Background Report: Current Status of Risk Management in Indian Housing Finance Companies

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Background Report
for the
Workshop on Applied Risk Management

An important component of the Indo-US Housing Finance Expansion Program is the upgrading of the HFCs' capacity for measuring and managing the financial risks of home lending. There have been two phases of this effort so far: 1) a report by Professor Anthony Santomero in 1992 entitled "Risk Management in Times of Financial Liberalization" and 2) a Workshop on Risk Management for HFC executives in September 1993. The next step will be another workshop focused on applying the general principles examined in the first workshop to the specific circumstances of each HFC.

The purpose of this report is to provide Abt staff and consultants with the background information needed to maximize the effectiveness of the workshop. The report describes the current activities and operating environment of HFCs, as well as the past and present effect of NHB on the HFCs. It also provides case studies of the configurations of risk in various types of HFCs, based on interviews and data from selected HFCs.[1]

The outline of the report is as follows. The next section briefly examines the liberalization that financial markets are undergoing and draws the implications for developments in the real economy as well as financial institutions. The following section reviews the recent history of the housing finance sector and the role of NHB. It also highlights certain aspects of the situation that are particularly important or are peculiar to India.

The rest of the report discusses the nature of each financial risk in the Indian market and some of the practical options available for managing those risks. The discussion is supplemented with examples modeled on actual data from HFCs. These examples are intended to serve as starting points for the preparation of teaching materials for the workshop itself. In addition, there are suggestions as to approaches to be taken in the workshop to explain the issues and developing strategies.

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[1] The author wishes to thank the senior executives from the following HFCs for their thoughtful discussion of trends in the marketplace and in their businesses: CanFin Homes, Dewan HFL, GRUH, HDFC, LICHFL, Saya HFL, SBIHFL, and Vysya Bank HFL. Peerless Abasan Finance LTD., a major HFC not yet "recognized" by NHB, was also contacted.

Liberalization and the HFC Sector

The 1992 report by Santomero, "Risk Management in Times of Financial Liberalization," provides an excellent overview of the nature and impact of the on-going liberalization process. This report will only highlight certain aspects of the process and note recent developments in the area.

As Santomero notes, liberalization will imply that uncertainty of all sorts will increase. The fortunes of whole sectors and individual companies or institutions will experience large swings as competitive pressures increase and government enterprises are privatized. This will mean greater frequency of unemployment, greater uncertainty of wage growth for HFC borrowers, greater swings in real house prices, and thus greater credit risk for HFCs.

Interest rates will be more sensitive to market pressures and government monetary policy will work through interest rates to provide indirect control over the pace of economic activity. Swings in public expectations for inflation or economic uncertainty will also influence interest rates. Consequently, HFCs will have to actively manage their exposure to such swings.

The higher volatility within the real sector and in financial markets will also pose new possibilities for liquidity shortfalls. In fact, the greater presence of private financial institutions carries with it the greater potential for loss of confidence in one or all such institutions. Liquidity management becomes another critical task of HFC management.

The risks of failure of staff or management to follow procedures or to perpetrate fraud are present in both a controlled and a liberalized financial market. However, the stakes tend to be much greater in a liberalized environment, simply because all markets (money market, stock market, foreign exchange) are much more volatile. At the same time, because the market conditions can change that much more rapidly, management has to be given more discretion and flexibility in responding. The issue of operational risk will need attention, in addition to credit, interest rate and liquidity risk.

The other challenge that is posed by liberalization is the need to constantly re-evaluate the funding options of the HFC and the pricing and specifics of the product being offered. Especially during the transition to a open, competitive financial market, these operational parameters will change frequently. For example, the eligibility for and terms on NHB refinance have evolved significantly over the last five years, as has the ability to take deposits and the market conditions for doing so. Each of these twists and turns in the market has to be at least responded to, if not anticipated.

Most of these impacts of liberalization are still just beyond the horizon, especially massive closures of "sick" public sector components, major restructuring at state-owned banks and other financial institutions, operation of monetary policy solely through interest rates, and truly major swings in interest rates and employment. However, India has already completed a cycle where the yield curve became inverted, growth slowed, the stock market collapsed, and this whole sequence successfully reversed itself.

Next on the horizon is the appearance of major new private banks, recapitalization of government banks, and perhaps privatization of government banks. Already a formal deposit insurance scheme has been introduced to level the playing field for private banks (but not HFCs). Bankers of all sorts continue to have more funds available for discretionary investment and to face greater scrutiny on non-performing assets. Private sector borrowers are developing new means of tapping financial markets, including issuing securities overseas. Joint ventures with multi-national companies and privatization of profitable public sector enterprises continues apace.[2]

HFCs, NHB, and Housing Finance in India

Early History[3]

Even before there were any specialized retail housing finance institutions in India, there were significant amounts of formal sector housing finance going on. The major lenders were the Life Insurance Company (LIC), the banks, and the Housing and Urban Development Corporation (HUDCO). Both LIC and the banks had their own resources, while HUDCO benefitted from funds channelled to it from those entities and other institutions. None of these lenders experienced free competition on either side of their market, i.e., raising funds or making loans.

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[2] One of the implications of all these changes going on in the financial sector is that the comparative advantages of HFCs in funding, originating, and servicing housing loans could change, perhaps abruptly. For example, commercial banks could probably, in a deregulated environment, offer variable rate housing loans at rates lower than what HFCs could offer for variable or fixed rate loans, because of their access to shorter-term deposits and to deposit insurance. This suggests that perhaps HFCs should be able to take shorter-term deposits and enjoy deposit insurance. All of these issues revolve around providing a level playing field for financial institutions, a very difficult task in a liberalizing financial system.

[3] This section derives primarily from Diamond (1993).

The Housing Development Finance Corporation (HDFC) was set up in 1977 as a specialized private sector retail lender (but with GOI sponsorship) to marshall additional funds for the sector and to operate in a more market-oriented fashion. Over the next ten years, HDFC grew to be the largest single direct lender for housing. In the process, it aggressively developed a wide variety of funding sources, ranging from pools of directed credit available from LIC, banks, and other institutions, to corporate and household deposits; bonds marketed to trusts; World Bank, USAID, and other foreign-sponsored borrowing; and even a contract-savings plan, as well as major equity infusions. The mix of resources changed with changing opportunities, but by March 1989, over half of the outstanding funding was from non-directed, market-rate sources.

In principle, HDFC could have blended all of these funds together and offered mortgage funds at some mark-up over its average cost of funds. However, the practice in the government-directed part of the financial sector was to offer smaller borrowers, probably with less income and wealth, a substantially lower rate than for large loans. HDFC adopted such an approach, presumably to ensure continuing access to non-market sources of funds and to build political support for its activities.

By the mid-1980s, there were at least three forces towards the establishment of additional housing finance companies (HFCs). First and foremost, HDFC had shown that the business could be very profitable. Secondly, the middle-class market for housing and housing finance were growing rapidly. Third, government policy was beginning to lean towards the expansion of credit for housing.

Thus, eight of the seventeen HFCs recognized by NHB today were started between 1984 and 1988, when the National Housing Bank (NHB) was set up. Many other HFCs opened their doors, some of them affiliated with real estate development companies. The situation called for some greater degree of regulation and orderly development of what could be a very risky or even fraudulent business. In addition, GOI and USAID policy favored systematic promotion and support for specialized, market-oriented housing finance institutions. NHB was started in July 1988 to perform these and other functions.

Even today, much housing finance is still originated through HUDCO or the many state or local housing boards, as well as through the scheduled banks and the Life Insurance Corporation (LIC). However, NHB does oversee, regulate, and promote the largest group of specialized housing lenders, the HFCs recognized by

NHB.[4] Total lending for housing by these NHB-recognized HFCs initially grew dramatically after 1988. For the HFC fiscal year ended March 1989, only Rs. 276 crores in loans were originated by this group. (Only ten were in full operation at the time, and HDFC originated over 90 percent of the total.) By the end of the next year, the volume of loans originated had nearly doubled to Rs. 598 crores, mostly due to growth in the same companies. Growth continued through March 1992, with now all seventeen institutions originating Rs. 1198 crores, double again the origination of 1989-90 and with HDFC handling only about half.

