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**Regulation and Supervision of Housing
Finance Companies**

*Course Outline for
National Housing Bank*

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COURSE OUTLINE

COURSE OUTLINE REGULATION AND SUPERVISION OF HOUSING FINANCE COMPANIES

The accompanying text briefly provides the outline for an introductory course applicable to supervisory training for Housing Finance Companies (HFC) regulated by the National Housing Bank (NHB). The text refers to slides that should be made available to participants in a workbook and also copied as overheads for display by an overhead projector. The instructors responsible for teaching the course are strongly encouraged to update, expand and modify the material as appropriate. The training outline was sponsored by a USAID contract in 1996 through Abt Associates of Cambridge, Massachusetts. The work was completed by William C. Handorf, Ph.D., Professor of Finance with the George Washington University, Washington, D.C. [phone: 202-994-1414, fax: 202-994-5014]

Timing: The attached material provides a course designed to last between two and three days. The exact time depends on the number of cases presented for groups in the class.

Objective: The objective of the course is to expose professionals to the HFC industry, NHB regulation, and asset/liability management. To the extent practicable, the course examples highlight the HFC industry and related problems in India as of 1995/1996. The material is provided in three modules: 1) Importance of Housing Finance Companies to India, 2) Supervision and Regulation of Housing Finance Companies, and 3) Fundamentals of Asset/Liability Management.

I. Importance of Housing Finance Companies to India

A-1 Introduce the course, the key instructor(s), and the participants. Try to tailor the material to the background and expertise of the participants.

A-2 Review the seminar objectives. Ask participants if there are any key questions they hope to have answered during the seminar.

A-3 Introduce the first topic, which should take no more than one-half day.

A-4 Discuss the founding, structure, organization and mission of the NHB. Differentiate the three components of the NHB's mission. Discuss any current initiatives that relate to the promotion, supervision or financial support of HFCs.

A-4a Differentiate regulation (rules), examination (on-site review), and supervision (directed change). Note that HFCs would be unable to mobilize savings if the public perceived HFCs were weak or likely to fail. Given the directed financing provided by HFCs to housing finance -- and the large demand for new housing in India -- the task is

very important to the country's savers and prospective mortgagors (homeowners financing a part of the purchase price). Illustrate any recent changes in regulation, examination or supervision.

A-5 Discuss the capital formation process. HFCs intermediate funds in the market place. They access savings from the public and borrowings from the NHB and other lenders, and funds from promoters, and use the proceeds by making house loans. Indicate how much more difficult it would be for savers and borrowers without HFCs or banks.

A-6 Review the role of any financial intermediary and why HFCs enhance capital formation relative to an informal market. HFCs are convenient to savers and borrowers. By concentrating on the same activity every day, HFCs are able to provide financial services more efficiently -- operating costs as a percent of assets should decline with volume. By using computers, HFCs can be even more efficient. HFC managers provide expertise. HFCs accept small deposits and make large loans, and accept shorter term deposits and make longer term loans. The maturity intermediation exposes HFCs to interest rate and liquidity risks. Liquidity risk reflects the possibility that a depositor withdraws funds prior to the repayment of a loan. An HFC expects another depositor to replace the initial depositor. However, new savers will not entrust funds to a weak institution. Interest rate risk refers to a change in interest rates on savings relative to lending. Short-term savings can reprice more quickly than long-term lending. The HFC makes many loans; they are able to diversify the portfolio among many borrowers. However, HFCs are regulated given access to the NHB window for refinance and the importance of financial intermediation to India.

A-7 Note that an HFC is like a bank. Differentiate banks from business. Banks tend to have far less inventory and plant & equipment than business. Banks make loans and purchase securities. Banks rely far less on net owned funds or equity capital than business. The smaller equity base increases the importance of banks operating efficiently and with sound risk management.

A-8 Differentiate the income statement of a bank and a business. Just as the gross profit margin (sales less cost of goods sold) is critical to a business, the net interest margin is critical to a bank. HFCs must originate loans so that few borrowers default and must control expenses closely to maintain a profit. Profits encourage sponsors to invest in more stock or provide earnings retained to build net owned funds.

A-9 Differentiate the types of HFCs in India. Note that very few HFCs have been approved. Discuss any recent trends regarding new companies interested in becoming an HFC. Note the importance of a "contagion" effect if an HFC -- even just a registered HFC -- fails and causes depositor losses. The public may not trust any HFC. Regulation, examination, and supervision are designed to maintain the safety and soundness of the industry.

A-10 Briefly review the key HFCs in India. Note the high concentration by just a few institutions. Size may allow an HFC to become more efficient and take advantage of economies of scale in operations. Yet, if a big HFC fails, the contagion effect is more likely to occur.

A-11 Review the range of sponsors of HFCs and their primary location. Rural areas and the Northeast part of India are still underserved. A sponsor is important to an HFC; it can provide professional managers, and funds. However, a sponsor may try to get cash and earnings out of an HFC too. Regulators must ensure that sponsors provide a source of strength to the industry. Note that more branches do not necessarily make an HFC bigger. HDFC has fewer branches than LIC Housing, yet is far bigger. Branches help obtain community savings. HFCs also borrow money.

A-12 Discuss the key objectives of an HFC. An HFC must be liquid; it must be able to meet cash demands when required. An HFC must be solvent; it must have positive net owned funds. Finally, an HFC must make good loans or earnings and capital will both suffer. Profits allow an HFC to attract new shareholders, build capital or encourage sponsors to invest more monies. Note there are more stakeholders than reviewed on the slide. For example, an HFC should consider the impact of its activities on the community and its employees. A HFC must operate prudently so that depositors are repaid. By intermediating funds, an HFC can make more housing loans so important to social needs of India. Unless an HFC retains the approval of the NHB, it will be unable to obtain refinancing important to providing additional source of liquidity for an institution.

A-13 to A-15 An HFC is regulated. These slides briefly review the key types of regulation imposed by the NHB. Define each area and indicate how the regulation affects the profitability, risk, safety and soundness of an institution. If HFCs are sound, they can originate housing loans. This is the connector to the final part of the first section.

A-16 Note that few Indians borrow money from the formal sector. Also, note that lenders often do not lend to poor, disadvantaged, women, self-employed, etc. The NHB is trying to alleviate some of the problems. Discuss any recent initiatives used by NHB to encourage more funds to flow to the disadvantaged sector. Note the legal system does not encourage foreclosure in India; the value of a home provides collateral to repay a loan if borrowers stop making contractual payments. Yet, it takes a very long time to evict a mortgagor and obtain a home when default occurs. As a result, HFCs make relatively small loans to relatively high-income individuals.

A-17 HFCs are an important part of the formal sector of mortgage finance in India. As HFCs grow and more HFCs are approved by the NHB, the role of HFCs to mortgage finance will increase. Banks do make a larger share of mortgage loans than HFCs. The NHB and approved HFCs are still new to India.

A-18 Housing is very expensive in India. In developed countries, the cost of a median home to median income is a multiple of about three to four. South Mumbai properties

cost 300 times more than median income as of 1995! It is important to note that housing prices do fall. Banks in the US, Japan and UK all suffered very large losses by making bad loans on real estate that suffered declining property prices.

A-19 Briefly note the population growth expected in India. More individuals require more housing. There is a huge market that needs to be satisfied and HFCs play a role if they are able to mobilize savings and borrow monies in the domestic and international markets.

A-20 Briefly note that India's population is moving toward urban centers. There will be more requirements for transportation infrastructure and multi-level housing.

A-21 The NHB's mission is very important. Population growth and migration place pressure on India's housing stock. Dwellings in rural areas do not meet urban requirements. By supporting, promoting and supervising HFCs, the industry can help alleviate the demand gap for housing.

A-22 Conclude the first section with a discussion of how HFCs impact India. They influence the nation's payment system, mobilize savings, and provide a store of wealth. HFCs must direct at least 75% of assets to housing finance. The industry also provides financial services in addition to intermediating funds. What would happen if the sector failed?

Ask if there are any questions. Break the class into groups. Assign discussion topics to each group. One group might discuss the NHB's promotion role, another the supervisory role, and another the financing role. Then, note how the missions complement each other and possibly interfere with each other. Ask another group how HFCs could best finance housing and alleviate the projected housing gap in India. The topics are illustrative, but make learning more active.

II. Supervision and Regulation of Housing Finance Companies

B-1 Introduce the second section of the seminar, which should require about one day. Reiterate the difference between examination and supervision. Examination attempts to determine whether an HFC is meeting prudential regulation. Supervision directs an HFC to rectify deficiencies.

B-2 An HFC is exposed to many risks. Central banks in other countries increasingly supervise risk management systems established by banks. Briefly review the various risks applicable to an HFC. Note that if an HFC fails to identify, measure, monitor and control risk, earnings and capital will become impaired. Most banks in the world ultimately fail because of credit risk (bad loans) and operational risk (fraud, inadequate controls). Address any key risks recently adversely affecting banks and HFCs in India.

B-3 Some regulators like to categorize bank supervision from a CAMEL perspective. This is the framework adopted for this section. An HFC must have adequate capital, good asset quality, effective management, sufficient earnings, and adequate liquidity. Differentiate strategic management, which covers long-term business plans, and risk management, which focuses on reports that allow management to measure and control risk exposure (e.g., interest rate repricing report). Differentiate visible liquidity, which can be measured on the balance sheet (e.g., short-term, unpledged government securities), versus invisible liquidity (e.g., the ability to borrow from the NHB or the financial markets). Ultimately, HFCs fail due to inadequate capital and/or a liquidity crisis. The problems typically occur due to bad loans, and operating losses. The ultimate problem returns to poor management, whether strategic or risk management.

B-4 Countries can learn from each other's mistakes. The next three slides summarize empirical studies and experience of central banks and bank failure. Management is the number one reason that banks fail. Examiners must determine whether management is able to identify, measure and control the various risks applicable to a financial intermediary. The board of directors must exert control of management. Very quick asset growth often leads to two problems: 1) the capital ratio falls as assets grow more quickly than net owned funds, and 2) the HFC makes risky loans that are not well documented. Some directors look at their bank as private "piggy bank." Insider loans should be subject to especially close supervision. Regulation is designed to ensure that financial activities do not hurt the liquidity, earnings and capital of the HFC. Briefly review any managerial problems common to HFCs or banks in India.

B-5 Review some of the financial indicators that suggest an HFC is more risky. Low capital or net owned funds to assets is one such indicator. Too little visible liquidity or visible liquidity, in conjunction with many loan commitments or deposit withdrawals, will place financial strain on an HFC. Finally, banks often fail because management did not correctly classify assets, originated too many high-risk and high-rate loans, or mismatched the repricing schedule of assets and liabilities. Focus on financial problems and indicators for HFCs in India.

B-6 Finally, banks that fail are unable to cope with an adverse economy. A recession, high unemployment, high inflation-adjusted interest rates and falling real estate prices all hurt the asset quality of a bank. In other cases, the economic problems are regional. Countries or states that grow quickly and then contract are especially difficult for bank managers. An HFC might project rising income or real estate prices to overcome a risky loan -- yet a subsequent recession will hurt income of a mortgagor and reduce collateral values.

B-7 Break students into groups and ask them to study the brief economic statistics applicable to India from *The Economist*. Based on the economic indicators and their own knowledge of India, determine how trends in the economy will affect the operations of an HFC. As of 1996, India was growing quickly, but experiencing high inflation. Real rates of interest were about zero (overnight rates equal inflation). What factors could produce

a recession or double-digit rate of inflation? Is the economy favorable or unfavorable to an HFC? The strong growth of India helps. The high inflation leads to higher real estate values and stronger incomes for individuals previously borrowing funds. However, the high inflation leads to high interest rates. Can borrowers meet the high payments? How will high rate deposits affect the net interest margin of an HFC that previously made many low rate loans?

B-8 As discussed in the first section of the seminar, HFCs are required to have deposit programs rated. Briefly note that there are four agencies that rate debt in India and several that rate debt internationally (Moody's and Standard and Poors). This work uses the ratings of CRISL as an illustration. Note that speculative debt suggests an HFC poses high risk to depositors, investors and regulators.

B-9 The majority of debt of approved HFCs cluster around "A" as of 1996. This rating indicates adequate safety for an investor. Compare the ratings of HFCs to that of the NHB (if and when rated). If the NHB can use its "AAA" rating to borrow funds more cheaply than approved HFCs, the agency can provide lower cost refinances than individual HFCs could obtain by borrowing in the market. However, if the rating of the NHB is comparable to HFCs, no advantage exists. Note that a sizable portion of funding for the NHB is based on the interest spread between its cost of money and refinancing activity.

B-10 Review the types of factors that analysts of CRISL review prior to assigning a rating. Note that the rating agency does consider the effect of regulation on activities of an HFC. If regulation limits profitability, the rating of the industry would decline. Also, the rating agency considers competition, which affects the net interest margin of an institution. Ruinous competition would cause an HFC to originate lower rate loans and market higher cost deposits. Overall, the concerns of the rating agency are quite similar to the NHB as supervisor.

B-11 This material is very important. The instructor should slowly cover and illustrate these and other points applicable to how the NHB identifies risk and responds to risky HFC activities. What is a weak HFC? Indicate and illustrate from financial reports of the NHB how an analyst could identify a weak HFC. Then, indicate how the NHB responds to situations where an HFC is deemed too risky or out of compliance with prudential norms. Cover any recent examples of supervisory actions. Ask the class when it might be more appropriate to direct an HFC to cease certain activities, compared to imposing a fine or changing management. When should the NHB take away approved status?

B-12 The rest of the section looks at key attributes of regulation from a CAMEL perspective. It would help to have students read or review the regulation applicable to each area prior to the lecture and case analysis. Capital or net-owned funds is the cornerstone of virtually any banking system. As of 1996, most countries require deposit institutions to meet two different types of capital requirements: 1) a minimum capital-to-assets ratio, and 2) a minimum capital-to-risk assets ratio. Regulators would like HFCs to maintain more capital to either assets or risk-weighted assets. Capital provides a cushion

to absorb unexpected losses. However, managers and equity investors are concerned with the return on equity earned by an HFC. $ROE = \text{Leverage Multiplier} \times \text{Return on Assets}$. $[\text{Net Income/Equity} = \text{Assets/Equity} \times \text{Net Income/Assets}]$. A higher capital ratio leads to a lower leverage multiplier and a lower return on equity. The instructor can substantially expand the treatment of each area in this section or summarize the key facets. At a minimum, note that HFCs are required to keep more capital against more risky assets, such as corporate bonds, than less risky assets, such as government securities. As regulation increases the minimum capital ratio, HFCs have an incentive to increase return on assets by increasing the risk profile of the institution or by operating more efficiently. Briefly differentiate the components of capital to include Tier I and Tier II.

B-13 This chart merely shows that most countries have capital standards similar to those imposed by the NHB as of 1996 for HFCs.

B-14 How can an HFC obtain capital? First, the HFC must be profitable and retain earnings. Second, an HFC can issue stock by selling securities to the public or raising money from the sponsor. Third, an HFC could issue subordinated debentures structured to qualify as Tier II capital. Sub. debt carries some advantages to Tier I; the interest paid is a deductible expense, and the HFC need not share control or earnings with new shareholders. However, there are disadvantages; the interest and principal must be paid. How can an HFC maintain compliance with minimum capital requirements? First, the HFC should not grow quicker than its sustainable growth pattern, which equals the return on equity adjusted by the cash dividend payout ratio ($\text{dividend/net income}$). If an HFC generates a ROE of 20% and pays no cash dividends, it can grow 20% because the capital base will increase by a like amount. If the HFC pays out 30% of earnings to shareholders, the HFC can only grow by 14% unless new stock is sold, subordinated debentures are issued or the HFC elects to operate with a lower capital ratio.

B-15 Ask the class to analyze the profitability of various HFCs as of 1995. High ROE is very desirable for shareholders or sponsors. An HFC can generate a high ROE by high leverage (low net owned funds) or high profits. Note Lic Housing has a very high leverage multiplier while Dewan has a very low multiplier. However, Dewan's ROE barely equals the rate of interest on government bills in India at the time of the analysis. Too much capital can hurt the ROE of an HFC and encourage management to grow quickly, increase risk or enhance efficiency. The first two alternatives -- growth and risk - - are of especial concern to supervisors.

B-16 Asset quality is critical to the safe and sound operations of an HFC. It is important that an HFC retain some diversification in assets so that one defaulting loan or security will not cause the institution to fail. Review the diversification standards covered in the first section of the seminar. Risk-based capital standards encourage HFCs with low capital to invest in or originate lower risk-weighted assets. Yet, regulation requires an HFC to commit at least 75% of assets to housing. Introduce the concept of classification and an allowance for loan loss.

B-17 The next two slides illustrate two key ratios used by banks around the world to assess relative credit risk of housing loans. The loan-to-value ratio identifies how the size of a loan compares to the value of the property. Briefly discuss how appraisers in India value real estate. Some appraisers value real estate by the market method which compares the value of real estate to comparable properties recently sold in a given market, subject to adjustments based on different properties or location. Others appraise real estate by the cost method which identifies what it would cost to construct a similar property and adjusts for any depreciation suffered by a building. Others appraise real estate by the income method which discounts projected cash flow at some rate of return. Most appraisers use all three methods and reconcile differences. Appraisal of real estate is a seminar in of itself.

B-18 The other key ratio is assessment of income of the property or the borrower relative to required interest and principal on the loan. A loan is less risky as net operating income increases relative to interest and principal payments required to service the loan. Provide illustrative standards for mortgage loans in India.

B-19 The prior charts identified the relative risk of apartment loans in the US based on the two key ratios. This chart reviews the implication of a rating for later default. Loans with higher LTV ratios and lower debt coverage ratios default more frequently; hence cause larger losses. However, such loans should also be priced with a higher yield.

B-20 The NHB requires HFCs to classify loans as a prudential standard. Review the purpose of loan classification: 1) provide early warning of possible problems, 2) determine the solvency of the HFC, and 3) most importantly allow management to correct the deficiencies prior to suffering huge losses. Management and examiners need to focus on certain loans and the chart reviews those priorities. Ask the class why a large loan or a loan to an insider deserves special attention.

B-21 Briefly review the four common classification standards. Some examination teams use special mention and doubtful very little.

B-22 Given the importance of substandard and loss, more fully address issues that make a loan substandard. An "evergreen" loan is a loan that is continually renewed by capitalizing interest. Provide examples of recent classification activity within the industry.

B-23 If the instructor does not bring in recent classification examples and exercises, assign the two small cases on this chart. The Rs. 10 crore security might be assigned Rs. 4 crore substandard, Rs. 1 crore doubtful, and Rs. 5 crore loss. The Rs. 20 crore loan might be classified Rs. 18 crore substandard and Rs. 2 crore loss. Note that HFCs originating more high risk loans or purchasing more high risk securities will experience more classified assets. High classified assets provide a signal that asset quality is poor.

B-24 Review the concept of the loan loss reserve. It is a contra account to loans (similar to depreciation for fixed assets). As more loans are classified loss, chargeoffs

increase and the allowance declines. There is both art and science to determination of an adequate allowance. Regulators do not agree on the best method to determine an allowance. Consequently, the chart reviews various methods adopted over time and by country: 1) the reserve should equal the HFC's recent annual losses (note that past losses do not necessarily reflect future losses if the asset mix has changed or new management has been installed), 2) the reserve should equal 1% of loans (why?; there is no reason why the arbitrary number is correct), 3) the reserve should exceed peers (by definition, one-half of HFCs would have inadequate reserves and all may have too much or too little), 4) the reserve should reflect asset classification (this approach is most sensible if management or regulators can show classified assets are related to loan chargeoffs). Review alternatives that HFCs use in India and note the NHB's assessment of the alternatives.

B-25 Generally, the NHB and independent auditors should expect an HFC to maintain a higher allowance if the institution is growing quickly, experiences many losses, charges-off losses very slowly, experiences significant personnel turnover, does not review loans, and so forth. Certain loans deserve more attention when evaluating the adequacy of the allowance; high yield loans, standby letters of credit, acquisition, development and construction project loans, insider loans, loans originated outside the HFC's loan policy and large loans. It is important to remember and stress how the allowance affects an HFC. The HFC must increase the provision for loan losses to increase the allowance; higher provisions lower income and provide less earnings to be retained for building capital. Yet, some portion of the allowance may qualify for Tier II capital.

B-26 Ask the students to recommend an allowance for loan loss based on the numbers for this HFC. If the allowance is to be sufficient to reflect future losses, it should have some relationship to past losses. At a minimum, the reserve should range between .8% and 1.1%. However, given the trend of losses by this HFC (assuming no change in asset mix, management or economic conditions), the reserve should be higher. There is no correct answer, but an allowance of 1.24% might be justified (that is the projected trend and is also very close to the average loss of .97% plus two standard deviations or .28%).

B-27 Review some of the regulatory concerns addressed in the first section regarding the importance of the CEO and chairman of the board to an HFC. Directors should be honest, have business experience and retain independence of management. Review any problems the NHB has experienced with chairs, CEOs or directors. Note that examiners should be concerned with the existence and adequacy of business plans (the future direction and growth of the company), risk management (discussed in section three of the seminar), and policy statements.

B-28 A policy statement represents a control device. It should exist for important areas of an HFC, like lending or investments. The statement should establish an objective, develop procedures, identify limits, review personnel responsibilities and indicate how exceptions will be handled. The policy should be approved by the board, and periodically reviewed and revised. The instructor might want to review several HFC policy

statements, and/or direct the student groups to develop a one-page policy for residential lending.

B-29 There are few regulatory directives applicable to earnings. Operating expenses are supposed to be less than 1.5% of loans. Review the derivation of net income.

B-30 Note that income ultimately reflects fund-based activities (loans and securities) or fee-based activities. This chart developed by Ferguson & Co. in New Delhi shows that HFCs are at a distinct disadvantage to banks and non-bank finance companies in India.

B-31 The prior material has stressed the importance of asset quality to the earnings and solvency of an HFC. Obviously, poor asset quality requires an HFC to charge off more loans and to establish a bigger allowance for loan loss. This chart graphically derives the net interest margin of an HFC. The interest margin is a function of the portion of assets earning interest and the portion of liabilities bearing interest, and is also a function of the rate on earning assets and rate on bearing liabilities. Problem assets: 1) reduce the portion of assets earning interest, 2) lower the rate on assets, and 3) may cause concern of rating agencies or depositors, hence cause the HFC to pay a higher rate on deposits or borrowed money.

B-32 Assume an HFC has interest-earning assets of Rs. 95 crore and interest-bearing liabilities of Rs. 90 crore. Note that all assets do not earn interest (cash, premise, foreclosed collateral), and all sources of funds do not bear interest (capital). Assume the HFC is earning 15% on assets and paying 12% on deposits. The HFC generates a Net Interest Margin of Rs. 3.45 crore. The chart shows how to decompose the NIM between the spread and the net-interest earning asset ratio. Note that high interest on assets suggests more risky assets, more credit risk, less marketability or long-term repricing and so forth. Similarly, a low interest expense may indicate high fees paid to brokers, expensive gift premiums to depositors or very short-term deposits. Remember, that if 15-year loans are funded by one-year deposits, the HFC is exposed to both liquidity and interest rate risk.

B-33 The final area of regulation addressed is liquidity. Review reserve requirements imposed on banks and HFCs. How much reserves or securities must be set aside? What is the base upon which the reserves or securities must be set aside? Note that reserve or liquidity requirements represent a tax to an HFC; they reduce the amount of assets able to earn interest (reserve) or the rate that can be earned (liquidity). An HFC must maintain more reserves (cash) or short-term securities than required by regulation to provide visible liquidity. That is, an HFC cannot reduce a reserve or liquidity ratio below that imposed by regulation.

B-34 Discuss the attributes of liquidity. Visible liquidity can be evaluated on the balance sheet. Short-term securities will mature and be converted to cash. Marketable securities can be quickly and easily sold in the secondary market to be converted to cash. Invisible liquidity is not on the balance sheet; it represents the ability of an HFC to raise money by

issuing bonds, mounting a deposit program or obtaining refinance from the NHB. It is critical that liquidity management embrace cash flows; interest income, principal repayment and maturing obligations relative to interest expense, loan disbursements and deposit maturity schedules. By providing too much liquidity an HFC will hurt profits. By providing too little liquidity, an HFC might lose the confidence of the public and the markets and fail.

B-35 Briefly discuss the comparative deposit profile of HFCs to other banks and non-bank finance companies in India. The HFC industry is still small, but growing very quickly. Note that HFCs rely more fully on wholesale funding, the average term or tenor is longer than banks, the size of the accounts is larger, but the cost is also higher. Long-term deposits reduce liquidity and interest rate risk of an HFC making long-term fixed rate loans.

B-36 There are many source of information about an HFC. The NHB must monitor the condition of all HFCs to determine how risk is changing. The call report provided by an HFC to the NHB can be used to derive key ratios. A change in deposit rating or stock prices also suggest problems if the rating or price decline. Analysts should be able to evaluate an HFC over time and against peers.

B-37 Central banks around the world prepare ratios to illustrate trends in operations and condition. This report illustrates the summary ratios for a large bank in the US. The instructor should show and discuss the types of reports prepared by the NHB. Highlight the key ratios from a CAMEL perspective.

B-38 Request the student groups to evaluate the financial profile of approved HFCs in India. Which of the indicated HFCs deserves regulatory concern? Why? Or, the instructor might assign one or two HFCs to each group and ask the group to compare the risk profile of the HFC to the industry. Key concerns: HFCs with high rate securities or loans may indicate high risk; HFCs with a low net interest margin or spread provide little income to support operations; HFCs with high operating expenses may be inefficient; HFCs with a low profit to net worth are under pressure to enhance operations; and HFCs with low net worth-to-assets may be less solvent, but those with a high ratio are more likely to pursue growth or assume high-risk operations to improve net income.

B-39 Summarize the second section of the seminar. Note that the regulation of HFCs is important to the Indian economy. If the HFCs are effectively regulated, they will be able to mobilize savings and make housing loans. Effective regulation affects the confidence of the public and market in banks and HFCs. As HFCs become larger, they may affect the level and structure of interest rates. If HFCs fail, and the government bails out depositors, the cost may affect the money supply and the governmental deficit. HFCs are affected by the economy, but could affect the economy positively or negatively depending on the effectiveness and efficiency of operations.

III. Fundamentals of Asset/Liability Management

C-1 Introduce the third module; the management of assets and liabilities. Remember that HFCs primarily obtain funds from customer deposits, NHB refinances and borrowed money, and mostly use funds to originate housing loans and purchase bonds. A/L management provides a process to manage the financial assets and liabilities.

C-2 Review the concept of A/L management; the coordinated approach to obtaining, using and pricing funds. By installing an effective management process an HFC should better be able to: 1) maximize net income so important to shareholders and for increasing net owned funds, 2) promote housing finance, and 3) minimize risk. An HFC cannot eliminate risk, but may be able to reduce risk to manageable proportions by installing an A/L process.

