ISSUES OF HOUSING FINANCE IN URBAN INDIA: A SYMPTOMATIC STUDY

A THESIS SUBMITTED TO
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
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VADODARA, GUJARAT, INDIA

AUGUST, 2012

DECLARATION

"I hereby declare that this thesis is a presentation of my original research work. To the best of my knowledge it contains no materials previously published or written by any other person. Wherever contributions of others are involved, every effort has been made to indicate it clearly with due acknowledgment in the text. The research work has not been previously accepted in whole, or in part, for the award of any other degree or diploma of the university or any other institute of higher education."

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CERTIFICATE

This is to certify that the thesis titled "Issues of Housing Finance in Urban India: A Symptomatic Study", submitted by Ms. ARCHANA FULWARI for the award of the degree of Doctor of Philosophy in Business Economics in the Department of Business Economics, Faculty of Commerce, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat has been carried out under my guidance and supervision.

The content of this thesis is the result of the independent research effort of the researcher herself, and has not been submitted anywhere else for the award of any other degree.

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LIST OF ABBREVIATIONS

ACHFs : Apex Cooperative Housing Federations
ADB : Asian Development Bank
AMIs : Alternative Mortgage Instruments
ARDBs : Agriculture and Rural Development Banks
ARMs : Adjustable Rate Mortgages
BOB : Bank of Baroda
BPLR : Benchmark Prime Lending Rate
BSUP : Basis Services to the Urban Poor
CAGR : Compound Annual Growth Rate
CFIs : Community based Financial Institutions
CGFS : Committee on the Global Financial System
CRISIL : Credit Rating Information Services of India Limited
EMI : Equated Monthly Installments
EWS : Economically Weaker Section
FDI : Foreign Direct Investment
FHA : Federal Housing Administration
FNMA : Federal National Mortgage Association
FRMs : Fixed Rate Mortgages
GDP : Gross Domestic Product
GHB : Government Housing Bank
GHLC : Government Housing Loan Corporation
GIC : General Insurance Corporation
GICHFL : General Insurance Corporation Housing Finance Limited
HDB : Housing Development Board
HDFC : Housing Development Finance Corporation Limited
HFCs : Housing Finance Companies
HFIs : Housing Finance Institutions
HFSs : Housing Finance Societies
HKMC : Hong Kong Mortgage Corporation

HOLC : Home Owner's Loan Corporation

HPF : Housing Provident Fund

HUD : Housing and Urban Development

HUDCO : Housing and Urban Development Corporation Limited

IAY : Indira Awas Yojana

ICICI : Industrial Credit and Investment Corporation of India

ICRA : Investment Credit Rating Agency

IHSDP : Integrated Housing and Slum Development Programme

ISHUP : Interest Subsidy Scheme for Housing the Urban Poor

ITES : Information Technology Enabled Services

JNNURM : Jawaharlal Nehru National Urban Renewal Mission

LIBOR : London Inter Bank Offer Rate

LIC : Life Insurance Corporation of India

LICHFL : Life Insurance Corporation Housing Finance Limited

LIG : Lower Income Group

LMI : Lower and Middle Income

LTV : Loan-to-Value

MBS : Mortgage Backed Securities

MSB : Mutual Savings Banks

NBFCs : Non-Bank Finance Companies

NBO : National Buildings Organization

NCHFI : National Cooperative Housing Federation of India

NGOs : Non-Governmental Organizations

NHB : National Housing Bank

NHP : National Housing Policy

NHHP : National Housing and Habitat Policy

OECF : Overseas Economic Cooperation Fund

PNB : Punjab National Bank

RAY : Rajiv Awas Yojana

REIT : Real Estate Investment Trusts

REMF : Real Estate Mutual Funds

RMBS : Residential Mortgaged Backed Securities

RRBs : Regional Rural Banks

RBI : Reserve Bank of India

SARFAESI : Securitization and Reconstruction of Financial Assets and Enforcement of the Security Interests

SBI : State Bank of India

SCBs : Scheduled Commercial Banks

SHBs : State Housing Boards

SHGs : Self Help Groups

SLA : Savings and Loan Associations

SOE : State Owned Enterprises

ULCRA : Urban Land (Ceiling and Regulation) Act

USAID : United States Agency for International Development

VAMBAY : Valmiki Ambedkar Awas Yojana

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SECTION 1.1

BACKGROUND OF THE STUDY

The housing finance sector in India has witnessed voluminous growth and qualitative transformation over the past two decades. Financial liberalization and deregulation have played a significant role in providing an enabling environment for the sector to expand. From a subdued sector lacking vigor into a sophisticated one with active involvement of all stake holders, the housing finance sector has come a long way. The intense promotional activities of lending institutions bear witness to the vibrancy of the housing finance market. The home loan interest rates recorded a decline from levels ranging as high as 17 to 19 percent in the 1990s to 7 to 8 percent in the early 2000s. The ratio of mortgage debt to Gross Domestic Product (GDP) rose from as low as 2% in 2002 to 7.25% in March 2010. The home loan portfolio of commercial banks as a ratio to the per capita net national income too registered significant improvement from 0.28 to 9.00 over a period of two decades from 1990 to 2010. Not only has the total volume of home loans increased, but the number of borrowers as well as the average loan size too has increased over time. Lower interest costs, rising disposable incomes, tax incentives on home loans and stable property prices have all contributed to the housing finance sector. For a couple of years towards the end of the decade of 2000 some slowdown was observed due to issues related to liquidity and inflation, however, there are signs of revival in house purchase activities with the softening of interest rates and rationalization of property prices. These developments make it imperative to examine the housing finance sector by linking all the key factors together for a better understanding.

The present study is a modest attempt to present a characteristic, suggestive and representative study in order to understand the issues of housing finance and highlight areas with scope for further research. The following sections bring the inquiry into clear perspective by highlighting the nature and significance of housing and the demographic changes taking place in India.

SECTION 1.2

NATURE AND SIGNIFICANCE OF HOUSING

Section 1.2.1: Significance of Housing at Household Level

Housing is in essence a significant component of the social and economic status of an individual or a household. It represents one of the three most fundamental social needs, that is, food, clothing and shelter. In the simplest form, housing is an abode as much for the poorest as for the most affluent of persons. This is so because housing comprises one of the prime aspirations for progressive lifestyles among all income groups. The social and economic transformation of an urban centre is caused as well as manifested in the changing housing scenario (Pugh, 1990). Housing has evolved into a complex economic good, demanded not merely as a shelter but as a lucrative investment asset. As Grimes (1976) states not only does it render social returns in terms of achievement, social acceptance and satisfaction to its owner but is also a source of household income in the form of rent.

Home ownership is embedded into the Hindu cultural bearings in property bequests, as also in the dowry system (Pugh, 1990). Ownership of housing increases the welfare of the household by enhancing productivity, efficiency and creativity (Desai, 2002). Housing provides vital services like privacy, independence, security, comfort, and status (Charles 1977); it is a centre of the household's total residential environment that serves the purposes of working, eating, sleeping, and leisure (Grimes, 1976). In this context, Charles maintains that demand for housing is a derived demand for these services rather than the demand for a brick and mortar structure. The National Housing Bank recognizes it as being not merely a place to live but also a workshop where people are shaped for constructive roles in the future (NHB, 2004). Charles considered housing a productive consumption as it helps to develop constructive attitudes that contribute indirectly to the national income so much so that the social returns from good housing exceed the private gains.

Section 1.2.2: Housing as an Economic Good

In economic literature housing has received significant attention. It has been treated variously, for example, as consumption good (Adam Smith, 1776) and as a tangible asset with potential attractive returns (David Ricardo, 1817). Jevons (1871) considered house as

fixed capital whether owned or rented. Marshall (1890) treated house as a capital similar to a machine if provided by employer but otherwise a consumption good. Gustav Cassel (1923) regarded housing as a durable good in a continuous process of production, necessitating complementary services of supervision and maintenance on regular basis.

Over time, with changes in the perceptions regarding the nature of housing, there have been changes in the policy orientation as well. In the past housing was viewed simply as a physical phenomenon (Grimes, 1976). Therefore the policies for its provision centered on building cost considerations comprising wide variety of material inputs, different levels of housing standard and quality of finish. In the present times, the perception has broadened to include greater emphasis on the socio-economic cost-benefits of housing (Grimes, 1976). Interestingly therefore, housing has become more than mere shelter. Its character and economic value is determined by the services and amenities it renders, such as access to health, education, security and employment opportunities, and by its neighborhood (Lakshmanan et al, 1976). This implies that housing production cannot be considered in isolation from location-centric aspects like well coordinated transport system, water supply, waste disposal, and community services. Bourne (1981) regards housing as a bundle of services including neighbourhood environment and locational elements. Alonso (1964) made an interesting reflection in that 'the rich are price oriented, whereas the poor are location oriented' in their preference for housing. Nearness to the urban centers of economic activities is crucial for employment opportunities.

Housing is a complex product; one that is long lasting, bulky, permanent, highly non-standardized in the materials, facilities and services involved and in prices, and is fixed in location (Beyer, 1958). The lifetime expectancy of a housing unit ranges from 50 to 100 years and includes almost 300 components (Palvia 1980). Since housing embraces much more than mere dwelling unit, it can be considered appropriate only when it incorporates the requirements of sustainable development, climatic and environmental considerations, economic and social background of people, and the lifestyles prevalent in the regions (Mathur, 1993). Moreover, while the problem of scarcity of housing is on account of the usual demand-supply mismatch, there is the added aspect of locational scarcity of housing in the sense of locational mismatch between demand and supply of housing (Charles, 1977). To quote Renaud (1996), who states that "Housing is not a very complex *technical* good to

produce in industrial societies…..it is perhaps the most complex *economic* good to analyze and manage properly because of its durability, heterogeneity, spatial fixity and sensitivity to the specific financial and regulatory environment in which it is provided."

Housing is considered to be a necessity in conventional theory, with the implication that its demand is relatively inelastic. However it is also a comfort good if characterized in terms of its utility. This is borne by the fact that housing encompasses unlimited dimensions of the element of comfort. Therefore we can expect housing demand to be responsive to changes in economic variables (Charles 1977). Housing is a major component of the household budget, second only to food, constituting 15 to 25 per cent of the expenditure (Grimes 1976). For any household, owning or producing a dwelling unit involves a high capital investment that involves savings of an entire lifetime or even more (Palvia 1980). Not only does housing depreciate slowly, but also being marketable in the real estate market, its value tends to appreciate due to rising demand and speculative activities. Demand for housing is a demand for investment and/or consumption. Theoretical work suggests that owner-occupied housing implies that investment demand for housing is greater than consumption demand for housing. This is because consumption demand for housing can be met through rental housing too. Further, Flavin and Yamashita (2002) point out that the level of residential property owned by households may be optimal from the point of view of utility maximizing consumption of housing services, but may differ from what the households consider as optimal ownership of housing-asset from the point of view of portfolio. The implication of this demarcation for policy purpose, whether related to tax incentives on home loans or to provision of subsidized housing finance, is that housing would require differential treatment depending on whether it is owner-occupied or rented out for income and whether it is a case of first-time purchase or otherwise. This underlines the complex nature of housing.

It is no doubt that given its immense significance, issues related to housing such as the adequacy of its supply, its affordability particularly for the lower income groups, and the need for financing, etc., form critical aspects of housing policies for the government.

Section 1.2.3: Significance of Housing at the Macro Level

At the macro level, investment in housing is akin to investment in human resource on account of its productivity-enhancing benefits, although it is difficult to measure the benefits which accrue over a long span of time. Palvia (1980) compares housing to a social overhead like education and health, and highlights its great implications for income generation akin to economic overheads like infrastructure. Its importance is underscored by the fact that within the ambit of the International Labour Organization conventions, provision of housing for workers was considered to be imperative in raising their productivity, wage level and standard of living. Housing has thus come to be acknowledged as the key component of a nation's social and economic structure and the benchmark of its socio-economic and cultural status. Warnock and Warnock (2007) extend the significance of a country's housing sector as a factor improving public health "by reducing the likelihood of outbreaks of disease." On the basis of the measurement of the willingness of households to pay for the positive effects of neighbourhood ownership, Coulson, Hwang and Imai (2007) have arrived at the level of subsidization justified for encouraging owner-occupied housing.

For an economist housing is both a theory and a practice. Theoretically, housing as an economic activity can be linked to consumption, savings, and investment, and with the swing and pace of economic development. Investment in housing is recognized as an important driving force generating sizable employment opportunities and supporting some 300 industries directly or indirectly. In practice, a variety of issues involving national policies are required to be sorted out in almost all countries in the world. In particular, in the developing countries, the policy aspects are more deliberate and manifest as they determine the direction and pace of urban (and rural) housing development. In India, this is reflected in the efforts of the Government in the form of financial allocations in the Five-Year Plans and fiscal measures announced in the annual budgets.

The report of the 11th Five-Year Plan (2007-12) Working Group on Urban Housing states that the overall employment generation in the economy on account of additional investment in the housing/construction sector was eight times the direct employment. The construction sector provides employment to 16% of the work force with an average increase of 7% per annum. The housing sector is second to agriculture in terms of employment generation with 58% of the total workforce employed in the construction sector working in the housing

sector. The employment opportunities exist for the unskilled labour category as well as for a wide section of population with varying degrees of skills, education, and professional knowledge. Increase in house construction activities leads to increase in producers and dealers in building materials; increase in the number of professionals like developers, architects, civil engineers, builders, contractors, interior designers, property evaluators, real estate agents, etc., as well as technicians such as plumbers, electricians, painters, and furnishers; increase in manufacturers and dealers in home appliances, electronic and electrical products, etc., (Cardozo, 2003). Housing requires continuous maintenance, repairs and modifications. Therefore, a small change in demand for housing may have multiplier effect on the whole economy.

The Report of Technical Advisory Group on Development of Housing Start-Up Index in India (2009) terms the multiplier effect as the 'ripple effect of housing demand'. It further states that a surge in the level of housing construction activity in a country can positively influence the magnitude of economic growth, cause interest rates to rise and has the potential to lead to inflation. On the other hand, fall in the pace of housing construction has the potential to cause a slowdown in the macro economy through its strong linkages with numerous sectors of the economy. Housing directly influences the steel and cement industries which in turn also have significant contributions to the national economy. A World Bank report on the housing sector in South Asia, (2007) states that a 10% growth of an economy would lead to 14% growth in the housing sector and this would generate 3.2 million new jobs over a period of one decade. On the other hand, the housing sector has the capacity to multiply income by five times the expenditure incurred on it. In the case of India, one rupee invested in housing adds 78 paise to the National Income (Nenova 2010). The Task Force on Affordable Housing for All (2008), under the Ministry of Housing and Urban Poverty Alleviation (MHUPA), estimated that reducing the urban housing shortage has the potential of raising the rate of growth of GDP by at least 1 to 1.5 percent.

Needless to say, the significance of housing for an individual as well as for the economy entails an inquiry into how its accessibility can be facilitated. In this context, the present study focuses on the issues of housing finance in urban India.

SECTION 1.3

MEANING OF HOUSING FINANCE

The term housing finance is commonly referred to the loans availed by a household for the purchase or construction of a housing unit. It involves mortgaging of the property as collateral against which the loan has been taken. Originally, a mortgage was said to have occurred when the owner pledged her right over an asset owned by her as a security with the lender for availing a loan. However, as housing loans are given under the condition of mortgaging the property for which the loan has been availed, the term mortgage finance has become synonymous to housing finance.

Housing finance covers a wide range of issues, and the concept often varies in its coverage across different countries; however, it has been defined mainly in terms of residential mortgage credit. Boleat (1985) for instance describes housing finance in terms of the flow of funds to home buyers. According to Lea (2000) housing finance includes a broad array of institutional arrangements which include both general and specialized institutions acting as primary or secondary lenders, with the common purpose of channeling funds from savers to households demanding housing loans. Warnock and Warnock (2007) describe housing finance as the provision of long-term financing for house purchase. King (2009) refers to housing finance as the funds used for building and maintaining the housing stock of a country. Chiquier and Lea (2009) look at housing finance as a link between multi-sector issues which are in a continuous process of change on account of the economic, cultural, and regulatory environment of a country. They consider housing finance as encompassing more than residential mortgage credit and include housing developer finance, rental finance as well as housing related micro-finance within the scope of the term housing finance. The NHB report on Indian Housing Finance System (2000), the report of the Committee on the Global Financial System (2006), Saravanan and Nagarajan (2007), the UN Human Settlements Programme Report (2008), the Asian Development Bank (ADB) Report on Private Sector Housing Finance Project in India (2008), and Nenova (2010), all describe housing finance to mean financing of home purchase. In the present study too the term housing finance is used to refer to the home loans extended to households for the purpose of purchase or construction of a housing unit and is used interchangeably with the term mortgage credit.

SECTION 1.4

POPULATION GROWTH AND HOUSING FINANCE

Population growth is an important factor that has huge implications for housing, and therefore issues related to housing finance have a pivotal role to play. Both, population growth and its changing age structure have an overwhelming impact as determinants of the quality of life, of which housing is an important parameter. India is the seventh largest country in the world. It accounts for 2.4 percent of the world surface area of 135.79 million square km. However, it holds 17.5 percent of the world population, totaling 1.21 billion persons, of which about 68.84 percent live in rural areas and 31.16 percent in urban areas (Census, 2011). Percentage decadal growth of India's population during 2001-11 has registered the sharpest decline since independence. The decadal growth of population in India declined from 23.87% in 1981-91 to 21.54% in 1991-2001 and further to 17.64% in 2001-2011. The Economic Survey of 2006-07 expresses the expectation that India's population would increase to 1400 million by 2026 and stabilize within the next 20 years thereafter i.e. around 2045. The National Population Policy (2000) of India has charted out the long-term objective of stabilizing population by the year 2045 to a level that is compatible with the requirements of sustainable economic growth, social development and preservation of environment (Census of India, 2001).

More importantly, the population of India comprises a very large proportion of children and persons in the productive age group. India is in the third stage of demographic transition and the age-distribution of its population is at an interesting juncture with vast implications for the housing sector, among others. It is projected that by the year 2020, the population in the age group under 15 years would be around 373 million whereas that in the age group of 15 to 59 years will have grown to 882 million, composing 28% and 66% respectively of the total projected population of 1331 million people (Bhat, 2001). The 'working population' defined as the age group between 15 and 64 years is expected to grow from 62.5% in 2002 to over 70% in 2030 (NCAER 2005 cited in UN-Habitat Series, 2008; Population Projection Report, 2006). It is expected to grow at a compound average rate of 2.1% over 2001-2011, which exceeds the overall population growth of 1.5% over the same period. The average age of Indians is 28.4 years. These facts are particularly important because the target age group for

housing finance is between 25 and 59 years of age. This poses huge opportunities and challenges for the housing sector. Increase in the nuclear family system and increased mobility is also bound to have significant implications, and indicate tremendous scope for the housing finance sector.

In terms of the socio-economic demography of India's population, it is interesting to note the change in its pyramid-like structure. A sizable low-income segment of the population comprises the lower level with incomes below INR 53625 per annum. A growing middle class with incomes between INR 53625 and INR 257125 per annum and a small high-income group with incomes above INR 257125[1] per annum constitute the upper end of the pyramid. This structure is undergoing a change with a more diamond-like shape emerging in the last decade. The middle-income group is expanding with a significant segment of the lower-income group moving up the socio-economic ladder (Jain, 2010). Coupled with the exposure to better quality of living standards, this has enhanced housing aspirations to unprecedented levels. Being more economically independent and secure, the new urban population is resorting to housing finance much earlier in life. This is evident in the fall in the average age of a home loan borrower from about 45 years to a range in early thirties today. With longer residual working life the quantum of housing finance sought is rising.

SECTION 1.5

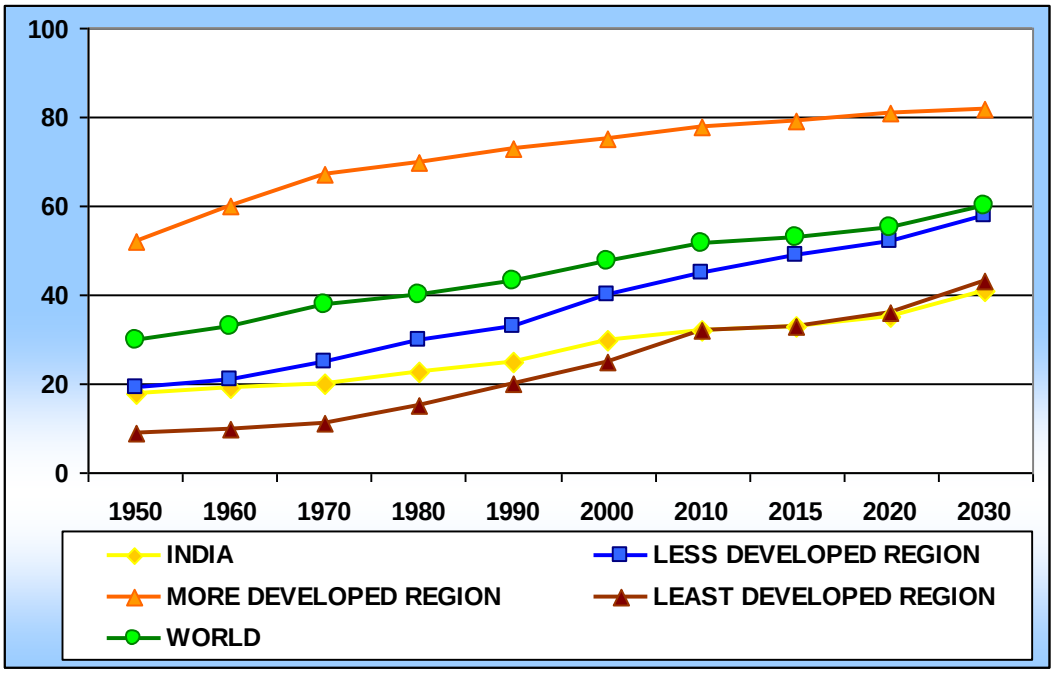
URBANIZATION AND HOUSING FINANCE

It is imperative to dwell upon the issue of urbanization for its overwhelming implications for the concerns that are at the center of the housing problem. Urbanization is a process of formation of cities and a continuous progression of population concentration in an urban unit (Dwivedi, 2007). It is an index that captures the transformation from traditional rural economies to a modern industrial one (Datta, 2006). This transition is no doubt the outcome of a complex mix of economic, technological, demographic, political and environmental factors.

1. US $ 975 and $ 4675 equals Rs.53625 and Rs.257125 when converted at the current dollar- rupee exchange rate of approximately Rs.55. (Income segments cited in UN-Habitat Series, 2008).

According to Todaro and Smith (2009), rapid growth of cities in developing countries is "one of the most remarkable of all postwar demographic phenomena and the one that promises to loom even larger in the future." UN-HABITAT series on Human Settlements Finance Systems (2008) too states that by the year 2030, two-thirds of the world population would be living in towns and cities. To quote from 'Housing Finance Mechanisms in India', UN-HABITAT 2008, "we live at a time of unprecedented, rapid, irreversible urbanization." Fig. 1.1 depicts the degree of urbanization projected for different regions of the world.

Fig. 1.1 WORLD URBANIZATION TRENDS: 1950-2030
(PER CENT OF TOTAL POPULATION)



Source: The State of World Population, 1999 and Population Projections for India, 1996-2016, as cited in Planning Commission Report on Population Growth, 2001.

The cities growing the fastest are located in the developing countries. Globally, mega cities with ten million plus population are growing in number at a rapid pace and most of these new mega cities are in the developing nations. In 1960, only two cities, namely, New York and Tokyo had a population of more than 10 million. By the year 1999, the number of mega cities had grown to 17 of which 13 were in developing countries (Planning Commission, 2001). According to the United Nations, by the year 2025 the number of mega cities will have grown to 29 and will account for 10.3% of the world's urban population. It is

envisioned that seven of the world's top ten mega cities and in total 18 mega cities will be in Asia. The less developed countries exhibit the sharpest increase in the projected urbanization. According to World Bank (2008), the developing countries account for 95% of the world's urban population growth with their increased thrust on rapid economic growth apart from significant increase in population and urbanization trends.

The global trend of urbanization is discernible in India as well. By 2025, India will be home to five mega cities. In 1991, India had 23 cities having a population of more than a million each and the population of these cities accounted for nearly 33% of the urban population of India. In 2001, such metropolitan cities increased to 35. According to Census 2011, the number of cities with million plus population crossed the figure of 53, with 43% of urban population residing in them. It is expected that by the year 2031 the number of metropolitan cities will increase to 87 (Ministry of Urban Development, 2011).

According to Census 2001, 27.8% of India's population lived in urban areas. As per Census 2011, this proportion has increased to 31.16%. In terms of numbers, urban population totals 377 million while rural population is 832 million. The growth rate of urban population at 2.73% during the second half of the 2000s exceeds the overall population growth rate of 1.7%. It is projected that by the year 2030, out of the total population of 1.4 billion in India, more than 600 million people would be living in urban areas (12th Five-Year Plan Document, 2011)[2].

According to Census 2011, the number of towns in India increased from 5161 in 2001, to 7935 in 2011, and more than 90% of the increase was due to growth of 'census' towns, that is, growth in agglomerations in the urban peripheries and rural areas which do not have any urban governance structures such as municipalities or corporations. These towns do not have the required urban infrastructure in terms of housing, roads, water, sanitation etc. Urbanization therefore has serious implications for the housing sector.

2. According to the Ministry of Urban Development, the term 'Urban' in India refers to all statutory places with a Municipality, Corporation, Cantonment Board, or Notified Town Area Committee, and all places satisfying the following three criteria simultaneously: (i) a minimum population of 5000; (ii) at least 75% of male working population engaged in non-agricultural pursuits; and (iii) a population density of at least 400 per sq. km (1000 per sq. mile), as cited in the Report on Indian Urban Infrastructure and Services, 2011.

Cities and towns in India contribute more than half of the country's GDP and therefore are central to economic growth (MHUPA Annual Report 2010-11). During the 11th Five-Year Plan Period, the share of urban sector to GDP was around 62% to 63% and its contribution is expected to grow to 75% by 2021 (11th Five-Year Plan, Mid-term Appraisal Document). Greater economic growth, diverse employment opportunities and higher levels of income in the urban centres, and the occupational shift from rural sector to manufacturing and service sectors are factors that are bound to increase the level of urbanization further and offer greater possibilities of inclusive growth. Incidentally, the degree of urbanization in India is lower than several Asian countries namely, China (32%), Pakistan (35%), Indonesia (37%), Japan (78%) and South Korea (83%) as cited in the 11th Five Year Plan document.

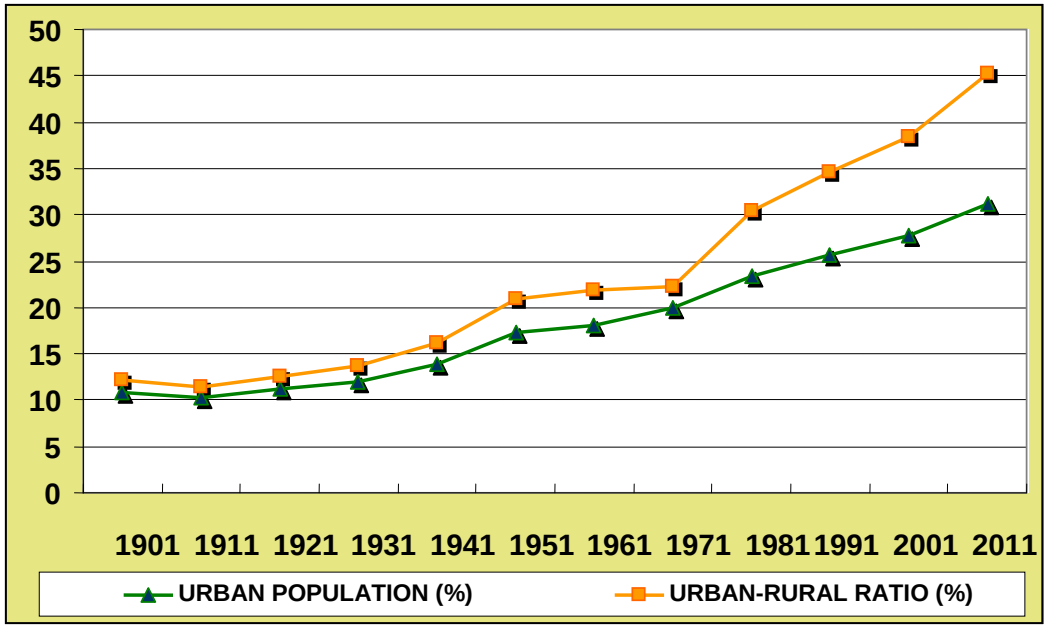
Population growth and accelerated rural-urban migration have accentuated the housing problems as is borne by the growth of informal settlements or slums in cities. In the context of India, the 6 to 9 percent growth rate of slums far exceeds the annual growth rate of urbanization at 2.1%. A World Bank (2010) study on housing finance sector in South Asia reports that 14% of the urban population in India lives in slums, which comes to approximately eight million urban households. Imprudent policies of the government with regard to urban planning, and regulations regarding building standards have led to substantial illegal urban housing.

Out of the total housing stock in India, 45% is 'kutcha' or temporary in nature built with nondurable material. The India Human Development Report (2011) states that the proportion of households living in pucca houses in India were only 66.1% in 2008-09. Although this is an improvement over the figure of 47.4% in the year 2002, it indicates huge scope for the housing finance sector not only in terms of provision of loans for house purchase but also in terms of home improvement loans. 12.6% households in India are reported to be living in kutcha houses. In the urban areas the proportion of households living in pucca houses is reported to have improved from 76.8% in the year 2002 to 91.7% in 2008-09 while those living in kutcha housing worsened from 2.1% to 3.3% over the same time period. These figures need to be seen in the light of the growth of urbanization in India. The situation in the rural areas is more adverse with only 55.4% households residing in pucca houses and 17% in kutcha houses. As per Census 2001, the number of households in India was 193.58 million

and the average household size was 5.3. Housing finance, among other things, can play an important role in improving the housing conditions in India.

Fig. 1.2 shows the growth and degree of urbanization in India. The degree of urbanization is measured in terms of the ratio of urban-rural population. It is clearly evident that over the years, particularly in the last two-three decades, there has been a sharp increase in the degree of urbanization from roughly 30% to nearly 39%. With the increase in urbanization, the issue of housing supply gains greater significance.

Fig. 1.2 GROWTH AND DEGREE OF URBANIZATION IN INDIA



Source: Census 2011

According to the Technical Group on Estimation of Housing Shortage constituted for preparing the 11th Five-Year Plan document, the urban housing shortage at the end of the 10th Five-Year Plan was around 24.71 million. For the 11th plan period (2007-2012), the urban housing shortage is estimated to be 26.53 million. These estimates constitute housing needs based on household size, congestion and depreciation of existing housing stock.

Along with the residential sector, the commercial real estate sector in India is one of the fastest growing sectors, bolstered by the boom in the Information Technology Enabled Services (ITES) sector. The expansion is not limited only to ITES but is bound to scale up the manufacturing sector as well with the increased global integration of Indian businesses.

Moreover, the regulatory relaxations which allow 100% Foreign Direct Investment (FDI) in the real estate sector in India under the automatic route has also lent greater vigor to the sector. The Government of India has allowed FDI in integrated townships, housing, infrastructure and construction projects that include housing, commercial complexes, hospitality industry, and educational and recreational facilities. This will have further implications for the macro economy and for the demand and supply of housing finance, which is the subject of analysis of the present study.

Needless to say, the changing demographics of the Indian economy, with its rising urban population and higher disposable incomes are encouraging more people to fulfill the aspirations of homeownership. However, the lack of mortgage penetration particularly among the lower income group poses a formidable housing problem. Given the rapid urbanization and its implications for housing requirement, there is immense scope of expansion for the housing finance sector in India.

SECTION 1.6

RATIONALE OF THE STUDY

The Indian housing finance sector has come a long way from its earlier phase of government domination to an increasingly market oriented system in the present times. In the 1990s, the process of liberalization of the financial sector provided much needed impetus to the housing finance sector with the entry of private financial institutions and banks, and propelled the system into a higher growth trajectory. Infusion of competition and supportive regulatory changes enabled the development of a more market driven sector. The market orientation has improved the accessibility and affordability of housing, making possible the dream of home-ownership of many a households to come true. Lower lending rates, stable property prices, rising personal incomes, and fiscal incentives for owner occupied homes have contributed to the increase in the demand for housing finance. The sharp growth of the housing finance sector, particularly in a short span of one decade, also raises concerns regarding financial stability of the system in the context of macro economic and global economic developments. Although the Indian financial sector has reasonably withstood the repercussions of the recent

global financial crisis, there is a need for a cautious and prudent approach on the part of the financial institutions.

Notwithstanding the dynamism, the recorded history of the housing finance sector in India is relatively young. Most studies in the context of housing finance in India are those that address the issues of the role of government vis-à-vis the market, the issues of resource allocation, policies and reforms in the housing and housing finance sectors, issues of housing affordability, studies examining the structure of housing finance in India; case studies on housing finance by institutions and so on. These are depicted by authors such as Gupta 1985, Lall 1987, Wadhwa 1988 and 2003, Kundu 1988, Mehta and Mehta 1987, 1988, 1991, Kapadia 1992, Garg 1998, Nair 1999, Mahadev 2001, 2005, 2006, Joshi 2006, Singh and Sharma 2006, Manoj 2010 etc. Studies examining the determinants of housing finance or the economic behaviour of borrowers and lenders with limited treatment in terms of institutions, regions or aspects covered, include works of Tiwari (2001), Saravanan and Nagarajan (2007), Bandyopadhyay and Saha (2009), Bhide et al (2009), Chandrasekar and Krishnamoorthy (2010), and Kumar Jayant and Fulwari (2012). In spite of the huge volume of literature, there is no comprehensive study bringing important key factors at one place, particularly in the Indian context. No studies were found that analyze the intricacies of the housing finance structure or its determinants in India. Despite the rich source of data on home loans of scheduled commercial banks, no studies were found that undertake a comprehensive analysis of the same. There is therefore a need to analyze the home loan activities of the banking sector so as to establish the linkages among their various facets. There is also a need to study the issues of housing finance in India with a special focus on urban India where housing finance activity is concentrated.

In the above context, the present study reviews the structure and growth of the housing finance sector in India; traces the trends and performance of housing finance in urban India and undertakes an empirical analysis of the demand for housing finance by urban households. The symptoms revealed by the examination of the sector would provide useful insights to policy makers and lending institutions. It would highlight the areas that need greater focus and sharpen the understanding of the links between key factors for the development of an inclusive housing finance sector. The present study would also be beneficial in terms of opening up new areas of inquiry at a more disaggregate level.

SECTION 1.7

OUTLINE OF THE THESIS

The present study is divided into seven chapters as outlined below.

1. Introduction
2. Review of Literature
3. Objectives, Hypotheses and Research Methodology
4. Structure and Growth of the Housing Finance Sector in India
5. Trends and Performance of Housing Finance in Urban India.
6. Demand for Housing Finance in Urban India: An Empirical Analysis
7. Conclusions

The introductory chapter of the thesis highlights the significance of housing and its peculiar characteristics, which helps in appreciating the interest in the subject of inquiry of the present study. The chapter puts the issue of housing finance in perspective in the context of demographic changes in India.

The second chapter details the extensive review of literature on the subject of housing finance and builds the background for the analytical work carried out in the subsequent chapters. The review comprises major works in the area of housing finance in India as well as at international level. The third chapter deals with the objectives and hypotheses of the study that emanate from the literature review and outlines the research methodology used in the analyses.

Chapter four to six comprise the major analytical work carried out under the objectives of the study. Chapter four provides a detailed review of the evolution and growth of the housing finance sector in India. Among other things, it traces the housing investment of the government through successive five-year plans and highlights the present competitive structure of the housing finance sector. The chapter also presents a summary of the global trends in housing finance markets and the common factors that have a bearing on the growth and development of the housing finance sectors.

The fifth chapter carries out a critical analysis of the outstanding home loans of the scheduled commercial banks on several parameters. Some of the parameters of analysis are bank

group-wise, interest rate-wise, home loan size-wise, population group-wise and region-wise distribution of outstanding home loans.

The econometric analysis in chapter six presents the findings regarding the determinants of urban demand for housing finance. Seven major analyses have been detailed in the chapter; each comprising several alternative models of the demand functions for home loans.

The concluding chapter summarizes the major findings of the research work. It lays down policy suggestions for further growth of the housing finance sector in India. It also touches upon the limitations of the study and highlights areas with scope for further research.

CHAPTER 2

REVIEW OF LITERATURE

CHAPTER 2
REVIEW OF LITERATURE

SECTION 2.1

INTRODUCTION

The literature on housing finance is replete with studies that examine the dynamics of the housing finance sector. The studies encompass several aspects of the multi-dimensional subject and as such it is not possible to segregate them under any strict classification. However, an attempt has been made to organize the research works with similar aspects under broadly defined areas. Accordingly, the chapter is divided into seven sections which present a critical examination of the rich literature on housing finance.

Housing is a lumpy asset that demands savings of a lifetime from a household. Both, the availability of housing finance as well as the cost at which it is available are individually and collectively crucial factors for potential homeowners. Thompson (1947) states that shelter financing is one of the most important components of finance. He attributes the expansion in the housing units in the US, in the early 1940s, to the easy availability of cheap housing finance. Grebler and Maisel (1963) state that no matter how housing problems be defined, credit has almost always been treated as the means to their solution. Though the various analyses may vary on matters of emphasis and detail, they conclude that short-run fluctuations in residential construction activities have resulted mainly from changes in financial conditions such as ease of borrowing, availability of mortgage funds, or supply of mortgage credit. Finance brings the opportunity for households to extend their purchasing power outside the bounds of what their current income permits (Lindsay 1971). But the possibilities of availing finance are limited and involve a cost. In analyzing the impact of housing finance, Swan (1973) emphasized the need to distinguish between stock of existing housing units and the flow of new units because the former includes vacant units as well. According to him, conventional wisdom suggests that changes in the cost and in the availability of housing credit affects the actual number of housing starts and not the demand

for housing. The latter is determined largely by demographic factors. Moreover, demand for housing can be met by vacant units too.

To quote Kearl (1979), "The mortgage market is important for housing precisely because it makes the asset divisible and therefore allows a household to more closely adjust its asset portfolio as desired." This speaks volumes about the significance of housing finance for an individual home buyer as for the economy. Stutz and Kartman (1982) suggest that the availability of housing finance has two aspects: it can be viewed as a demand factor in terms of long-term mortgages or as a supply factor when treated as construction loans. Bandyopadhyay and Saha (2009) consider easy access to bank finance at affordable rates to be among the most significant drivers of the growth of housing market in India. Nenova (2010) too asserts that availability of housing finance enables a larger proportion of the population to become home owners. According to the author, "Housing finance plays a critical role in the development process by supporting strong housing markets, while strengthening the financial sector and contributing to overall economic growth." This indicates the scope of housing finance in impacting the development of a comprehensive housing sector.

SECTION 2.2

STUDIES ON DETERMINANTS OF HOUSING FINANCE

Section 2.2.1: Studies on the Role of Income of Borrowers

The demand for housing finance is an important indicator of the vibrancy of the housing finance sector. Several factors such as, incomes of the borrowers, the interest rate on home loans and the rate of inflation can independently and collectively influence the demand for housing finance. Although traditionally viewed as a basic necessity, housing is considered to be relatively income-inelastic; but if seen as a composite good that includes the gradient of services and amenities, it is a comfort good exhibiting income elastic behaviour. Charles (1977) expects demand for housing to be sensitive to economic variables. Income therefore plays a major role in demand for housing and thereby for housing finance. The role of income is incorporated in terms of monthly repayment burden that a potential borrower can

be exposed to. This makes income level a constraint variable in the model of demand for housing finance.

Several studies point towards the sensitivity of demand for housing finance to the income variable. Gelfand (1966, 1970) suggests that lenders can choose borrowers with stable incomes in the case when credit terms are too liberal. The relationship between housing finance and income is manifested in the fact that it enables households to spend more that what their current income permits (Lindsay 1971).

Using ordinary least squares estimation, Arcelus and Meltzer (1973) found the demand for housing services to be positively influenced by real income and negatively by rental price of housing. They measure real income in terms of real consumption expenditure. Incidentally, the authors consider real income as an argument in the demand for housing services but not in the demand for new housing. Their line of reasoning is that when real income increases households tend to increase their housing expenditures, pushing up the rental price of housing. This in turn induces increase in the demand for new housing units. It is not clear how the authors purport to differentiate the demand for housing services from that of new housing units. They also postulate that anticipating increase in housing expenditure, households would increase the demand for new housing. Thus, demand for new housing is hypothesized to be a function of rental price of housing, the anticipated housing expenditure, the cost of credit, price of new housing as well as the owner's equity in houses as a proxy for real wealth. The authors have included too many intertwined variables in the model. The inclusion of the variable, 'owner's equity in houses' does not seem to be logical. In the purchase of a new housing unit, higher owner's equity in houses would imply lower loan-to-value ratio which logically would discourage demand for housing, and as such cannot be taken as a proxy for real wealth, perhaps until the entire loan is paid up. Further, it is not clear how the authors reconcile inclusion of both the price of new housing unit as well as owner's equity in the demand equation. For a given loan-to-value ratio, the two variables are bound to be highly correlated.

Rosa (1978) found that mortgages increased with increase in net worth, real disposable income and house prices. The researcher has used the Brainard-Tobin portfolio model which encompasses range of assets and liabilities of a household such as real income, physical and

financial assets, and mortgages and other consumer loans. Therefore the net worth is found to be more deterministic as a constraint rather than the real disposable income which is just one component of net worth. As regards house prices, the researcher does not clarify how they have been measured.

The housing market does not differ much from other markets in that the interaction between demand and supply forces produces a price that allocates buyers to the dwelling whose value is matched by their income (Kirby, 1976). He makes an important observation in this context. He states that the linearity between the demand and supply of housing vis-à-vis house prices is hampered by the tendency of lenders to discriminate between households with regard to their type of income. For instance, it is observed that people with lower but regular income are more likely to be eligible for home loans than those with higher but variable incomes.

The significance of income and wealth in the demand for housing is also borne out by the fact that for any household, owning or producing a dwelling unit involves a high capital investment that commands savings of an entire lifetime or even more (Palvia 1980). As regards the income variable applicable in the analysis of demand for housing finance, Kent (1980) considers permanent or normal income to be decisive in positively affecting the demand for housing services. In the model of home mortgage constructed by him, the author considers the demand for housing finance in real per capita terms, which in turn, is influenced by the real per capita demand for housing services. The demand for home mortgage fund is posed as a function of real per capita permanent income and the price of rental housing in real terms taken as a close substitute for owner-occupied housing. Households tend to determine their home ownership affordability by comparing monthly installments on home loans vis-à-vis rentals in relation to their normal income. The values of permanent income are obtained through an equation involving an adjustment coefficient with respect to the current income and the trend rate of income growth over the permanent income value of the previous period. Results obtained for the estimation period of nine years show that increase in permanent income has a positive impact on the demand for home mortgage funds. Decrease in price of rental housing was found to have reduced the demand for mortgage finance for most part of the period of estimation.

Reidy (1983) states that *a priori* decline in real income adversely affects the ability of households to afford housing; although no quantification of the claim has been provided by him. Dynarski and Sheffrin (1985) lay stress on the role of transitory income in determining the ability of households to make down payments and thereby it's bearing on the total demand for housing credit. Transitory income is measured as the difference between disposable and permanent income. We differ in opinion from Dynarski and Sheffrin with regard to their logic that transitory income is significant in influencing purchase decisions, particularly, the timing of house purchase decision. In our view, it is unlikely that households take such a major decision as house purchase on the basis of accruals of transitory income, which by its very nature is unanticipated. In our opinion, it is the current and the anticipated income that are the significant determinants of house purchase decision. Positive transitory income, if synchronous with house purchase decision can help households to economize on the amount of housing finance required; otherwise at best, it would logically be more consequential in making prepayments. As regards the measurement of permanent income, the authors depart from the traditional method of using distributed lags of past disposable incomes as a proxy. Instead they use changes in household's food consumption as a measure of the changes in permanent income. Their reasoning is that aggregate data on income underestimate the extent of variations and volatility while individuals are more certain about the changes in their income situations. This is why aggregate data generally tends to reject the permanent income measured in traditional manner even as it finds support in microeconomic panel data (Lucas, 1977, Mankiw, 1982 and Bernanke, 1983, as cited in Dynarski and Sheffrin, 1985). To obtain values of permanent income, the authors first estimate a permanent income demand curve for food adjusted for family size, and then calculate the change in permanent income on the basis of the change in food consumption.

J. Sa-Aadu and Sirmans (1995) include annual income of the borrower as well as the average percentage change in income as arguments in the borrower's choice between fixed versus adjustable rate mortgages. Their report that the level of borrower's income appears to have no effect but expectations of increase in incomes reduced interest rate sensitivity, making borrowers more inclined to use adjustable rate mortgages. Srinivas (1996) cites low and uncertain incomes as well as low levels of assets of urban poor as the major reasons for commercial banks to neglect their housing finance needs. Similar findings are reported by

Saleh (1999) based on multi-clustered stratified sample data of households residing in informal settlements in Jakarta, Indonesia. The study indicates that mortgage loans were inaccessible to majority of households employed in the informal sector due to the nature of their incomes and the strict requirements of loan collateral by the formal housing finance sector.

In an empirical study, Hendershott, Pryce and White (2000) examine the impact of phasing out of home mortgage interest deduction from taxable income for home buyers on borrowers' decision on the amount of debt they were willing to take. The study is based on a sample of 117,000 home loans in the UK over the period from 1988 to 1998. The researchers found that removal of interest deductibility resulted into borrowers reducing the initial loan-to-value ratios and that this effect varied with household age, loan size, and tax bracket.

Quigley and Raphael (2004) state that housing choices are more likely to be based on assessment of permanent incomes made by households themselves rather than current annual income, because households would not adjust their housing consumption to short run fluctuations in income. In another study based on a sample analysis of 13487 home loan accounts with leading housing finance companies and public sector banks, Bandyopadhyay and Saha (2009) found that more than 90 percent of borrowers belonged to the category of 'employed', while the remaining borrowers were either self-employed, unemployed or pensioners. It indicates the high value that lenders place on regularity of income in sanctioning loans. Further, their least square dummy variable regression model suggests that housing demand is sensitive to income and house prices, although the demand elasticities with respect to the two variables are less than one. The significance of the income variable is further substantiated by the fact that lenders were found to be more inclined to lend to relatively younger borrowers for the longer residual working life they implied. The variable 'number of dependents in a household', indicating its financial liability exhibited statistically significant negative effect on the demand for housing. The merit of their model is that the effect of income level in absolute terms is qualified by additional determinants of affordability in the form of relevant borrower characteristics.

Bhide, Gupta, Buragohain, Sethi, Kumar S. and Bathla (2009) cite uncertainty of rural incomes as the major deterrent for formal housing finance to reach out to rural demand for

housing finance. Kumar Jayant and Fulwari (2012) found that anticipated income of households provided better explanation for the variations in the demand for home loans in Gujarat rather than the current income levels.

Section 2.2.2: Studies on the Role of Home Loan Interest Rates

The rate of interest on housing finance is *a priori* one of the most fundamental factors affecting the market for housing finance. It has received much attention in the literature for its impact on the lenders and borrowers alike. Interest rate on home loans being the cost of borrowing is expected to negatively affect the demand for housing finance. In the pre-liberalization era, prohibitive home loan rates in India made house purchase possible only on retirement for a vast majority of middle-income households. However, financial liberalization and increased private participation has instilled strong competition among lenders compelling them to make competitive cuts in interest rates to woo potential borrowers. Increase in the demand for housing and for housing finance has coincided with the unprecedented decline in interest rates in India.

The crucial role of the cost of credit in housing finance can be gauged from the remarks of Fisher (1933) who considered interest and amortization on housing finance as a burden on families that increased the costs of shelter to a great extent. Dhrymes and Taubman (1969) found high negative effect of the regression of demand for mortgages on the mortgage rates. Wallich (1971) however, maintains that high demand elasticities for loanable funds with respect to interest rates could be misleading in the sense that the elasticities to a great extent depend on the ratio of debt service to borrower's income; that is, the higher interest rates need not deter borrowers if the debt service ratios are reasonably low.

Arcelus and Meltzer (1973) include a vector of rates of interest on financial assets, including mortgages, in the demand function for housing. Given the difficulty of getting reliable measures of interest rates on mortgages, they assume that open market interest rates provide adequate representation for the mortgage rates. Their regression results reveal that relative house prices, that is, the rental price of housing services, and interest rates were the principal determinants of the demand for housing, both having a negative impact. The authors maintain that the interest elasticity of housing demand suggests that "housing is a postpone-able expenditure." While house prices, measured by the average cost of new housing units in

the absence of reliable time series, appear with the expected negative sign in the demand function for housing, it is not found to be a significant variable. Moreover, the results reported by Arcelus and Meltzer show poor values for the D-W statistics in some models. It may be borne in mind that the study examines the determinants of demand for housing and not those for housing finance.

Fisher and Seigman (1972) consider the real rate of interest to be more relevant than the market rate of interest during periods of price rise. Meltzer (1974) found high interest elasticity of the demand for mortgage finance. Smith (1976) however, has cautioned that it is incorrect to conclude that mortgage rates are prohibitive without comparing them with the long-term inflation and the wage rate. The author has formulated a hypothetical model of construction of an apartment building. He illustrates that ignoring the comparative rates of changes in other factors that increase the cost of housing, such as, rates of general price rise vis-à-vis house price rise; rates of increase in labour costs in construction sector vis-à-vis manufacturing sector, etc., may lead to the erroneous conclusion that mortgage rates need to be lowered. He explains that lowering of the home loan rate may increase housing demand only because it compensates or negates the effect of rising inflation and wage rates and not because it was high in the first place. This has important policy implications, in the sense that, provision of subsidized housing finance should not be seen in isolation from efforts to remove market imperfections.

Starr (1975) proposes lowering of mortgage interest rates to increase the availability of housing to moderate and low-income borrowers. Rosa (1978) examined the relationship between housing demand and interest rate on housing finance and found it to be highly elastic. The demand for housing was regressed on three alternative interest rates, namely, the average of time and savings rate, the bond rate, and the secondary market yield of mortgages. As regards their impact on mortgages as a part of the consumption model of households, the interest variables had the expected signs but were not found to be significant.

Kearl (1979) has estimated the interest elasticity of down payment and loan maturity. Results indicate that down payment is found to be elastic to the nominal interest rate, more so at higher rates. At higher nominal interest rates, down payments are bigger, which implies that households economize on housing loans. The relationship between loan duration and interest

rate is found to be negative implying that higher nominal rates reduced the maturity of the loan contract, which is another evidence of the sensitivity of households' demand for housing finance to different terms of housing loan.

Kent (1980) posits the demand for housing finance as a negative function of the real home loan interest rates. The alternative interest rates used in the model include the mortgage rate and the bond rate as competing interest rates. These variables were not found to be direct determinants of the demand for housing finance as they worked indirectly through the user cost term[3].

Green and Shoven (1986) have examined the effect of interest rates on the prepayment behaviour of home loan borrowers. They state that the effective tenure of the mortgage asset is determined internally by the way interest rates evolve. If the prevailing interest rate is lower than the contract rate borrowers are induced to prepay the loan, subject to prepayment penalties, by acquiring a new loan. Most mortgages usually have a "due-on-sale clause meaning that the lender can claim the face value of the mortgage if the borrower sells the residence." If the current rate is higher than the rate at which the loan has been contracted, the homeowner is mandated to give up a below-market rate loan if he sells the house. However, this option will not be forced upon him if the prevailing interest rate happens to be lower. Based on prepayment cases of panel data on 4000 individual mortgages of two Saving and Loans Associations based in California between the years 1975 to 1982, the researchers found that interest rates are important determinants of the average age of prepayment. Thus the effective maturity period of a loan is highly dependent on interest rates.

Clauretie and Herzog (1990) found that loan losses for lenders reduced when regressed on rising property prices and rising interest rates. The reason is that an increase in the current market rate of interest reduces the incentive for borrowers to default on the mortgage carrying lower rate. Flavin and Yamashita (2002) consider the nominal mortgage interest rates as costs of home ownership; Khan (2003) considers highly prohibitive mortgage rates the reason behind extremely poor access to housing finance for majority of the population in Pakistan; although no empirical tests have been undertaken by the two studies.

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3. The user cost is determined by the credit terms such as the loan-to-value ratio, the home loan interest rate, the loan contract term, and the price of the home.

Green and Wachter (2007) emphasize on the availability and cost of housing finance as crucial determinants in the functioning housing markets across countries. They cite decline in nominal prime interest rates from an average of 15 percent in 1980 to 4.4 percent in 2004 across several countries. The major outcome of this was improved access to housing finance, increase in demand for housing, and increase in house prices across most of the industrialized countries in the world. It is therefore clear that fall in interest rates induces higher demand for housing finance and has an impact on house prices; more so if there exists severe housing shortage. Decline in mortgage rates improved affordability while appreciation in house prices impaired it by necessitating larger housing loans. However, they found that home loan interest rates and an alternative rate on a competing bond did not directly determine the demand for home mortgage funds. This is because interest rates already appeared as determinants of the desired level of housing demand through the user cost term. The user cost of housing incorporates into one measure the various aspects of housing cost namely home loan interest rates, property and income taxes, maintenance cost, depreciation, expected capital gains, etc. (Rosen, H. S., Rosen, K. T., and, Holtz-Eakin, 1984).

Green and Wachter (2005) state that rising incomes and particularly the institution of long term, fixed rate, self-amortizing mortgages, that make housing finance affordable, were the prime reasons that increased home ownership rapidly in the US economy as borne out by census figures for 1940 and 1980. Mortgage insurance is also claimed to have positively influenced both lenders and borrowers, leading to expansion of mortgage finance. Inflation is stated to have caused increase in nominal interest rates and affected mortgage lending more than mortgage borrowing, in the face of fixed rate mortgages that prevailed at the time.

Ellis (2006) reports that the nominal mortgage rates declined during the phase of deflation in Australia and New Zealand in the 1980s and 1990s, with the consequence of improving the borrowers' capacity to make repayments. Going by the practice of lenders of setting the ratio of initial repayment to borrower's income as a credit rationing guideline, more borrowers became eligible for mortgage loans, and the decline in inflation rates and nominal interest rates acted as important factors that increased the average size of new mortgages.

Chandrasekar and Krishnamoorthy (2010) conclude that affordability factors such as home loan interest rates and house prices, and availability of home loans are crucial in the demand

for housing function. They employ regression analysis to study the impact of home loan interest rates, housing loan disbursements, inflation and house price growth on the housing demand in the US over the period from 1998 to 2009. They report significant negative impact of the interest rate and house price growth variables and positive impact of the home loan disbursements. While inflation was not found to be significant, it had a positive coefficient. The authors have also examined the same housing demand model for UK as well, for the period from 1995 to 2009. Regression results reveal that both mortgage availability and interest rates exerted significant positive effect on the demand for housing. House price growth was found to have a positive relationship with housing demand, suggesting that households gave importance to the investment value of housing asset which would result into capital gains on further price increases. They assert that households' expectations of capital gains provide further explanation for the positive effect of interest rate. Unlike in the case of the US economy, inflation was found to have significant negative impact on housing demand in UK.

Chandrasekar and Krishnamoorthy have also examined the housing demand function for the city of Hyderabad, using regression analysis. Using benchmark prime lending rates as a proxy for home loan interest rate, they found significant negative impact of lending rates on housing demand. However, given the single explanatory variable used in the model, the explanatory power of the model is only 33 percent. Important determinants like household income and house prices have not been examined by the authors.

Kumar Jayant and Fulwari (2012), in their analysis of the demand for housing finance in the state of Gujarat report that while in its individual capacity, the home loan interest rate had a negative impact on the demand for home loans, in conjunction with the income variable it was not found to be a significant determinant. Another study by Fulwari (2012) found urban demand for home loans to vary negatively with the variable home loan interest rate.

Most of the studies while appreciating the role of interest rate, have not attempted to explain or contextualize the mortgage rates with other aspects of housing namely, house prices, tax incentives on home loans, income of prospective borrowers, etc.

Section 2.2.3: Studies on the Role of Inflation and House Prices

Some studies have examined the role of inflation in the demand for housing finance. Inflation affects housing affordability by increasing the nominal rates of interest. At the same time, it raises the equity value of the mortgaged housing asset, thereby accruing wealth for the households. How inflation affects housing demand depends on various factors such as the way anticipated inflation is integrated into the mortgage contract terms and the relative rates of change in house prices vis-à-vis general price levels.

Arcelus and Meltzer (1973) examine the link between market rates of interest, anticipated rate of inflation, wages and house prices. They state that when market rates of interest rise, and when expectations of higher inflation in the long run keep interest rates at the higher levels, it would not reduce housing demand permanently because after a time lag, wages and house prices would adjust to the higher anticipated inflation.

Economists do not agree on the role of anticipated inflation on the demand for housing finance. Kearl (1979) hypothesized that housing finance contracts that involve constant installment payments "lead to distortions in the housing market in the face of anticipated inflation." Since anticipated inflation is incorporated in the nominal interest on home loans, it increases the real burden of debt service for the households by increasing the annual amortization. This is because it is only in the future that inflation may induce higher nominal incomes. 'Constant payment housing loan contracts' thus inflict a reallocation by households in favour of savings vis-à-vis consumption in the present. Since increase in household incomes lags behind the increase in inflation, the resultant mismatch between mortgage payment and income has two effects. Firstly, it disqualifies some households from availing home loans, and secondly, those who do qualify are compelled to lower the value of house purchased, and thereby the amount of home loan demanded.

The regression results derived by Kearl support the hypothesis that anticipated inflation affects relative house prices via its effect on nominal interest rates. His line of reasoning is that inflation affects maturity, down payments and the degree of risk of the loan, all of which increase the real cost of housing capital. This in turn dampens the demand for housing. Inflation induces increase in the initial payment and a preference for shorter-duration contract, particularly for fixed nominal payment contracts. While Kearl limits his

examination to contracts with fixed nominal payments, it is equally applicable to contracts involving variable interest rates and installments. In variable payment contracts, while it is possible to accommodate changes in the rate of inflation, the frequent adjustments in the rate of interest may induce potential borrowers to restructure their demand for home loans.

Similar findings are obtained from econometric analyses by Follain (1982) and Boehm and McKenzie (1982) which show that inflation dampens the demand for housing and reduces home ownership opportunities for households by increasing the nominal rates of interest. The interest cost effect outweighs the positive impact of capital gains and tax exemptions.