These recognized HFCs clearly form the largest single sub-sector of the formal housing finance sector, especially since LIC has shifted most of its home lending activities to the LICHFL since 1989. For 1993-94, they probably originated over Rs. 200 crores in loans to households, corporate bodies, or for development. While the top four HFCs probably do over 75 percent of the business, HDFC no longer has the majority to itself.

In theory, NHB could have emphasized its role as regulator of the HFC industry. In addition to defining and monitoring fiscal soundness, this function could include activity as a lender-of-last-resort, providing short-term liquidity to even out supply and demand of funds for individual HFCs, especially in case of deposit withdrawals. NHB could have also developed a role as promoter of the system by making available long-term market-rate funding to smaller HFCs which could not otherwise tap the market on favorable terms. However, the modern Indian financial system has a tradition of creating refinance facilities with access to below-market funds to channel to favored sectors. So, below-market refinance was the approach adopted by NHB in 1989, to both promote housing as well as housing finance. In keeping with the Indian practice of regulating and cross-subsidizing interest rates, NHB adopted a sliding-scale rate structure for the HFC industry as well.

The initial designs of the refinance program proved to be too restrictive. Demand was less than the supply of funds, both because of the size constraint on the unit, and because of the limitation of the amount refinanced to only Rs. 50,000. Moreover, a potentially major user of the refinance, the banking sector, did not take much interest in the refinance activity of NHB.

Not only was the demand for refinance low, but the interest rate structure being enforced by NHB was unprofitable to the newer HFCs for those smaller loans

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[4] Some categorization of housing finance institutions include HUDCO as an HFC. However, in this report, HUDCO is treated as an entity whose primary focus is not housing finance to individual households and thus is not covered by the term "housing finance company" (HFC).

not eligible for refinance. Given the cost to HFCs of raising market rate funds, they could not afford to make smaller loans unless refinanced by NHB.

As a result of these considerations, NHB substantially liberalized the direct refinance program in March 1990, retroactive to January 1, 1990. It expanded the loan amount to be refinanced on a small (i.e., less than 40 square meters) urban unit to Rs. 200,000 and permitted refinance on up to Rs. 100,000 for larger units located anywhere and costing less than Rs. 150,000. As of January 1, 1992, the price limit had been raised to Rs. 200,000 and the refinance rate set at 100 percent. In addition, the spread to the HFCs was expanded to 2.0 percent for loans up to Rs. 50,000 and 1.5 percent for larger loans.

These modifications had a dramatic effect on the level of NHB refinance activity and on the HFC industry. Demand for refinance expanded rapidly in 1990-91 and 199 92. This expansion reflected the greater share of HFC lending eligible for refinance, the general growth in housing lending, and the substitution of lending by LICHFL for lending previously done by LIC directly and thus not subject to refinance. It also reflected the fact that, under the more liberal terms, an HFC could profitably cater to those portions of the market subject to refinance and not have to raise funds in the market. This permitted rapid expansion in lending by several HFCs catering to those borrowers eligible for refinance.

Housing Finance Since 1992

No sooner had the industry adjusted to the upsurge in interest in opening HFCs and using NHB refinance than the operating environment changed. Interest rates rose in 1992, dampening demand for mortgage lending. The spread of HFC branches throughout the country had pretty much saturated the easily tapped urban markets. And the continuing phasing out of directed credit reduced NHB's below-market funding, which was the basis for its ability to both require HFCs to make many loans at below market rates and simultaneously to offer to refinance many of those below-market loans at an attractive spread.

As noted in Diamond (1989), the requirement that HFCs cross-subsidize smaller borrowers would not be sustainable in a liberalized marketplace (unless backed-up by liberal refinance). It was foreseen that new entrants into the market would undercut the market interest rates on larger loans by specializing in such lending, thereby avoiding the burden of the low-rate on smaller loans. However, refinance was subsequently liberalized to such an extent that the amount of cross-subsidy was minimal and rates on larger loans were essentially market rates, not above-market. Since 1992, though, NHB's access to below-market funding for its refinance program has declined steadily. The net available annual funding peaked in 1991-92 at Rs. 688 crores, declined to less than Rs. 400 crs in 1992-93, and is expected to decline further in 1993-94. Actual incremental refinancings have not declined as steeply, because invested funds have been drawn down.

Moreover, the cost of funds to NHB has also risen, both because the flow of funds from the most subsidized sources has ended and because the degree of subsidy derived from other sources has declined. The average cost of new funds has risen from 8.8 percent in 1988-89 to 11.4 percent in 1991-92 and an estimated 13.0 percent in 1993-94.

Another consideration for NHB has been the growing demand for its refinance of Land Development and Shelter Project (LDSP) loans, which are primarily made by banks and HFCs to state and local development authorities. NHB has made commitments to refinance over 500 crores of LDSP loans and these commitments are starting to come to fruition. As LDSP funding grows, the funds available for home purchase loans declines.

Perhaps as a result of these trends, or for other reasons, NHB chose, as of August, 1993, to sharply truncate its activities as a source of refinance and as a shaper of interest rates. It did this through three separate actions. First, it limited HFC refinance to no more than 60 percent of the HFC's outstanding loan portfolio. As of 1993-94, this rule could potentially have affected ABHFL, Dewan HFL, GRUH, and India HFL.

Second, the refinance rate was raised from the range of 13 to 14 percent for loans between Rs. 25,000 and Rs. 100,000 (the bulk of the refinance market) to a flat 14.75 percent, and NHB reduced the spread permitted on refinanced loans larger than Rs. 25,000 to 1.25 percentage points from 1.5 percent. It was concluded in Diamond (1989) that a gross interest spread of at least 1.50 percent is probably needed to provide an attractive return to shareholders when the HFCs gearing ratio is less than 10.

Whatever the spread on NHB refinance, the actual market spread at the moment appears to be greater than 1.25 percent. That is, the larger HFCs are able to raise funds at an all-in cost of less than 14.75 percent and originate loans at 16 percent or more. Thus, most HFCs have cut back sharply on their usage of NHB refinance. A preliminary estimate of the usage for 1993-94 is for about Rs. 100 crores for HFC refinance (as opposed to LDSP or HUDCO loans), in contrast to Rs. 377 crores in 1991-92 and Rs. 289 crores in 1992-93. This would be much less than 10 percent of the funding being lent by the sector for loans to individual households.

The third element of NHB's disengagement from rate-setting was permission to the HFCs to charge whatever rate they desired on loans that are not refinanceable (eligible for refinance), whatever the size of the loans. (This had already been done on loans larger than Rs. 100,000, and was being done for small loans in practice by some HFCs, despite the NHB rules.) Those loans that do not qualify for refinance, combined with those loans that qualify but which exceed Rs. 100,000, certainly constitute a majority of all loans and probably 80 percent or more of all funding. Essentially interest rates in the sector are now de-regulated.[5]

At the same time NHB is moving to deregulate lending rates, it is taking more interest in regulating and supervising the HFC sector. Building on two earlier reports done for USAID by Dr. James Croft, NHB is close to implementing a system of measures of financial and operating risks designed primarily to protect depositors from failure of the institution. The effectiveness of the system to be actually adopted, both in design and implementation, of course remains untested.

Another important joint goal of NHB and the Indo-US Housing Finance Expansion Program is the creation of some kind of mechanism for accessing funding from the financial markets on a wholesale basis, commonly called a secondary market mechanism. Such a mechanism will probably mean HFC's having regular access to funds at a higher cost than currently, particularly compared to deposits. But there would be no interest rate risk involved (depending on the prepayment provisions). This may bring the question of interest rate risk sharply into focus, as HFCs face a choice of avoiding the risk at some, probably significant, cost in yield.

Credit Risks for Home Lending in India

Introduction

Managing the credit risk on housing loans in India is somewhat different from in the U.S., closer to the situation in Europe, and vastly better than in many developing countries. Essentially, the first lien on a home provides the basis of a legal threat to the peace and quiet, and ultimately even the occupancy of the

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[5] As of April 1994, most of the rate structure for refinance was lowered by 0.50 percent; the current rate structure is as follows for loans eligible for refinance:

Rs. 0	-	25,000	12.0%
25,001	-	100,000	15.5% (Maximum)
100,001 +	-		No maximum or minimum

home, of the recalcitrant borrower. But, it is the last line of attack for recovery of the loan, primarily because of the delays associated with both foreclosure and the subsequent eviction process.

