sector. In this paper, we have argued that disentangling these problems is closely related to the question of making the arms length securities markets function better, and exploiting their strengths in information processing and risk taking.

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