Contradictory views are expressed by Titman (1982) who has analyzed the effect of anticipated inflation in dictating the demand for housing. According to him, inflationary expectations combined with the policy of tax deductions on interest payments are found to induce the demand for housing. This is because the tax regulations are not indexed to the rate of inflation. It is the nominal interest payments and not the real interest payments that are tax deductible. This makes debt servicing cheaper in real terms and thereby increases the demand for housing. Anticipated inflation also increases housing demand because housing acts as a good hedge against inflation unlike stocks.

While the researcher has constructed mathematical models to explain the interrelationships between anticipated inflation, rentals, interest rates, tax payments and house prices, he does not provide any empirical analysis of the same. There is no explanation regarding how households form their expectations about rate of inflation. Moreover, his analysis is silent on the impact of inflation on nominal interest rate, which, *a priori*, must increase and thereby affect housing finance adversely. Not only may housing become unaffordable due to the inflationary rise in its real price but with the increase in the rate of interest, the affordability of housing finance too may get adversely affected. An analysis of the role of real as against nominal interest rate on housing loans in affecting the demand for housing finance would be more meaningful.

Reidy (1983) cites three factors, namely, excessive inflation, volatile interest rates and declining real incomes to severely affect housing affordability. These factors, according to him, seriously disrupt a country's mortgage finance. The author has however not substantiated this by any empirical examination. He considers policies of supply-side

economics[4] and restrictive monetary policy to be responsible for high inflation and escalating interest rates, which worsen the condition of the housing industry. The response of the mortgage finance industry to these problems has been the innovation of new types of mortgage instruments and new sources of funds for mortgage.

Inflation, whether current or anticipated, is accommodated in terms of higher nominal rates of interest on home loans. In this context, the issue of inflation causing a shift in the real mortgage debt servicing towards the initial years of the mortgage contract, termed as the 'tilt problem', is also raised by Alm and Follain (1984). The problem of tilt is particularly related to the case of 'Standard Fixed Payment Mortgages' (SFPM). In response to the real payment tilt problem they mention several alternative mortgage instruments (AMIs), such as, the graduated payment mortgage, shared-appreciation mortgage and price-level adjusted mortgages. The authors examine behaviour simulation models wherein household's choice is examined under different levels of household income and wealth, assumed rates of inflation, and the type of AMIs available to them. The impact of AMIs is measured in terms of the initial (lower) loan-to-value ratios implied by them. Effects of alternative levels of income and wealth work through the maximum home loans permissible, taking into account the mortgage payment-to-income ratio and the down payment requirements set by lenders.

The simulation results of the analysis by Alm and Follain reveal that moderate increases in the rate of inflation induce housing demand due to reduced user costs. High rates of inflation, on the other hand, reduce housing demand due to the liquidity constraints operating through higher nominal rates of interest and related credit terms as mentioned above. Results of simulations reveal that AMIs permit households to purchase homes with higher value and avail greater mortgage finance. The magnitude of the effects depends on the extent to which the AMIs reduce the initial loan-to-value ratio. The results suggest that AMIs are effective in reducing the 'tilt' problem; and thereby increasing housing demand even during inflationary phase.

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4. Supply side economics is a school of macro economic thought that advocates the lowering of taxes and providing greater flexibility to people by reducing regulations, with the purpose of encouraging them to work, save and invest. This is expected to result in greater supply of goods and services at lower prices. In general, supply-side economics has three pillars: tax policy, regulatory policy and monetary policy.

Kapadia (1992) asserts that high and increasing prices of urban property made housing affordability a problem difficult to resolve even if housing finance were made easily available**.** The author has however not substantiated this claim with an empirical examination. Renaud (1996) states that *a priori,* higher rates of inflation, higher real rates of interest and falling real wages are individually potent factors that can curtail the demand for housing finance. However, he does not provide any empirical tests of the sensitivity to these factors. Campbell and Cocco (2003) discuss about the effect of expected inflation in increasing the nominal interest rates, which in turn lead to proportionate increase in nominal mortgage repayments, even though it is only an expected increase in the price level and not an actual increase. This makes real monthly payments under the adjustable-rate mortgages highly variable. Borrowers, in such cases would have less preference for variable interest rate mortgages. The authors have carried out a normative analysis of borrower-characteristics that would suit either fixed rate mortgages or variable rate mortgages, in household risk management behaviour; however they do not test the results empirically.

Quigley and Raphael (2004) discuss the role of inflation in the context of housing affordability. Rapid increase in house prices makes home ownership difficult for renters. They differentiate between what affordability means for different income groups. Accordingly, for the higher income groups, affordability would mean the terms at which dwelling units can be purchased and the terms at which housing loans are available and can be serviced. For the lower income groups, housing affordability refers to the terms of rental contracts in relation to their incomes. Increase in income has favourable influence on housing affordability. However, increase in inflation increases both nominal interest rates and house prices, which negate any increases in nominal wages. Thus inflation adversely affects housing affordability. As policies to improve housing affordability, the authors suggest "graduated payments" in mortgage amortization in which monthly payments increase over time along with increase in incomes. They also advocate longer maturity periods so as to reduce monthly debt servicing and make households with lower current incomes eligible for housing finance.

SECTION 2.3

STUDIES ON THE ROLE OF HOUSING FINANCE TERMS AND CONDITIONS

Demand for housing finance is greatly influenced not just by the rate of interest on home loans but also by other terms and conditions at which credit is available. Besides the rate of interest, credit terms typically include, the maturity period of the loan and the down payment required. Credit conditions on the other hand include administrative fees and repayment aspects such as monthly installments, prepayment penalties, etc. Most studies reviewed in the previous section examine the impact of interest rate as the relevant credit term applicable. However, such an approach fails to highlight credit as a specific variable with its varied aspects like the credit terms and conditions. The following sub-sections reviews the studies examining the role of such non-interest rate terms of credit.

Section 2.3.1: Studies on the Effect of Credit Terms on Demand for Housing Finance

Thompson (1947) relates the increase in the demand for housing in the US after the World War II, to the increase in purchasing power of households, not only due to rising incomes but also due to cheaper rates of mortgages and extended maturity period of home loans. These factors reduced the monthly debt servicing burden and enabled the consumers to spend more on housing capital rather than on day to day expenditures. However, the author does not establish these effects statistically. Vernon (1965), and Anderson and James (1977) report the practice of thrift institutions and commercial banks of using nonprice terms such as the loan-to-value ratio, maturity, and customer relationship, to allocate mortgage funds particularly during periods of credit restraint.

Gelfand (1966, 1970) examines credit availability and terms in influencing housing demand. He defines credit terms to mean the rate of interest, the down payment requirements and the mortgage maturity term. Credit conditions are defined to include the ratio of monthly debt service to family income, the tenure status of the land - whether owned or rented - on which the house is built, and the accommodation preference of the house selected - whether regarded as desirable or simply minimally acceptable. As regards the debt-service burden on the family, Gelfand adopts the benchmark that the monthly installments should not be in

excess of average aggregate family income for one week. The accommodation preference provides a measure of the affordability of housing. This is achieved by translating housing of different standards into specific housing costs. He attempts to obtain a measure of the sensitivity of lower and middle income housing demand to housing credit terms. The author has generated the data using computer simulation model of the lower-middle income housing markets in Philadelphia, Pittsburgh and Harrisburg.

His results suggest that "elimination of the down payment requirement is the most effective single action that can be taken to spur potential housing demand." He found that the sensitivity to liberal down payment requirements increased as both interest rates and mortgage maturity periods were eased. He also found that potential housing demand was more sensitive to decrease in interest rates at reduced down payment requirements, but not to longer mortgage tenures. Although not an empirical study, the analysis provides useful insight into the financial capability of households to demand housing under different credit terms and conditions. The results present the guidelines required by public officials, builders, and lenders to ascertain the extent to which easier terms and conditions of credit may enlarge the market for housing and for housing credit.

Von Furstenberg (1969) and Herzog and James (1970) relate the decline in delinquency and default costs to the lowering of loan-to-value and maturity of housing loans. This indicates that demand for home loans is sensitive to credit terms. Kent (1980) has studied the impact of the terms of home loan contract namely, loan-to-value ratio and maturity, that are used by lenders to allocate housing finance funds, particularly at times of credit crunch. These factors, according to him, are more likely to cause shifts in the demand for housing finance than in its supply. It implies that home buyers are averse to high loan-to-value ratios and to longer maturity, for given interest rates. He found maturity to be an important determinant, though when taken in conjunction with loan-to-value ratio it created the problem of multicollinearity. When entered individually the equation with maturity gave better results than that with loan-to-value ratio. The results were obtained using ordinary least squares.

Explaining the theoretical relationships between credit terms and housing finance, Alm and Follain (1984) state that several liquidity constraints are faced by households in their demand for housing finance on account of the credit terms adopted by lenders. Firstly, lenders limit

the mortgage interest payment to household income ratio which reduces the maximum loan size that can be demanded in the event of increase in nominal interest rates. Secondly, the minimum down payments required to be made to purchase a house without exhausting the wealth of the household also limits their ability to avail larger loans. These factors ultimately reduce the demand for housing.

Using ratio analysis, Taylor and Jureidini (1994) found that housing repayment requirements for women borrowers in Australia were consistently higher by more than ten percent than for men. The reason behind this could be attributed to the secondary status assigned to women's income and the uncertainty of continuation of women in work owing to domestic reasons. Increase in home loan interest rates due to the twin reasons of deregulation of home loan interest rates and tight monetary policy was found to worsen the relative position of women compared to men. The analysis indicates that the home loan market discriminates between genders and that women would be more sensitive to home loan terms and conditions compared to men.

Bandyopadhyay and Saha (2009) report a significant positive association between the ratio of equated monthly installments (EMI) to income and the probability of default. This is particularly crucial at the times of rising interest rates. Factors like presence of additional collateral, the number of co-borrowers and incomes of co-borrowers were found to reduce the likelihood of defaults. Conversely, age of the borrowers was found to increase the chances of defaults, particularly in an environment of rising interest rates. This is because higher age of borrower leaves little scope for increasing the term of the loan contract.

Section 2.3.2: Studies on the Effect of Credit Terms on Housing Affordability

Credit terms such as the loan-to-value ratio, the home loan rate, the loan contract term and the price of the home determine the cost of buying a house and are therefore closely linked to issue of housing affordability. Affordability is a crucial aspect of housing. It is commonly measured in terms of the user cost or the cost of carrying a representative house relative to the average income of households in a particular city (Hosios and Pesando, 1992). It encompasses several diverse issues tied together in a single term, such as, the distribution of housing prices, housing quality vis-à-vis income, the ability of households to borrow, public policies affecting housing markets, conditions affecting the supply of new or renovated

housing, and the choices that people make between housing and non-housing consumption (Quigley and Raphael, 2004). Since affordability differs for different income groups, the user cost to income ratio can be worked out for different income classes. It has been extensively asserted that if housing units are adapted to the parameter of affordability for various income groups, the volume of dwelling units can be significantly increased (Lakshmanan et al 1976, Grimes 1976).

Chatterjee (1982) has also linked housing affordability to mortgage credit terms. The author has formulated an analytical model of affordable housing and relates it to housing finance. She considers the annual housing consumption expenditure of an average household in a given income class to reflect their effective demand for housing. It indirectly provides a measure of the annual payment for a loan that a household can afford to pay. She arrives at the present value of the house that can be afforded by an average household of a given income group, by factoring in the credit terms, namely interest rate and maturity period with the annual payments. She then examines the impact of different combinations of credit terms, ranging from favorable to unfavourable, to see how housing affordability differs for different income groups. The study reveals that mortgage rates, loan size and repayment terms can significantly influence housing affordability.

The analysis of affordable housing is further extended by Chatterjee to deal with the issue of what constitutes prudent housing strategies that are effectively aimed at providing basic shelter to the poor. The responsiveness of housing affordability to credit terms highlights the importance of creating an operational housing finance system that delivers the goods. This way the market oriented housing finance approach with its thrust on recovery and economic viability can be integrated with the overall strategy of shelter provision. The author maintains that determining the volume and type of affordable housing would aid planners in understanding the nature and size of the housing market that is within the reach of different income groups in a society.

The above deliberations point to the fact that the conceptual approaches to housing issues have come a long way in terms of linking and integrating the market oriented tenets of housing finance with government provisioning for shelter. The two issues are intertwined and no longer seen as compartmentalized aspects.

Section 2.3.3: Studies on the Issue of Down Payments and Demand for Housing Finance

Down payments have received distinct attention in the literature on housing finance. Lending institutions follow certain norms for sanctioning the loan amount, such as margin rules, the minimum qualifying income level and the amount of liabilities and regular expenditures of the households, all of which sum up as the factors determining the minimum down payment to be made. How liberal or stringent the down payment requirements are, can affect not just the housing aspirations of individual households at the micro level but also the capacity of the housing finance sector to reach out to a larger section of potential home owners. It can evoke matter of fact responses from the borrowers. It is a common practice of borrowers to supplement the loan amount by internal/personal sources of finance especially by liquidating their holdings of financial assets. However, if down payment requirements are too prohibitive, households may be compelled to compromise on their desired housing standards.

Rathbun (1952) inquires into the (desirability of) liberal down-payment requirements in a setting of high savings, large holdings of liquid assets, and improved income distribution. His study is set in the premise of the rehabilitation efforts in postwar era in the United States. Postwar home buyers were given the benefit of making low down payments for obvious reasons. However the author has reservations against such practices as they are not sustainable in future housing policies. He employs ratio analysis to compare holdings of liquid assets with the down payments made by households. Results of his analysis reveal that the average holdings of liquid assets were substantially in excess of down payments made, but that the policy of low down payment requirements fails to recognize this. Extreme liberality in down payment requirements not only tends to shift housing aspirations on to a higher trajectory than otherwise but also inflates the effective demand for housing and housing finance. In the face of severe housing shortages and slow pace of residential construction such practice raises concerns about other competing macro economic objectives. Excess holdings of liquid financial assets can be an important source of funds for the housing sector, although, liquidation of financial assets could mean diversion of resources away from the industrial sector. Rathbun suggests raising the down payment requirements across all income groups in order to mend a situation of unprecedented demand for housing. The author however has not established any quantitative measure of sensitivity of the demand for housing to higher down payment norms.

In this regard Dynarski and Sheffrin (1985) state that transitory incomes are potentially important in overcoming the down payment constraints on house purchase, and therefore have a significant influence on the house purchase decision, particularly for first time buyers. Permanent income, on the other hand is significant for existing home buyers in their decision to adjust the quantity of their housing stock. The authors contest that the importance assigned to permanent income hypothesis in the purchase of durable goods has led to the omission of the role of transitory income. The type and quality of house that is affordable depends on the twin factors of down payment requirements and the availability of reasonable finance. Realization of transitory incomes positively affects the probability of being granted a home loan. The authors explore the role of transitory income in the purchase of housing, using panel data of 5000 American households for the years 1969 to 1975. Their regression results support the hypothesis that positive changes in transitory income strongly influence renters' decision to become home owners through its positive impact on down payment ability. They find a strong effect of transitory income on the quantity of the housing stock.

Buckley (1994) suggests in the context of India, that the analysis of demand for housing finance must factor in the effect of substantial holdings of gold and precious metals in the country, which raises the possibility of adjustments of household portfolios so as to positively impact households' down-payment and repayment capacity. Ling He (2000) found that inflation-adjusted returns of stocks in the US over a period from 1975 to 2000 had a positive impact on the ability of borrowers to accumulate wealth for mortgage down payment and thereby to qualify for a home loan.

While the above analysis of the role of liquid assets of households in issues of housing finance is reasonable, cognizance should be taken of households' preference for liquid assets. The very fact that the assets are liquid indicates that they may be held for short-term returns meant for financing the purchase of other household assets, or for reinvestment, as households attempt to augment their regular incomes. Households may not prefer to alter or hamper their short term budgeting by using all their liquid assets for making down payment while purchasing a housing unit. In fact, having to set aside income for debt servicing, households put greater value on such holdings of liquid assets to cushion the regular outgo. They may therefore be disinclined to part with their liquid assets to purchase a housing unit, which entails a long-term monetary commitment.

SECTION 2.4

STUDIES ON BORROWER-CHARACTERISTICS AND NATURE OF HOME LOAN PRODUCTS

Changes in regulations governing the housing market and the thrust on market oriented housing finance systems has encouraged and permitted the origination of innovative residential mortgage instruments. The introduction of adjustable rate mortgages (ARMs) bears witness to this. In case of ARMs, the interest rate risk is shared by lenders and borrowers. The interest rate is pegged to the prime lending rate or some other benchmark rate such as the expected deposit rate over the life of the mortgage, and is subject to revision as and when the liquidity position in the economy warrants. Impact of changes in the home loan rates are accommodated through adjustments in the debt servicing per month or more likely in the maturity term of the loan, if feasible. Lenders also have the freedom to offer negative amortization in the case of which, borrowers are allowed the flexibility of paying less than the interest due on their loans and instead, increase the principal loan outstanding.

In the case of Fixed Rate Mortgages (FRMs), home loan instruments carry fixed rate of interest and puts lenders at a disadvantage as they bear the entire risk arising out of uncertainty of future trends in inflation and interest rates. It is therefore customary for housing finance institutions to charge a premium to offset the disadvantage emanating from funds getting blocked for long time at fixed rates. They also try to circumvent the disadvantage by making suitable changes in the conditions applicable to full or partial prepayments, and the like.

Such practices by lenders affect the choice between different instruments of home loans. With new mortgage instruments abounding in the market, it has generated interest in the inquiry into the borrowers' rationale behind the choice of a particular type of contract such as fixed versus variable rate mortgage. It is expected that borrowers would exercise their preferences for the desired level of interest rate risk exposure and the flexibility of alternating between instruments. An examination of the underlying factors can throw light on the direction in which mortgage-lending practices and borrowing behaviour have evolved and the kind of support it would require.

Dealing with the types of mortgage instruments, Reidy (1983) states that under conditions of moderate inflation, upward-sloping yield curve[5] and easy availability of mortgage credit, the long-term fixed-rate mortgage instrument is more conducive. However, where these conditions are not satisfied there is a need to replace the long-term fixed-rate mortgage with innovative and more flexible loan types. This would have two favourable effects. One, it would provide protection to investors from the forces of inflation and interest-rate escalation and two, it would encourage a greater flow of funds to the housing sector. It is worthwhile to examine whether such claims hold true for the Indian housing finance market.

The US experience indicates that the success of the traditional fixed rate mortgage instruments has not replicated in the alternative market of flexible rate mortgage instruments. The major reason cited for this is confusion and resistance among prospective mortgagors, and to a lesser degree, mortgage lenders and investors. An examination of the causes behind such behaviour would provide useful insight into the dynamics of alternative mortgage instruments. Riedy suggests that the solution to the above issues is standardization of the new instruments and securitization[6] of the mortgage market.

Section 2.4.1: Studies on Borrower-Characteristics and Choice between Fixed and Adjustable Rate Mortgages

Several studies such as Dhillon, Shilling and Sirmans (1987), Brueckner and Follain (1988), Chari and Jagannathan (1989), Brueckner (1991), J. Sa-Aadu and Sirmans (1995), have attempted to capture the impact of contract features on borrowers' behaviour and thereby the nature of the demand for housing finance. According to Dhillon et al (1987), two views exist in the literature regarding the significance of borrower characteristics in choice making behaviour. One view holds that for given prices and contract terms, they are insignificant in the mortgage choice decision and another holds that borrower characteristics have significant impact in mortgage choice, given asymmetric information.

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5. A yield curve shows the relationship between the rate of interest and the term of the loan. A positively sloped yield curve means that the rate of interest increases with increase in the term of the instrument. Since housing typically requires long-term finance it is imperative that the yield curve is positively sloped so as to be conducive for lenders.
6. "Securitization is a process of pooling and packaging Financial Assets, usually relatively illiquid, into liquid marketable securities." (Sridhar, 2002). These securities are called Mortgage-backed securities (MBS).

Dhillon, Shilling and Sirmans (1987) and Brueckner and Follain (1988) have empirically examined the impact of pricing and borrower characteristics on the choice between fixed and adjustable rate mortgage contracts. Their analysis is limited to the choice between one variant of both fixed rate mortgage and adjustable rate mortgage. Dhillon et al have used a standard probit probability model applicable to variables with binary outcomes. It estimates the variations in the mortgage choice index for the mutually exclusive options of fixed and adjustable rate mortgages with respect to changes in a host of independent variables outlined below.

The studies conclude that the choice between FRMs and ARMs is largely influenced by mortgage price variables and that borrower characteristics do not influence the choice between the two. Some categories of borrowers such as those with co-borrowers, married couples and those who expected to have a shorter tenure in the same house had a tendency to choose adjustable rate mortgages. Factors like as age, education, first-time home purchase, and self-employment were not found to be significant. Borrowers with greater net worth are likely to be less averse to risk or may have better access to capital markets and therefore have a greater probability of preferring adjustable rate mortgages when their net worth increases. The results indicate that holding other factors constant, lower mortgage payment ratios bear insignificant impact on the choice of adjustable rate mortgages. It implies that borrowers look beyond the initial payments.

At this juncture it may be added that borrowers may often opt for longer-term maturity for home loans to keep their repayment ratios low. However, they do contemplate prepayments, in part or full, on the realization of higher incomes. Prepayment options are decisive when the home loan contracts are for longer terms. This is because the longer the term, the greater are the chances of changes in borrowers' income status and their capacity to service debt. In this context, prepayment options offered by lenders are important. Chari and Jagannathan (1989) and Brueckner (1991) suggest that borrower mobility affects the choice between mortgages by way of prepayment options that the mortgage contracts offer. They suggest that borrowers with greater mobility value the prepayment option less and thus prefer shorter-term contracts.

J. Sa-Aadu and Sirmans (1995) hypothesize that borrowers with greater proportion of liquid assets, as a proxy for mortgage affordability, have a greater capacity to make bigger down payments, and therefore do not need to rely on the more affordable ARMs. The underlying implication is that households prefer the certainty of a fixed rate mortgage over the risk of increase in adjustable rates. Miles (2004) states that particularly the first-time borrowers have a tendency of focusing excessively on initial monthly mortgage payments and have poor comprehension of the interest rate risks involved in various mortgage products.

Section 2.4.2: Studies on Borrower-Characteristics and Choice among Differentiated Mortgage Products

Most of the studies relayed in the previous sub-section treat mortgages as undifferentiated (generic) products. Rosenthan and Zorn (1991) assert that the very fact that borrowers exercise their preference between different Adjustable Rate Mortgages to take advantage of their differential pricing itself suggests that borrower-characteristics may influence choice. J. Sa-Aadu and Sirmans (1995) contest the approach of classifying all mortgage products into either Adjustable Rate Mortgages or Fixed Rate Mortgages as it fails to appreciate the choice within each type of product. The authors estimate the mortgage choice behaviour by treating mortgages as differentiated products to see if this provides a better description of the mortgage choice process. Their methodology involves regression of a multinomial logit model which allows for more than two discrete outcomes. Using this model the authors examine the choice between the varieties of residential mortgage contracts as a function of the various explanatory variables as regressors as mentioned below. Their database is 345 mortgage loans that originated over the period between 1979 and 1984.

The results obtained by J. Sa-Aadu and Sirmans indicate that the impact of price variables, such as contract rates and discount points, on mortgage choice are found to differ across alternative mortgage contracts. Significant differences were found in borrower response to mortgage contracts of different maturities. Greater mobility and younger age increased the preferences for shorter-term mortgages. Their analysis indicates that age has negative impact on the probability of choosing shorter-term contracts. They also found that increase in the maturity of the mortgages coincided with the years of stay at the current address. The analysis does not support the claim that borrowers with high-income prefer short-term

mortgages. However, expectation of higher incomes raised the probability of choosing adjustable rate mortgages over fixed rate mortgages. Expectations of higher interest rates are found to discourage borrowers from choosing ARMs. Greater holdings of liquid assets also lowered the preference for adjustable rate mortgages. The results suggest that ARMs are not generic contracts as considered in the earlier studies.[7]

In the light of the above studies, it is pertinent to study borrowers' choice making behaviour between fixed and floating interest rates in India. The practical implementation of the variable interest rate loans has only just evolved in India and borrowers are still in the early stage of learning-through-experience about the complex dynamics of the adjustable rate mortgage instruments.

SECTION 2.5

STUDIES ON THE AVAILABILITY OF HOUSING FINANCE

Credit availability is one factor that has been given much attention in the literature on housing finance. The financial processes adopted to mobilize funds; the means and cost of augmenting savings flow towards housing; the inter-sectoral flow of funds and their implication for the national budgets; the policy of mortgage restraint; the practice of mortgage rationing, and the management of variety of financial and operational risks of long-term housing finance are important factors that determine the availability of funds for housing finance. One reason why the availability factor warrants independent attention is that in the developing countries, in particular, which typically face the issue of paucity of funds and the predicament of competing priorities, deliberate efforts are needed to make funds available for the housing sector. This explains the need for government intervention in terms

7. Adjustable rate mortgages do not merely mean floating rate-housing loans. It includes several variants. Lenders may benchmark interest rate to the prime lending rate or the rate of inflation. Fixed rate mortgages may be offered with the condition of revision of the benchmark rate at regular intervals. Lenders may offer mortgages with graduating interest rates or teaser rates where mortgages have low rates of interest for the initial years. There may be differential treatment of partial or full prepayments in different loan products. Often housing loans are offered at discounts on the prevailing prime lending rate to new customers. Other variants include flexibility to alternate between fixed and floating interest rate mortgages. There are instances where this flexibility is offered to only those borrowers who opt for adjustable rate contract and not to those who choose fixed rate mortgages.

of direct provisioning of housing as well as in regulating the interest rates on housing finance, making the sector highly segmented. The flow of funds to the thrift institutions is affected by the competitive interest rates of other financial institutions. Where the deposit rates of thrift institutions are regulated by the government, while other institutions offer market rates of interest, it is bound to cause disintermediation of the former, which in turn affects the availability of funds for the housing sector. Under such circumstances the interest rate on housing loans cannot be expected to efficiently represent the true cost of capital, as there may be many hidden subsidies involved. The implication of conventional wisdom is that home loan rates by themselves do not correctly represent the spontaneous availability of mortgage credit. Therefore it becomes important to test for the availability hypothesis independently.

Section 2.5.1: Studies on Relevance of the Availability Factor

Thompson (1947) attributes the increase in the supply of funds with mortgage lenders to the expansion of deposits and savings. He cites increased lending capacity of private institutional lenders to be the cause behind decline in interest rates on mortgages; although he does not examine it statistically. Various studies seek to examine the significance of the availability factor. Regression results of Dwight (1971), Gibson (1973) and Dwight and Rosen (1979) report that housing investment is positively influenced by the availability of funds, measured in terms flow of new mortgage credit, mortgage commitments, saving flows to thrift institutions, government agency activities, etc. These studies imply that the interest rate fails to equilibrate the market for housing finance and is not a true reflection of the demand and supply of housing finance, that is, they result into non-clearing markets.

Wallich (1971) states that flattening of the term structure of interest rates reduces the profitability for lenders who depend on ‘borrowing short and lending long.’ This adversely affects the flow of funds to the housing sector. Resource mobilization for housing has an impact on aggregate savings and availability of fund for other sectors, as a substantial portion of household savings get diverted from financial assets towards building home-equity and debt servicing. It also has a bearing on the national budgets with respect to inter-sectoral allocation of resources, requiring revision of budgetary provisions. Gramley (1971) is of the opinion that industrial investment being profit generating in nature and involving fund

requirement over relatively shorter term horizon, may pre-empt real and financial resources from the housing sector.

Contrasting the course of industrial investment with that of private housing, Fisher and Seigman (1972) too throw light on the disproportionately severe effect of credit restraint on the private housing market. They hypothesize that the demand for housing is likely to be more sensitive to cost of credit compared to the demand for industrial investment. This is because the latter not only has internal and external sources of funds, but involves fund requirement over shorter time horizon compared to housing investment. Moreover, industrial investment is a profit generating activity. The authors have however, not empirically tested their hypothesis.

Swan (1973) states that drop in the savings flow to thrift institutions can cause a fall in the supply of mortgage funds in the short run and thereby a reduction in the demand for new housing units. The extent of fall in the demand for new housing would depend on factors such as the magnitude of decline in the supply of funds, the savings flow prior to the decline and the vacancy rates for housing units. However, Arcelus and Meltzer (1973) do not support the hypothesis that decline in mortgage availability results into fall in housing activities. According to them, when rates of returns in the capital markets rise faster than those offered by thrift institutions, it leads to disintermediation of the latter as the public shifts to investment in marketable securities. Thus, decline in new housing construction is the result of downward shifts in the demand for housing rather than curtailment of mortgage supply. Kearl and Mishkin (1977) too do not find evidence of any significant positive relationship between mortgage credit availability and housing production or purchase.

Rosa (1978) however cautions that models that treat availability as an independent factor, suffer from simultaneous equations bias, as the proxies for availability are internal variables in a larger model of consumption. The consumption model includes an assortment of physical and financial assets including houses and mortgages, and hence if credit availability for housing were curtailed, households would economize on their holdings of alternative assets in order to satisfy their excess demand for mortgage credit. In such a case, the ease or difficulty of credit availability does not significantly affect housing investment.

Doling (1982) contests the concerns about the pre-emption of national resources by the housing sector owing to the system of tax exemptions and subsidies on housing investment. He contends that there is no certainty that if the incentives for housing sector were taken away it would necessarily increase investment in industry. In fact the very opposite might be observed. On the lines of Rosa, Doling too asserts that in the absence of incentives, households may liquidate their holdings in financial assets in order to reduce their mortgage debt. A comparative analysis of the same for the Indian industrial and housing sector can throw light on the important issues of resource mobilization.

Thom (1985) investigates the relationship between construction of new housing units and mortgage availability. He uses a vector auto regression model wherein 'impulse response function' is computed for four variables, namely, private sector housing starts, mortgage availability, mortgage interest rate and the average interest rate on long term government bonds. The results suggest that there is some indication of an independent effect of variations in availability of finance on housing starts. However, in comparison to the interest rate, the role of mortgage availability was found to be secondary. Even as there are contradictory reports on the role of availability of finance, Thom states that *a priori* it is expected that as the financial environment becomes more competitive, the disintermediation process gradually diminishes and hence would lead to a decline in the significance of availability factors. This is because the market rate of housing credit would then adequately represent the spontaneous flow of funds to the housing finance sector.

Mayo, Malpezzi and Gross (1986) raise the issue of adverse effect on the viability of housing finance institutions in the developing countries due to government regulation of home loan interest rates targeted to make housing more affordable. This often results in housing finance institutions having to lend at negative real rates of interest, particularly during times of high inflation; ultimately discouraging the total availability of housing finance.

Section 2.5.2: Studies on the Flow of Funds to the Housing Finance Sector

With regard to spontaneous flow of funds to the home loans segment, many studies highlight the attractiveness of mortgage lending, which logically should voluntarily draw more funds to the housing sector. Buckley (1989) identifies several characteristics of housing investment that make it efficient collateral and have a bearing on the demand for and supply of housing

finance. Housing serves as low-risk collateral on account of being durable in the physical and monetary terms. This is because housing is an asset which is by far the most 'redeployable' among varied uses and yields stable real-denominated returns.

Mehta and Mehta (1991) examine the extent of financial deepening[8] in India and whether it has improved the distribution of formal housing finance across various income groups in urban India. Their basic contention is that although households are the net savers in the economy, they do not benefit much from the allocation of these savings. This is because a major share of bank credit goes to the industrial sector, whereas low priority is attached to the housing sector. They claim that if the process of financial deepening is supplemented by improved access to housing finance, it would cause housing investment to increase. Moreover, availability of funds would encourage households to add resources from internal sources such as transfer of unproductive savings in the form of gold, property etc.

Beaverstock, Leyshon, Rutherford, Thrift and Williams (1992) point out that the historically high levels of mortgage rates made mortgage lending a profitable business and encouraged banks to increase the supply of mortgage credit. With the appropriate legal environment to ensure easy and trouble free contract enforcement and foreclosures, supply of housing finance can be expected to increase. Ellis (2006) states that the mix of disinflation, deregulation and financial innovation provides considerable boost to the supply of housing loans, lowers the cost of funds, and thereby stimulates the demand for housing through increased competition among lenders.

Buckley (1994) cites the high costs of enforcing contracts in the event of default by borrowers as the impediment to voluntary supply of mortgage credit, particularly in the developing countries. If the legal means for foreclosing a contract are weak, lenders are at a disadvantage in the event of a default. Mere existence of contract enforcement laws does not ensure a smooth and speedy remedial mechanism, unless the laws are adhered to. Rigid urban regulatory environment in the developing countries makes the foreclosure procedures lengthy and uncertain, discouraging spontaneous lending.

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8. Financial deepening has been measured in terms of ratio of M_3 to Gross Domestic Product. It indicates the level of maturity of the financial system. M_3 is a measure of money supply which includes currency plus time deposits, and represents the aggregate monetary resources of the country.

Buckley states that it is the poor contract enforcement that is more responsible for the restrained supply of housing finance in developing countries. The increased risk of lending is further reflected in higher interest rates on housing finance. These post-contract transaction costs are however amenable to change, according to Buckley, and reducing them would result into spontaneous and rapid growth of the housing finance system. He states, "In countries where the basic urban and financial infrastructure already exists, and in which there is an attempt to liberalize and accelerate the development of the financial systems, the development of credible contracts can play an important role in improving both shelter conditions and the financial system."

Buckley exemplifies the success of Housing Development Finance Corporation (HDFC) in bridging the gap between the low and middle-income groups and the formal housing finance sector by the means of seeking third party guarantees[9]. The HDFC experience is a pointer to the fact that innovative ways such as appealing to what constitutes apt behaviour can circumvent the high cost of contract enforcement and that housing finance reforms can play an important role in reducing transaction costs.

Incidentally, some earlier studies too have raised concerns about the above issue. State foreclosure laws increase the risk of residential mortgage lending. Meador (1982) and Jaffee (1985) report that there is a tendency for home loan interest rates to be higher in states where the law increased the length and cost of the foreclosure process. Barth, Cordes, and Yezer (1986) suggest that state laws, which hinder the credit solutions for personal loans in the event of delinquency or default, impose net costs on all borrowers because it tends to discourage the flow of funds to the housing finance sector.

In the context of mortgage contract enforcement laws, it would not be inappropriate to make a cursory reference to the impact of property exemptions on the supply of housing finance in the event of bankruptcy of the borrowers. Researchers are at variance regarding the impact that property exemptions can have on the housing finance market. Sullivan, Warren and Westbrook (1989) claim that increase in property exemption levels is not found to be a cause

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9. The 'Third party' is usually someone the borrower respects, for instance, a senior colleague or a relative, who acts as a guarantor for the borrower (Buckley, 1994). The guarantor is also required to submit a financial statement to validate his/her ability to repay the loan in the case of failure of the borrower to do so.

for being rejected on a mortgage application. On the contrary, the likelihood of the mortgage application being declined appeared to have marginally reduced. Gropp, Scholz and White (1997) on the other hand, argue that if bankruptcy laws provided too many exemptions, including that on house property, it would discourage the supply of credit in general and for housing in particular. Findings of Berkowitz and Hynes (1999) endorse the view of Sullivan et al and show that high exemption levels are not likely to increase the home loan rates.

Tiwari (2001) cites the absence of risk-sharing in mortgage lending business in the form of secondary markets and mortgage insurance, as one of the important causes behind a constrained formal housing finance sector in India. Typical risks involved in mortgage lending are macro economic risk causing interest rate volatility, and liquidity risk due to prepayments and defaults. Absence of a secondary market implies that the housing finance institutions are the sole risk bearers of the home loans extended by them. Not only does this limit the total availability of housing finance, but also reduces the loan-to-value ratios, compelling households to accumulate sufficient means to build high home equity through personal sources. Moreover, lenders try to reduce the risks by imposing higher rates of interest, high prepayment penalties and conservative debt service to income ratios. All these factors adversely affect mortgage affordability.

SECTION 2.6

STUDIES ON THE ROLE OF GOVERNMENT IN THE HOUSING FINANCE ISSUES IN INDIA

As regards studies on housing finance issues in India, the focus has been more on the budgetary measures of the government, the status of low and middle-income housing, the role of the National Housing Policy (NHP) and the National Housing Bank (NHB) in the provision of housing finance, etc.

Mehta and Mehta (1987) confront the approach of the National Housing Policy (NHP) of emphasizing on ‘affordable shelter’ without addressing the issue of unequal resource distribution among various income groups. They make a significant observation that if the principle of housing affordability is sought to be resolved within the prevailing inequitable

distribution of income and wealth it is bound to produce inequitable results in the access to new resources as well. The emphasis on removing the constraints of the housing market by facilitating a more liberal functioning betrays the policy makers' faith in the market forces in resolving the issues of housing sector even as the market does not address the concerns of the poor and the less privileged households.

The authors are critical of policy makers for ignoring the fact that housing itself can be used as a potent vehicle to achieve a better distribution of resources. They attribute this to the tendency of national planners to view housing merely as consumption good rather than a productive investment vis-à-vis other sectors of the economy. It also reflects that policy makers focus on priorities within the housing sector while undermining the issue of inter-sectoral prioritizing. The authors suggest that the National Housing Policy must broaden the horizon of the principle of 'affordable shelter for all' by incorporating rental housing and not focus predominantly on ownership. They cite the case of developed countries where only about 50 percent of the population resides in owned property.

Kundu (1988) too has dealt with the issue of marginalization of the poor in the access to housing finance even as the NHP claims to aim at improving the housing activities in their favour. His basic contention is that both market mechanism and government programmes of resettlement of the poor households caused "degenerated peripheralisation", pushing them away from the central parts of the cities and into the city peripheries or adjacent towns and villages. Factors such as land use and building regulations, zoning legislation and poor land acquisition by government do not augur well for solving housing problems of the marginalized households. Endorsing the views of Mehta and Mehta (1987), Kundu laments that the NHP focuses only on issues related to total supply of housing while ignoring the distributional issues. He states that in absence of proper institutional regulations and well conceived scheme of incentives, "it would be naïve to expect that the private individuals and companies would start building for the poor."

Lall (1987) upholds the setting up of the National Housing Bank (NHB) for directing more funds towards the housing sector. At the same time, he draws attention to the drawbacks in government fiscal strategy for housing finance in India. While the fiscal incentives have provided impetus to housing linked savings and investments, in the process some

discrimination has entered in the impact of tax implications[10]. The fiscal measures favour new housing units over old housing stock, and building cost over land cost where the latter can be ascertained separately from the purchase price of the housing unit. Expenditure incurred on house renovation, upgradation or extensions are also excluded from tax incentives. This has serious implications in the face of the high magnitude of housing shortage, the huge cost of construction of new housing and the considerable amount of money invested in old housing stock. The issue relevant for the present study is that the housing finance system needs to be more inclusive in its reach and coverage.

Mehta and Mehta (1988, 1991) raise concerns about inadequate representation of the housing needs of the poor in the functioning of the NHB. They demonstrate that the middle and upper income families are the main beneficiaries of NHB, including incentives in the form of various tax reliefs. Criticizing the suggestion of the NHB bill to create specialized housing finance agencies, the authors opine that such a move was not called for and that shelter financing could be carried out effectively even under the conventional practice of private and public sector institutions by including home upgradation and rehabilitation within its scope.

There is therefore a need to customize housing finance instruments to cater to the particular needs of the poor. This could also encourage households to bring in more internal funds towards housing. An analysis of income-class-wise and end-use-wise disbursal of housing finance can throw light on this aspect. Due to non availability of the data at the aggregate level the authors have undertaken case studies of three metropolitan cities to identify the beneficiaries of formal housing finance. They conclude that only a marginal share of institutional credit goes to the urban poor.

Pugh (1990), in the context of India, maintains that government intervention in the housing markets is inevitable, particularly in terms of deregulating the market and directing the flow of savings towards housing investment in order to instill efficiency in the housing market. The major reform area according to him is the housing finance sector as an intermediary.

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10. The favourable treatment given to owner-occupied housing vis-à-vis renters is highlighted in Merz (1965). The tax incentives violate the principle of horizontal equity i.e. equal treatment of equals. Moreover, not only are the owners benefited, but also home owners in the upper income classes benefit more, reducing the progressiveness of the personal income tax.

In the opinion of Kapadia (1992), easy availability of housing finance would not be sufficient amidst high and increasing prices of urban property which severely affects housing affordability. Garg (1998) opined that the government should restrict its involvement in the construction of housing units and instead focus on promoting housing activity by providing an environment that is conducive.

Nair (1999) laments that neither the budget nor the general economic environment in India addresses the issue of how the housing sector can be redesigned to address the severely inequitable distribution of housing resources. The average dwelling cost, the monthly income and size of the dwelling unit indicate the kind of segment of the society served by housing finance institutions and reflects the bias against low-income households. Desai (2002) has dealt with the housing finance institutional set up in India. He has emphasized on the importance of specialized housing finance institutions. According to him, "…..it is imperative to have specialized housing finance institutions within the framework of national financial system so that lending for housing purposes can be finely integrated for the greatest effectiveness."

Wadhwa (2003) alleges that despite the various fiscal incentives offered to housing developers and financial institutions by the Indian government in the successive budgets in order to encourage housing for lower income group households, not much success has been achieved on that front. The increase in the demand for housing loans on account of reduced effective rates of interest however, does suggest the effectiveness of fiscal incentives. The author points out that no empirical study has been undertaken to examine the impact of fiscal incentives on the housing sector. Wadhwa also contests the proposal of the Task Force on Direct Taxes to phase out incentives given to home loan borrowers and advocates the continuation of the same due to the multiplier effects of housing on the income of the economy. In this context, it would be worthwhile to reiterate the results obtained by Hendershott, Pryce and White (2000) in their empirical study on how borrowers' decision regarding the amount of debt they were willing to take was affected by the phasing out of home mortgage interest deduction from taxable income for home buyers. The researchers found that removal of interest deductibility resulted into borrowers reducing the initial loan-to-value ratios and that this effect varied with household age, loan size, and tax bracket.

Wadhwa laments that the fiscal incentives extended in successive budgets and the interest rate subsidies to low income households administered through the NHB fail to address the issue of social equity. This is because such measures benefit only those households who have taxable incomes and those who borrow from eligible lenders under NHB. Through increased demand for housing and for housing finance, the exemption of interest payments from the calculation of taxable income enables higher income households to effectively shift to lower income tax brackets. It indirectly subsidizes house purchase for those with purchasing power. The effect is even more inequitable because fiscal benefits are applicable to second home buyers as well. Tax incentives thus flow to households who are beneficiaries of housing finance; amounting to a kind of dual advantage for higher income households. There is a large section of the population that is employed in the unorganized sector which is not served by the organized housing finance system. The concerns over tax benefits for owner-occupancy being regressive were also raised by Heady (1978). In his view, tax exemptions on mortgages amount to a subsidy to owners unless imputed rent on the housing asset is taxed. This is because it is the higher income groups rather than the lower income groups that are beneficiaries of such tax benefits.

SECTION 2.7

STUDIES ON DEVELOPMENT OF MARKET BASED HOUSING FINANCE SYSTEMS

Section 2.7.1: Studies on the Significance of Market based Housing Finance Systems

There are several studies in the literature on housing finance which deal with the issues of market based housing finance systems, with most studies clearly in favour of it. Wallich (1971) maintains that actions to deregulate financial markets or to improve financial instruments and to promote competition among financial intermediaries are inadequate in creating favourable housing credit conditions unless government policies effectively control inflation and are oriented towards increasing the supply of investable funds. A World Bank paper on Financial Intermediation (1985) reports that any deliberate action by the government to mobilize and divert credit to preferred sectors interferes with the financial system's ability to price and allocate risk. Buckley (1989) submits that the case for greater

access to market-rate housing finance is in effect a case for greater recognition of the costs of 'relying on the directed credit systems' which is a common element of financial systems of most developing countries.

Genteel, Marshall and Coombes (1991) and Thrift and Leyshon (1992) state how the freedom acquired in a more liberalized economic environment opened up new profit-making avenues for the financial institutions in the UK. It resulted in an unprecedented round of financial product innovation, contributing to a remarkable increase in the availability of credit, including housing credit. Beaverstock et al. (1992) also highlight how the promotion of the liberal economic tenets in UK led to the entry of large financial institutions into its estate agency market, transforming the small localized estate agency firms into large multi-locational firms through the process of mergers and acquisitions. According to the authors these changes coincided with "a period of financial deregulation, increased home ownership, freely available housing credit and a very active housing market."

Chen and Gao (1993) attribute the severity of urban housing shortages in China to the policy of allocating "urban housing as a heavily subsidized re-distributive good." They observe that introduction of gradual decentralization and infusion of market mechanism into the centrally planned system brought positive changes in the housing scenario in China. They use panel regression analysis to model demographic, economic and political determinants of urban housing development during the early phase of economic and housing reforms. Results indicate a housing construction boom on account of decentralization and diversification of housing finance, and also that continuing housing shortages were the result of partially reformed housing systems. This speaks volumes about the desirability of market oriented housing finance systems.

Order (1994) holds that much of the government intervention in housing finance grew out of the Great Depression and that it would be more desirable to approach it differently in the present context. According to him, improving the efficiency of housing finance policy would be more effective than extending government intervention. It may be recalled from the previous section that Garg (1998) too considers the promotional role of government more appropriate than its direct involvement in the provision of housing units. By creating an

environment that is conducive, the government can encourage more private participation in housing activities.

Llanto and Basilio (1999) have discussed the case of Philippines where excessive subsidy component in the National Shelter Programme led to huge fiscal burden on the government and ultimately on taxpayers. It also discouraged private commercial banks from participating in the housing finance market as they could not compete with government subsidy programme. The authors cite innovative housing finance schemes that would enable the predominantly government-support based housing finance sector to develop into market-based housing finance system.

One such scheme is the 'contract savings for housing' scheme wherein households enter into a contract with financial institutions for availing home loan on the condition that they satisfy minimum savings commitment within a certain period of time. This ensures credit worthiness of borrowers. They also suggest that the flow of funds to the sector from the financial institutions with access to long term funds such as pension funds and non-bank financial institutions should be encouraged. Further, they emphasize on securitization as an efficient method of circumventing the problem of liquidity because of the 'recycling mechanism' that it offers.

Green and Wachter (2007) state that technological innovations and market orientation are important global forces that broaden and deepen the housing finance markets across countries. They examine the institutional changes in housing finance in industrialized countries over a period of 30 years to see the effect on housing affordability. They find that market-based system linked to capital markets was the most effective way to secure sustained finance compared to mortgage systems where cost and allocation of mortgages is decided by government.[11]

11. Exploring viable mortgage systems across different countries, Green has identified three models, each with its risks; first, those funded exclusively by commercial banks through deposits as in case of UK, second, those funded by covered mortgage bonds directly funded via capital markets, as in Germany, and third those funded on the basis of securitization through collateralized mortgage-backed-security in Australia and to some extent in Korea.

Academicians and policy makers have raised doubts about the suitability of the principles of market mechanism to the housing finance sector in developing countries. In this context, Lall (1987) endorses the approach of setting up sector-specific financial infrastructure as the most effective path to strengthen the concerned sector. In his view, market based housing finance sector would fail to cater to the housing needs of the poorer sections of the society and would necessitate directed lending though specialized institutions like the National Housing Bank.

Kundu (1988) has challenged the effectiveness of increased private participation and a freely functioning housing market in solving all housing finance problems, particularly in the developing countries. His basic contention is that if the role of government is limited to that of a facilitator, the availability and accessibility of housing finance for the poor will be greatly compromised. Emphasis on 'commercial viability and timely recovery' as the most important tenets of housing finance clearly crowds out the poor, unless definite actions are taken for establishing an inclusive housing finance system.

The concerns raised by Kundu is endorsed by Goetz (1995) who examines the impact of source of funding on housing programmes and targeting of beneficiaries by the US Department of Housing and Urban Development. Employing bivariate correlation, Goetz finds that greater flow of housing benefits to households with moderate-incomes and to home owners and home buyers coincided with reduction in federal spending. His regression results reveal that cities with lower levels of poverty relied more heavily on nonfederal funds rather than local resources for funding their housing programs. His regression models involving per capita data support the hypothesis that cities with higher per capita incomes exhibited higher housing expenditures with more use of nonfederal revenues. He finds reduced federal spending to be highly associated with increase in the level of private sector participation in housing which substantiates the concerns regarding beneficiary targeting. Renaud (1996) reports severe decline in housing output in transition economies due to withdrawal of the state from direct housing production. These include the Czech Republic, Slovakia, Hungary, Poland, Bulgaria, Romania and Russia.

Section 2.7.2: Studies on the Pre-conditions for Market based Housing Finance Systems

The transition to market based housing finance sector necessitates certain preconditions to exist which calls for concerted effort and deliberate actions by the government. The regulatory and legislative initiatives need to be continuous, coherent and synchronized to expedite the process.

Reidy (1983) emphasized the role of an active secondary market for a dynamic housing finance sector. The transformation of banks and financial institutions into market oriented competitive institutes would lead to development of the primary mortgage market. This in turn would enable it to produce large volume of good quality mortgages that have been originated according to standardized documentation. Competition would not only moderate the housing finance rates to a level that would stimulate effective demand for mortgage credit but would further enable the creation of a secondary mortgage market. Growth of secondary mortgage market would help catalyze the development of a country's capital markets and reinforce each other on volume basis. The author however, does not provide any empirical examination of the above assertions.

Renaud (1984, 1996) cites low inflation, radical banking reforms and earnest reforms in the laws and institutions of the real estate sector as the prerequisites for the transition economies to develop a modern system of housing finance. According to him, the key reform areas that are indispensable for a sound financial system include liberalization of the economy, privatization of housing and real estate sector, financial sector reforms and stable prices. The basic issue according to him is to achieve a balance between three conflicting objectives, namely, affordability for households, viability for financial institutions and mobilization of requisite resources from the perspective of the national economy. Uy (2006) considers the establishment of an active and liquid secondary mortgage market as one of the solutions to the challenges of developing a viable and sustainable source of long term housing finance.

Warnock and Warnock (2007) make an insightful classification of the supply of housing finance. Supply or provision of housing finance from a lender's point of view is essentially different than mobilization of funds from the economy's point of view, which determines the extent of funds accessible to the lending institutions. They consider strong legal protection in terms of collateral rights and bankruptcy laws, extensive credit information systems and

stable macro economic fundamentals as the essential factors to induce long term lending by housing finance lenders. Conversely, mobilization of funds for the sector depends on the financial institutional structure of the country in the primary and secondary markets.

Long term lending is further favourably affected if a country has in place an effective liquidity crisis management system. They consider the proportion of households having access to housing finance, the range of housing finance products available to borrowers, and the mortgage debt to GDP ratio to be the alternative measures of a well functioning housing finance market. Using regression analysis as the tool, the authors have carried out an empirical analysis of the determinants of the size of the housing finance market of a country. The explanatory variables include the index of legal rights, the index of credit information, and macro economic volatility. They measure the dependent variable - size of housing finance market - in terms of the mortgage debt to GDP ratio.

The index of strength of legal rights in a country is measured on ten parameters, each assigned the dummy value of one if it is present, or else, zero. The index of credit information is constructed on similar lines with six parameters. Macro volatility is captured through the standard deviation in inflation rates based on quarterly consumer price index. Their regression results support the hypothesis that stronger legal rights and better credit information system positively influenced the size of housing finance market, while macro economic instability had a negative effect.

Nenova (2010) emphasizes a sharper focus on secondary market for housing finance. She opines that development of mortgage refinancing companies as second-tier structure of mortgage finance was crucial for "the provision of long-term funding, standardization, and stabilization of mortgage markets."

Much of the efficacy of a market orientated housing finance system rests on the premise of a smoothly operating trickle-down effect.[12] Availability of housing finance increases the supply of housing units and enables the qualifying borrowers to realize their aspirations for better housing. In the process they vacate the old residential units for households in the lower

12. 'The trickle down effect' or the 'filtering process' occurs when households shifting to new dwelling units free their old units for occupancy by households belonging to the socially and economically lower strata (The World Bank Research News, 1983).

rung of the income strata. Sternlieb and Hughes (1983) attribute the improvement in the housing conditions of the poor in the US to the role of such ‘ filtering process’, even as relatively small proportion of housing production was targeted directly to the poor households. However, they express concern over barriers against the filtering process due to stagnation of average real household incomes, increase in the number of persons below the poverty line, and a housing finance system completely driven by competitive market forces. Under such conditions, housing needs of the poor tend to relegate in terms of political appeal compared to housing demand of the middle class. McCrane (1971) considers severe housing shortage and escalating house prices to be strong barriers to the trickle down theory.

The above discussion entails an inquiry into the functioning of the housing finance sector of India. In India, the government has typically had an interventionist approach towards housing sector, emphasizing on the provision of subsidized housing for the lower income groups. The middle income households have depended largely on their retirement funds to garner enough equity to purchase a house, given the high interest rates on home loans in the pre-1990s. However, with the onset of a liberalized era since the 1990s, India has witnessed the emergence of specialized housing finance institutions. Financial deregulation has increased competition, virtually turning the housing finance sector into a borrowers’ market. In this context, it would be interesting to establish the impact of these changes in terms of wider availability of cheaper housing finance in India.

CHAPTER 3

OBJECTIVES, HYPOTHESES AND RESEARCH METHODOLOGY

CHAPTER 3
OBJECTIVES, HYPOTHESES AND RESEARCH METHODOLOGY

SECTION 3.1

OBJECTIVES OF THE STUDY

In the light of the extensive review of literature, several issues of interest emerge for investigation into the housing finance sector in India. The survey of literature suggests that empirical research on housing finance in India is scarce on account of scanty information; one reason being that the emergence of formal housing finance system in India is a relatively recent development. Most studies, therefore, have focused on evaluating the performance of government intervention in housing and its housing policies. Variables such as house prices, incomes and interest rates are examined for their influence on the final demand for housing rather than the demand for housing finance as an intermediate variable. The present study seeks to fill this gap through a comprehensive integration of various determinants of housing finance into simple feasible models in the Indian context. Once identified and empirically supported, they can be linked together in the context of prospective policies and thereby present a symptomatic study for wider economic implications. A macro economic study of this nature is always fraught with challenges and swarmed with purposes. We, however, in this context of the study, restrain ourselves to the following specified objectives.

- To review the growth and structure of the housing finance sector in India.
- To examine the cross-country structures and systems of housing finance and to check if there is a process of convergence in the systems.
- To analyze the outstanding home loans of scheduled commercial banks in terms of bank group-wise distribution, size-wise and interest rate-wise distribution, population group-wise and region-wise distribution.
- To probe into the concern that the housing finance sector caters more to the higher income groups.

- To examine the role of nominal and real interest rates in determining the demand for home loans.
- To explore if households take into account expected home loan interest rates in deciding how much home loans to demand.
- To examine the role of current and anticipated income in the demand for home loans.
- To explore the role of house prices as a determinant of the demand for home loans.
- To test if the increased ratio of urban population provides any explanation for the variations in the demand for housing finance.
- To explore the impact of demographic changes over time on the demand for housing finance.
- To analyze the home loan disbursals of Housing Development Finance Corporation (HDFC) as a representative Housing Finance Company.

The analyses in the context of the first three objectives outlined above involve descriptive exploration of the inquiry at hand. The first two objectives are examined in chapter four, while the next two objectives are addressed in chapter five. The remaining objectives are examined through econometric analysis and are presented in chapter six.

SECTION 3.2

HYPOTHESES OF THE STUDY

The hypotheses pertaining to determinants of demand for home loans are as follows:

- Nominal home loan interest rate has a negative impact on the demand for home loans.
- Real home loan interest rate has a negative effect on the demand for home loans.
- Expected nominal home loan interest rate plays a decisive role in the demand for home loans.
- Income has a positive effect on the demand for home loans.
- Anticipated income affects the demand for home loans.
- House prices affect the volume of home loans demanded by households.
- Urbanization has a positive impact on the demand for home loans.
- Time factor plays a significant role in the demand for home loans.

SECTION 3.3

RESEARCH METHODOLOGY

Section 3.3.1: Methodology

The present study is descriptive-analytical-empirical in nature. The research methodology includes a blend of extensive review of literature and inductive reasoning applied to observed data on factors presumed to be linked with housing finance. The investigation starts with a review of the structure and growth of the Indian housing finance sector. Simple statistical calculations and ratios have been used to divulge the relative significance of the various institutions involved in housing finance. Global trends in the housing finance systems have been reported with reference to selected countries to compare and contrast the evolution and recent trends in housing finance systems.

The second part of the research work is an analytical analysis of the outstanding home loans of the scheduled commercial banks (SCBs). It may be noted that for the major part of the period under study, SCBs have constituted around 70 percent share of the housing finance market. The level of outstanding home loans of SCBs has been examined in the context of macro economic variables such as National Income, household savings and level of time deposits. The trends in the outstanding and incremental home loans of SCBs have been critically examined under various classifications such as bank group-wise, interest rate-wise, loan size-wise, population group-wise and region-wise distribution. Common tools of statistical analysis such as ratio analysis, trend analysis and correlation analysis, and growth rates have been used. Ratio analysis enables presentation of variables on a comparative basis. It helps put movements in variables in perspective by measuring relative rather than absolute and independent changes. Further, trend analysis of ratios has been done which not only reveals the direction of movement in variables but also substantiates the results obtained subsequently in the econometric analysis.

The third part of the research work is econometric in nature, based on bivariate and multivariate regression analysis that provides an empirical test for the determinants of the demand for housing finance in urban India. Alternative models have been constructed with various combinations of the explanatory variables. The models are tested for data reliability and co-linearity with the help of scatter diagrams, *t* test, F test, adjusted R^2 and D-W test.

Simple econometric techniques are graphically represented for convergence/divergence analysis, wherever needed. Graphs and charts depicted with the text add to visual analysis of housing finance symptoms to substantiate the arguments further.

The time period of the analysis of the study is a twenty-year period from 1990-91 to 2009-10. The data on outstanding home loans of scheduled commercial banks (excluding Regional Rural Banks, RRBs) and housing finance companies, and the data on national aggregates and other variables used in the study have been sourced from the publications of the Reserve Bank of India, the National Housing Bank, and Economic Surveys of various years and the Census of India. The data on home loan disbursals and home loan interest rates of HDFC have been obtained from the annual reports of HDFC. The data for some of the variables have been generated with the help of simple computations based on certain assumptions. In some cases proxy variables have been used due to non availability of the desired data.

Section 3.3.2: Explanation of Variables

This section provides the description of the data employed in the study, the explanation of the construction of variables computed for the study, and the justification for the proxy variables used in the analyses. The underlying assumptions have been clearly laid down.