The underwriting situation is compounded by difficulties in appraising the market value of some homes, particularly those in rural areas and those being self-built. Moreover, the presence of significant stamp duties (3 to 17 percent, depending on the state) deter HFCs from even registering their lien against the property, at least until repayment difficulties arise, and a court suit is going to be pursued. The net result of these considerations is a relatively low official limit on the ratio of loan to value (LTV) (or cost) of the unit, usually only 60 to 70 percent at most HFCs. In practice, though, nearly all LTVs are 40 percent or less because 1) low provable incomes and high interest rates that limit borrowing capacity, and 2) the market value of the home is understated because of high stamp duties and involvement of "black money" (unreported income) in the purchase.

In fact, it appears from interviews with the HFCs that the payment-to-income ratio (PTI), not the LTV, is 1) the major constraint on the ability to borrow, 2) a major marketing tool, and 3) a major determinant of repayment difficulties. All of this makes sense in an environment where home loans are effectively a form of unsecured personal lending, house prices are up to ten times (reported) annual income, and interest rates are 14 to 16 percent due to ongoing inflation of 8 to 10 percent.

Complicating the situation further is the importance of gray or black incomes, i.e., undocumented, irregular, and unreported. Even doctors and lawyers, as well as ordinary businessmen and small shop-owners, receive undocumented and unreported income.[6] Regular salaried workers may have irregular sources of income, either from a spouse, side jobs, or simply corruption. Some lenders have complex procedures for attempting to verify this income, or permit branch manager discretion in accepting claims of such "unprovable" income. Many lenders implicitly accept the presence of such income by using high payment-to-income (PTI) ratios for loan underwriting (up to 40 percent normally and even to 50 percent in cases of sufficient documentation of unreported income).[7]

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[6] Not all of this non-reporting is illegal. The threshold level for the payment of income taxes is quite high, so that the great majority of moderate-income non-salaried workers would not be required to report their income anyway.

[7] It appears that the common terminology is "installment-to-income" ratio (although ITI does not seem to be used as an acronym).

As in some European countries with difficult foreclosure and eviction, a major focus of underwriting (commonly referred to as "appraising" the loan) is the income and credit habits of the borrower. Unfortunately, credit bureaus do not exist currently in India. Attempts to lend to self-employed borrowers, outside the environment of the tenured employment that is a hallmark of government, government-related, and even private sector employment, have usually brought on recovery difficulties, or, at a minimum, have suffered from much higher servicing costs due to irregularity of repayments. Nor have attempts to implement a contract-savings scheme or some other "screening" device for judging credit-worthiness met with much success.

While regularity of income and reliability of income data are keys to regular repayment, the basis of collection activity is often the presence of one or more personal guarantors. Most HFCs require such guarantors in most cases, and the guarantors must meet some standards of respectability and reliability themselves. But it is actually not the fiscal solvency of the guarantors that is critical, but rather their ability to apply social pressure on the borrower. Only in extreme cases would the guarantors be called upon to rescue a borrower from dire financial straits. However, the legal basis for pursuing the guarantors is no stronger than for pursuing the borrower.[8]

Monitoring and Management of Credit Risk

Most of the HFCs appear to focus on the amount of Equated Monthly Installments (EMIs) overdue as their measure of recovery difficulties. This practice is reflected in NHB's requirement that, to be eligible for refinance, HFCs must limit their EMIs overdue more than 90 days to less than 5 percent of annual EMIs. The advantage of focusing on EMIs overdue is that it is more indicative of cash-flow difficulties. However, it does not directly convey useful information as to what share of loans have repayment problems.

It is important for outside observers to become fully familiar with the EMI method of tracking delinquencies. The system starts with an unlikely denominator, the total EMIs due for twelve months on those loans outstanding one year earlier than the current period. In other words, the rate for March 1994 is based on the EMIs on those loans outstanding in March 1993, multiplied by 12. (At least one HFC also adds in all overdue EMIs to this figure. (It is not clear that this is required

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[8] One of the special legal bases for pursuing a borrower is to demand the presentation of post-dated checks for the payments for the first year or more. Then, if a check is not covered at time of presentation, the borrower can be pursued for check fraud.

or appropriate.]) The numerator is the amount of EMIs not yet paid at the present time for whatever the delinquency period is. If the delinquency period is three months, then only those EMIs that are overdue by more than three months are counted (not all EMIs outstanding on these delinquent loans overdue by more than three months). Thus a loan that had gone six months without repayment would have three EMIs overdue by more than 90 days. If it were the only loan in the portfolio, the 90 day delinquency rate for that portfolio would be 25 percent (3 EMIs out of 12 EMIs for the year).

The correspondence between an EMI delinquency rate and a "principal outstanding" rate depends heavily on the average period of delinquency for the relevant group of loans. If 5 percent of a portfolio of equal-size loans is overdue more than 90 days and on average 6 months, then one-fourth of the annual EMIs on those loans are overdue more than 90 days. The overall rate for EMIs overdue more than 90 days would be one-fourth times 5 percent or 1.25 percent. However, if these same loans are on average overdue by 9 months, the average overdue loans have six EMIs overdue more than 90 days. The 90 day delinquency rate (as a percent of EMIs due for twelve months) would be 5 percent times one-half or 2.5 percent. In general, the delinquency rate as measured by principal on overdue loans will be twice or more higher than the rate measured by the EMI method. Thus the 5 percent figure set by NHB for 90-day delinquencies could easily correspond to a 10 percent or higher figure for principal on overdue loans, as long as the average period of delinquency is less than 9 months.

Some of the HFCs additionally calculate delinquency statistics in terms of the amount of principal outstanding on loans by period of delinquency. Even those that do not follow this practice say that their MIS is capable of doing so.[9] The advantage of looking at principal outstanding is that it conveys information directly about how common the problem is. Another reason to do so is as a measure of the connection to potential loss upon disposition of the property. However, HFCs do not connect delinquency with foreclosure and disposition. Rather, they view the overdue EMIs as the problem, independent of principal outstanding. The response to delinquency is to reduce this pool of EMIs overdue through any means, not to foreclose or provision for loss.

At this point in the development of housing finance in India, it is difficult to argue with this perspective. The loan-to-value ratio on new loans is usually less than 40 percent and the ongoing rates of inflation are rapidly increasing the

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[9] At least two HFCs gave contradictory indications with respect to the capabilities of their MIS. It appears that they were reluctant to disclose the "principal outstanding" data because the rates would be much higher than the range of numbers usually seen with the EMI ratio figure.

collateral coverage on a given loan. Because of this,and in the absence of regulatory or accounting requirements, no HFC appears to have written off any portion of a regular home loan.[10] Essentially, the presence of a large number of overdue EMIs on a loan is not viewed as making eventual repayment of the loan "doubtful," just more difficult and perhaps jeopardizing the full recovery of the interest.

Whether looking at EMIs or principal of loans in arrears, there are also issues of what is an unacceptable degree of delinquency. Most HFCs feel that some irregularity of repayment is acceptable, and they indicate that 10 percent or more of their borrowers are reported one month or more in arrears, either because of late payment or delayed receipt and recordation of the payment. In case of longer overdues, the primary concern is to get the borrower back on a regular repayment schedule rather than to collect arrearages or penalties. Some HFCs appear to routinely waive the penalties and will reschedule loans if the arrearages are too significant. Others say that they scrupulously charge for all collection costs and seek to collect them.

These practices reflect a widespread perception that the borrower and lender are locked into a long-term relationship that will not end until the loan plus accrued interest is repaid. This perception appears to be held by most borrowers also, who do not seriously consider the option of simply not repaying the loan ever.[11] (The obverse of this observation is also true; some loans are fully prepaid as soon as circumstances permit. See below on prepayment risks.) Fortunately, most borrowers do not seem to perceive that they are in a strong bargaining position. This perception is probably reinforced by the absence of consumer protection laws regulating creditor contact with the borrower. One HFC admitted that its collection efforts on longer-term delinquencies consisted primarily of intimidation and implied coercion (applied by outside "collection agencies.")