C-3 Review the various ways an HFC might increase risk. Refer students back to the CAMEL framework discussed in section two. Loans tend to be less marketable than government securities; note effect on liquidity. Risky loans tend to default more than government securities; note effect on asset quality. When the yield curve is upward sloping an HFC can increase the NIM by making long-term, 15-year, fixed rate loans financed by one-year deposits; note effect on interest rate risk if interest rates subsequently rise in India. A yield curve provides a graphic representation of interest rates (vertical axis) and term-to-maturity (horizontal axis). HFCs can also underrepresent the required allowance for loan loss or understate the classification of assets; note effect on earnings. Or, an HFC can speculate in the foreign exchange market; note effect on earnings. If an HFC purchases an asset denominated in a currency that depreciates against the Rupee, the institution will lose. If an HFC finances by a security denominated in a currency that appreciates against the Rupee, the institution will lose.

C-4 The majority of section three deals with the asset side of an HFC. Banks around the world fail because they purchase bad securities or originate bad loans. However, as the NHB relaxes pricing parameters for deposit slabs and loan products, and as India encourages a competitive financial market, interest rate risk becomes more important. IRR refers to the relative repricing of assets and liabilities. How will a change in interest rates in India affect the NIM of an HFC? For our introductory purposes, an account is rate-sensitive if it matures or reprices in a given period of time, say six months or one year. If an HFC has more liabilities repricing in a near-term bucket than assets, it is negatively-gapped. The HFC is liability sensitive and would be hurt by rising interest rates. By contrast, if an HFC has more assets repricing in a near-term bucket than liabilities, it is positively-gapped. The HFC is asset sensitive and would be hurt by falling interest rates.

C-5 Here is an example of a repricing report for a US bank. The bank is asset sensitive for both three-month and 12-month buckets. The three-month gap is +16.32% and the 12-month gap is +13.61%. Note that total interest-earning assets exceed interest-bearing liabilities by 14.7%; this relationship affects the NIM of the bank. This would be a good

time to include the IRR reports now prepared by the NHB for HFCs. Many banks today use duration analysis and simulations to measure IRR; we do not include such analysis for an introductory course.

C-6 Ask students how they would allocate Rs. one crore to the indicated repricing report. The 6-month T-bill would be allocated in the first bucket; the security matures within one year. The 18-month CD would be allocated to the second bucket; the risk is that the depositor withdraws funds prematurely. The 15-year fixed rate loan can be approached several ways: 1) the entire amount is allocated to the third bucket, 2) the portion of principal to amortized in year one should be allocated to the first bucket, the amount of principal to be repaid in the second and third years should be allocated to the second bucket, and the rest should be put in third bucket, or 3) some estimate of prepayment may be added to that estimated by repayment. The variable rate security should be placed in the first bucket for repricing purposes if there are no caps (maximum rate) or floors (minimum rate) on the variable rate. The NHB refinance should be placed at the end of the second bucket given the fixed rate and term.

Assume an HFC has a one-year gap of -10% of total assets. The HFC has Rs. 40 of repricing assets and Rs. 50 of liabilities in the one-year bucket. The HFC has assets equal to Rs. 100 crore (for simplicity). Assume the HFC earns a NIM of 4% or Rs. 4 crore. What rate change would produce a loss of Rs. one crore?

$$\begin{aligned} \text{Gap} \times \text{Rate Change} &= \text{Change NIM} \\ -10 \times \text{Rate Change} &= -1 \\ \text{Rate Change} &= .10 \text{ or } +10\% \end{aligned}$$

The analysis assumes that all assets and liabilities will reprice immediately and no embedded options contained in accounts will be exercised. A 10% rise in rates would lead to income increasing by Rs. 4 and lead to expense increasing by Rs. 5; the NIM falls by Rs. 1.

C-7 Note that a related attribute of A/L management is resource mobilization. By relying on many sources of funds, an HFC will be less likely to suffer a liquidity crisis. The HFC should be concerned with the diversity of sources, the sustainability, and the cost. As just discussed, the HFC might be able to reduce costs by relying on certain maturities, but A/L mismatches should be limited to amounts that can be tolerated by earnings and capital.

C-8 The next section briefly reviews the concept of valuation, especially valuation of bonds. Since prior work illustrated credit risk, apartment loan ratios and default rates, this section extends the interest rate risk concept. First, how are assets valued? Intrinsic value has little role in finance; it is often used when purchasing art, coins, and other collectibles. The concept of "bigger fool" is very relevant to financial markets; it has existed from the tulip bulb bubble, through the South Seas Bubble to today. Investors buy assets because certain assets appreciate and investors believe they will continue to go one way -- up. At

some point the bubble collapses and the bigger fool is left holding less valuable assets. Most assets are valued by present value or option-pricing. Focus on present value. The value of any bond equals the present value of cash flow -- interest and/or principal. $Value = Cash\ Flow_t / (1+i)^t$. Any asset that pays cash quicker, pays more cash flow, or is less risky is worth more.

C-9 Review the key financial risks of bonds to an HFC. Ask students how they could measure credit risk. They should remember credit ratings. Credit risk is more important in a recession. Long maturities may provide higher interest rates than short maturities, but are less liquid (have to wait a longer period of time to receive principal) and are more price volatile (shown on next two slides). India's capital market is still developing; bonds are not easily or quickly sold at small prices between the bid (sell) and asked (buy) prices. Note that many bonds include options, like a call and put. We do not discuss options in an introductory seminar. A call is an option of the issuer to redeem a bond prior to maturity. The borrower will exercise the call when interest rates subsequently decline. The call takes away potential appreciation of a bond because prices rise when rates fall; except for the call feature. A put is an option of an investor to have a bond redeemed prior to maturity. The investor will exercise the put when interest rates rise and reduces any price depreciation. Callable bonds provide investors higher yields; putable bonds carry lower rates due to the shift in risk.

C-10 The bond markets are global. An HFC must consider credit risk that ranges from country risk, debtor risk and issue risk. This slide highlights credit factors applicable to a bond. The country risk ratings reflect the political, economic and transfer factors of a country. A regulator can assess the relative risk of a bond if it is rated. Alternately, one must analyze the bond; note that international information may not be timely, reliable or comparable to India's accounting standards. There is also legal risk (what rights exist if a dispute occurs), settlement risk (payment v. delivery issues) and collateral factors. We more fully illustrate credit analysis in the final part of this section.

C-11 The chart illustrated on this slide is important; it shows how the price of two 15% Indian bonds change in response to volatile interest rates. Long-term securities are much more volatile than short-term. The issue of price volatility is important regardless of accounting. If an asset is marked-to-market, long-term securities will produce larger changes in value. If an asset is carried at historical cost, long-term securities will lock-in that yield for a longer period of time. Relate the discussion back to IRR.

C-12 This chart complements the prior analysis. Maturity is not the only factor affecting price volatility. The graph illustrates how three, 15-year assets would change if interest rates rise one percent. The zero-coupon security falls the most; there is no interim cash flow. The amortizing asset declines the least; the loan pays interest and principal.

C-13 Ask students to answer the questions. How will the prices change on a percentage basis given a 1% rise in rates? A 0% 10-year bond is more volatile than a 12% bond. A bullet bond is more volatile than an amortizing loan. A low rate (8%) bullet loan is more

volatile than a high rate amortizing loan. To illustrate for assets with a face value of Rs. 100 crore, assume interest rates in India are 12%:

| | 12% | 13% | % Price Change |
|---------------------|--------|--------|----------------|
| 0%, 10-year | 32.20 | 29.46 | -8.51% |
| 12%, 10-year | 100.0 | 94.57 | -5.43% |
| 10%, 12-year Amort | 90.91 | 86.85 | -4.47% |
| 10%, 12-year Bullet | 87.61 | 82.25 | -6.12% |
| 8%, 15-year Bullet | 72.76 | 67.69 | -6.97% |
| 15%, 15-year Amort | 116.48 | 110.52 | -5.12% |

The concept illustrated is related to duration. Duration represents the time-weighted present value of an asset's cash flow. Assets that promise more cash or cash more quickly have a shorter duration and expose an HFC to less market risk.

C-14 Summarize the bond discussion with different strategies HFCs may use to reach for yield and risk. This would be a good time to review the actual bond portfolio of an HFC and ask students to describe the risk(s) inherent in the portfolio.

C-15 The last module of section three discusses lending. The analysis provides a framework to assess credit risk of any loan or corporate security. An HFC must meet NHB regulatory requirements; placing 75% of assets in housing-related loans. In addition, an HFC must ensure that it meets prudential risk-based capital requirements and maintain credit risk to limits that can be tolerated by earnings and net owned funds. It is critical that HFCs note the consequence of maturity and variable rate pricing in terms of IRR. Also, loans provide the most important part of an HFC's NIM and cash flow. Lending is where HFCs prosper or fail.

C-16 Management issues invariably require an HFC to develop a policy statement. This slide addresses some of the issues related to lending decisions. First, the policy should establish personnel responsibilities: a call offer markets loans, a credit officer ensures that a loan is documented and there are two or more sources of repayment, a client officer has direct contact with a customer, and a review officer ensures that policies are complied with, assets deserving classification are classified correctly and the allowance is satisfactory. The policy should indicate how loans are to be priced. A later example shows how the cost of funds, credit risk, profit contribution and operating costs interact. The policy should indicate what types of loans, borrowers and industries it will lend. By definition, HFCs focus on housing finance for the majority of loans; it is not a well diversified portfolio. The policy should indicate how an HFC determines that a borrower has the legal right to borrow monies, what forms are required and how the credit risk should be underwritten and documented. This would be a good time to introduce some documentation applicable to an Indian house loan. Finally, the policy should address how risk is going to be measured and how correlated its portfolio is. For example, will an HFC originate a loan with a 90% loan-to-value or only 40% LTV? Will an HFC originate a loan with a debt service ratio of 1.5 or require 2.0? Are all loans originated in the same area?

C-17 This slide provides an overview of the lending decision. Review each block. Note that once a loan is originated, two things will happen. It is repaid, or it is not repaid. If a loan is not repaid, the HFC encounters losses.

C-18 Review the underwriting process of a loan and highlight how HFCs evaluate each block. First, assess the purpose of a loan. If the purpose is within the HFC's policy, management must determine if two or more sources of repayment exist. If the loan appears acceptable, management must structure the loan; to include pricing the loan (fees and interest), and requiring collateral and/or guarantees. Finally, the loan must be monitored until repaid or financial problems are worked out. Note that many lenders around the world consider the "5C's" of credit when assessing credit risk. This is the framework adopted here.

C-19 A debtor's character is the most important factor to consider. It is also the most difficult to measure. Discuss any recent scams in India that led to losses because individuals were not honest.

C-20 Capacity is the next most important factor to consider when evaluating a loan. It refers to the income of the borrower in relationship to debt. The amount and stability of income is important. Note that some income is unreported (for tax reasons) and affects potential repayment. Note that it is important to determine which debt has priority over another. Lenders must also consider potential contingencies; the chance of being sick, dying, or being called on to repay another debt.

C-21 Capital is less important than character or capacity. It refers to the net worth of a borrower. Capital only provides cash flow if assets can be sold or if new funds can be raised by the borrower. Some borrowers inflate the value of assets and underreport liabilities -- a character flaw.

C-22 The last two factors, collateral and conditions, do not necessarily affect default but may reduce the consequence of default. However, the sources of repayment are inferior to capacity. Does the HFC have the legal right to enforce the collateral or conditions? Is the collateral durable and marketable? Does the guarantor have the financial resources to pay? Discuss the record of collateral and conditions in India. That is, how often is an HFC able to collect a loan by selling collateral or relying on guarantors?

C-23 If time permits, illustrate the financial analysis of a firm (corporate bond or project loan) with the following small case. Most financial analyses start with an assessment of financial records. What confidence do we have in the records? Differentiate an audit from internally-prepared reports. We will proceed through several types of ratios common to an international credit analysis, not necessarily one unique to India. The ratios refer to the balance sheet and income statement of "Computron," which is a good name for a company given India's heavy computer programming activity.

C-24 Show the financial statements of Computron and related peer statistics. We will use this firm to illustrate financial analysis.

C-25 Review some of the common managerial and operations indicators of a problem commercial loan. Add examples from recent India defaults. Note that A/R refers to accounts receivable.

C-26 Increasingly, banks around the world utilize credit scoring models. This slide provides a partial loan score. Empirical studies compare a sample of firms who repay debt and compare them to a sample that default. This sample analyzed 70 financial ratios and these five were the ones that separated good from bad firms. The cash ratio shows immediate liquidity and the current ratio shows short-term liquidity. The operating cash flow ratio shows repayment by operating cash flow and debt ratio illustrates the importance of debt to funding decisions. ROE affects the ability of the firm to attract equity.

C-27 This slide shows Computron in relationship to the five ratios associated with bankruptcy. The firm shows weakness in the debt ratio and cash flow ratio, but does not look like failure is imminent.

C-28 Integrative ratios provide a quick overview of a firm. Shareholders are very interested in return on equity. ROE rewards shareholders and provides a source of capital for a firm. However, a banker wants to know whether the ROE is high due to high leverage or due to high profitability. Profitability can be decomposed between turnover and profit margin. We discussed similar issues when evaluating capital for an HFC.

C-29 Computron is experiencing financial problems from an integrative perspective. ROE is declining and much lower than peers. Why? The leverage multiplier is higher, which indicates the firm is more risky, yet ROE is lower. The firm has a very low ROA. Why? Although the firm's asset turnover declined a little and is lower than the peers, the problem is related to a low profit margin.

C-30 An analyst would now evaluate why the profit margin declined by developing a common size income statement analysis. The prime reasons for the lower profit margin are a higher cost of goods sold and increasing other expenses. What are other expenses? These could range from a collection of small expenses to items management is trying to hide.

Note, at this time many credit analysts would compute many other ratios reflecting the liquidity, asset efficiency, solvency and profitability. We have not introduced these additional ratios given the introductory nature of the seminar.

C-31 It is useful to evaluate any managerial changes introduced by management. A source and use of funds can provide such information. It is nothing more than a comparative analysis of a balance sheet at two points in time. Some analysts do not show

net income as a source of funds and dividends paid as a use; they show the net change in earnings retained as a source.

C-32 The source and use of funds schedule allows an analyst to focus on large changes in A/L management. Computron borrowed a large amount of new long-term debt and investment heavily in inventory. Why? Note that the debt increased the debt ratio and leverage multiplier, and the inventory buildup was not accompanied by a lower cost of goods sold or a sharply higher current ratio.

C-33 Ultimately, the financial ratios must return to credit analysis and loan repayment. Some analysts estimate operating cash flow of a firm by adding net income to non-cash expenses such as depreciation. The funds perspective of cash flow can be very misleading when accounting accruals exist. One should subtract any change in accounts receivable and inventory, and add any changes of payables. Why? Sales included transactions that had not been realized in cash. Similarly, expenses had been subtracted that were not paid. Note that the cash flow of Computron changes from a positive 64,220 to a negative 73,780. The firm will have trouble repaying a loan from operating cash flow.

This would be an excellent time to have students break into groups and analyze the financial statements of a company whose bonds are owned by several HFCs.

C-34 The preceding analysis has provided examples of a financial perspective of assessing a credit. This slide returns to pricing a loan. The rate and fees should be sufficient to cover the cost of match-funded liabilities, the operating costs of the loan, an estimate of credit loss and a return to profits.

| | | | |
|-------------------------|-----------|---|------------------|
| Cost of Debt | 9 x .11 | = | .99 |
| Cost of Equity (profit) | 1 x .16 | = | .16 |
| Operating Costs | 10 x .015 | = | .15 |
| Credit | 10 x .005 | = | .05 |
| Total | | | 1.35/10 or 13.5% |

Unless the HFC is able to charge an interest rate according to the above principles, it will not cover expenses or post a profit. Note that efficient HFCs can price loans with a lower rate. Low risk loans should cover a lower rate. Discuss how HFCs price loans. Note that NHB guidelines and competition also affect loan pricing.

C-35 Conclude the section with what an HFC can do when a loan develops problems. It can workout (change terms of loan), settle (accept less than owed), offset accounts (offset loan with any deposits of borrower), and take legal actions (pursue bankruptcy or foreclosure). If an HFC takes possession of collateral, it either must sell the assets or finance the sale (often known as a loan-to-facilitate). Note that problem loans should have been classified and affect the amount of allowance for loan losses. Finally, there is a public policy issue regarding how financial institutions respond to problem loans. If an HFC settles or agrees to a workout, they are keeping control of assets with existing

owners and managers. By pursuing a legal alternative or offsetting accounts, they are changing control of the firm.

C-36 This slide merely provides a graphic perspective of the problem loan alternatives. It is critical that most of an HFC's loans are repaid fully and on a timely basis, and that the interest rate compensates for relative credit risk exposure. Discuss how HFCs have been managing problem assets.

C-37 Conclude the section and seminar. Review the principles of a safe/sound HFC and the indications of a creditworthy institution.

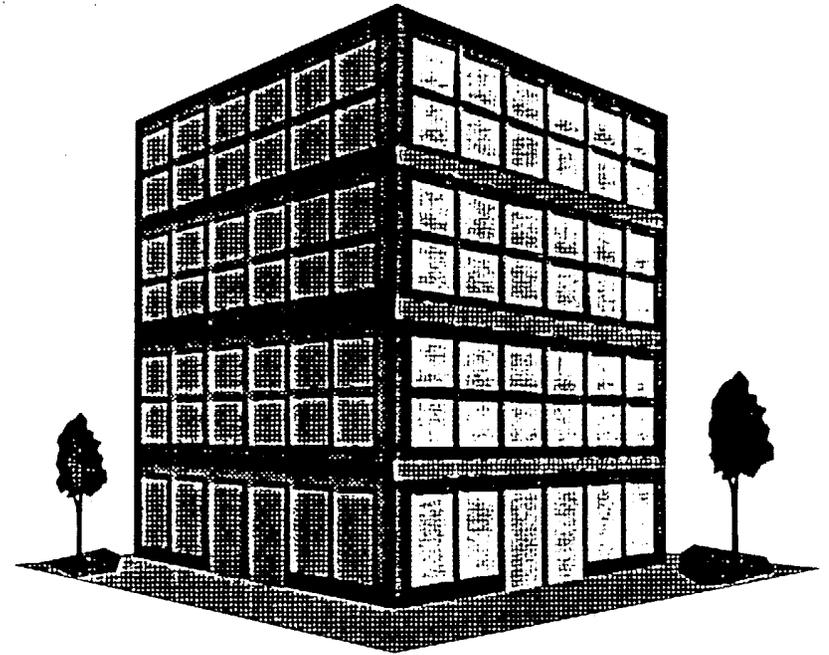
Ensure that all questions have been answered that were raised at the start of seminar. Summarize the key points of the seminar. Identify any legal, financial, economic, demographic or governmental trends within India or HFCs that will affect operations and condition of firms in the future. Note that a healthy HFC industry allows India to mobilize savings and to provide housing finance. Best of luck!



Seminar Objectives

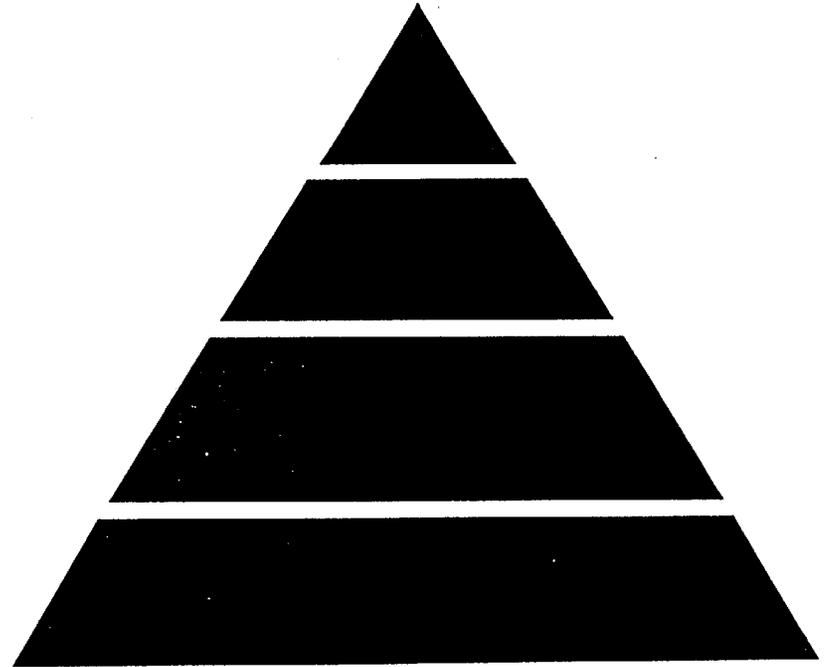
- Identify Importance of Housing Finance Companies (HFC) to India
 - Intermediation of Funds
 - Housing Finance
- Establish Why and How HFCs Are Regulated and Supervised
 - Examination Function
 - Supervision Function
- Review Fundamentals of Asset/Liability Management

IMPORTANCE OF HOUSING FINANCE COMPANIES TO INDIA



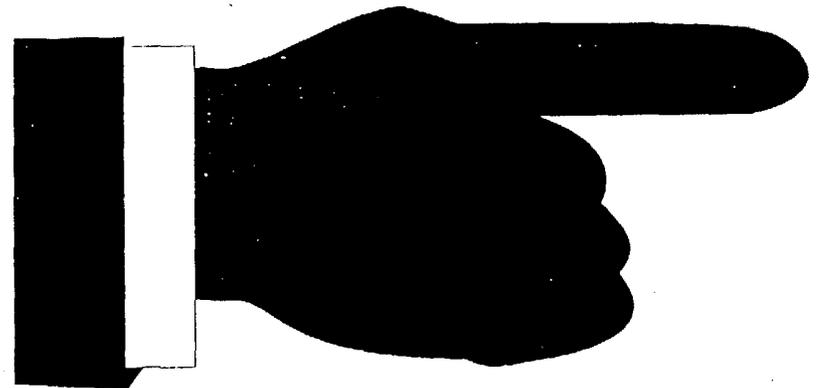
NHB Mission

- Promote Housing Finance Companies
- Supervise Housing Finance Companies
- Provide Financial Support of Housing Finance Companies
 - Refinance
 - Equity
 - Guarantee

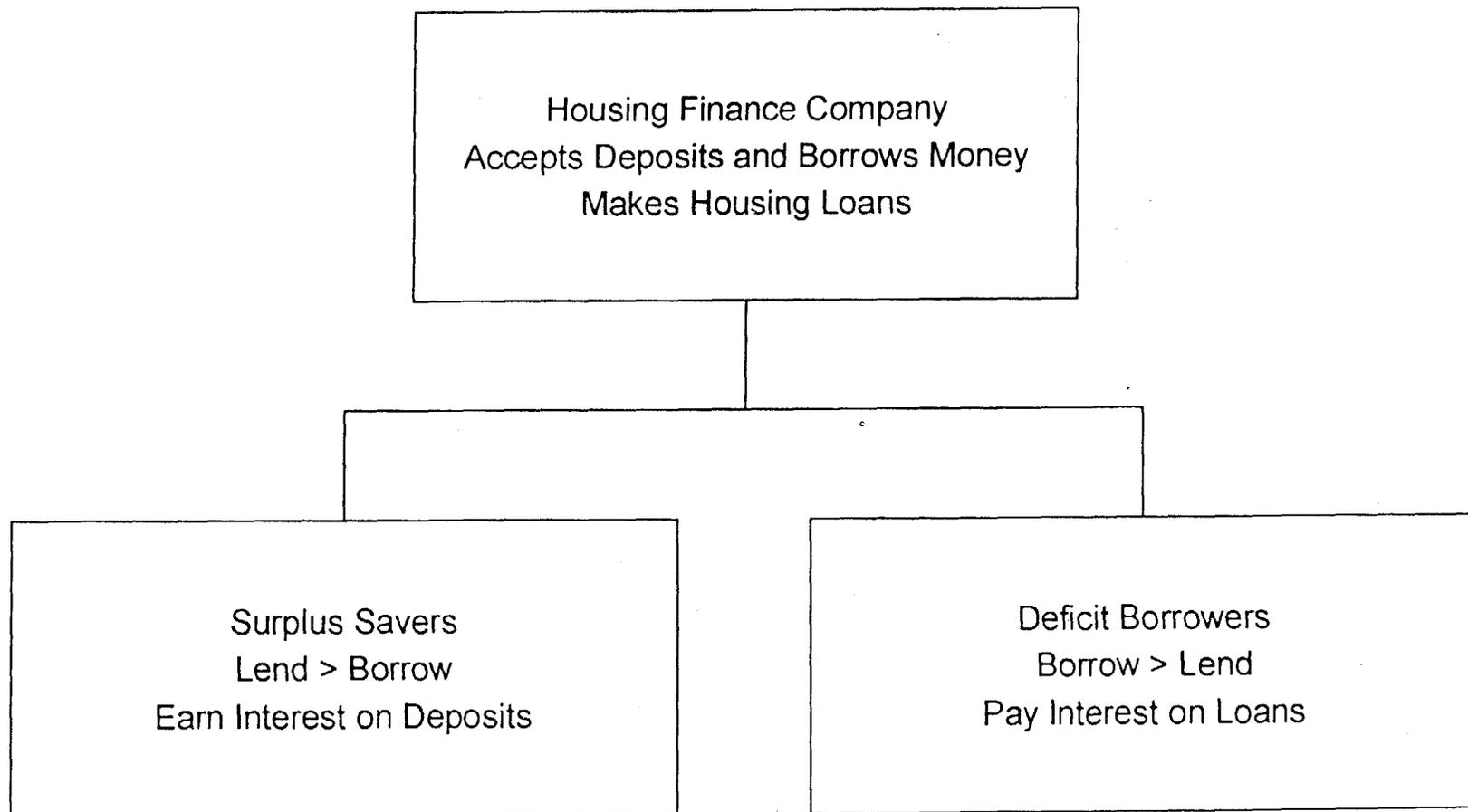


The NHB and Housing Finance Companies

- Regulation -- Sets Prudential Standards
- Examination -- Ensures Regulations are Met
- Supervision -- Directs HFC to Change Operations to Meet Regulation