1. DEMAND FOR HOME LOANS

The demand for home loans has been examined through three alternative variables, namely, the outstanding home loans of SCBs, the changes in outstanding home loans of SCBs and the sectoral share of home loans in total credit by the SCBs to all sectors. The outstanding home loans of Regional Rural Banks (RRBs) have been excluded from the analysis as the present study is focused on urban demand for home loans.

The level of outstanding home loans is a combination of principal loan amount outstanding, new home loan disbursals, prepayments, balance loan transfers and any other form of loan restructuring. By this implication, it is an expression of the preference of households to hold the housing loan liability at the existing rates of interest and income levels. Since separate data on new loan disbursals, prepayments or loan transfers is not available, the changes in outstanding home loans of SCBs are taken to suffice as an 'incremental demand for home loans' variable. Alternatively, the outstanding home loans of SCBs have been used as a proxy for the 'gross demand for home loans.' It may be noted that incremental housing loans are

bound to exhibit greater variations compared to outstanding home loans. The incremental home loans are also a closer reflection of the housing loan disbursals by the commercial banks as loan prepayments are not expected to be high in proportion to the total home loans outstanding at any given point of time. Further, sectoral share of home loans in the total credit of scheduled commercial banks to all sectors is another home loan demand variable which has been analyzed in this study.

2. HOME LOAN INTEREST RATES

As regards the home loan interest rates, substantial segmentation has been observed on the basis of the maturity period of loan, the quantum of loan and the type of loan whether on floating rate or fixed rate. It is not possible to incorporate the varied rates of interest for analysis of home loans in the aggregate form. Therefore, the benchmark prime lending rate (BPLR) has been used as a proxy for the nominal home loan interest rate. The use of BPLR is justified by the fact that the lending rates of banks are linked to the prime lending rates. The use of BPLR is also justified by the fact that the decline in the interest rate on a standard mortgage of 20-year maturity from a high level of 17-18 percent in the early 1990s to as low as 7-8 percent in the early 2000s has coincided with the progressively soft stance adopted by the RBI towards key interest rates, in the wake of declining rates of inflation. The increase in the home loan interest rates in the recent years to a level of 11-12 percent is also synchronous with the successive upward interest rate revisions made by the central bank in its effort to curtail inflation. Moreover, the variable-interest rate contracts being more preferred in India (80% of home mortgage transactions in India are on floating rates according Chandrasekar and Krishnamoorthy, 2010; 90% as per ICRA, 2010); the prime lending rates would reflect the home loan interest rates reasonably well. Data on fixed and variable home loan interest rate is available, but for a period of twelve years only. A high degree of correlation of 83% and 85% is found between the prime lending rates and the fixed and variable home loan interest rates respectively. This further supports the use of BPLR as proxy for home loan interest rates. The real home loan rate of interest has also been used in the analysis. It is derived from the Fisher's method of subtracting the rate of inflation from the nominal home loan interest rate.

The use of prime lending rate as a proxy for interest rate is a common practice in research work owing to reasons ranging from availability of continuous data to the frequency of

compilation of data and to the prevalence of segmentation of interest rates for different markets. Prasad (1990) has used the IDBI prime lending rate as a proxy for long term interest rate and the SBI prime lending rate as a proxy for short term interest rate in the regression analysis of the demand for money on interest rate. Chandrasekar and Krishnamoorthy (2010) have used the benchmark prime lending rate as a proxy for home loan interest rate in the regression model of housing demand. They justify the use of BPLR on the grounds that most banks offer rates that are tied to the benchmark prime lending rates.

Although in a different context, there is some discussion on mortgage rates being closely correlated with deposit rates or average cost of funds of banks and thrift institutions in Mayer and Nathan (1983). Kahn, Pennacchi and Sopranzetti (2000) use market interest rates with similar duration as a benchmark for consumer loan rates. They have also used average consumer loan rates of selected banks as the interest rate variable. Ashley (2002) in his analysis of the demand for consumer credit has used the inter-bank interest rate on loans as a proxy for interest rate on consumer loans with the premise that the former is the base on which banks add a fixed percentage of rate to charge to consumer. The same logic holds in the case of home loan interest rates and BPLR.

In calculating the cost of home ownership, Flavin and Yamashita (2002) have measured nominal mortgage interest rate in terms of the annual average of conventional home mortgage rates charged by major lenders. In the analysis of house price bubbles in India, Joshi (2006) has used the weighted average call money rate as a proxy for home loan interest rate because of the higher frequency with which they are available. In our opinion the call money rates are not a good representation of the home loan interest rates as they are highly short term rates, although they do reflect the current liquidity situation in the market.

Following the financial deregulation in India, as lenders aggressively promoted their products, awareness of changes in home loan rates among households has increased. It is therefore likely that expectations about home loan interest rates may have a role in influencing the demand for housing loans. The benchmark prime lending rate of the subsequent year (t + 1) is taken as the expected home loan interest rate in the given year (t). It implicitly assumes that borrowers are capable of making correct expectations about the home loan interest rate changes at least over the short time horizon of one year. Alm and Follain

(1984) too have assumed that consumers of home loans are capable of fully anticipating the future trends in interest rates. Incidentally, as far as modelling of expectations is concerned, Prasad (1990) in his analysis of the demand for money has used expected inflation rate as one of the arguments. With the premise that the current year's inflation rate is the basis for price expectations in the subsequent year, he uses the inflation rate with one year lag to represent the expected rate of inflation for a given year.

3. INCOME

Income is another major factor that plays a vital role in the decision to avail home loans. It is an important criterion that decides the credit worthiness of a potential borrower. The per capita net national product (PC NNP) at constant prices has been taken as the income variable. The reason for taking per capita income at constant rather than current prices is that the former signifies the affordability factor much better than the latter in terms of the true ability and willingness of households to service a home loan over and above other consumption expenditures.

Lenders normally extend home loans up to 85% of the value of the house to be mortgaged depending on the income and liabilities of the borrowers. The initial amount required to build up home equity is usually managed by households from their financial savings and other liquid assets held by them. This may temporarily cause an adverse cash flow situation for the households. However, borrowers generally look over a horizon of three to four years to restore a comfortable cash flow situation by achieving a regular flow of savings even as they ensure funds to honour debt servicing. In this context, anticipated income is an important input in the decision of borrowers to avail home loans and in deciding the quantum of the loan. For lenders too, anticipated income of the borrowers over their working life is an important criterion to decide the eligibility of households for home loans. Therefore anticipated income of households has also been used as an argument in the demand function for home loans. On the presumption that borrowers know the future path of income (Alm and Follain, 1984) we have taken PC NNP of the $(t + 3)^{th}$ year as the anticipated income for the t^{th} year.

As regards the income of borrowers corresponding to amount of home loans demanded, economy wide data is not available for analysis. Such an examination would be possible only

by adopting case study method wherein home loan records of selected banks could be used to get data on the nature of home loan contracts and borrowers' income levels. However, it is not within the scope of the present study. To circumvent this drawback, an attempt has been made to get an indication of the annual income levels of households on the basis of the size-wise distribution of outstanding home loans of commercial banks for each year. The computation of the income levels is based on the premise that the maximum home loan extended by lenders is up to three times the annual income of the borrower. It may be noted that the calculation does not take into account the differences in other aspects of home loan eligibility of households or the differences in the down payment that households are able to make. A similar computational technique is found in Buckley (1994), although in a different context. In arriving at a measure of households' ability to afford mortgage repayments at different rates of inflation and interest rates, Buckley assumes that households purchase a house worth 2.5 times their annual income.

4. HOUSE PRICES

With the rapid stride in house purchase activities, house prices have exhibited an upward trend across most cities in India and are bound to affect the demand for home loans. The residential price index 'RESIDEX' launched by the National Housing Bank in 2007 tracks the quarterly movements in house prices across selected cities. Currently the Residex is available for 15 cities for a period from 2007 to 2011. The study seeks to analyze the impact of house prices on the demand for housing loans. However, the total number of observations is too small to undertake a comprehensive examination. The present study seeks to tackle this issue by introducing another proxy variable, namely the Wholesale Price Index (WPI). While it is true that house prices including land values do not appear in the construction of the WPI, the prices of building materials are included in the index so that some reflection of house prices can be seen in the WPI. Moreover, high positive correlation ranging from 0.88 to 0.99 is observed between the RESIDEX across various cities in India and the WPI in the corresponding years. Further, it may be noted that house prices are highly location-specific so that the city-wise Residex would not capture the country wide pattern of changes in house prices and their impact on the demand for housing finance. This suffices the use of WPI in the place of Residex to get a fair idea of the role of house prices in the demand for housing loans. Quigley and Raphael (2004) maintain that increase in the rate of inflation increases

house prices. This supports the correlation between the two variables and justifies the use of WPI as a substitute of house price index.

5. URBANIZATION

The connection between economic growth and cities as centres that are integral to the process of structural transformation of the economy from rural occupations to industry and service sectors, and which results into creation of national wealth is well established globally (Report on Indian Urban Infrastructure and Services, 2011). Rising urbanization is considered one of the important reasons for the housing finance market to grow (LICHFL Annual Report, 2010-11). As the economy grows, it leads to greater migration from rural areas, resulting into rise in the demand for housing in the urban areas. Rapid pace of urbanization is manifested in increased construction of dwelling units in the cities and the expansion of cities in their peripheries, leading to increase in the demand for housing loans. In fact, housing is considered to be one of the sources of urban agglomeration[13] owing to its multi-sector linkages that encourage several other economic activities which reinforce each other. In this context, the level of urbanization has been used as one of the arguments in the demand function for home loans. The ratio of urban population to total population has been employed to represent the growth of urbanization in India.

6. NUMBER OF YEARS

Along with the major factors identified for their independent impact, as listed so far, several other social and economic factors may be responsible for the demand for housing finance. Thompson (1947) has cited increased rate of family formation, and "spreading out"[14] of families over housing units due to increased incomes combined with availability of easy and cheap housing loans as collective reasons for increase in the number of dwelling units in the US, in the early 1940s. Although no empirical analysis of the same has been done to find the extent of interdependence of these factors, the author has provided visual presentation and percentage growths for the same.

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13. "Urban agglomeration is a continuous urban spread constituting a town and its adjoining urban outgrowths of two or more physical contiguous towns together and any adjoining urban outgrowths of such towns." (Dutta, 2006).
14. The term "spreading out" of families is used to reflect the ability of families to maintain more than one housing unit.

In the context of India, the economic and demographic factors include changing spending attitudes and growing housing aspirations of households, faster rate of household formation on account of increase in the number of nuclear families, increase in double income households, decline in the average age of first time home buyers, trend of second home purchases with an investment motive, emergence of the trend among single women to invest in housing etc. Since 20 year data on all these factors are not available, the study seeks to capture their combined effect through the proxy variable 'Number of years' to reflect changes taking place over time. It is computed by assigning numbers one to 20 to successive years of the period under study.

SECTION 3.4

LIMITATIONS OF THE STUDY

Although conscientious efforts have been made in carrying out the research work, there are certain limitations on account of unavailability of the desired data. Given that this is a symptomatic study, the variables employed in the research work are generic in nature. The analysis is based on the data on outstanding home loans of scheduled commercial banks. Time series data on loan disbursals of commercial banks is unavailable which would have otherwise sharpened the analysis, particularly in the context of the interest rate and income variables. In the case of the demand for home loans of HDFC, which has been examined as a representative housing finance company, while data on home loan disbursals are available, the segregation of disbursals at floating vis-à-vis fixed home loan interest rates is not available.

The official data sources provide information on the classification of outstanding home loans at different interest rates for each of the years; however, the data on home loans outstanding in a year at the rates prevailing in that year are not available. Therefore, while the present study relates the changes in outstanding home loans of a given year to the average home loan interest rate prevailing in that year, it is unlikely that all of the outstanding home loans of the given year were held at the those rates of interest. Of course, taking the changes in

outstanding home loans against the prevailing interest rates of the respective years solves the problem though not accurately.

Likewise, the outstanding home loans are classified into different loan sizes for each year; however they cannot be directly attributed to the prevailing home loan interest rates or the income of the borrowers. While the availability of the data in the forms described above enables examination of the trends under various classifications, they are not suitable for appropriate econometric analysis.

The interest rate variable used in the analysis is generic in nature due to unavailability of twenty year data on variable and fixed home loan interest rates. Moreover, the segregation of home loan disbursals at variable and fixed rates respectively is not available. Segregated data would have been highly desirable so as to reveal borrower preferences. Besides this, while data on outstanding home loans is available bank group-wise, the data on their respective home loan interest rate in unavailable for the entire period. An econometric analysis of bank group-wise home loan disbursals would have had the advantage of establishing their competitive positions and would have enabled a comparative analysis of the magnitude of their beta coefficients, in the context of the differences in their lending practices.

The review of literature shows many studies in advanced countries that test the sensitivity of down payments to the home loan interest rates or the impact of liquid assets of borrowers on their down payments. The preferences of borrowers between alternative home loan contracts based on the amount of monthly installments they are required to pay have also been examined by several studies. Relationship between borrower-characteristics and features of alternative home loan products has also been examined in several studies. However, on account of lack of suitable data, the present study has not been able to incorporate such inquiries within its scope.

Another interesting area of research is the issue of prepayments of home loans. Prepayment behaviour of borrowers has impact on liquidity and profitability of lenders. A detailed investigation into the prepayment experience can throw light on the factors that induce borrowers to prepay. A related issue is that of balance loan transfer by borrowers in response to interest rate differentials between lenders, particularly as a result of the aggressive strategies adopted by lenders. An inquiry into the factors that lie behind such borrower

behaviour would enable lending institutions to enhance their risk-return objective. However, due to lack of distinct data on loan prepayments and transfers vis-à-vis the home loan interest rates, such an inquiry is not possible to undertake.

Another limitation of the study is on account of the unavailability of data on income of borrowers vis-à-vis the size of the home loans demanded. An analysis of income-class-wise disbursal of housing finance could throw light on the distribution of funds in the housing sector. Nonetheless, the present study has attempted to compute the estimated income classes of the borrowers from the loan sizes of the commercial banks. The lack of data on house price index for the twenty year period is another limitation of this study.

Despite these constraints, the present study has been successful in establishing empirical support for *a priori* expectations with respect to the determinants of the demand for housing finance in the Indian context through the use of suitable proxy variables. The study highlights the areas that need greater focus and sharpens the understanding of the links between key factors for the development of an inclusive housing finance sector. It opens up scope for further research at more disaggregate and specific levels for a sharper focus on the intricacies of the working of the demand side of the housing finance sector.

CHAPTER 4

STRUCTURE AND GROWTH OF HOUSING FINANCE SECTOR IN INDIA

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SECTION 4.1

INTRODUCTION

The Indian housing finance sector has come a long way from its earlier phase of government domination to an increasingly market oriented system in the present times. The establishment of public sector institutions such as the Housing and Urban Development Corporation Limited (HUDCO) and the National Housing Bank (NHB), and the Housing Development Finance Corporation Limited (HDFC) in the private sector, in the 1970s and 1980s brought the much needed focus to the housing finance sector and propelled the system into a higher growth trajectory. In the 1990s, the process of liberalization of the financial sector provided further impetus to the sector with the entry of private financial institutions and banks. Public sector banks too turned to the housing finance sector in a major way and now claim a lion's share of nearly 70% of the total outstanding home loans. The outstanding home loans of the Scheduled Commercial Banks (SCBs) in the year 2003-04 stood at Rs.853.47 billion which amounted to a 73% rise over the home loan level in previous fiscal year. This is the sharpest rise recorded over a span of 20 years since 1990-91. In recent years though, the annual growth rates in outstanding housing loans of SCBs have slowed down and there has been a marginal decline in its market share vis-à-vis the housing finance companies.

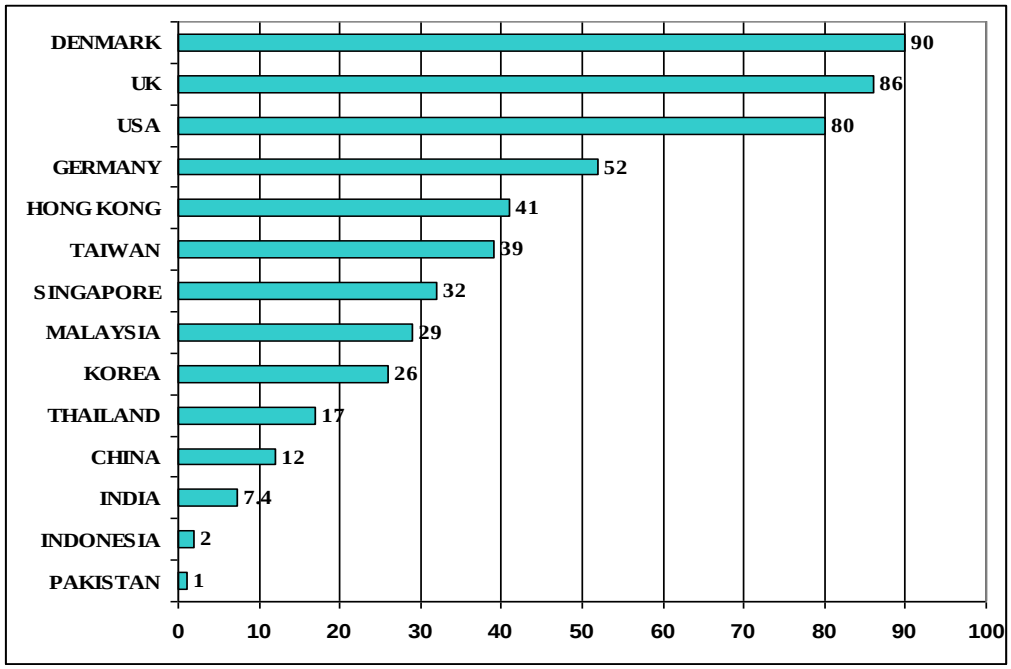
Liberalization of the housing finance sector has paved the way for rapid growth of housing finance in India. Over the years, the mix of market orientation of the housing finance system and an enabling regulatory framework has lent the much desired vibrancy to the housing market. The vibrancy is manifested in the intense competition among lenders and the wide choices available to borrowers. Lower lending rates, stable property prices, rising personal incomes and tax incentives for owner occupied homes have contributed to the increase in the demand for housing finance.

The supply of housing finance has expanded under priority sector lending, refinance by the NHB, increased budgetary allocations to the housing sector and increased participation of private sector lending institutions. Securitization of housing loans, although at an infant stage, has provided an additional source of funds. At the same time, rising housing aspirations and rapid pace of urbanization are resulting into a widening gap between the demand and supply of housing. According to the Technical Group on estimation of housing shortage constituted for the preparation of the 11th Five Year Plan document, the urban housing shortage at the end of the 10th Five-Year Plan was around 24.71 million, which increased to 26.53 million for the 11th plan period (2007-2012). Nearly 99% of the estimated housing shortage in the urban areas is related to the economically weaker section (EWS) and to the low income group (LIG) [15] categories. 80.7 million persons, amounting to 26.7% of the total poor people in the country, live in urban areas and constitute nearly one-fourth of the urban population (MHUPA, 2007, cited in National Resource Centre, 2009). Therefore, there is an increased thrust on "Affordable Housing" in the present times. Policy makers and the housing industry alike are oriented towards affordable housing in order to develop an inclusive housing finance sector. The builder community and lending institutions have awakened to the huge market potential for affordable housing for lower income households.

Despite the intense pace of growth in housing finance in India over the past ten years, there remains a vast open field to be covered. This is evident from the low mortgage penetration in India which is just a little above 7%, measured as the ratio of dissemination of housing finance to Gross Domestic Product. This ratio is comparatively very low with respect to advanced countries such as US (80%) and UK (86%). India compares poorly with other Asian countries as well. For example, China has a mortgage debt ratio of 12%, followed by Thailand with 17%. Other Asian countries boast of a mortgage debt to GDP ratio in the range of 20 to 40%. Fig. 4.1 shows the ratio of mortgage finance to GDP for various countries.

15. As per the Ministry of Housing and Urban Poverty Alleviation (MHUPA), EWS includes households with monthly income of up to Rs.5000 and LIG households constitute those with monthly income between Rs.5001 to Rs.10000 (MHUPA Annual Report, 2010-11).

Fig. 4.1 MORTGAGE DEBT TO GDP RATIO (%)



Source: European Mortgage Federation (2007), Asian Development Bank (2007), RBI (2009), as cited in Manoj (2010), Nenova, (2010).

The figure vividly demonstrates the great distance to be traveled by India when compared to other countries of the world in terms of its potential to expand the reach of formal housing finance. Further momentum to the housing finance expansion is anticipated by the fact that while the housing finance market of India is dynamic, organized or formal housing finance accounts for approximately only one-fourth of the total capital expended in housing in India, and caters largely to the upper income groups. The huge scope in housing for low and moderate income (LMI) households offers much to be deliberated upon for creating an inclusive housing finance sector. It is for these reasons that mortgage lending is a growing business in India with enormous opportunities.

This chapter undertakes a review of the structure and development of the housing finance sector in India which is the first objective of the present study. The objective is addressed through Sections 4.2 to 4.6. Section 4.2 traces the progression of housing finance in India through the planning process since 1951. Sections 4.3 and 4.4 analyze the impact of government involvement in the housing and housing finance sectors in terms of its achievements and failures. Section 4.5 outlines the structure of housing finance sector in India in terms of its institutional framework. With the view to provide an overview of the

current market of housing finance in India, Section 4.6 discusses the performance of commercial banks vis-à-vis housing finance companies. The second objective, that is, examination of the cross-country structures and systems of housing finance, is addressed in Section 4.7 of this chapter.

SECTION 4.2

EVOLUTION OF HOUSING FINANCE IN INDIA UNDER THE PLANNING PERIOD

The initial expansion of housing finance in India was the outcome of government housing policies. Its evolution can be traced from the successive Five-Year Plans. For long, the focus was on centralized approach to housing development. The government viewed housing within a social perspective, unlike the developed countries which viewed housing as an economic good with important forward and backward linkages with the rest of the economy. Failure to recognize the economic implications of housing has been one the reasons for the slow pace of improvement in the housing situation in India. However, in the present times, the situation has undergone a change and the successive governments have come to realize the potential of housing activities and its contribution to economic development. It is now recognized as a catalyst that improves the quality of life and has significant positive impact on generation of additional employment, income, output and savings. In the recent times government has come to realize that 'housing for all' is not a matter of choice but rather an integral part of achieving the plan objectives of social and economic equality.

Section 4.2.1: 1951 to 1969

First Five-Year Plan (1951-56)

The first five-year plan saw the introduction of housing in the national policy framework, emphasizing affordability as the fundamental concern (UN-Habitat, 2008). Housing being viewed from a social perspective, government support came in the form of subsidies and loans. The government emphasized the importance of housing by establishing a separate Ministry of Works and Housing and by creating the National Buildings Organization (NBO), which was to function as an apex organization for collecting, tabulating and disseminating

statistical information on housing and building construction activities. Much of the housing effort during the 1st five-year plan period came in terms of minimum housing standards being set as the target and government making the budgetary provisions for the same.

Second Five-Year Plan (1956-61)

The second plan reinforced the action plans laid down by its precursor, increasing the targets for housing provisions under various schemes. The government brought about changes in its approach towards the housing problem. Instead of the policy of centralized provision of direct loans for housing to low-income groups, it started providing assistance to state governments for developing low-income housing with greater focus. This originated the present day State Housing Boards (SHBs). In 1959, the central government introduced a scheme for the state governments which offered loan assistance for a term of ten years. These loans were extended with the purpose of assisting state governments in land acquisition and development so that sufficient land could be made available for building cities.

Third Five-Year Plan (1961-66) and Three Annual Plans (1966-69)

Realizing the need for organized and well planned approach to housing, the government, during the 3rd Five-Year Plan and the three annual plans emphasized on planned development and land acquisition, especially for urban regions. While continuing with the housing and subsidy schemes of the previous plans, the government re-emphasized the need to direct them towards the low-income groups. The assistance to the SHBs' was increased to improve the target achievements in their respective states.

It is evident from the above enumeration that since the beginning of the planning period, government role was envisaged to be dominant and crucial in resolving the housing problem of the poor and low income households. Such an approach betrays the typical mindset of the policy makers of considering housing nothing beyond a mere extension of the primary human needs after food and clothing. The lack of housing was seen purely as a deprivation just like malnutrition. There was complete failure in comprehending the productive nature of housing in terms of its efficiency-enhancing influence on the inhabitants and its multiplier effects for the macro economy. The lack of imagination on the part of government officials was apparent in its failure to visualize any role for the private players in improving the housing situation in India.

Section 4.2.2: 1969 to 1985

Fourth Five-Year Plan (1969-74)

Notwithstanding the efforts made in more than three plan periods, the anticipated results did not fructify. The government could not make much progress in ameliorating the housing problems of the large majority of the low income households; it also had to grapple with the slow paced growth of housing stock in the face of a rapidly growing population during the 4th Five-Year Plan period between 1969 and 1974. State provision of subsidized housing finance was not adequate to meet the growing challenges. It was then that the government sought to promote private and cooperative housing schemes by providing fiscal support (UN-Habitat, 2008). The greater part of concrete action however remained within the public sector.

The policy makers also recognized that availability of concessional housing credit to households belonging to low income groups would help augment funds for housing by encouraging beneficiary households to pool in their savings. Realizing the need to provide housing finance to the low income households rather than rely entirely on provision of subsidized housing, the government in 1970 set up the Housing and Urban Development Corporation (HUDCO) under the Companies Act 1956 as a fully owned enterprise of the Government of India. The primary focus of HUDCO was to contribute meaningfully to the provision of housing and urban infrastructure by providing preferential treatment to the socially marginalized households. It was assigned the task of providing housing finance to the low-income groups by designing suitable loan contracts that offered lower interest rates and longer repayment terms. Among the main objectives of HUDCO was the provision of long term finance for construction of houses for residential purposes and to undertake urban development programmes with the purpose of reducing congestion in cities. It provided financial assistance by subscribing to bonds and debentures issued by the various SHBs and also provided consultancy services. The government also realized the need to redirect population from large cities to smaller ones to avoid congestion and sought to disperse population through the creation of smaller townships.

Fifth Five-Year Plan (1974-79)

The 5th Five-Year Plan saw the establishment of India's first retail housing finance company, namely, Housing Development Finance Corporation (HDFC) in 1977. It was believed that the specialized institution would provide a mechanism to channel household savings and

funds from the capital market to flow into the housing sector. The main aim of HDFC was to promote home ownership by providing financial assistance to individuals, groups, cooperative societies, and to companies for providing staff housing. This was perhaps the first edifice of modern housing finance sector and a successful move of the government.

The 5th Five-Year Plan also witnessed the adoption of the contentious Urban Land (Ceiling and Regulation) Act (ULCRA) 1976, which was passed with the intent of discouraging the concentration of urban land holdings, enabling land acquisitions by the government and promoting an equitable distribution of available land. It was believed that the law would release more urban land for construction of houses for the low and middle income households.

Sixth Five-Year Plan (1980-85)

To counter the predicament of ever-rising urbanization, the Sixth Plan put the thrust on the provision of more housing in small and medium-sized towns. The government launched the programme of Integrated Development of Small and Medium Towns in order to construct roads, bus stands, markets, shopping complexes and undertake minor civic works. Moreover, the government also encouraged setting up of industries and commercial hubs in the small and medium towns with a view to generate employment opportunities and thereby keep population from migrating to larger cities for jobs. The government also tried to improve the living conditions in the slums by providing *in situ* facilities, particularly, pertaining to basic sanitation facilities and drinking water. Several other housing finance companies also ventured into the market during this period. These include, for example, Dewan Housing Finance Limited, Gujarat Rural Housing Finance Corporation, LIC Housing Finance Limited, Can Fin Homes, SBI Home Finance, PNB Housing Finance, etc.

Section 4.2.3: 1985 to 2002

Seventh Five-Year Plan (1985-90)

The inadequacy of the public sector in the provision of housing for the growing masses dictated a radical transformation in government policies. It was felt that house construction was best left to the private sector while the government played the promotional role of a facilitator. The 7th Five-Year Plan document for the first time recognized the contribution of housing towards improving productivity, generating employment opportunities and bracing

economic activities through its forward and backward linkages with a vast gamut of industries.

In 1988, when the UN General Assembly espoused the Global Shelter Strategy, it gave the necessary impetus to India in its housing efforts (UN-Habitat, 2008). It materialized in the form of the drafting of the first National Housing Policy (NHP). The National Housing and Habitat Policy (NHHP) was announced by the government in May 1988. Its objective was to create an environment that would enable comprehensive growth of the housing sector. Its long term goal was to eradicate homelessness and to promote housing services in a planned manner for all sections of the society, particularly the weaker and backward classes, for which the government is a direct provider of housing (Ministry of Urban Development). It sought to integrate the efforts of various agencies such as government at different levels, the cooperative sector, the community based financial institutions, and the private sector.

The year 1988 also witnessed another development in the form of establishment of the National Housing Bank (NHB). NHB was entrusted with the task of promoting and regulating the housing finance companies and also to mobilize additional resources for the housing sector. During the same period, while more housing finance companies were promoted, commercial banks remained aloof from housing finance activities given the typical mismatch between maturity term of assets and liabilities for them.

Acknowledging the problems of the urban poor, the seventh plan introduced an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP). Moreover, in order to augment mass housing projects, the government offered incentives to private builders to construct homes for the lower income groups.

Eighth Five-Year Plan (1992-97)

The first National Housing Policy was endorsed by the Parliament in 1994, during the 8^{th} Plan period. The complementarities of private and public sector effort in housing became more defined as the government discerned its role as better suited to the provision of housing for the low-income groups while leaving the major job in private hands. The plan recognized that the pace of urbanization would always outdo any effort of the government to meet its infrastructure and housing needs and therefore more funds were concentrated on upgrading urban areas.

During the eighth plan period reforms addressed to the financial sector in general and the mortgage market in particular were given impetus, with the special emphasis on enhancing credit flow to the housing sector through various housing finance institutions.

Ninth Five-Year Plan (1997-2002)

The 9th Five-Year Plan advocated further reforms with particular emphasis on market orientation. The National Housing and Habitat Policy, 1998, was formulated with a wider scope to incorporate issues related to sustainable development and infrastructure development, and a greater emphasis on establishing effective partnership between the private and public sectors for shelter delivery for all. There was an increased focus on the private sector participation in the area of land assembly, housing construction, and investment in infrastructure facilities for which the government proposed to undertake regulatory reforms. The government broadened the concept of affordable housing by focussing on housing both on rental and ownership basis. The NHHP 1998 also sought to remove legal, financial and administrative barriers to enable more people to have easy access to tenure, land, finance, and technology.

An important shift in the approach of the government was to address the issues of housing from the view point of demand rather than having a supply orientation. For instance, in place of subsidy-based housing schemes, the government shifted to cost recovery-cum-subsidy schemes for housing. It adopted more practical approach of finance by involving micro-finance and self-help group programmes.

In the year 1999, the central government repealed the controversial Urban Land (Ceiling and Regulation) Act 1976 which was a failure in bringing about any results as envisaged by the government. Following the financial deregulation, the 9th plan period witnessed the entry of commercial banks in the housing finance sector in a major way. This helped to improve accessibility to housing finance in a significant manner.

Section 4.2.4: 2002 to 2017

Tenth Five-Year Plan (2002-2007)

The 10th Five-Year Plan made extensive efforts to enlarge the resource base and to augment the housing delivery mechanisms in the urban centres through ‘innovative institutional mechanisms’. It laid further stress on market-friendly reforms in taxation and infrastructure

in order to increase capital spending on housing. Considerable progress was witnessed on the housing finance front, with private housing finance institutions and banks catering to the mortgage credit demands of households at market rates.

Following the suggestions of the Planning Commission for the modification of the housing policy, focused efforts were made to incorporate the poor and vulnerable groups of society within affordable housing programs. The central government sponsored Valmiki Ambedkar Awas Yojana (VAMBAY) launched in 2002 is a case in point. The objective of this scheme was to improve the living conditions of the slum dwellers in the urban areas. Under the scheme the government facilitates the construction and upgradation of the dwelling units in the slum areas and also provides health facilities (Desai, 2002).

The most significant development during the tenth plan was the launch of Jawaharlal Nehru National Urban Renewal Mission (JNNURM) by the Government of India in 2005 with a central outlay of Rs.50000 crores. 63 cities were selected for investment under this programme. The considerations behind the Mission were to augment infrastructure and implement reform measures that would smoothen and expedite the housing delivery systems. The two sub-missions within JNNURM were Urban Infrastructure and Governance, and Basic Services to the Urban Poor (BSUP). In the case of non-mission towns, the centrally supported scheme of Integrated Housing and Slum Development Programme (IHSDP) was also launched during the plan period (December 2005). The schemes of BSUP and IHSDP were envisaged to replace the earlier schemes of VAMBAY and National Slum Development Programme (NSDP). Further, the NBO was restructured in 2006 to adapt to the changing requirements of targets and beneficiaries under various housing and poverty alleviation schemes of the Ministry of Housing and Urban Poverty Alleviation (MHUPA). NBO is mandated to coordinate the appraisal, sanctioning, monitoring and review of housing projects under BSUP, IHSDP, and the Rajiv Awas Yojna (RAY), which was formulated in 2009.

At the end of the 10^{th} five year plan, the estimated housing shortage in urban areas was to the tune of 24.7 million housing units, of which 99% comprised housing shortage in the segments of EWS and LIG. The National Urban Housing and Habitat Policy (2007) sought to boost housing activities further by streamlining rules and regulations governing the sector. It also sought to remove legal barriers in achieving the goals of the policy, with a focus on

'affordable housing for all'. The policy undertook designing of innovative housing finance schemes for the EWS and LIG sections, following which, the government launched the Interest Subsidy Scheme for Housing the Urban Poor (ISHUP). The purpose of ISHUP was to complement the affordable housing projects under the JNNURM. Under the ISHUP a subsidy of 5% per annum was to be granted for loans up to Rs.1 Lac, taken during the 11th five-year plan. The repayment period of the loan is kept at a liberal 15 to 20 years and borrowers are free to choose between floating and fixed rate loans.

Eleventh Five-Year Plan (2007-2012)

The 11th Five-Year Plan had the objective of improving the quality of urban life. In order to achieve this goal, the plan sought to improve housing stock through urban renewal, slum improvement, and development of new housing stock in existing cities and building new integrated townships. As part of the Bharat Nirman Program which had the target to construct six million houses from 2005 to 2009, the eleventh plan focused on the poorest of the poor to address their housing woes.

Twelfth Five-Year Plan (2012-2017)

The document on the 12th Five-Year Plan suggests increased focus on improving the quality of urbanization by modifying the JNNURM programme to suit the next level of urban renewal. The plan document suggests integration of the new JNNURM and RAY programmes. It advocates a planning and improvement approach of 'whole city' rather than focussing on slums, in isolation. The thrust on holistic approach is evident in the emphasis on developing the 'soft infrastructure' of a city by incorporating social aspects rather than focussing only on hard infrastructure such as zoning and engineering plans. The aim is to achieve inclusive growth. The stress on focused approach is further underlined by the recognition of the need for tailor-made housing solutions instead of the approach of 'one size fits all.'

SECTION 4.3

ACHIEVEMENTS OF GOVERNMENT MEASURES FOR THE HOUSING SECTOR

The gradual transformation of housing finance in India from a system predominated by direct provisioning of housing and subsidized housing credit by the government to the present day demand driven vibrant system is a combination of success on some counts and failure on some other, as discussed in the following sections.

The success of the policy of encouraging private initiative in the housing sector is visible in the rapid growth in the private investment in housing development. It led to the emergence of several real estate developers. Favourable factors such as, a more liberalized economy, emergence of information technology-enabled services, permission to foreign direct investment in real estate, increased employment opportunities, rising personal incomes and growth of second tier cities, have had reinforcing effects that boosted the housing sector. Moreover, macro economic climate that was conducive in terms of lower inflation and cheaper credit availability also enabled rapid growth of the housing sector.

The unprecedented growth in investment in housing under the five-year plans is apparent in Table 4.1 which highlights the several hundred folds rise. This development is the result of the housing sector being given the status of priority sector by successive union governments that have been increasing the allocations to the sector in each plan.

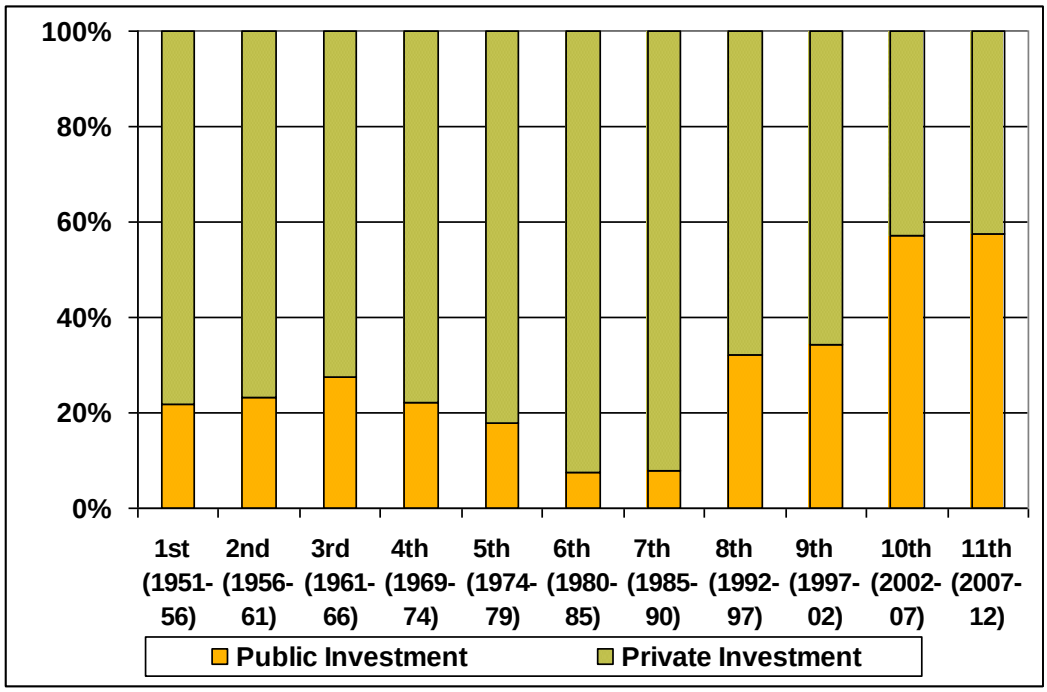
The share of public investment in housing increased from approximately 20% to nearly 60% over the period covering the first five-year plan to the eleventh five-year plan (Fig. 4.2). This reflects the government efforts in the form of affordable housing programs and the heavy expenditures on urban renewal under the JNNURM. The relative share of public and private investment in housing, particularly in the last few five-year plans is an indication of the growing emphasis on public-private partnership in the housing sector.

Table 4.1
CAPITAL EXPENDITURE ON HOUSING UNDER FIVE-YEAR PLANS (INR BILLION)

Plan Period	Public Investment		Private Investment		Total Investment	
1st (1951-56)	2.50		9.00		1.50	
2nd (1956-61)	3.00	(20%)	10.00	(10%)	13.00	(13%)
3rd (1961-66)	4.25	(42%)	11.25	(12.5%)	15.50	(19%)
4th (1969-74)	6.25	(47%)	21.75	(93%)	28.00	(80%)
5th (1974-79)	7.96	(27%)	36.40	(67%)	44.36	(58%)
6th (1980-85)	14.91	(87%)	180.00	(494%)	194.91	(439%)
7th (1985-90)	24.58	(65%)	290.00	(61%)	314.58	(61%)
8th (1992-97)	315.00	(1280%)	660.00	(227%)	975.00	(310%)
9th (1997-02)	520.00	(65%)	990.00	(50%)	1510.00	(55%)
10th (2003-07)	*4150.00	(798%)	*3113.00	(314%)	7263.00	(481%)
11th (2007-12)	**5073.18	(22%)	#3735.60	(20%)	8808.78	(21%)

Source: NHB Trend and Progress Report, 2003. Figures in brackets are growth rates over the previous plan period. *Estimated figures as per 10th Plan Document. **11th Plan Document on Urban Housing. # Estimated as 1.2 times that of the 10th Plan figure.
(Reference: Manoj P. K., 2010, European Journal of Economics, Finance and Administrative Sciences.)

Fig. 4.2 SHARE OF PUBLIC AND PRIVATE HOUSING INVESTMENT UNDER THE FIVE-YEAR PLANS



Source: Computation based on data displayed in Table 4.1.

The shift in the approach of policy makers towards housing has enabled voluminous growth of the primary market of mortgage credit and has lent efficiency to the housing finance system. Moreover, the housing sector has received a large number of fiscal and monetary incentives that encourage greater generation of savings to flow towards house purchase. The salaried class has benefitted in terms of housing credit at reasonable rates of interest along with fiscal incentives in the form of tax exemptions on interest payments and principal repayments.

The achievements of the various housing projects can be gauged from the fact that under the scheme of BSUP and IHSDP, the MHUPA approved 477 and 966 projects respectively. Three key reforms directed towards the poor have been identified by the MHUPA. These include, making allocations in the budgets of local governing bodies towards BSUP; earmarking a minimum of 20 to 25 percent of developed land for housing projects for EWS/LIG category and provision of seven basic entitlements/services, namely, land tenure, housing at affordable cost, water, sanitation, health, education and social security. The progress under these reforms is manifested in the fact that by the end of the year 2010, 55 cities had undertaken to allocate funds for BSUP in their local body budgets and 50 cities in 17 states had issued directives to reserve developed land for EWS and LIG housing. The progress under the BSUP and IHSDP schemes is presented in Table 4.2.

Table 4.2

CUMULATIVE PROGRESS UNDER THE BSUP AND IHSDP SCHEMES up to 31.12.2010.

Projects approved	1443
No. of Cities/Towns covered	884
No. of Dwelling Units sanctioned	15.4 Lacs
No. of Dwelling Units completed	3.7 Lacs
No. of Dwelling Units in progress	4.5 Lacs
No. of Dwelling Units occupied	1.8 Lacs

Source: MHUPA Annual Report, 2010-11.

The cumulative achievements of HUDCO are presented in Table 4.3. A significant move by HUDCO is the lower interest rates of 7 to 7.5 percent for EWS and LIG housing sectors.

Table 4.3

CUMULATIVE ACHIEVEMENTS OF HUDCO up to 31.12.2010

Schemes sanctioned	16282
Total Project cost	Rs.507231 Crores
Loans sanctioned	Rs.108725 Crores
No. of Dwelling Units constructed	145.29 Lacs
No. of Sanitation Units constructed	66.87 Lacs
No. of Towns covered	1853

Source: MHUPA Annual Report, 2010-11.

The emphasis on institutional development has also fructified in terms of enhanced flow of funds to the housing sector. Regulatory changes permitted the commercial banks, with their vast network of branches to increase their retail lending activities, unleashing monetary resources for housing finance. Increase in the number of lending institutions, be it banks or housing finance companies instilled greater competition in the system with its characteristic benefits. Refinance facility extended by the NHB too has provided lending institutions with the necessary liquidity as well as the scope for profits. It would not be an overstatement to say that easy availability of housing finance at unprecedented low rates of interest has been the single most significant factor that has driven the growth of the housing sector.

In the context of low income housing[16], a NHB study (2010), 'Building Homes, Financing Homes', reports strong evidence that the low income housing market in India has grown rapidly in the past couple of years. The largely under-served low income, informal sector urban households offer huge potential for profitable supply of housing owing to its sheer size. There is a growing interest among the developers, including large, established and corporate developers, and new housing finance companies in this segment. Availability of housing finance for these households has shown improvement, lending support to the fact that they are a commercially viable segment, provided financial products and construction technologies are suitably structured and modified.

16. Low income housing here, refers to housing in the price range of Rs.3-7 lacs and a monthly household income of Rs.7000 to Rs.15000.

The financial assistance of Rs.12034.79 crores extended by NHB to the housing sector in the year 2010-11 was a record high since its inception in 1988. 35% of the total refinance disbursed during this year was for the loan size of below Rs.5 lac and 49% towards rural housing. This reflects the focus on EWS and LIG housing segments. Overall, there is a "clear shift from high-end housing finance options to 'affordable housing segments' towards expansion of the housing finance market" (NHB, 2011).

Several new housing finance companies are entering into low income housing segment with a thrust on continuous innovations in the areas of risk assessment, recovery mechanisms, etc. These HFCs include Micro Housing Finance Corporation Limited (MHFCL), Dewan Housing Finance Limited (DHFL), Gujarat Rural Housing Finance Corporation (GRUH), Self-employed Women's Association Finance (SEWA), MAS Rural Housing and Mortgage Finance Limited, Mahindra Rural Housing Finance Limited (MRHFL), etc. The average loan sizes of these firms range from 1.72 lacs to 6.2 lacs (Source: Monitor Company Group, a study commissioned by NHB).

In 2007 the RBI constituted a Technical Advisory Group to develop Housing Start-Up Index (HSUI). This is because, internationally, housing investment is regarded as one of the leading economic indicators owing to its strong multiplier effects on a vast array of sectors. "The number of housing starts during a given period reflects the institutional response in a country to the current demand and supply situation in the market, as reflected through operationalisation of the existing building permits into actual starts" (Technical Advisory Group on Development of HSUI, RBI (2009). The National Building Organization (NBO), along with the RBI has been identified to operationalize the HSUI in India. The HSUI would trace new housing construction at different sites in various cities. It would act as a core indicator of the direction of investments in the housing sector and guide housing developers in undertaking building projects according to the construction activities going on across the cities.

SECTION 4.4

LIMITATIONS OF GOVERNMENT MEASURES FOR THE HOUSING SECTOR

Section 4.4.1

Despite increased housing investment, the government has not achieved the desired level of success. Government seems to have followed the method of 'trial and error' as far as successive housing programmes for the poor are concerned (Wadhwa, 1988). During the initial years of the planning period, influenced by the housing experience of the developed countries, the programmes have focused on slum clearance and rehabilitation of the poor through direct housing provision with a significant element of subsidy.

While the housing schemes designed by the government for the urban poor had 'housing need' as the guiding principle, there were several inconsistencies in policy orientation. The housing schemes for the poor, while claiming to adhere to the 'needs' of the poor households, have been linked to the household income rather than to its size. The ceilings for the dwelling units specified in terms of square feet area in the housing schemes sponsored by the Government of India and those financed by the HUDCO vary income class-wise (Wadhwa, 1988). For instance, while the floor area is set to a lower standard for the LIG housing schemes, that for MIG housing is higher. Even in terms of tenure of housing, there is an income bias in the sense that for the lowest income groups, rental housing is deemed to be fit whereas for others, home ownership is sought to be provided. Such an approach restricts the horizon within which solutions can be visualized. While the rationale behind considering rental housing fit for the lowest income households is that they are seen incapable of home ownership, it shuts out concepts of affordable alternative and innovative housing designs from being considered as conceivable solutions. For instance, efforts are being made around the world to link the need for low cost and environment friendly yet profitable housing with the accumulation of waste and scrap material available locally. For example, the method of using scrap paper recycled and converted into pulp, mixed with organic solution and transformed into prefabricated economical construction panels is a case in point (Dell, Social Innovation Challenge). The prefabricated panels are structurally strong and self supporting with a life expectancy of more than 50 years, and are also termite proof, and fire and water

resistant. These efforts are then linked with micro-finance and cooperative efforts to provide housing to the homeless. Borrowers pitch in the supply of scrap material needed as raw material and their labour services.

Mayo, Malpezzi and Gross (1986), in the context of developing countries, point towards the dichotomy between housing-needs as assessed by planners based on 'minimum acceptable physical standards' of housing and realistic assessment based on resource availability and households' ability and willingness to pay for housing. India is no exception to this. The housing programmes of the government prescribed standards of housing that were unaffordable for the target households at the prevailing prices. There was clearly a need to reconcile housing need with housing demand.

Section 4.4.2

In the efforts to bridge the gap between need and demand, the policy makers, in the 1960s and 1970s, focused on effecting shifts in the demand and supply curves of housing. On the supply side, efforts were made towards finding cost reducing technological solutions for housing. On the demand side, the government adopted measures such as provision of subsidized housing, concessional credit and rent control.

Despite the measures adopted, the government-sponsored housing programmes failed on several counts, in practice. Firstly, the housing programmes were unable to cover a major segment of the population and secondly, the actual beneficiaries were not those who belonged to the target group. It is a commonly known fact that often subsidized housing is misappropriated by the relatively higher income group households who did not belong to the target group but who otherwise found market rate housing unaffordable. There are also innumerable cases of subsidized housing being rented out by low income households with the purpose of augmenting incomes. This was because households found themselves forced into house purchase even though their economic condition did not permit them to do so. Thus, while housing units were claimed under the subsidy schemes, the beneficiary households continued to live in make-shift dwellings. It is evident from these experiences that housing is secondary in the priorities of the poor households. Under such circumstances the predicament for the government is that even if the proportion of subsidies is increased to

improve housing affordability, it does not guarantee that the houses would not be let out or rented for income.

Thirdly, the slum clearance programmes generally sought to reinstate the poor at the peripheries of the cities, overlooking the issue of nearness to employment opportunities and transportation implications. The result was that rehabilitation programmes showed little success. The poor households eventually ended up resettling in slums and squatter settlements in some other areas within the cities. Thus, slum clearance only displaced rather than eradicate slums. These views find mention in Mayo, Malpezzi and Gross (1986) who further point out that slum housing is a major part of the poor people's capital stock and often informal housing is of good quality; there is therefore little economic rationale in destroying this capital without providing appropriate alternative solutions.

Section 4.4.3

After several failed attempts at slum clearance and the non-sustainability of the subsidy based housing programmes, the government in due course realized the futility of the efforts and instead came up with the alternative approach of *in-situ* facilities. Rather than uprooting the poor from their slums, the government saw wisdom in improving the living conditions of the poor households by providing basic amenities like drinking water, sanitation and drainage facilities at the place where they resided, and increasing the security of tenure. However, the success of the *in-situ* programmes too has not been impressive. The financial provision for these programmes was inadequate and improvements in housing were at best short-lived due to poor quality of work and inappropriate location in some cases. Rising costs of construction, poor governance, and corruption were also responsible for the dismal performance of government housing programmes.

Under the sites and services approach, the government provided land and infrastructure to the urban poor but left it to the households to build dwelling units as and when their means permitted. The rationale behind the approach was to leave housing priorities to the need perception of the households rather than imposing it on them. It helps reducing costs as households can go for gradual upgradation of their dwelling units, using local materials. Moreover, such an approach was believed to motivate the poor households to upgrade their housing conditions by putting in their own efforts and savings rather than depending

passively on government provisioning of housing. However, in the case of sites and services programmes too often the sites remained unoccupied by the targeted households or were taken hold of by the relatively higher income groups.

Section 4.4.4

In the second half of the 1970s, the establishment of HUDCO and State Housing Boards (SHBs) led to greater reliance on demand based housing programmes. These institutions sought to provide financial assistance for housing but with the emphasis on cost recovery. Rather than a 'programme approach', there was a shift to 'project approach' so that issues of viability remained the guiding factor (Wadhwa, 1988). The shift in the approach coincided with the entry of the World Bank in the housing sector which reinforced the tenets of cost recovery, affordability and replicability.

One of the problematic areas with the projects approach was the desperate aim to cover as many target households as possible with the result that the projects were planned on a large scale. This made land acquisition in the central locations impossible. The sites chosen in the peripheral areas out of compulsions of land costs were inappropriate, imputing higher opportunity costs.

The policy of reducing subsidy component through cross-subsidization of housing also did not bring the expected results as it was misconceived in practice. In order to generate monetary surplus out of sale of high priced land to households belonging to higher income groups and to commercial complexes, large plots of land was made available for them. The consequence was that it raised the neighbourhood value of the area which percolated to the smaller plots, luring the poor households to sell them.

Section 4.4.5

It may be said that the primary cause of failure of various efforts of the government in improving housing conditions of the poor lies in the lack of effective demand for housing in the face of the more basic priority of food. Neither the need based approach nor the demand based approach can meet much success in such circumstances. Even as the housing projects for the low income households adopted housing affordability as the guiding principle, the measure of affordability was set arbitrarily, assuming that they could spend 20 to 25 percent

of their income on housing. Such rules of thumb, set in relative terms ignored the distribution of income, the absolute levels of income of the households and their family sizes. At the same time, the peculiarity of the problem owing to the fixity of the total availability of land and the speculative demand for land makes the problem of housing for the poor all the more difficult to resolve. The trickle down effect would entail a long wait and also be limited to only those who could afford to pay for housing even though of poor standards.

The above facts imply that the problem of housing for the poor cannot be addressed in isolation from issues of employment opportunities and income distribution. The policies of urbanization and industrialization should be oriented towards incorporating housing problems of the poorer sections of the society so as to build an inclusive system. In the context of the housing shortages in the urban areas, the Planning Commission underlined the importance of creating employment opportunities in the semi-urban areas so that the issues of housing too could be tackled more easily (EPW, 2001). Pugh (1990) too asserts that "competition and inequality in housing systems are products of a wider economic inequality." In this context he suggests increasing the supply of housing across all income groups as per the distribution of income so that housing problems can be integrated with increase in national income, employment generation and economic development.

Section 4.4.6

Housing finance is essentially a facilitating mechanism. Its easy availability is one of the many factors on which the efficacy of the housing sector rests. However, in the absence of a smoothly functioning housing sector, that includes laws governing land use, rental housing and the like, the optimum potential of housing finance cannot be accomplished. In this context, Kapadia (1992) considers onerous legislations, time-consuming procedures and stringent urban land policies to be major constraints on the elasticity of housing supply in the face of rising demand for residential accommodation. Urban land policies restrict the supply of available land for housing construction. The increase in the supply of land is by itself a potent factor to improve accessibility and affordability for the urban poor and no amount of liberal housing finance can supersede it. The Confederation of Indian Industries too has cited availability and cost of land as the single most crucial factor affecting the cost of housing in India.

The Urban Land (Ceiling and Regulation) Act, 1976 sought to make more land available and affordable by increasing its supply in the market and establishing an efficient land market. However, the implementation of the ULCRA Act was far from satisfactory. The regulation encouraged evasive tactics by landowners and created artificial scarcity of land. Contrary to the expectations, housing sector became stagnant due to the astronomically high land prices. The Government of India has since, repealed the Act with the passing of the Urban Land (Ceiling and Regulation) Repeal Act, 1999. This freedom to landowners was expected to result into greater transparency and improve land availability for the housing sector.

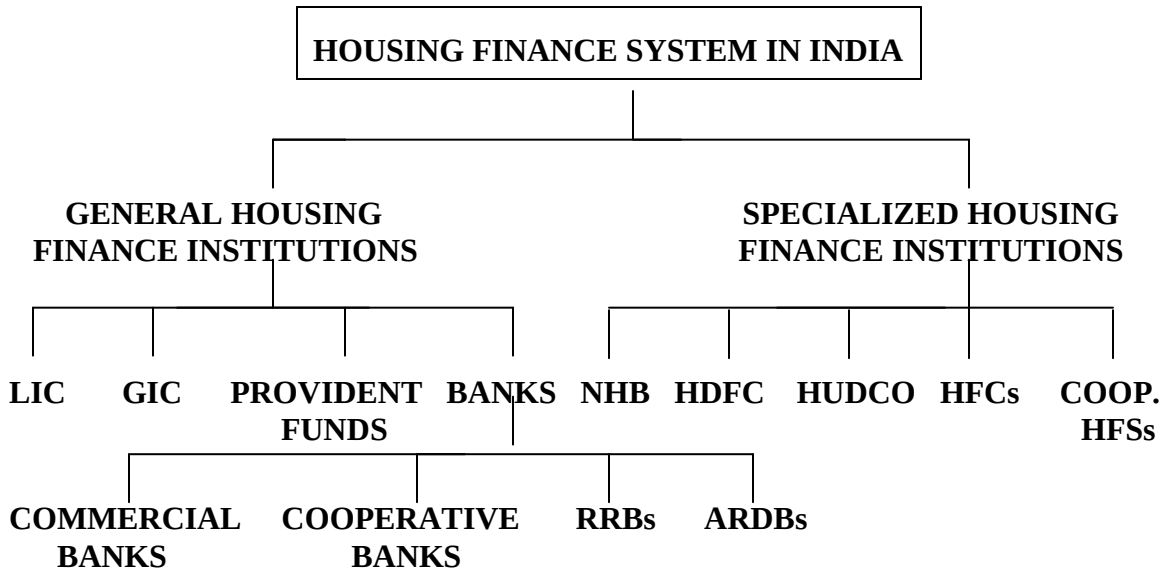
Kapadia also cites the ill conceived rent control legislation that "protects existing tenants at the expense of all future potential tenants by eliminating rental markets from functioning." Abuse of tenancy laws has discouraged renovation of buildings and availability of more houses on rental basis. Given the urban housing shortage in India, estimated at 26.53 million by the end of the 11^{th} five year plan, the maintenance, upgradation and efficient use of existing stock of houses cannot be ignored. It would not be improper to say that the absence of efficient rental markets reinforces the need for home ownership, which in turn, tends to magnify the demand for housing finance. Needless to say, this would result into higher cost of housing finance and inadequate availability of funds. It may be mentioned at this juncture that fiscal incentives by government for housing favour home ownership as against rental housing. Given the magnitude of housing shortage in India, it is important that the housing policy integrates the issues of rental housing in a conclusive manner.

Another important issue raised by Kapadia is the failure of planners and policy makers to recognize the importance of housing investment for economic development. The denial of the status of industry to the private housing sector in India greatly hampers resource mobilization. An industry status would bring about a major transformation in the outlook of the housing sector. It would inspire corporate culture and instill industry discipline. The author laments the decline in the public sector fund allocation for housing despite its growing need. This needs to be seen in the light of the fact that developed economies worldwide have used the principle of home-ownership as an anchor for the development of a free and democratic society and have explicitly stated that housing policies and the health of their housing finance institutions are major concerns of their government.

SECTION 4.5

THE STRUCTURE OF HOUSING FINANCE SECTOR IN INDIA

Easy access to institutional finance at affordable rates is a critical requirement for a dynamic housing sector. While several financial institutions are involved in providing housing finance, the need for specialized housing finance institutions for mobilization of resources and greater efficacy cannot be overemphasized, given the distinctive nature of housing finance. The broad structure of the Indian housing finance system is shown in the chart below. The housing finance system in India comprises the National Housing Bank (NHB), the apex housing institution which regulates the housing related functioning of other financial institutions such as the HDFC, HUDCO, LIC, GIC and a host of HFCs and commercial banks. Depending upon whether housing finance comprises their primary or secondary function, these institutions can be classified into two categories, namely, specialized housing finance institutions and general housing finance institutions (HFIs).