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[10] One HFC reported that it followed a policy of taking as a loss 40 percent of the interest (not principal) overdue by more than 12 months, plus writing-off half of all interest due on loans on which a court proceeding had been started (4 loans). Otherwise, all overdues are treated as income under the accrual accounting system.

[11] HFCs report that borrowers in some areas of the country, especially those who have experienced forgiveness of loans from government-related entities in the past, exhibit substantially worse repayment attitudes. This includes rural areas, where recovery on agricultural loans is notoriously poor, and areas where socialist ideology is more pervasive. Many HFCs respond by keeping a low exposure in these areas.

Management of credit risk takes two forms. First, HFCs have various policies for contacting the borrower as soon as he becomes delinquent. The managing director of one small HFC personally calls all delinquent borrowers immediately (and credits his zero percent delinquency rate beyond 90 days to this practice). All HFCs at least send an overdue notice. The second stage is to contact the borrower in person, usually after 90 or 180 days. If this fails, the HFC gets serious with a delinquent borrower, by contacting the guarantors. In most cases, this approach is successful. The HFCs reported that they have very few cases of delinquency extending more than one year (but there is also fragmentary evidence that this is not true). This latter measurement point seems to be taken as the indicator that they have a truly serious recovery problem with which to contend.

Despite their expectation that all loans will be fully recovered eventually, HFCs do care about delinquencies. This appears to be primarily because of the higher cost of servicing such loans, with only a minor concern about liquidity and cash flow. There is no information on the specific costs of pursuing recovery in such cases, but it is almost certainly relatively expensive once personal contact with the borrower or the guarantors is required. There may also be a concern that if delinquencies were ever to reach too high a level, the borrowers might decide that the "Emperor has no clothes on," i.e., the lender is actually incapable of enforcing repayment.

Because of these concerns, all of the lenders appear to take delinquency seriously and revise their marketing and underwriting standards accordingly. Most HFCs report that they analyze their delinquencies for patterns of delinquencies, whether by region, by urbaness of the area, by type of borrower (e.g., self-employed), by age of borrower, or by underwriting ratios. Notably, most HFCs have made adjustments in their marketing, underwriting, or approval mechanisms in response to rising delinquencies on loans made during the boom years of 1990 to 1992. Some attribute the slowdown in loan growth in the last two years to this process of tightening underwriting standards and processes.

Current Risk Levels

With the information currently provided by the HFCs, it is not possible to derive reliable and comparable numbers on current levels of delinquencies at all HFCs. As a generalization, though, the rates are higher than might be expected and rising among most if not all of the HFCs.[12] They seem to be higher than

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[12] The major exception is among loans to corporate bodies or for project development. Such loans are rarely reported to be overdue. This may be because

anyone will admit publicly. In fact, in some cases they are probably in excess of NHB's standard for maintaining access to refinance (5 percent of annual EMIs), a standard that seems ex ante very liberal.

The author made rough estimates of the delinquency rates for several HFCs, as measured by the share of principal associated with overdue loans and/or by the share of annualized EMIs that are delinquent. Most of the estimates are rough because of omissions, errors, and distortions in the various surveys and reports used to compile the data. Thus they can be viewed only as best guesses of the true situation. These data issues are of one or more of the following types:

1) No data on principal outstanding on delinquent loans.

2) No EMI data available at all, or no usable data on the annualized EMI due (which is the proper denominator to be matched with amounts of EMI overdue).

3) Data on principal outstanding includes "pre-EMI" loans, i.e., loans in the process of being disbursed as the house is completed. Interest is due on such loans and is presumably paid, since the borrower wants to receive the rest of his loan. But such loans should not be included in the denominator until they enter "EMI status."

4) Not a clear basis for calculating delinquencies solely on loans to individuals; loans to corporations or for construction are mixed in and can not be separated properly.

5) Data was reported according to some mis-reading of the question and in such a manner that it cannot be re-formulated. For example, the "principal portion" of the overdue EMIs (i.e., a very small number) was reported in response to the question about "principal outstanding" on overdue loans.

6) Data are strongly distorted by the extreme "youth" of most of the loan portfolio.

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such borrowers are really more reliable or it may be because of a practice of seeking interest payments only for the first two to three years of a project and then EMIs only thereafter. It may be that delinquent interest payments are not reported, since the report covers only delinquent EMIs. One currently would have to conclude from available reported data that those HFCs specializing in construction lending (viewed as being risky in the U.S. context) have the lowest credit problems.

There were three sources of delinquency data. The starting point was the responses to a mail survey conducted by Abt in November, 1993 seeking delinquency rates for 30, 60, and 90 days as of 31 March, 1993, based on principal outstanding. Most responses to this survey were not usable, for one of the reasons noted above. The second step was to utilize the data provided to NHB in the half-yearly reports for the periods ending 3/92 and 9/92 and cleaned up and compiled by Abt in March 1993. NHB asks for the data both for principal outstanding and for EMIs overdue, but does not ensure completeness or correctness of the reports. The third step was to directly ask for data or at least general estimates during visits in March, 1994.

The fragmentary data permits several important generalizations about credit risk for the HFCs. First, some data available for delinquencies recorded after 30 days confirms that some small delays in payment receipt or recording are very common. Several HFCs provided data which suggest 30 day "delinquency" rates of over 15 percent in terms of number of loans. These delays, of course, influence the rates measured at 90 days or other periods, in the sense that the 90 day rate is not directly comparable to the 90 day rate in systems without such delays.

Thus, the first useful measure of delinquency is that for 90 days or more (not 60 days, as in the U.S.). While it is difficult to generalize about the current delinquency situation for HFCs, what is most striking is the evidence as to the upward trend in delinquencies. What is even more worrisome is that the trend has probably not stopped yet, even if management efforts have been redoubled, simply because the portfolios of loans were very young for most HFCs as of March 1993. The continuation of the upward trend in 90-day delinquencies, plus the expected impacts on longer-term delinquency rates, is apparent in the two cases where some data were available for March 1994. (The situation may be the reason for the strong disinclination of the top three HFCs to provide proper data.)

Further generalization is made difficult by a number of factors. First, the age and growth pattern of the portfolio affects the reported rate, especially for some of the EMI figures. For example, the EMI delinquency figures are built upon figures reported to Abt for delinquent EMIs, but without data on total annual EMIs. The latter is estimated from the data on total principal outstanding, applying the same ratio to DHFL as was reported by HDFC for September 1992 between annual EMI and principal outstanding. But the correct ratio depends on what share of the loan portfolio is "pre-EMI" (still being disbursed). The share is much higher for some HFCs than for HDFC, since the portfolios had doubled in the previous twelve months.

Fortunately, the goal of this exercise is not to ascertain the true delinquency situation of particular HFCs.[13] What can be concluded is that:

1) The HFCs need to be trained on how to properly analyze their data;

2) The HFCs need to realize (if they do not already) that delinquency can quickly get out of hand if underwriting standards are inappropriate, and that the bad news only shows up with a lag; and

3) Delinquency levels seem to be high enough to encourage renewed efforts to secure better foreclosure protection and to engender serious concern as to the ability to sponsor pass-through securities.

Suggested Workshop Approach

The analysis and data here suggests that the workshop would be a good occasion to:

1) Explain <u>some</u> of the analytical framework developed in the U.S. for understanding delinquency rates, e.g., how random shocks to economic circumstances of borrowers push some into delinquency. (As opposed to the usual U.S. situation, the course of house prices and net equity level of the borrower does not play a major role.) Show how this is cumulative and produces a typical time profile of delinquency rates by cohort. Apply this to the Indian experience of rising delinquencies after the surge in originations in 1991-92. Explore the way that different overall measures of delinquency hide the key information on the evolving pattern by cohort (e.g., the uselessness of the ratio of principal outstanding on delinquent loans when the loan portfolio has an average age of one year since final disbursement and a quarter of the loans are still not into normal repayment.)

2) Interactively explore the causes of delinquencies in India. Develop links to underwriting (loan appraisal) processes and standards. Any ideas on their part on the trade-offs between loan production and increasing credit risk?

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[13] If this were a goal, it is the view of the author that it would require on-site, in-depth interview and checking of the MIS at each HFC, both to verify the methods used in compiling the data, and to introduce refinements, such as breaking out the data by loan cohort. As a sign of skepticism in this area, it was notable that more than one HFC commented that they did not believe that even HDFC's published numbers were accurate.