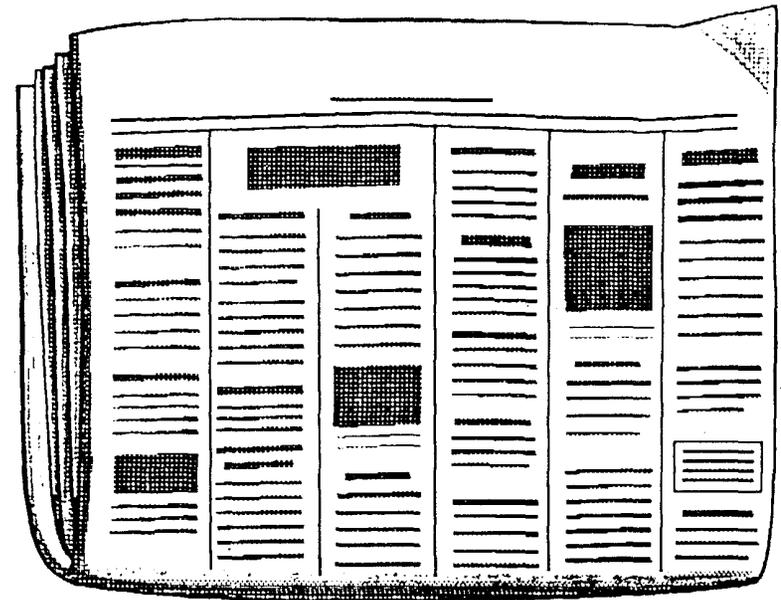


Capital Formation: Intermediation of Funds from Surplus to Deficit Units



HFCs as Financial Intermediaries

- Convenience
- Economies of Scale
- Expertise
- Intermediation
 - Denomination
 - Maturity
- Asset Diversification
- Technology
- Regulation



Balance Sheet Comparison

----- BUSINESS -----
ASSETS LIAB. & EQUITY

| | |
|---------------------------------|------------------|
| Cash | Accounts Payable |
| S-T Securities | |
| Accounts Receivable | S-T Debt to Bank |
| Inventory | L-T Debt |
| Plant & Equipment (Net of Dep.) | Equity |

----- BANK -----
ASSETS LIAB. & EQUITY

| | |
|------------|--|
| Cash | Customer Deposits |
| Fed Funds | |
| Securities | |
| Loans | Open Market Borrowing & Purchased Deposits |
| | S-T Debt |
| | Equity |

1
Promise
& Equipment

Income Statement Comparison

----- BUSINESS -----

| INCOME | EXPENSES |
|---------------|-------------------------------|
| Sales | Cost of Goods Sold & Overhead |
| | Interest Paid |
| | Taxes |
| Interest Rec. | Profit |
| Other | |

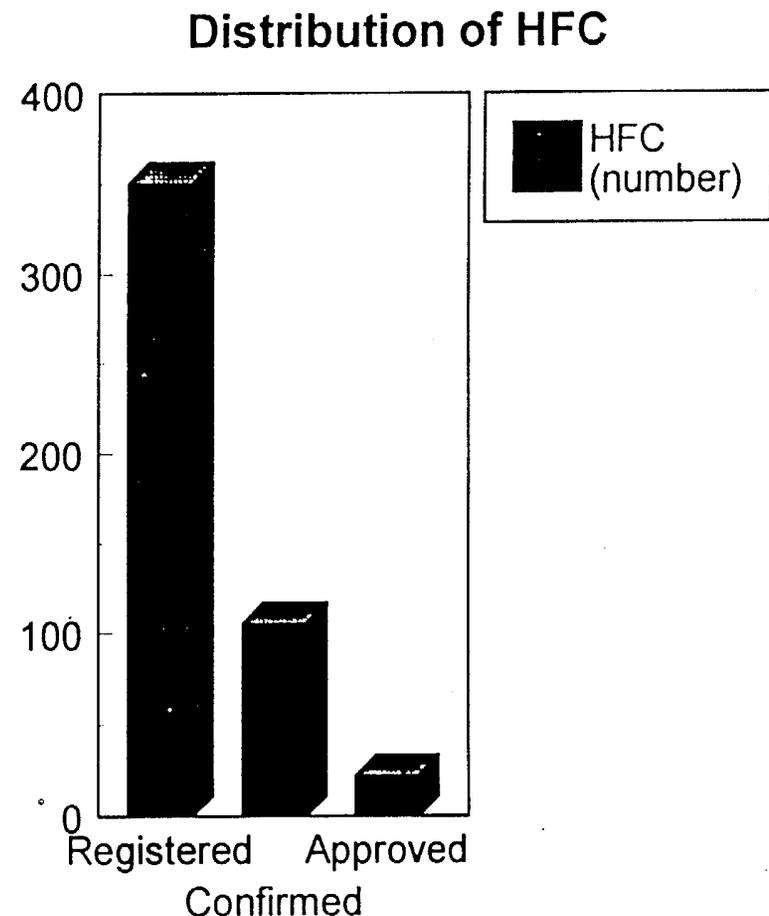
----- BANK -----

| INCOME | EXPENSES |
|-----------------|-------------------|
| Interest Income | Interest Expenses |
| | Other Expenses |
| | Taxes |
| Other Income | Profit |

Loan Losses

Housing Finance Company Profile

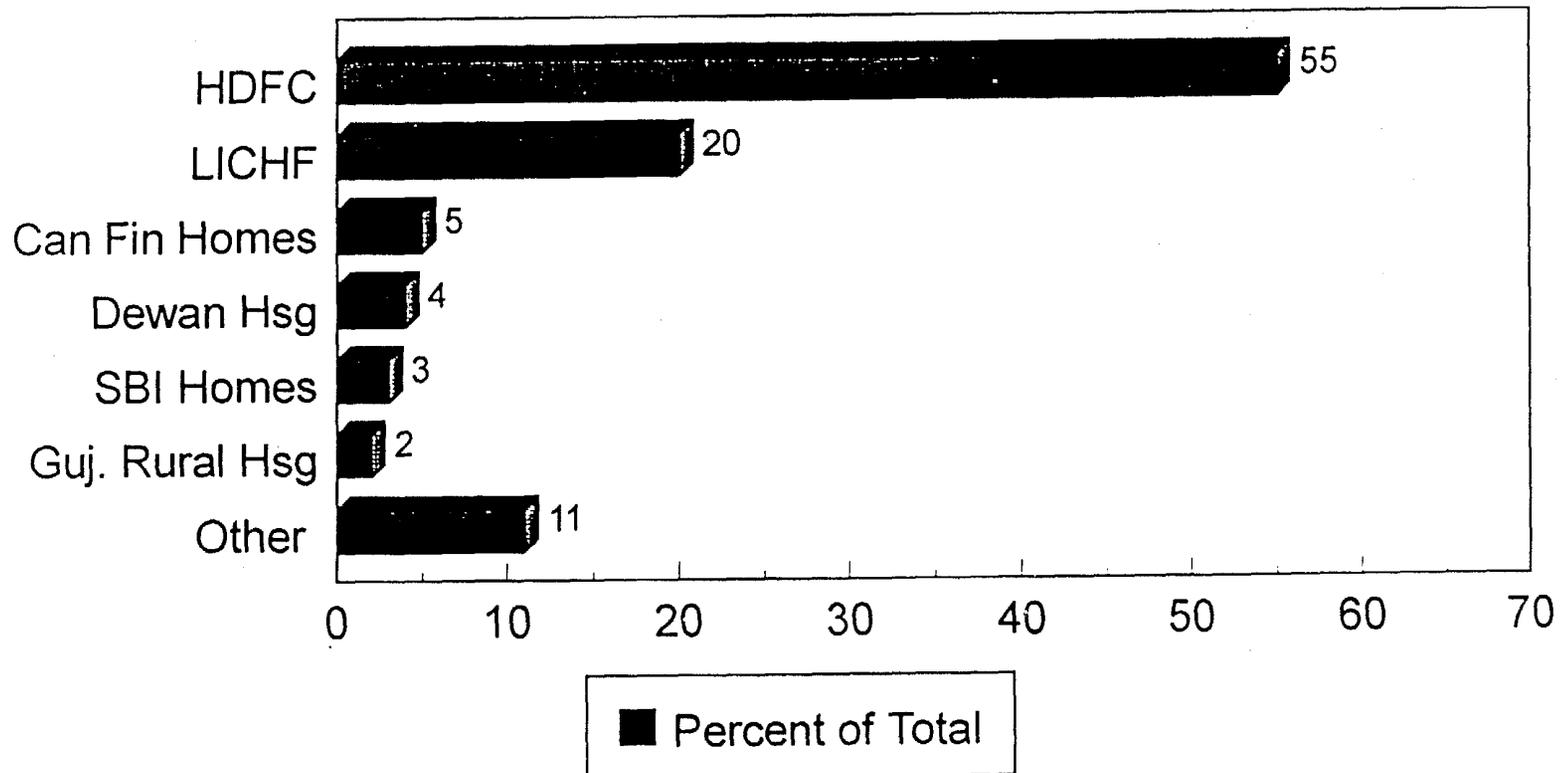
- Registered HFC
 - Housing Finance is One of Main Business Activities
- Confirmed HFC
 - Housing Finance is The Main Activity
- Approved HFC
 - NHB-approved HFC for Refinance



Approved HFCs by Asset Size

HFC Market Share by Assets

1995 Estimate of Credit Lyonnais



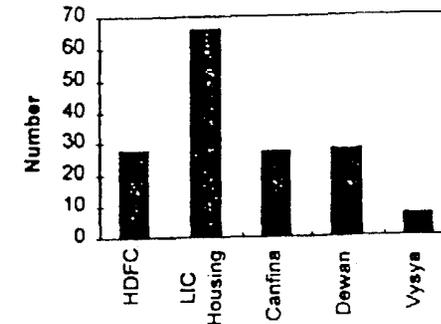
HFC Sponsor and Location

| HFCs | Principal area of operations/Based in | Year of commencement of operations |
|---|--|------------------------------------|
| HFCs set up by Insurance companies | | |
| 1. LIC Housing Finance | Bombay | 1989 |
| 2. GIC Housing Finance Ltd. | Bombay | 1990-91 |
| HFCs set up by banks | | |
| 1. AB Homes Finance Ltd. | Hyderabad | 1991 |
| 2. BOB Housing Finance Ltd. | Jaipur | 1990 |
| 3. Canfin Homes Limited | Bangalore | 1987 |
| 4. Cent Bank Home Finance Ltd. | Bhopal | 1991 |
| 5. Indian Bank Housing Ltd. | Madras | |
| 6. PNB Housing Finance Ltd. | New Delhi | 1988 |
| 7. SBI Home Finance Ltd. | Calcutta | 1988 |
| 8. Vysya Bank Home Finance Ltd. | Bangalore | 1991 |
| Private Sector HFCs | | |
| 1. Dewan Housing Development Finance Ltd. | Bombay | 1984 |
| 2. Fair growth Home Finance Ltd./ Vijaya Home Loans | Bangalore | 1990-91 |
| 3. Gujarat Rural Housing Corporation Ltd. | Ahmedabad | 1988 |
| 4. GLFL Housing Finance Ltd. | Ahmedabad | 1992 |
| 5. HDFC | Bombay | 1977 |
| 6. Hometrust Housing Finance Ltd. | Calcutta | 1994 |
| 7. India Housing Finance and Development Ltd. | | |
| 8. Live Well Housing Finance | Hyderabad | |
| 9. Parashwanath Housing Finance Corporation Ltd. | Ahmedabad | 1986 |
| 10. Peerless Abasan Finance Ltd. | Calcutta | |
| 11. Saya Housing Finance Company | Ahmedabad | 1985-86 |
| HUDCO | Finances state level housing development bodies. | 1970 |

* De-recognised by NHB

Branch network of select HFCs

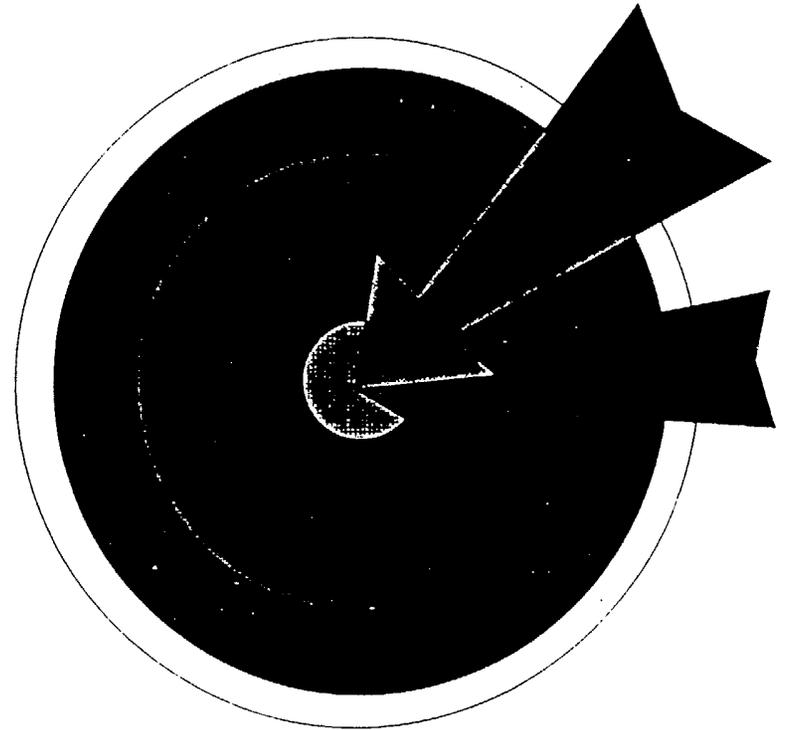
(As at March 31, 1995)



HDFC - Housing Finance Development Corporation Ltd
 LIC Housing - LIC Housing Finance Limited
 Canfina - Canfin Homes Limited
 Dewan - Dewan Housing Finance Corporation Ltd
 Vysya - Vysya Bank Housing Finance Ltd

HFC Objectives

- Financial
 - Adequate Liquidity
 - Sufficient Capital
 - Good Asset Quality
- Profitability
 - Support Capital Growth
 - Reward Shareholders
- Stakeholders
 - Depositor Safety
 - Mortgagor Demands
 - Regulatory Confidence



Approved Housing Finance Company

- Liquidity
 - Maintain investment in liquid assets equal to at least 10% of deposits
 - Deposits may range in tenor between one-year and seven years
 - Deposits must be rated "investment grade"
- Operations
 - Operate efficiently -- Keep costs under 1.5% of loans
 - Price loans and/or deposits under maximums when set by NHB

Approved Housing Finance Company

■ Asset Portfolio

- Commit at least 75% of assets toward housing
- Ensure slow loans three-months late less than 5% of total demand in one year
- Limit loans-to-one borrower to less than 30% of net owned funds
- Classify assets according to repayment

■ Capital

- Issued and outstanding capital of Rs. 5 crore
- Meet prudential risk-based capital ratio
- List stock on exchange in India



Approved Housing Finance Company

- Business Strategy
 - Chartered as a public limited company
 - Provide long-term finance for construction and purchase of new homes
 - No relationship with construction company
- Management
 - Well qualified and independent board of directors
 - Chairman subject to approval by NHB
 - Require governmental approval prior to appointing the auditor

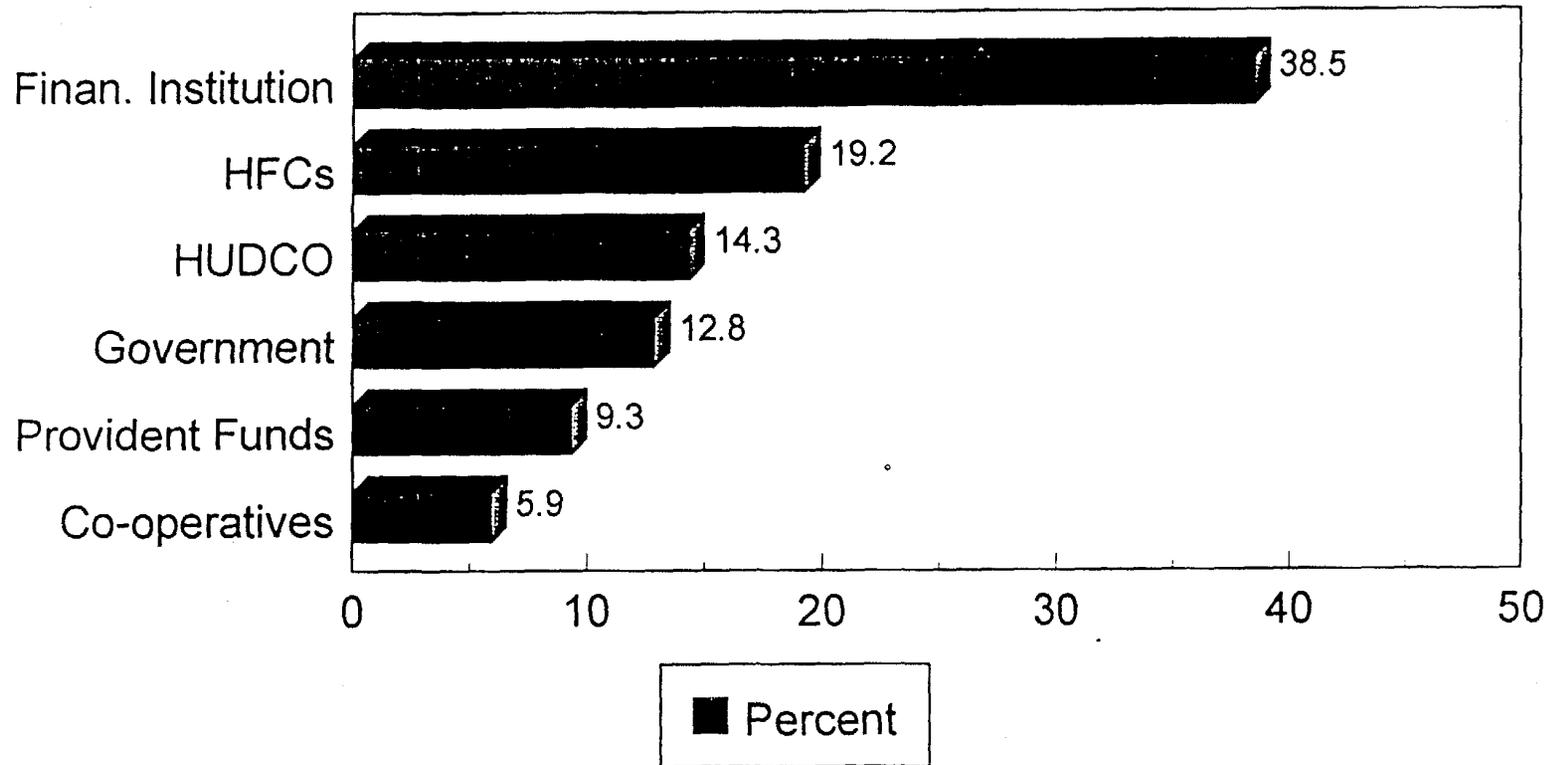
Mortgage Demand

- Low Dependence on "Formal" Sector
 - 30% Use Formal
 - Borrow 35% of Price
 - High Income Borrow
 - 110,000 Rs. Common Loan
 - Debt Aversion
 - Utilize Family Savings
 - Government, Directed Credits
- Problems of "Formal" Sector Funding
 - Poor
 - Rural
 - Women
 - Disadvantaged
 - Bankruptcy Law and Foreclosure

Funds Flow to Housing Finance by "Formal" Sector

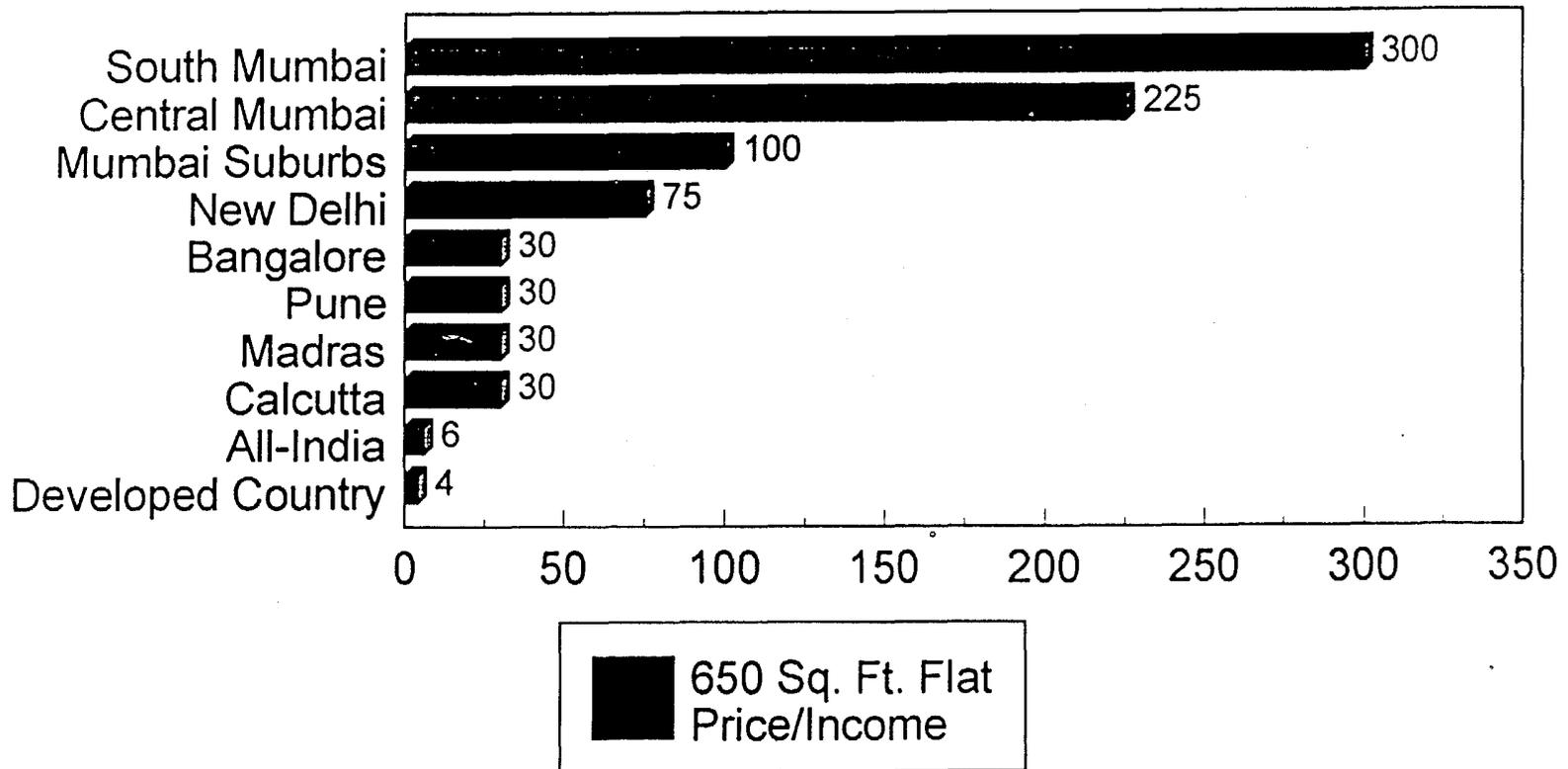
Funding of Housing Sector

Report of the Working Group for the Housing Sector (1992-97)



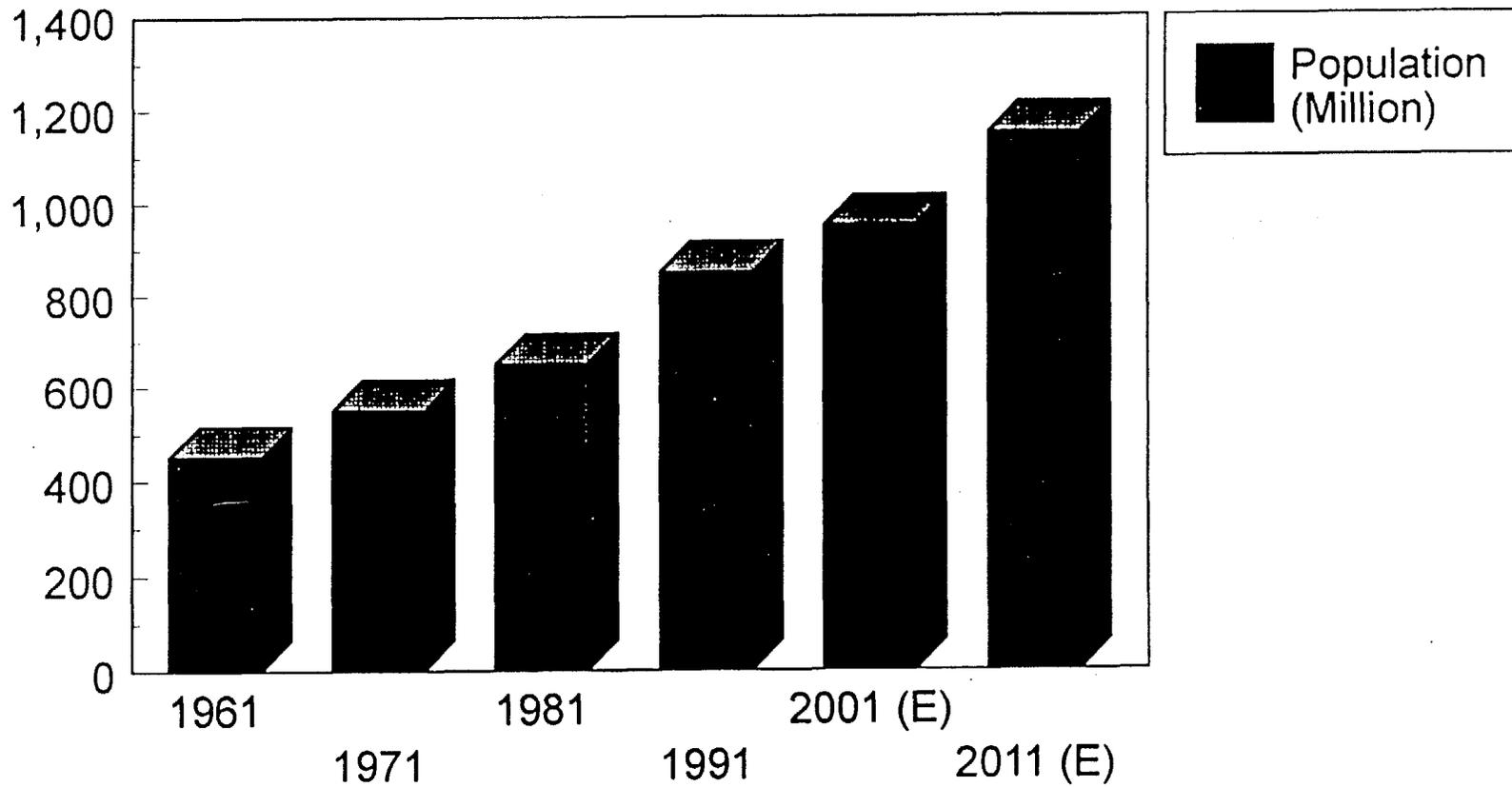
Home Affordability in India (Middle to High Income Group)