Section 4.5.1: General Housing Finance Institutions

The general HFIs are called so as they lend only a small proportion of their funds for housing. Either regulations do not permit them to lend beyond certain limits or their primary function is other than housing finance. The foremost among these is the Life Insurance Corporation of India.

1. Life Insurance Corporation of India and General Insurance Corporation

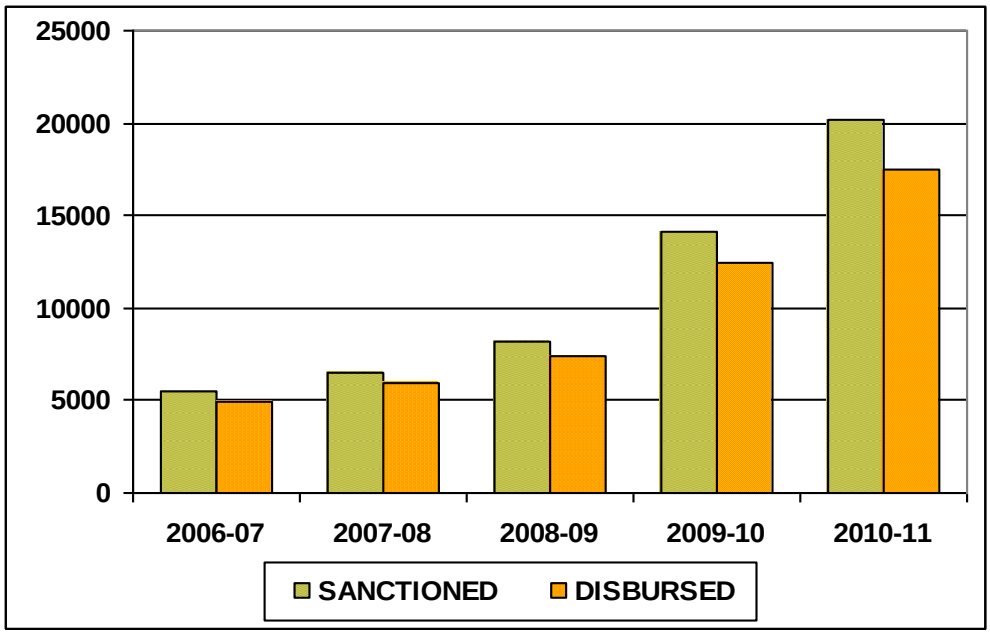
The Life Insurance Corporation of India (LIC) and the General Insurance Corporation (GIC) provide support to housing activity directly as well as indirectly (Vora, 1999). The former is statutorily required to invest 25% of its net annual accrual in socially oriented schemes which includes housing. LIC undertakes projects of public residential housing in selected cities. Both LIC and GIC grant loans for the rural housing programmes of the State Governments and State level Apex Cooperative Housing Finance Societies. LIC also subscribes to the bonds issued by HUDCO and the SHBs. It also lends to the NHB. Policy holders of LIC are also extended the facility of loans. LIC is presently the single largest institutional lender to the housing sector. It invests about 12% of its total credit disbursal to the housing sector largely indirectly through agencies and institutions as mentioned above.

In June 1989, LIC promoted the LIC Housing Finance Company Limited as its subsidiary. It was set up with the aim of supplying long term finance for purchase or construction of housing units to LIC policy holders in India. The outstanding home loans of LICHFL stood at Rs.27680 crores as on March 2008-09. The individual home loan disbursements of LICHFL for the year 2010-11 were to the tune of Rs.17512 crores. Fig. 4.3 highlights the individual home loans sanctioned and disbursed by LICHFL over the last five years. The disbursals exhibit more than 50% annual growth on an average. The outstanding home loans of LICHFL comprised 8% of the total market for formal housing credit as on March 2010.

The General Insurance Corporation started its housing finance related activities in 1977. GIC and its subsidiaries are statutorily required to dedicate 35% of their new funds in each year for housing purpose (Vora, 1999). These funds flow to the housing sector indirectly through loans to state governments, HUDCO and other development authorities. It invests in bonds and debentures of these authorities that undertake housing activities. The four subsidiaries of GIC, namely, the Oriental Fire and General Insurance Co. Ltd., the National Insurance Co. Ltd., the United India Insurance Co. Ltd., and the New India Assurance Co. Ltd., directly grant loans for housing construction. GIC established a separate housing finance subsidiary company, GIC Housing Finance Ltd., in July 1990 to lend to individuals directly. GIC provides funds for the operations of its housing finance subsidiary. The outstanding housing loans to individuals by GICHFL was to the tune of Rs.2920 crores as on March 2010, compared to Rs.2682 crores as on March 2009 registering a growth of 9%. These loans were

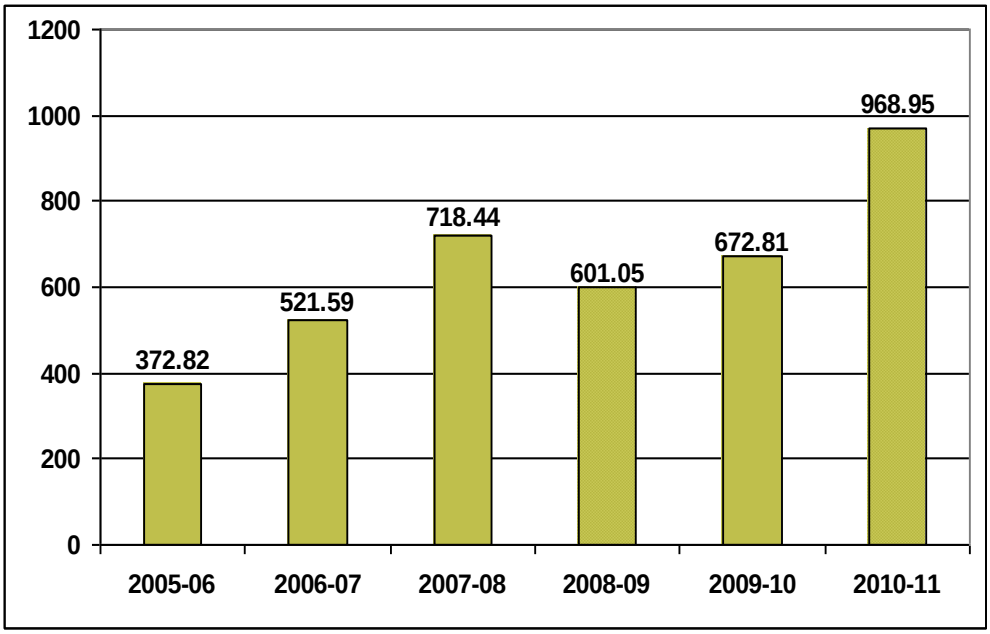
granted against equitable mortgage of property or any other acceptable collateral securities. The home loan disbursals of GICHFL grew at an average annual rate of 16% over the five years from 2005-06 to 2009-10. Fig. 4.4 depicts the home loan disbursals of GICHFL.

Fig. 4.3 INDIVIDUAL HOUSING LOANS BY LICHFL (Rs. Crores)



Source: LICHFL Annual Reports

Fig. 4.4 HOUSING LOANS DISBURSED BY GICHFL (Rs. Crores)



Source: GICHFL Annual Reports

2. Provident Funds

Housing finance funds are also made available by the Provident Funds to its subscribers. In a way they lend liquidity to the savings accumulated in the accounts of the subscribers. Provident Funds such as the General Provident Fund, the Public Provident Fund and the Contributory Provident Fund finance the house purchase of their members by granting advances or permitting partial withdrawals of their subscriptions. However, only about one per cent of their total accumulated funds are used for housing purpose.

The fundamental issue, as discussed by Vora (1999) is that these organizations have a flow of funds with long maturity period and are therefore ideal for the requirement of housing activity. However, the resource flow from these organizations is largely directed and inadequate for the magnitude of housing activity required in India.

3. Commercial Banks

The commercial banking sector consists of public sector banks and private sector domestic as well as foreign banks. Traditionally, the mortgage market in India had been dominated for many years by a diverse group of Housing Finance Companies (HFCs), with some focusing on specific regions in India and others targeting specific consumer segments. The banking sector was not involved in housing credit, its role perceived to be limited to providing for the working capital needs of industry and trade. Besides, commercial banks face the typical issue of mismatch between assets and liabilities with regard to their maturity term.

It was only after nationalization of banks in 1969, that social needs of the community were incorporated into the normal course of business of the commercial banks. The Reserve Bank of India initially encouraged the commercial banks to grant credit to the housing sector in the form of 'directed credit.' Under directed lending, the major portion was provided in terms of subscribing to the bonds and debentures of HUDCO and SHBs, which were guaranteed by the government, and in the form of direct lending to individuals and groups of borrowers belonging to the scheduled castes, scheduled tribes and the EWS (Desai, 2002). The remaining amount was contributed to HDFC. The nationalized banks also financed housing projects independently or through a consortium formed with other banks, HUDCO, LIC, SHBs and other bodies. Directed lending essentially meant that banks were mandated to lend to housing finance intermediaries at subsidized rates. This implied that banks lent at their

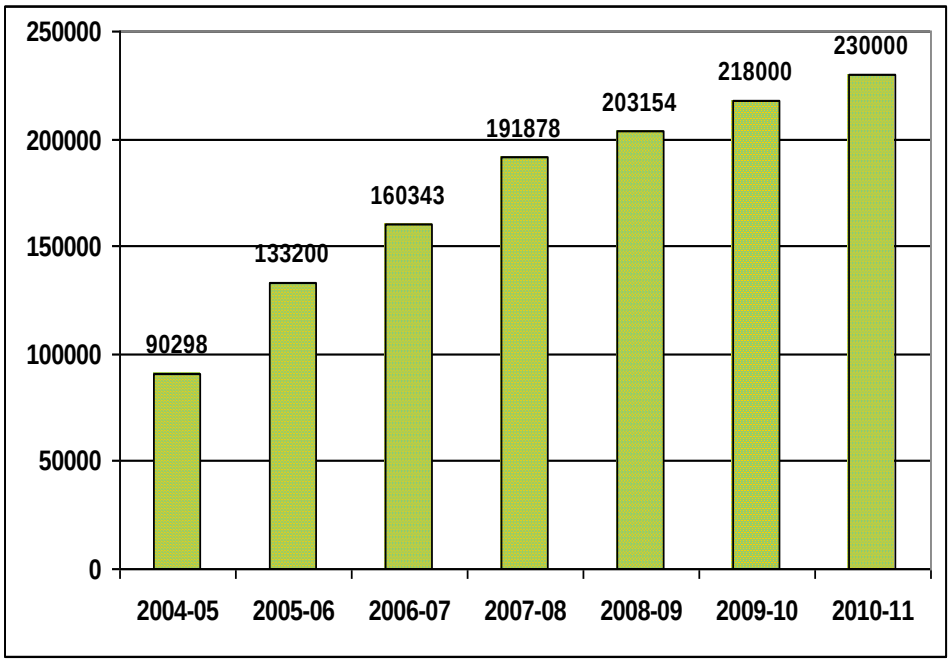
respective prime lending rates minus 150 basis points. This obligation was however revoked in 1998. But compared to the earlier directive of allocating 1.5% of the previous year's incremental deposits to housing finance, commercial banks were required to increase the allocation to 3% of the incremental deposits.

The commercial banks' housing finance activities take three discrete modes: direct lending in terms of home loans; indirect lending through approved housing finance companies or State housing boards which on-lend the funds; and investments in mortgage backed securities (MBS)[17] issued by housing finance companies (UN-Habitat, 2008). In 1990, the RBI recognized housing loans under priority sector lending. Housing loans up to Rs.20 lacs to individuals for purchase or construction of dwelling unit per family were eligible to qualify for priority sector lending. This limit has been relaxed to Rs.25 lacs for housing loans sanctioned on or after April 1, 2011. As regards indirect housing finance, individual loans are not permitted to exceed Rs.5 lacs to qualify as 'priority sector lending.' Outstanding housing loans under priority sector lending of commercial banks is shown in Fig. 4.5. For the year 2004-05, the outstanding loans were Rs.90298 crores which increased to Rs.230,000 crores in 2010-11, which is a growth of 22% per annum on an average.

In the late 1990s several factors like lower interest rates, decelerated industrial growth, lethargic credit off-take and the abundance of liquidity propelled the commercial banks into housing finance sector in a major way. Concern for profit margins necessitated the shift in focus from wholesale segment to retail segment (Karnad, 2004). Rising disposable incomes, lower interest rates and stable property prices made the environment conducive for housing loan business. Huge latent demand and low proportion of non-performing assets added to the attractiveness of the sector. With forecasts for robust growth, commercial banks became more active in the mortgage finance market in the last decade.

17. A MBS "is a funding and risk transfer technique where the mortgage loan originating financial institution or bank sells and/or transfers these loans to an independent special purpose company or vehicle in return for cash payment" (CGFS, 2006). Such companies issue bonds to investors spread across the length and breadth of the country and abroad, if permitted, and use the proceeds to purchase the mortgage loans from the originator. Investors bear the risk only to the extent of their investment in the bonds. The bonds are redeemed by the issuing companies from the cash inflows in the form of interest and principal payments, prepayment and other penalties.

Fig. 4.5 OUTSTANDING HOME LOANS OF SCBs UNDER PRIORITY SECTOR LENDING (INR Crores)



Source: RBI Publications

In 2009-10, almost 67% of the total outstanding housing loans were from commercial banks. Today, commercial banks are the largest mobilizer of household savings in India. The deposits of scheduled commercial banks as a ratio to National Income at current prices increased from 60.7% in the year 2002 to 86.6% in 2010. In terms of coverage, the banking system has the largest branch network, servicing an average population of 13800 per bank branch as on March 2010. In recent times, The RBI has extended banking license to many private players, both domestic and foreign.

Public sector banks ventured into the housing finance sector by setting up their housing finance subsidiaries. SBI House Finance, for instance, was set in April 1988. Similarly, Canara Bank set up Canfin Homes Limited to cater to the housing finance market. Likewise, the BOB Housing Finance Ltd. of the Bank of Baroda, Ind Bank Housing Financial Services of the Indian Bank, PNB Housing Finance of the Punjab National Bank, ViBank HFL of the Vijaya Bank, etc., were some of the housing finance companies floated by the parent banks. Most of these HFCs have merged with their parent organizations in the first half of the decade of 2000 with a view to consolidate their financial position.

4. Other Banks

As far as Cooperative Banks and the Regional Rural Banks are concerned, they have not been very active in lending for housing although they are allowed to. Agriculture and Rural Development Banks (ARDBs) are term lending institutions operating exclusively in the rural sector. Though housing finance was at first not within their scope, with the importance attached to the housing sector in the late eighties, especially after the setting up of the NHB, ARDBs started lending for housing in the rural areas. In the year 2000, there were 19 ARDBs in the country operating through their own branches or through those of the primary cooperative agriculture and rural development banks.

Section 4.5.2: Specialized Housing Finance Institutions

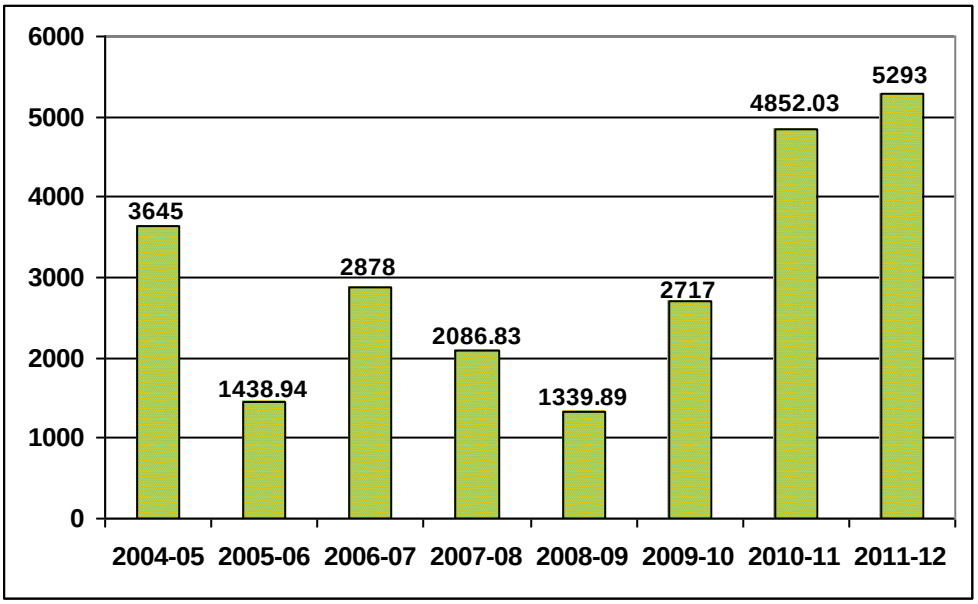
Specialized HFIs are those whose primary function is to lend for housing. While there are market oriented specialized HFIs involved in the business of home loans, the government has also set up specialized HFIs in the public sector with the primary purpose of improving the housing situation in India by undertaking housing projects, financing house construction/purchase activities and providing technical and financial assistance to various stake holders in the housing market.

1. Housing and Urban Development Corporation (HUDCO)

Housing and Urban Development Corporation is a specialized HFI set up in 1970 as a public sector apex body with the basic objective to fund state governments in infrastructure development and to serve the shelter needs of the poor sections of the society. It finances and undertakes housing and urban development programmes in the country by building satellite towns, providing finance to building materials industries, conducting research in low cost housing, etc. It also undertakes consultancy in the areas of housing and urban development.

With a special focus on the economically weaker sections of the society, HUDCO practices progressive interest rate policy wherein the rates of interest on home loans are varied between 4 to 15 percent, according to the income levels of borrowers. It extends the benefit of longer repayment facility for the poor. Out of its total disbursal of home loans, it ensures that a higher proportion goes to the poor. It thereby seeks to foster greater equity and distributive justice among households belonging to different income classes. Fig. 4.6 depicts the urban housing loans sanctioned by HUDCO since 2004-05.

Fig. 4.6 URBAN HOUSING LOANS SANCTIONED BY HUDCO (Rs. Cr)



Source: HUDCO Annual Reports

For the year 2010-11, HUDCO extended Rs.5105 crores as loans under its housing projects. For the fiscal year 2011-12 it has already shelled out Rs.2136 crores for the same so far and has sanctioned urban housing loan to the extent of Rs.5293 crores. It can be seen that in the past couple of years the volume of loans sanctioned is on a rise.

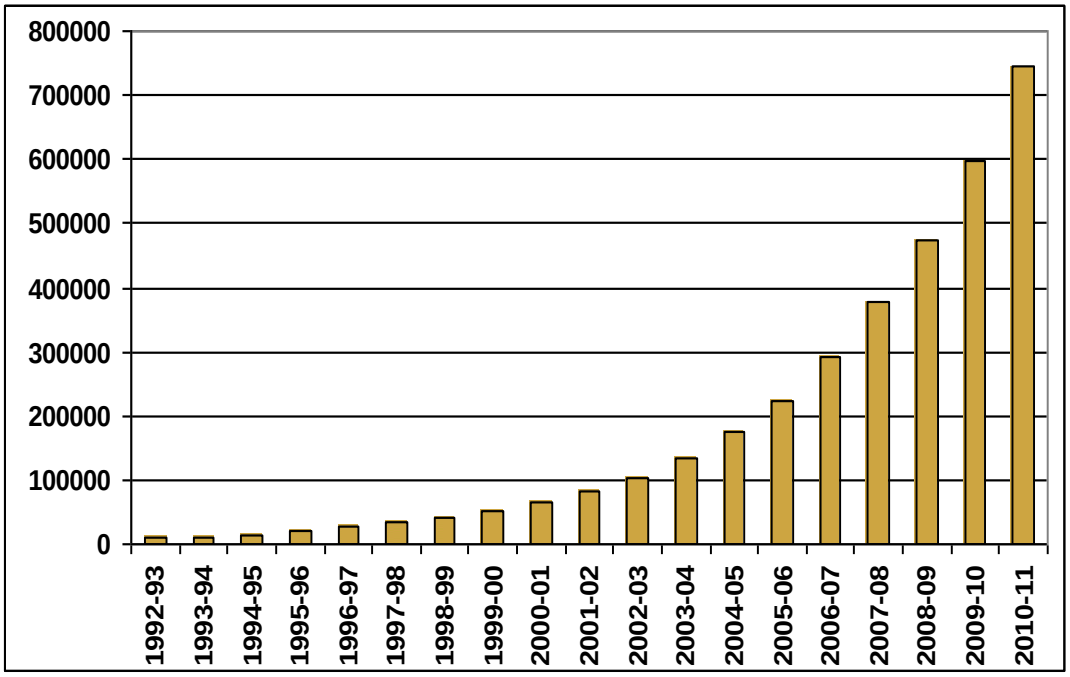
2. Housing Development Finance Corporation (HDFC)

One of the most important specialized HFI is the Housing Development Finance Corporation (HDFC) which was established in 1977 as a private sector institution with the purpose of providing long term loans to home buyers. In fact, private sector partaking in retail housing finance that provided housing loans to individuals, cooperative societies and the corporate sector, initiated with the establishment of HDFC. It raises long term funds from institutional sources. It has also entered into international syndication. The USAID and Aga Khan Foundation provide funds to HDFC for its housing finance activities. HDFC has played a significant role in promoting the establishment of housing finance institutions in India and in other countries.

The total approvals of housing loans of HDFC during the year 2010-11 was Rs.75185 crores against Rs.60611 in the previous year, recording a growth of 24%. The loan disbursal of HDFC for the year 2010-11 was Rs.60314 crores, representing a 20% growth over the

previous year's figure of Rs.50413. Approximately, 66% of these loans went to individuals while 33% to corporate borrowers. The home loans of HDFC accounted for about 17% of the institutional housing finance as on March 31, 2010. Fig. 4.7 portrays the cumulative investment of HDFC towards housing over the period from 1992-93 to 2010-11. It highlights the huge contribution of HDFC in the housing finance sector.

Fig. 4.7 CUMULATIVE HOUSING INVESTMENT OF HDFC (INR CRORES)



Source: HDFC Annual Reports.

3. Housing Finance Companies (HFCs)

The non-banking finance companies (NBFC) entered into the housing finance sector by incorporating as Housing Finance Companies. A NBFC is classified as a HFC if its principal objective is to provide housing finance or in the case of competing objectives, where housing finance figures as the major component of the company's asset.

In the mid and late 1980s, HFCs were set up as private limited companies like the Dewan Housing Finance Limited or as joint ventures with state governments like the Gujarat Rural Housing Finance Corporation, or bank-sponsored HFCs like Can Fin Homes, SBI Home Finance, PNB Housing Finance, etc. State owned insurance companies like the LIC and the GIC also set up their own housing finance subsidiaries. Some other HFCs are Global Home

Finance Ltd., Birla Home Finance Ltd., Tata Home Finance Ltd., Maharshi HFC Ltd., Parashwanath HFC, etc. While there are close to 400 HFCs, 95% of the total housing loans sanctioned by them are provided by 29 major companies. Some of the above mentioned HFCs were later merged with their parent banks or have been acquired by some other financial institutions.

The major sources of funds for HFCs include loans from banks, debentures, fixed deposits and refinance from the NHB. The problem of mismatch of asset-liability as they typically depended on public deposits and the general financial institutions for funds was resolved to some extent with the establishment of the NHB. The NHB provided refinance assistance which was synchronous with the repayment tenure fixed by the HFCs for the ultimate borrower. Nevertheless, this does not solve the issue of sufficient long term funds for the specialized institutions as there is a limit to which NHB can fund the entire portfolio of these companies. The eligibility for approval of refinance facility is that a minimum of 75% of the capital employed should have been by way of long-term finance for housing. Currently 54 HFCs are registered with the NHB.

4. National Housing Bank (NHB)

The growing presence of private sector institutions necessitated the establishment of a regulatory and supervisory agency specializing in the furtherance and financial functions of housing finance. This role was being played by the RBI. Despite the large number of agencies providing housing finance to individuals, the flow of funds through formal institutional finance was not found to be adequate. The housing sector was underserved in terms of the volume of loans to individuals, sufficient serviced land, building materials, and effective low-cost technology (Vora, 1999). The High Level Group on housing set up by the government under the chairmanship of Dr. C. Rangarajan, the then Deputy Governor of the RBI, along with the National Commission on Urbanization recommended the establishment of an apex housing bank. It was then that the National Housing Bank was instituted in July 1988 under an Act of Parliament (NHB Act 1987) to create the desired system.

The role of NHB can be divided under three heads, namely, promotional and developmental function, regulatory function and financial function. The fundamental responsibility of the NHB is to develop a healthy and self-sufficient housing finance system in the country. For

this, it sought to set up more local and regional level specialized institutions so as to have committed outlets for the supply of housing credit. These institutions, NHB believed, would be able to tailor formal credit for the differing needs of various income groups. Households with above average income could well be served by market based HFIs operating under mandatory prudential norms by the regulator. The below poverty line households on the other hand, would need an institutional approach to housing that not only incorporates the factor of subsidy but that also integrates employment and poverty alleviation programmes (Vora, 1999). The middle income group comprising the low and moderate income households, and constituting nearly half the total number of households also need to be catered. For this the NHB provides refinance schemes to encourage the financial institutions to lend.

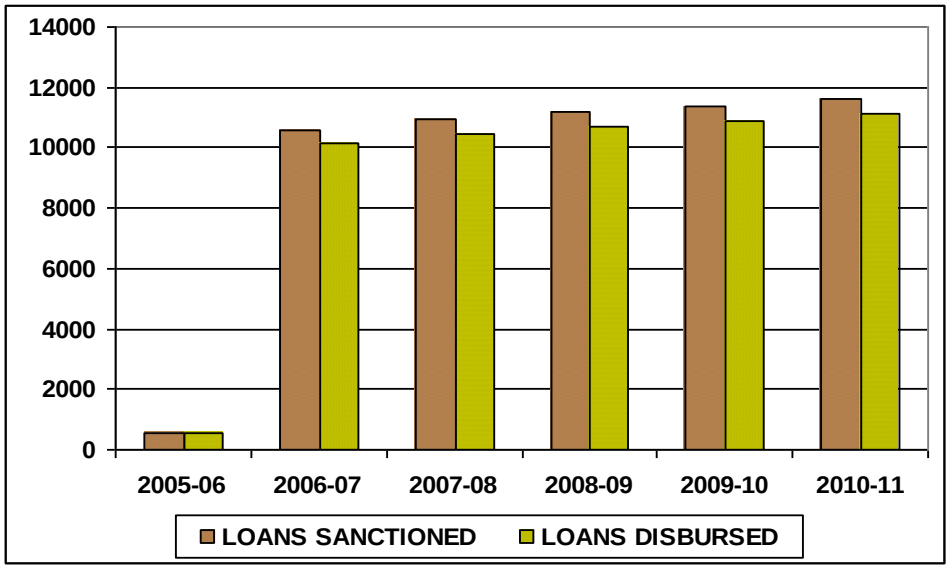
The NHB thus has the mandate to establish a regionally balanced network of housing finance outlets across the country so as to cater to different economic and social groups. It is the chief agency for the promotion and support of housing finance institutions. NHB is empowered to issue directives to HFIs so as to ensure healthy growth of business. It provides them financial and technical support. It can devise schemes for the mobilization of resources and expansion of credit for housing. The NHB issues guidelines to the HFCs on prudential norms related to income recognition, asset classification, provisioning for bad and doubtful debts, capital adequacy and concentration of credit investment.

The regulatory function of NHB is significant in the context of development of the housing finance system and its increasing integration with the debt and capital markets. As the sector became more market oriented it necessitated regulation so as to lend stability to the system. The NHB makes attempt to evolve a system of discretionary regulation with a focus on stability on three counts, namely, resource development, policy improvement and institution creation. To ensure systematic and smooth growth of HFCs, NHB has prescribed that they cannot accept deposits for periods below 12 months and exceeding 84 months. Only those HFCs with minimum net owned funds of Rs.2.5 million and a minimum acceptable credit rating are allowed to accept public deposits. Moreover, the prescribed limits for their acceptance of deposits from the public are set in relation to their net owned fund. Under the financial function, the NHB provides financial assistance to banks and HFCs, particularly in terms of refinance facility. The main focus of NHB is to engender large scale contribution of primary lending institutions as dedicated outlets for housing credit.

5. Cooperative Housing Finance Societies

Cooperative Housing Finance Societies represent the third category of institutions in the structure of institutional housing finance intermediaries, the other two being, the commercial banks and the HFCs. Among the three, cooperative societies are the most inclusive in terms of catering to the credit requirements of the common man; however they are becoming insignificant with each passing year (Manoj, 2010). Cooperative housing finance societies have a two tier structure that includes the apex cooperative housing finance society at the state level and the primary cooperative housing finance society at the retail level. There are 26 state level apex cooperative societies and more than 90000 registered cooperative housing finance societies in the India. NHB provides financial assistance and support to help them cater to the housing needs of the community. In 1969, the Apex Cooperative Housing Federations (ACHFs) promoted the National Cooperative Housing Federation of India (NCHF) as the apex national cooperative society which would be responsible for promoting, developing and coordinating the activities of housing cooperatives in the country. The NCHF oversees the growth strategies, policy formulations and housing programmes of the ACHFs. The latter have cumulatively disbursed Rs.11094.26 crores to the primary housing cooperatives for the construction of dwelling units for their members. Fig 4.8 depicts the housing loans sanctioned and disbursed by ACHFs on cumulative basis.

Fig. 4.8 CUMULATIVE LENDING OF ACHFs (Rs. Crores)



Source: National Cooperative Housing Federation of India as cited in NHB Annual Report 2010-11.

Apart from the above retail lenders, the Central and State Governments also support the house building efforts of the people indirectly. The Central Government lays down broad principles of social housing schemes to provide advice to the State Governments/Union Territories. It also provides financial assistance through loans and subsidies. The Central Government provides advance to its employees for house construction. The State Governments too devise their own housing schemes for the poor and backward classes. They provide funds to various housing boards and development authorities involved in constructing houses for different income groups. State Government employees too are granted home loans at cheaper rates.

As far as rural housing is concerned, provision of finance is an enormous task requiring concerted efforts from all the agencies. Market oriented housing finance is hard to implement on account of the irregular nature of rural income, inadequate land records, unclear demarcation of land for agricultural and other uses, etc. The major role is therefore played by the government. Addressing rural housing issues require institutions that have greater knowledge and comprehension of the local problems faced by the rural population and that can provide financial assistance in innovative ways. For this reason, the NHB has identified the Agriculture and Rural Development Banks (ARDBs) as intermediaries for long term loans. The ARDBs operate as dedicated channels for rural housing credit. The Gujarat Rural Housing Finance Corporation (GRUH) for instance has been promoted to provide institutional finance to maintain and increase the rural housing stock and improve the overall living atmosphere of rural settlements. It focuses on individuals with monthly income less than Rs.2500 and on loans less than Rs.50000. The objective is to facilitate an individual to build a modest house or to upgrade his existing dwelling unit in rural areas.

Several financing and developmental agencies have a critical role in executing the Government sponsored rural housing programmes such as the Indira Awas Yojana (IAY). IAY is a centrally sponsored cent percent subsidy scheme with resources being shared in the ratio of 80 to 20 by the Centre and State respectively. All the financial institutions with the exception of primary cooperative banks of the urban areas provide finance for rural housing. These include the scheduled commercial banks, state cooperative banks, agriculture and rural development banks, apex cooperative housing finance societies, and specialized housing finance institutions (Vora, 1999).

Section 4.5.3: Securitization

The above enumeration about the HFIs highlights the one major issue in the development of the housing finance sector in India, namely, the need for long term resources. Therefore, apart from the multiple agencies involved in the primary provision of housing finance, another source with great potential is the secondary mortgage market comprising mortgage securitization.

A secondary market enables the participation of investors located across the length and breadth of the country to fund loans originating in one place. As the risks can be managed and distributed more efficiently through securitization, it encourages more funds to flow into the housing finance sector, and thereby integrates the localized mortgage market with the nationwide capital market. Ownership of Mortgage Backed Securities (MBS) affords the benefit of fast and easy liquidation of investments in the real estate market unlike the traditional way of having to dispose of the asset.

Establishment of securitization requires an enabling legal and regulatory framework. To quote Sridhar (2002), "Lack of appropriate legislation and legal clarity, unclear accounting treatment, high incidence of stamp duties making transactions unviable, lack of understanding of the instrument amongst investors, originators and, till recently, even rating agencies are some of the glaring reasons for the lack of activity in the area of securitization in India." The impediment to the development of MBS market is the varying stamp duty across different states ranging from 3% to 17%. Moreover, transfer of mortgage debt requires that the instrument is registered. As securitization involves pooling of mortgages originated by housing finance institutions in different states, the requirement of registration not only affects the commercial viability of the transactions but also makes them impracticable.

As regards the establishment of residential securitization, the Satwalekar committee studied the introduction of Real Estate Mutual Funds (REMF) in India. It submitted its report in October 2000, following which, the National Housing Bank permitted mortgage-backed securities and assumed the role of 'special purpose vehicle.' The first set of mortgage assets securitized by the NHB was fully lapped up by the housing finance institutions. Many private equity investors in the real estate projects in India have been looking forward to the growth

of REMFs and Real Estate Investment Trusts (REITs) so that they could get an exit option once their investments matured.

India's capital market activities have increased over the last decade. An increase in the volume of mortgages originating in the primary market has helped boost the number of mortgage-backed securities that have been issued in India. It has added another source of funding for commercial banks and housing finance companies. The MBS market in India has grown from a total of Rs.0.80 billion worth MBS issued in the year 2002 to Rs.21.05 billion in 2007. It is worth noting that MBS constitute about 76% of the securitized debt market in the US. This suggests that there is a huge potential for securitization of mortgages in India as well. Not only would it enable wider access to funds but also positively influence the profitability and functioning of HFCs by allowing them to focus on housing loan origination and not having to hold the mortgage assets to maturity with the allied risks.

Section 4.5.4: Multilateral Agencies, Self Help Groups, Non-Governmental Organizations and Community-Based Financial Institutions

Several multilateral agencies are also involved in the housing sector in India. The United States Agency for International Development (USAID) allowed HDFC to borrow from the US Capital Market to raise funds to be lent to low income groups, under the Housing Guaranty Program of the US Government. NHB too has an agreement with the USAID to source funds from the US capital market. USAID also offered technical assistance for the improvement of the Indian Housing Finance system. The Asian Development Bank (ADB) supplied technical assistance to the NHB to build up the housing finance institutions, to create a mortgage insurance fund and to encourage business alliance between Housing Finance Institutions and Community based Financial Institutions (CFI), apart from providing loan assistance to NHB, HDFC and HUDCO for onward lending to borrowers. Similarly, the Overseas Economic Cooperation Fund (OECF) too, in 1991, provided loan assistance to the Government of India under the programme for low and medium income housing through the NHB.

Though the housing finance sector in India is growing for the past few years, the organized sector continues to comprise only a quarter of the total housing investment in India. The organized sector that includes the housing finance institutions and banks focus around the

formal sector comprising the employee class and professionals. The informal sector consisting of small businessmen, traders and self-employed persons is still not conceived as a target market for housing finance by majority of the lending institutions. Borrowers from the informal sector get disqualified from getting loans simply due to the nature of their earnings and the lack of adequate documentation for their incomes and assets, as required by the formal financial institutions. They are therefore forced to rely on non-institutional credit. In this context, the linking of Self Help Groups (SHGs) with banks and increasing the operative capacity of Non-Governmental Organizations (NGOs) can go a long way in bringing a majority of such population within the ambit of the formal financial institutions. Likewise, Community-based Financial Institutions (CFIs) and micro-finance sector can also provide funds for shelter improvement. The NHB too has formulated a refinance scheme for HFCs that extend loans to the CFIs. The Asian Development Bank identified six projects involving CFIs and HFCs to which it provided technical assistance to understand the operational aspects of housing finance in the informal sector. Improved comprehension about the interest rate structure suitable to the informal sector, flexibility in the kind of security acceptable for loans, ability to manage long term loans, non conventional ways of credit appraisal, proper selection of borrowers, etc., would encourage formal and informal institutions to provide affordable credit to the poor.

SECTION 4.6

HOUSING FINANCE SCENARIO IN INDIA: AN OVERVIEW OF THE MARKET

Section 4.6.1: Structure of the Housing Finance Market in India

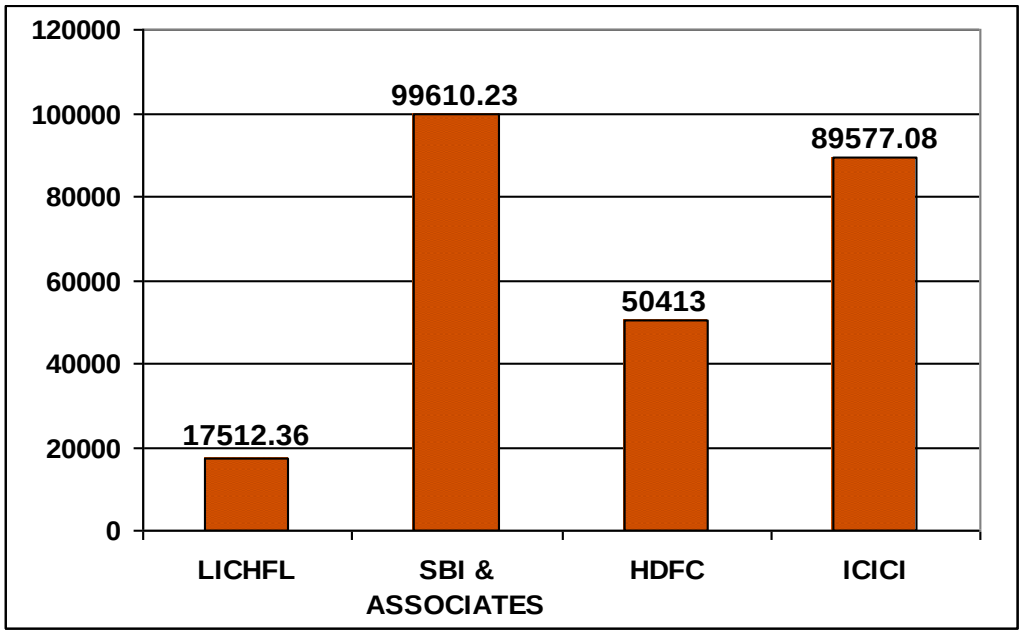
The changing market structure of the housing finance system in India can be traced from the institutional changes that have taken place over the years. Incidentally, the term ‘market structure’ in the context of housing finance is used to refer to the ‘proportion of outstanding mortgages held by each type of lender’ (Gillies and Curtis, 1955). Mao (1958) defines market structure as the ‘percentage distribution of home mortgages among various types of lenders.’ In the present study we use the term in a broader sense to represent the outstanding home

loans held by the broad categories of 'lender-type' and by the major market holders, irrespective of their type.

Up to the late 1990s, the sector was largely composed of specialized HFCs and those sponsored by banks and insurance companies. Besides these, there were HFCs promoted by builders and private companies. The second phase, between 1998 and 2003 saw an upsurge of commercial banks in the housing finance market leading to increased competition and rapid increase in disbursal of home loans. Irrational competition resulted into the sellers' market turning into a buyers' market with the customer being spoiled for choice. The bargaining power of buyers improved to a great extent even as they commanded quality services (UN-Habitat, 2008). It was a phase wherein HFCs lost a lot of market share. However, as issues of the quality of credit emerged, there was some rationalization in the operations of the players in the market.

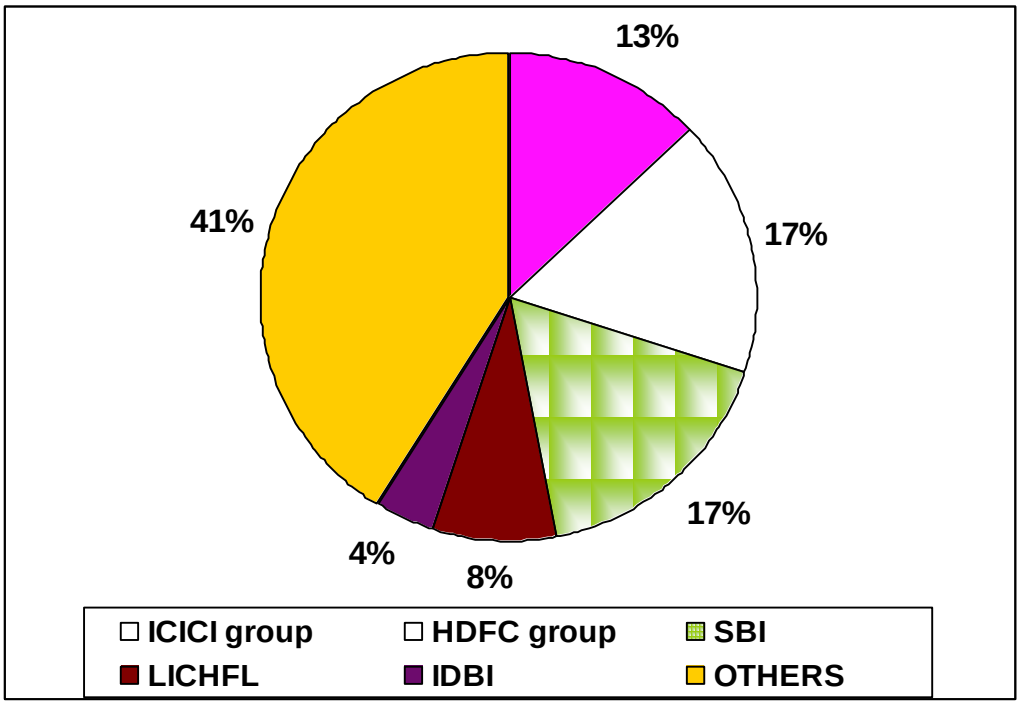
HFCs, local and foreign commercial banks, and other non-bank finance companies are the major players in the industry. Presently, one can observe an oligopolistic structure in the housing finance market with four major players, namely, HDFC, which is the largest HFC; the ICICI Bank, which is the largest private sector bank; State Bank of India, the public sector bank and also the largest bank in India; and the LICHFL, promoted by the life insurance major, LIC. Being large mobilizer of savings and having a considerable spread across the country, each of these institutions has a strong presence in the housing finance market in India. Together, they dominate the domestic mortgage market, accounting for 55% of the total housing credit in India as on March 31, 2010. In terms of volume, the total home loan disbursals of these four housing finance majors were Rs. 257112.67 crores as on March 2010. The housing finance disbursals of the four major lenders are shown in 4.9.The institutional composition of the housing finance market in India is depicted in Fig. 4.10.

Fig. 4.9 HOUSING FINANCE DISBURSALS OF MAJOR LENDERS YEAR: 2009-10 (Rs. Crores)



Source: ICRA 2010, Annual Reports of Mortgage Lenders

Fig. 4.10 SHARES OF VARIOUS INSTITUTIONS IN THE HOUSING FINANCE MARKET as on March 31, 2010



Source: ICRA, 2010

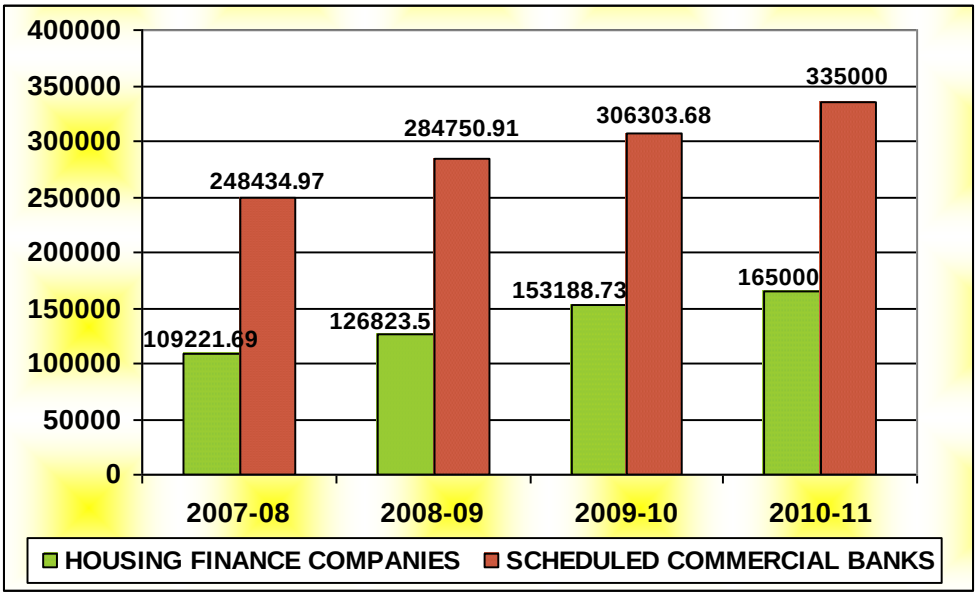
Section 4.6.2: Housing Finance Companies vis-à-vis Scheduled Commercial Banks

Housing finance companies face stiff competition from the banking sector which has the advantage of a well spread network of branches. One of the most elementary differences between HFCs and SCBs is with respect to their sources of funds. Commercial banks have access to cheaper floating-rate deposits. This allows them to undercut HFC pricing, particularly in urban areas. Given that deposits are their major sources of funds, banks are more likely to offer floating-rate loans which reduce their interest rate risks and which are also the preferred home loan product of Indian borrowers. It also enables banks to reduce mismatches in the tenure of their assets and liabilities.

The sources of funds for HFCs are public deposits, subject to NHB regulations; refinance from NHB; and institutional borrowings apart from equity. Only those HFCs who meet the NHB criteria of minimum net owned funds are permitted to raise public deposits. HFCs can provide long-term fixed rate housing loans because their funding primarily consists of refinance from the NHB and foreign commercial borrowings. To some extent, they also source their funds at floating rate credit from banks and fixed deposits from the public. The greater the proportion of funds raised from public deposits, the greater is the problem of asset-liability mismatch as the public deposits are generally for a period of three to five years. Some highly rated large HFCs could access funds through securitization. In general it may be stated that HFCs have a higher cost of funding compared to commercial banks. The NHB lends at 8% for HFCs and at 5.5 to 6 percent to commercial banks. Further more, over the past few years, NHB has reduced the term of its funding to about five years, in the process producing maturity mismatches on the balance sheets of HFCs. Government restrictions on external commercial borrowings have also reduced the availability of funds for HFCs.

Overshadowed by the banks, HFCs have yet to realize their full potential given the lower degree of their geographical penetration. Higher cost of their funds and stricter capital provisioning norms put them at a disadvantage. In the case of some HFCs consolidation has been observed as some of the smaller HFCs have been acquired by the larger ones and some others have closed down business. In 2010-11, the housing finance market was worth more than Rs.5.5 lac crores, of which the outstanding home loans of HFCs stood at Rs.186,438 crores while that of commercial banks at Rs.367,364 crores. The comparative position of housing finance companies and scheduled commercial banks is portrayed in Fig. 4.11.

Fig. 4.11 OUTSTANDING HOME LOANS OF HFCs AND SCBs (INR Cr.)



Source: NHB Annual Report 2010-11, RBI Publications

HFCs and banks also differ with respect to their target markets, business models and products. Commercial banks focus predominantly on large urban areas and higher income borrowers. Since they have many branches, they normally go for cross-selling of their products. Consequently, while their specialized mortgage lending skills are not widely developed, they get the advantage of lower administration costs. While some HFCs focus on urban areas, their target borrowers have been more diverse. Typically HFCs have served lower and middle income borrowers. It may be stated that HFCs are perceived to have a higher developmental impact due to their thrust on catering to underserved customers in semi urban and rural areas. As regards mortgage products, the HFCs tend to offer more flexible and creative products to attract customers. They traditionally offer fixed rate products, while commercial banks focus on floating-rate products.

The clientele of banks and HFCs include individual home buyers, professionals for non-residential premises, non-resident Indians and individuals of Indian origin for purchasing or constructing housing units in India. They also cater to corporate clients who provide housing facility to their employees anywhere in India. Some financial institutions also provide loans against rent receivables. This practice is a response to the emergence of information technology and business process out-sourcing sectors, which normally prefer to take business premises on lease. The financial institutions grant loans to the owners of these commercial

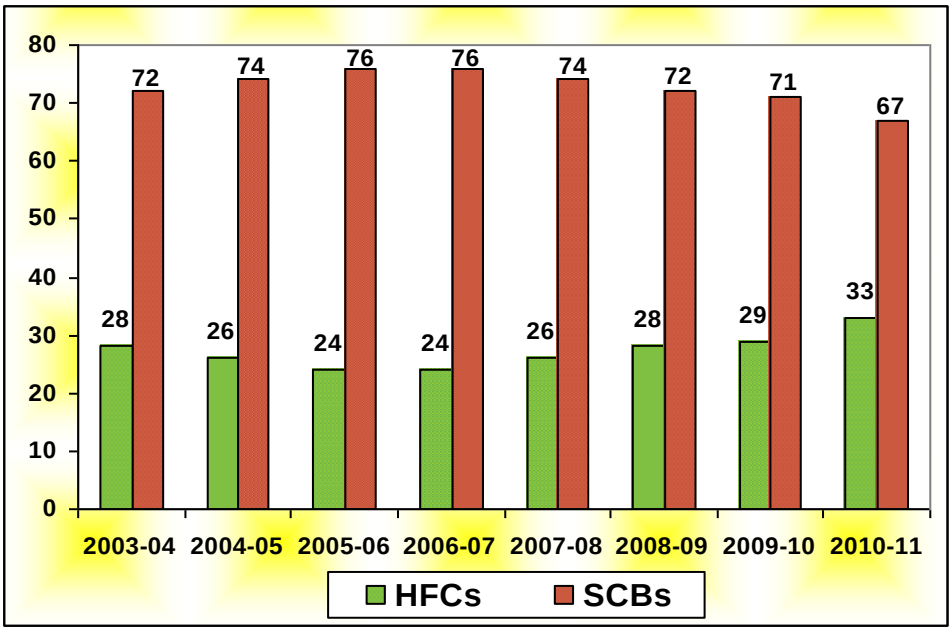
complexes based on the lease rental discounting. Likewise, loans are also made available to approved developers for their housing projects on rent receivables from their tenants.

The relative advantage of HFCs in comparison to commercial banks lies in their specialized skills as housing finance is their core activity. For the banks, as mentioned earlier, housing finance is only one of the many banking services they provide. However, typical problem faced by HFCs are the higher cost of funds, declining profit margins as a result of increased competition from banks, and lack of parity with banks as far as capital adequacy norms are concerned. HFCs for instance are required to maintain a minimum capital adequacy ratio of 12% compared to 9% for commercial banks, as of 2009. The peak period of housing loan sector in India, around 2003-04, also witnessed the majority of consolidation activity among HFCs, with the smaller HFCs, in particularly, getting merged with their own parent organizations. This was especially the case with bank-sponsored HFCs. Some of the instances of the mergers are the SBI HFL, BOB HFL, Andhra Bank HFL, ViBank HFL, Ind Bank HFL, etc., with their respective parent banks. Some of the other major consolidations were the acquisition of Vyasya Bank HFL by a larger HFC, namely, Dewan Housing Finance Corporation; acquisition of the housing loans segment of Citibank by LICHFL; take over of Tata Home Finance Ltd. by the IDBI Bank, and so on.

All these factors are reflected in the relative market shares and growth rates of the two segments, HFCs and SCBs, as depicted in Fig. 4.12 and Fig. 4.13. The eight years' observations portray a decline in the market share of the commercial banks from 72% in 2003-04 to 67% in 2010-11. The annual growth rate of outstanding housing loans of the SCBs has declined in the recent years owing to the global liquidity crisis which led to a cautious approach in lending. In the year 2004-05, the growth rate per annum in the case of commercial banks was 51%, which came down to 7% in the year 2008-09. While the annual growth rate of outstanding home loans of HFCs has been relatively lower, it has exceeded the rates of growth experienced by the SCBs between the years 2006-07 and 2009-10. In the year 2010-11 SCBs experienced an improved pace of growth. Notwithstanding these developments, commercial banks are expected to continue to command larger market share owing to their advantageous position in terms of extensive network of branches and access to a steady flow of low cost funds in the form of deposits. Moreover, banks are mandated to meet housing finance targets under the priority sector lending. The recent offers of lower

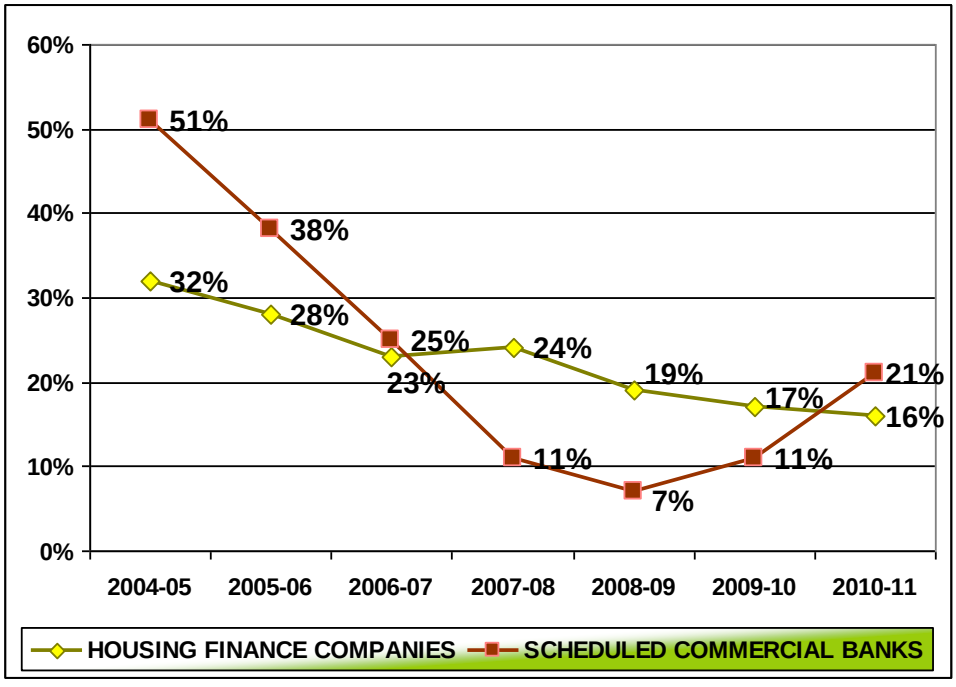
mortgage interest rates by the public sector banks resulted in increased prepayment experience for most HFCs (ICRA, 2010).

Fig. 4.12 MARKET SHARES OF HFCs AND SCBs



Source: ICRA, 2010

Fig. 4.13 GROWTH IN OUTSTANDING HOME LOANS OF HFCs AND SCBs



Source: ICRA 2010, NHB Annual Report, 2010-11

Section 4.6.3: Non Performing Assets in the Home Loan Sector

Traditionally, the level of non-performing assets in the housing finance sector has been relatively low. Several factors are responsible for this. At the psychological level, default on home loan is perceived more gravely by households owing to its greater social implications compared to business loans or other personal loans. Moreover, the major proportion of home loans of HFCs goes to individuals whose income is properly verified. Home loans with loan-to-value ratios in excess of 85% are limited. HFCs generally follow stringent credit appraisal process which helps keep defaults at low levels. The gross NPAs of HFCs have continuously declined from a roughly 1.5% in the fiscal year 2006-07 to less than 1% in 2008-09 (ICRA, 2010). Similar trend is observed in the net NPAs as well, which have hovered around 0.30 to 0.50 percent over the later half of the decade of 2000.

Smaller HFCs have higher cost of funds lower interest rate spread, resulting into relatively higher NPAs. Large HFCs like the HDFC enjoy the benefits of cheaper sources of funds and wide network of operations. However, as reported in a study by Manoj (2010), size is not necessarily the factor for better efficiency. His analysis reveals that despite being large in terms of capital investment, LICHFL has lower operational efficiency. Its operational costs are found to be high relative to its income due to higher provisioning for NPAs, poor credit quality and weak recovery management systems.

In the late 1990s and early 2000s commercial banks entered into the housing finance sector in a major way and adopted aggressive marketing approach with a view to sizing up their housing loan portfolios. The market witnessed intensive advertising, waiving of processing and administration fees, gifts and other incentives offered by banks (UN-Habitat, 2008). In a bid to attract customers they also offered on-the-spot approvals without thorough document verification. Banks also tried to attract clients by offering loan-to-value ratios is excess of 100% and waiving off prepayment charges on fixed rate loans. Discounts points on Prime Lending Rates were also granted. Imprudent lending practices caused increase in defaults[18] and frauds. Their Gross NPAs in housing loans increased from 1.8% in 2005 to 2.2% in March 2007 (CRISIL) as a consequence of irrational aggression in their lending practices.

18. A loan delinquent for three consecutive months is defined as defaulted. (Tiwari, 2001). This is the common way in which defaults are defined in the balance sheets of housing finance institutions.

Banks realized that ultimately their profit margins were compromised on account of competitive undercutting of pricing. The Reserve Bank of India also advised caution regarding the potentiality of the market getting overheated and eventually collapsing. This lent some degree of wisdom to the banks, and especially the public sector banks withdrew their aggressive stance (UN-Habitat, 2008). In the late 2000s, the market saw some rationalization and stability. It was realized that the sustainability and efficacy of the lending institutions is eventually determined by the quality of loan origination, asset and service.

Considering the adherence to income recognition and asset classification norms, aggressive provisioning norms and reasonable interest rate spread, the NPAs levels of HFCs are expected to remain low over the foreseeable medium term. The provisions of the Securitization and Reconstruction of Financial Assets and Enforcement of the Security Interests Act 2002 (SARFAESI) and the Enforcement of Security Interest and Recovery of Debts Laws (Amendment) Act 2004 have expedited the recoveries from delinquent borrowers and thereby helped control credit costs. The enactment of the Credit Information Companies (Regulation) Act 2005 has facilitated setting up of companies that would collect and disseminate information about the credit records of borrowers. This has improved the lending decisions, keeping chances of NPAs under check. The RBI has been proactive in issuing directives regarding prudential norms to be followed by the banking sector. This has greatly helped maintain rationality and financial prudence in the lending practices of the banks.

SECTION 4.7

GLOBAL TRENDS IN HOUSING FINANCE MARKETS

This section revisits some of the issues discussed in the Report of The Committee on the Global Financial System (CGFS), 2006, published by Bank of International Settlements. The section also draws from discussions by Lea (2000), Green and Wachter (2005) and Saravanan and Nagarajan (2007). Section 4.7.1 highlights the features of the housing finance sector with reference to G7 countries. Apart from these, it covers some European countries such Belgium, Sweden, Spain, Netherlands and Switzerland, and among others, Mexico and Australia. Section 4.7.2 summarizes the evolution of the housing finance sector in the US. Section 4.7.3 covers the nature of growth in housing finance sectors in selected Asian countries. Section 4.7.4 enumerates the common factors working across the global economy which have a bearing on growth and efficiency of the housing finance sectors. Section 4.7.5 presents the broad conclusions regarding housing finance structures across countries.