3) What are acceptable levels of delinquencies? This is a key question. The "acceptable" level is probably much higher than in the U.S., but not much more than this can be said with certainty. The issue is very important for regulation, as well as risk management. Focus on:

a) the effect of high EMI delinquency on cash flows,
b) the effect of high number of loans being delinquent (or principal outstanding) as undermining repayment habits through contagion, and

c) the out-of-pocket costs of servicing delinquent loans and whether those are fully recovered.

Of course, the "acceptable" level may vary by region or customer base and thus should not be based on the rates achievable by any one HFC.

4) After 1) - 3), introduce discussion of how economic shocks of the type that India has only begun to see can severely affect delinquencies, especially within specific regional markets. Illustrate with evidence from U.S. or U.K.. Also note how introduction of ARMs may magnify impacts on delinquencies of the economic cycle.

5) A compilation should be made of practical insights from participants on steps in loan appraisal and collection to reduce delinquencies. The discussion should be abstracted as much as possible from the specific institution and towards the interchange of ideas among professionals facing similar problems. The topics that should come up would include the difficulties of assessing black income and self-employed income, what is an appropriate installment-to-income ratio, discussion of the usefulness of guarantors, etc..

As a precondition for coming to the workshop, participants should be required to examine the delinquency data (on "principal outstanding basis") for loans fully disbursed in 1991-92, for each quarter since March, 1992. It should be emphasized that the rate for this cohort alone needs to be calculated. (It is important that the HFCs start to go beyond their overall delinquency rate to isolate meaningful patterns, not only by cohort, but also by other categorizations.) They should not be asked to divulge this information to Abt or NHB, but they should bring it to the workshop to talk about the level and pattern that they found.

Interest Rate Risk

In principle, applying gap or duration analysis to Indian HFCs is a straightforward exercise. Unfortunately, there are two major sources of uncertainty to the process. First, it is difficult for an outsider to fully understand all of the peculiarities to the common types of assets and liabilities. Second, no one can fully predict how some of these will behave under the unprecedented conditions of liberalization. This report tries to explore as many of these issues as possible. Hopefully, more information will come forth at the workshop.

Assets

Examining the asset side of the balance sheet first, the following are the most common components, in descending order of importance.

1. Home Loans: The standard term of a home loan is 15 to 20 years, with level payment amortization. Most HFCs limit the term to 15 years and NHB has limited its refinance to that term, starting in August 1993. But at least one HFC (LICHFL) continues to offer a 20 year term, due to a 20 year term on funding that it gets from its parent. Some HFCs further limit the term to the period until normal retirement (usually at age 60) and some borrowers prefer shorter terms.[14] This makes for a range in terms from 10 to 15 years, and most HFCs report an average term of about 13 years.

A very important mystery to Indian housing finance is whether the basic home loan to individuals is at a fixed rate or is in some way at a variable rate. To quote HDFC's consumer brochure, "While (HDFC will endeavor) to keep the interest rate constant over the duration of the loan, it reserves the right to vary the rate of interest prospectively at any time in response to changes in money market conditions...." Such a change in rates has not yet happened at HDFC or any other HFC. Those HFCs that were asked were skeptical that such an increase could be enforced, either because of legal challenges or because of mass refusal by borrowers to change their payments. This topic should be explored at the workshop, but at the present, it appears that the loans should be treated as having fixed rates.

Equated Monthly Installments (EMIs) on home loans in India are not calculated in the conventional manner. Interest for each year is calculated in advance on the principal outstanding at the beginning of the year (or "on annual rest") and then becomes payable monthly. This is the equivalent of funding the EMI by assuming annual payments at the end of each year, amortizing the loan on

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[14] DHFL has a special repayment scheme for those approaching retirement that front-loads repayment until retirement and then permits a son to serve as co-signer and continue payments at a reduced rate when the parent retires.

this basis and then dividing the annual payment into monthly payments. This procedure slightly increases monthly payments, reduces early principal repayments, while boosting yields, especially in the later years of the loan.

Prepayments on these loans are permitted and may be common. (HFCs vary with respect to charging prepayment penalties.) Struyk's (1988) study of prepayment to HDFC supports the oft-expressed view that households are debt-adverse and prepay the entire loan as soon as possible. He found that for loans originated in 1979 to 1983, the payments averaged about 2 percent in the second year after origination, 4 percent for the next two years, and 5 percent or more thereafter to the eighth year. After eight years, over one-third of the loans were fully repaid.

As we shall see later, the pattern of prepayment has important effects on the duration of the loan portfolio. Unfortunately, HDFC itself is only now starting to extend the Struyk analysis to longer periods after origination and for other years of origination. The HFCs interviewed said that their (very limited) prepayment experience was more on the order of 1 percent a year or less. Such a reduction in rates of prepayment could be due to several factors, including the sharp rise in returns on other financial assets since 1988, both due to liberalization, good stock market performance for much of the period, and higher interest rates in general. Moreover, HDFC borrowers might have higher prepayments because they are more mainstream middle-class than the clientele of some of the newer HFCs. In any case, it is likely that most loans will be fully prepaid by the last years of the term, because the real value of the balance is small and the effective interest rate is over 20 percent.

Even with a prepayment rate in earlier years of only one percent, all of these considerations strongly suggest that the average term to full repayment may be closer to 11 to 12 years than 13 to 15 years. The duration of the 15 year loan at 16 percent is about 8 years, and this drops to about 7 years with such prepayments. Also, it is likely that the term will partly depend on movements in interest rates, because sharp changes in one direction or the other should influence the desirability of prepayment relative to investing excess funds.

Some HFCs also make modest number of home improvement loans, with terms of only 1 to 5 years. No HFC reported this as a significant part of their business.

2. Project Loans. Some HFCs make a substantial number of loans to with private developers or to government-related development boards for the costs of developing housing. At least four HFCs have the majority of their portfolio in such loans. Under certain circumstances, these loans are eligible for refinance from NHB. The term on these loans is usually less than 3 years, but there are no

principal repayments during that period. In certain cases, the loan is converted into long-term take-out financing for the purchasers, in which cases the loans become reclassified into loans to individuals.

There appears to be an important distinction here between private developers and government-related housing boards. Loans to the former are truly short-term, and, barring credit risk, are repaid over 2 to 3 years, usually with a variable interest rate. Loans to housing boards, while in principle government-guaranteed, are de facto often for a much longer term. The boards are renowned for the glacial pace of completion of projects and they are equally slow in repaying loan principal. The lenders are guaranteed repayment, but only ultimately, and enforcing any pattern of repayment or even variability in interest rate is apparently problematic.

Some of these loans qualify for refinance from NHB, especially the loans to housing boards. But this is not always the case, even for housing boards, because of the restrictive limits on house size under such schemes.

3. Corporate Loans. HDFC in particular has made a substantial number of loans to corporations for them to build housing for their employees. Other HFCs have attempted to follow this same approach recently. The term on these loans is usually only 5 to 7 years (but sometimes up to 10 years) and the interest rate has traditionally been a bit higher than for conventional loans. Recent competition among HFCs and with banks for this market seems to be pushing the rate below that for loans to individuals, where it belongs because of lower credit risk and shorter term.

The most important aspect of the corporate loans is that they may truly be made at a variable rate of interest. Some of the HFCs report having successfully raised the rates on corporate loans during the recent run-up in rates. It was not established as to how the new rates were set.

4. Investments. Every HFC has some liquid investments for parking excess funds, in addition to cash and bank deposits. Some HFCs manage these investments on a supplementary source of profit. HDFC in particular pursues equity investment for this purpose. However, the single most popular investment is in UTI mutual funds, since these confer tax benefits and are very liquid.

Most of these investments are either equities, or mutual funds (with fixed returns sometimes). There are also a few blue-chip debt issuances of fairly long term. Thus the term until re-pricing of yield can be very long (in the case of bonds) or potentially fairly short (in the case of dividends or equities). Evaluating equities and investments in general for interest rate sensitivity is a gray area.