Estimated Cost of 650 Square Foot Flat and Rs. 43,000 Income
India Research (Credit Lyonnais Securities)



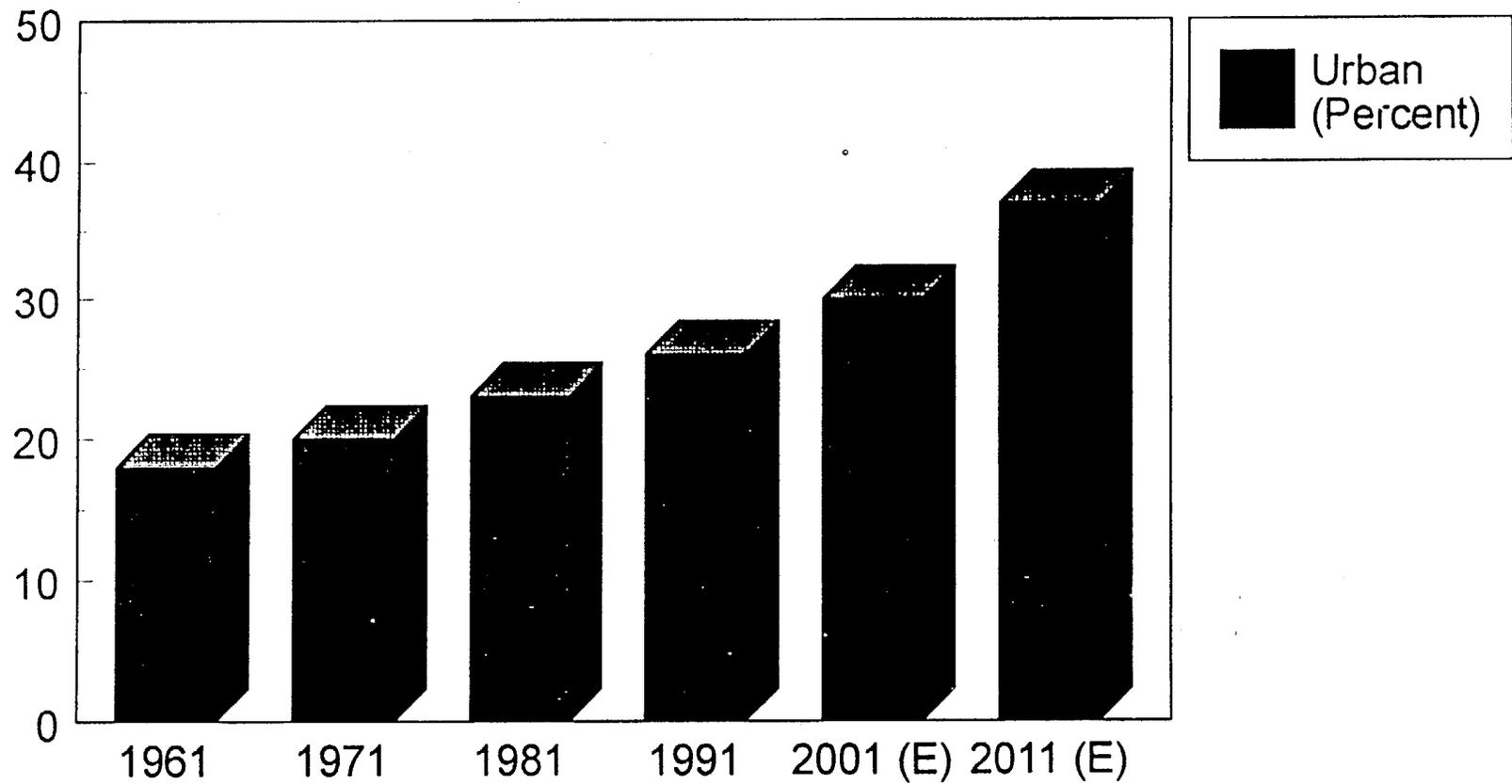
Population Growth

India Research



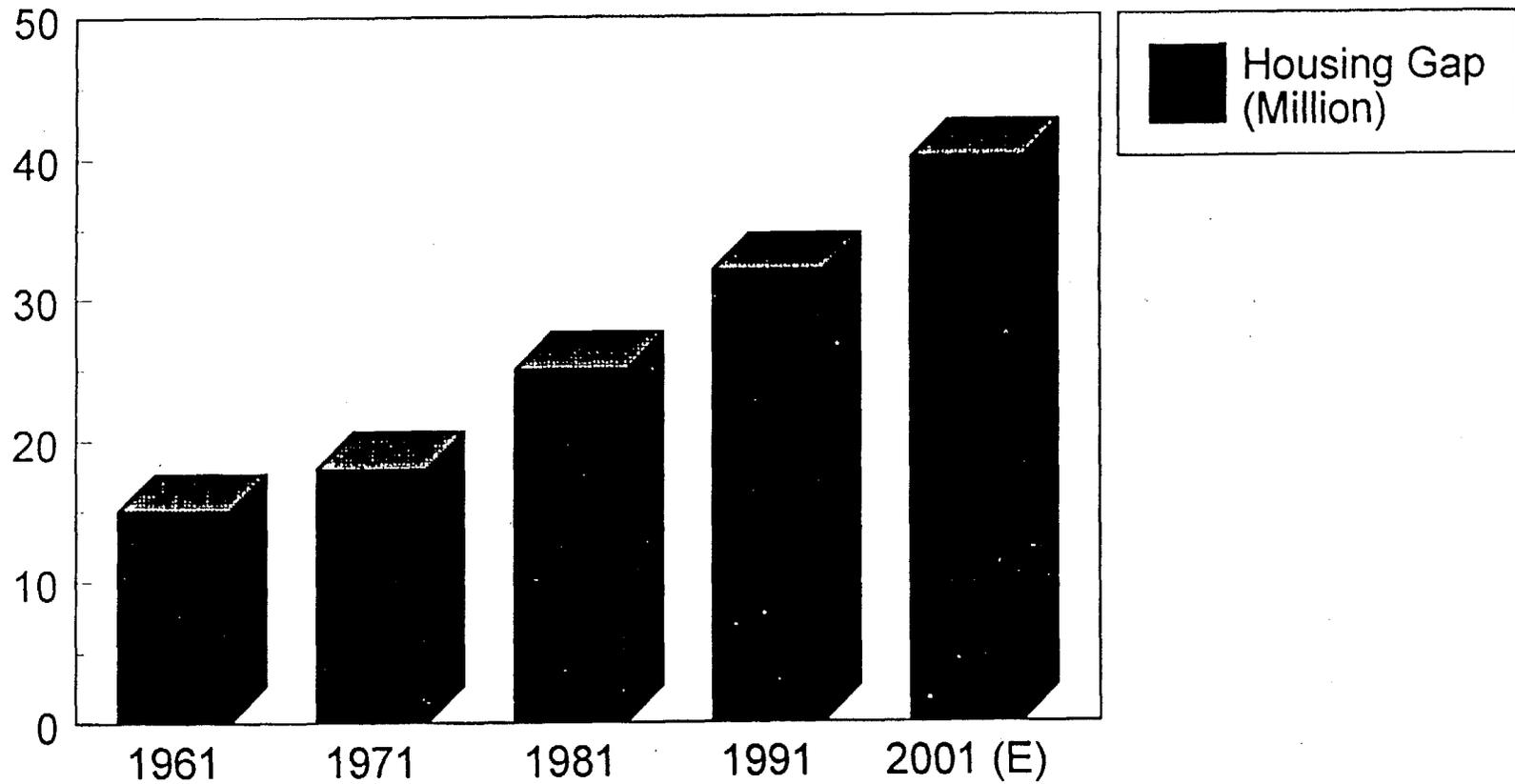
Urbanization of Population

India Research



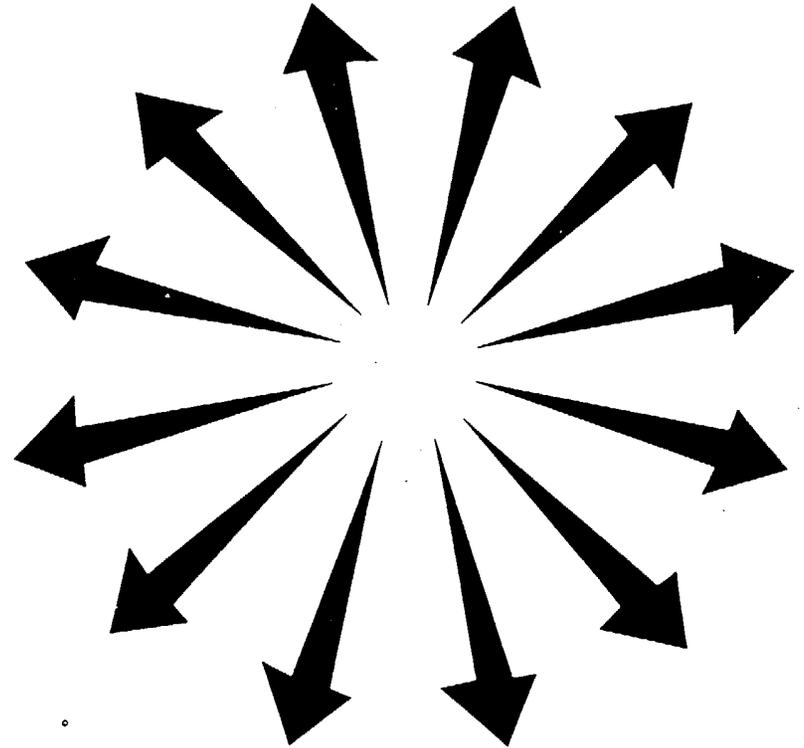
Housing Demand/Supply Gap

National Building Organization



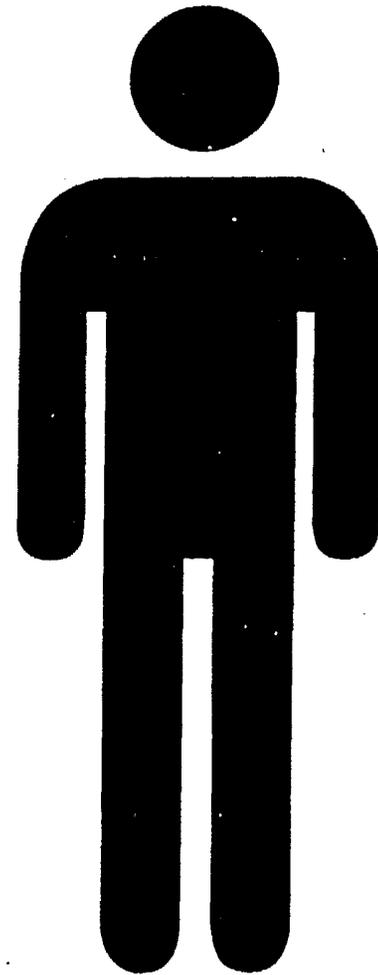
HFCs and Capital Formation Process

- Payment System
- Mobilize Savings
- Store of Wealth
- Source of Credit
 - 75% Housing Finance
 - 25% Other
- Financial Services



III

SUPERVISION AND REGULATION OF HOUSING FINANCE COMPANIES



ah

Regulation and Risk Management

- Credit Risk -- Borrower Fails to Perform
- Market Risk -- Effect of Adverse Move of Interest or FX
- Liquidity -- Unable to Meet Claims
- Operational -- Fraud, Inadequate Controls
- Legal Risk -- Effect of Unenforceable Contracts or Lawsuit
- Reputation -- Potential Adverse Publicity and Loss of Customers or Effect of Lawsuits

Bank Supervision

- Capital Adequacy
- Asset Quality
- Management
 - Strategic
 - Risk
- Earnings
- Liquidity
 - Visible
 - Invisible

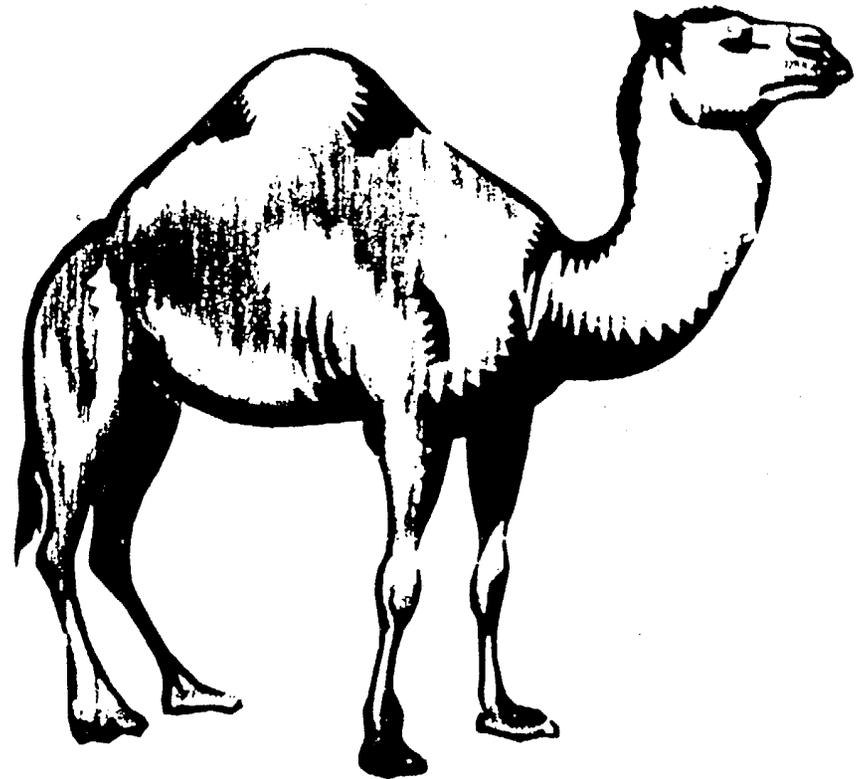
C

A

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Bank Failure and Management

- Management unable to identify, measure and control risk
- Passive (non-independent) Directors
- Aggressive growth Business Strategy that leads to poor loans or high cost of money
- Many loans to insiders -- poor underwriting and inadequate rates/fees
- Affiliated transactions with Directors detrimental to HFC
- Excessive dividends to shareholders

Bank Failure and Financial Factors

- Low Capital
- Liquidity Crisis
 - Unable to borrow in market or from NHB
 - Loss of consumer confidence
 - High loan-to-asset ratio
- Operating Losses
 - Inadequate classification of assets
 - High Loan losses and provision for losses
 - Low net interest margin due to mismatch of repricing of assets and liabilities

Bank Failure and the Economy

- India's Economy
 - Recession
 - High Unemployment
 - High "Real" Rate of Interest
 - Falling Real Estate Prices (e.g., Bombay)
- Regional Economies
 - "Boom" to "Bust"
 - Problem in Dominant Industry (e.g., agriculture or tourism)
 - Change in Governmental Support

International Economies and Potential Bank Failure

ECONOMY A strike in the car industry caused South Korea's industrial output to grow by only 3.8% in the 12 months to June, the lowest year-on-year growth for 28 months. In the year to July its inflation rose to 5.6%, the highest since December 1994. In June, Thailand's 12-month trade deficit shrank to \$10.8 billion, the smallest for 14 months.

| | % change on year earlier | | | Latest 12 months, \$bn | | Foreign reserves, \$bn | |
|----------------|--------------------------|-----------------------|-----------------|------------------------|-------------------------|------------------------|-------------------|
| | GDP | Industrial production | Consumer prices | Trade balance | Current account | Latest | Year ago |
| China | + 9.5 Q2 | +13.2 Jun | + 8.5 Jun | + 4.3 Jun | +16.5 1995* | 83.7 Apr | 61.4 |
| Hong Kong | + 3.0 Q1 | - 2.6 Q1 | + 6.4 Jun | -18.4 Jun | - 3.4 1995 | 59.8 Mar | 49.3 ⁵ |
| India | + 7.0 1995* | + 9.8 Apr | + 9.1 May | - 3.5 Apr | - 5.1 1995* | 17.4 May | 20.6 |
| Indonesia | + 8.1 1995 | +18.0 Q3 | + 7.5 Jun | + 5.3 Apr | - 7.5 Q4 | 15.0 Apr | 12.3 |
| Malaysia | + 8.3 Q1 | + 7.4 May | + 3.8 Jun | - 3.2 Mar | - 6.8 1995 | 24.2 Mar | 25.0 |
| Philippines | + 4.7 Q1 | +24.9 Jun | + 9.8 Jun | -10.7 May | - 2.5 Q2 95 | 7.5 Apr | 5.6 |
| Singapore | +10.7 Q1 | +10.0 May | + 1.2 Jun | - 7.3 Jun | +13.6 Q1 | 70.3 Mar | 61.3 |
| South Korea | + 7.9 Q1 | + 3.8 Jun | + 5.6 Jul | -10.6 Jun | -11.5 May | 36.2 May | 27.1 |
| Taiwan | + 5.3 Q1 | - 0.4 Jun | + 2.3 Jun | +12.1 Jun | + 5.2 Q1 | 84.7 Apr | 99.5 |
| Thailand | + 8.6 1995 ¹ | + 9.6 May | + 5.5 Jun | -10.8 Jun | -14.5 Q1 | 38.0 May | 32.2 |
| Argentina | - 3.2 Q1 | + 4.9 Jun | - 0.1 Jun | + 1.0 May | - 2.0 Q1 | 14.0 May | 9.2 |
| Brazil | - 2.1 Q1 | + 6.1 May | + 16.3 Jun | + 0.8 Jun | -15.6 Q1 | 54.7 Apr | 30.0 |
| Chile | + 9.0 Q1 | - 3.5 May | + 8.3 Jun | + 0.3 Jun | - 0.6 Q1 | 13.6 Mar | 13.8 |
| Colombia | + 3.8 Q1 | + 3.0 Apr | + 19.1 Jun | - 3.2 Mar | - 4.3 1995 | 7.6 Apr | 8.2 |
| Mexico | - 1.0 Q1 | + 8.3 Apr | + 31.8 Jun | + 7.9 Jun | nil Q1 | 16.9 May | 11.0 |
| Venezuela | + 2.2 1995 | na | +108.1 Jun | + 6.6 Dec | + 1.5 1995 | 6.7 May | 7.9 |
| Greece | + 2.0 1995 | + 2.3 May | + 8.8 Jun | -17.3 Feb | - 3.6 Feb | 11.9 May | 16.0 |
| Israel | + 7.0 Q1 | + 3.3 Apr | + 12.9 Jun | -10.8 Jun | - 4.4 Q1 | 9.3 May | 9.6 |
| Portugal | + 1.9 1995 | - 1.3 Apr | + 3.5 May | - 9.6 Mar | - 4.1 Feb | 15.6 Apr | 14.4 |
| South Africa | + 2.8 Q1 | - 0.1 May | + 6.9 Jun | + 0.7 May | - 3.4 Q1 | 0.9 May | 1.9 |
| Turkey | + 8.2 Q1 | +15.0 May | + 82.9 Jun | -14.0 Dec | - 2.5 Dec | 15.5 Apr | 12.3 |
| Czech Republic | + 4.3 Q1 | + 1.6 Jun | + 8.4 Jun | - 4.6 Jun | - 2.2 Q1 | 12.6 Apr | 8.6 |
| Hungary | - 1.0 Q1 | - 3.7 May | +23.6 Jun | - 2.0 May | - 1.3 May | 10.8 Mar | 6.8 |
| Poland | + 4.0 Q1 | + 2.4 Jun | + 19.5 Jun | - 2.5 May | - 1.8 May | 16.8 Feb | 6.7 |
| Russia | - 6.0 Q2 | -10.2 May | + 50.2 Jun | +23.1 1995 | +13.4 1995 ¹ | 14.3 Apr | 5.8 |

*Fiscal year beginning April ¹EIU estimate ²Excludes trade with other former Soviet republics ³Dec. 1994 ⁴Includes gold

FINANCIAL MARKETS Asian stockmarkets had a wretched time in the week to July 31st. Jakarta dropped by 6.2% following the weekend's riots and fears of further trouble in the city. Bangkok declined by 7.0% as foreign investors lost confidence in the Thai government. Shanghai lost 7.5% as traders trod warily before the publication of interim results in August.

| | Currency units | | Interest rates | Stockmarkets | % change on | | | |
|----------------|----------------|----------|----------------|-------------------|-------------|---------------|-------------------|-------------|
| | per \$ | per £ | | | Jul 31st | Dec 29th 1995 | | |
| | Jul 31st | year ago | Jul 31st | short-term % p.a. | Jul 31st | one week | in local currency | in \$ terms |
| China | 8.31 | 8.30 | 12.9 | 12.67 | 861.0 | - 7.5 | + 49.7 | + 49.9 |
| Hong Kong | 7.73 | 7.74 | 12.0 | 5.63 | 10,681.4 | - 0.2 | + 6.0 | + 6.0 |
| India | 35.6 | 31.4 | 55.3 | 9.20 | 3,536.9 | - 1.3 | + 13.7 | + 12.6 |
| Indonesia | 2,352 | 2,236 | 3,657 | 15.50 | 536.0 | - 6.2 | + 4.3 | + 1.7 |
| Malaysia | 2.50 | 2.46 | 3.88 | 7.44 | 1,068.2 | - 2.6 | + 7.3 | + 9.3 |
| Philippines | 26.2 | 25.6 | 40.8 | 12.00 | 3,028.3 | - 1.5 | + 16.7 | + 16.6 |
| Singapore | 1.41 | 1.40 | 2.20 | 3.50 | 2,111.8 | - 1.2 | - 6.8 | - 6.8 |
| South Korea | 813 | 757 | 1,264 | 13.70 | 821.7 | - 1.3 | - 6.9 | - 11.4 |
| Taiwan | 27.5 | 26.7 | 42.8 | 5.25 | 6,107.0* | + 0.2 | + 18.4 | + 17.5 |
| Thailand | 25.3 | 24.8 | 39.3 | 10.00 | 1,064.0 | - 7.0 | - 16.9 | - 17.2 |
| Argentina | 1.00 | 1.00 | 1.56 | 5.25 | 529.1 | - 0.7 | + 2.0 | + 1.9 |
| Brazil | 1.01 | 0.94 | 1.57 | 25.80 | 61,159 | + 1.1 | + 42.3 | + 36.9 |
| Chile | 4.11 | 3.80 | 6.39 | 10.69 | 5,516.3 | - 1.4 | - 3.9 | - 4.9 |
| Colombia | 1,059 | 912 | 1,647 | 31.40 | 852.0 | + 1.2 | + 12.6 | + 5.3 |
| Mexico | 7.60 | 6.11 | 11.8 | 30.22 | 3,007.2 | + 2.2 | + 7.8 | + 9.2 |
| Venezuela | 4.71 | 1.70 | 7.33 | 22.74 | 4,222.1 | + 0.2 | + 109.1 | + 47.9 |
| Greece | 2.35 | 2.25 | 3.65 | 13.86 | 878.8 | + 0.2 | - 3.9 | - 2.7 |
| Israel | 3.15 | 3.00 | 4.90 | 14.01 | 177.3 | + 4.5 | - 19.3 | - 19.5 |
| Portugal | 152 | 145 | 236 | 7.37 | 2,813.7 | - 0.6 | + 12.8 | + 11.7 |
| South Africa | 4.51 | 3.62 | 7.01 | 16.00 | 6,606.9 | - 0.3 | + 6.1 | - 14.2 |
| Turkey | 83,320 | 45,290 | 129,588 | 88.00 | 63,366 | - 0.5 | + 58.3 | + 13.3 |
| Czech Republic | 26.4 | 26.1 | 41.0 | 12.78 | 551.1 | + 2.0 | + 29.4 | + 30.9 |
| Hungary | 149 | 127 | 231 | 23.62 | 2,865.5 | - 5.2 | + 87.4 | + 75.8 |
| Poland | 2.70 | 2.28 | 4.20 | 20.18 | 12,887.3 | + 2.4 | + 69.9 | + 55.4 |
| Russia | 5,210 | 4,415 | 8,102 | 110.00 | 253.7 | + 5.4 | + 91.0 | + 70.3 |

*July 30th

Sources: National statistics offices, central banks and stock exchanges, Datastream, IMF, Reuters, SBC Warburg, J.P. Morgan, Smith New Court, Hong Kong Monetary Authority, Centre for Monitoring Indian Economy, Bank Negara Indonesia, Malaysian Banking, Philippines National Economic and Development Authority, Moore Govett Asia, F&L, Baring Securities, Merrill Lynch, Bank Leumi Le-Israel, Standard Bank Group, Arabank, Deutsche Bank, Russian Economic Trends, Moscow Times/State Press

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Fixed Deposit Ratings (CRISIL)

CRISIL RATING SYMBOLS FOR FIXED DEPOSIT PROGRAMMES

FAAA
(F Triple A)
Highest Safety

This rating indicates that the degree of safety regarding timely payment of interest and principal is very strong.

FAA
(F Double A)
High Safety

This rating indicates that the degree of safety regarding timely payment of interest and principal is strong. However, the relative degree of safety is not as high as for fixed deposits with "FAAA" rating.

FA
Adequate Safety

This rating indicates that the degree of safety regarding timely payment of interest and principal is satisfactory. Changes in circumstances can affect such issues more than those in the higher rated categories.

FB
Inadequate Safety

This rating indicates inadequate safety of timely payment of interest and principal. Such issues are less susceptible to default than fixed deposits rate below this category, but the uncertainties that the issuer faces could lead to inadequate capacity to make timely interest and principal payments.

FC
High Risk

This rating indicates that the degree of safety regarding timely payment of interest and principal is doubtful. Such issues have factors at present that make them vulnerable to default; adverse business or economic conditions would lead to lack of ability or willingness to pay interest or principal.

CRISIL RATING SYMBOLS FOR DEBENTURES

High Investment Grades

AAA
(Triple A)
Highest Safety

Debentures rated 'AAA' are judged to offer highest safety of timely payment of interest and principal. Though the circumstances providing this degree of safety are likely to change, such changes as can be envisaged are most unlikely to affect adversely the fundamentally strong position of such issues.

AA
(Double A)
High Safety

Debenture rated 'AA' are judged to offer high safety of timely payment of interest and principal. They differ in safety from 'AAA' issues only marginally.