Section 4.7.1: Features of Housing Finance Systems across Selected Countries

- **STRUCTURE OF HOUSING FINANCE MARKETS**

The structure of housing finance markets in most of the countries has remained national in character, unlike the growing global integration of other segments of the financial market. The presence of foreign lenders in loan origination has been relatively lower in most markets, though in recent years the trend is seen to be changing gradually. The reasons behind the weak presence of foreign lenders are the national legal framework and the complex regulations governing mortgage contracts and foreclosures. Customs and traditions are crucial in housing finance practices which create a natural barrier for external institutions to acquire the required skills.

In most countries, the mortgage market is dominated by a small group of commercial banks and/or specialized institutions that have a national presence. In some countries, namely, Germany, Spain and Switzerland, cooperative and regional banks have also been active. In Japan, private banks have become more active after the restructuring of government owned housing finance institutions. In Canada, a sizable proportion of outstanding mortgage debt is held by bank and credit unions (75% in the year 2004). Denmark is dominated by specialized

mortgage banks, although commercial banks too have entered the segment leading to greater competition. The mortgage banks source their funds through the issue of mortgage bonds.

The mortgage market in the United Kingdom is dominated by depositories, while reliance on capital markets is found to be limited. In Finland, commercial, cooperative and savings banks are the major lenders in the housing finance sector. Share of insurance institutions and specialized financial institutions has been limited. France has a limited number of suppliers of mortgages. Its mortgage market is dominated by banks and other depositories who have access to cheap retail funds in the form of savings, particularly, contract saving accounts.[19] The mortgage market of United States perhaps has the most competitive housing finance sector with a vast array of lenders.

- **MORTGAGE DEBT**

The mortgage debt among households in several countries has increased significantly over the last two decades. This is indicated by the increased ratio of mortgage debt to GDP. The ratio of mortgage debt to GDP per capita has also shown significant rise. This has been observed in the G7 countries as well as in Belgium, Sweden, Spain, Mexico, Netherlands, Switzerland, and Australia, etc. In some of these countries, the mortgage debt to GDP ratios is well between 50 to 75 per cent. Denmark has one of the most advanced mortgage markets in Europe, with the highest mortgage debt to GDP ratio of 90%. France has relatively low mortgage penetration due to high interest rates; although in the last decade, lower interest rates have resulted into high rates of new construction. In Japan, the mortgage debt to GDP ratio was low at 21% in 1980 but is currently approximately 40%. The household debt to income ratios in most developed countries has crossed 100% and is inching towards 150%.

Even as mortgage debt has grown over the years, it has coincided with decline in real and nominal interest rates, leaving debt service ratios within reasonable limits and causing them to rise only slowly. For most countries, post 1990, the debt service to household disposable income ratio has been below 10%.

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19. Contract savings require account holders to save a certain minimum stipulated amount over a medium period of time, such as four to five years, which makes them eligible for housing loans. The system ensures the repayment ability of borrowers.

The growth of mortgage borrowing has been associated with increase in the house prices over the past two decades in most countries. Between the years 1996 and 2007, the real property prices in Australia, New Zealand, UK, US, Sweden and Netherlands increased in the range of 150 to 250 percent, with the exception of Japan and Germany where property prices remained rather stable. Most European countries witnessed a much rapid increase of 150 to 330 percent, while Switzerland recorded a fall in real residential property prices.

In contrast, in the Asian countries, real house prices have remained subdued for most parts since the Asian financial crisis. In Hong Kong, for instance, real house prices declined roughly 25% between 1996 and 2005, while Singapore experienced a fall of roughly 40% over the same period. Real house price levels in Korea, Malaysia and Thailand have fallen just a little below the levels prevailing in 1996.

- **LOAN PRODUCTS AND FEATURES**

As far as housing loan products are concerned, in most countries it has been customary to offer fixed rate loan contracts. However, over the last two decades, there has been an increase in the preference for adjustable rate mortgages and combination loans. In several European countries such as Finland, Italy, Sweden, Spain, Luxembourg, and United Kingdom, the percentage of adjustable rate loans is found to be higher, in the range above 80%. Australia too has a higher proportion of adjustable rate mortgages.

The greater thrust on variable rate mortgages is explained by the fact that depositories are the major mortgage lenders in these countries, and they prefer variable rates so that the interest rate risk can be passed on to borrowers. Markets where fixed rate mortgages are predominant include the United States, Canada, Germany, France, Belgium, the Netherlands and Switzerland. Canada offers fixed rate mortgages; however, the rates are fixed only for a maximum period of five years. In Denmark, the rate of interest is normally fixed over the life of the loans. Repayment is typically made quarterly and full prepayment is allowed in the case of fixed rate mortgages.

Over the years, the number of variable rate contracts has increased. The mortgage banks charge 50 to 100 basis points over the government bond yields to recover administrative costs and to cover credit risk. Finland offers both fixed and variable rate mortgages. The variable rates are indexed to Euro inter-bank offer rates (Euribor). In the case of fixed rate

contracts, the interest rates are revised in three or five years. On the completion of the period for which fixed rate is offered, the interest is revised based on the prime lending rate of the major lender, plus a margin. Borrowers also have the option to choose a new period of fixed interest rate.

In France, more than half the mortgage contracts have fixed rates up to the full term of the loan, however, the duration of the term is generally less than 20 years. The loans are fully amortizing. Majority of the variable rate loans are offered by specialized institutions, while banks generally offer fixed rate mortgages as they are well capitalized and have contract savings accounts as their source of funds. Variable rates are pegged to Euribor. Three types of mortgage loans are found in France; one is the free market mortgage where interest rates are market-determined; another is regulated mortgage market where government intervenes to keep interest rates 10 to 20 basis points below market rates, and are targeted to certain group of customers; and the third category of loans is targeted to marginal borrowers whose loans are guaranteed by the government.

Moreover, some hybrid forms of loan products allow postponement of repayment of principal outstanding by offering interest-only loans. Differences are also found with respect to prepayment conditions and options. In some markets, prepayment does not involve any penalty whereas in others, prepayment attracts some fees. This affects the borrowers' incentives to prepay and also the amount of risk assumed by lenders. In Canada, for example, penalties, known as yield maintenance,[20] are imposed on prepayments. Stringent penalty clauses are also found in Germany, which require borrowers who prepay, to pay all the interest they would have paid had the mortgage contract continued till maturity. Despite the conservative approach of lenders, Germany boasts of 52% mortgage debt to GDP ratio.

Another innovative aspect of home loan products in Australia, Canada, Germany, UK and US, etc., is the home equity extraction under which homeowners can borrow against accumulated home equity. Mortgage equity withdrawal is found to have positive impact on consumption spending of households. In fact a reduction in this facility after being allowed at liberal levels was found to have depressed consumer spending in the Netherlands.

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20. Yield maintenance penalties ensure that lenders get a minimum rate of return over a minimum time period, that is, the period of time for which the interest rate is fixed (Green and Wachter, 2005).

As regards the loan-to-value ratio, most countries allow 80 to 100 percent loans, except in some cases like Germany which has restricted it to 60%. Germany does allow for second mortgage up to an additional 20% of the value of the housing asset. Second mortgages are also allowed in Australia, Canada, Denmark, Italy, Netherlands, Spain, UK, US and to a limited degree in France. Increased competition and regulatory permissiveness has resulted in higher LTV ratios in most countries in recent times with its analogy of lower down payments. Countries with high LTV ratios include, France, Netherlands, Spain UK and US. Korea is a country with the lowest average LTV ratio of 40%, followed by Italy at 55%. It is found that countries with less liberal credit terms are also the ones that have relatively lower mortgage debt to GDP ratios. A positive correlation is found between the LTV ratio and mortgage debt to GDP ratio; although the magnitude is not very strong. For instance, France allows LTV ratio of 100% however its mortgage debt to GDP is ratio is only 25%.

Compared to most other countries, the Italian mortgage market is highly restricted. Its mortgage debt ratio is only 13% due to unfavourable credit terms such as variable interest rates, short term maturity of loans, prepayment penalties and low LTV ratios. Despite being a developed country, its banking system is not well developed. Interest rates on deposits are still regulated. Of late, however, there are some signs of development of its mortgage market with its recourse to the capital markets for mortgage funds.

Higher LTV ratios are also found to be associated with longer loan contracts. Most countries allow contract maturity up to 20 years, while the terms are more liberal in Luxembourg, Germany, Australia and Canada. Netherlands and the US offer home loans up to 30 years, while Sweden extends it between 30 to 45 years.

- **SECURITIZATION**

Many countries have witnessed the growth of secondary mortgage markets through securitization of mortgages that has allowed a greater degree of specialization in financial markets. Use of mortgage-backed securities is yet to develop to its full potential in most housing finance markets. While it is extensively used in Australia, Denmark, United States, and the Netherlands, in most other countries, such as, the UK and Japan, securitization is limited. Around 56% of mortgages in the US are securitized whereas, for Europe it was 15% of all mortgages at the end of 2004. Canada has a mortgage insurance fund called the

National Housing Act (NHA) Fund whose loans are guaranteed by the Canadian government. This secures the investors in these loans with the assurance of timely payment of principal and interest amount. Securitization in Canada is limited in the sense that except for the mortgages backed by the NHA, other mortgages are not securitized.

The German mortgage system depends on both, the capital markets as well as depositories for mortgage funds. The mortgage market of Denmark is well developed with sizable mortgage funds being generated through the capital market. At the same time, the criteria to qualify for a mortgage are quite stringent in Denmark. In order to avail a mortgage up to 80% of the value of the house, borrowers are required to follow strict underwriting rules and must opt for a variable rate second mortgage. Thus credit risks are well addressed by the Danish mortgage system.

It may be pointed out that increase in mortgage debt has coincided with the development of secondary markets for home loans. Technical development, ability to correctly price prepayment risks and regulatory framework are some of the important requirements for developing securitization of home loans.

- **SUB-PRIME LENDING**

One of the important global developments over the first half of the decade of 2000 is the rapid growth of sub-prime lending in the United States, United Kingdom, Australia and Canada. It typically means that loans are extended to households with poor or insufficient credit history and has features like self-certified income or assets. Insufficient documentation compromises the quality of asset for the lenders. In the US, the sub-prime lending grew at an average rate of around 25% per annum from 1994 and 2003, which exceeded the growth rate of prime lending. It accounted for about 16% of total lending in 2006 (Gyntelberg, Johansson and Persson, 2007). Following the series of policy rate hikes in the US, the debt affordability of sub-prime borrowers was severely affected in the early 2007, ultimately leading to the bankruptcy of sub-prime lending institutions. In the other countries too, sub-prime lending increased although its proportion to the total mortgage stock was limited. In most countries, the sub-prime lenders are typically specialized credit institutions which are independent institutions or subsidiaries of commercial banks or finance companies. The increase in sub-

prime lending coincides with the increase in residential property prices which reinforces the tendency to compromise on lending terms.

Section 4.7.2 History of Mortgage Market in the US

The history of the evolution of the US mortgage market is remarkable in many ways and offers important lessons for countries in the early stages of development of the mortgage markets. The institutional developments in the US represent early innovations in the financial sector. "The housing finance system in the United States is a marvel in its size, scope and efficiency", (Chandrashekhar and Krishnamoorthy, 2010). It therefore commands a special mention.

The original form of the US mortgage market in the pre-Great Depression era is a far cry from its present character. In its initial period, until the 1930s, residential mortgage contracts in the US were quite conservative. Housing finance was typically available for a short duration of five to ten years, carried variable rates of interest, and had low loan-to-value ratio of 50% or less. Payment of principal was required to be done at the end of the term. Borrowers could get their loans refinanced when they matured; but failure to do so required them to clear the outstanding loan amount. The Great Depression of the 1930s changed the scenario. Property prices fell by 50% compared to their peak levels (Green and Wachter, 2005). Lenders refused to refinance loans that matured. Borrowers started defaulting as they lacked the means to repay. Moreover, their home equity too was not sufficient to pay up the loans. Further downward pressure on property prices came from the lenders' attempt to resell the properties they got hold of due to defaults.

The response to the above crisis came in the form of institutional innovations in the housing market by the federal government. The US government set up three institutions, namely, the Home Owner's Loan Corporation (HOLC), the Federal Housing Administration (FHA) and the Federal National Mortgage Association (FNMA).

The aim of HOLC was two-fold. It sought to restore the mortgage firms and to circumvent the otherwise inevitability of defaults. It issued bonds guaranteed by the government to raise funds to purchase the bad mortgage debts from the financial institutions. Once in the possession of the mortgage assets, the HOLC sought to elude the closure of the mortgage contract by simply changing the terms of the contracts. The changes were quite radical in the

sense that they had nothing in common with the existing features of the contracts. The mortgages were converted into fixed rate, long term, fully amortizing contracts so that the recovery of the principal loan amount could be spread over the entire span of loan, rather than borrowers having to make lump-sum payment at the end of the loan term. The new mortgage instrument thus did away with the need for refinance. Not only did this ward off defaults by borrowers but it also helped avoid worsening of the economic and social position of households in the face of rising unemployment. Enabling the financial institutions to remove the defaulting mortgages from their books also helped them survive the crisis period. It is interesting to note that the innovation in the mortgage instrument was the result of government's response to a financial crisis and not a promotional measure to increase the reach of housing finance.

The ingenuity of the federal government was manifested not only in its intervention in the housing finance sector to correct the historical crisis but also in its farsightedness and proactive approach in making the mortgages purchased by HOLC marketable, so that eventually the government could withdraw from holding the mortgages. In an effort to find investors in mortgages the government established the FHA. Its function was to provide mortgage insurance. This step greatly helped built investor confidence. Green and Wachter (2005) consider these institutional innovations by the US government, "an early piece of 'financial engineering' that allowed illiquid financial institutions to become liquid again." Having achieved its purpose, the HOLC was dissolved in 1936 and in its place the FNMA was established in 1938 with the objective of helping to establish a secondary market for FHA mortgages. Investors purchased bonds issued by FNMA (Fannie Mae), the proceeds of which were used to purchase mortgage assets from the original lenders.

While the above measures were effective in getting hold of the housing market crisis, the combined effects of the Great Depression and the World War II kept new housing construction at very low levels. With the end of the war, the Veterans Administration mortgage insurance programme was launched which allowed veterans to obtain mortgages with very high loan-to-value ratios. At the same time, with the aim of encouraging house construction, the FHA also liberalized the credit terms by raising the maximum maturity period of home loans to 30 years and the loan-to-value ratio to 95%, while continuing with the limit on the amount of home loan that it would insure. These measures, coupled with the

robust expansion of the US economy yielded rapid increase in home ownership. Private players too increased in the mortgage market giving further boost to the system. Mortgage insurance provided by FHA as well as by the private sector institutions was the main factor leading to rapid expansion of the housing finance market. Commercial banks and savings and loan associations (SLA) emerged as the major sources of funds for mortgages as they had access to cheap funds in the form of public deposits.

Later, in 1970, the government set up the Federal Home Loan Mortgage Corporation (Freddie Mac) with the purpose of securitizing mortgages issued by SLAs. By developing government backed institutions in the areas of mortgage insurance and securitization, the government sought to ensure liquidity and stability in the secondary market for mortgages which helped in wider availability of housing finance. These institutions were mandated to purchase only those mortgages whose principal outstanding was within permissible limit vis-à-vis changing house prices.

The system functioned well until the emergence of inflationary phase and the entry of new forms of savings such as mutual funds, money market funds etc. which led to disintermediation of banks and SLAs. The government responded to this development by deregulating interest rates on savings and allowing Adjustable Rate Mortgages. The practice that emerged out these changes was that depositories typically continued to carry ARMs in their books as the interest rate risk in such cases was borne by borrowers; but in the case of Fixed Rate Mortgages, they sold it to government institutions involved in mortgage insurance and securitization. Since the US mortgage market was dominated by FRMs rather than ARMs, more and more mortgages were securitized and traded in secondary markets. This is the origin of the high level of securitization as the major source of mortgage funds in the US economy.

With the passage of time, increased competition among lenders led to variations in the mortgage instruments such as interest-only loans and negative amortization that allowed borrowers to increase the principal loan amount. As more and more borrowers opted for these loans and as lenders increasingly compromised on the asset quality by lending liberally to households with poor credit, it built a bubble in house prices that could not sustain once interest rates firmed up, and borrowers started defaulting. Drastic and rapid fall in property

prices severely affected the survival of lending institutions. The sub-prime crisis exposed the dangers of securitization and raised doubts about its efficacy as an instrument of investment.

The institutional innovations in the US in the housing sector are worth emulating. It shows that expansion and efficient functioning of the housing finance sector require proper delivery mechanisms on both the demand and the supply side of the market. This can be made possible only if a system of supportive and reinforcing institutional infrastructure is developed. The lesson out of the US sub-prime crisis is that securitization of mortgage assets can only delay but not prevent an impending financial crisis resulting from injudicious practices of both lenders as well as borrowers.

Section 4.7.3: Housing Finance Systems in Selected Asian Countries

- **CHINA**

Housing in China has been a state affair as the ownership of land has been with the State since the formation of the People's Republic of China in 1949. Until the year 1990, the state had complete control over every aspect of the housing market from investment, construction, distribution and even management and repairs. The State Owned Enterprises (SOE) provided housing to their employees, which was part of compensation paid to them. Such a system of housing was completely devoid of any scope for capital gain on the housing assets, and therefore offered no incentive for improvement or modernization (Lea, 2000).

It was only after the adoption of the open door policy since the late 1970s that private ownership of housing started. As land is nationalized, the home buyers only have legal rights to occupy the building for a specific period of time as per the policy regulations. Legal rights for residential property are allowed for 70 years while that for commercial property for 30-50 years. Transfer of the title to another party is also allowed. These changes have led to rapid development of the primary mortgage market with commercial banks being the leading players.

Since 1991, gradual reform of the housing sector was initiated. This included the establishment of the Housing Provident Fund (HPF) scheme which played a supportive role in the housing finance sector in China. The HPF scheme mandated compulsory savings by employees for being eligible for a housing loan. Employers too were required to contribute to the reserve. With the increased trend towards private ownership of housing, the SOE started

discharging their ownership of housing by selling them at sizable discounts. By the end of the year 2005, most of the housing units in the economy were traded at market prices.

The Chinese mortgage system is dichotomized into two sectors. One being the provident fund mortgage, which required compulsory contribution to the fund by employees as mentioned above. The other sector within the housing finance system constitutes the commercial mortgage lending sector. This comprises four state owned commercial banks who are engaged in the business of housing finance. In the late 1990s, the Chinese government introduced further reforms in the housing and real estate sector by increasing the LTV ratio to 80% and extending loan maturity term to a liberal 30 years. The impact of these reforms was evident in the increased investment in urban housing construction, further substantiated by the increase in average per capita availability of living space.

- **HONG KONG**

Among the Asian countries, Hong Kong has the most developed mortgage market. Approximately, one-fourth to one-third of the commercial bank loans are in the form of mortgage loans. An important contribution to the well developed housing market is the role played by the Hong Kong Housing Authority, a government institution, which provides public housing including low-cost housing and public rental units. The public housing takes care of nearly half of the country's population. The government also regulates banks' involvement in mortgage loans by setting limits on their exposure. It regulates the demand for housing finance through changes in the maximum loan-to-value ratios. Both fixed and floating rate mortgages are available; although the latter are more prevalent. The floating home loan interest rates are pegged to Hong Kong's prime rate, the Best Lending Rate. The loans are fully amortizing and have a liberal maximum tenure of 30 years.

Mortgage securitization commenced in Hong Kong in the mid-1990s, which enabled banks to meet the mortgage exposure guidelines issued by Hong Kong Monetary Authority. The Hong Kong Mortgage Corporation (HKMC) was set up in 1997 to promote the growth of secondary mortgage market. In 1999, the HKMC launched a mortgage insurance programme which enabled banks to allow higher LTV ratios without assuming additional risks.

- **INDONESIA**

The housing sector in Indonesia has an interesting feature. Since the early 1970s, the housing development policy of the government has concentrated on providing low-cost housing for the low-income households. The innovative approach of the government entails the imposition of the compulsory '1:3:6' rule for housing developers. This rule requires developers to build a minimum of three middle-class housing units and six lower-class housing units for every high cost house. The government supplemented this rule by providing subsidized loans for low-cost housing via state owned mortgage banks. Most domestic banks and one foreign bank are actively involved in housing finance for high-end houses.

- **JAPAN**

The evolution pattern of the housing finance sector in Japan is similar to that in the US in more ways than one; although development of the US mortgage market occurred much earlier. In 1950 the Government Housing Loan Corporation (GHLC) was set up with the view to develop the housing finance market. Its objective was to provide long term funds at subsidized rates for construction/purchase of housing targeted primarily to middle-income households. The mortgages of GHLC statutorily do not carry prepayment penalty. Major share of public sector mortgage market in the country is held by GHLC, while in the private sector the market is largely dominated by private sector banks. Other lenders include insurance companies, pension companies and financial institutions.

The Japanese real estate sector experienced a setback in the early 1990s with increased mortgage defaults and drastic fall in real estate prices. This adversely affected the sustainability of the specialized housing finance institutions. In response to the crisis, the government of Japan introduced structural reforms of the financial institutions. It deregulated mortgage interest rates which enabled lenders to price mortgages more efficiently and introduce innovative mortgage products. The banks typically offer adjustable rate mortgages, pegged to various interest rates. Fixed rate mortgages are also offered, however, for a short term of three years, generally. In 1998 it passed a law that allowed for asset-backed securitization and the GHLC was given the responsibility to develop the residential mortgage-backed securities market. Lack of legal and regulatory framework has been the

basic impediment to the growth of MBS in Japan; although subsequently the government passed new legislation to create a more conducive environment.

- **KOREA**

The housing market in Korea has traditionally been a sector that is largely subsidized by the State. It was controlled by the public sector institutions like the National Housing Fund (NHF), the Korean Housing Bank and Kookmin Bank, which were the major providers of funds. The private sector housing finance lenders included life insurance companies, commercial banks and specialty finance companies. The government sought to control interest rates so as to keep them below market rates as the mortgage funds were basically targeted to the low and lower-middle income households. The impact of the stronghold of the public sector in housing was that the middle and upper class home buyers were deprived of housing finance. Particularly, the middle to lower-middle income class had to depend on the rental housing system which too was highly taxing in terms of having to pay high cash deposits for entering into the contract.

Financial liberalization post 1991 in Korea and the mortgage interest rate deregulation in 1997 have played a key role in transforming the heavily regulated Korean housing finance system. Under the liberalized regime, price controls on new housing units were abolished and market based housing finance was allowed to set in. By the year 1996, commercial banks were allowed to provide long term mortgages. The year 1997 saw the privatization of the Korea Housing Bank, re-christened as the Korea Housing and Commercial Bank. The government also established a new intermediary, the Korea Mortgage Corporation, which had the mandate to securitize the housing loans of the National Housing Fund as well as those of private banks and other financial institutions.

Currently, housing banks and commercial banks are the dominant players in medium and high cost housing, while the National Housing Fund (NHF) is a major source for low-income home buyers. In Korea the mortgage debt to GDP ratio was 25% in the year 2004. Over the period from 1985 to 2005, its household debt to household disposable income ratio increased from close to 50% to nearly 130%. However, the household debt service to income ratio in Korea has been at the modest level of 3% in 1985 and 6% in the year 2005, with peak of around 10% in 1999. The real residential property prices have remained fairly stable in

Korea. The country predominantly relies on adjustable rate loans. Close to 95% of its entire mortgage loans are at adjustable interest rates while use of mortgage backed securities is quite limited. In recent years though, Korea is making an effort to establish a liquid secondary mortgage bond market based on government credit guarantees. Most lenders offer home loans for three to 20 years period with a modest average LTV ratio of 56.4%.

- **SINGAPORE**

In Singapore, housing is divided into private and public housing markets. The Public housing sector is predominant, constituting 84% of the total households. This is accomplished by the Housing Development Board (HDB) which exclusively administers the public housing segment. It makes provision of housing as well as housing finance. It also provides rental flats at subsidized rates. HDB provides long term loans at concessional rates for the purchase of flats.

Since 1990, the government has started focussing on developing private housing. Currently, there is a dichotomized system at work. The HDB provides subsidized loans to first time home buyers, while others depend on the private mortgage system. Households are required to save under the mandatory social security saving plan of the Central Provident Fund Scheme, which in turn is used by them to finance their house purchases. It is a major source of mortgage finance. In the private sector, a few commercial banks dominate the private housing loans segment.

- **THAILAND**

The housing sector in Thailand grew simultaneously with the growth of its economy in general in the 1980s. In the latter part of 1980s the government encouraged active participation of commercial banks in housing finance. Both, commercial banks and the Government Housing Bank (GHB) together provide 80 to 90 percent of the total mortgage funds. Before 1999, GHB offered home loans with fixed payments but flexible term. This was changed in 1999 to variable mortgage payments linked to interest rate changes. This feature allowed borrowers to overcome situations of adverse cash flows. In the attempt to capture a larger market share commercial banks have been offering mortgage rates that are much lower than their minimum lending rates. They have also introduced greater flexibility in the mortgage instruments. Mortgage securitization is yet to develop in Thailand.

Section 4.7.4: Global Factors Contributing Towards Housing Finance Systems

Several common factors can be identified that have contributed to the dynamism of housing finance systems across countries. Favourable macro economic developments such as lower nominal and real interest rates, decline in the level and volatility of inflation, and higher and stable output growth have contributed significantly (CGFS, 2006; Gyntelberg et al, 2007). These developments have been witnessed across industrialized countries as well as emerging economies.

1. STRONG MACRO ECONOMIC FUNDAMENTALS

The macro economic developments can be seen as the fruits of the determination of monetary authorities toward achieving price stability and demonstrating financial prudence in their fiscal policies. The move towards freer global trade of goods and services and liberal movement of labour has contributed towards making inflation manageable and less volatile. The general decline in inflation rates has translated into decline in the nominal long term and short term interest rates. The long term real interest rates have also exhibited a decline.

The impact of the interest rate changes is observed on the mortgage rates as well. The G7 countries where mortgage rates varied between 8% and 14% in the year 1985 saw them decline to the range of 2% to 7% in the decade of 2000. The United Kingdom, for instance, witnessed a fall from around 12% to half its level, that is, about 6% over the same time period. In the US, the mortgage rates declined from a peak of around 13%, to as low as 6%. Similar trend was observed in Canada as well. Other European countries such as Spain, Luxembourg, Netherlands, Belgium, Sweden, etc., witnessed greater volatility and variations in the mortgage rates but nevertheless experienced declines from a range little above 8% to less than 5% over the same time period. The decline is observed particularly in the late 1990s after it peaked at the level of 17% in the early 1990s' period. Declining mortgage costs imply improvement in the efficiency of the system and increased competitive environment.

Globally, the decline in nominal interest rates has favourably influenced both the demand for and supply of housing loans. Loan affordability is an important consideration for households particularly in the initial years of the contract and therefore debt service burden has a strong influence on the demand of housing loans. Lower mortgage rates stimulate demand for home loans by lowering the size of the debt service costs in nominal terms. Moreover, lower

volatility in inflation has also impacted the choice between mortgage products. For instance, more stable shorter-term nominal interest rates induce preference for adjustable rate loans, thereby boosting their demand relative to that for the traditional fixed rate mortgages.

There has been observed a trend of faster economic growth across industrialized countries as well as emerging economies since the latter part of 1980s, although a downturn was witnessed towards the end of the decade of 2000. Increased incomes have contributed to increase in the demand for housing in most countries. With relatively lower frequency and severity of economic downturns, the household income also became more stable further boosting their ability to sustain higher debt liabilities. Housing sector, having several strong backward and forward linkages with other sectors of the economy, has in turn reinforced the macro economic growth in output and employment. Besides, the appreciation in house price increases the wealth of households, thus providing further stimulus to the macro economy through increased consumption expenditures.

2. IMPACT OF INFORMATION TECHNOLOGY

The second important factor that has aided housing finance sectors across the globe is the information technology which has made financial innovations practical and viable with extended economies of scale resulting into lower costs for both lenders and borrowers. Improvement in communication and database management and sophisticated modelling techniques has facilitated more accurate estimates of credit risks and prepayment behaviour. Information technology has helped lenders in enhancing their ability to understand market developments and borrower characteristics, thereby enabling them to respond with innovative financial products. Database improvement has positively impacted loan origination, home loan product design, servicing, and management in general. More and more players have been attracted to the sector as credit has become more efficiently priced and more appropriately allocated. It has led to increased incidence of mergers and acquisitions as financial institutions sought to take advantage of existing distribution networks. In general, it may be stated that advances in information technology has reduced the cost of producing contracts and the post-contract governance costs.

Another aspect of financial innovation is the combination of products and services offered by housing finance institutions. These practices have enabled lenders to use mortgages as a

means to acquire a larger customer base. One such product is the income protection insurance which covers the cost of debt service in the event of loss of income. Mortgage insurance is insisted upon especially where there is a practice of high loan-to-value ratios, in order to safeguard lenders against defaults. Financial market development has widened the housing finance options available to households and given them greater access to credit. It is an indication of a financially stronger household sector.

Technological developments have also had a positive impact on the functioning of various housing finance systems. It has resulted into lower computing and telecommunication costs. Physical distance no longer being a barrier as before, it has lowered the costs of post contract management with customers spread across geographically diverse areas. In fact the combination of technological advances and financial innovations has facilitated lenders in providing customized financial products with better risk management and pricing accuracy. One also witnesses standardization of documentation that in turn enables automation of credit evaluation. It has made secondary markets more transparent which induces further growth of the housing finance sector.

3. FINANCIAL LIBERALIZATION

Financial liberalization and deregulation have played a major role in taking advantage of the prevailing macro economic environment. With the growth of the housing finance systems across various countries, there have been changes in the regulatory approach towards it. Earlier, the period was marked by financial conservatism with several legal and regulatory restrictions and barriers aimed at customer protection through creation of an insulated system. However, over time, regulators have shifted their focus towards improving efficiency and profitability by allowing market forces to bring financial discipline. Removal of rigid controls paved the way for market orientation which brought along greater efficiency and dynamism. Financial liberalization has set free global competitive forces so that national and regional players are now focussing on increasing pricing efficiency and providing better services. Capital markets are expected to play a bigger role in future due to a more market based housing finance system, supported by the growth of secondary mortgage markets. The implementation of Basel II norms on risk and capital management requirements will increase the international marketability of the financial system in general and the housing finance

system in particular. The collective impact of the globalization of financial markets is the significant expansion in the availability of mortgage loans across various countries.

4. HOUSING POLICIES

The fourth important factor contributing towards expansion of the housing finance systems has been government housing policies which though, are at variance across different countries. The role of government in the housing sector in most countries has been crucial. Policy makers use tax policies as a tool to encourage house purchase. The public authorities frame regulations related to price and rent, land use, construction restrictions and financing (CGFS Report, 2006). Governments are active in social housing and urban planning as well as renewal. Most governments provide tax incentives on mortgages so as to improve home ownership rates. This is done by giving preferential treatment to mortgages by allowing full or partial deduction of interest payments from taxable income or by giving subsidies or cash grants. While in most countries there has been a gradual reduction in the role of government in housing markets, their policies regarding land use, rental housing, and foreclosure laws have a great impact on the functioning of the housing sector.

Regulations of land use and building activities form an important agenda of all countries. Often, these regulations are found to have restricted the supply of land for housing purpose and have caused house and land prices to rise. There is a large difference across countries with regard to personal bankruptcy laws and foreclosure norms. It is common knowledge that weaker foreclosure laws adversely affects access to housing loans. Thus, government regulations and legal framework have an important bearing on the functioning of the housing finance sector.

Section 4.7.5: Conclusion

The above enumeration of the housing finance systems across various countries clearly brings out one major difference between most of the western countries and the Asian countries. While the former have well developed market based housing finance systems, most of the Asian countries including India are in a transition towards greater marketization of their housing and housing finance systems. In the Asian countries, there is observed a clear complementarity in the role played by government and market-oriented private housing finance institutions. Public housing typically concentrates on the low income housing

involving subsidies and interest rate concessions. Each of these countries has some innovative measures integrated within the broad division between public and private housing and housing finance systems.

Another common factor observed is the effort to operationalize a well functioning secondary market of mortgages in countries which do not have one as yet. Similarly, there is a move towards establishing mortgage insurance market so as to encourage more housing finance funds to flow, particularly to sections of society hitherto neglected by lending institutions. Mortgage insurance would go a long way in inducing lending institutions to extend home loans to households with lower and variable income. There are important lessons to be learnt by India in its approach and strategies of housing finance under both private and public sectors. More importantly, India needs to focus on the proper implementation of well intentioned housing finance policies so as to achieve the desired results.

It may be reasonably concluded that there is some kind of convergence observed across most countries of the world with regard to their housing finance systems. Most countries appear to follow the same pattern of structural transformation of the sector. The increase in the volume of housing finance in emerging economies is concurrent with the adoption of the tenets of liberalization and marketization. Typically in the advanced countries with substantial expansion of the housing finance sector, there appears a tendency of over-exposure to risks, making the systems vulnerable, as was witnessed in the case of the sub-prime lending crisis. It may be noted however, that there does not exist a strong correlation between liberal credit terms and the mortgage debt to GDP ratio. This suggests that the depth and width of the housing finance market cannot be enhanced merely by liberalizing credit terms. Rather it calls for concerted effort across all quarters such as establishment of appropriate institutional infrastructure and prudent financial practices along with healthy and effective legal framework. The essential lesson for each country is the adoption of prudent and far-sighted approach with the right degree of risk exposure and social responsibility executed under a system of judicious regulatory apparatus.

CHAPTER 5

TRENDS AND PERFORMANCE OF HOUSING FINANCE IN URBAN INDIA

CHAPTER 5
TRENDS AND PERFORMANCE OF HOUSING FINANCE IN URBAN INDIA

The housing finance sector in India has witnessed unprecedented growth in the past decade or so. Introduction of financial liberalization paved the way for a more dynamic housing finance market than ever before. The accessibility and affordability of housing finance has improved substantially as reflected in the expansion of the volume of home loans in India. The middle class dream of home ownership was never so well manifested as it has in the last two decades. During the reference period of this study, 1990 to 2010, easy access to credit at lower interest rates, coupled with rising personal disposable incomes and stable property prices have facilitated more households to borrow; and to borrow a larger sum on an average. Expansion of urban centres,[21] owing to enhanced role of the service sector in the national economy, has also played a significant role in the growth of the housing finance sector.

The Indian housing finance sector is dominated by scheduled commercial banks who have commanded a market share of more than 70% for major part of the last decade. This chapter examines the underlying changes that have taken place over a period of two decades in the outstanding home loans of the scheduled commercial banks. The objectives of this chapter include analyzing the growth of outstanding home loans in the context of macro economic variables and under various classifications such as bank group-wise, interest rate-wise, size wise, population-wise and region-wise distribution. This chapter also seeks to probe into the concern that the housing finance sector caters largely to the higher income group households.

21. A large and densely populated urban area; may include several independent administrative districts.

SECTION 5.1

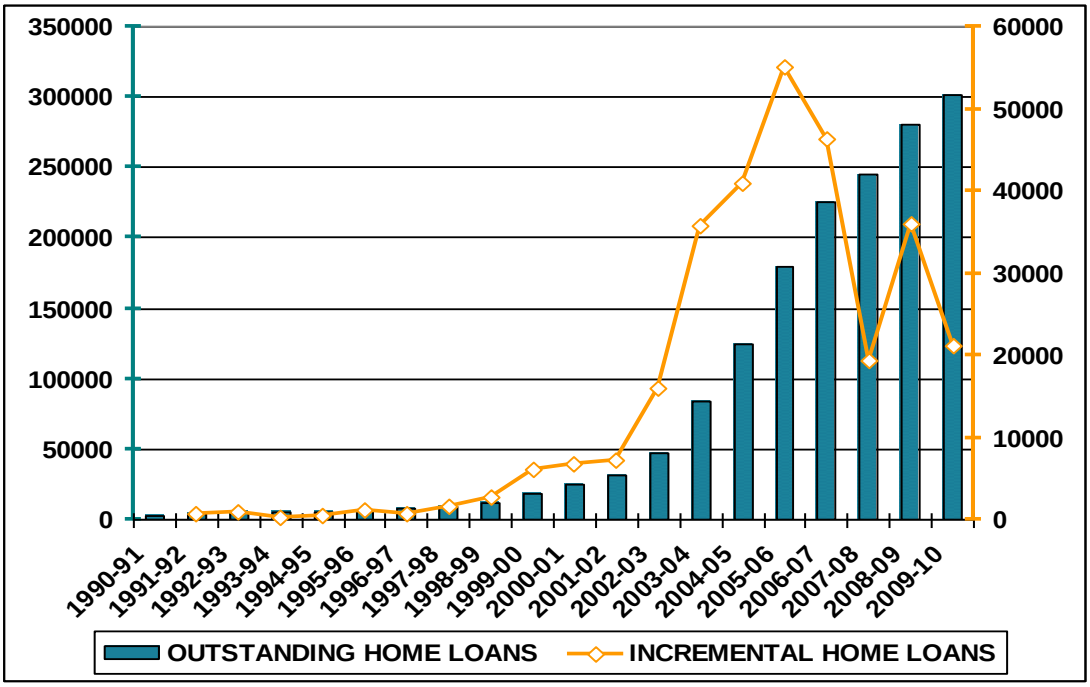
TRENDS IN HOME LOANS OF SCHEDULED COMMERCIAL BANKS

This section analyzes the changes in demand for home loans over the period of two decades. The alternative indicators of the demand for home loans include the level of outstanding and incremental home loans, the number of home loan accounts, the average home loan size and the sectoral share of housing finance in the total credit of commercial banks.

Section 5.1.1: Outstanding Home Loans

The outstanding home loans of Scheduled Commercial Banks (excluding Regional Rural Banks, RRBs) stood at Rs.3258.11 crores as on March 1991. At the end of the fiscal year 2009-10, the outstanding home loans were Rs.302037.24 crores, recording an average annual growth rate of 28% over the 20 year period. The fast increase in the demand for home loans came in the back drop of rising personal incomes, declining home loan interest rates, stable property prices and tax incentives to home buyers. The growth in home loans in the two decades is vividly depicted in Fig. 5.1. The figure shows outstanding well as incremental home loans of SCBs (excluding RRBs).

Fig. 5.1 HOME LOANS OF SCHEDULED COMMERCIAL BANKS (INR CRORES)



Source: Basic Statistical Returns of SCBs, RBI.

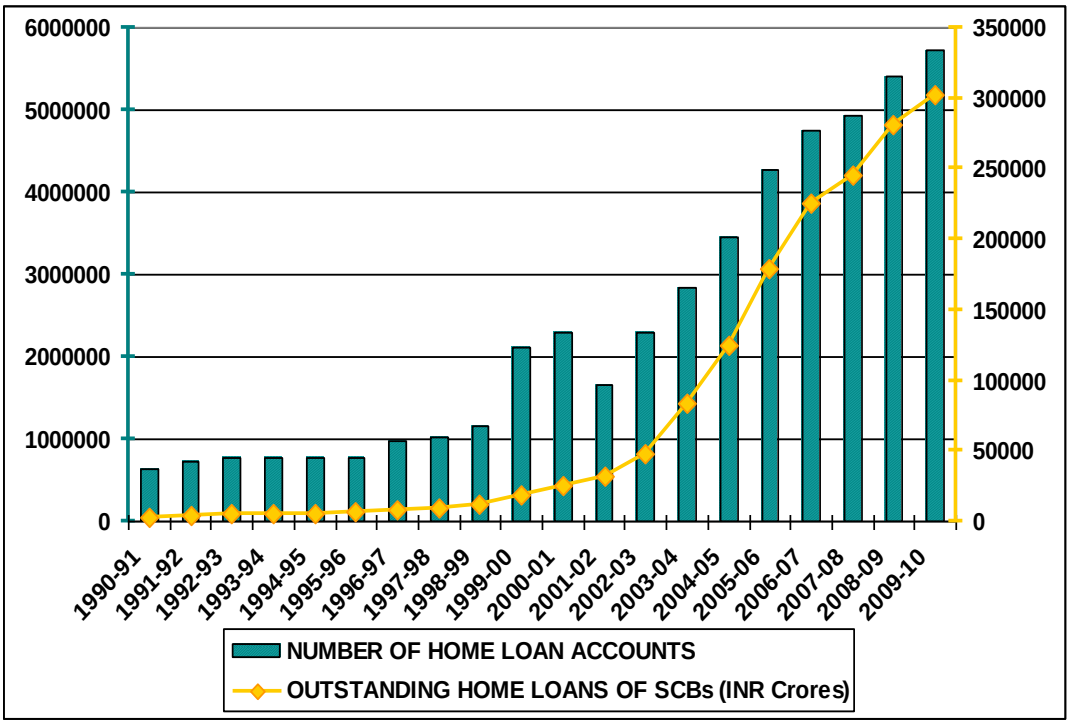
It is evident that for the entire first decade under examination, that is, 1990-2000, the outstanding home loans of commercial banks were very low. There was not much growth in disbursals of new home loans. This was a period when commercial banks were not very active in the housing finance sector, particularly, in terms of retail lending to borrowers. There role was limited to providing for the working capital needs of industry and trade. Their involvement with the housing sector was limited in terms of directed credit under which they subscribed to the bonds and debentures of HUDCO and State Housing Boards, and lent to borrowers belonging to scheduled castes, scheduled tribes and EWS.

In the late 1990s several factors such as financial deregulation, lower interest rates, decelerated industrial growth, lethargic credit off-take, and the abundance of liquidity propelled the commercial banks into housing finance sector in a major way. Concern for profit margins necessitated the shift in focus from wholesale segment to retail segment. As a result, high disbursals of new home loans, i.e., incremental home loans were witnessed in the early 2000s. For instance, the disbursals more than doubled in a span of one year, that is, between 2001-02 and 2002-03, and there after maintained a multi-fold pace till 2005-06 which also marks the peak level in home loan disbursals of commercial banks till date. It is interesting to note that in a span of ten years, between1990-91 and 2000-01, there was a 7.5 times increase in the outstanding home loans of SCBs. With the increased momentum of growth in the housing finance sector the same magnitude of growth was achieved within a span of the next five years, ending 2005-06. Thereafter the growth slowed down a little as property prices started hardening, and on account of the global financial crisis, which resulted into liquidity issues for the financial sector. Although, official figures are not yet available for the year 2010-11, there are reports of an upward turning point in new loan disbursals with the rationalization of property prices and reversal of the upward trend in interest rates.

Section 5.1.2: Number of Home Loan Accounts

An important indicator of the growing demand for home loans is the number of home loan accounts. Not only has the housing finance market in India experienced increase in the outstanding home loan amount, but the number of accounts has also increased, indicating that the banking sector is catering to a larger number of borrowers. It thereby indicates widening and deepening of the housing finance system. Fig 5.2 depicts the growth in the number of home loan accounts in the twenty year period.

Fig. 5.2 NUMBER OF HOME LOAN ACCOUNTS AND OUTSTANDING HOME LOANS OF SCBs



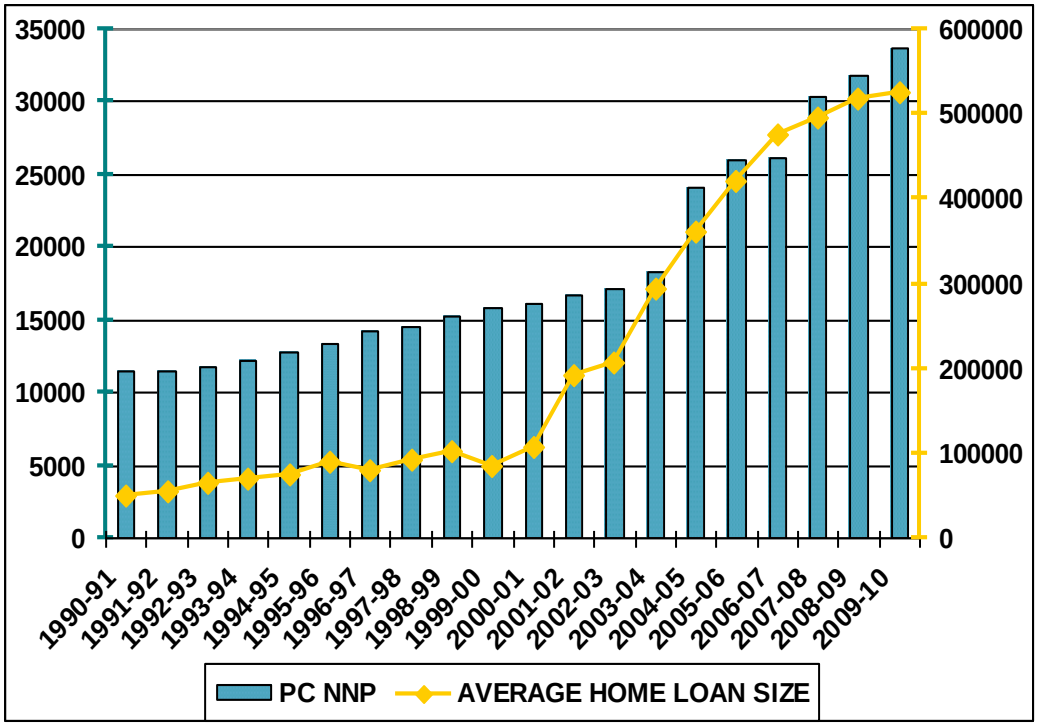
Source: Basic Statistical Returns of SCBs, RBI.

The number of accounts increased from 6.4 lacs to 57.38 lacs, recording a growth of nearly 800% over a period of two decades. Fig. 5.2 reveals that the change was at a slow pace in the decade of 1990s; however, with the increased thrust on retail loans, particularly home loans, by commercial banks in the last decade, there was a rapid rise in the number of borrowers. The increase in the number of loan accounts indicates that a large number of households have been able to access home loans on account of rising incomes and cheaper credit.

Section 5.1.3: Average Home Loan Size

The robustness of the growth in the demand for housing finance is further substantiated by the changes in the average home loan size over time. It is measured as the ratio of outstanding home loans to the number of loan accounts. It is noteworthy that the average home loan size has grown with each passing year. It is a measure of the increased demand for home loan per loan account. At just Rs.50000 in 1990-91, the average loan size has grown more than ten folds to Rs.520,000 in 2009-10 as seen in Fig. 5.3. The curve showing average loan size is positioned along with per capita income to depict the changes in perspective.

Fig. 5.3 PER CAPITA INCOME AND AVERAGE HOME LOAN SIZE (Rs.)



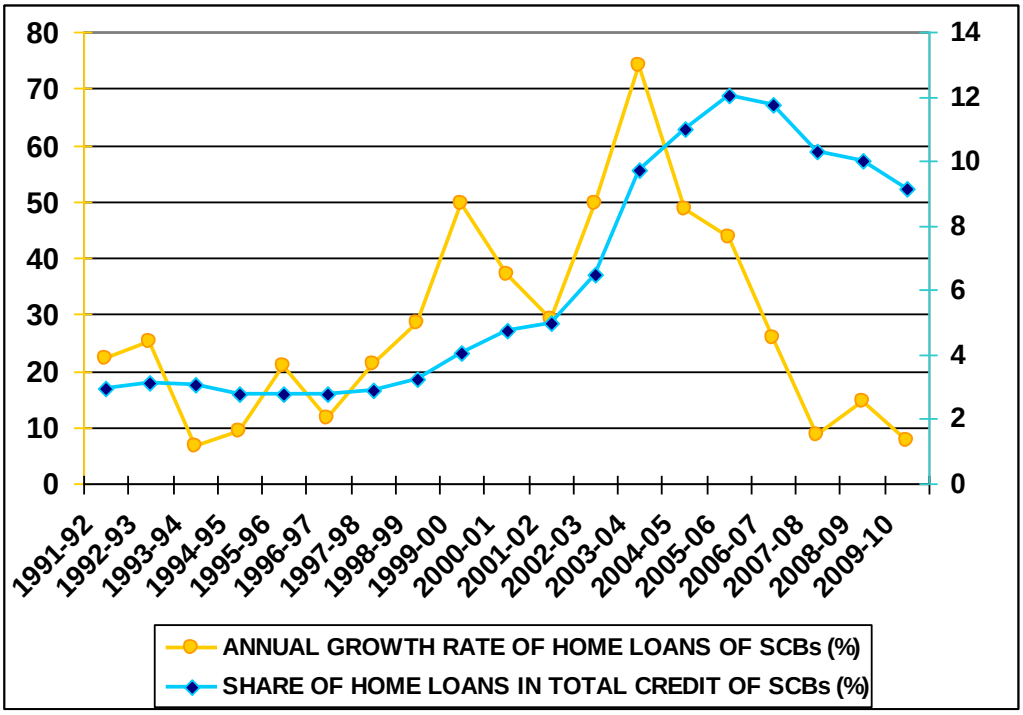
Source: Handbook of Statistics of Indian Economy, RBI. Average Home Loan Size computed as explained in the text.

The average loan size follows a pattern similar to that of outstanding loans. In the first decade its growth has been very gradual. It took ten years for the average loan size to double from Rs.50000 to Rs.100000. The second decade witnessed a rapid increase in the average loan size, registering more than five fold increase over the same span of time. Further, it is evident from Fig 5.3 that the change in the pattern of average home loan size is highly correlated to the trend in income measured in terms of per capita net national product.

Section 5.1.4: Growth Rate and Sectoral Share of Outstanding Home Loans of SCBs

The growth in the demand for home loans and the thrust on retail lending among commercial banks, particularly in the second decade under study, is borne out by the increased share of home loans in the total credit extended by the banking sector. Fig. 5.4 combines the growth pattern of outstanding housing loans and its sectoral share in the total credit of scheduled commercial banks.

Fig. 5.4 GROWTH PATTERN OF HOME LOANS OF SCBs



Source: Computations based on the data on Outstanding Home Loans and Total Credit of SCBs. (BSR, RBI)

The growth in housing loans through the decade of 1990 has been relatively lower, at the average rate of 21.47%. The second decade, 2000-01 to 2009-10, witnessed rapid increase in outstanding housing loans, registering an average growth rate of 34.12%. This amounts to a pace of growth that is faster by more than 60% compared to the previous decade. The peak growth rate of 74% in outstanding home loans was registered in the year 2003-04. The growth rate slowed down afterward, particularly during 2006-07 to 2007-08 on account of the global economic slowdown.

The share of housing loans in the total bank credit hovered between 3 to 4 percent in the 1990s. In the mid-2000s there was improvement in its share to above 10%. It hints at the

growing significance of housing finance as a lucrative sector for commercial banks, even as relatively strict prudential norms are required to be followed for lending to this retail sector. The increase in the sectoral share is also a reflection of the loans extended to the housing sector under priority sector lending. The sectoral share was at its maximum in the year 2005-06 at 12.03% but declined to around 9% in 2009-10.

Section 5.1.5: Conclusions

The comprehensive analysis of the various indicators of demand for housing finance unambiguously establishes that over the past two decades there has been substantial and robust growth in the demand for housing finance. Cheaper credit and rising incomes as well as fiscal incentives have not only enabled more households to borrow but also to borrow more. Both in absolute terms, be it in form of outstanding or incremental home loans, new loan disbursals or number of loan accounts, and in relative terms such as the average loan size and sectoral share of home loans, the housing finance market has achieved greater breadth as well as depth. The present study seeks to revisit these measures by casting them into econometric models for empirical analysis.

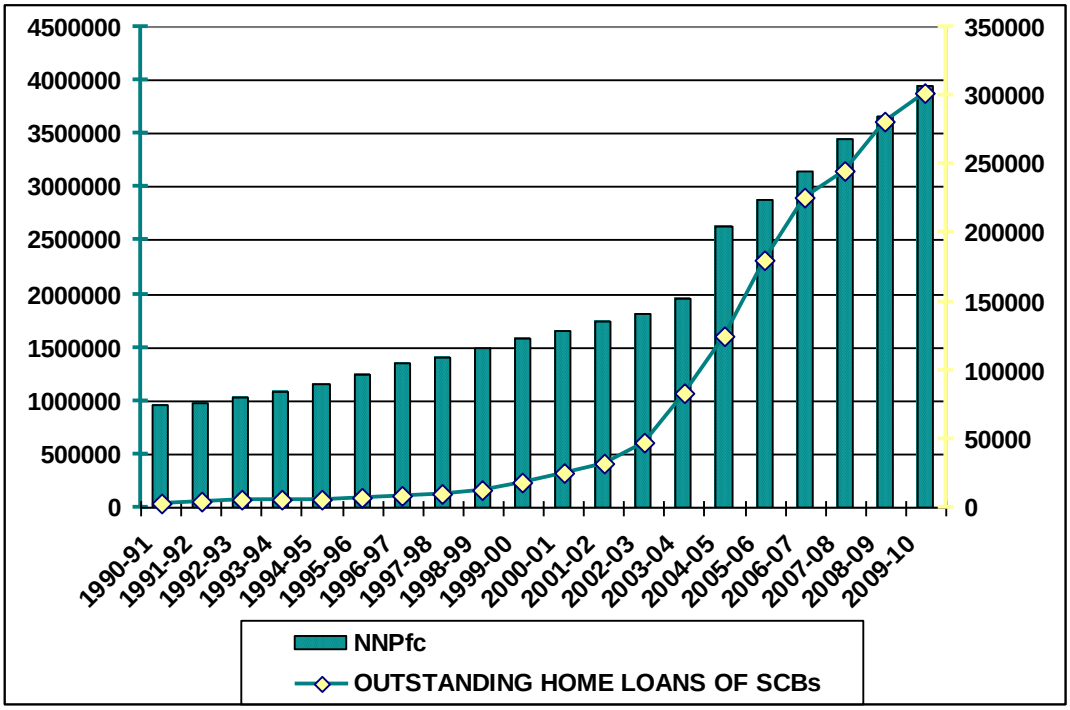
SECTION 5.2

HOME LOANS AND MACRO ECONOMIC VARIABLES

Section 5.2.1: National Income and Home Loans

An interesting picture emerges at the macro economic level when the growth trend of outstanding home loans of scheduled commercial banks is juxtaposed with the NNP at factor cost. Fig. 5.5 depicts the trends in the two variables for the period 1990 to 2010. It is evident that with the faster pace of growth in National Income in the second decade under study, the upward trend in outstanding home loans has also become steeper. There is a strong positive correlation, measuring 0.98, observed between the two variables. The strength of the growth in housing finance is further substantiated by the steady rise in the ratio of outstanding loans to NNP. From as low as 0.34% in 1990-91, the ratio rose to 7.65% in 2009-10. This suggests that demand for home loans has indeed out-paced the rate of growth of National Income.

Fig. 5.5 TRENDS IN NATIONAL INCOME AND OUTSTANDING HOME LOANS OF SCBs (INR Crores)



Source: Economic Survey 2010-11, Basic Statistical Returns of SCBs, RBI

Examination of home loans vis-à-vis per capita income reveals that in the first decade under study, the ratio of outstanding home loans to PC NNP was quite low but it increased steadily each year. For instance, this ratio was only 0.28 in the year 1990-91. By the year 1999-2000, it reached a level of 1.13. In the second decade, 2000 to 2010, the outstanding home loans grew at unprecedented rates to reach a level of nine times that of PC NNP by the end of the period. The ratios are displayed in the Table 5.1.

TABLE 5.1

OUTSTANDING HOME LOANS OF SCBs AND NATIONAL INCOME

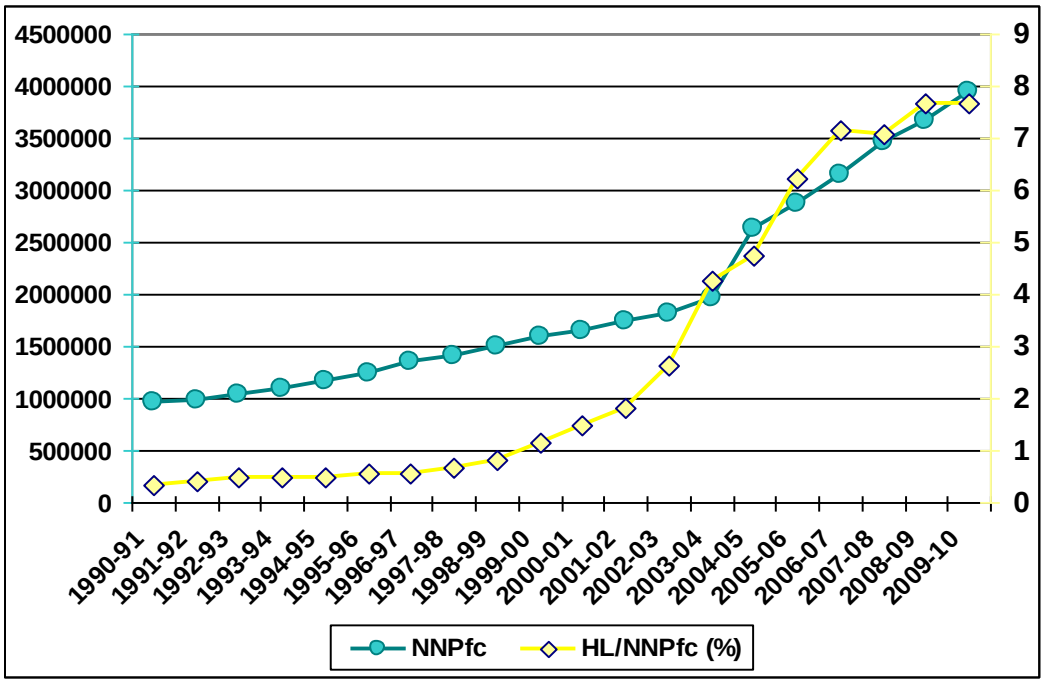
YEAR	Ratio of Outstanding Home Loans to NNP	Ratio of Outstanding Home Loans to PC NNP
1990-91	0.0034 : 1	0.28 : 1
1999-00	0.0113 : 1	1.13 : 1
2009-10	0.0765 : 1	9.00 : 1

Source: Computations based on data on NNP, PC NNP and outstanding home loans of SCBs. (Economic Survey, 2010-11, BSR, RBI)

The ratios for the three years presented in the table above reveals the momentum that housing finance has gathered in its upward march. Interestingly, between the years 1990-91 and 1999-2000, the ratio of outstanding home loans to NNP has increased by 3.3 times from 0.0034 to 0.0113; over the next ten-years time period, that is, between the years 1999-00 and 2009-10, the same ratio increased by 6.7 times from 0.0113 to 0.0765; a more than double growth. The trend in the ratio of outstanding home loans to National Income is portrayed in Fig. 5.6.