5. Deposits and Other Assets. In general, HFCs will keep a minimum amount of funds in the form of low-yielding cash or deposits. For example, DHFL had cash and bank balances of about 1 percent as of 3-93. In addition, it had other current assets that included the EMIs overdue on its loan portfolio and also a significant amount of "advances." Notably, Dewan's current liabilities exceeded its current assets by Rs. 5 crores. (On the other hand, HDFC was very liquid, with excess of Rs. 437 crs. (13 percent of assets) of current assets over current liabilities. This may have reflected investment strategy with respect to the equity market.)

6. Leases and Other Financial Instruments. At least one HFC noted that it was going into leasing for its tax advantages, shorter term, and perceived higher yield. There is little to restrict the types of business that an HFC enters, other than the requirement that HFCs be primarily in the business of financing housing, to the tune of 75 percent of the balance sheet. For example, HFCs could do more consumer finance to reduce their interest rate risk.

Liabilities

There are as many different categories of liabilities as there are of assets. Moreover, the relative magnitudes of their importance on the balance sheets of HFCs is changing.

1. NHB Refinance. Before 1990, NHB refinance was a small part of the funding available to HFCs. Between 1990 and 1993, it was probably the largest single source of funds to the industry. But since early 1993, the role of NHB refinance has receded once again.

The terms of NHB refinance for loans to individuals was originally intended to match that of the loans being refinanced, up to a maximum of 20 years. The maximum was shortened to 15 years as of August 1993, payable in quarterly EMIs. There is no information on whether NHB previously routinely provided for a 20 year term and whether NHB has the power to seek early repayment of the loans if the loans to individuals are prepaid. It appears that NHB refinance can be prepaid by the HFCs without penalty. It seems likely that NHB refinance provides ideal coverage of HFC interest rate risk and even gives the HFCs a free call option on prepaying these loans. (It is another question as to whether all of NHB's liabilities are pre-payable.)

The spread between NHB refinance and the loan rate has varied between 1 and 2 percent, depending on the time period and the size of the loan. For the most common types of refinance, the spread had been 1.50 percent until August 1993, when it was trimmed to 1.25 percent. The effective spread is a little wider, since the interest on the housing loans is calculated at annual rests, while the interest on the refinance is on quarterly rests.

2. Household Deposits. A relatively small but growing part of the overall HFC balance sheet are deposits placed by individuals for terms of at least one year and no more than 7 years. Some schemes permit recurrent deposits towards some initial term (i.e., monthly deposits for two years, and then withdrawal of the full amount) and others build upon a one-time, fixed deposit, often with the potential for monthly receipt of income. In all cases, premature withdrawals are permitted at a penalty of a reduction in the stated interest rate by one percent.

Prior to 1993, the minimum term of these deposits had been two years. Despite the liberalization to a one-year minimum, most deposits remain in the 2 to 3 year range (according to comments made by the HFCs). This appears to be a planning horizon that most households are comfortable with. It also corresponds to the term at which no further rate premium is forthcoming for longer terms. (However, some depositors appear to take longer terms in anticipation of declining rates in the future.)

The deposit market remains heavily regulated by the RBI. Banks are restricted to a low rate of interest on term deposits (currently 10 percent), leaving the field open to non-bank financial companies (NBFCs). HFCs and other NBFCs are given a higher ceiling on the rates that they can pay (currently 14 percent). However, even these institutions can be outbid for deposits by ordinary companies, who are free of constraint, and currently offer 15 percent. (Yes, ordinary operating companies collect deposits in India. This is presumably a feature of constraints on lending patterns for banks.)

In practice, the rates paid by HFCs vary a good bit. HDFC can raise funds by paying only a little more than banks for one-year deposits, rising up to a maximum of 13 percent for 3 or more years, a maximum that is currently lower than the ceiling of 14 percent. The bank-sponsored HFCs can do almost as well, due to presumption of indirect backing by the government (although not in law). Finally, the totally private HFCs generally have to offer the ceiling rate for all periods.[15]

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[15] This differentiation in the cost of deposit-raising may create price competition over time between HFCs. In any case, it introduces a degree of cost advantage that did not exist when refinance was more plentiful.

Effective rates on deposits also vary according to the granting of premiums to agents. Most HFCs employ agents who secure deposits for a commission of 1 to 2 percent. This commission is taken out of the interest rate by HDFC and some others, but added on top of the 14 percent by the more aggressive HFCs. In fact, at least one HFC claimed to know of another HFC that offered a commission of 4 percent for a very large and long-term institutional deposit, despite the NHB limit of two percent for commissions. Clearly, there is a large gray area for competition within the RBI ceilings.

3. Institutional Deposits. There are very large financial assets held by the many non-governmental educational, religious, and charitable institutions (trusts) in India. Currently, their investment options are heavily regulated by the government, with only 30 percent of their assets being able to seek market rates. One of the key steps for an aspiring HFC is to be approved by the RBI for accepting the deposits of these trusts.[16] The rate and term restrictions on these deposits are the same as for households. These trusts may be potentially an even more important source of deposits or purchasers of mortgage securities if their investment choices become less regulated.

4. Corporate Deposits. The true corporate deposit is referred to an a ICD, or inter-corporate deposit. It is short-term and at a market rate. For example, rates in the ICD market are very low currently because of excess liquidity in the system. Some HFCs can tap this market for liquidity, but it is not viewed as a permanent source of funds. It should be noted that most "non-household" deposits sometimes mentioned are actually trust deposits, not corporate deposits.

5. Bank Loans. Banks are (supposedly) required to meet certain lending norms for housing. One method of doing so is to lend to an HFC, either one sponsored by the bank or an independent HFC. The term for such a loan is usually 10 years, close to the effective term of a housing loan. This potential source of long-term funding is truncated, though, by the restrictions on the rate chargeable (currently only 12 percent).[17] Thus most banks are avoiding making such loans, even to their sponsored HFCs. Non-

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[16] It is not known by what criteria the state governments grant approval to HFCs for receiving trust deposits. Even if approved, an HFC that does not have strong sponsorship, e.g., from a bank, still faces difficulty in raising such deposits.

[17] Some market participants see the RBI rates on these loans as guidelines, not binding maximums. At least one HFC secured a bank loan be offering a percent premium. If bank loans could be raised by paying 13 to 14 percent, they would be a welcome method of extending the term of the liabilities.

Non-sponsored HFCs face another constraint set by NHB, that bank loans shall not exceed the net own funds of the HFC. (HDFC is exempted from this requirement.)

6. Other Long-Term Loans There are some other sources of long-term loans. This most prominent is the Life Insurance Company (LIC), which used to channel significant funds to HDFC and then NHB. Most recently, it has been directing funding to housing mostly through loans to LICHFL, which derives all of its borrowed funding from this source. The loans are for 20 years at a rate of 13.0 percent, compounded semi-annually.

The General Insurance Company (GIC) and UTI also used to direct funds to housing in the same manner, but have not done so recently.

7) Net Owned Funds (NOF) The HFCs have been very successful at raising funds in the equity markets. This has been true despite the presence of real risk exposure for their equity and a rate of return on equity sometimes inferior to that on deposits in the HFC. This situation may reflect 1) the general positive attitude towards equity investments, 2) the expectation of emulating HDFC as a highly profitable long-term investment, or 3) the existence of a shareholder discount of one-half percent on loans to shareholders. Whatever the reason, HFCs have not had any trouble maintaining a comfortable, if not excessive, capital position.[18]

The NOF of HFCs includes special reserves established under special provisions of the tax code and a general reserve funded out of the net profits. The special reserve consists of 40 percent of pre-tax profits, which can be set aside and deducted for tax purposes.

The Current Risk Situation

Among the seventeen recognized HFCs (excluding HUDCO), the composition of assets and liabilities varies enormously. There is simply no uniformity in funding sources and lending activities in the industry at this point. Fortunately, there is a growing awareness of tailoring the two sides of the ledger to reduce (but not eliminate) interest rate risk.

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[18] At present, the HFCs are not subject to a formal weight capital adequacy ratio based on international (Basle) standards. However, such standards are due to be in place by 31 March 1995. This raises two key issues: 1) What should the weighting be for residential first mortgages, and 2) What should the provisioning standards be for delinquent loans. The answers to these questions are far from obvious, and would benefit from discussion at the workshop if time permits.