Investment Grades

A
Adequate Safety

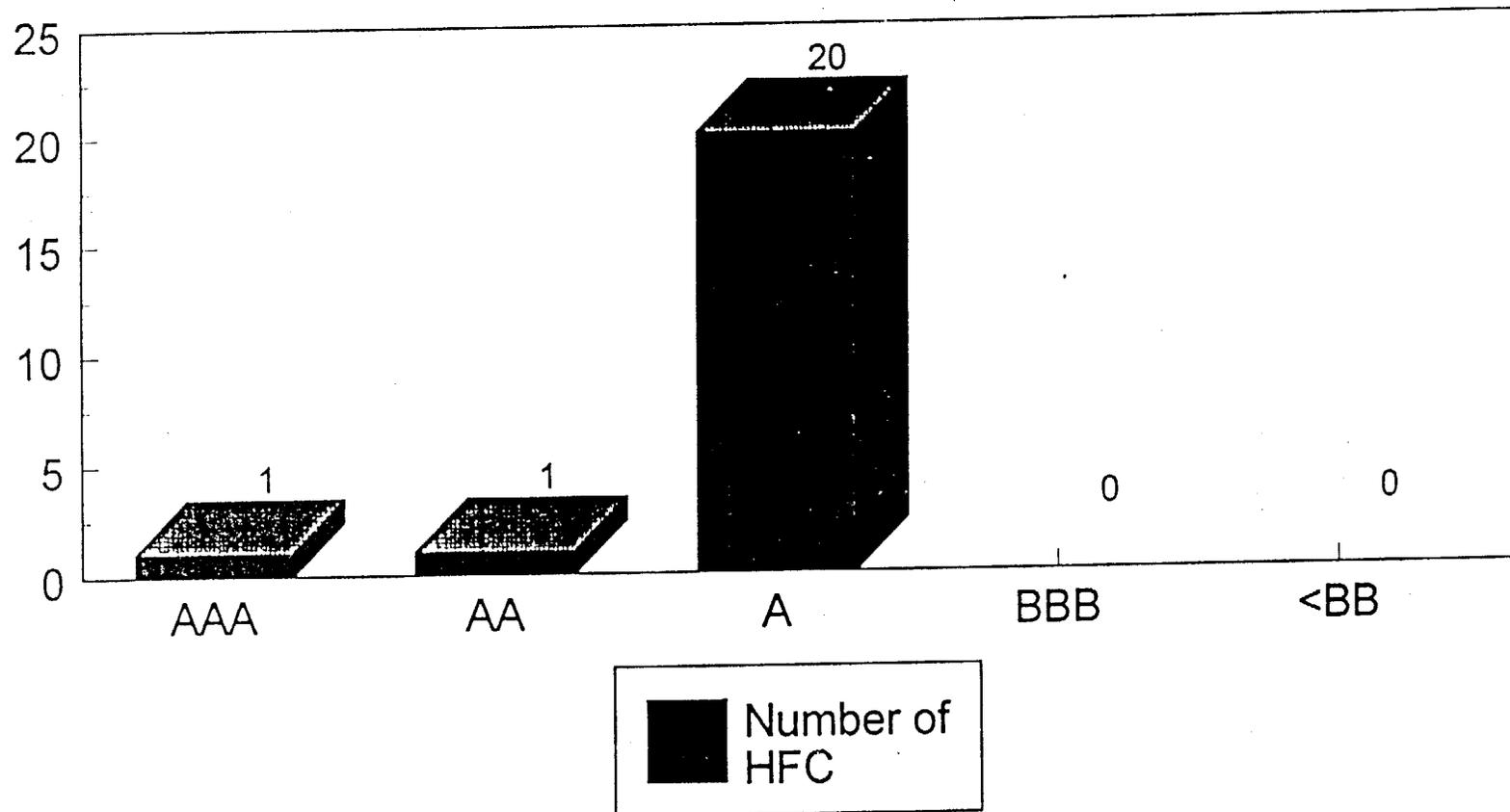
Debentures rated 'A' are judged to offer adequate safety of timely payment of interest and principal; however, changes in circumstances can adversely affect such issues more than those in the higher rated categories.

BBB
(Triple B)
Moderate Safety

Debentures rated 'BBB' are judged to offer moderate safety of timely payment of interest and principal for the present; however, changing circumstances are more likely to lead to a weakened capacity to pay interest and repay principal than for debentures in higher rated categories.

HFC Ratings (CRISIL)

Distribution of Credit Ratings as of 1996





Deposit Ratings (CRISIL)

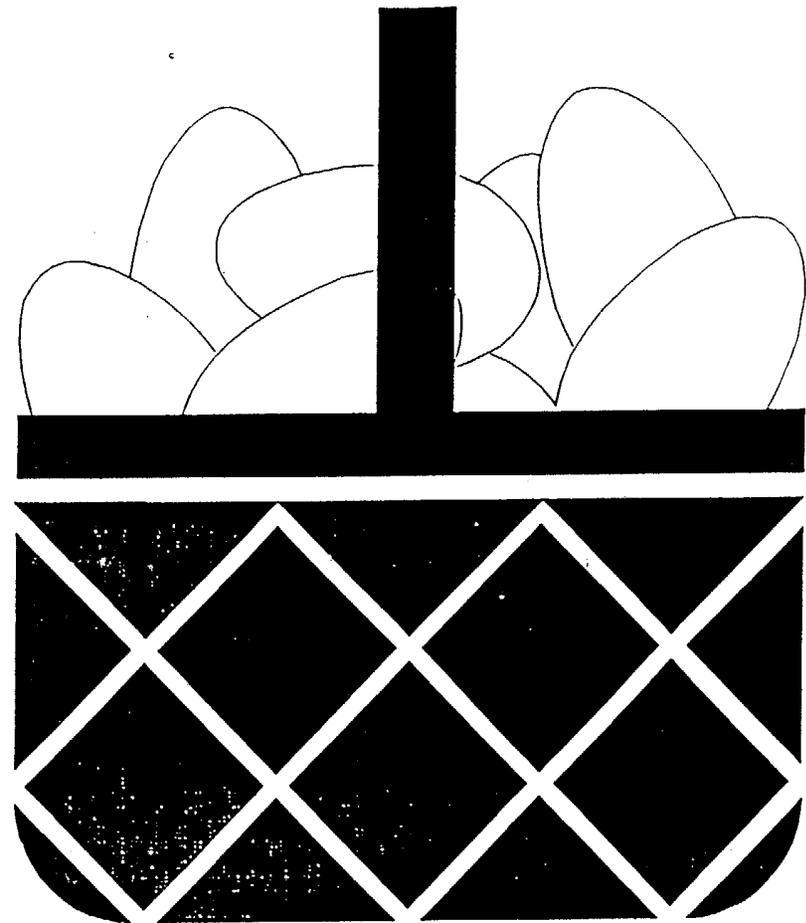
- Regulation and Impact on HFC
- Competition
- Management Quality
- Fundamental Analysis
 - Capital Adequacy
 - Funding Sources
 - Asset Quality
 - Liquidity Management
 - Profitability
 - Interest Rate and Tax Sensitivity

Supervision and HFCs

- Supervisory Alternatives
 - Directive
 - Monetary Fine
 - Growth Restriction
 - Change of Management
 - Merger/Liquidation
 - Loss of Approved Status
- Weak HFC
 - Low Capital
 - Losses
 - Inadequate Liquidity
 - Risky Investments
 - Excess Dividends
 - Excess Salaries
 - Unable to Meet Prudential Guidelines
 - Weak Controls
 - No Oversight

Capital

- Ratio
 - Capital-to-Assets
 - Risk-Based Capital
 - 0% (Government)
 - 20% (Agency)
 - 50% (Mortgage)
 - 100% (Other)
 - Other Risk Factors
 - Proportion (Risk/Return)
 - Type: Equity, Allowance
Sub. Debt



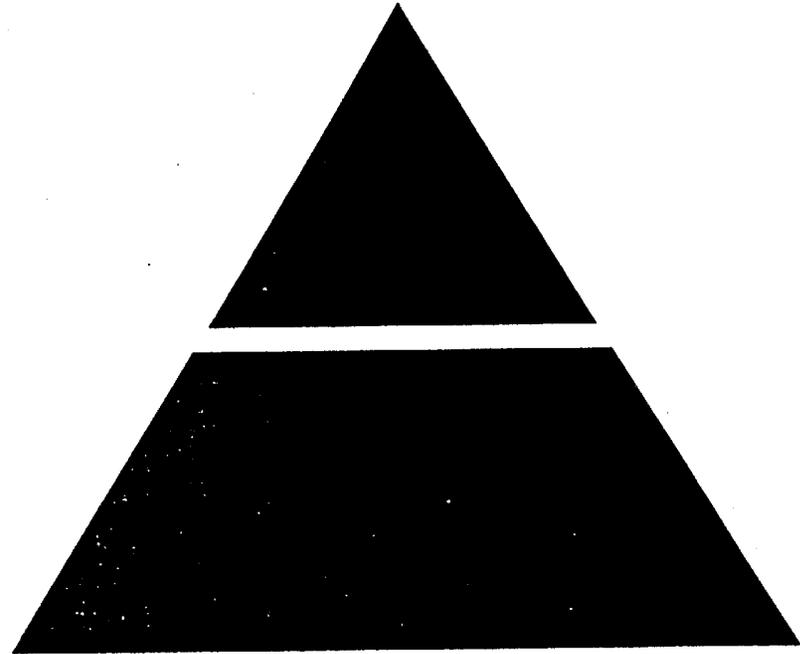
Capital Regulation by Country

The Basle Ratios Implementation by National Authorities

| G10 Countries | Minimum Ratio | Coverage | Implementation |
|----------------|--|---|--|
| Belgium | 8% | All banks | End of 1992 |
| Canada | 8%, but individual ratios may be set | All banks | End of 1992 |
| France | 8% | All banks | End of 1992 |
| Germany | Twelve to fifteen banks required to report regularly on the basis of Basle. About another thirty do so voluntarily. Basle-based rules not published. | | |
| Italy | International banks encouraged to implement Basle from January 1991; no implementation guidelines issued | | |
| Japan | 8% | International banks plus others on voluntary basis | End of March 1993 |
| Netherlands | 8% | All banks | End of 1990 |
| Sweden | 8% | All banks, finance companies, credit companies, and stockbrokers | End of 1992 |
| Switzerland | Not expressed as a minimum ratio | All banks | In force since 1980s; 1989 revisions applied from January 1990 |
| United Kingdom | 8%, but individual ratios set | All banks | End of 1989 |
| United States | 8%, but individual ratios set | All federally regulated or insured banks and savings associations | End of 1992 |

Capital Management

- Increase Capital
 - Retain Earnings
 - Issue Stock (Tier I)
 - Issue Sub. Debt (Tier II)
- Maintain Capital Ratio
 - Limit Growth to Sustainable Growth
 - $ROAE(1 - \text{Div. Payout})$
 - Invest in Low-risk Assets
- NHB v HFC -- Safety v. ROAE and Multiplier



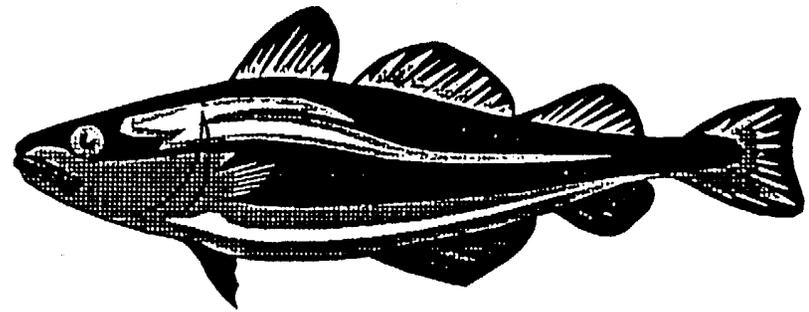
HFC Profitability

Decomposing the Return on Equity of Approved HFCs

| | ROAE NI/Equity | Lev. Multiplier Asset/Equity | ROAA NI/Asset |
|---------------|-------------------|---------------------------------|------------------|
| SBI Homes | 33.8 | 9.9 | 3.4 |
| CanFin | 32.3 | 9.8 | 3.3 |
| LIC Housing | 24.5 | 12.9 | 1.9 |
| HDFC | 21.1 | 7.0 | 3.0 |
| Gujarat Rural | 13.7 | 6.2 | 2.2 |
| Dewan Housing | 9.2 | 4.0 | 2.3 |

Asset Quality

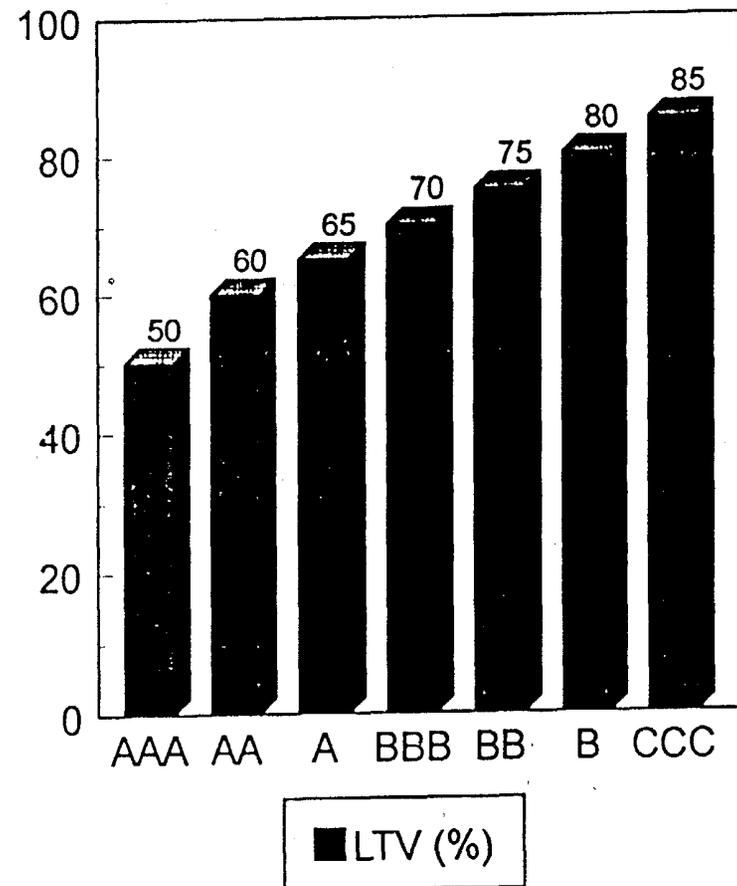
- Portfolio Diversification
 - Industry
 - Region
 - Borrower
- Risk-Based Capital
 - Agency/Government
 - Conforming Standards
- Asset Classification and the Allowance



Apartment Loans and Key Ratios

- Loan-to-value
 - Value of loan
 - Appraised Value of Apartment
 - Market Method
 - Cost Method
 - Income
 - Higher Ratios More Risky
 - More Funds by HFC
 - Less Investment by Borrower

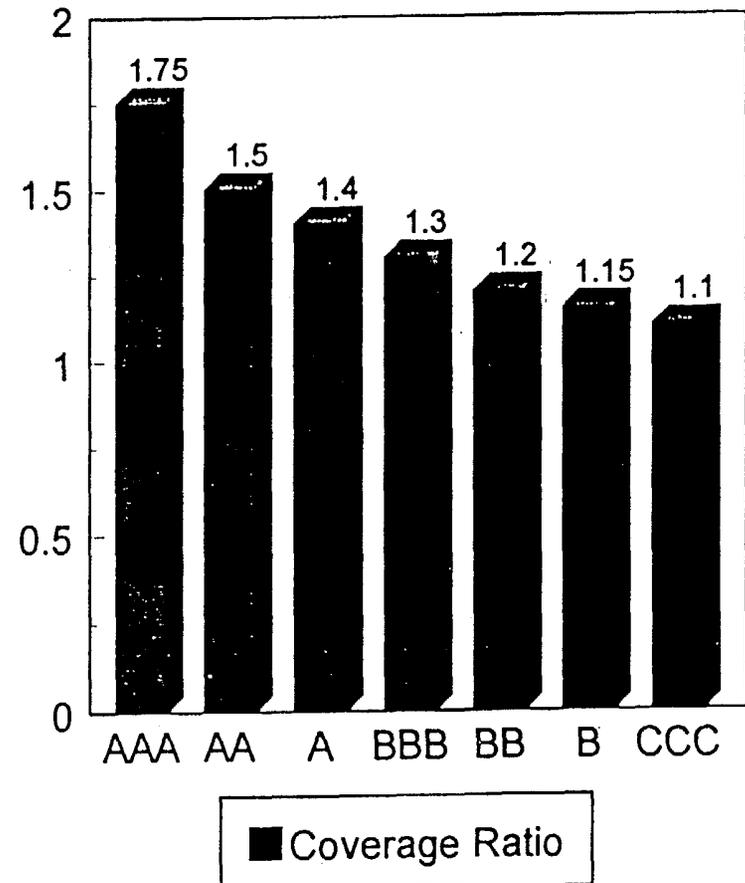
US Experience for Securities Backed by Apartment Loans



Apartment Loans and Key Ratios

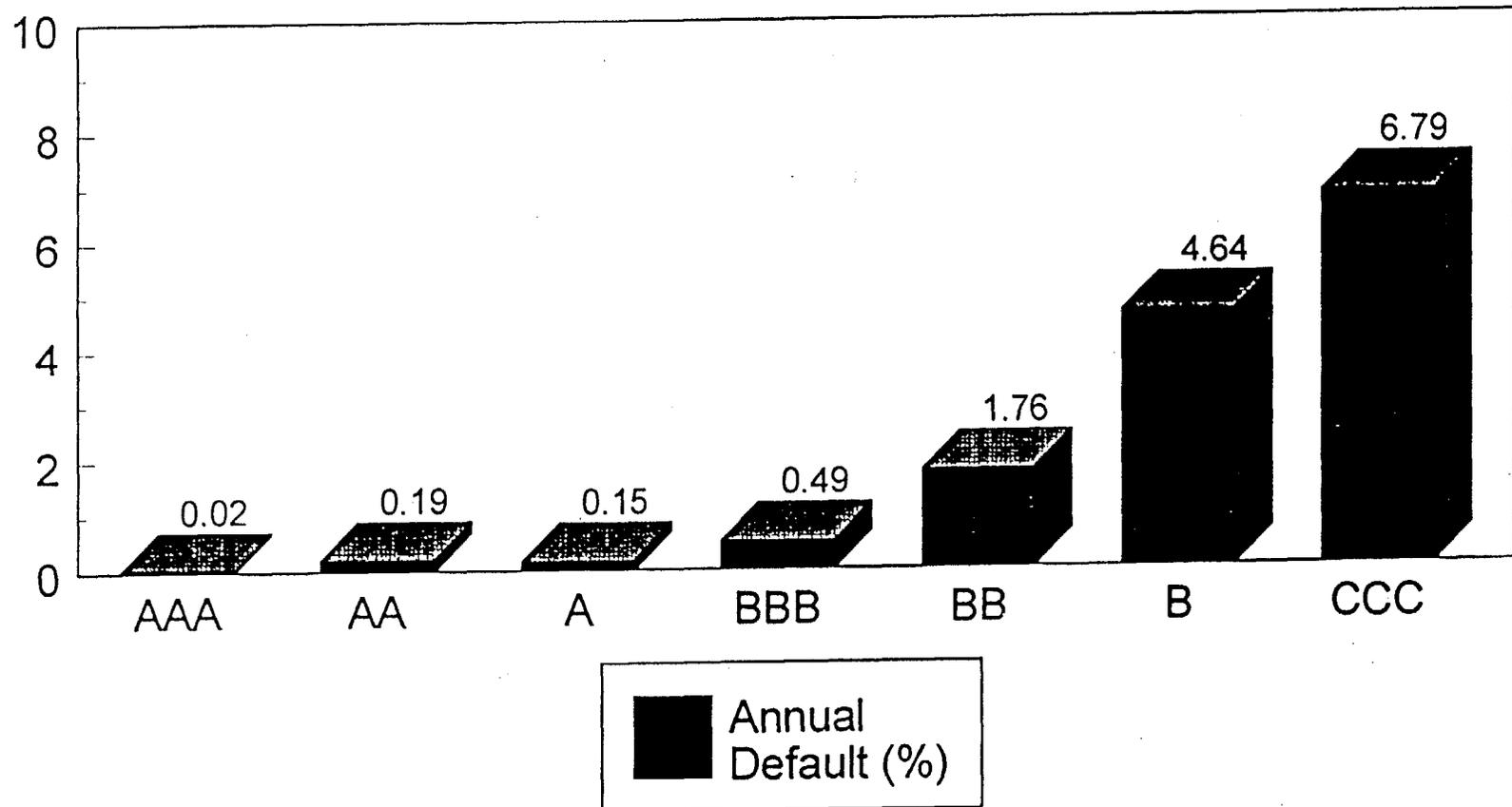
- Coverage Ratio --
 $\text{NOI}/(\text{Principal and Interest})$
- Net Operating Income
 - Rent + Other Income
 - Less Operating Expense
- Lower Ratio More Risky
 - Lower Income
 - Higher Expense
 - Higher P&I Obligation

US Experience for Securities Backed by Apartment Loans



Credit Ratings and Annual Probability of Default

US Experience with Initial Rating and Later Default



Loan Classification

- Purpose
 - Provide Early Warning of Credit Problems
 - Determine Solvency of Bank
 - Identify Corrective Actions Required
- Priorities
 - Large Credits
 - Problem Loans
 - Slow Loans
 - Loans-to-facilitate
 - Poor Documentation
 - High Concentration
 - Outside Policy
 - Insider Loans

Classification

- Special Mention
 - Payment/Collection Problems if Adverse Conditions Occur
- Substandard
 - Inadequate Protection
- Doubtful
 - Full Payment Questionable
- Loss
 - Uncollectible Asset

Substandard

- Well-Defined Weakness
- Loss Not Necessary, but Collection Not Timely
- Inadequate Collateral, Net Worth or Cash Flow
- Collateral Not Subject to Inspection
- Primary Source of Cash Flow Gone
- Borrower Unable to Generate Cash
- Documentation Flaws
- "Evergreen" Loan, or Workout
- Poor Economy

Asset Classification

- Rs. 10 Crore 10%, 10-Year Security
- Debtor Defaulted 3 Years Ago and Received No Payments
- Courts Indicate Will Receive Minimum of 40% and Maximum of 50% Payout
- Rs. 20 Crore 12% Project Loan
- Borrower Stopped Construction in Last Year
- Three Builders Expressed Interest to Complete Project
- "As is" Project Value = Rs. 18 Crore

Allowance for Loan Losses

- Accounting Contra
 - Loans
 - (Allowance)
 - Net Loans
- Derivation
 - Allowance (Begin)
 - (Charge-off)
 - Recovery
 - Provision
 - Allowance (End)
- Determination
 - Reflect Recent Losses
 - Increase Each Period
 - 1% of Loans
 - Exceed Peers
 - Classification
 - 5% Special Mention
 - 20% Substandard
 - 50% Doubtful
 - 100% Loss

Allowance for Loan Losses

- Bank Factors
Affecting Allowance

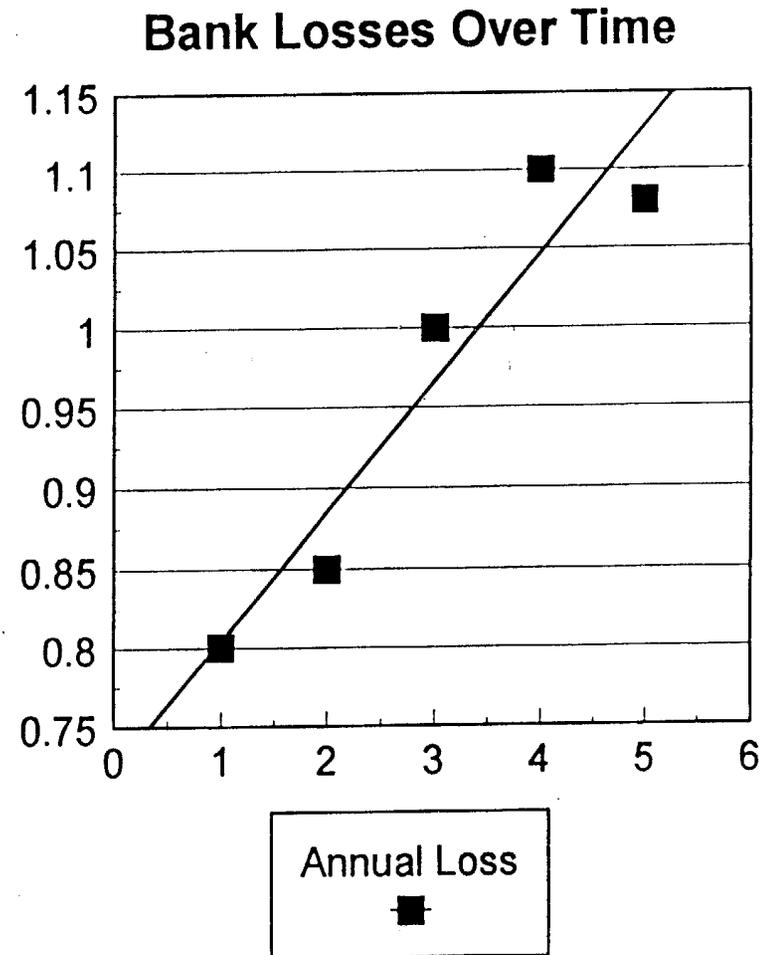
- Quick Growth
- Poor Loss Record
- Personnel Turnover
- Slow Charge-off
- Little Expertise
- No Loan Review

- Loan Factors
Affecting Allowance

- High Yield
- Standby LC
- ADC Real Estate
- Insider Loans
- Big Loans
- Loans Outside Policy

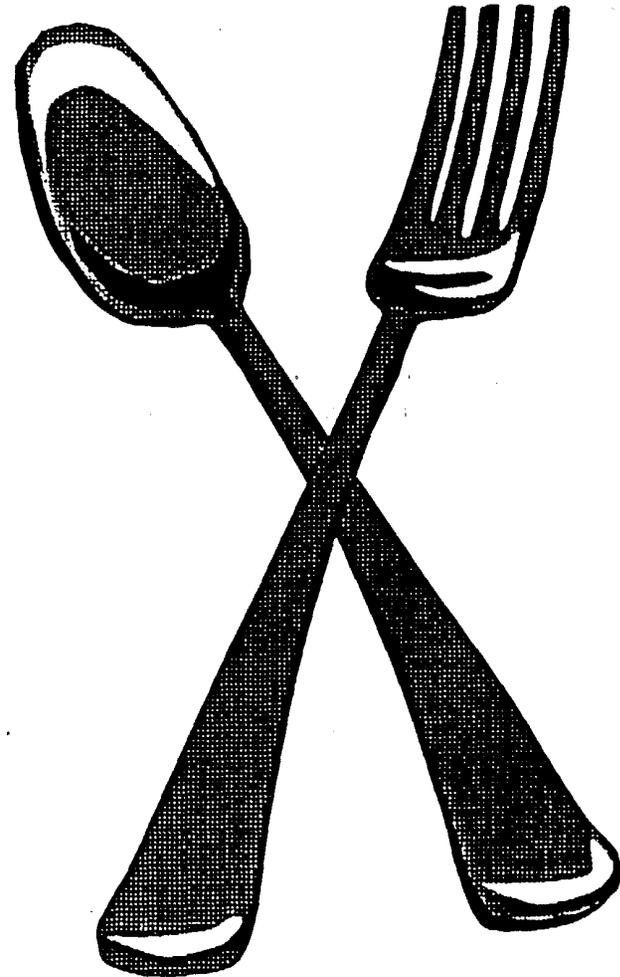
Loan Losses and the Allowance

- Recent Loss: 1.08%
- Average Loss: .97%
- Range of Losses: .80% to 1.10%
- Projected Loss: 1.24%
- Standard Deviation of Loss: .14%