A similar pattern of change is observed in the case of ratio of outstanding home loans to PC NNP. In the first ten years reported in Table 5.1, the growth in the ratio is four times the level prevailing at the beginning of the period. Over the next ten-year period ending 2009-10, the ratio has again grown at double pace to reach a level that is eight times higher than that at the beginning of the decade of 2000. While home loans vis-à-vis aggregate as well as per capita national income are expected to continue to grow in the future, the pace of growth will be influenced by factors such as the movement in property prices, the pattern of urbanization across the country and the level of further development of the financial sector, among others.

Fig. 5.6 TRENDS IN MORTGAGE DEBT RATIO AND NATIONAL INCOME



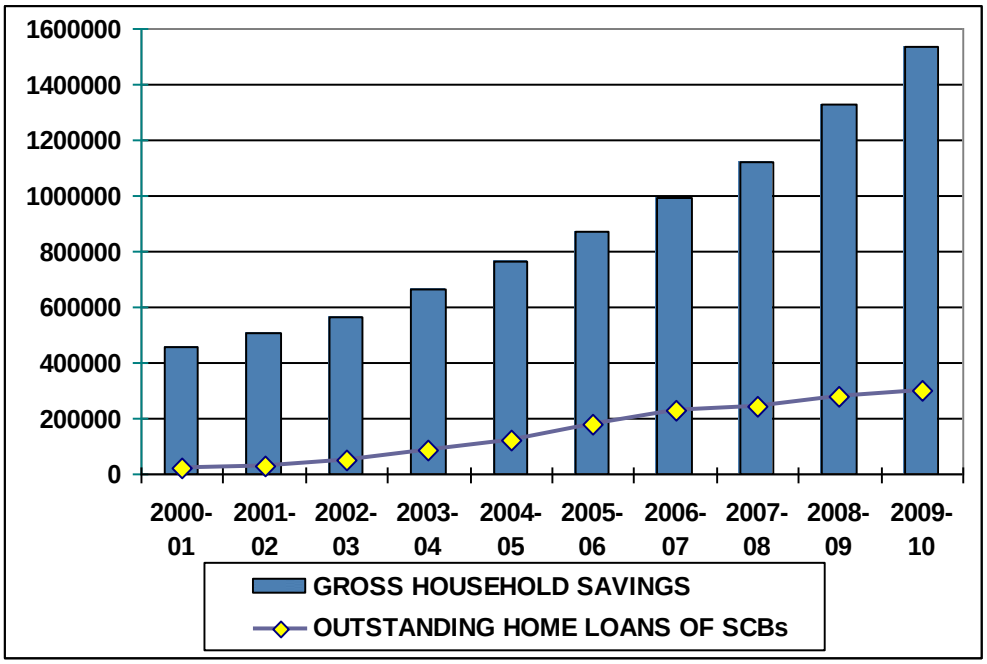
Source: Economic Survey 2010-11, and computations based on data on outstanding home loans of SCBs (BSR, RBI.)

Section 5.2.2: Household Savings and Outstanding Home Loans

Savings are essential for households to enable them to make the down-payments while opting for home loans. It is worthwhile to note the trends in aggregate household savings and the outstanding level of home loans of scheduled commercial banks. Both, household savings and home loans have grown substantially over the period under investigation. While household savings grew at the compound annual rate of 15.81% over the two decades, outstanding home loans of the commercial banks grew at the compound annual rate of 26.92%. Figure 5.7 depicts the trends in the two variables.

As regards the ratio of outstanding home loans to aggregate household savings, there is evidence of an increasing trend. At the beginning of the period, that is, in the year 1990-91, outstanding home loans were merely 3.11% as a proportion of the household savings. By the end of the period, that is, in the year 2009-10, outstanding home loans were nearly 20% of the household savings. This indicates the growing ability of households to demand home loans. Even as savings of the household sector has increased, they are able to afford more home loans as liabilities. It suggests that increase in income is the overpowering factor that has led to increase in the demand for home loans. Table 5.2 presents the changes in the relationship between national income, savings and home loans.

Fig. 5.7 HOUSEHOLD SAVINGS AND HOME LOANS (Rs. Crores)



Source: RBI Bulletin, Basic Statistical Returns of SCBs, RBI.

TABLE 5.2
RATIO OF OUTSTANDING HOME LOANS TO NATIONAL INCOME AND HOUSEHOLD SAVINGS

YEAR	HOME LOANS / NNP	HOME LOANS / HOUSEHOLD SAVINGS
1990-91	0.34%	3.11%
1999-00	1.13%	4.35%
2009-10	7.65%	19.66%

Source: Computations based on data on NNP, Household Savings and Outstanding Home Loans. (Economic Survey, 2010-11, BSR, RBI)

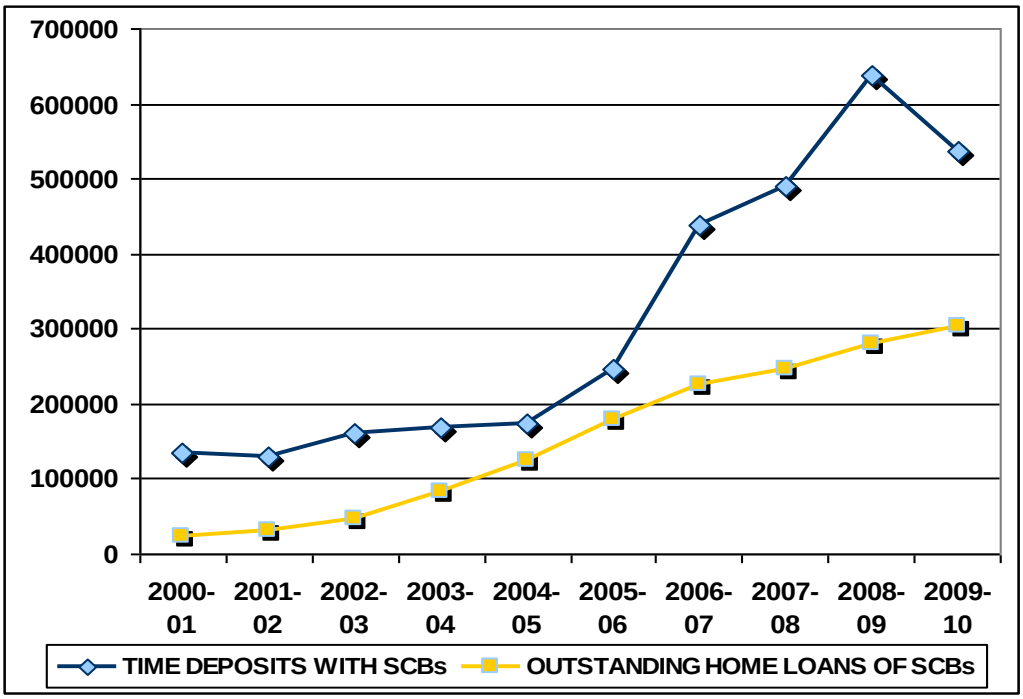
Section 5.2.3: Time Deposits and Home Loans

Along with the increase in savings, another measure which highlights the growing ability of households to borrow is the positive trend in the time deposits of the SCBs. Even as the holdings of time deposits have increased, households have borrowed more. From the point of view of household savers, increase in time deposits implies increase in financial wealth, which improves their ability to make down payments for house purchase. This leads to improvement in housing affordability which encourages demand for home loans.

From the point of view of supply of funds, increase in time deposits with the commercial banks implies increase in the ability to lend. The increase in the ratio of housing loans to time deposits substantiates that more funds have flown into the housing finance sector. Along with this, as will be seen later in Section 5.8, there is substantial increase in the refinance extended by NHB to the SCBs particularly in the second decade under study. This testifies the increased flow of funds towards the housing finance sector.

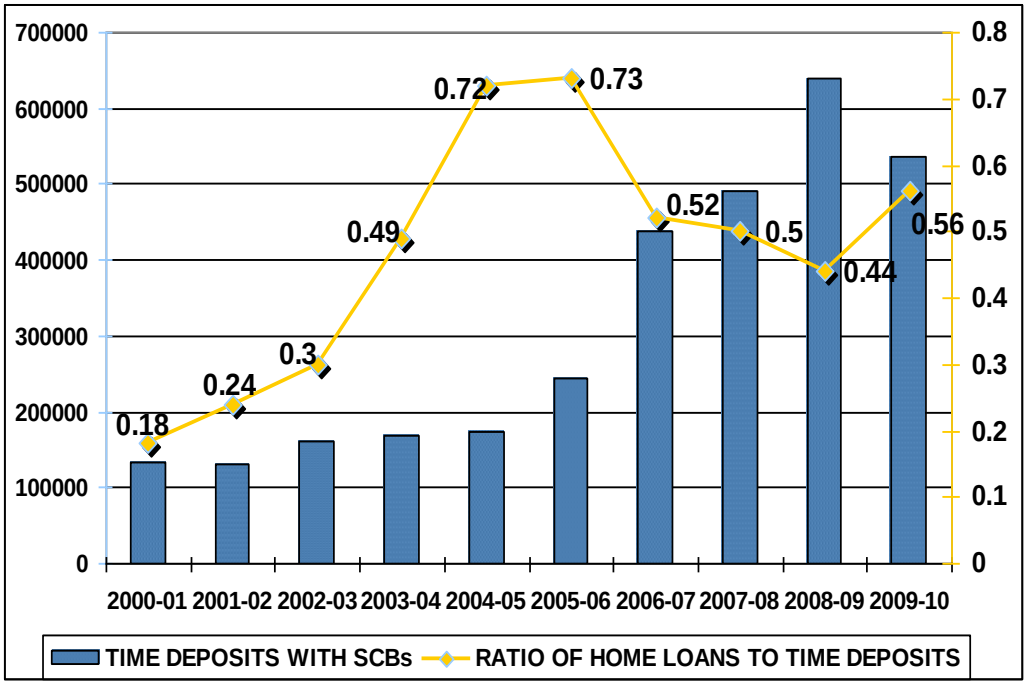
The trend in the two variables has been depicted in Fig. 5.8. The ratio of outstanding home loans to time deposits is shown in Fig 5.9. The ratio was merely 0.18 in 2000-01 which peaked to 0.73 in the years 2005-06 which coincides with the peak period in the outstanding home loans of SCBs. Reflecting the impact of the global financial crisis, however, this ratio dipped to around 0.44 in 2008-09, although there was an improvement in the ratio to 0.56 in 2009-10. Over the ten year period, the ratio has grown more than two times from 0.18 to 0.56, indicating growing affluence of the household sector and increased flow of funds to the housing finance sector.

Fig. 5.8 TREND OF TIME DEPOSITS AND HOME LOANS



Source: RBI Bulletin, Basic Statistical Returns of SCBs, RBI.

Fig. 5.9 RATIO OF HOME LOANS TO TIME DEPOSITS



Source: RBI Bulletin, Computations based on data on Outstanding Home Loans of SCBs. (BSR, RBI)

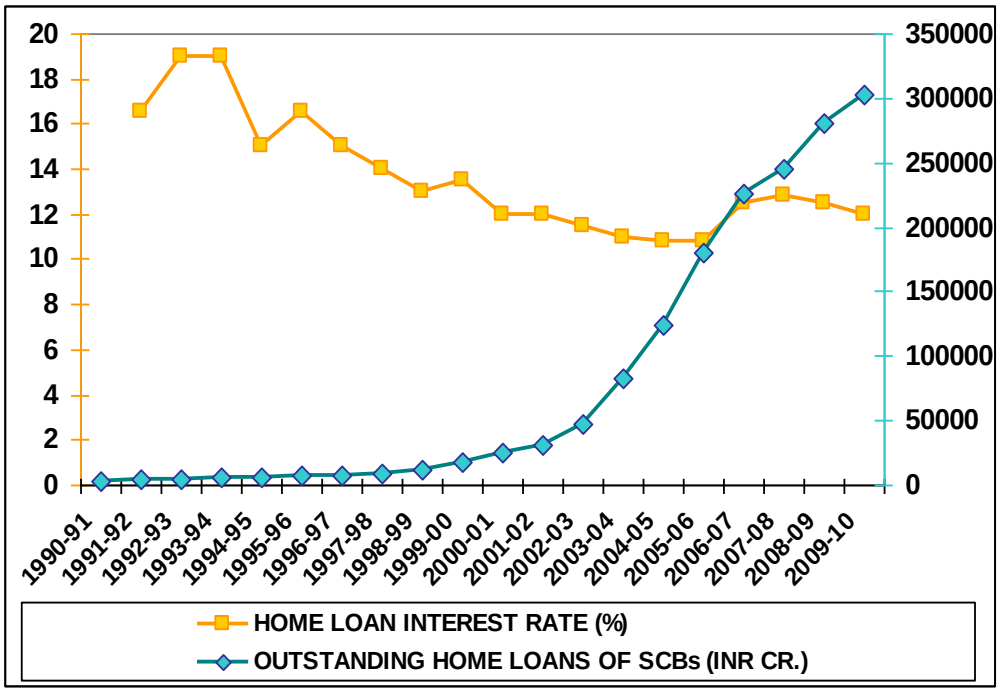
Section 5.2.4: Home Loan Interest Rates and Home Loans

The housing finance market in India has witnessed a rapid expansion in the last two decades, and among the factors responsible for the upsurge is the decline in the home loan interest rate. Home loan interest rates have largely been governed by movements in the Benchmark Prime Lending Rates of the respective banks. Prior to 1994, the cost of home loans was regulated by the NHB which sought to maintain interest rate differentials vis-à-vis the size of the loan. Post 1994, this regulation was partially liberalized by giving lending institutions the freedom to charge market rates of interest for home loans above INR 25000. Severe liquidity crisis in the economy in the early 1990s saw the maximum BPLR hovering in the range of 17 to 19 percent per annum. Therefore, home loan rates up to the initial years of 1990s were quite high, except, for instance, for the employees of Public Sector Undertakings and beneficiaries of subsidized housing credit who were offered home loans at very cheap rates.

The downward trend in interest rate on housing finance in India was observed particularly from 2000 to 2005 with a 15-year home loan cost falling to an unprecedented low level of 7.5%. Loans were offered as discounts over the prime lending rates. Lower interest rates brought the anticipated increase in the loan amount demanded by borrowers. Until 1999 only fixed rates were offered on home loans. With the entry of commercial banks in a big way by the year 2000, home loans started being offered with adjustable rates to suit their liability structures. Commercial banks eased their lending standards in pursuit of a larger pie of the rapidly rising market for housing finance. Overall, there were competitive reductions in the interest rates which benefitted borrowers immensely. Banks and HFCs also offered to re-price most high-cost fixed rate loans by converting them to floating rates at a nominal fee.

In the later years of the last decade, between 2007 and 2010, financial crisis and economic slowdown in the global economy and rising inflation in the domestic economy led to firming up of interest rates and caused a slowdown in mortgage finance activity in India. More recently though, there has been some softening of the interest rates and there is likelihood of further lowering of policy rates by the RBI in a bid to arrest further dip in the performance of the industrial sector; although the depreciation in Rupee value against the US dollar may change the priorities and the policy responses. Fig. 5.10 portrays the trends in outstanding home loans vis-à-vis interest rates. It may be noted that the average benchmark prime lending rates of the banking sector have been used as proxy for the home loan interest rates.

Fig. 5.10 OUTSTANDING HOME LOANS VIS-À-VIS INTEREST RATES



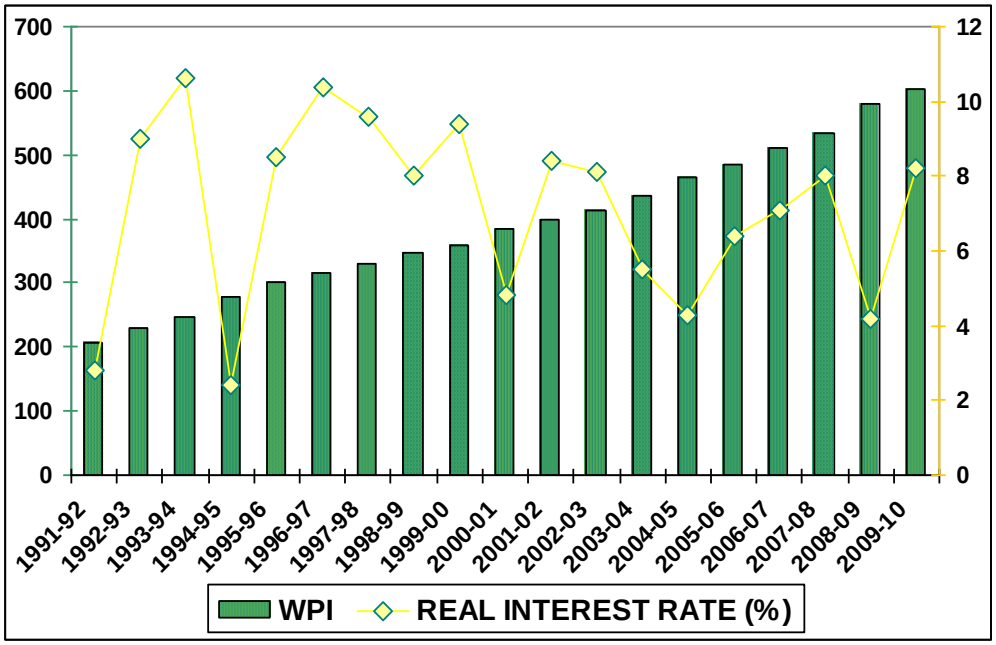
Source: Basic Statistical Returns of SCBs, RBI, RBI Publications.

The upward trend in mortgage finance is found to be negatively correlated with the downward movement in the home loan interest rates, although the magnitude of the coefficient of correlation is only –0.51 for the total period of 20 years, and is statistically significant at 5% level of significance. Interestingly, when the total period is divided into two decades, the first decade reveals a much stronger negative correlation between the two variables. The correlation coefficient is found to be of the magnitude of –0.72, which is significant at 5%. In the second decade, 2000-10, as housing finance sector gained momentum, a mildly positive correlation is observed between outstanding home loans and interest rates; although it is statistically significant at a higher significance level of 21%.

The relatively weak negative correlation between interest rates and home loans could also be due to the capital gains arising out of increase in residential property prices over time. Increase in property price generally outweighs the total interest cost of home loan. Therefore even when interest rates are rising, it may not deter households from borrowing more. Fig. 5.11 demonstrates the trend in real interest rates and the Wholesale Price Index, which has been used as a proxy for residential property prices as discussed in Chapter 3. It can be seen

that in the second half of the period examined, the real rates of interest have reduced while the WPI has a continuous upward trend, resulting into capital gains for home buyers.

Fig. 5.11 TRENDS IN REAL INTEREST RATES AND WPI



Source: Handbook of Statistics of Indian Economy, RBI. Real interest rate computed as explained in Chapter 3.

Section 5.2.5: Conclusions

Examination of home loans in the context of selected macro economic variables reveals significant relationships. Home loans appear to follow the pattern of the trend in National Income as well as household savings. It suggests that the increase in incomes has scaled up households' affordability of housing finance. The modest ratio between mortgage debt and National Income indicates the huge scope for growth of housing finance in future, particularly in the light of the upward trend in household savings as well as time deposits.

Increase in household savings and time deposits also indicate increase in financial flows towards the banking sector, thereby augmenting the availability of funds. The upward trend in the ratio of home loans to time deposits is an indication in this regard. In the years 2007 to 2009, following the sub-prime crisis in the US, which led to a global financial crisis, banks in India too adopted a cautious approach towards housing finance. This is evident by the fact that during these years, while the level of time deposits increased, there was a fall in the ratio

of home loans to time deposits. A similar flattening of trend in outstanding home loans is also observed vis-à-vis household savings during the same period. During the years 2007-2009 property prices across most cities hardened. Moreover, in the effort to rein inflation, the central bank raised policy interest rates several times which led to hardening of home loan interest rates as well. Both factors were responsible in slowing down the pace of growth of home loans; although the trend remained positive.

The interrelationships between macro economic variables point toward important aspects of the housing finance market. Firstly, it suggests that funds for the housing finance sector can be augmented by encouraging more savings to flow to the financial sector, in general, and to the banking sector in particular. Secondly, it points out that macro economic stability in terms of prices and interest rates are crucial for rapid expansion of the housing finance sector, as has been largely maintained in the literature on housing finance across various countries.

The trends in interest rates and outstanding home loans suggest that the interest rate is an important determinant of the demand for home loans, although home loans appear to be more strongly driven by the trend in income. Given the fact that home loan products in India have undergone innovative changes in the form of adjustable interest rates and combination loans, it is more likely that interest rate per se may not be utmost important as compared to the *type* of interest rate that borrowers can choose to suit their affordability criteria. Moreover, capital gains for home buyers on account of increase in property prices more than outweigh the increased interest cost of home loans, so that higher interest costs may not discourage borrowers. Looking at the overall trend in outstanding home loans, it can be concluded that the scale variables such as income and wealth are more decisive in determining the level of home loans compared to the cost variables such as interest rates and house prices.

SECTION 5.3

BANK GROUP-WISE DISTRIBUTION OF HOUSING LOANS

Bank group-wise examination of home loans throws light on the competitive structure of the housing finance sector. The analysis covers four bank groups, namely, State Bank of India and its associate banks, nationalized banks, foreign banks and private banks. Regional Rural Banks have been excluded as the present study is focused on urban housing finance.

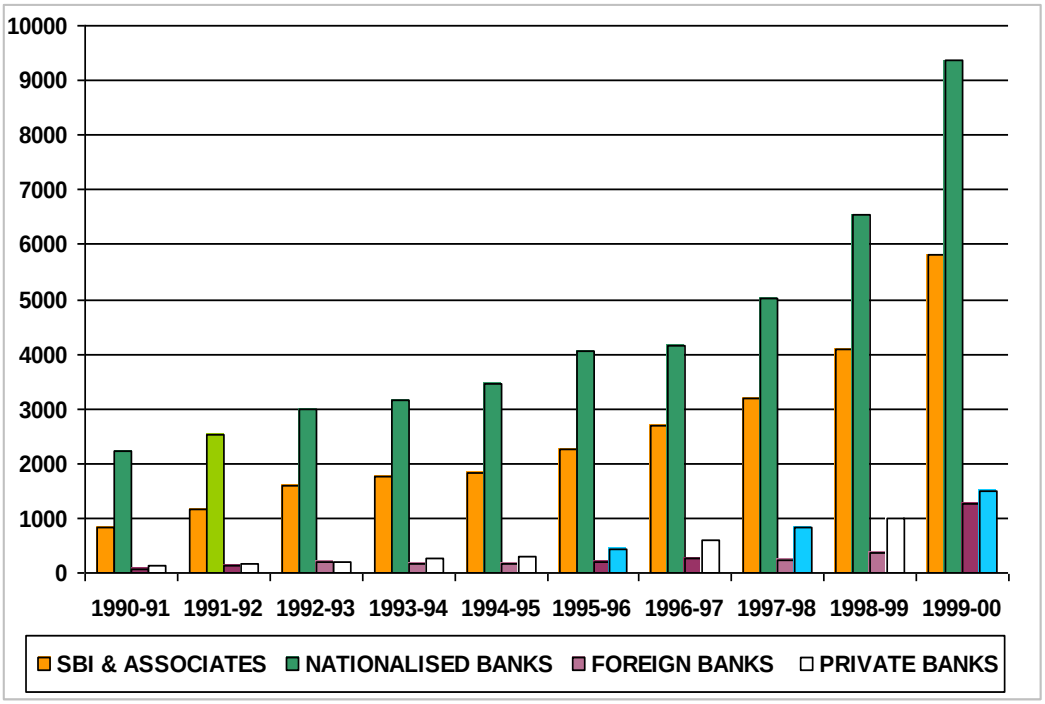
Section 5.3.1: Volume and Growth of Home Loans across Bank Groups

Fig. 5.12a and 5.12b depict the volume of bank group-wise outstanding home loans for the two decades respectively to facilitate proper portrayal of the wide variation in home loans across banks between the two sub-periods. The decade of 1990s is marked by low volume of home loans. All bank groups have outstanding home loans below Rs.10000 crores. Private and foreign banks could just cross the Rs.1000 crores mark at the fag end of the decade.

Nationalized banks have the highest volume of home loans. Its home loans grew from Rs.2229.31 crores in the year 1990-91 to Rs.9356.3 crores in 1999-2000. This amounts to a four fold growth for the first decade. Their average growth rate in home loans per annum for the first decade was 18 %. Nationalized banks have the highest share of the home loans among all bank groups. In the decade of 2000, nationalized banks recorded an average annual growth rate of 30% to reach a level of Rs.121148.04 crores of home loan disbursals. Taking the entire period into account, the home loans for nationalized banks grew at an average rate of 24% each year (22.11% in terms of Compound Annual Growth Rate, CAGR).

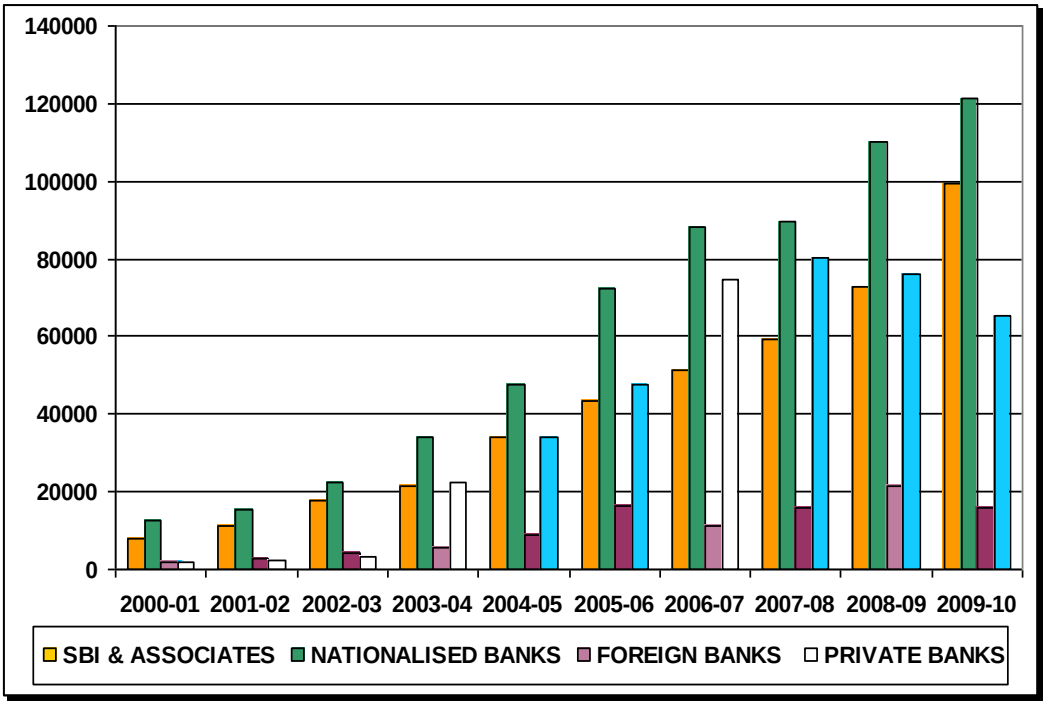
SBI and Associated banks as a group is among the major lenders of housing loans. Bifurcating the period into two decades, the first decade shows a seven fold increase in outstanding home loans from Rs.830.38 crores to Rs.5827.9 crores, which amounts to an average annual growth rate of 25%. In the second decade there was acceleration in the average growth rate to 33% per annum. At the end of the fiscal year 2009-10, the outstanding housing loans of SBI and associated banks stood at Rs.99610.23 crores, which is an increase of 17 times in the second decade. Its outstanding loans to the sector grew at an average rate of 29% per annum over the period from 1990 to 2010 (CAGR 27.04%).

Fig. 5.12a BANK GROUP-WISE OUTSTANDING HOME LOANS PERIOD: 1990-91 TO 1999-2000



Source: Basic Statistical Returns of SCBs, RBI

Fig. 5.12b BANK GROUP-WISE OUTSTANDING HOME LOANS PERIOD: 2000-01 TO 2009-10



Source: Basic Statistical Returns of SCBs, RBI

The outstanding housing loans of foreign banks were only Rs.74.29 crores in 1990-91; this grew to Rs.1250.2 crores in 1999-2000, recording close to 17 times increase and reflecting a growth of 52% per annum. The second decade witnessed relatively unstable growth in the outstanding housing loans of foreign banks. While its outstanding loans stood at Rs.16077.55 crores in the year 2009-10, its growth over the second decade was about 13 fold. This amounts to average annual growth of 35% in the second decade. The overall growth for the entire period from 1990-91 to 2009-10 was 43% on an average (CAGR 30.87%).

The outstanding home loans of private banks increased from Rs.124.13 crores to Rs.1506 crores in the first decade from 1990-91 to 1999-2000, which amounts to a twelve fold rise. Its outstanding home loans stood at Rs.65201.42 at the end of the period of study, that is, 2009-10, registering a 43 fold increase in ten years from 2000-01 to 2009-10. This is perhaps the most remarkable expansion witnessed across all bank groups. This is substantiated by average annual growth rate of 32% for the first decade and 79% for the second decade. The average growth rate for the twenty year period was 57% per annum (CAGR 36.78%), which is the highest across all bank groups.

Table 5.3 summarizes the growth of outstanding home loans across various bank groups. While public sector banks have maintained their growth rates within close range, the private sector banks have experienced much greater annual growth rates particularly in the second decade under examination. A comparatively better performance of private and foreign banks suggests deepening and widening of the housing loan segment of the financial system, although strict comparison cannot be made with larger public sector bank groups because of lower base figures of private and foreign banks. Nonetheless, it is noteworthy that the huge gain in market share by private banks from merely 4% in 1990-91 to 22% in 2009-10 suggests that their growth has indeed been robust.

Table 5.3
GROWTH RATE OF HOME LOANS ACROSS BANK GROUPS
(Average Annual Growth Rates)

PERIOD	SBI & ASSOCIATES	NATIONALIZED BANKS	FOREIGN BANKS	PRIVATE BANKS
1990-2000	25%	18%	52%	32%
2000-2010	33%	30%	35%	79%
1990-2010	29%	24%	43%	57%

Source: Computations based on data on bank group-wise outstanding home loans. (BSR, RBI)

Section 5.3.2: Growth Pattern of Home Loans across Bank Groups

The growth pattern of outstanding home loans for the various bank groups is shown in Fig. 5.13a to 5.13d. It is evident that all bank groups experienced the first major surge in the growth rates of home loans in the year 1999-2000. These were the years marked by intense competition among the lenders which saw aggressive interest rate schemes being launched to attract borrowers. Many banks, particularly the private sector banks, offered teaser rates wherein the home loan rates were set as low as 6% for the initial year or two. This allowed households to borrow larger sums of money for housing by keeping debt servicing low in the initial years. The peak growth rate for all bank groups, except foreign banks, was witnessed over the period ranging from 2003-04 to 2005-06. The peak growth rate for the foreign banks was 1999-2000, although they did experience resurgence in the growth rate in the year 2005-06 on the lines of other bank groups.

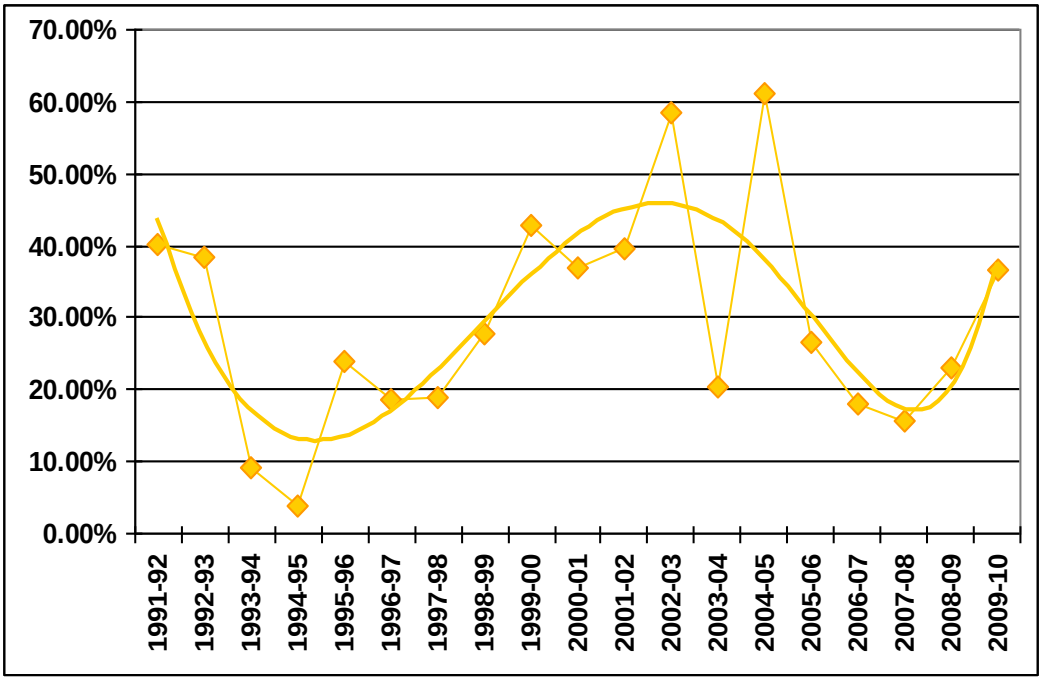
The growth rates of SBI group and nationalized banks have been relatively stable, ranging between 2 and 60 percent and is positive through out the period of study, as seen in the figures. Both bank groups high growth rates in home loans in the same period of time from 2002-03 to 2005-06. Overall, the SBI group and the nationalized banks have experienced a positive trend in outstanding home loans. The ups and downs in the growth rates are at best random in nature that can be attributed to the variability in performance in any market-based activity.

The outstanding home loans of foreign banks increased substantially from as low as Rs.74.29 crores in 1990-91 to Rs.1250.2 crores in 2009-10; however their growth pattern has not been very impressive. In four out of the 20 years reported here, foreign banks registered negative growth rates in the outstanding home loans. Moreover, its growth rates fluctuate substantially from negative to as high as 256%. Incidentally, it is the only bank group that exhibits a negative linear trend over the 20 year period; although the negative trend is not very sharp.

The growth pattern of private banks is found to be relatively volatile in nature. For the entire first decade and up to the initial years of the second decade under examination, their growth rates fluctuated between 20 and 58 percent. Its peak rate of growth of nearly 550% occurred in the year 2003-04.

GROWTH PATTERN OF OUTSTANDING HOME LOANS (1990 to 2010)

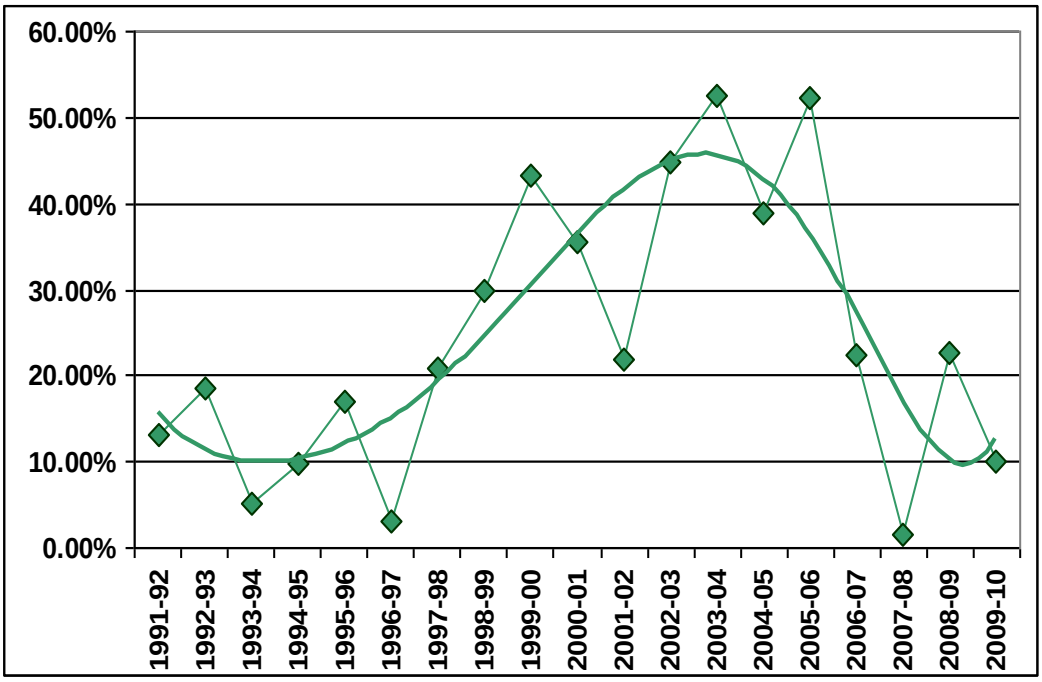
Fig. 5.13a SBI AND ASSOCIATED BANKS



Source: Computations based on values in Fig. 5.12a and 5.12b.

GROWTH PATTERN OF OUTSTANDING HOME LOANS (1990 to 2010)

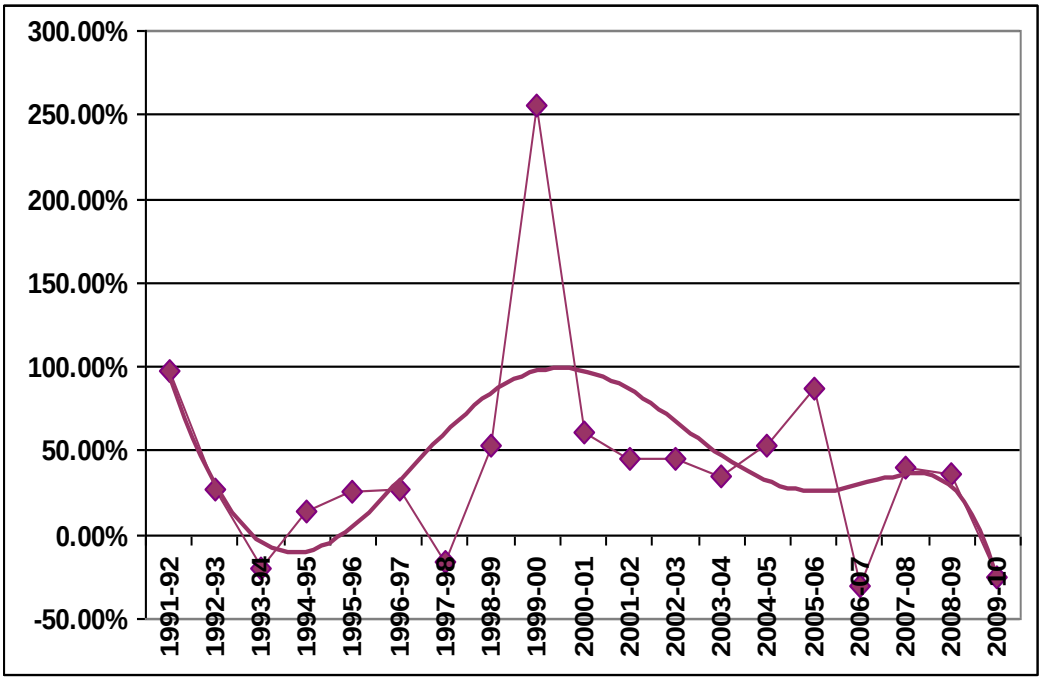
Fig.5.13b NATIONALIZED BANKS



Source: Computations based on values in Fig. 5.12a and 5.12b.

GROWTH PATTERN OF OUTSTANDING HOME LOANS (1990 to 2010)

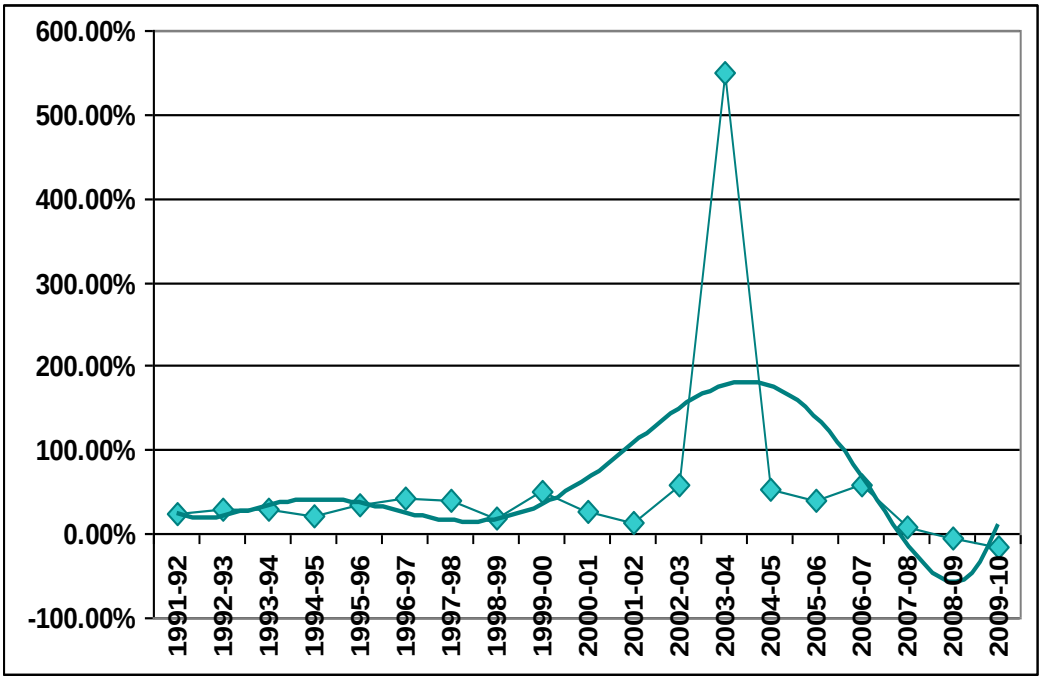
Fig. 5.13c FOREIGN BANKS



Source: Computations based on values in Fig. 5.12a and 5.12b.

GROWTH PATTERN OF OUTSTANDING HOME LOANS (1990 to 2010)

Fig. 5.13d PRIVATE BANKS



Source: Computations based on values in Fig. 5.12a and 5.12b.

In 2003-04, the banking sector as a whole registered the sharpest growth in housing loans segment (73%) and the biggest increase in share of housing loans in the total credit of SCBs from 6% to 9%. Further, it is also a year that is marked with substantial increase in the number of home loan accounts after a decline in the preceding year. In the last two years of the study period, that is, in 2008-09 and 2009-10 private banks experienced a negative growth in the outstanding home loans. The exposure of ICICI Bank to the sub-prime crisis in the US could be one of the responsible factors, given the substantial share of ICICI Bank in housing loan sector.

Section 5.3.3: Incremental Housing Loans of Commercial Banks

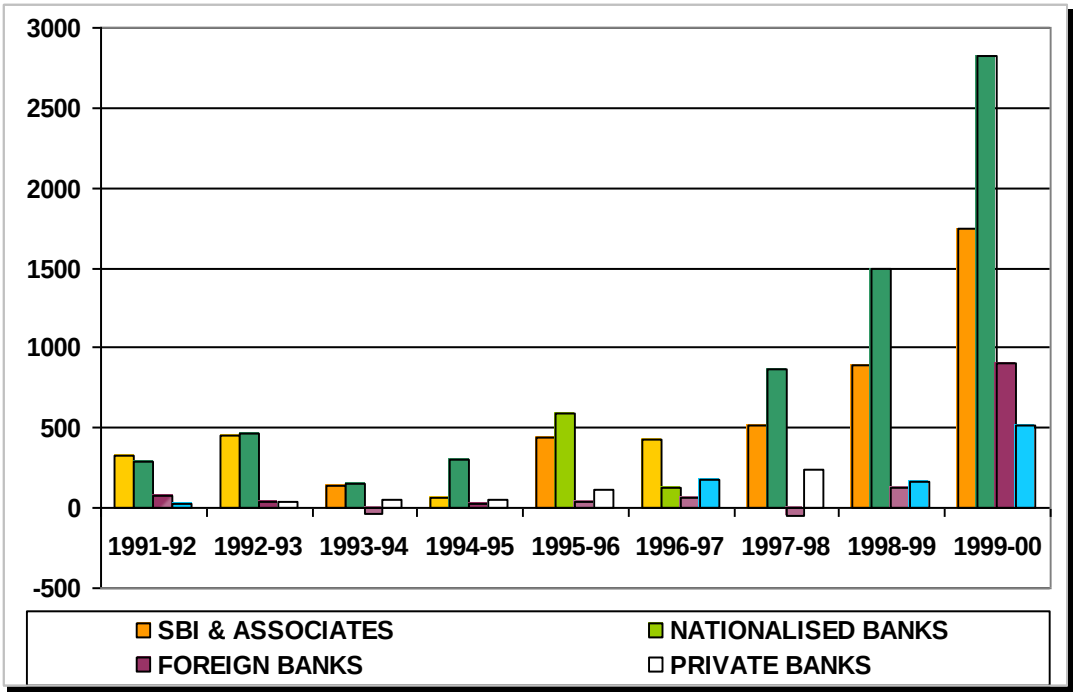
Analyzing the incremental housing loans of various bank groups provides some insight into the inter-bank group changes that have taken place over a period of time. For closer inspection, the data has been presented separately for the two decades in Fig 5.14a and 5.14b.

Over the first decade, the incremental home loans of SBI and Associates increased at the average rate of 94% per annum, although the rate of growth for second decade declined to 50%. For all the years reported in this study, there have been positive increments to the outstanding home loans of SBI and its associate banks, registering an average growth rate of 70% for the entire period of twenty years.

The nationalized banks maintained a strong average growth rate of 107% and 162% per annum in their home loan disbursals for the two decades respectively. It can be seen that despite the healthy growth rate, nationalized banks experienced wider fluctuations in their home loan activities, particularly in the second decade.

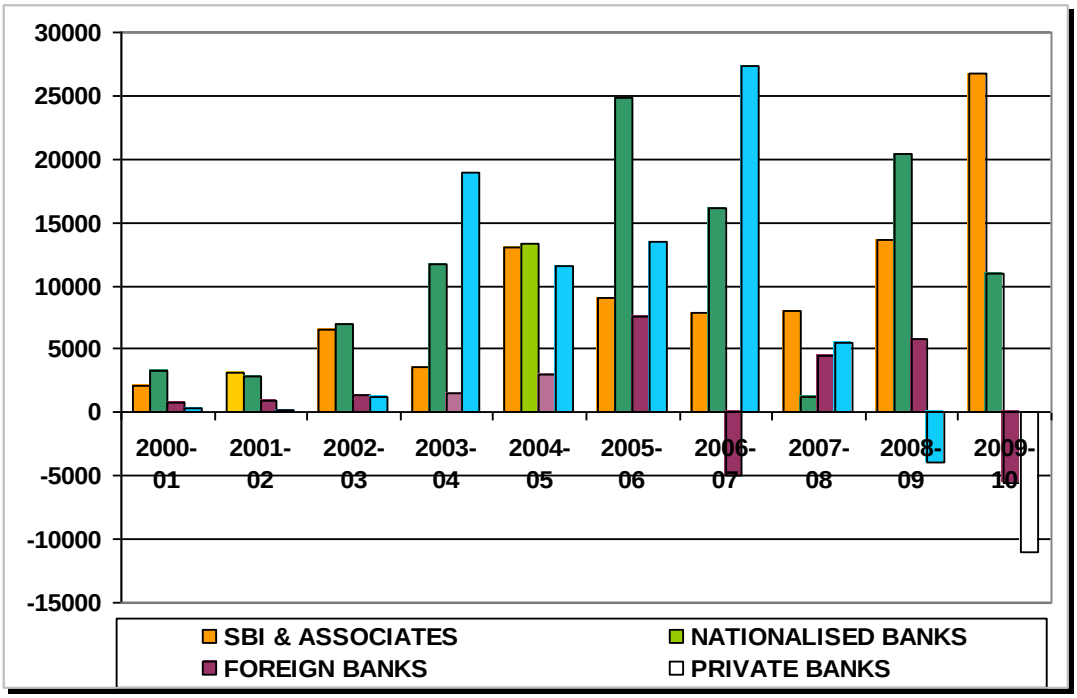
As regards the foreign banks, it is the only bank group that has experienced negative growth in new home loans, precisely in the year 1993-94 and 1997-98 of the first decade. However, in the last two years of the first decade, foreign banks experienced substantial growth in incremental home loans over almost negligible growth in previous years. This pulled up the average growth rate to as high as 111% per annum for the period of the first decade.

Fig. 5.14a BANK GROUP-WISE INCREMENTAL HOME LOANS PERIOD: 1991-2000 (Values in Rs. Crores)



Source: Computations based on data on Outstanding Home Loans of SCBs.

Fig. 5.14b BANK GROUP-WISE INCREMENTAL HOME LOANS PERIOD: 2001-2010 (Values in Rs. Crores)



Source: Computations based on data on Outstanding Home Loans of SCBs.

In the second decade, due to the large negative incremental housing loans in the years 2006-07 and 2009-10, the average growth rate registered by foreign banks was merely 17% per year. The adverse global outlook might have affected the foreign banks more severely. In fact, their incremental housing loans were substantially negative for the years 2006-07 and 2009-10, indicating that they were not able to attract new borrowers. The average annual growth rate was close to 60% for the entire period.

The private banks enjoyed positive incremental home loans through out the first decade, averaging a growth of 58% p.a. The second decade witnessed a huge increase in the new loans demanded from private banks. A close examination of Fig. 5.14b reveals that in the year 2003-04, the incremental home loans of private banks exceeded the combined incremental loans of the other three bank groups. This phenomenon is repeated in the year 2006-07. In fact, in 2006-07, private banks were the only ones to register a high positive growth rate of more than 100% in their incremental home loans, while all other bank groups experienced negative rates of growth in the incremental home loans over their previous year's values. However, the growth experience did not sustain for the private banks. Their growth rates in new loans turn negative for the next three years and their incremental home loans too remained negative for two consecutive years, 2008-09 and 2009-10. This suggests the preference of households for public sector banks over private sector banks. The gain in market share by the private sector banks, supported by aggressive promotion, appears to be a phenomenon that emerged during the upsurge in the housing finance sector during the mid of the decade of 2000. It would be interesting to see the scenario that would transpire beyond the period of the present study.

Section 5.3.4: Share of Various Bank Groups in Outstanding Home loans of SCBs

The relative shares of various bank groups in the outstanding home loans of commercial banks (excluding RRBs) at the beginning of the study period are shown in Fig. 5.15a. It is evident that nationalized banks occupy the top most position among the SCBs. In the beginning of the period under study, that is, for the year ended March 1990-91, the share of nationalized banks was a huge 69% of the total home loans of all scheduled commercial banks, which is more than double the market share of all other bank groups taken together. This is owing to their large and established network of branches and also due to the inclusion

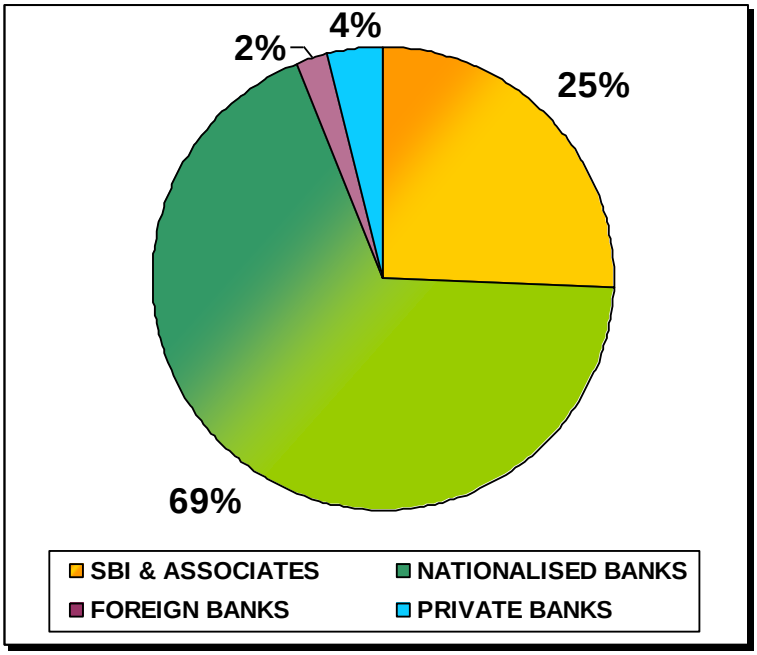
of housing under the priority sector lending. The combined share of other bank groups was only 31%.

In the year 2009-10, as shown in Fig. 5.15b the share of nationalized banks stood at 40%, amounting to a fall of 42% in the market share. At 40%, its share is only two-thirds or 66% of the combined market share of other bank groups. The decline is owing to the greater role and aggressive approach of domestic and foreign private sector banks, particularly in the second half of the period under study.

SBI and its associate banks registered a 32% growth in its market share, from 25% to 33%, between the two periods. While the share of foreign banks' more than doubled to 5%, that of private banks increased remarkably, almost five-fold, from merely 4% at the beginning of the period to 22% by the end of the period under study. It is obvious from the pie diagrams that SBI and associated banks, foreign banks and private banks together have partially eaten into the share of nationalized banks. While the market share within the category of SCBs has increased for all bank groups, only nationalized banks as a group has experienced a decline in its share.

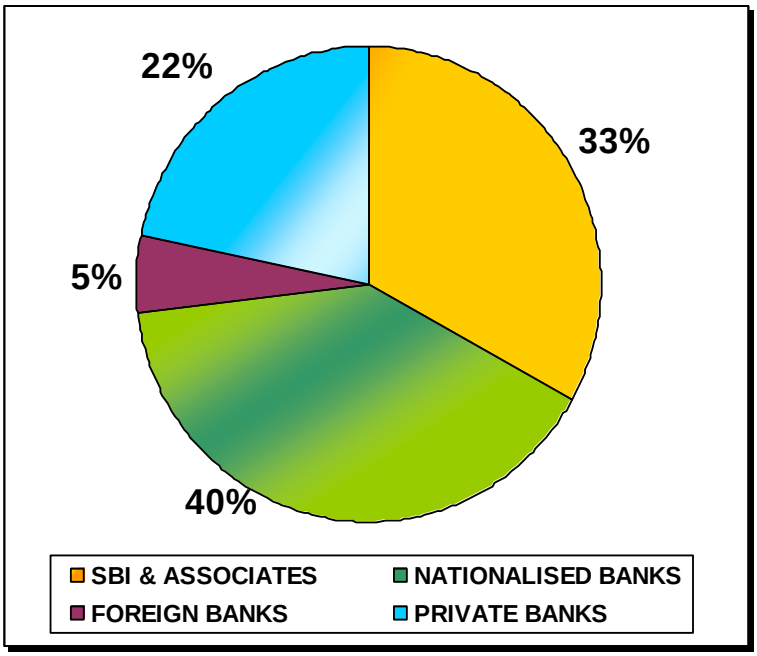
The growing significance of private sector banks, whether domestic or foreign is evident from the fact that while at the beginning of the period, the outstanding housing loans of all public sector banks, inclusive of SBI and its Associates, was nearly 16 times that of all private sector banks, this proportion reduced to 2.7 times in the year 2009-10. However, the public sector banks together continue to hold a lion's share of 73% of the home loan market among scheduled commercial banks.

Fig. 5.15a SHARE OF BANK GROUPS IN OUTSTANDING HOME LOANS PERIOD: 1990-91



Source: Computations based on data on Outstanding Home Loans of SCBs.

Fig. 5.15b SHARE OF BANK GROUPS IN OUTSTANDING HOME LOANS PERIOD: 2009-10



Source: Computations based on data on Outstanding Home Loans of SCBs.

Section 5.3.5: Conclusions

The performance and growth patterns of various bank groups highlight the traditional preference of households for public sector banks over private and foreign banks. The public sector banks have wider, deeper and established network of branches across the country and this is the single most important factor responsible for the lion's share they command in the home loan sector. Several other factors can also be identified. Public sector banks, although relatively conservative in risk bearing, are more flexible and borrower-friendly in their retail loan practices compared to foreign and private banks. They are known to allow additional repayments of varying amounts above the fixed equated monthly installments (EMI) without any service charge levied on them. Moreover, they adopt the practice of daily reducing balance of principal amount which results into lower total interest burden and faster amortization of principal loan amount.

Private sector banks on the other hand, although more venturesome in risk-taking in terms of a lenient approach vis-à-vis borrowers' income and offering innovative loan products, generally do not allow much flexibility to borrowers. They follow set rules such as the minimum partial prepayments that borrowers are allowed to make and also impose service charges on such payments. Such practices deprive borrowers of the flexibility to make repayments in excess of the EMI as and when their incomes permit and thus discharge their home loan liability much earlier. Service charges on partial prepayments impose additional burden on borrowers and discourage them from making such payments even when they experience increased incomes. Moreover, private sector banks adopt yearly or at the most monthly reduction of principal outstanding with the effect that borrowers end up paying interest charge even on the principal amount that they have already repaid in a given year or month. This results into higher user cost of home loans and slow amortization of the principal outstanding at given rate of interest, in the case of loans taken from private sector banks.

Due to the above differences, even when home loan products are otherwise homogeneous in terms of interest rates charged, tenure and loan-to-value ratios offered, the loan contracts are heterogenous in practice. Increasing awareness among the borrower-class about this heterogeneity reinforces the traditional preference for public sector banks. The 'hidden costs' in the practices of the private sector banks, in particular, are not justifiable for the fact that adjustable rate loan contracts already gives them the leeway to shift the risk of interest rate

volatility to borrowers. RBI needs to take cognizance of these differential practices and regulate the banking sector in the best interest of the borrowers. In the long run, the growth of housing loans disbursed by public sector banks vis-à-vis private sector banks would depend on the customer services and customer satisfaction delivered by them.