LICHFL, the second largest HFC, is at one extreme of the spectrum. All of its funding is either NOF or long-term loans from LIC and nearly all of its lending is for long-term loans to individuals. Less than 3 percent of the portfolio is to professional developers, for up to 40 percent of total project costs, at 19 to 20 percent interest rate. For two years, LICHFL has talked about weaning themselves from LIC funding, but this has not happened.

The fourth largest HFC, Dewan, had until recently a portfolio similarly devoid of interest rate risk. That was accomplished by specializing in loans qualified for refinance from NHB. However, as early as 1992-93, DHFL had begun to aggressively and successfully seek deposits. Given its lack of "backing," it has had to rely on deposits from individual households at premium rates. As of March 1993, such deposits formed 25 percent of their funding, while longer-term loans to individuals at fixed rates formed almost 100 percent of their assets. This approach, plus a gearing ratio of 15, allowed DHFL to earn a respectable 18 percent on equity for 1992-93. Profits were higher in 1993-94 on the same equity base, but about 30 percent of the net funds raised were from deposits with an average maturity of three years. DHFL is raising capital in April or May to fund continuing expansion, but is concerned about the risks of growing reliance on deposits.

Nearly all HFCs (other than LIC) seem to have expanded their deposit raising activities in the last year. Even HDFC and Canfin have moved aggressively to seek household deposits in contrast to a previous reliance on institutional deposits. But several HFCs seemed to be reasonably aware of the interest rate exposure and were seeking a rough correspondence between buckets of shorter-term funds and short-term loans for construction or to corporate bodies. HDFC made over a third of its sanctions to developers and corporate bodies in 1992-93, up from 24 percent for prior years. SBIHFL and CFHL also focused on expanding corporate lending.

Another reason for the focus on corporate lending, aside from the shorter terms on the loans, is the presumption that the clause in all current mortgage contracts that permits changes in interest rates could actually be exercised for corporate loans. While there is no expectation of doing this on a regular basis, the ability to do so in case of emergency is viewed as reassuring.

Another way of assessing the current situation among HFCs is the contrasting perspectives of HDFC and Vysva Bank HFL. HDFC had stated last year that they felt that interest rates were going to come down for a while and thus wanted to shorten the term on their liabilities. This year they succeeded in expanding the gap between the average term on assets and liabilities from six months to a year. They now are looking forward to starting to securitize loans soon to prevent adding further to their interest rate exposure.

At the other extreme, Vysya Bank rapidly expanded lending in 1993-94 based on deposit raising going on with the encouragement of offering 14 percent even for one year deposits. They do have a large share of corporate and construction loans, but they will still be very vulnerable to a run-up in rates in the next year or so. In contrast to HDFC, they got into this situation without recognizing the consequences.[19] Only during our interview did the full meaning of a term mismatch become clear to management.

Prepayment Risk

The focus of most discussion of interest rate risk is on the potential negative consequences of a rise in interest rates. Western institutions have learned from harsh experience about the hazards of the opposite event, a sharp decline in interest rates. In the Indian context, this is probably the lesser of the two concerns. But it is also probably one that is less understood and still potentially dangerous.

If the inflation rate in India were to decline from current levels (8 to 10 percent) towards 5 percent or less, the entire rate structure could decline to unprecedented levels. At the same time, continuing liberalization should give corporate and construction borrowers more ways to refinance or otherwise payoff their remaining balances. Even homeowners could become the target of aggressive marketing for refinancing loans by HFCs flush with low-rate funds. The end result could be an unexpected drop in the effective term of most HFC assets. If liabilities are perfectly matched, but not pre-payable on similar terms, some HFCs could suffer losses.

One solution to this problem in the Indian context is for HFCs to seek a free prepayment option whenever possible. Most lenders and investors do not recognize the value of such an option at this point in time. For example, NHB refinance probably was made prepayable without a lot of thought. The five-to-seven year deposits that some HFCs are seeking are probably not prepayable.

The key to assessing the importance of prepayment risk for HFCs is to better explore the prepayment provisions for their liabilities and the prepayment tendencies of their assets. With respect to the latter, an extension of the Struyk (1988) study of HDFC prepayments would probably be quite informative as to

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[19] A number of times it appeared that HFCs still perceive the major reason for "matching terms" is to reduce liquidity risk. Even those with some recognition of interest rate risk seemed to need some prompting to see the seriousness of it under some scenarios.

what HFCs might expect, now that a full interest-rate cycle has transpired since the time of the earlier study.

Suggested Workshop Approach

The workshop needs to clearly establish the difference between liquidity risk and interest rate risk, and the potential dangers of decreases as well as increases in rates, and the differences between duration, maturity and weighted average maturity. The simplest place to start might be by analyzing an HFC which is 90 percent funded by 3 year fixed-deposits, and 10 percent with own funds, backing a portfolio consisting of 90 percent 15 year loans and 10 percent cash and fixed assets.

The net impact of a 2 percent rise in interest rates could be developed by looking at the present value of the higher yield on re-lending of repayments on the mortgage portfolio and the present value of the higher cost of funds after the deposits are renewed at the higher rate after 3 years. The net loss is substantial, about half of the institution's capital. On the other hand, a 2 percent decrease in interest rates, and no acceleration in prepayments, is as profitable as the 2 percent rise would be costly.

The same exercise could be repeated with 5 year deposits instead of 3 years, and so on, until eight year deposits or bullet bonds become the funding source, in which case the interest rate risk appears to be neutralized. However, now an alternative problem arises with respect to prepayment risk if in fact prepayments accelerate when interest rates drop substantially. The key question is whether the funding source is itself prepayable.

Once these lessons have been absorbed, the workshop could turn to applying gap analysis to their particular portfolios. The attendees should be asked to prepare in advance a information matrix such as Table 1, essentially allocating their balance sheet to the various categories noted above and according to time from now to the first time they are subject to a change in rates.

Another point that is worth making is that the interest sensitivity of the typical HFC portfolio will change over time as the industry matures. In particular, the asset structure currently is very long because of the recency of the growth in lending. If the inflation adjusted growth in lending stays in the 5 to 10 percent range, the asset duration will steadily shrink. A corollary of this observation is that an older institution such as HDFC is less exposed to rate movements than a new entry with any recent loans.

Finer distinction by time period could be sought, but probably is not necessary. This information would allow both a formal gap analysis, a rough application to the case of a 2 percent permanent rise in interest rates, and also an attempt at duration analysis.

Based on the interviews with the HFCs, it appears that there is relatively little patience for extended exploration of interest rate risk in the absence of realistic answers to the question of how to reduce it. In other words, there may be significant resistance to the fine points of gap or duration analysis unless the participants feel there is a point to it. As it is, most seem to feel that they simply do what they can under market pressures to raise funds and originate loans. Several HFCs appear to have adopted the notion of trying to match deposits with shorter-term lending (corporate and construction loans). But all of them seem to recognize the fact that, as NHB refinance dries up, they will not have enough really long-term funds for regular housing loans. Even many corporate loans have a much longer term than do deposits (unless they really are variable rate loans).

One answer to these concerns is to point to the potency of a moderate level of regular prepayment for reducing the duration of the loan portfolio. Even a 3 percent rate of prepayment after the first three years would auger well for those HFCs with liabilities such as NHB refinance that are for 15 years and assume no prepayments. However, more information is needed as to how sensitive prepayments are to rate changes; if a rise in rates causes prepayments to fall significantly, the effective term of home loans will grow just when interest rate risk on the deposit side begins to bite.

Another implication is that the HFCs should be sure that they will be able to raise the rates on corporate loans if necessary. A formula for doing so may belong explicitly in the loan document.

Another solution would be for HFCs to compete more strongly for loans from banks. Although the rate on such loans are supposedly fixed at too low a rate to interest the banks, the rate appears to, in fact, be negotiable. Any rate below 14 percent would appear to be profitable and lower risk than raising deposits.