Management

- Considerations
 - Character
 - Experience
 - Depth
 - Independence
- Concerns
 - Business Plan and Strategy
 - Risk Management -- Identify, Measure, Monitor and Control
 - Policy Statements



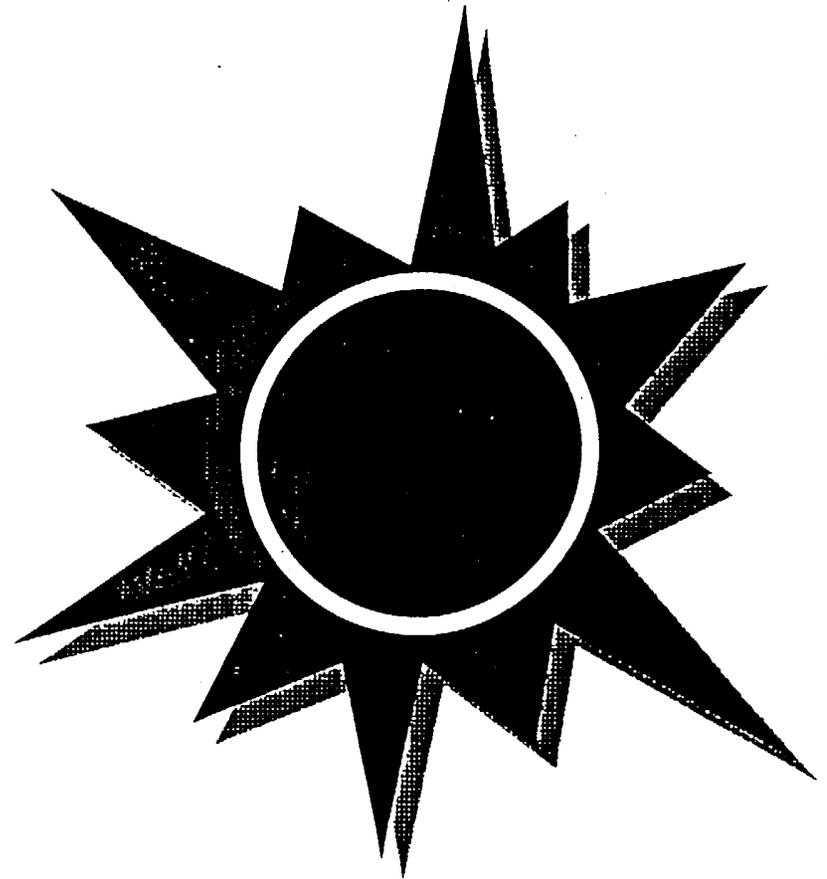
Effective Policy Statements

- Written
 - Objective
 - Procedures
 - Limits
 - Personnel
 - Exceptions
- Board-Approved
- Implemented
- Reviewed and Revised



Earnings

- Net Interest Margin
 - Interest Income
 - (Interest Expense)
- Non-Interest
 - Fees
 - (Operating Expense)
 - (Provision Loss)
 - (Income Tax)
- Net Income
 - Dividend
 - Earnings Retained

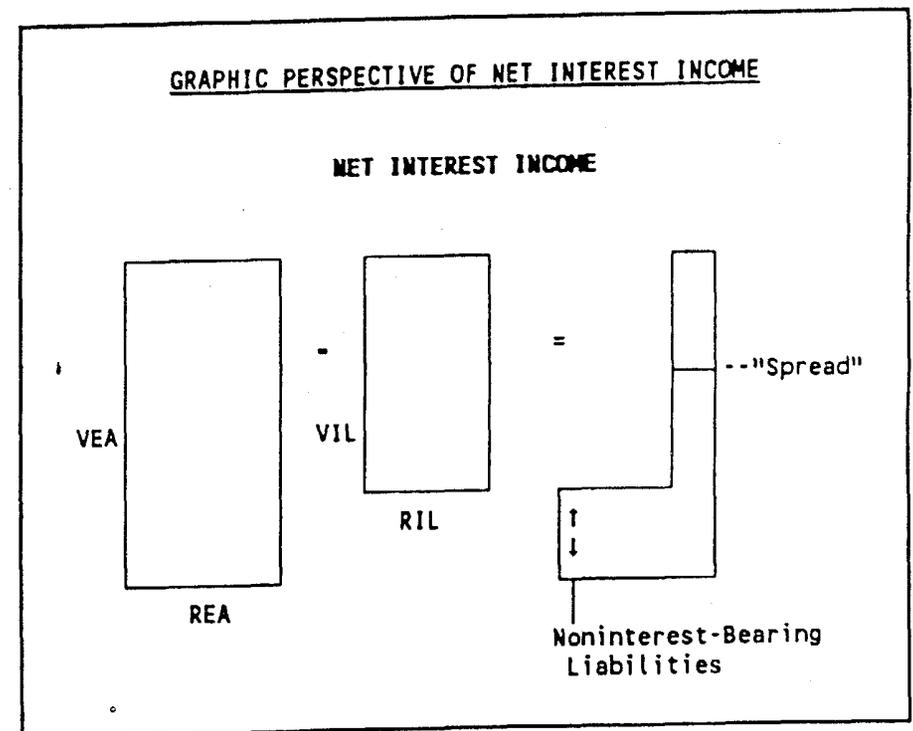


Range of Activities

| | HFCs | Banks | NBFCs |
|---------------------------------------|------|-------|-------|
| <i>Fund based activities</i> | | | |
| Working capital finance (cash credit) | | √ | |
| Term loans (project finance) | | √ | |
| Money market (govt. securities) | | √ | |
| ICD lending | √ | | √ |
| Consumer loans (asset financing) | | √ | √ |
| Leasing | √ | √ | √ |
| Housing finance | √ | √ | |
| Foreign exchange loans | | √ | |
| Capital market investments | √ | √ | √ |
| Loan against shares | | √ | √ |
| Promoter funding | | √ | √ |
| Primary market funding | | | √ |
| Bill discounting | | √ | √ |
| <i>Fee based activities</i> | | | |
| Letters of credit | | √ | |
| Guarantees | | √ | |
| Credit cards | | √ | |
| Merchant banking | | √ | √ |
| Collection charges | | √ | |
| Remittances | | √ | |
| Foreign exchange transactions | | √ | |
| Advisory services | | √ | √ |
| Loan/lease syndication | | √ | √ |

Problem Assets and the Net Interest Income

- Volume
 - Earning Assets
 - Bearing Liabilities
- Rate
 - Assets
 - Liabilities
- Problem Assets
 - Lower Volume of Assets
 - Lower Rate on Assets
 - Higher Rate on Liabilities



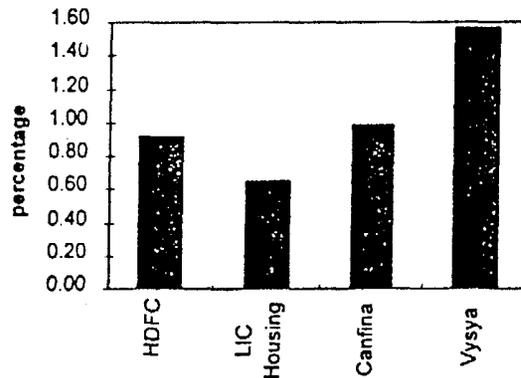
Net Interest Income

- NIM = Rs. 3.45 Crore
- Spread: Rs. 90 Crore
x .03 = Rs. 2.7 Crore
- Net Interest-Earning
Assets: Rs. 5 Crore x
.15 = Rs. .75 Crore

Net Interest Margin (Per Rs. 100 Crore)

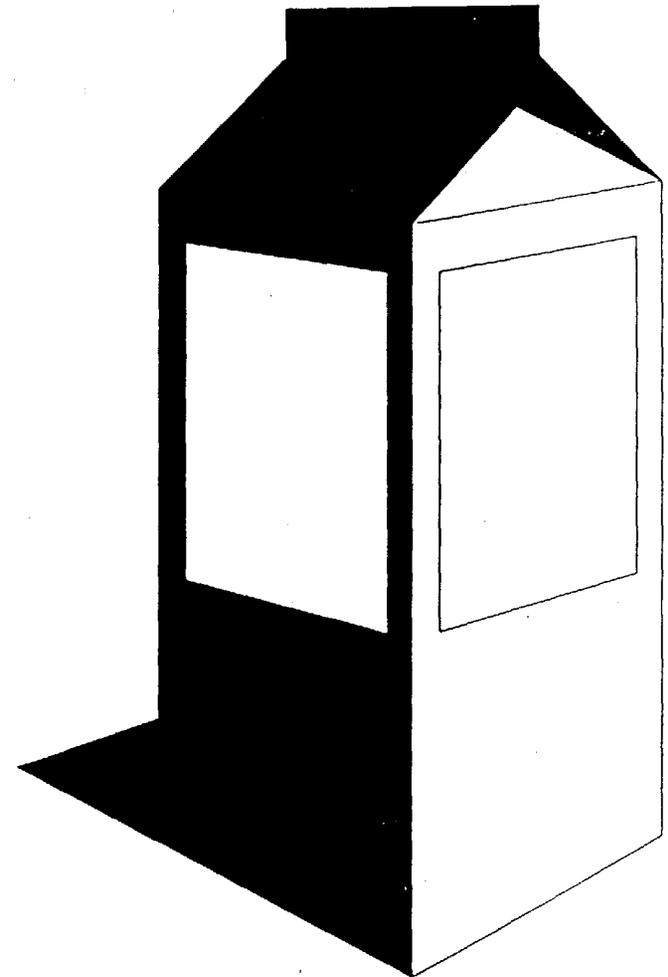
| | Volume | Rate |
|-------------|--------|---------|
| | Amount | Percent |
| Assets | 95 | 0.15 |
| Liabilities | 90 | 0.12 |

Expense ratios (1994-95)



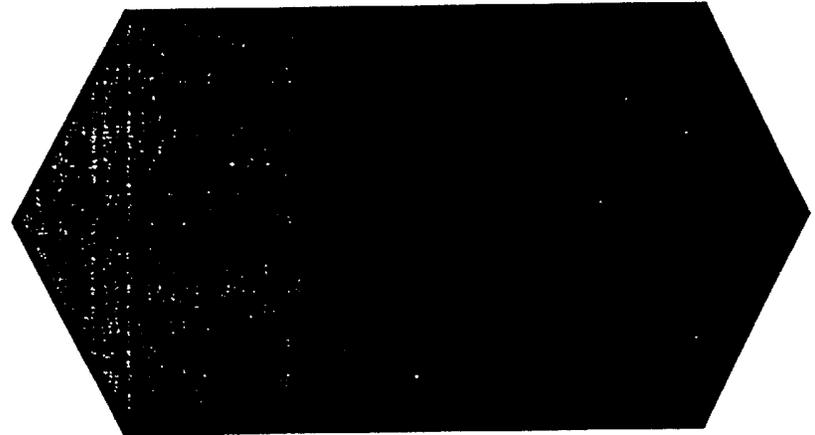
Liquidity

- Reserve Requirements
 - Proportion
 - Base
 - Composition
- Liquidity Requirements
 - Proportion
 - Base
 - Composition
 - Term
 - Credit
 - Marketability & Pledge



Liquidity Management

- Visible Liquidity
 - Securities/Deposits > Regulation
 - Short-term
 - Marketable
- Invisible Liquidity
 - Reputation and Rating
 - Ability to Borrow from NHB and Market
- Cash Flow



Deposit Profile

Comparative deposit profile of HFCs, NBFCs and Banks

| | HFCs | Banks | NBFCs |
|--|---------------------------------|---|---|
| Deposits outstanding (Rs. crore) (as at March 31, 1995) | ~ 4000 | 386,859 | ~ 5000 |
| Growth rate over the previous year (%) | 43% | 16% | 45% |
| Deposits as % of funds deployed (as at March end 1995) | 33% | 75% | 25% |
| Average tenure (years) | 2- 3 years | 2-3 years | <2 years |
| Average cost (%) (1994-95) | 14% - 15%* | 7%- 8% | 14%-15%* |
| Source of deposits | Retail - 40% Wholesale - 60% | Retail- 74% Wholesale - 26% | Retail |
| Size of retail deposits (Rs.) | 10,000-25,000 | 1,000-50,000@ | 2,500-10,000 |
| Region-wise profile | Largely in metros | Metro 40% Urban (Non-Metro) 24% Semi-Urban 20% Rural 16% | Largely in metros and some smaller towns |

* excluding brokerage and incentives in kind.

@ term deposits

Note :

HFCs: Wholesale deposits include deposits from corporates, trusts, local authorities and other bodies.

NBFCs : Deposits refer to retail deposits of loan, investment, equipment leasing and hire purchase companies. **Banks :** Wholesale deposits include deposits from corporates and other bodies and

certificates of deposit.

Financial Analysis and Monitoring

- Financial Information
 - Call Report
 - Annual Report
 - Deposit Rating
 - Stock Market Prices
- Analytical Framework
 - Trend Analysis -- Over Time
 - Peer Analysis -- Compare to Other HFCs



SUMMARY RATIOS

| | 09/30/95 | | | 09/30/94 | | | 12/31/94 | | | 12/31/93 | | 12/31/92 | |
|---|----------|---------|-----|----------|---------|-----|----------|---------|-----|----------|---------|----------|---------|
| | 31249255 | | | 28139441 | | | 28836912 | | | 24355007 | | 23155310 | |
| | 282867 | | | 276009 | | | 376947 | | | 317720 | | 235194 | |
| | 67 | | | 56 | | | 57 | | | 51 | | 48 | |
| EARNINGS AND PROFITABILITY | BANK | PEER 01 | PCT | BANK | PEER 01 | PCT | BANK | PEER 01 | PCT | BANK | PEER 01 | BANK | PEER 01 |
| PERCENT OF AVERAGE ASSETS: | | | | | | | | | | | | | |
| INTEREST INCOME (TE) | 7.36 | 7.27 | 52 | 6.28 | 6.25 | 54 | 6.46 | 6.40 | 55 | 6.30 | 6.28 | 6.99 | 6.80 |
| - INTEREST EXPENSE | 4.17 | 3.59 | 85 | 2.90 | 2.47 | 84 | 3.10 | 2.62 | 84 | 2.67 | 2.41 | 3.33 | 3.06 |
| NET INTEREST INCOME (TE) | 3.19 | 3.69 | 30 | 3.38 | 3.76 | 35 | 3.36 | 3.77 | 31 | 3.62 | 3.87 | 3.66 | 3.72 |
| + NONINTEREST INCOME | 1.11 | 1.82 | 11 | 1.18 | 1.87 | 17 | 1.16 | 1.86 | 13 | 1.33 | 2.11 | 1.26 | 1.98 |
| MEMO: FEE INCOME | 0.34 | 0.58 | 19 | 0.35 | 0.58 | 28 | 0.34 | 0.58 | 22 | 0.43 | 0.66 | 0.35 | 0.61 |
| - NON-INTEREST EXPENSE | 2.30 | 3.45 | 07 | 2.51 | 3.72 | 12 | 2.45 | 3.71 | 12 | 2.80 | 3.88 | 2.85 | 3.87 |
| - PROVISION: LOAN&LEASE LOSSES | 0.17 | 0.17 | 54 | 0.04 | 0.15 | 31 | 0.06 | 0.16 | 36 | 0.26 | 0.32 | 0.42 | 0.57 |
| = PRETAX OPERATING INCOME (TE) | 1.83 | 1.84 | 51 | 2.00 | 1.79 | 63 | 2.00 | 1.78 | 58 | 1.90 | 1.64 | 1.65 | 1.27 |
| + REALIZED GAINS/LOSSES SECS | 0.00 | 0.01 | 48 | 0.00 | 0.00 | 52 | 0.00 | 0.00 | 55 | 0.00 | 0.04 | 0.00 | 0.10 |
| = PRETAX NET OPERATING INC(TE) | 1.84 | 1.85 | 48 | 2.00 | 1.79 | 64 | 2.00 | 1.76 | 60 | 1.90 | 1.71 | 1.65 | 1.39 |
| NET OPERATING INCOME | 1.21 | 1.18 | 57 | 1.33 | 1.14 | 68 | 1.33 | 1.13 | 65 | 1.29 | 1.15 | 1.13 | 0.93 |
| ADJUSTED NET OPERATING INCOME | 1.34 | 1.18 | 67 | 1.33 | 1.09 | 75 | 1.36 | 1.07 | 77 | 1.30 | 1.04 | 1.17 | 0.83 |
| ADJUSTED NET INCOME | 1.30 | 1.24 | 54 | 1.30 | 1.15 | 68 | 1.33 | 1.08 | 72 | 1.27 | 1.06 | 1.01 | 0.84 |
| NET INCOME | 1.21 | 1.19 | 57 | 1.31 | 1.14 | 66 | 1.31 | 1.13 | 63 | 1.30 | 1.19 | 1.02 | 0.96 |
| MARGIN ANALYSIS: | | | | | | | | | | | | | |
| AVG EARNING ASSETS TO AVG ASSETS | 92.41 | 90.55 | 76 | 91.86 | 90.00 | 73 | 91.93 | 90.10 | 72 | 92.06 | 89.43 | 92.41 | 89.42 |
| AVG INT-BEARING FUNDS TO AVG AST | 78.68 | 74.42 | 67 | 78.51 | 73.41 | 78 | 78.68 | 73.37 | 81 | 76.79 | 75.04 | 78.45 | 76.75 |
| INT INC (TE) TO AVG EARN ASSETS | 7.97 | 8.01 | 50 | 6.83 | 6.91 | 52 | 7.02 | 7.07 | 51 | 6.84 | 6.99 | 7.56 | 7.57 |
| INT EXPENSE TO AVG EARN ASSETS | 4.51 | 3.97 | 77 | 3.16 | 2.73 | 82 | 3.37 | 2.89 | 81 | 2.91 | 2.68 | 3.60 | 3.42 |
| NET INT INC-TE TO AVG EARN ASSET | 3.46 | 4.06 | 29 | 3.68 | 4.16 | 33 | 3.65 | 4.16 | 31 | 3.93 | 4.32 | 3.96 | 4.15 |
| LOAN & LEASE ANALYSIS | | | | | | | | | | | | | |
| NET LOSS TO AVERAGE TOTAL LN&LS | 0.06 | 0.32 | 19 | 0.08 | 0.31 | 22 | 0.05 | 0.33 | 13 | 0.41 | 0.67 | 0.62 | 1.19 |
| EARNINGS COVERAGE OF NET LOSS(X) | 51.67 | 11.02 | 87 | 45.01 | 13.70 | 84 | 75.47 | 11.09 | 94 | 8.54 | 5.76 | 5.22 | 3.11 |
| LN&LS ALLOWANCE TO NET LOSSES(X) | 21.87 | 7.20 | 89 | 17.15 | 8.50 | 73 | 29.26 | 7.99 | 89 | 3.57 | 3.88 | 2.40 | 2.53 |
| LN&LS ALLOWANCE TO TOTAL LN&LS | 1.29 | 1.96 | 16 | 1.27 | 2.30 | 08 | 1.26 | 2.20 | 08 | 1.42 | 2.43 | 1.45 | 2.83 |
| NON-CURRENT LN&LS TO GROSS LN&LS | 0.36 | 0.94 | | 0.42 | 1.26 | | 0.34 | 1.12 | | 0.76 | 1.57 | 1.29 | 2.86 |
| LIQUIDITY | | | | | | | | | | | | | |
| VOLATILE LIABILITY DEPENDENCE | 35.22 | 30.04 | 63 | 38.43 | 28.56 | 64 | 40.05 | 28.71 | 67 | 20.34 | 25.66 | 23.94 | 25.58 |
| NET LOANS & LEASES TO ASSETS | 63.79 | 63.35 | 47 | 54.09 | 59.25 | 31 | 55.05 | 60.17 | 36 | 57.36 | 59.50 | 58.01 | 59.11 |
| CAPITALIZATION | | | | | | | | | | | | | |
| TIER ONE LEVERAGE CAPITAL(***) | 6.69 | 6.94 | 39 | 6.12 | 6.95 | 22 | 6.20 | 6.83 | 24 | 6.82 | 6.93 | 6.34 | 6.40 |
| CASH DIVIDENDS TO NET INCOME | 45.08 | 55.00 | 33 | 46.04 | 56.65 | 36 | 43.21 | 61.27 | 29 | 39.43 | 40.18 | 53.27 | 27.47 |
| RETAIN EARNS TO AVG TOTAL EQUITY | 10.53 | 7.18 | 80 | 11.30 | 6.57 | 82 | 12.07 | 5.43 | 86 | 11.75 | 9.28 | 7.24 | 8.97 |
| GROWTH RATES | | | | | | | | | | | | | |
| ASSETS | 0.48 | 10.07 | 20 | 19.51 | 10.10 | 78 | 24.21 | 10.11 | 85 | 4.47 | 6.96 | 5.68 | 7.82 |
| TIER ONE CAPITAL(***) | 12.44 | 8.93 | 67 | 12.46 | 10.37 | 58 | 13.73 | 9.23 | 70 | 11.30 | 15.31 | 8.32 | 21.68 |
| NET LOANS & LEASES | 18.50 | 14.95 | 64 | 12.48 | 9.91 | 62 | 19.22 | 10.85 | 77 | 3.30 | 9.07 | 5.03 | 2.68 |
| TEMPORARY INVESTMENTS | -14.28 | 2.32 | 44 | -37.59 | 12.09 | 17 | -41.45 | 13.03 | 12 | 52.24 | 13.22 | 31.15 | 23.80 |
| VOLATILE LIABILITIES | -8.18 | 19.30 | 13 | 39.52 | 14.80 | 82 | 57.45 | 16.71 | 80 | 10.64 | 14.84 | 3.14 | 1.34 |
| (***) TIER ONE CAPITAL FOR 12/31/93 EXCLUDES FASB 115 NET UNREALIZED HOLDING GAIN ON AVAILABLE-FOR-SALE SECURITIES. | | | | | | | | | | | | | |

B37

HFC Financial Perspective

Financials for year ending March 31, 1995

| Rs. crore | IIDFC | IJC | Canfin | Dewan | SBI Home | GIC | PNB | AB | Vysya | Centbank | GLFL | Parahwanath | Ilometrust | IIUDCO* |
|-------------------------------------|---------|---------|--------|---------|----------|---------|---------|--------|---------|----------|---------|-------------|------------|---------|
| | | Housing | Homes | Housing | | Housing | Housing | Homes | Housing | Home | Housing | Housing | Housing | |
| No. of branches | 28 | 66 | 27 | 28 | 17 | 14 | 10 | 11 | 7 | 9 | 4 | 3 | 4 | 22 |
| Cumulative disbursements | 5695 | 1688 | 545 | 368 | 355 | 138 | 131 | 54 | 43 | 42 | 11 | 7 | 3 | 7341 |
| Paid up capital | 101.25 | 74.87 | 20.48 | 27.80 | 15.00 | 17.64 | 10.00 | 9.00 | 3.00 | 10.00 | 3.00 | 2.00 | 10.00 | 298.00 |
| Networth | 874.86 | 255.69 | 46.58 | 50.20 | 25.33 | 55.93 | 24.28 | 10.87 | 4.87 | 11.95 | 3.74 | 3.07 | 10.09 | 633.53 |
| Total borrowings | 4436.33 | 1639.91 | 423.25 | 291.13 | 269.16 | 119.20 | 109.39 | 53.80 | 41.39 | 38.63 | 15.59 | 15.59 | 15.59 | 4461.23 |
| Total Income | 780.34 | 258.39 | 70.80 | 50.77 | 42.35 | 21.14 | 32.58 | 7.68 | 6.54 | 6.95 | 2.17 | 2.43 | 0.18 | 614.37 |
| PBT | 184.39 | 55.50 | 13.56 | 6.71 | 8.61 | 7.95 | 10.47 | 0.90 | 1.96 | 1.81 | 0.74 | 0.91 | 0.14 | 100.16 |
| PAT | 146.15 | 41.35 | 10.84 | 5.90 | 8.30 | 6.23 | 9.58 | 0.66 | 1.44 | 1.38 | 0.67 | 0.61 | 0.14 | 70.60 |
| Interest earned on average loans | 16.00% | 15.34% | 16.76% | 16.72% | 18.60% | 16.33% | 21.70% | 17.05% | 18.47% | 17.22% | 17.48% | 16.48% | 5.83% | 11.47% |
| Income earned on investments | 21.57% | 19.13% | 18.20% | 23.62% | 23.59% | 25.87% | 32.98% | 6.12% | 32.89% | 14.26% | | 92.31% | | 17.68% |
| Interest paid on average borrowings | 13.58% | 12.69% | 13.49% | 14.41% | 13.49% | 11.53% | 17.40% | 13.49% | 13.15% | 13.26% | 13.15% | 10.77% | | 11.24% |
| Interest spread | 2.42% | 2.65% | 3.27% | 2.31% | 5.11% | 4.80% | 4.30% | 3.56% | 5.32% | 3.96% | 4.33% | 5.71% | 5.83% | 0.23% |
| Investment income/Total income | 27.81% | 9.39% | 4.16% | 0.58% | 2.48% | 2.24% | 5.03% | 0.31% | 0.57% | 0.18% | 0.09% | 0.02% | | 17.67% |
| PBT/Total Income | 23.63% | 21.48% | 19.15% | 13.22% | 20.33% | 37.61% | 32.14% | 11.72% | 29.97% | 26.04% | 34.10% | 37.45% | 77.78% | 16.30% |
| PAT/Total Income | 18.73% | 16.00% | 15.31% | 11.62% | 19.60% | 29.47% | 29.40% | 8.59% | 22.02% | 19.86% | 30.88% | 25.10% | 77.78% | 11.49% |
| Operating margin/Avg. Assets | 4.18% | 3.68% | 3.15% | 12.91% | 12.59% | 12.33% | 6.85% | 1.58% | 5.46% | 4.05% | 4.34% | 5.72% | -2.46% | 2.16% |
| Operating expenses/Avg Assets | 0.64% | 0.56% | 0.79% | 1.64% | 1.54% | 1.04% | 0.67% | 0.95% | 1.17% | 0.98% | 2.82% | 1.23% | 4.22% | 0.15% |
| PAT/Average assets | 2.96% | 2.38% | 2.43% | 1.84% | 3.37% | 4.48% | 6.24% | 1.15% | 3.91% | 3.07% | 5.10% | 3.76% | 1.38% | 1.32% |
| PAT/Avg. Network | 16.71% | 16.17% | 23.27% | 11.75% | 32.77% | 11.14% | 39.46% | 6.07% | 29.57% | 11.55% | 17.91% | 19.87% | 1.39% | 11.14% |
| Debt/Equity (Times) | 5.07 | 6.41 | 9.09 | 5.80 | 10.63 | 2.13 | 4.51 | 4.95 | 8.50 | 3.23 | 4.17 | 4.44 | | 7.04 |

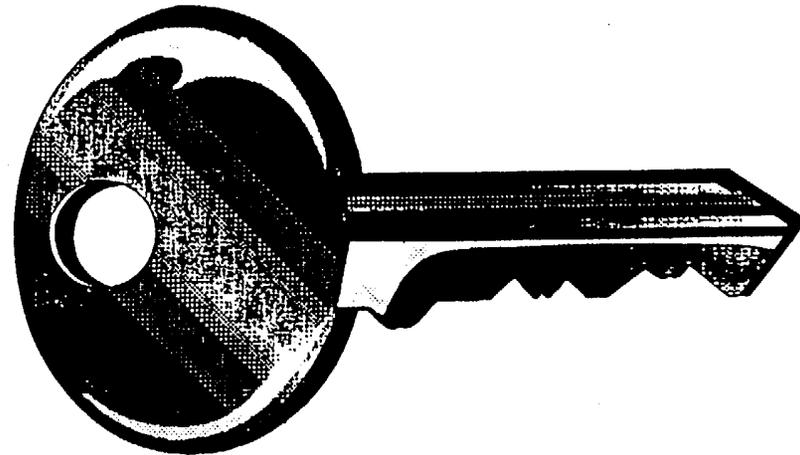
* HUDCO is not really comparable with other IIFCs as it is not a retail financier; it is a government undertaking which finances state level agencies and plays a developmental role in the housing sector. It has a mandate to lend 55% of its funds towards housing projects for the lower income groups.