SECTION 5.4

SIZE-WISE DISTRIBUTION OF HOUSING LOANS

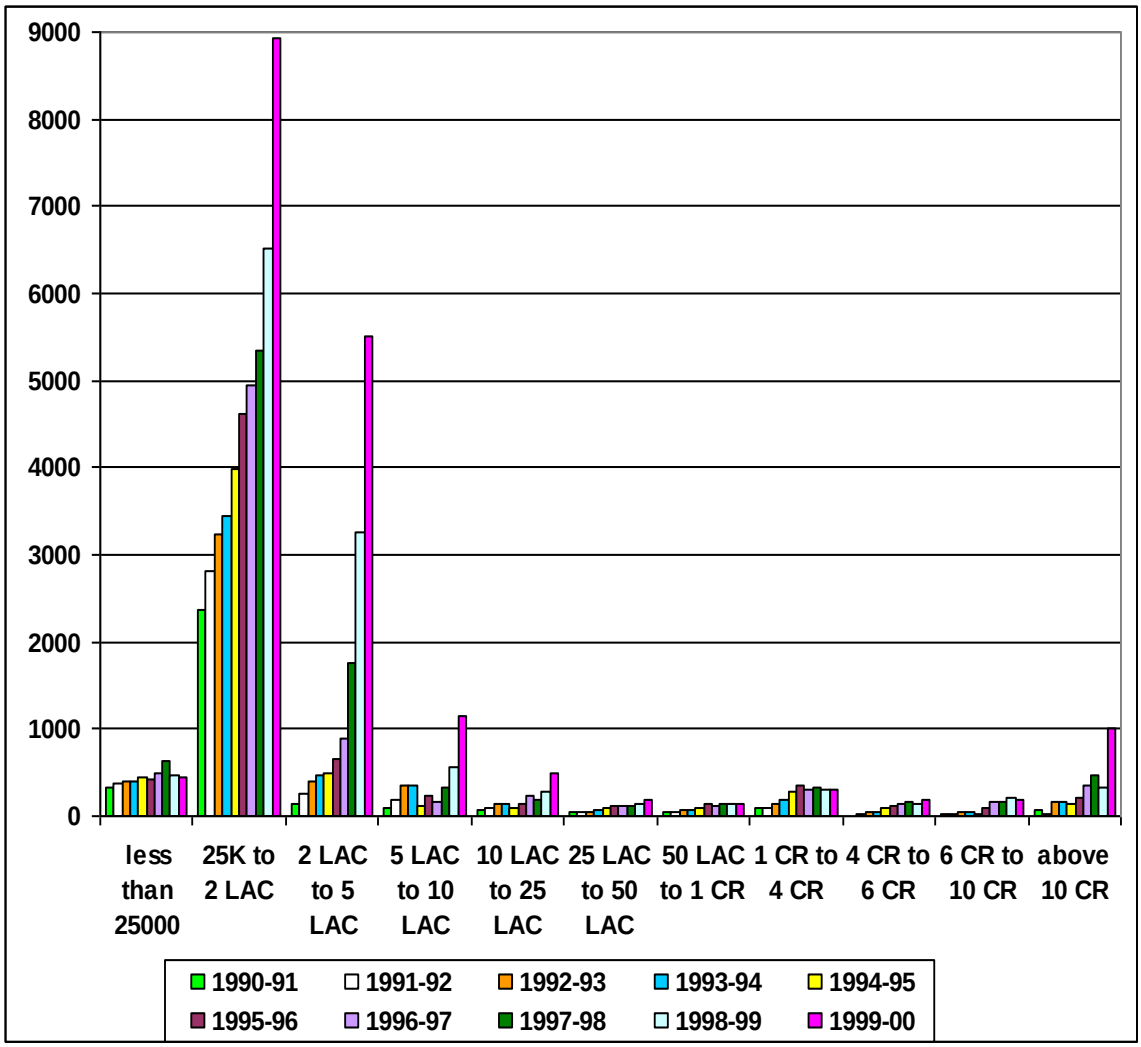
The RBI reports industry data on outstanding home loans under varied criteria. Size-wise distribution of credit by SCBs is one of them. The total outstanding loans for each year is distributed over eleven loan sizes, namely, less than Rs.25000; Rs.25000-Rs.2 lacs; Rs.2 lacs-Rs.5 lacs; Rs.5 lacs-Rs.10 lacs; Rs.10-Rs.25 lacs; Rs.25 lacs- Rs.50 lacs; Rs.50 lacs-Rs.1 crores; Rs.1crore-Rs.4 crores; Rs.4 crores- Rs.6 crores; Rs.6 crores-Rs.10 crores; and above Rs.10 crores. It may be noted that from the year 2002-03 RBI has introduced some modifications in the classification of loan sizes so as to have more relevant classes that are commensurate with changing patterns of demand for loans and the value of money. The changes include additional categories of Rs.10 crores to Rs.25 crores and above Rs.25 crores. However, for the purpose of analysis, we have continued with the old classification of loan sizes in order to ensure continuity of data. The analysis of size-wise distribution of housing loans gives useful insights into the changes in the housing finance market in terms of demand for home loans and incomes of borrowers. Fig. 5.16a and Fig.5.16b provide a quick idea about the changes in popular loan sizes for the two decades under study.

Section 5.4.1: Distribution of Home Loans during 1990-2000

It is evident that in the first decade, 1990 to 2000, loan size of Rs.25000 to Rs.2 lacs was the most common one, with the maximum housing loans demanded in this category. It has also registered high and consistent growth in each year of the first decade. The second most popular loan size during the first decade is that in the range of Rs.2 lacs to Rs.5 lacs. All other loan sizes, except for a few cases exhibit low volume of home loans, below Rs.500 crores for any given year, and also have a flatter growth for the first decade.

It can be observed that the last two years of the first decade, that is, 1998-99 and 1999-2000 show marked improvement in the level of outstanding home loans for some of the loan sizes. For instance, the loan size of Rs.25000-Rs.2 lacs grew at nearly 37% in the year 1999-00; loan size Rs.2 lacs-Rs.5 lacs grew at 86% and 68% respectively in 1998-98 and 1999-00; and the loan size Rs.5 lacs-Rs.10 lacs grew at 79% and 99% respectively in these two years. These developments coincide with the enthused entry of commercial banks in the housing finance sector and the increase in personal incomes as economic reforms started showing their effects in the domestic economy.

Fig. 5.16a SIZE-WISE DISTRIBUTION OF HOME LOANS
PERIOD: 1990-91 to 1999-00

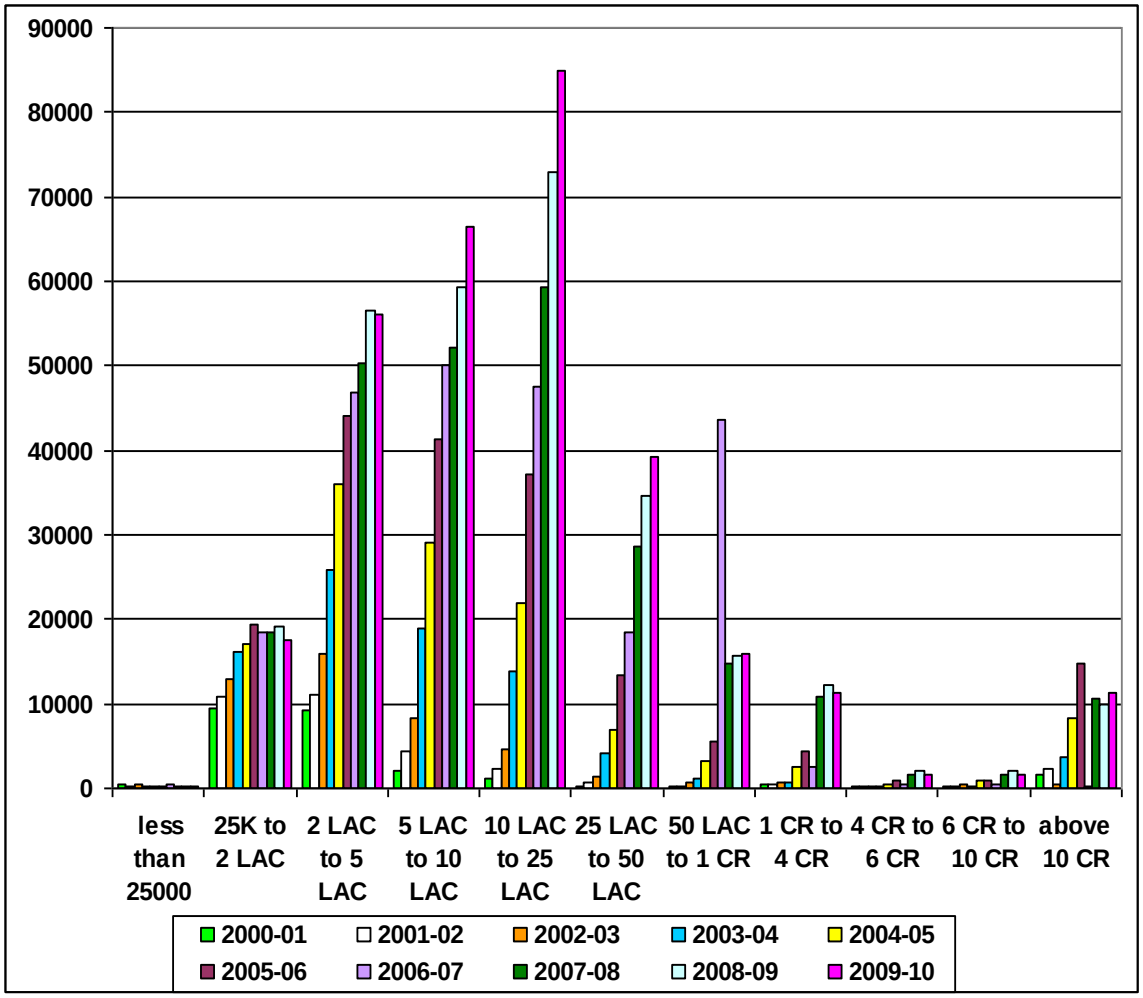


Source: Basic Statistical Returns of SCBs, RBI

Section 5.4.2: Distribution of Home Loans during 2000-2010

The volume of loans of the various sizes has undergone interesting changes in the second decade under scrutiny. Four loan sizes encompassing the range from Rs.2 lacs to Rs.50 lacs have shown substantial growth with each year. This indicates a better representation of different income groups in the housing finance market. It can be seen that the loan size of Rs.25000 to Rs.2 lacs which was the most demanded loan range in the previous decade has now taken a back seat, with its level stunted within the limit of Rs.20000 crores for each year of the second decade. In the later half of the second decade, the volume of loan sizes between Rs.50 lacs to Rs.4 crores has also increased significantly. It may be noted that the loan size of Rs.10 crores and above shows odd values and growth pattern as it is an open ended class.

Fig. 5.16b SIZE-WISE DISTRIBUTION OF HOME LOANS
PERIOD: 2000-01 to 2009-10



Source: Basic Statistical Returns of SCBs, RBI

The loan size Rs.2 lacs-Rs.5 lacs, which had started gaining momentum at the fag end of the 1990s, grew at an average rate of 92% per annum in the decade of 2000. At the end of the second decade, the volume of home loans in the size Rs.5 lacs-Rs.10 lacs was a spectacular 57 times higher than its level at the end of the first decade. The most significant growth was in the loan size of Rs.10 lacs to Rs.25 lacs. While at the end of the 1990s, the total volume of loans demanded of this size was less than Rs.500 crores, by the end of the second decade, that is, in March 2010, the total home loans demanded with Rs.10 lacs to Rs.25 lacs size was 169 times higher and stood at Rs.84880 crores.

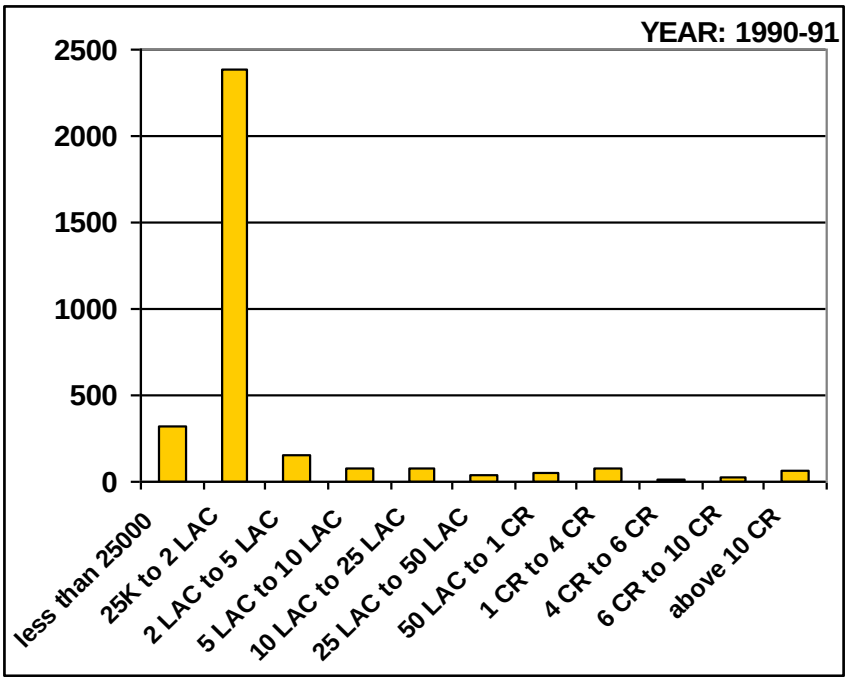
Section 5.4.3:Size-Wise Distribution of Home Loans in Selected Years

Fig. 5.17a to 5.17d depict the volume of loans for each loan size in selected years which highlight the changes in the demand behaviour of home loan borrowers. In the 1990s, there was not much change in the popular loan sizes. This can be gauged from the figures for the years 1990-91 and 1999-2000. Till the mid of the decade of 2000, the general trend observable is that the volume of loans gradually declined as the loan size increased, although the popular loan sizes have shifted over time. This is depicted in the figures for the years 1990-91, 1999-2000 and 2004-05.

In the second half of the decade of 2000, a discernible change is seen in the popular loan sizes. The volume of loans is found to increase along with the increase in loan sizes of the middle ranges. This can be attributed to the increase in property prices as well as in interest rates observed over the same period of time. It indicates that there has been a tilt in favour of higher income classes in the home loan disbursals of commercial banks.

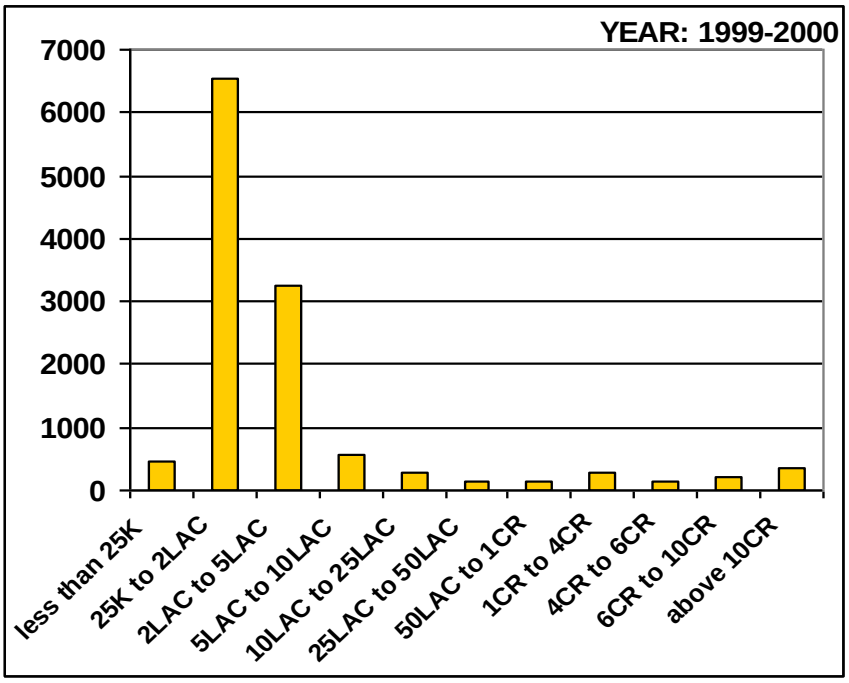
OUTSTANDING HOME LOANS OF VARIOUS SIZES (INR CRORES)

Fig. 5.17a YEAR: 1990-91



Source: Basic Statistical Returns of SCBs, RBI

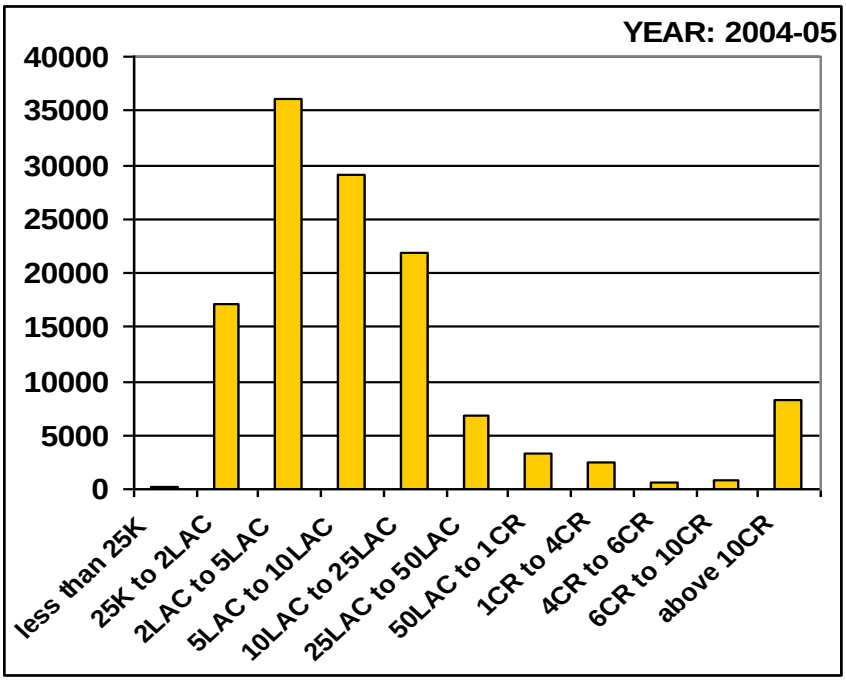
Fig. 5.17b YEAR: 1999-00



Source: Basic Statistical Returns of SCBs, RBI

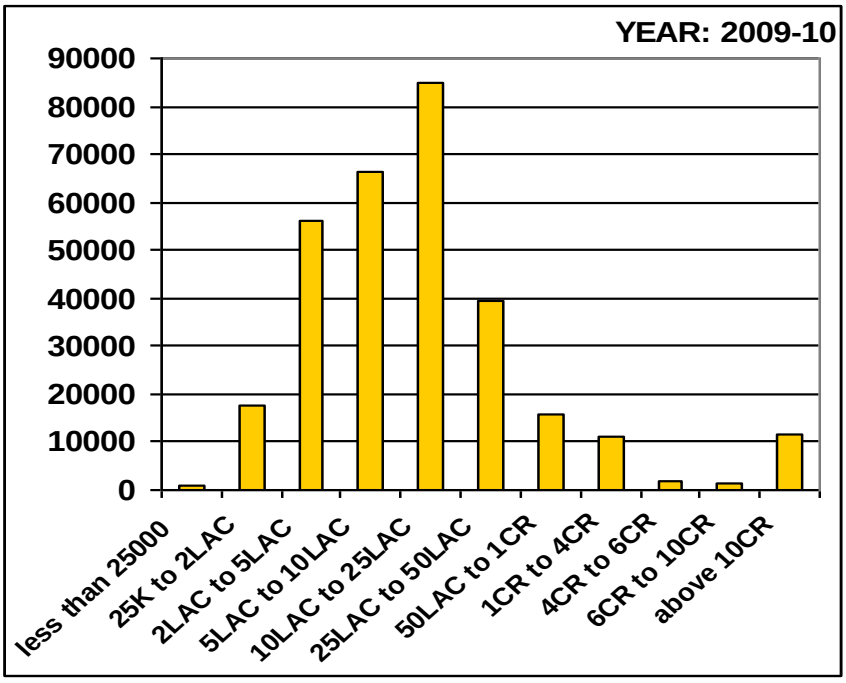
OUTSTANDING HOME LOANS OF VARIOUS SIZES (INR CRORES)

Fig. 5.17c YEAR: 2004-05



Source: Basic Statistical Returns of SCBs, RBI

Fig. 5.17d YEAR: 2009-10



Source: Basic Statistical Returns of SCBs, RBI

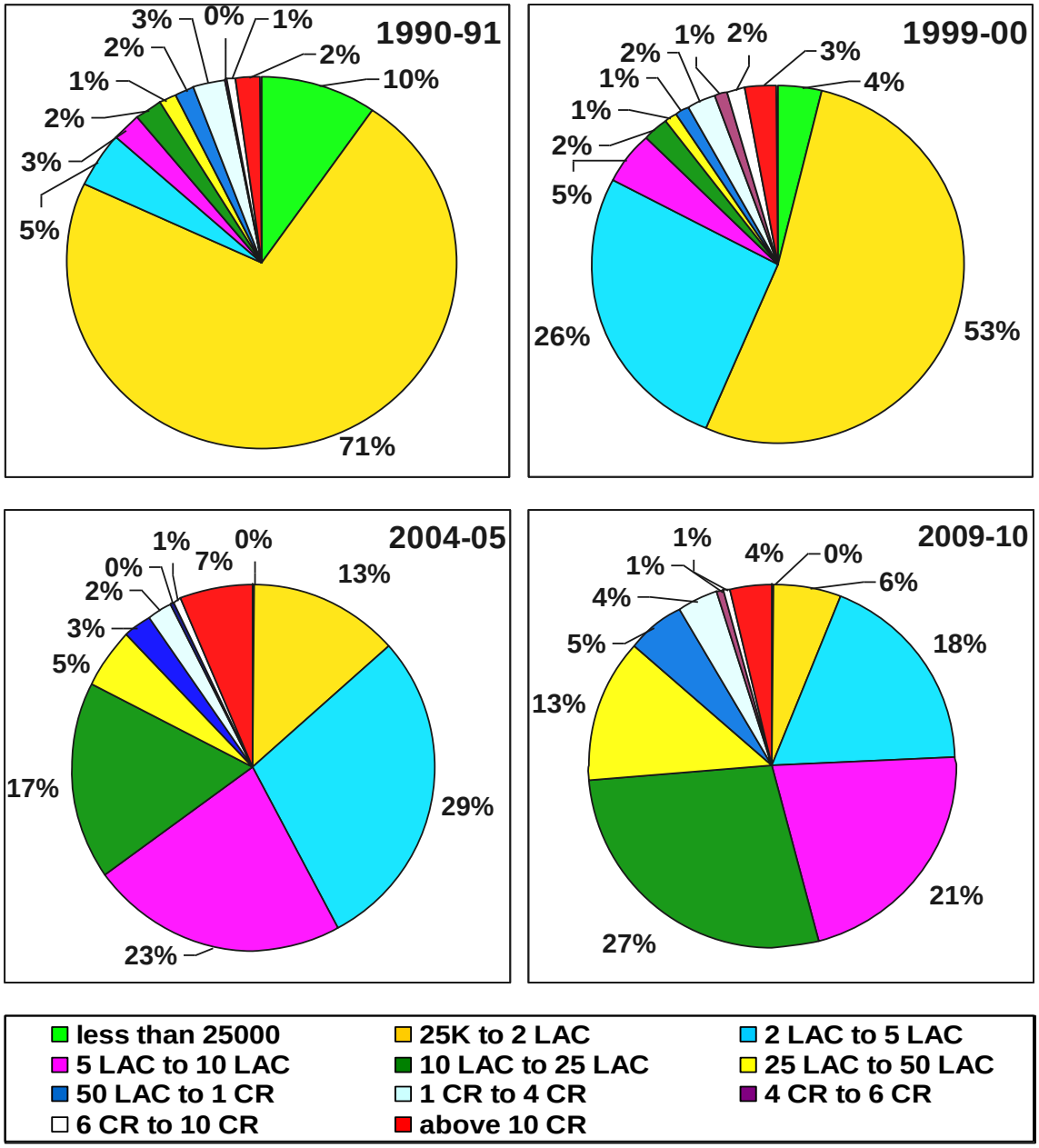
Section 5.4.4: Share of Home Loans by Loan Size

Fig. 5.18 depicts the shares of each loan size during the years 1990-91, 1999-00, 2004-05 and 2009-10 respectively. They present an interesting picture of the relative changes that have taken place over time in the demand behaviour of home loan borrowers. There are major changes in the size-wise distribution of home loans between the beginning and end of the study period.

The pie diagrams vividly demonstrate the increasing shares of larger loans sizes. For instance, the loan size less than Rs.25000 which had a share of 10% in the year 1990-91, has become negligible by the end of the study period, that is, in the year 2009-10. The loan size of Rs.25000 to Rs.2 lacs which claimed 71% share in the year 1990-91 has dwarfed to as low as 6% in 2009-10.

The share of loan size in the range of Rs.2 lacs to Rs.5 lacs increased till the mid of the decade of 2000 but has since reduced in proportion towards the later years of the decade. On the other hand, the loan size of Rs.5 lacs to Rs.10 lacs grew from merely 3% in 1990-91 to 21% in 2009-10 and has the second highest share in the total housing loans outstanding with the commercial banks in that year. Similarly, the home loan size of Rs.10 lacs to Rs.25 lacs which constituted only 2% of the total home loans extended by commercial banks in the year 1990-91, claims the highest share of 27% in the year 2009-10 compared to other loan sizes. The increase in the proportion of bigger loan sizes indicates increase in house prices and increase in the proportion of borrowers with greater income levels. It may be noted that the major changes have taken place only in the last decade.

Fig. 5.18 PERCENTAGE SHARE OF EACH LOAN SIZE IN SELECTED YEARS



Source: Computations based on data on size-wise distribution of home loans of SCBs.

Section 5.4.5: Loan Size and Income Class of Borrowers

The aggregate data on outstanding home loans do provide the distribution of housing loans across various years but not against different income classes. Therefore income class of borrowers in not known. To obtain such data one would require the use of case study method. In this section an attempt has been made to get an indication of the income classes served by

the banking sector and the income classes that have availed the most home loans. This can be worked out as follows. Housing finance institutions follow the practice of lending up to three to four times the annual disposable household income, depending upon the age of the customer, the composition of the household, household liabilities and so on. Taking the norm that the maximum home loan extended is up to three times the annual disposable household income, the Table 5.4 shows the computed values of the income group vis-à-vis the loan sizes reported by RBI. It may be noted that our computation does not take into account the differences in other aspects of home loan eligibility of households or the differences in the down payments made by households.

Table 5.4
COMPUTED ANNUAL DISPOSABLE INCOME LEVELS

HOME LOAN SIZE	INCOME CLASS
Less than Rs.25000	Below Rs.8333
Rs.25000-Rs.2 Lacs	Rs.8333-Rs.66666
Rs.2 Lacs-Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs
Rs.5 Lacs-Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33Lacs
Rs.10 Lacs-Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs
Rs.25 Lacs-Rs.50 Lacs	Rs.8.33 Lacs-Rs.16.67 Lacs
Rs.50 Lacs-Rs.1 Crores	Rs.16.67 Lacs-Rs.33.33 Lacs
Rs.1 Crore-4 Crores	Rs.33.33 Lacs-Rs.1.33 Crores
Rs.4 Crores-6 Crores	Rs.1.33 Crores-Rs.2 Crores
Rs.6 Crores-10 Crores	Rs.2 Crores-Rs.3.33 Crores
Above Rs.10 Crores	Rs.3.33 Crores and above

Source: Computations based on underlying assumptions stated in the text.

Having derived the range of income classes served by the banking sector on the basis of the loan sizes classified by RBI, we can now proceed to obtain the income groups that have been most represented in the home loans disbursed by the commercial banks. Such an exercise would throw light on the changes in the income classes most served over a period of time and also whether there exists a bias in favour of higher income groups in the housing finance sector. This would address the fourth objective of the present study as outlined in Chapter 3. For this we adopt the criteria of presenting only those loan sizes that constitute more than 10% share of total home loans outstanding in each year. The results are shown in Table 5.5. It may however be noted that apart from income determining the size of home loan, the level of interest rate is also an important factor affecting loan sizes.

Table 5.5
COMPUTED ANNUAL DISPOSABLE INCOME LEVELS AND SHARE IN OUTSTANDING HOME LOANS OF SCBs

YEAR	HOME LOAN SIZE	INCOME CLASS	PERCENTAGE OF HOME LOANS
1990-91	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	72%
1991-92	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	70%
1992-92	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	63%
1993-94	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	64%
1994-95	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	68%
1995-96	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	65%
1996-97	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	62%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	11%
1997-98	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	55%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	18%
1998-99	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	53%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	26%
1999-00	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	48%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	30%
2000-01	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	37%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	36%
2001-02	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	33%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	33%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	13%
2002-03	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	26%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	32%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	17%
2003-04	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	19%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67Lacs	30%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	22%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	16%
2004-05	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	13%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67Lacs	28%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	23%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	17%
	Rs.25000 - Rs.2 Lacs	Rs.8333-Rs.66666	10%
2005-06	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	24%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	23%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	20%
	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	20%
2006-07	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	22%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	21%
	Rs.50 Lacs - Rs.1 Crores	Rs.16.67 Lacs-Rs.33.3Lacs	19%

Table 5.5 continued……..

YEAR	HOME LOAN SIZE	INCOME CLASS	PERCENTAGE OF HOME LOANS
2007-08	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	20%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33 Lacs	21%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	24%
	Rs.25 Lacs - Rs.50 Lacs	Rs.8.33 Lacs-Rs.16.67Lacs	11%
2008-09	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	20%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33Lacs	21%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	26%
	Rs.25 Lacs - Rs.50 Lacs	Rs.8.33 Lacs-Rs.16.67Lacs	12%
2009-10	Rs.2 Lacs - Rs.5 Lacs	Rs.66666-Rs.1.67 Lacs	18%
	Rs.5 Lacs - Rs.10 Lacs	Rs.1.67 Lacs-Rs.3.33Lacs	22%
	Rs.10 Lacs - Rs.25 Lacs	Rs.3.33 Lacs-Rs.8.33 Lacs	28%
	Rs.25 Lacs - Rs.50 Lacs	Rs.8.33 Lacs-Rs.16.67Lacs	13%

Source: Computations based on underlying assumptions stated in the text.

Section 5.4.6: Conclusions

Several interesting observations and conclusions emerge out of the analysis in this section. Over a period of time, the modal loan size has graduated to higher levels in a systematic manner. This is an indication of the favourable impact of rising personal incomes and lower nominal interest rates, which enabled households to avail larger home loans. It is also indicative of rising house prices which necessitate bigger loans sizes. In the first decade only one loan size, that is, Rs.25000 to Rs. 2 lacs was dominant, while the next category of loan size, Rs.2 lacs - Rs.5 lacs, gained some market share towards the end of the 1990s. A complete contrast is observed in the 2000s with four to five different loan sizes becoming popular; their respective shares only relatively higher or lower in comparison.

Since the mid-1990s, the share of home loan size of Rs.2 lacs - Rs.5 lacs started expanding with each year up to the mid of the decade of 2000. From 2003-04 onwards, bigger loan sizes such as Rs.5 lacs - Rs.10 lacs and Rs.10 lacs - Rs.25 lacs also started gaining sizable share in the total home loans of commercial banks. The loan size of Rs.25 lacs - Rs.50 lacs also started claiming more than 10% share towards the end of the second decade. These changes can be attributed to liberal home loan terms and conditions offered by banks. It also reflects the increase in house prices, particularly, as house purchase activities gained momentum.

Relating the loan sizes to income class of borrowers, one can observe a more balanced spread of home loans across various income classes. For the major part of the first decade, the group most represented in the housing finance market had a modest annual income of Rs.8333 to Rs.66666, corresponding to the loan size of Rs.25000 to Rs.2 lacs. It may be noted that the high proportion of lower loan size could also be on account of the high interest rates prevailing for most part of the 1990s. However, since the share of this class of loan size has been more than 50% for entire first decade, except for 48% in the year 1999-00, the lower loan size cannot be attributed to high home loan interest rates entirely. Moreover, the culture of high incomes in the organized sector is a phenomenon that emerged only towards the end of the 1990s with the increased presence of multinational companies in India. Economic and Political Weekly editorial (2001) reports that the cost of a typical home for a home owner, which was 14 to 15 times of the annual income of the house owner in the past, has come down to only to four to five times the annual salary. This suggests that rising disposable incomes have been a significant factor in increasing the market for home loans.

In the second decade, particularly from 2001-02 to 2005-06, households in the income group Rs.1.67 lacs to Rs.3.33 lacs took the most loans. 2007-08 onwards, the maximum loans have been taken by households in the higher income bracket of Rs.3.33 lacs to Rs.8.33 lacs. Since the mid of the second decade, four different income groups together consistently held around 80% of the total home loans.

The shift in popular loan sizes to higher values is an indication of the rising disposable incomes of the middle class in India and their growing housing aspirations. It also suggests the crowding out of households with lower incomes from the housing finance market. Closer observation reveals that there is a gradual tilt in favour of higher income groups in the loans disbursed by the banking sector. The share of lower income bracket of Rs.8333 to Rs.66666, corresponding to the loan size of Rs.25000 to Rs.2 lacs registered a sharp fall from as high as 71% in 1990-91 to as low as 6% in 2009-10. Similarly, the share of the loan size of Rs.2 lacs to Rs.5 lacs representing the household income of Rs.66666 - Rs.1.67 lacs has halved to 18% in 2009-10 after reaching the peak level of 36% share in 2000-01.

The share of loan size of Rs.5 lacs - Rs.10 lacs, which represents the income class of Rs.1.67 lacs - Rs.3.33 lacs, has exhibited a constant share of 22-23 percent since the year 2003-04.

The higher income class of Rs.3.33 lacs-Rs.8.33 lacs corresponding to the loan size of Rs.10 lacs - Rs.25 lacs, has been holding the highest percentage share of home loans in the last three years of the second decade. Given that this coincides with the period which witnessed hardening of interest rates and firming up of property prices, it may be inferred that a greater share of home loans has indeed gone to relatively higher income groups at the cost of lower income households. With the rise in house prices, there is a serious compromise on the element of affordability for the larger mass of population. With property developers catering to the housing preferences of the middle and upper income groups, in many cases for a second home with an investment motive or as a weekend home, less dwelling units are being constructed for the lower income class. Further, it implies that the biggest beneficiaries of fiscal incentives have been the upper income classes as the tax exemptions on home loans enabled them to shift to lower income-tax brackets.

SECTION 5.5

INTEREST RATE-WISE DISTRIBUTION OF HOUSING LOANS

This section analyses the outstanding housing loans in terms of their interest rate-wise distribution. The RBI segregates outstanding home loans under several interest rate categories. The ten categories for which continuous data is available for the period of this study include interest rate less than 6 percent; 6 to 10 percent; 10 to 12 percent; 12 to 14 percent; 14 to 15 percent; 15 to16 percent; 16 to 17 percent; 17 to 18 percent; 18 to 20 percent and above 20 percent. The manner in which the interest rates are clubbed together under different classes is indicative of the implied scaling of interest rate levels into ones that could be considered to be very low, low, moderate, high, very high, and perhaps prohibitive. The data reveals that in general, over the 20-year period, there is a negative trend between outstanding loans and the rate of interest.

It may be noted that the data on interest rates are not the prevailing interest rates of a given year but rather they show the quantum of home loans, with varying interest rates and residual maturities, which households are yet to repay. These rates therefore indicate the ones at which the loans were originated, or the floating rate applicable to a loan at the time. Interest

rate being a cost variable, it is expected that there would be more loans outstanding at lower rates than at higher rates. Borrowers would have a greater urgency to discharge their loans when they are paying higher interest rates on their loans, provided their resources permit. Where loans were contracted at higher interest rates at the time of origination, there may be cases where borrowers transfer the balance loan amount to new loan contracts bearing lower interest rates. In other words, it is expected that outstanding home loans at the different interest rates in a given year would exhibit a negative trend.

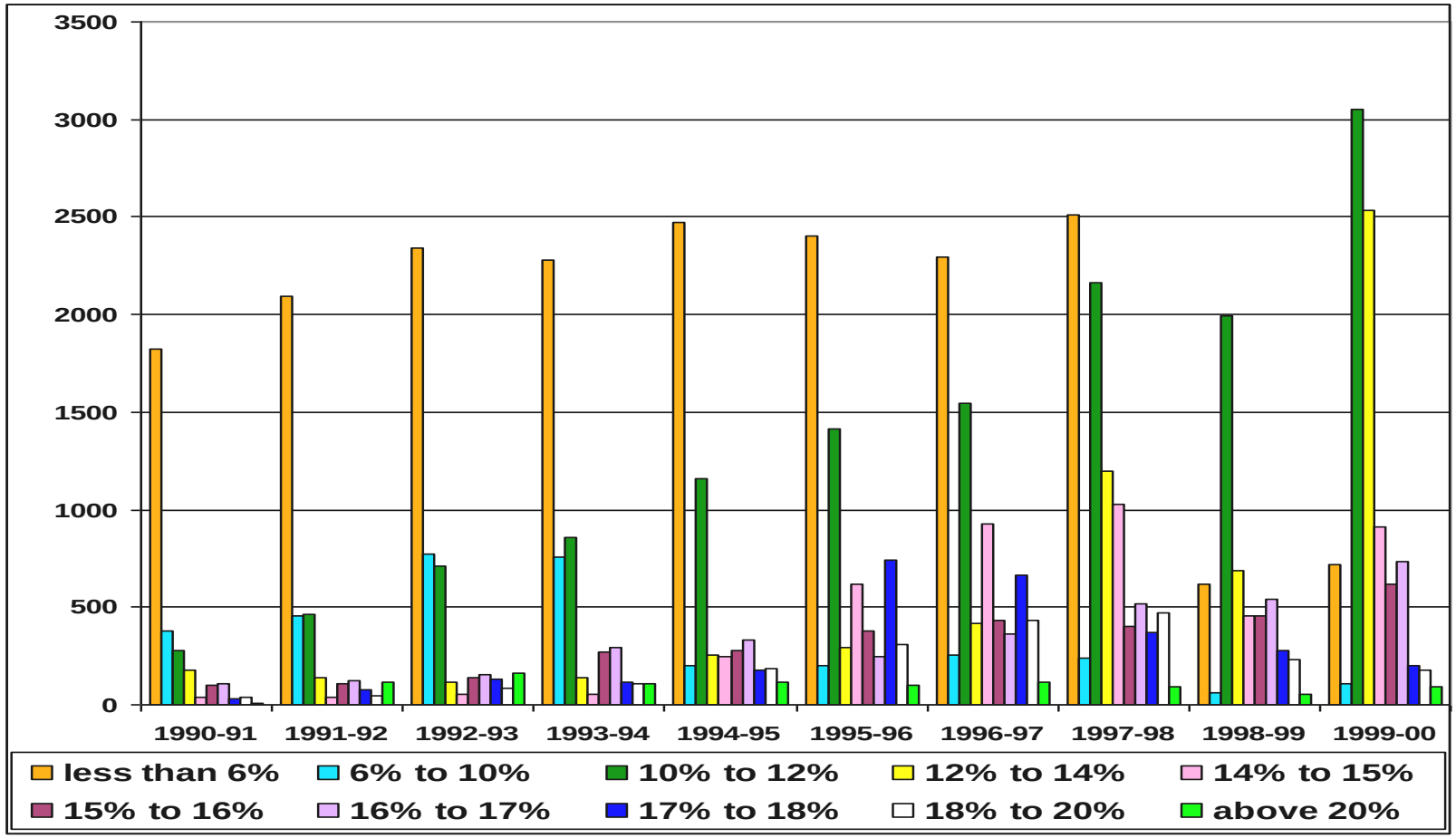
Section 5.5.1: Volume of Home Loans at Various Interest Rates

Fig. 5.19a and 5.19b depict the interest rate-wise distribution of home loans for the two decades respectively. A close look at the Fig 5.19a reveals a largely negative relationship between the level of interest rate and the quantum of home loans outstanding. In the 1990s, with exception in the last two years, the maximum outstanding home loans were held at interest rates less than 6% as depicted by the orange column bars. Another highlight of the 1990s is consistently increasing volume of home loans at interest rates between 10 to 12 percent which indicates growing house purchase activities in India with the easy availability of home loans.

The second decade examined here witnessed rapid rise in home loan disbursals by commercial banks which substantially increased the outstanding home loans of the banking sector, as can be seen in the range of values in Fig. 5.19b. For most part of the decade of 2000, the maximum loans were held at interest rates ranging between 6% and 10%, followed by those held at 10 to 12 percent as evident in Fig. 5.19b. No clear negative relationship emerges between the level of interest rates and outstanding home loans in the second decade.

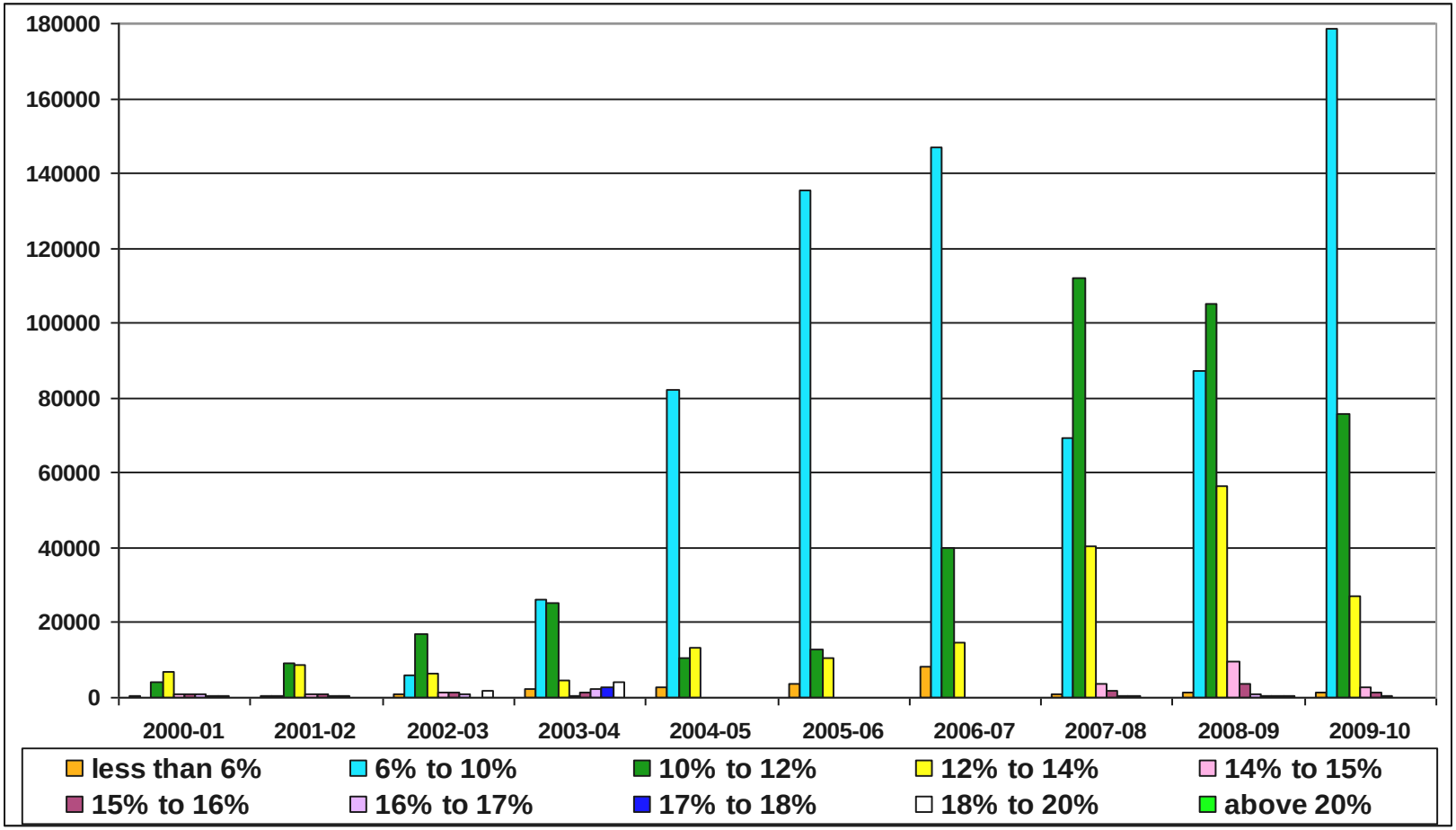
The variations in home loans vis-à-vis interest rates suggest that in the first decade they were generally ‘well-behaved’, displaying a negative relationship. However, in the second decade, as home purchase activity gained momentum due to increased housing aspirations supported by rising incomes, rapid urbanization and associated social changes, interest rates were no longer as decisive in influencing the demand for home loans. Moreover, as home loan products became more sophisticated, the interest rate as a generic variable does not display a clear direction of relationship with outstanding home loans.

Fig. 5.19a INTEREST RATE-WISE DISTRIBUTION OF HOME LOANS (INR CRORES)
PERIOD: 1990-91 TO 1999-00



Source: Basic Statistical Returns of SCBs, RBI

Fig. 5.19b INTEREST RATE-WISE DISTRIBUTION OF HOME LOANS (INR CRORES)
PERIOD: 2000-01 TO 2009-10



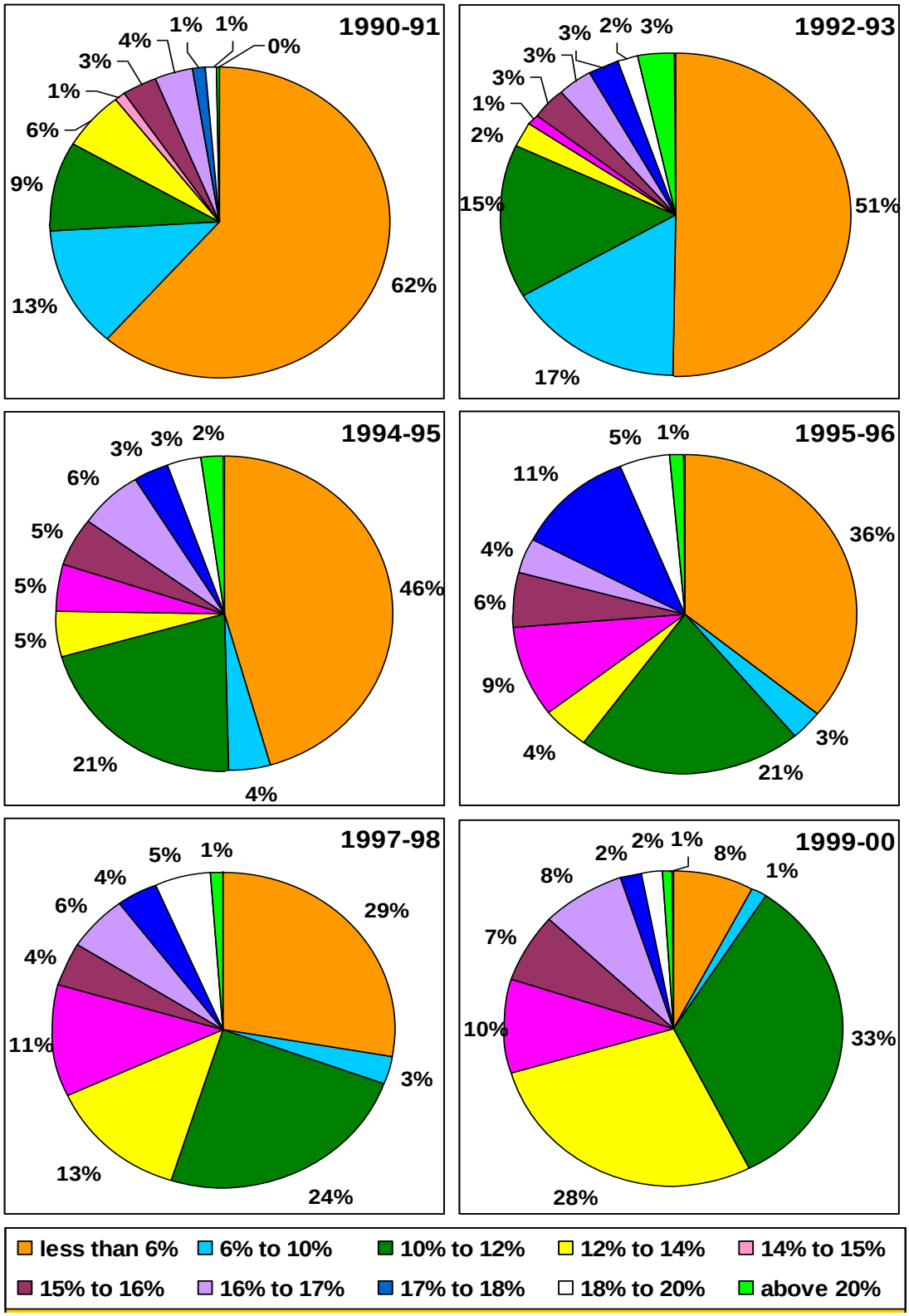
Source: Basic Statistical Returns of SCBs, RBI

Section 5.5.2: Share of Home Loans at Various Interest Rates

Fig. 5.20a and 5.20b portray sets of pie diagrams showing the share of home loans at various interest rates for selected years within the period under review. The years have been selected in a manner that reflects significant changes in the structure over time. There is a clear contrast of sorts in the interest rate-wise distribution of outstanding home loans between the two decades. For most part of the first decade, precisely till the year 1997-98, most of the outstanding loans were at the low interest range of less than 6%. In the year 1990-91 as high as 62% of outstanding loans were held at this rate. Only 9% loans were held at interest rates above 15%. It reflects a housing loan sector that was narrow, shallow and highly prohibitive. Only perhaps, the employees of public sector enterprises and private corporate sector, who enjoyed subsidized home loan facilities could avail the benefit of such low rates of interest. Besides that, it includes beneficiaries of subsidized housing credit through government initiatives. Very low proportion of loans was demanded at higher rates of interest, as is evident in the diagrams.

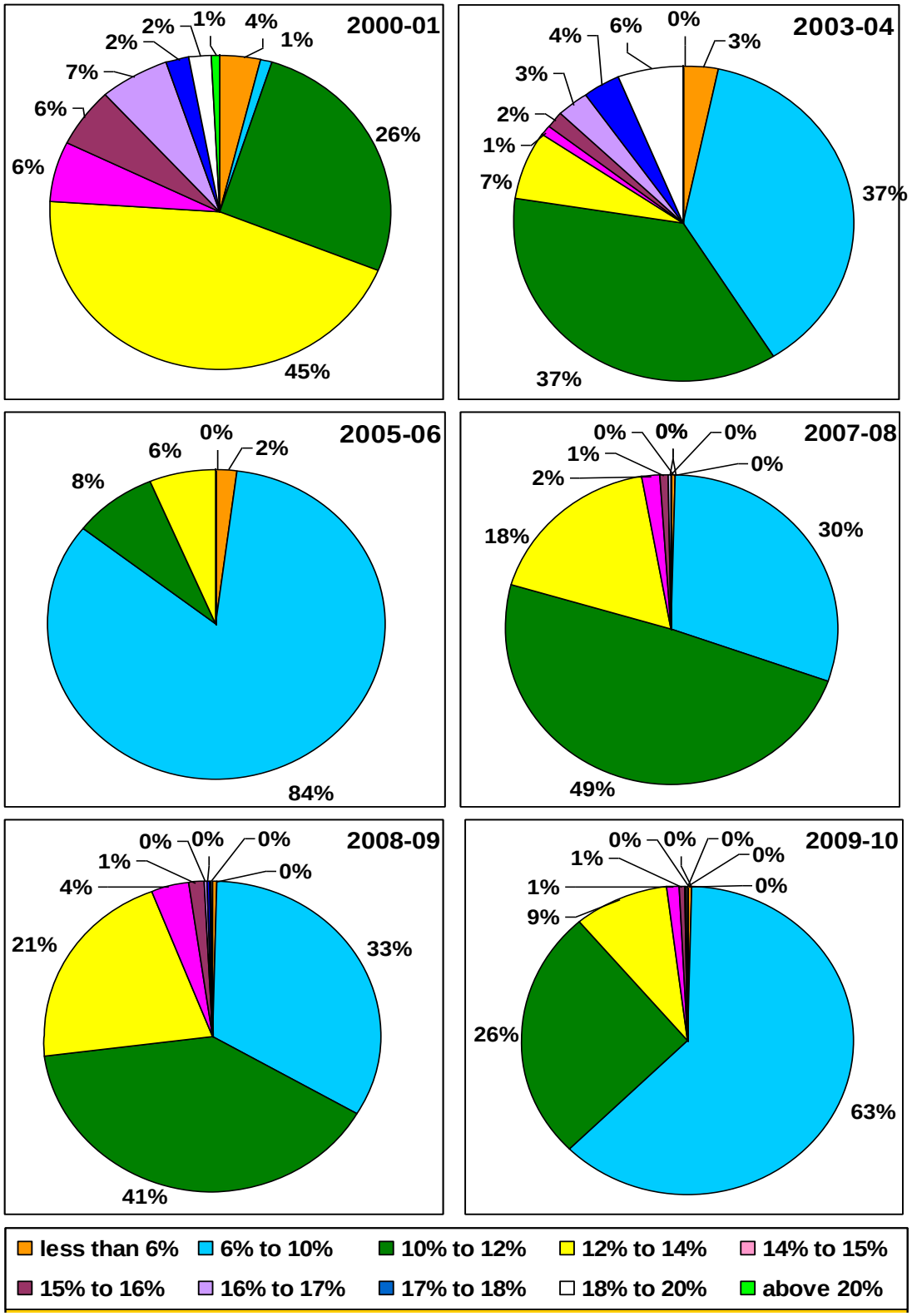
If the interest rate categories up to 10%, which may be considered to be a range from low to moderate costs of home loans, are clubbed together, their combined share was three-fourth of all outstanding home loans in the year 1990-91. If outstanding loans up to 12% are clubbed together, given that they may be considered to be only moderately high compared with the prohibitive rates that prevailed at that time, the proportion of such loans increases to 84%. This further reflects the high interest rates prevailing at the time, which resulted into only 16% loans being demanded at higher interest rate ranges.

Fig. 5.20a INTEREST RATE-WISE DISTRIBUTION OF HOME LOANS (%) IN SELECTED YEARS. PERIOD: 1990-91 TO 1999-00



Source: Computations based on data on Outstanding Home Loans of SCBs.

Fig. 5.20b INTEREST RATE-WISE DISTRIBUTION OF HOME LOANS (%) IN SELECTED YEARS. PERIOD: 2000-01 TO 2009-10



Source: Computations based on data on Outstanding Home Loans of SCBs

Significant changes are visible in the mid 1990s as reflected in the pie diagram for the year 1995-96. The combined share of home loans outstanding at interest rates up to 12% reduced to 60% of the total home loans in that year, while those at higher interest rates rose to 40%. These changes are reflective of several factors working in unison. While interest rates prevailing in the mid 1990s were in the higher range, it also saw a surge in housing loans by commercial banks. Each bank group experienced much higher rates of growth in 1995-96 over the previous year. For instance, SBI and group registered a growth of nearly 24% in its outstanding home loans in the year 1995-96 compared to merely 4% in the preceding year. Nationalized banks too registered a growth of 17% in 1995-96 compared to 10% in the year 1994-95. The figures for foreign banks were 36% and 21% for the year 1995-96 and 1994-95 respectively. Likewise, private banks registered a higher growth rate of 20% in 1995-96 compared to 8% in the year 1994-95.

With increased competition, even as interest rates were relatively higher, the terms and conditions of home loans such as tenure and loan-to-value ratios became more liberal, enabling borrowers to qualify for larger loan amounts. Fiscal incentives introduced by the central government also reduced the effective rates of interest for borrowers. Moreover, in the mid 1990s, National Income moved to a higher growth trajectory of 6-8 percent. Similar was the case with real per capita income which increased at higher rates of 4-6 percent compared to lower rates in the preceding years. The combined effect of all these factors can be seen in the greater proportion of home loans outstanding at interest rates above 12%. By the end of the decade of 1990, 58% of home loans carried interest rates above 12%.

A completely different picture emerges in the decade 2000-10 as can be readily gauged from the pie diagrams. The early half of the decade saw aggressive home loan practices by the commercial banks, vying to acquire a larger share of the growing market. It was a period which saw the introduction of hybrid loan contracts, teaser rates, loans being offered at discounts on the benchmark prime lending rates and balance loan transfers to lower rates, mainly on account of cut-throat competition among lenders. The macro economic environment in the country was also conducive. It is interesting to note that the share of home loans at interest rates up to 10% that had reduced to merely 5% in the year 2000-01 rose to 86% in the year 2005-06. Moreover between the years 2004-05 to 2006-07, there

were no loans outstanding at interest rates above 14%. It is quite likely that this was due to balance loan transfers to lower rates of interest and because of loans being on floating rates.

In the second half of the decade of 2000, with the RBI and the NHB adopting tighter norms, the housing and housing finance market experienced rationalization in terms of residential property prices and lending practices, which resulted into the home loans at cheaper rates getting phased out. Moreover, the build up of inflationary trends led to increase in interest rates as most home loans were on floating rates. This is evident from the nearly half of all outstanding home loans being held at the interest rates of 10 to 12 percent in the year 2007-08. Global financial downturn following the sub-prime crisis in the US saw further firming up of interest rates. This is evident in the increase in volume of home loans at higher rates of interest. In the year 2008-09, more than a quarter of the total home loans were held at interest rates above 12%. At the end of the decade, the combined share of outstanding home loans at interest rates from 10 to 12 percent declined from 41% in 2008-09 to 26% in 2009-10, and that in the range of 10 to 14 percent declined from 62% to 35%. This may be on account of high prepayments by borrowers to reduce their home loan liabilities that were at risk of rising with unabated rise in inflation. This is substantiated by the negative growth rates in home loans of foreign and private banks in the year 2009-10 and a low rate of growth of 10% for nationalized banks. Incidentally, SBI and Associated banks clocked a growth of 36.64% in 2009-10 owing to its teaser home loan scheme, launched in February 2009, which offered a lower interest rate of 8-8.5 percent for the first three years of the loan contract. The overall growth in outstanding home loans of commercial banks fell to just 7.5%, which is the lowest rate of growth since the year 1994-95.

Section 5.5.3: Conclusions

The detailed analyses of the distribution of outstanding home loans at various interest rates clearly bring out the role of interest rate as a cost variable in borrowers' decision about the amount of home loans to hold. This is particularly so for the first decade investigated in this study. More outstanding loans are found to be held at lower rates than at higher rates. At the same time, the pattern of distribution of loans at different interest rates is also a matter of the level and type of home loan interest rates and the home loan products offered by various banks during a given period of time. It also depends on the prepayment behaviour of

borrowers which may be influenced by several factors beyond interest rate changes and accruals of incomes. Nonetheless, the manner in which the shares of home loans outstanding at various interest rates have changed are traceable to the changes that have taken place in the housing finance sector in India in particular, and in the economy in general, as described in the previous sub-section. Further analysis of home loans vis-à-vis interest rates has been undertaken and presented in Chapter 6.