Lastly, the HFCs should go away with a renewed interest in seeing a variable rate loan becoming standard. They should recognize that they will have to be willing to offer some lower rate on such a loan, both because of the upward slope to the yield curve and because of the shifting of risks. They will also need to recognize that their deposit rates and maturities will need to be set in synch with whatever index is adopted for adjusting the loan rate. In fact, the changes that would be required for HFCs to switch to doing business in VRMs would be quite significant, and thus the conversion to it could be difficult. However, the current reliance on deposits to fund long-term loans will lead to an unacceptable level of rate risk for many HFCs.[20]

Liquidity Risk

Even if HFCs are able to introduce a variable rate loan, they will continue to face real uncertainty with respect to liquidity. The issues here overlap generally with those of the NHB effort to invigorate and rationalize its regulation of the industry. It is only if confidence in a particular institution or the industry as a whole were reduced that liquidity could become critical. To the extent that NHB regulation and supervision is effective, the failure of an HFC should be rare.

If long-term fundraising or securitization become feasible, the problem will be minimized. But if deposits become the primary funding base of HFCs, one or more of several steps may be needed, including:

1) inclusion of HFCs under the deposit insurance scheme for banks, or

2) the provision of a liquidity window at NHB.

This issue should be explored with HFCs at the workshop. They might also be encouraged to work with NHB to create an informal liquidity window within the context of the current refinance scheme. This could consist of a process whereby an HFC would get approval for a certain amount of refinance upon payment of some commitment fee to NHB, but be able to draw it down only as needed, perhaps several years later.

Operational Risk

For most HFCs, the major operational risks are associated with the potential for fraud in the origination of mortgages. None have indicated a problem in this area and the larger ones have some kind of system of internal auditors.

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[20] It may be worth exploring with the participants the point at which the rate risk actually threatens to go beyond simply reducing profits to the point of jeopardizing the capital base of the institution. In may be that, given the current and prospective mix of assets and liabilities, the threat to the viability of the institutions may not be too serious even if most funding was in the form of deposits for the next several years and most lending continued to be long-term at fixed rates.

All HFCs, even HDFC, seem to be small enough that all risk monitoring and management is done by a small group of top managers who meet frequently to discuss these and other business issues. No HFC has any formal credit risk or asset and liability committees.

Categorization of HFCS

It may be of use to the presenter and organizers of the workshop to have some capsule classification of each HFC with respect to:

1) level of lending activity
2) degree of delinquency problems, and
3) degree of interest rate risk.

Table 2 attempts to provide such information on a very informal and general basis.

The level of lending activity is judged based on the absolute level of disbursements in 1992-93 (or 1993-94, if known) and the rate of growth in disbursements over the previous year. For this purpose, levels of disbursement over 50 crores per year are considered high and annual disbursements below 10 crores are considered to be low. Growth in disbursements of over 50 percent is considered high, and under 10 percent is considered low.

The degree of delinquency problems is judged based on data available from NHB's half yearly report for September 1992 (as reviewed and edited by Abt in March 1993), responses to the Abt survey of overdues position as of March 1993, and from recent interviews. In all cases, the judgement refers to delinquencies on loans to individual households that have been fully disbursed. All other types of loans are reported to have no delinquencies (although this should not be taken as a fact). The data have been roughly adjusted where possible for recent rapid growth in disbursements, a large number of pre-EMI loans, and other distortions. Since different data sources were used and because of the sensitivity of the subject, no specific cut-offs are indicated for each category. These judgements should be treated as confidential.

The degree of interest rate risk is judged based on published balance sheet information for 1992-93, supplemented with more up-to-date information where possible. The major reason for a "low" level is either the presence of a lot of long-term resources, including reliance on shareholder capital, long-term loans, or NHB refinance, or a preponderance of shorter-term lending.

TABLE 1
TIME UNTIL REVISION OF
RATE OF RETURN ON COST OF FUNDS OR ASSETS

	< 1 YEAR	1 - 2 YEARS	2 - 3 YEARS	3 - 5 YEARS	5 - 7 YEARS	7 - 10 YEARS	10 - 15 YEARS	15 + YEARS	NOT RATE SEN-SITIVE	TOTAL
. FUNDS EMPLOYED LIABILITIES)										
1. Shareholder Funds										
2. Loan Funds										
a. NHB Refinance										
i. Home Loans										
ii. LDSP Loans										
b. Loans from schd. banks										
c. Other loans										
d. Bonds/ Debentures										
e. Deposits										
i. Household: fixed										
cumulative										
ii. Institutions: fixed										
cumulative										
3. Other										
OTAL LIABILITIES										

I. APPLICATIONS OF UNDS (ASSETS)										
1. Loans										
a. Households										
i. Purchase/ construction										
ii. Home Improvement										
b. Corporate Bodies										
i. To rent to Employs										
ii. To sell to Employs										
c. Housing/Land Devel.										
i. Prof. Developers										
ii. Housing Boards										
d. Other										
2. Investments										
a. Equity (Shares)										
b. Bonds, Bills										
c. Unit Trusts										
3. Deposits/ CDs										
4. Fixed Assets										
5. Other										
OTAL ASSETS										
. GAP (II-I)										
/. RATE SENSITIVITY AP RATIO										
CUMULATIVE GAP										
. CUMULATIVE GAP ATIO										

Table 2

HFC	LENDING ACTIVITY		DELINQUENCIES		INTEREST RATE RISK	
	LEVEL	TREND	LEVEL	TREND	LEVEL	TREND
ABHFL*	Low	Medium	Low	??	Low	Medium
ANVIL*	Medium	High	Low	??	Low	Low
CBHFL*	Medium	High	Low	??	Low	Low
CFHL	High	Low	High	??	Medium	High
DHFL	High	Medium	Medium	??	Medium	High
FGHL	Low	Low	High	??	Medium	??
GICHFL	Medium	Medium	Low	??	Low	Low
GRUH	Medium	High	High	High	Low	High
HDFC	High	Medium	Low	High	Low	Medium
IBHL	Medium	High	High	??	Medium	High
IHFD	Medium	Low	Medium	??	Low	Medium
LICHFL	High	Low	High	High	Low	Low
PHFL	Low	Low	??	??	Low	Medium
PNBHF*	Medium	Medium	Low	??	Low	Low
SHFC	Low	Low	High	Low	Low	Low
SBIHFL	High	High	Medium	High	Medium	Medium
VBHF	Low	High	Low	Low	High	High

These HFCs appear to primarily deal in construction finance, rather than in long-term housing loans.

ABBREVIATIONS OF HFCS

BHFL:	Andhra Bank	IBHL:	Ind Bank
NVIL:	Bank of Baroda	IHFD:	India Housing Finance
BHFL:	Cent Bank	LICHFL:	Life Insurance Co.
FHL:	CanFin Homes	PHFL:	Parshwanath
HFL:	Dewan	PNBHF:	Punjab National Bank
HL:	Fairgrowth	SHFC:	Saya
CHFL:	General Insurance Co.	SBIHFL:	State Bank of India
UH:	Gujarat Rural Housing	VBHF:	Vysya Bank

HDFC:Housing Development Finance Corporation

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ROUGH ESTIMATES OF DELINQUENCY RATES FOR SELECTED HFCS - NOT FOR PUBLICATION

(1) HFC	(2) PRINCIPAL OUTSTANDING (Rs. Crs.) (Date)	(3) SHARE OF (2) DELINQUENT 90+ DAYS (%)	(4) SHARE OF (2) DELINQUENT 180+ DAYS (%)	(5) TOTAL EMI DUE ON HOUSING LOANS, ANNUALIZED (Rs. lks.)	EMIS OVERDUE AS SHARE OF (5)		
					(6) 90+ DAYS (%)	(7) 180+ DAYS (%)	(8) 360+ DAYS (%)
CFHL	235* (9-92) 340* (3-94)			2300**' 3300**'	2.10 4.00'	1.32	0.60 1.52'
DHFL	155* (3-93)			1500**'	1.70	0.36	
GRUH	22** (3-92) 31** (3-93) 72* (3-94)	4.99 5.80 7.33	0.98 1.95 3.19	590**'	4.40'		
HDFC	1741** (3-92) 1869** (9-92)	1.10 2.10	0.44 0.78	18622**	.70	0.81	0.34
LICHFL	400* (3-92) 852* (3-93)			5180* 11019**'	3.55 8.68'	1.95 6.53'	
SBIHFL	66** (3-93)		1.60'				
SHFL	2** (3-93)	6.72	6.54				
VBHFL	18** (3-94)	0.00					

* Based on all loans, not just to households; includes pre-EMI and EMI loans.
** Based on loans to households; includes pre-EMI and EMI loans.
' Estimated