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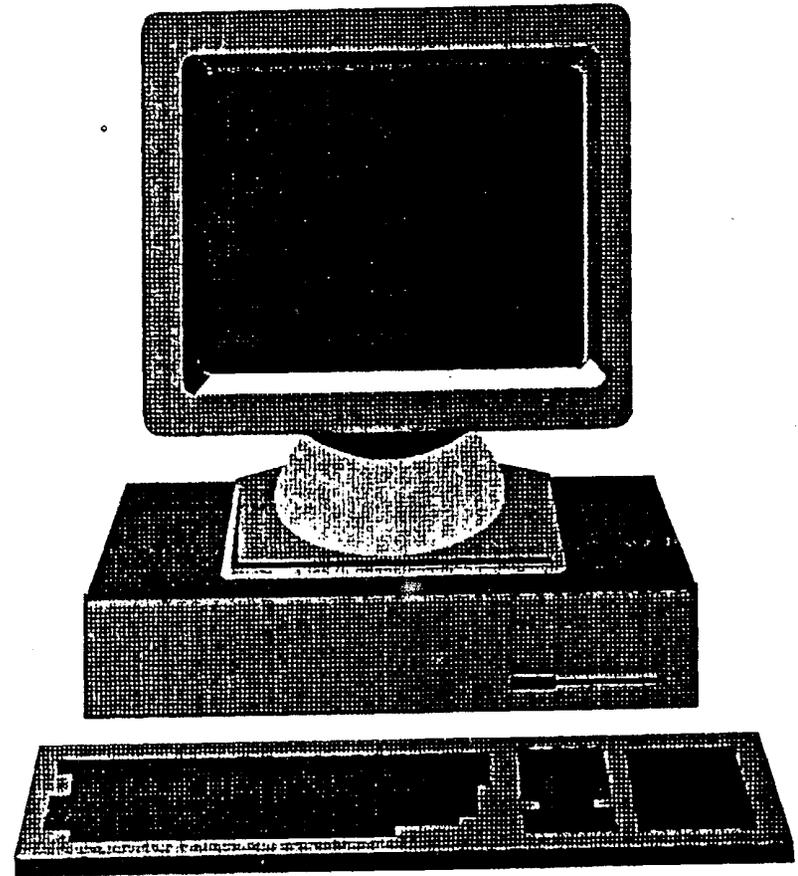
B 30

Economic Implications

- Flow of Funds
 - Mobilize Savings
 - Source/Type Credit
- Interest Rates
 - Level
 - Structure
- Confidence in Market and Banks
- Money Supply
- Fiscal Policy

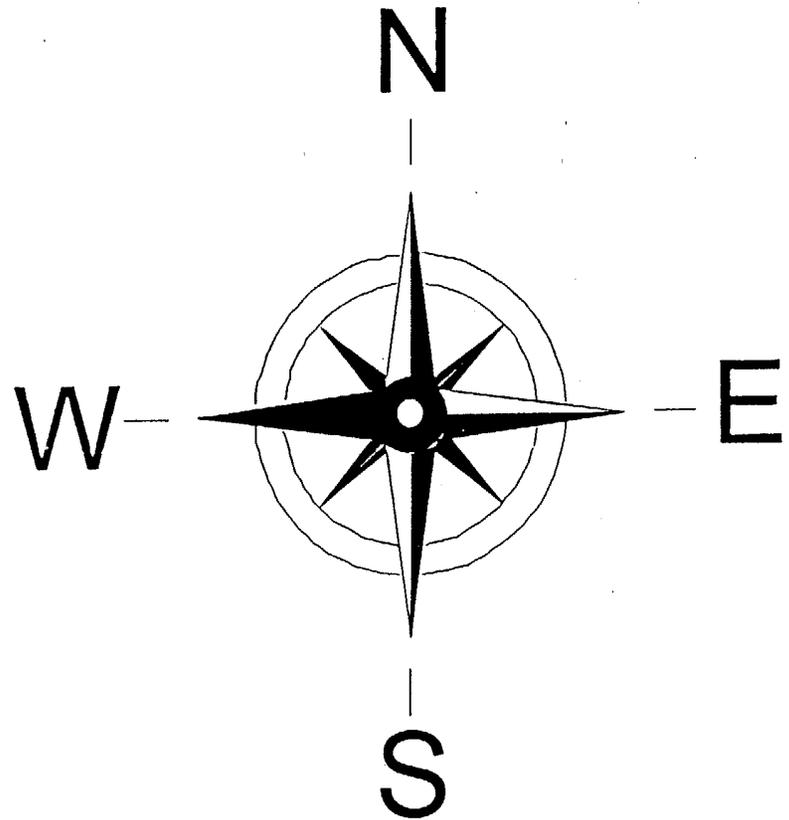


IV FUNDAMENTALS OF ASSET/LIABILITY MANAGEMENT



Asset/Liability Management

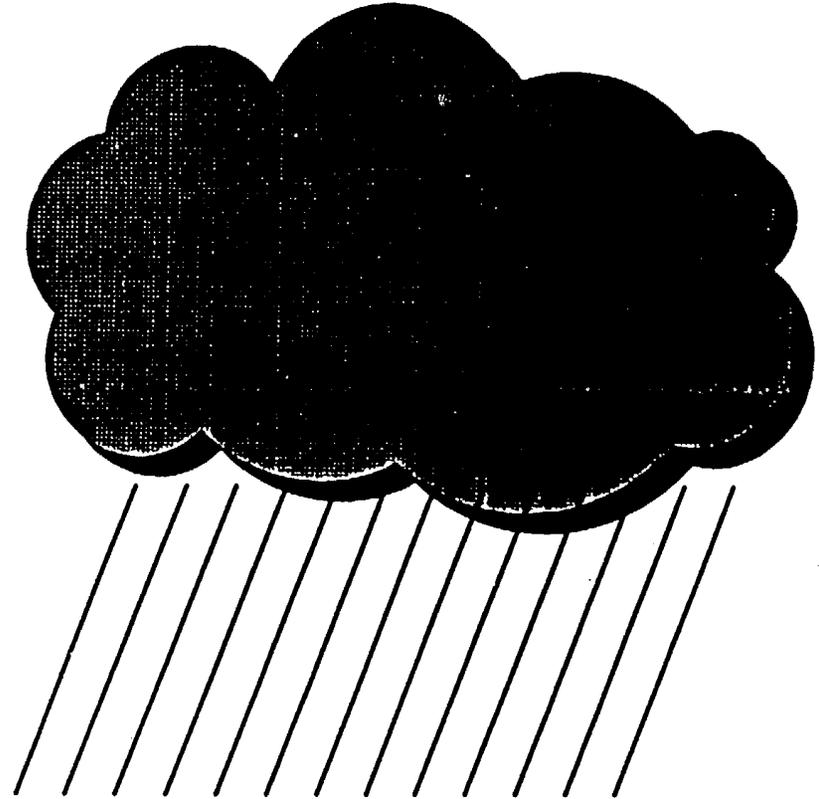
- Coordinated Approach to:
 - Obtain Funds
 - Utilize Funds
 - Price Funds
- Objective
 - Maximize Net Income
 - Promote Housing Finance
 - Minimize Risk



nb

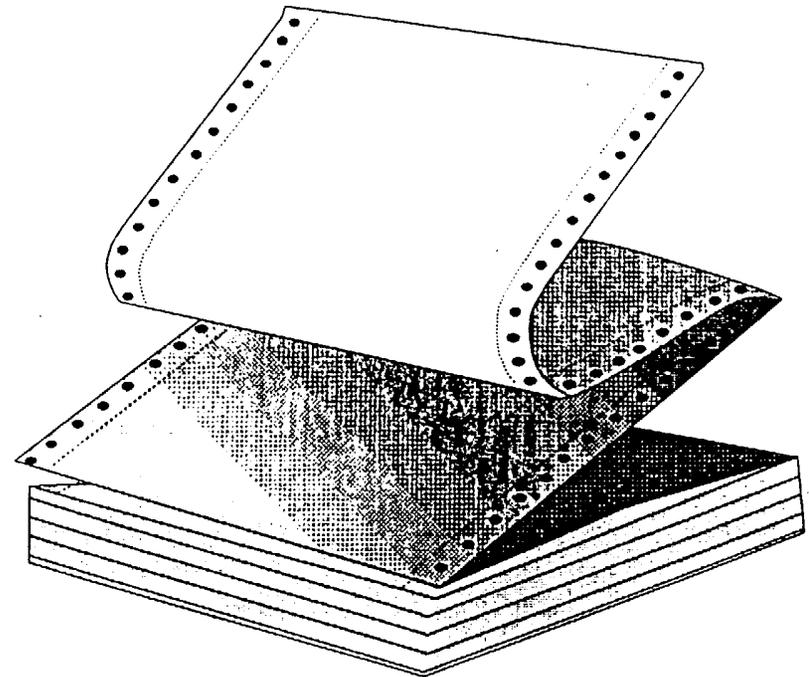
Risky Alternatives to Enhance Earnings

- Increase Loan/Asset
- Decrease Government Securities/Assets
- Originate "Risky" Loan
- Mismatch Repricing of Assets and Deposits
- Understate Provision for Loan Losses
- Speculate in FX Market



Interest Rate Risk Management

- Repricing
 - Term
 - Variable Rate
- Negative Gap
 - Liabilities Reprice $>$ Assets
 - Risk of Rising Rates
- Positive Gap
 - Assets Reprice $>$ Liabilities



| ASSETS | CUMULATIVE AMOUNT AS A PERCENT OF ASSETS | | | | | | | | | |
|---|--|-------|--------|----------------------------------|-------|--------|-----------------------------------|-------|--------|--|
| | TOTAL | | | PERCENT REPRICED WITHIN 3 MONTHS | | | PERCENT REPRICED WITHIN 12 MONTHS | | | |
| | BANK | PEER | 01 PCT | BANK | PEER | 01 PCT | BANK | PEER | 01 PCT | |
| LOANS AND LEASES (EXCL NONACC) | 64.53 | 64.11 | 47 | 38.88 | 31.84 | 70 | 46.91 | 40.36 | 72 | |
| FIXED RATE BY MATURITY | 41.31 | 29.74 | 88 | 20.44 | 5.32 | 95 | 25.98 | 8.65 | 95 | |
| FLOATING RATE BY REP INTERVAL | 23.22 | 32.94 | 17 | 18.44 | 25.28 | 23 | 20.92 | 30.33 | 11 | |
| DEBT SECURITIES | 20.69 | 17.17 | 64 | 0.21 | 1.70 | 16 | 3.12 | 4.24 | 44 | |
| FIXED RATE BY MATURITY | 18.24 | 14.73 | 63 | 0.21 | 0.53 | 41 | 0.67 | 1.66 | 23 | |
| FLOATING RATE BY REP INTERVAL | 2.45 | 1.54 | 66 | 0.00 | 0.70 | 19 | 2.45 | 1.53 | 66 | |
| FEDERAL FUNDS SOLD(OVERNIGHT)* | 3.36 | 2.30 | 64 | 3.36 | 2.30 | 64 | 3.36 | 2.30 | 64 | |
| SECURITIES PURCHASED UNDER AGREEMENT TO RESELL* | 0.72 | 0.17 | 77 | 0.72 | 0.17 | 77 | 0.72 | 0.17 | 77 | |
| INTEREST-BEARING BANK BALANCES* | 2.13 | 0.90 | 70 | | | | 2.13 | 0.90 | 70 | |
| TRADING ACCOUNT ASSETS* | 0.98 | 0.70 | 61 | 0.98 | 0.70 | 61 | 0.98 | 0.70 | 61 | |
| TOTAL INT-BEARING ASSETS(IBA) | 92.40 | 89.56 | 85 | 44.14 | 42.35 | 52 | 57.22 | 55.52 | 52 | |
| LIABILITIES | | | | | | | | | | |
| DEPOSITS IN FOREIGN OFFICES** | 14.56 | 7.35 | 67 | | | | | | | |
| CD'S OF \$100,000 OR MORE | 3.41 | 4.08 | 39 | 2.34 | 1.76 | 69 | 2.99 | 3.10 | 51 | |
| FIXED RATE BY MATURITY | 3.41 | 4.04 | 41 | 2.34 | 1.73 | 70 | 2.99 | 3.06 | 52 | |
| FLOATING RATE BY REP INTERVAL | 0.00 | 0.01 | 61 | 0.00 | 0.00 | 64 | 0.00 | 0.01 | 61 | |
| OTHER TIME DEPOSITS | 12.55 | 13.75 | 42 | 4.47 | 3.44 | 70 | 8.79 | 9.00 | 47 | |
| MONEY MARKET DEPOSIT ACCOUNTS* | 9.27 | 11.22 | 39 | 9.27 | 11.22 | 39 | 9.27 | 11.22 | 39 | |
| OTHER SAVINGS DEP (EXCL MMDA)** | 7.59 | 5.88 | 67 | | | | | | | |
| NOW ACCOUNTS* | 3.74 | 4.11 | 48 | 3.74 | 4.11 | 48 | 3.74 | 4.11 | 48 | |
| FEDERAL FUNDS PURCH(OVERNIGHT)* | 4.04 | 6.76 | 32 | 4.04 | 6.76 | 32 | 4.04 | 6.76 | 32 | |
| SECURITIES SOLD UNDER AGREEMENT TO REPURCHASE* | 2.86 | 2.13 | 64 | 2.86 | 2.13 | 64 | 2.86 | 2.13 | 64 | |
| OTHER BORROWED MONEY** | 16.28 | 7.87 | 80 | | | | 10.82 | 5.63 | 76 | |
| SUB NOTES & DEBENTURES** | 2.30 | 1.33 | 83 | | | | | | | |
| TREASURY NOTES* | 1.09 | 0.53 | 69 | 1.09 | 0.53 | 69 | 1.09 | 0.53 | 69 | |
| TOTAL INT-BEARING LIABS (IBL) | 77.70 | 76.87 | 50 | 27.82 | 35.89 | 23 | 43.61 | 49.42 | 23 | |

NET POSITION (NOT CALCULATED FOR THE FFIEC 031 CALL REPORTER.)

*INDICATES ITEMS THAT ARE NOT REPORTED BY MATURITY/REPRICING INTERVAL, HOWEVER, REPRICING ASSUMPTIONS WERE MADE.
 **INDICATES ITEMS THAT ARE NOT REPORTED BY MATURITY/REPRICING INTERVAL, HOWEVER, NO REPRICING ASSUMPTIONS WERE MADE.

PLEASE NOTE: DURING THE CURRENT QUARTER THIS BANK HAS PARTICIPATED IN INTEREST RATE CONTRACTS MARKET.

Gap Report

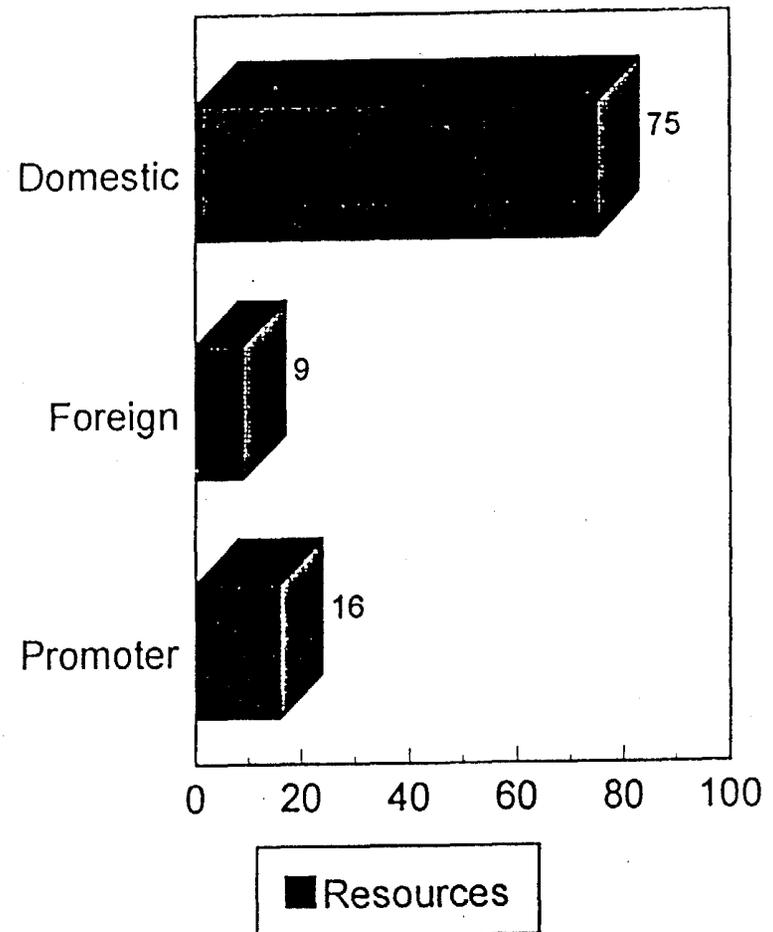
- 6-month Government T-bill
- 18-month, Fixed Rate Deposit
- 15-year, Fixed Rate Mortgage Loan
- 4-Year, Variable Rate Corporate Security
- 3-year, Fixed Rate NHB Refinance

Identify Repricing of Accounts (Assume Rs. One Crore)

| | 0-1 Year | 1-3 Years | 3+ Years |
|-------------|----------|-----------|----------|
| Assets | | | |
| Liabilities | | | |
| Gap | 0 | 0 | 0 |

Resource Mobilization

- Diversity
- Sustainability
- Cost
 - Interest
 - Fees
 - Expenses
- Maturity and Repricing
- Currency
- Outlook



Valuation

- Intrinsic Value
- "Bigger Fool"
- Present Value
 - Cash Flow
 - Timing of Cash Flow
 - Discount Rate
 - Risk-free Rate
 - Risk Premium
- Option-Based Value
 - Term and Strike Price
 - Volatility



Financial Risk and Indian Bonds

- Credit Risk and Non-payment
- Maturity, Liquidity and Price Volatility
- Marketability and Conversion to Cash
- Embedded Options and Effect on Cash Flow and Price Movement



International Loan

- Country Risk
- Debtor Risk
 - Credit Rating
 - Financial Information
 - Timeliness
 - Reliability
 - Comparability
- Issue Risk
 - Legal
 - Settlement
 - Collateral

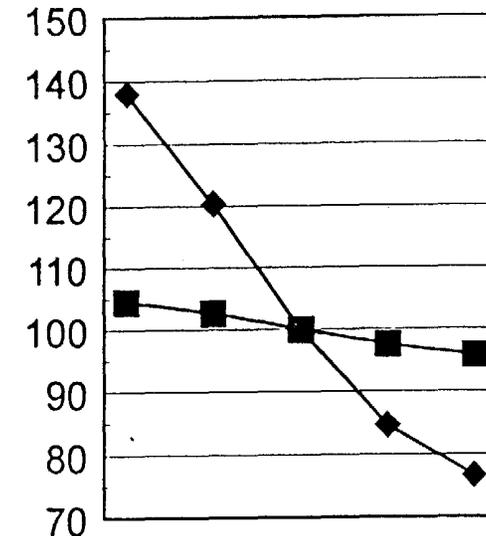
■ RISK The chart shows the latest quarterly summary of national credit-risk ratings, based on economic and political factors, produced by the Economist Intelligence Unit (EIU), a sister company of The Economist. Russia is the riskiest of the countries in the chart. In the first quarter of 1996 it scored 85 (out of a maximum 100). But according to the EIU, Russia is slowly becoming less risky: its previous score was 90. Asia tends to offer the least risky environments for investors. The EIU gives Singapore a mere five points.



Price Volatility and Maturity

- Long-term Securities More Volatile than Short-term
- Long-term Securities "Lock-in" HFC to Yield Much Longer than Short-term
- Long-term Securities Less Liquid than Short-term

Price of Rs. 100 Crore Security
Price

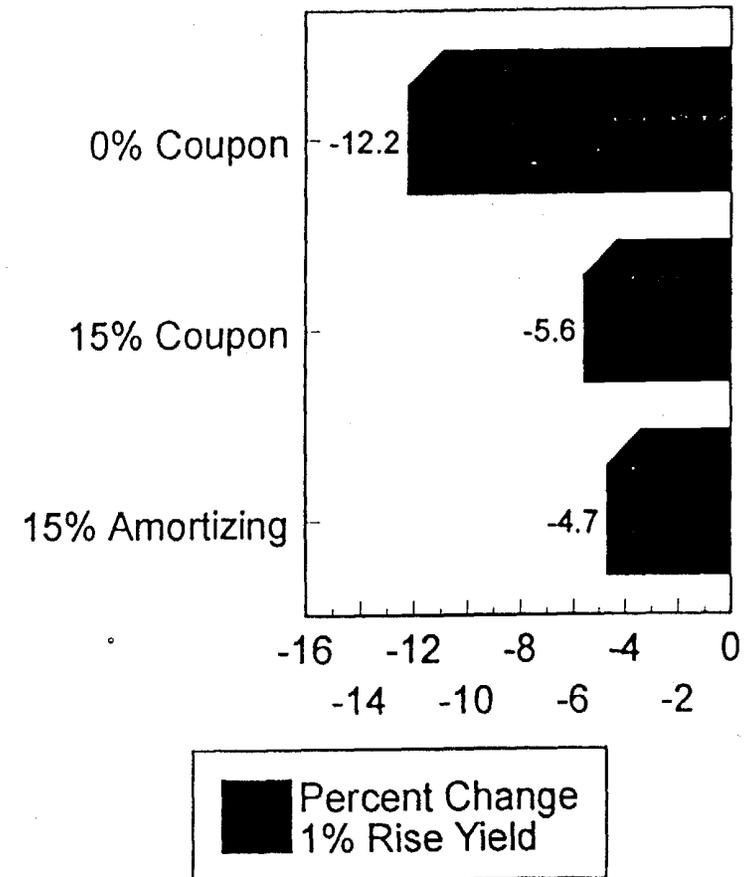


| Yield | 10 | 12 | 15 | 18 | 20 |
|----------------|-------|-------|-------|------|------|
| 1 Year, 15% ■ | 104.5 | 102.7 | 100.0 | 97.5 | 95.8 |
| 15 Year, 15% ◆ | 138.0 | 120.4 | 100.0 | 84.7 | 76.6 |

Price Volatility and Maturity

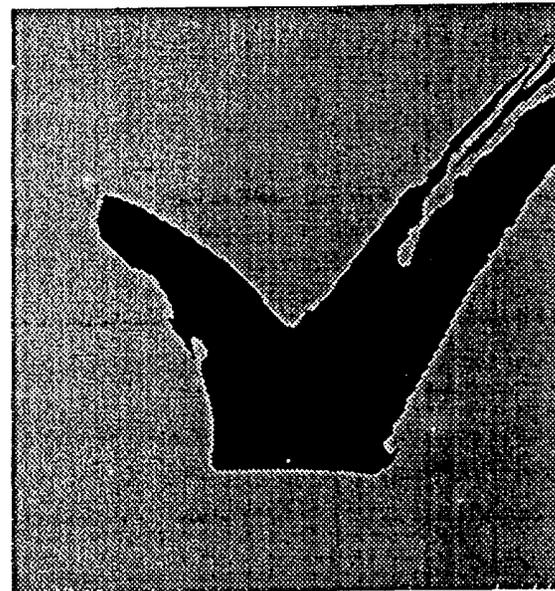
- Price Volatility Reflects the Duration of an Instrument
- Duration Declines with
 - Short Maturity
 - High Coupon
 - Principal Repayment
- Long Duration Increases HFC Risk

Price Change of Rs. 100 Crore 15-year Securities



Estimate Relative Price Risk

- Securities
 - 0% 10-year Bond
 - 12% 10-year Bond
- Loans
 - 10% 12-year Amortizing Loan
 - 10% 12-year Bullet Loan
- Loans
 - 8% 15-year Bullet Loan
 - 15% 15-year Amortizing Loan



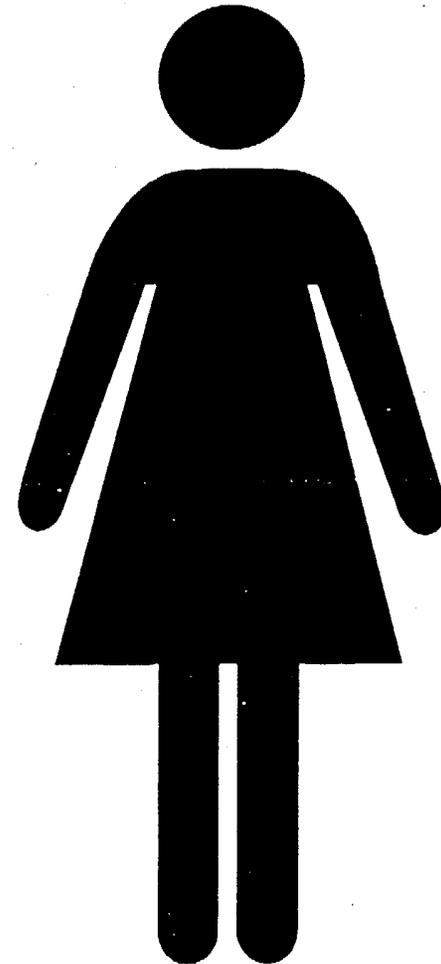
Low Rate Environment: Reach for Investment Yield

- Long-term
- Lower Credit Rating
- Less Marketable
- Embedded Options
- Different Currency

DDM

Lending Decisions

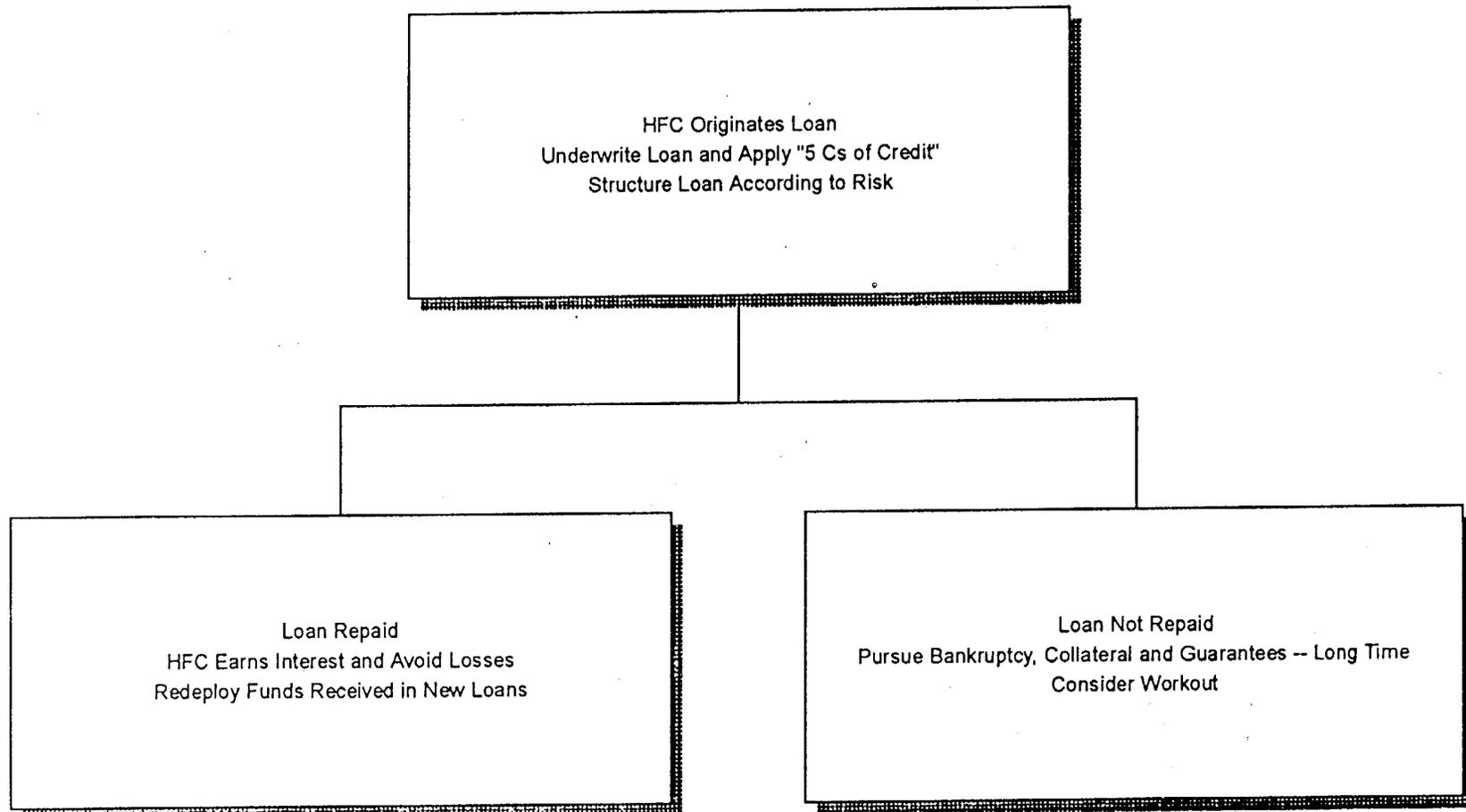
- Meet NHB Regulation
- Meet Risk-based Capital
- Maintain Credit Risk
- Match-fund Repricing with Deposits
- Promote Yield
- Provide Cash Flow and Liquidity



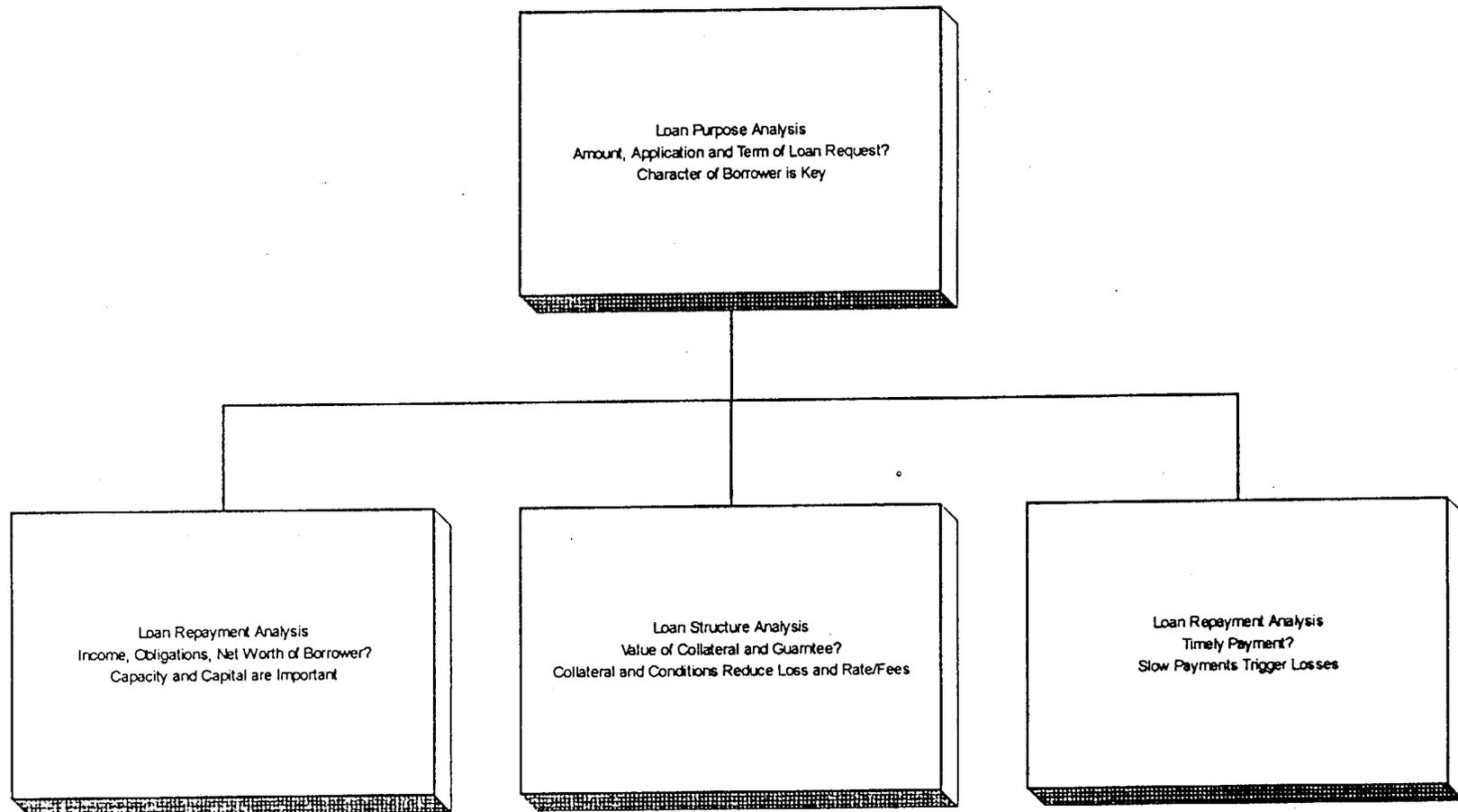
Policy Issues

- Personnel
 - Call
 - Credit
 - Client
 - Review
- Pricing
 - Cost of Funds
 - Credit Risk
 - Functional Cost
 - Profit Contribution
- Products
 - Type Loan
 - Borrower
 - Industry
- Procedures
 - Legal
 - Credit
- Portfolio Mix
 - Risk
 - Correlation

Loan Repayment

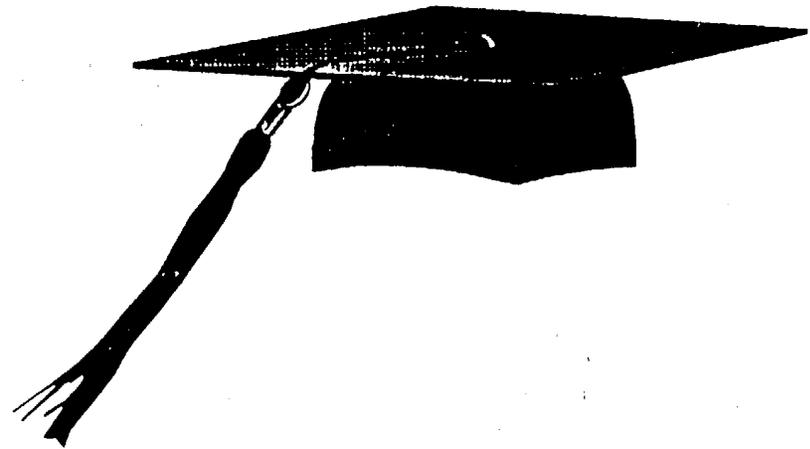


Credit: Character, Capacity, Capital, Collateral and Conditions



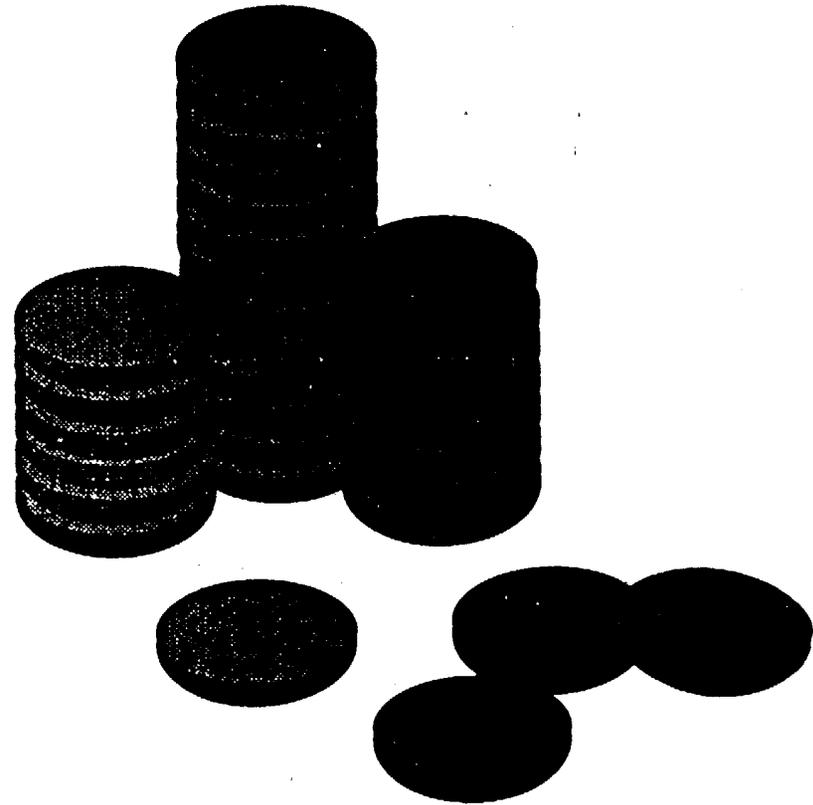
Character

- Past Payment Record
- References
- Stability of Employment
- Criminal or Civil Penalties
- Honesty and Integrity
- Importance of Home to Family



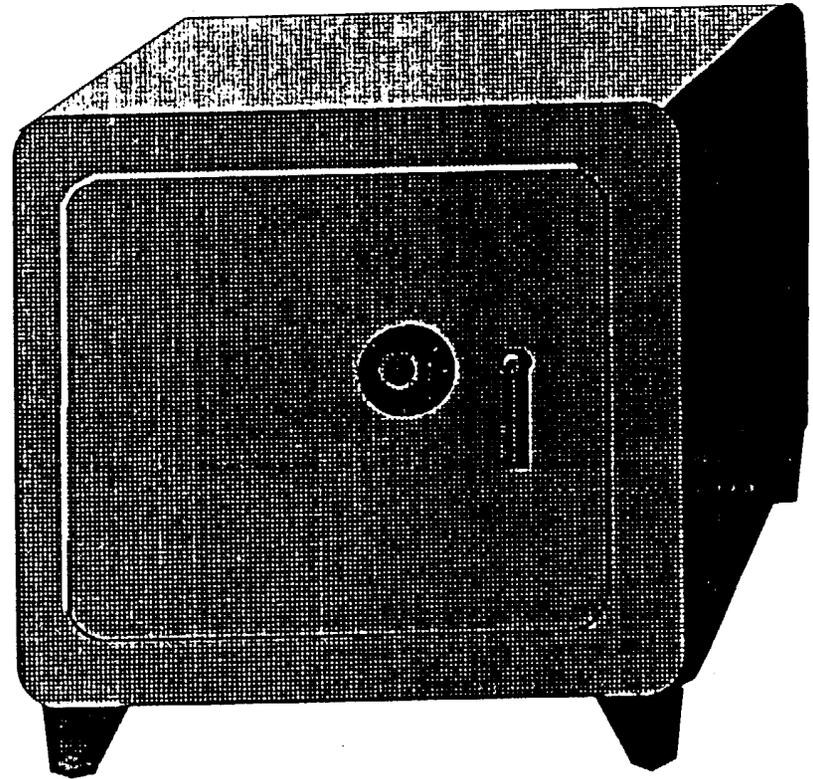
Capacity

- Income
 - Amount
 - Stability
 - Reported v. Other
- Other Obligations
 - Priority of Debt
 - Number of Dependents
 - Medical Concerns/Disability
- Potential Contingencies



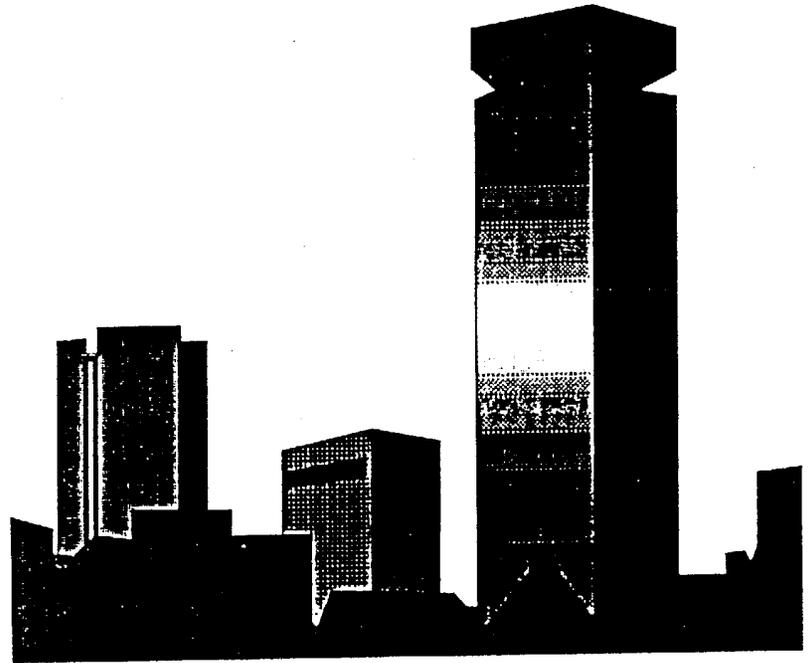
Capital

- Assets
 - Value
 - Location
 - Ownership
- Liabilities
 - Amount
 - Priority
 - Fully Disclosed
- Capital Only Provides Cash if Assets Sold or New Funds Borrowed



Collateral and Conditions

- Collateral and Guarantees
 - Do Not Affect Default
 - May Reduce Loss
- Collateral
 - Value and Marketability
 - Ability to be Seized and Sold
- Guarantees
 - Legal Enforceability
 - Ability to Pay



Financial Analysis

- Statement Reliability

- Audit

- Unqualified

- Qualified

- Review

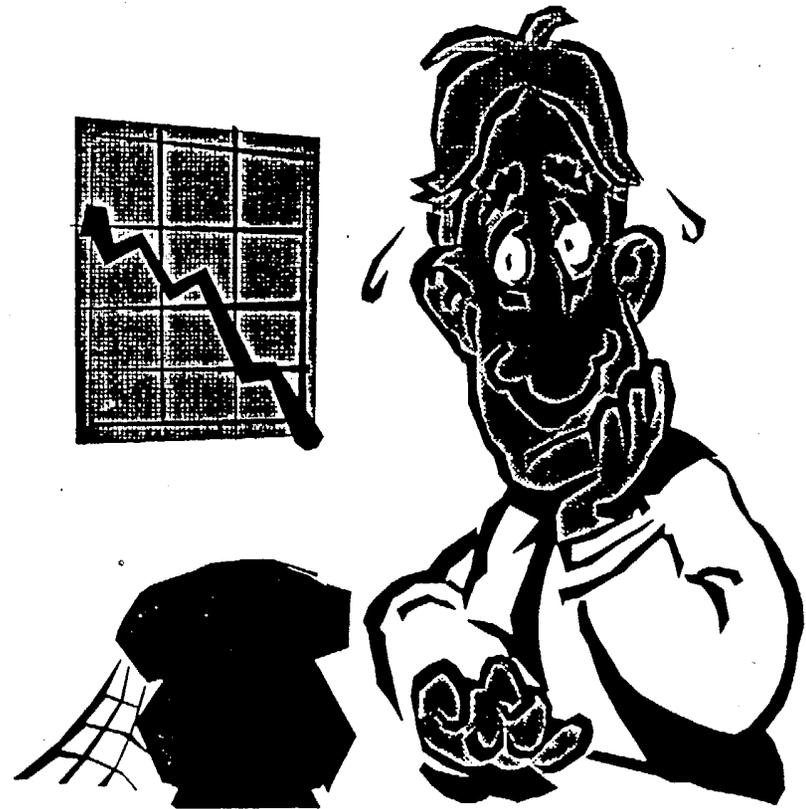
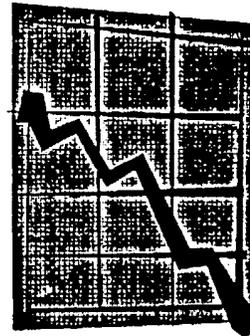
- Compilation

- Financial Ratios

- Integrative

- "Bankruptcy"

- Value Creation



Computron Industries

| BALANCE SHEETS | 1995 | 1994 |
|--------------------------------|------------------|------------------|
| Assets: | | |
| Cash | 52,000 | 57,600 |
| Accounts receivable/Inter Firm | 402,000 | 351,200 |
| Inventories | <u>836,000</u> | <u>715,200</u> |
| Total current assets | <u>1,290,000</u> | <u>1,124,000</u> |
| Gross fixed assets | 527,000 | 491,000 |
| Less Accumulated Depreciation | <u>166,200</u> | <u>146,200</u> |
| Net fixed assets | <u>360,800</u> | <u>344,800</u> |
| Total assets | <u>1,650,800</u> | <u>1,468,800</u> |
| Liabilities and Equity: | | |
| Accounts payable | 175,200 | 145,600 |
| Notes payable | 225,000 | 200,000 |
| Accruals | <u>140,000</u> | <u>136,000</u> |
| Total Current liabilities | <u>540,200</u> | <u>481,600</u> |
| Long-term debt | <u>424,612</u> | <u>323,432</u> |
| Common stock (100,000 shares) | 460,000 | 460,000 |
| Retained earnings | <u>225,988</u> | <u>203,768</u> |
| Total Equity | <u>685,988</u> | <u>663,768</u> |
| Total liabilities and equity | <u>1,650,800</u> | <u>1,468,800</u> |
| INCOME STATEMENTS | | |
| Sales | <u>3,850,000</u> | <u>3,432,000</u> |
| Cost of goods sold | 3,250,000 | 2,864,000 |
| Other expenses | 430,300 | 340,000 |
| Depreciation | <u>20,000</u> | <u>18,900</u> |
| Total operating costs | <u>3,700,300</u> | <u>3,222,900</u> |
| EBIT | 149,700 | 209,100 |
| Interest expense | <u>76,000</u> | <u>62,500</u> |
| EBT | 73,700 | 146,600 |
| Taxes (40%) | <u>29,480</u> | <u>58,640</u> |
| Net Income | <u>44,220</u> | <u>87,960</u> |
| Dividend Paid | 22,000 | 22,000 |

INDUSTRY AVERAGE DATA

| Ratio | Industry Average |
|------------------------------|------------------|
| Current | 2.7x |
| Quick | 1.0x |
| Inventory turnover | 7.0x |
| Days sales outstanding (DSO) | 32.0 days |
| Fixed assets turnover | 10.7x |
| Total assets turnover | 2.6x |
| Debt ratio | 50.0% |
| TIE | 2.5x |
| Fixed charge coverage | 2.1x |
| Profit margin | 3.5% |
| Basic earning power | 19.1% |
| ROA | 9.1% |
| ROE | 18.2% |
| Price/earnings | 14.2x |
| Market/book | 1.4x |

Corporate Indicators of Credit Problems

▪ Managerial

- Change of Life Style of Owner
- Management Turnover
- Change of Bank, Auditor or Attorney
- Unexplained New Activity
- Violation of Loan Covenant

▪ Operations

- Returns, Allowances and Slow Sales
- Rapid Change in Inventory
- Slow A/R Turnover
- Easy Credit Terms
- Vague Management Plans
- Late Payment or Financial Reports

Corporate Bankruptcy and Financial Ratios

- Cash Ratio: $(\text{Cash} + \text{Securities}) / \text{Assets}$
 - Good $> 1\%$; Bad $< 1/2\%$
- Current Ratio: $\text{Current Assets} / \text{Current Liabilities}$
 - Good $> 220\%$; Bad $< 150\%$
- Operating Cash Flow Ratio: $(\text{Net Income} + \text{Non-cash}) / \text{Term Debt}$
 - Good $> 30\%$; Bad $< 0\%$
- Debt Ratio: $\text{Total Liabilities} / \text{Assets}$
 - Good $< 50\%$; Bad $> 80\%$
- Return on Equity: $\text{Net Income} / \text{Equity}$ ($> \text{T-bond}\%$)

Computron and "Bankruptcy" Ratios

Key Ratios (percent)
Financial Management (1987)

| | Current | Prior | "Failure" |
|-----------|---------|-------|-----------|
| Cash | 3.1 | 3.9 | 0.5 |
| Current | 239.0 | 233.0 | 150.0 |
| Debt | 58.4 | 54.8 | 80.0 |
| Cash Flow | 15.1 | 33.0 | 0.0 |
| ROE | 6.4 | 13.3 | 0.0 |

Integrative Ratios

- Return on Equity
 - Net Income/Equity
- Leverage Multiplier
 - Assets/Equity
- Return on Assets
 - Net Income/Assets
- ROE = LM x ROA
- Return on Assets
 - Net Income/Assets
- Asset Turnover
 - Revenue/Assets
- Profit Margin
 - Net Income/Revenue
- ROA = AT x PM

Computron and Integrative Ratios

| | ROE | LM | ROA |
|-----------|------|------|-----|
| CURRENT | 6.4 | 2.41 | 2.7 |
| LAST YEAR | 13.3 | 2.21 | 6.0 |
| PEER | 18.2 | 2.00 | 9.1 |

| | ROA | AT | PM |
|-----------|-----|------|-----|
| CURRENT | 2.7 | 2.33 | 1.1 |
| LAST YEAR | 6.0 | 2.34 | 2.6 |
| PEER | 9.1 | 2.60 | 3.5 |

Computron and Common Size Income Statement Ratios

Profit Analysis (Account/Sales)

| | CURRENT | PRIOR |
|-------|---------|-------|
| SALES | 100.0 | 100.0 |
| CGS | 84.4 | 83.4 |
| OTHER | 11.2 | 9.9 |
| DEPR. | 0.5 | 0.6 |
| EBIT | 3.9 | 6.1 |
| INT. | 2.0 | 1.8 |
| TAX | 0.8 | 1.7 |
| NET | 1.1 | 2.6 |

Source and Use of Funds

- Source of Funds

- + Liability

- + Equity

- + Net Income

- + Depreciation

- - Assets

- Use of Funds

- + Assets

- + Dividends

- - Liability

- - Equity

Computron and Source/Use of Funds Schedule

| | SOURCE |
|--------------|---------|
| CASH | 5,600 |
| DEPRECIATION | 20,000 |
| ACC. PAY | 29,600 |
| NOTES PAY | 25,000 |
| ACCRUAL | 4,000 |
| LTD | 101,180 |
| RE | 22,220 |
| TOTAL | 207,600 |

| | USE |
|-------------|---------|
| ACCT REC | 50,800 |
| INVENTORY | 120,800 |
| FIXED ASSET | 36,000 |
| TOTAL | 207,600 |

Computron and Operating Cash Flow (Accrual Adjustments)

- Net Income
- Non-cash Items
 - - Change Accounts Receivable
 - - Change Inventory
 - + Change Accounts Payable and Accrual

Operating Cash Flow (Current Period)

| | Amount |
|---------------|----------|
| Net Income | 44,220 |
| Depreciation | 20,000 |
| Change A/R | -50,800 |
| Change Inv | -120,800 |
| Change AP | 29,600 |
| Change Acc | 4,000 |
| Op. Cash Flow | -73,780 |

Price a Loan

- Rs. 10 Crore Loan
- Fund 90% by Deposits and 10% with Net Owned Funds
- Cost of Deposits = 11% and Cost of Equity = 16%
- Operating Costs = 1.5%
- Credit Loss = .5%



Problem Loan

- Alternatives
 - Workout
 - Settlement
 - Offset Accounts
 - Legal
 - Loan-to-facilitate
- Recognition
 - Classification
 - Allowance
- Public Policy --
Change Management



Effective A/L Management

- Stable Earnings
- Liquid Operations
- Assets Match-funded by Liabilities
- No Exposure to Options (prepayment of loans or withdrawal of deposits)
- Ability to Identify, Measure, Monitor and Control Risk