SECTION 5.6

POPULATION GROUP-WISE DISTRIBUTION OF HOUSING LOANS

This section looks into the distribution of the total outstanding home loans in terms of the population group that the banking sector has catered to. The RBI publishes data on outstanding home loans for four population groups namely, Metropolitan, Urban, Semi-urban and Rural population[22]. The analyses of home loans against these classifications unearth interesting revelations.

Section 5.6.1: Share of Population Groups in Home Loans

The pie diagrams in Fig. 5.21 highlight the percentage shares of various population groups for the years 1990-01, 1999-00 and 2009-10. In 1990-91, the share of urban and metropolitan population in the total outstanding home loans of the banking sector stood at a high 67%. Including semi-urban population to this takes the proportion to as high as 87%. At the end of the first decade examined here, that is, in the year 1999-2000, nearly 90% of the total home loans of commercial banks went to the non-rural population. The urban bias in the lending operation of the commercial bias continued with 76% of its total home loans being extended to population residing in urban areas and metros in the year 2009-10. If semi-urban population is included in the total, this ratio increases to 92%. Thus non-rural centres constituted 87%, 90% and 92% of the total outstanding home loans in the years 1990-91, 1999-00 and 2009-10 respectively.

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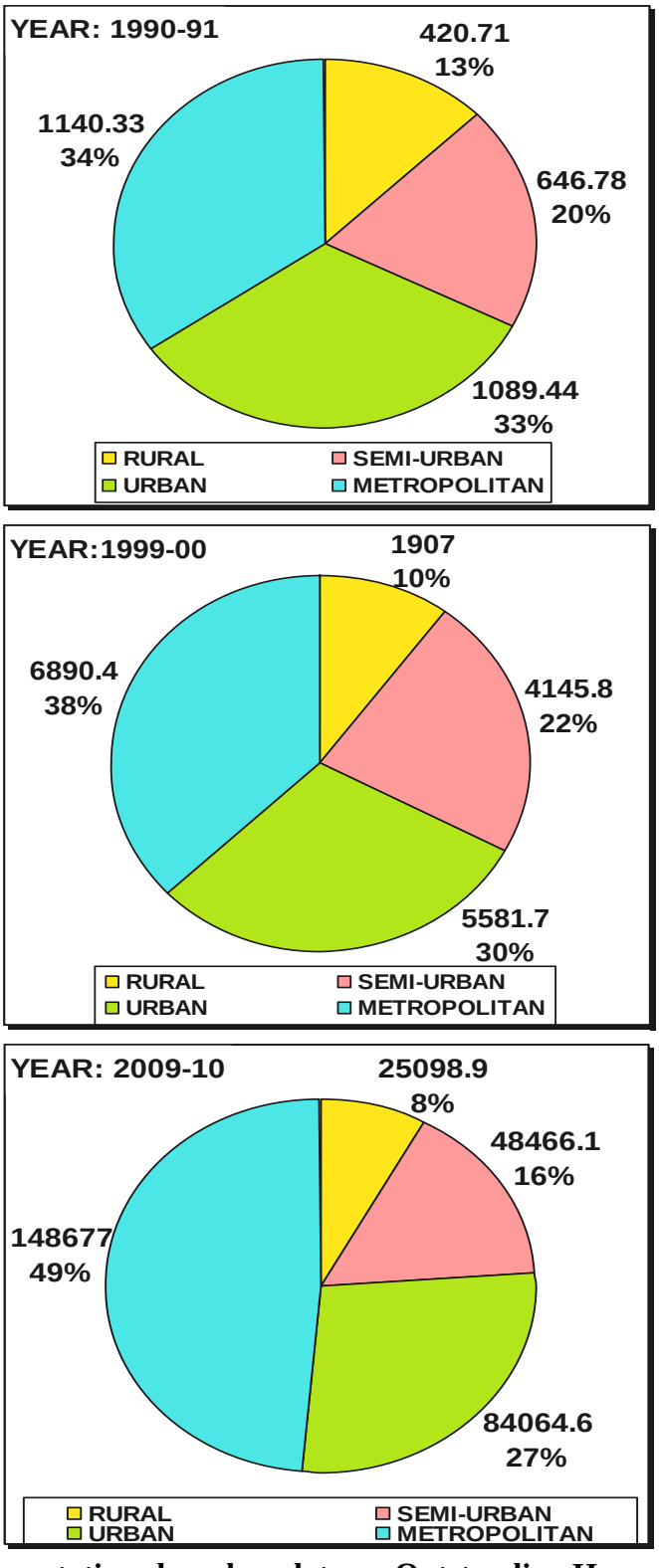
22. 'Rural' group includes all centres with population less than 10000; 'Semi-Urban' group: 10000 to 1 lac; 'Urban' group: 1 lac to 10 lacs; 'Metropolitan' group: Above 10 lacs (Basic Statistical Returns of SCBs, RBI)

Fig. 5.21 POPULATION GROUP-WISE DISTRIBUTION OF HOME LOANS (VALUES INR CRORES AND PERCENTAGES)



Source: Computations based on data on Outstanding Home Loans of SCBs

Analyzing the growth of population group-wise housing loans over the years, it is found that the outstanding home loans in the urban areas grew at an average rate of 41% per annum in the decade of 1990. In the decade of 2000, the rate of growth accelerated to 140% per year. The change in growth rates in the metropolitan centres was even more vivid. In the first decade the average annual growth rate in outstanding home loans in metropolitan centres was 50%. It accelerated to an average growth of as high as 205% per annum in the second decade.

Considering the ratio of outstanding home loans of metropolitan plus urban population to rural plus semi-urban population, there is an increase from 2.09 in the year 1990-91 to 3.16 in 2009-10. These data support the evidence of growing urbanization in general and increase in the number of large cities in particular. Increase in property prices in cities is also one of the reasons for the growing share of urban and metropolitan centres in the home loan advanced by commercial banks.

Section 5.6.2: Conclusions

The changes in the population group-wise shares of outstanding home loans clearly indicate a strong urban bias in the lending operations of the commercial banks. This is commensurate with the increase in the number of cities in India with million plus population. In 1991, India had 23 cities having a population of more than a million each and the population of these cities accounted for nearly 33% of the urban population. In 2001, the number of metropolitan cities increased to 35. According to Census 2011, the number of cities with million plus population crossed the figure of 53, with 43% of urban population residing in them. Moreover, the number of towns increased from 5161 in 2001 to 7935 in 2011. According to Census 2011, the proportion of population residing in urban areas has increased to 31.16% compared to 27.8% as per Census 2001. There is no doubt that with the increased rate of growth of urban population at 2.73% during the second half of the 2000s, which is much in excess of the overall population growth rate of 1.7%, commercial banks are bound to find greater profitability in lending to the metropolitan and urban population. In fact rapid urbanization is manifested in horizontal and vertical spread of residential construction. Inadequate documentation and ambiguity in the nature of incomes in the rural sector is also a major deterrent for commercial banks in lending to the rural sector.

SECTION 5.7

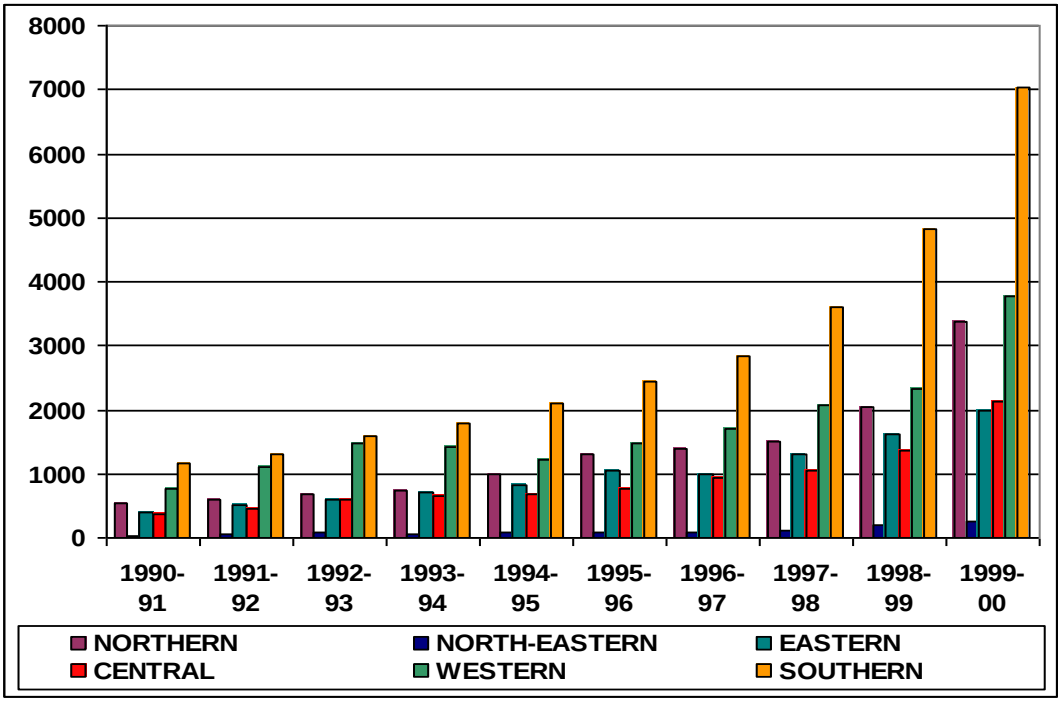
REGION-WISE DISTRIBUTION OF HOUSING LOANS

Section 5.7.1: Region-Wise Volume of Home Loans

The data on outstanding home loans of SCBs is segregated by RBI across six regions, namely, northern region, north-eastern region, eastern region, central region, western region and southern region. Examination of the data reveals that the southern region has the highest volume of home loans outstanding in each year through out the 20-year period. This is anticipated because three out of top six metropolitan centres, namely, Bengaluru, Chennai and Hyderabad are located in the southern region. The second highest volume of housing loans in each year over the two decades has been concentrated in the western region of India which comprises the states of Maharashtra and Gujarat. Together, the two states comprise 10 metropolitan cities out of the total of 53 metro-cities according to Census 2011. Fig. 5.22a and 5.22b show the decade-wise volume of regional outstanding home loans.

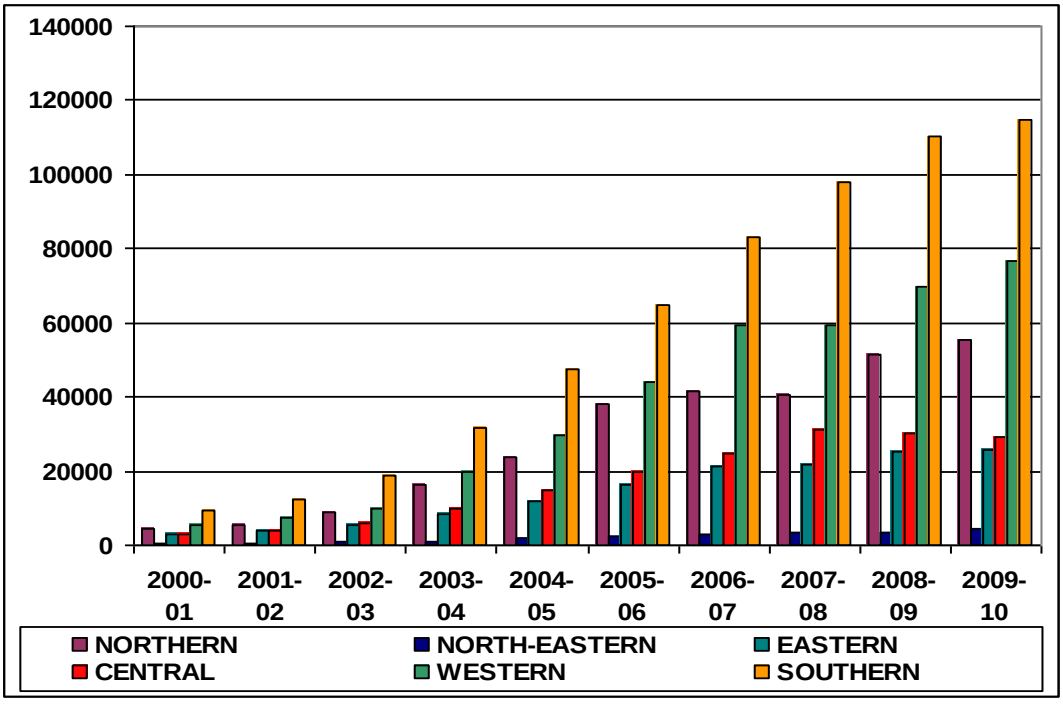
Interesting observations emerge when the region-wise distribution of home loans is juxtaposed with the region-wise number of metropolitan cities, their relative population strength and economic prosperity. It is observed that regions comprising states with relatively larger number of metropolitan cities, higher urban population and greater economic prosperity are found to have a greater volume of outstanding home loans. This suggests that level of urbanization and incomes reinforce each other and are important factors influencing the level of home loans. It also substantiates the greater volume of loans going to metropolitan and urban population, as discussed in the preceding section. For instance, as per Census 2011 records, 15 out of the 53 metropolitan cities in India belong to the southern region, of which, 12 cities rank amongst the top 30 cities. The central region has 14 metro-cities compared to the western region which has 10 metro-cities. However, four out the top nine metros and seven out of the top 30 metro-cities are located in the western region, while the metro-cities in the central region rank on the lower side. Moreover, the southern and western regions rank higher than the central region in terms of economic prosperity.

Fig. 5.22a REGION-WISE DISTRIBUTION OF HOME LOANS PERIOD: 1990-91 TO 1999-00



Source: Basic Statistical Returns of SCBs, RBI

Fig. 5.22b REGION-WISE DISTRIBUTION OF HOME LOANS PERIOD: 2000-01 TO 2009-10



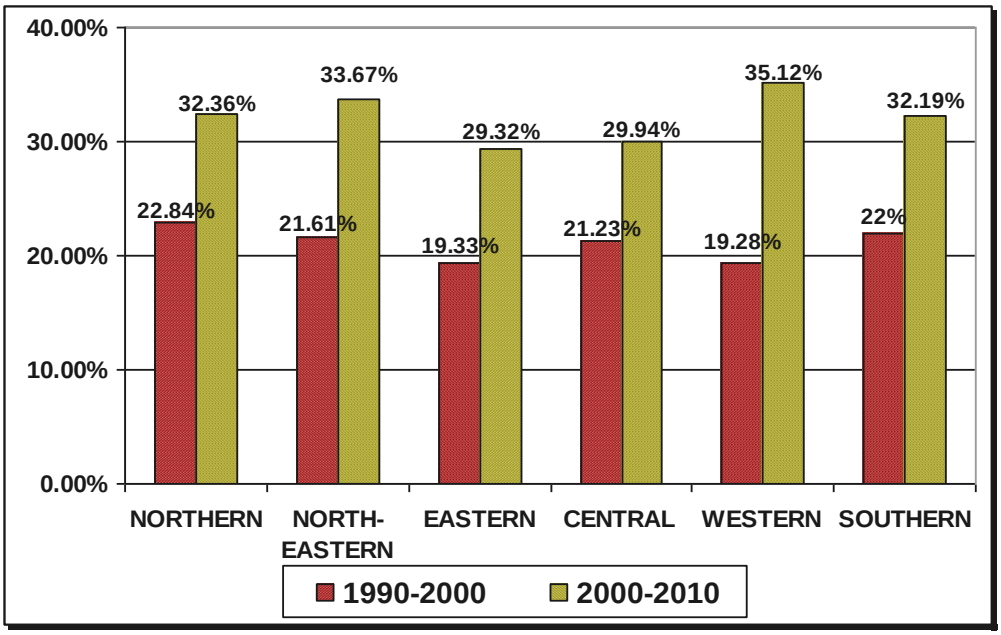
Source: Basic Statistical Returns of SCBs, RBI

For similar reasons, with eight metros, the northern region is found to be ahead of the central region in terms of outstanding home loans. The central region, while comprising 14 metros, it's population-wise largest city is positioned at number eleven and only six of top 30 metros belong to this region. These facts, combined with lower economic prosperity, explain the relatively lower home loans disbursals by banks in this region. The same factors are responsible for the low volume of outstanding home loans in the eastern and the north-eastern regions. Only six metros are located in the eastern region of which four rank among the last 18 metro-cities in terms of population size.

Section 5.7.2: Region-Wise Growth Rates in Outstanding Home Loans of SCBs

The compound annual growth rates across the six regions in the 1990s have been fairly comparable, varying over a small range of 19 to 22 percent. The Eastern and Western regions have had the slowest decadal growth rates, while the northern region has the fastest rate of growth in home loans. However, in the decade of 2000, two changes are discernible. The pace of the growth rates in the second decade is 40 to 80 percent faster than that in the first decade; and there has been an increase in the CAGR in the range of 29 to 35 percent across the six regions, as depicted in Fig. 5.23. The CAGR for the Western region has outpaced that of all other regions, although in terms of volume, the southern region is at the forefront.

Fig. 5.23 REGION-WISE GROWTH RATES OF HOME LOANS

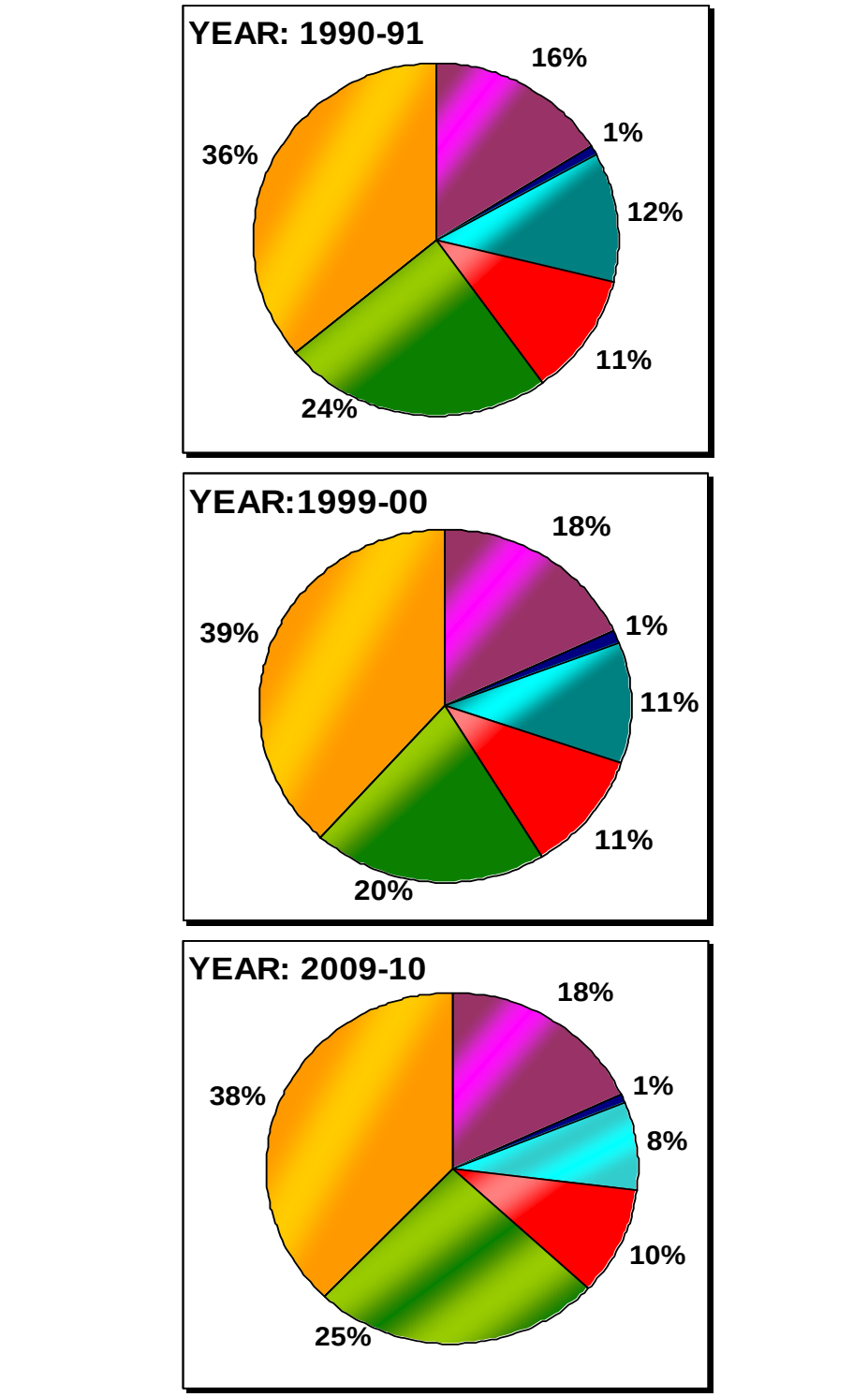


Source: Computations based on values in Fig. 5.22a and 5.22b.

Section 5.7.3: Regional Shares in Outstanding Home Loans of SCBs

On account of the small variance in the respective growth rates in outstanding home loans between regions, there is not much change in the region-wise composition of the total home loans. The northern region witnessed relatively the maximum gain of 12.5% in its share, while the shares of southern and western states have improved marginally by 5.5% and 4% respectively. Eastern and Central regions have experienced a decline in their shares by 33% and 9% respectively; this, despite the fact that the two regions registered a compound annual growth rate of 29% and 30% respectively in the outstanding home loans over the decade of 2000. The north-eastern region continues to have a negligible share of one percent in the total home loans outstanding of the banking sector. Fig. 5.24 demonstrates the region-wise structure of home loans for three years, namely, 1990-91, 1999-2000 and 2009-10. It is evident that there is only a marginal change in the regional shares of home loans of the scheduled commercial banks. It uncovers the fact that the banking sector has not explored newer regions in its disbursal of home loans. Likewise, it indicates that the housing finance activities are concentrated in the same regions for the twenty year period of the study.

Fig. 5.24 REGIONAL SHARES IN OUTSTANDING HOME LOANS



Source: Computations based on values in Fig. 5.22a and 5.22b.

SECTION 5.8

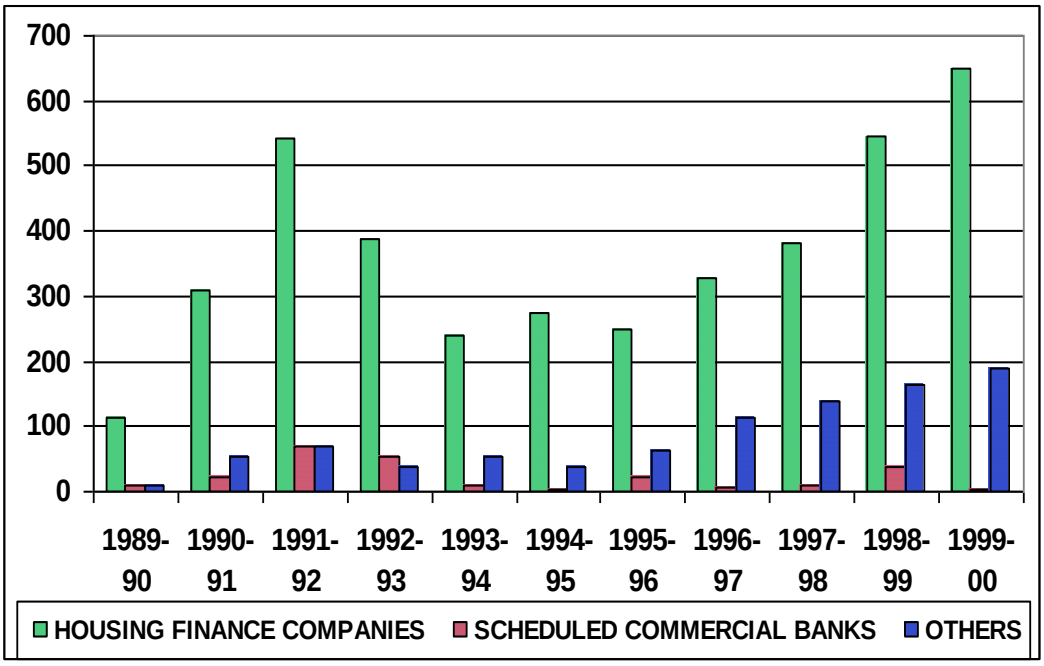
REFINANCE BY NATIONAL HOUSING BANK

As discussed in Chapter 4, the National Housing Bank is the apex institution that regulates and supervises the housing finance companies. Among its primary functions includes the development of a healthy and sustainable housing finance system in the country. In pursuit of this objective, the NHB provides financial assistance to various banks and housing finance institutions, particularly in terms of refinance facility to encourage them to lend to the housing sector. Over the years there has been significant increase in the refinance provided by the NHB from Rs.132 crores in the year 1989-90 to Rs.17250 in 2009-10, registering an increase of nearly 28% on compound annual growth rate basis.

Section 5.8.1: Volume of NHB Refinance Across Institutions

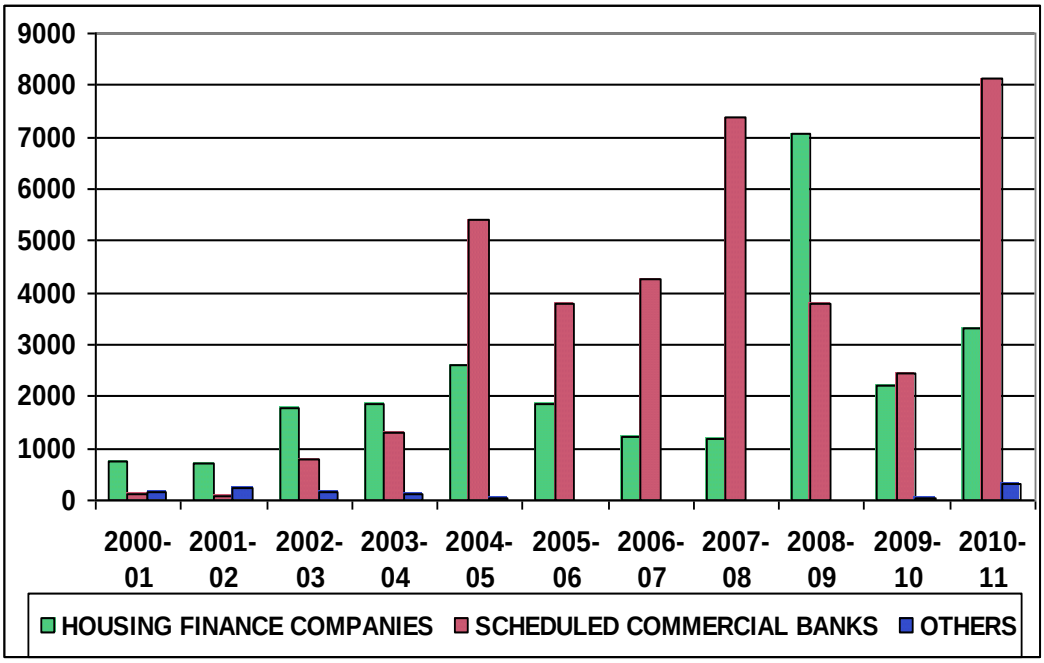
Increased refinance facility extended by NHB indicates expansion in the home loans extended by SCBs and HFCs. Through out the first decade, housing finance companies received greater refinance from the NHB, indicating their active role in the housing finance market. Between the years 1990-2000, HFCs have retained a lion's share ranging from 72 to 87 percent in the total refinance extended by NHB. The refinance facility availed by them increased from Rs.115 in the year 1989-90 to Rs.2865 in 1999-2000. This amounts to compound growth rate of 38% per annum. Reflecting the minor role played by the commercial banks in the home loan sector in the 1990s, the refinance facility availed by them is negligible in comparison to that availed by HFCs. The refinance availed by commercial banks increased from Rs.9 crores to Rs.54 crores over the decade of 1990. The share of scheduled commercial banks remained consistently below 7-8 percent through out the first decade. In fact, the rural area based banks and financial institutions and the cooperative housing societies are found to be relatively significant in the first decade under study. The combined share of RRBs, ACHFs, ARDBs and others in the category was more than 10% for most part of the 1990s and increased to 22% in 1999-2000. Fig. 5.25a and 5.25b demonstrate the trend in the refinance by NHB over the two decades respectively.

Fig. 5.25a NHB DISBURSEMENTS UNDER REFINANCE FACILITY PERIOD: 1989-90 TO 1999-00 (Rs. Crores)



Source: NHB Annual Reports. Note: 'Others' include RRBs, the Scheduled Urban Cooperative Banks, ACHFs and ARDBs.

Fig. 5.25b NHB DISBURSEMENTS UNDER REFINANCE FACILITY PERIOD: 2000-01 TO 2000-10 (Rs. Crores)



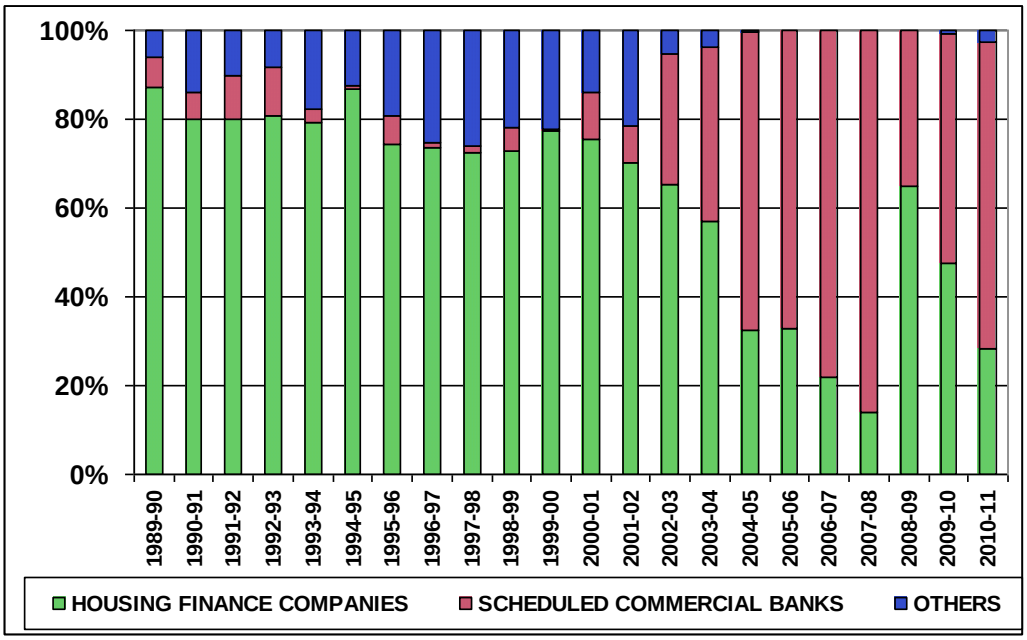
Source: NHB Annual Reports. Note: 'Others' include RRBs, the Scheduled Urban Cooperative Banks, ACHFs and ARDBs.

In the second decade, from 2000-01 to 2009-10, there is a visible change in the scenario as can be seen in Fig. 5.25b. While the refinance availed by HFCs has increased over time, its compound annual growth rate was only 12% compared to 38% for the earlier decade. Their share in the total refinance extended by NHB fell steadily from 77% at the end of the previous decade to as low as 13.8% in the year 2007-08. In the year 2010-11, its share stood at 28% of the total refinance disbursed by NHB. On the other hand, the refinance facility availed by scheduled commercial banks grew at a compound annual growth rate of 46% during the second decade compared to 19.62% in the first decade. The increase in refinance by the NHB hints at the heightened activity of banks and financial institutions in housing loan sector. In the second half of 2000s, the combined share of RRBs, ACHFs, ARDBs and other cooperative institutions turned negligible, reflecting their insignificant role in housing finance.

Section 5.8.2: Distribution of NHB Refinance Across Institutions

The percentage shares of various lender categories in the refinance availed from NHB indicate their respective significance in the housing finance activities in the Indian economy. Fig. 5.26 provides the percentage distribution of the refinance by NHB for the entire period. It portrays the growing share of the banking sector in the decade of 2000. Interestingly, the curtailment of housing credit by commercial banks in the backdrop of the global financial crisis in 2008 is also reflected in the drop in the share of commercial banks in the refinance availed from NHB. In the last couple of years the banking sector has regained momentum in home loan disbursals as revealed in the data on outstanding home loans and which is further reflected in the greater proportion of refinance facility availed by it from NHB. The Housing Finance Companies have lost their market share in the housing finance sector vis-à-vis the commercial banks and is mirrored in the fall in the share in NHB refinance availed by HFCs. As far as the cooperative sector is concerned, its share in NHB refinance has declined drastically to a negligible level.

Fig. 5.26 DISTRIBUTION OF REFINANCE BY NHB ACROSS INSTITUTIONS

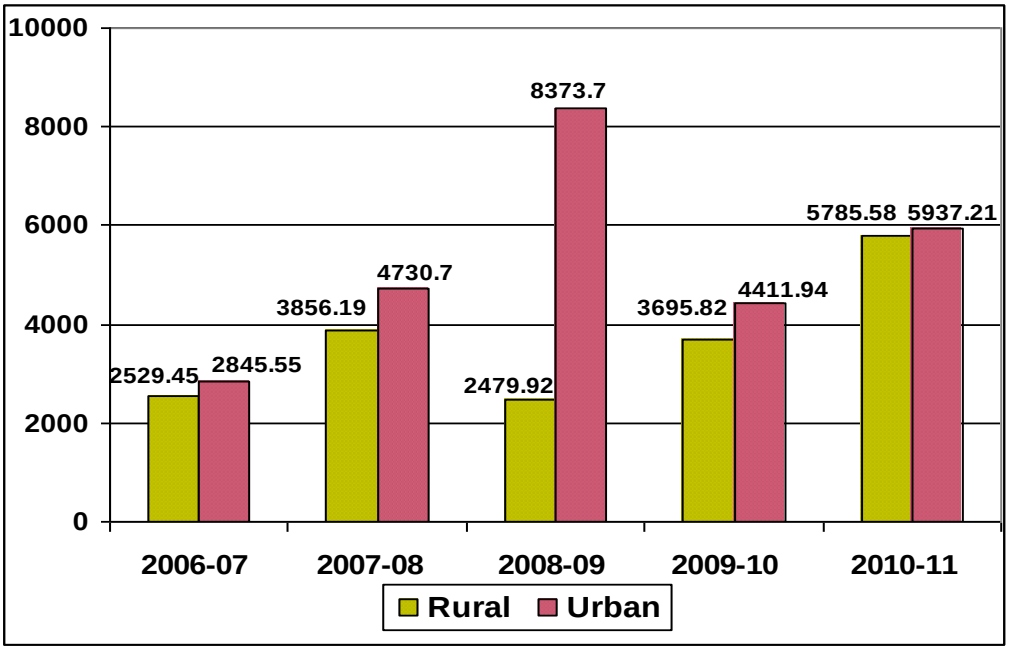


Source: Computations based on values in Fig 5.25a and 5.25b.

Section 5.8.3: Area-Wise Refinance Disbursals by NHB

Fig. 5.27 portrays the area-wise distribution of NHB refinance disbursements.

Fig. 5.27 AREA-WISE DISTRIBUTION OF REFINANCE DISBURSEMENTS BY NHB



Source: NHB Annual Report, 2011.

The area-wise refinance disbursements by NHB are found to have a tilt towards the urban centres. Between the years 2006-07 to 2008-09, there is gradual decline in the rural-urban ratio of NHB refinance disbursals. However, in 2009-10 and 2010-11 there is improvement in the proportion of distribution between the two. In the last year reported here, there was a near equal distribution between the rural and urban areas with the share of rural areas being 97% of that of urban areas.

SECTION 5.9

NHB RESIDEX

With the expansion of the real estate and housing sectors, changes in house prices have also drawn the attention of policy makers. The accurate measurement of real estate prices is a matter of great concern for market participants and policy makers as prices are an important signaling mechanism for decision making (Athaide, 2008). In recent years, housing has become an important part of investment portfolio, beyond the need for housing as shelter. This makes it necessary to develop sophisticated techniques to measure real estate price behaviour. Such a mechanism would help keep a track of the developments in the prices of residential segment and provide useful inputs for the various stake holders associated with it. For instance, variations in house prices affect the costs of government programs of public housing and the cost of living indices in various cities. It would assist banks and housing finance institutions in ascertaining the housing finance requirement of households, and in taking informed risks vis-à-vis the values of their collaterals. It would also guide them in formulating more efficient policies with regard to issues of prepayment and foreclosure. State government and local administration would get the benefit of the index in matters related to property tax, housing registration, property valuation etc. At the macro level, the index would provide useful inputs in the formulation of monetary and fiscal policy.

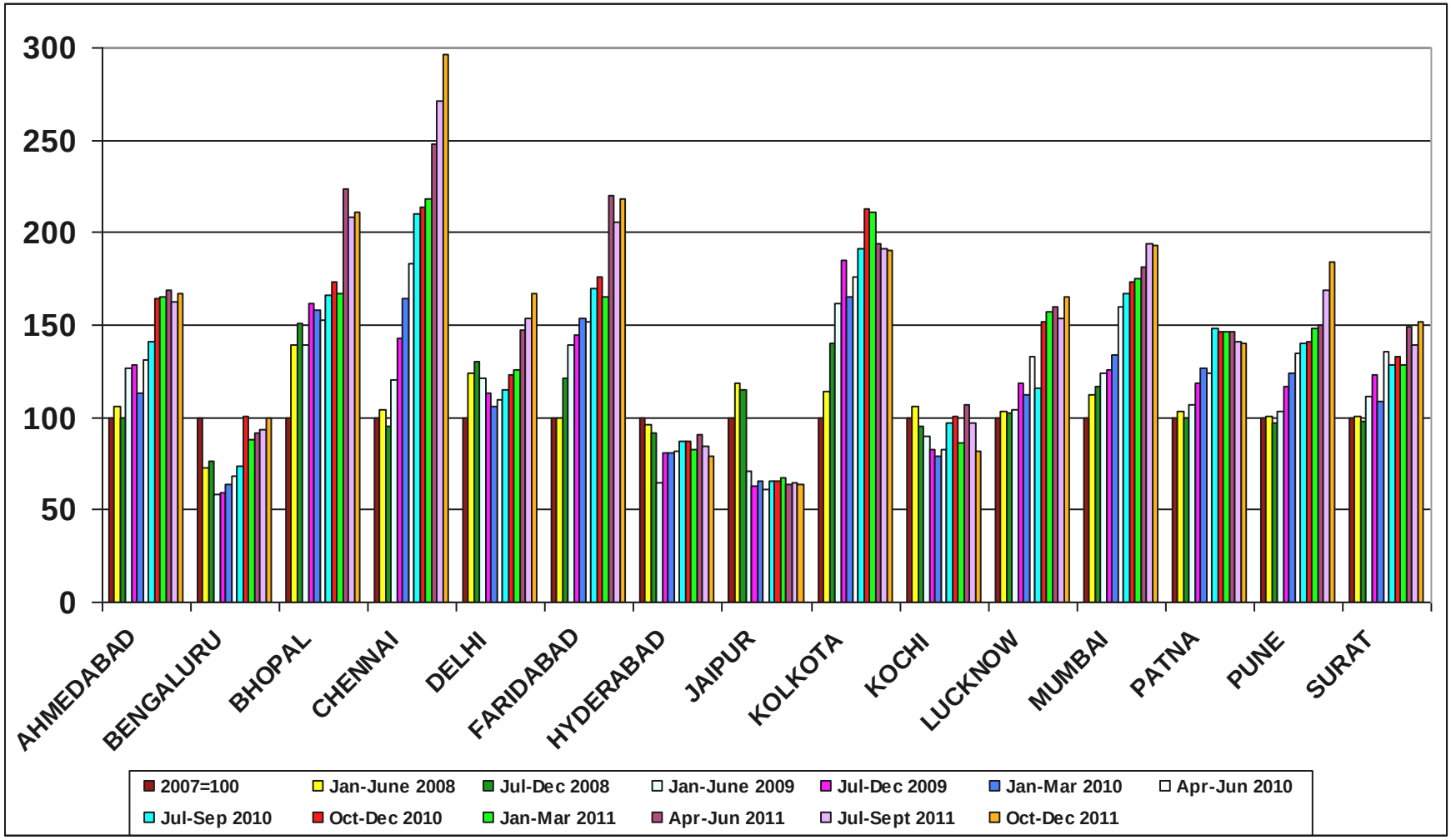
Working on these lines, the National Housing Bank launched a residential price index, NHB RESIDEX in July 2007 for tracing and monitoring the price structure of the residential property in India. The NHB Residex is currently constructed for property meant for residential purpose only, irrespective of the nature of ownership or tenure of the occupants. It is envisaged that in the future the price index would be expanded to commercial property as

well. A separate as well as a combined index would provide useful information for all the stake holders in the real estate sector. The combined index would determine the real price cost index.

The index uses the average weighted methodology in the Price Relative Method. The differences between cities with regard to property tax zones, administrative zones and so on, are well integrated into the cost structures. Initially, the index was constructed on six monthly basis but since 2010, NHB has shifted to quarterly index. With further expansion, it is envisaged that more metropolitan cities would be incorporated in the index. Fig. 5.28 shows the trend in the residential prices in selected cities of India since 2007.

As can be observed in Fig. 5.28, there is substantial variation in the residential price index across the 15 cities in India. Barring Hyderabad, Jaipur and Kochi, all other cities indexed, have experienced increase in residential prices over the four year period compared to the base prices in the year 2007. Chennai experienced the highest price level and the most rapid growth in residential property prices, while Jaipur had the lowest and the most stable prices. Linking the city-wise data on incremental home loans with the respective Residex values does not produce a clear relationship between the two variables. Some cities exhibit positive correlation while some, negative correlation between Residex and incremental home loans. Since the home loan data is available on yearly basis and not on quarterly basis, the quarterly Residex values have to be averaged out for the year, resulting into only four observations for each city. The number of observations being limited, it is not sufficient to establish statistically verifiable inferences. The present study has therefore used the wholesale price index as a proxy variable to reflect the price of housing. The econometric analysis involving the variable has been dealt with in Chapter 6.

Fig. 5.28 CITY-WISE RESIDEX



Source: NHB Publications

CHAPTER 6

DEMAND FOR HOUSING FINANCE IN URBAN INDIA: AN EMPIRICAL ANALYSIS

CHAPTER 6
DEMAND FOR HOUSING FINANCE IN URBAN INDIA: AN EMPIRICAL ANALYSIS

SECTION 6.1

INTRODUCTION

The comprehensive analysis of the various indicators of demand for housing finance in the preceding chapter unambiguously establishes that over the past two decades there has been substantial and robust growth in the demand for housing finance. Both in absolute terms, such as outstanding home loans, new home loan disbursals and number of home loan accounts, as well as in relative terms such as average home loan size and the sectoral share of home loans, the housing finance market has achieved greater breadth and depth.

When the home loans are seen in the context of relevant macro economic variables such as national income, time deposits, interest rates, wholesale price index and level of urbanization, etc., they suggest significant correlations. The distribution of outstanding home loans at various interest rates clearly brings out its role as a cost variable such that more home loans are found to be outstanding at lower interest rates than at higher interest rates. Over a period of time, the modal home loan size has graduated to higher levels, indicating that rising personal incomes and lower nominal interest rates have had favourable impact on households, enabling them to avail larger home loans. It is also indicative of rising house prices which necessitate bigger loan sizes. The population group-wise shares and regional distribution of outstanding home loans clearly indicate a strong urban bias in the lending operations of the commercial banks.

The present study seeks to revisit these variables by casting them into econometric models for empirical analysis. In this context, the current chapter traces some of the important factors that are responsible for the demand for housing finance in urban India. Once identified and empirically supported, they can be linked together in the context of prospective policies, and thereby present a symptomatic study for wider economic implications.

SECTION 6.2

OBJECTIVES AND HYPOTHESES

The objectives of the present study addressed in this chapter are as follows:

- To examine the role of nominal, real and expected home loan interest rates in determining the demand for home loans.
- To examine the role of current and anticipated income in the demand for home loans.
- To explore the role of house prices as a determinant of the demand for home loans.
- To test if the increased ratio of urban population provides any explanation for the variations in the demand for housing finance.
- To explore the impact of demographic changes over time on the demand for housing finance
- To analyze the home loan disbursals of Housing Development Finance Corporation (HDFC) as a representative of Housing Finance Companies.

The hypotheses tested in the context of the above objectives are as under:

- Nominal home loan interest rate has a negative impact on the demand for home loans.
- Real home loan interest rate has a negative effect on the demand for home loans.
- Expected nominal home loan interest rate plays a decisive role in the demand for home loans.
- Income has a positive effect on the demand for home loans.
- Anticipated income affects the demand for home loans.
- House prices affect the volume of home loans demanded by households.
- Urbanization has a positive impact on the demand for home loans.
- Time factor plays a significant role in the demand for home loans.

To test these hypotheses alternative models have been constructed that incorporate the dependent variable, the demand for housing finance, in various forms such as incremental demand for home loans, gross demand for home loans and sectoral share of home loans in total credit of commercial banks, in absolute values as well as log formulations.

SECTION 6.3

EMPIRICAL ANALYSIS OF INCREMENTAL DEMAND FOR HOME LOANS

This section analyzes the determinants of incremental demand for home loans by means of simple and multiple regression models which include alternative combinations of variables. As mentioned in Chapter 3, incremental demand for home loans is measured as change in outstanding home loans of commercial banks. The explanatory variables tested in this section include nominal and real home loan interest rates, expected home loan interest rates, per capita net national product at constant prices, anticipated income, and the wholesale price index as a proxy for house prices. The variables have been examined for their linearity and have therefore been used in their absolute values. The explanation for each variable has been provided in Chapter 3. Table 6.1 shows the regression results for the dependent variable 'incremental demand for home loans.' It may be recalled from Section 3.3.2 of Chapter 3, which discusses the data used in the analysis, that changes in outstanding home loans reflect the combined impact of new loan disbursals, loan prepayments, loan rescheduling and loan transfers.

Table 6.1
REGRESSION RESULTS-1
DEPENDENT VARIABLE: INCREMENTAL DEMAND FOR HOME LOANS (D_{HL})
PERIOD: 1990-91 to 2009-10

VARIABLE / MODEL	Constant	NR	PCI	RR	PCI^a	NR^e	WPI	Adjusted R^2	D-W
I	80990.12 (4.56)*	–4780.39 (–3.74)*						0.415	0.758
II	–19461.19 (–2.33)**		1.847 (4.50)*					0.516	0.869
III	25134.42 (0.96)	–2512.66 (–1.82)***	1.307 (2.68)*					0.574	1.014
IV	–11.419.46 (–0.95)		1.829 (4.43)*	–1134.57 (–0.94)				0.513	0.906
V	–37085.2 (–6.68)*				2.499 (9.70)*			0.861	1.351
VI	–57729.74 (–2.62)**	1034.36 (0.97)			2.807 (6.85)*			0.860	1.709
VII	–67271.89 (–3.91)*				2.904 (8.94)*	1604.61 (1.84)***		0.881	1.867
VIII	–92229.92 (–2.55)**				2.235 (2.45)**	2506.80 (1.73)***	73.73 (0.79)	0.878	1.838
IX	–71776.86 (–4.72)*		2.361 (2.23)**		1.332 (1.75)***	1410.5 (1.84)***		0.909	2.068

Figures in brackets are *t* values. * Significant at 1% level. **Significant at 5% level. *** Significant at 10% level.
NR = Nominal Home Loan Interest Rate; **RR** = Real Home Loan Interest Rate; **NR^e =** Expected Nominal Home Loan Interest Rate; **PCI** = Per Capita Net National Product at Constant Prices; **PCI^a** = Anticipated PC NNP; **WPI** = Wholesale Price Index

INTERPRETATION OF MODELS

MODEL I: $D_{HL} = \alpha + \beta_1 NR + \varepsilon$

With *a priori* expectation that interest rate would exert negative effect on the demand for home loans, the first model regresses the incremental demand for housing loans on the interest rate on home loans. The coefficient of interest rate is negative, which suggests that more housing loans are demanded at lower interest rates. The variable is highly significant at 1% level of significance and explains approximately 42% variation in the dependent variable. The intercept has a positive sign and is highly significant. It indicates the average effect of the variables excluded from the model. Alternatively it can also be interpreted as the maximum loans demanded at zero rate of interest. However, the Durbin-Watson statistic for the model is below one indicating problem of autocorrelation. The existence of positive autocorrelation in the successive error terms is anticipated as only one independent variable has been included in the model.

MODEL II: $D_{HL} = \alpha + \beta_1 PCI + \varepsilon$

The second model tests for the significance of income, represented by Per Capita Net National Product (PC NNP) at constant prices, in explaining the variations in the new demand for housing loans. The income variable has the expected positive coefficient, which is found to be significant at 1%. The adjusted R^2 has improved to 0.516. It may be said that when examined separately, income has a stronger impact on the new demand for housing loans as compared to the interest cost. For borrowers, rather than the nominal rate of interest on home loans, what is more important is the monthly debt servicing that the particular interest cost translates into. Monthly repayment ability is directly related to the income of the household. While households cannot influence the interest rate charged on home loans, they can adjust the amount and maturity period of their loan to suit their debt servicing ability which is mainly determined by their income levels, among other factors. This is one plausible reason why the income variable gives better results compared to interest rates in explaining the variations in incremental housing loans demanded by households.

The intercept term has turned negative which is an important change compared to the previous model. It indicates that households become eligible to demand home loans only when their income reaches a certain minimum level. The measure of autocorrelation

however, suggests that the model is incomplete as there are other important determinants of the dependent variable that are missing.

MODEL III: $D_{HL} = \alpha + \beta_1 NR + \beta_2 PCI + \varepsilon$

The third model takes both, the cost and the scale variable together to examine their combined impact on the dependent variable. While interest rate is expected to have negative effect, income is expected to exert positive effect on the demand for home loans. The explanatory power of the model has improved marginally as indicated by the adjusted R^2 value of 0.574. The D-W statistic has increased to 1.014. However, being far below the ideal value of two, it suggests the existence of autocorrelation in the error terms. The model as a whole is significant in terms of the value of F statistic.

It is interesting to note that the home loan interest rate continues to have a negative coefficient and is found to be significant at 10% level of significance even in the presence of the income variable. This is so because the model uses incremental as against total outstanding housing loans as the dependent variable and is therefore a closer proxy for new home loans disbursed by banks. The model supports *a priori* proposition that interest rate as a cost variable in the demand function for housing loans would negatively affect the demand for home loans. Falling interest rates induce higher demand for home loan rates while firming up of interest rates has a dampening effect. The inclusion of the income variable has not undermined the importance of home loan interest rate as one of the important determinants of the demand for housing loans, although the magnitude of its coefficient has reduced, which is consistent with normal expectations.

The PCI has a positive coefficient and is significant at 1% level of significance. The value of its coefficient has marginally fallen in the presence of the home loan interest rate. The intercept has a positive sign, however, it is not found to be significant. [23]

23. When incremental demand for home loans is regressed on the home loan interest rate and PC NNP at current prices, the adjusted R^2 is only 0.51 and D-W statistic is 0.864. The income variable has a positive coefficient which is significant at 5%; the interest rate exhibits the expected negative impact and is significant at 10%. However, the explanatory power of the model and the measure of autocorrelation leave much to be desired. Any other combination of explanatory variables with current PCI does not generate significant results.

MODEL IV: $D_{HL} = \alpha + \beta_1 RR + \beta_2 PCI + \varepsilon$

The fourth model replaces the nominal home loan interest rate with the real home loan interest rate. While the coefficient of the real rate of interest on home loans is found to be negative, it is statistically insignificant when taken as the sole independent variable or in combination with the per capita income, as in Model IV. Only the income variable is found to be significant. Moreover, the explanatory power of the model is poor and the D-W statistic indicates presence of autocorrelation.

MODEL V: $D_{HL} = \alpha + \beta_1 PCI^a + \varepsilon$

When households expect their incomes to rise, they are likely to opt for bigger loans. Anticipation for incomes to fall, on the other hand, would discourage households from taking loans or from taking bigger loans. With this premise, the demand for home loans is regressed on anticipated income to examine if it provides a better explanation for the behaviour of the dependent variable. The results are quite robust. There is substantial improvement in the adjusted R^2 to 0.861. The Durbin-Watson Statistic has also improved to 1.351.

The model suggests that anticipated income is a highly potent argument in the demand function for home loans. Its coefficient is positive and highly significant and is much greater in magnitude compared to income coefficients in the earlier models. This is particularly significant for the fact that for any household, keeping other things constant, home loan has the longest tenure compared to other personal loans. Thus, anticipated income has a significant role as a determinant of the demand for home loans. The intercept term too is highly significant and has the expected sign.

MODEL VI: $D_{HL} = \alpha + \beta_1 NR + \beta_2 PCI^a + \varepsilon$

Along with anticipated income, the interest rate on housing loans is also included in Model VI. While this has not improved the explanatory power of the model, the D-W statistic has increased to 1.709 which is very close to two, indicating absence of autocorrelation. The model as a whole is highly significant.

The home loan interest rate has turned insignificant suggesting the overpowering effect of higher incomes expected in the future. That is, in the presence of higher anticipated income, the interest cost fails to depress the demand for home loans. It may be noted that when the

interest variable was taken along with current year's income, it was found to have a negative coefficient and was significant too. The coefficient of anticipated income is positive, has a higher value and continues to be significant at 1%. The intercept term has a negative sign, which is consistent with the income variable, and is also statistically significant. It endorses the overpowering effect of the income variable vis-à-vis the interest variable.

MODEL VII: $D_{HL} = \alpha + \beta_1 NR^e + \beta_2 PCI^a + \varepsilon$

This model integrates expectations of borrowers in their demand function of home loans by taking the combination of anticipated income and expected home loan interest rates as the two independent variables. As mortgages with floating rates represented by the BPLR are found to be highly preferred by borrowers in India, it is hypothesized that expectations about the future movements in the interest rate are crucial in influencing the demand for home loans. *A priori* it is expected that there is a positive relationship between expected rate of interest and the demand for home loans. Thus, when households expect the rate of interest to rise in the future, they are likely to demand more home loans in the current time period at the existing lower interest rates. Amidst households' expectations for interest rates to rise, lenders too are found to offer to lock home loans at lower interest rates for the initial two-three years of the contract to attract customers. On the other hand, when households expect interest rates to fall in the future they may postpone their demand for home loans.

Whether the hypothesis regarding expected home loan interest rates turns out to be true or not depends on several factors. Firstly, it must be borne in mind that home loans involve much longer tenure compared to other personal loans and therefore households' borrowing behaviour is not expected to change drastically with every expected change in the home loan interest rate. It is quite well established that the era of high prohibitive rates of interest in the absolute sense are a *passé*. In the post-liberalization era, interest rates are unlikely to reach the high levels that were a norm in the pre-1990s in India. Therefore, even as lower rates do encourage households to borrow more, expectations regarding fall in the interest rates in the future would simply be interpreted as an extension of the benefit of variable rate mortgages. By this logic, expectations of the interest rate to fall in the future are likely to evoke less response in terms of the amount of home loans demanded, than would the expectations of a rise in the rate of interest. Higher levels of interest rates in the future than at the time of

origination of the loan contract has implications for debt servicing, as they expose households to risks of higher repayment requirements. It is this uncertainty that may induce greater response in the case of expectations of hardening of interest rates.

Secondly, expectations about future interest rates may not affect the *amount* of home loan demanded as much as it is likely to affect borrowers' *choice* between fixed and variable rate mortgages. For instance, if households expect sharp increase in interest rate they may prefer fixed rate mortgages to variable rate mortgages so as to reduce interest rate risks. If households expect interest rates to fall in the future, they may not reduce the demand for home loans in the current time period, but are more likely to opt for variable interest rate mortgages. Opting for variable interest rates would allow them to borrow more, given that fixed rates are about two basis points above the variable rates. We thus anticipate an asymmetrical behaviour on part of households as far as expected interest rates are concerned.

Thirdly, the impact of expectations regarding future home loan interest rates would depend on households' expectations about their future incomes as well. If households anticipate increase in their incomes in the future, they are less likely to be discouraged from demanding home loans in the current period even if they expect interest rates to harden. Prospects of capital gains from increase in the value of the housing asset would also veil the clear impact of expected rates of interest.

The results for the model involving expected rate of interest and anticipated income are as follows. The model generates the highest adjusted R^2 value of 0.881, compared to other models so far. The D-W statistic has also further improved to 1.867 which suggests absence of autocorrelation. The model is highly significant. The intercept term is negative and highly significant at 1%.Anticipated income is found to have a significant positive effect on the demand for home loans.

Expected home loan interest rate has a positive coefficient and is significant at 10% level of significance. With the upward movement in interest rates in recent times, combined with rising inflation and frequent upward revision of key interest rates by the RBI, households build expectations for further rise in home loan rates. This may induce them to borrow more at the prevailing rates, particularly at fixed rates. When interest rates are expected to fall or remain subdued, households may postpone contracting the home loans at the current rates of

interest or may opt for variable rate mortgages in the hope of subsequently enjoying the benefit of lower interest rates.

MODEL VIII: $D_{HL} = \alpha + \beta_1 NR^e + \beta_2 PCI^a + \beta_3 WPI + \varepsilon$

Adding the variable - wholesale price index - to the previous model as a proxy for house prices, does not improve the results. The adjusted R^2 of 0.878 is high but marginally lower than when WPI is excluded from the model. Similar is the case with the D-W statistic which is a tad lower at 1.838 compared to the previous model.

Expected interest rates and anticipated income continue to be significant at 5% and 10% level of significance, respectively. WPI has a positive coefficient suggesting that higher house prices necessitate bigger home loans at given interest rates and income levels. Rising property prices may induce households to speed up their house purchase intentions, leading to increase in demand for home loans. Rising residential property prices also entail capital gains for the home buyers, thereby inducing greater demand for home loans even amidst expectations of increase in interest rates. However, WPI is not found to be statistically significant. The intercept bears a negative sign as is anticipated and is found to be significant.

Several plausible reasons could be responsible for the unclear impact of the WPI as a determinant of the demand for home loans. Firstly, the rate of interest is correlated with the rate of inflation which in turn is derived from the WPI. The correlation between the interest rates and WPI is revealed by the fact that the magnitude of the coefficient of expected home loan interest rate has increased by more than 50% in the presence of WPI.

Secondly, when both, interest rates and income levels are rising or are expected to rise, the impact of house prices would depend on the relative strength of change in each variable. Mild increases in house prices would increase the demand for home loans, for given values of current and expected interest rates and incomes. But rapid and sharp increase in house prices are likely to discourage households from purchasing a house or may compel them to compromise on the house size and/or location, and thereby cause a fall in the demand for housing finance, particularly in the case of lower income households.

Thirdly, when WPI rises and the borrowers expect interest rates to firm up but their real incomes to decline, they may adopt a cautious approach in demanding home loans. Thus,

while rising WPI and expectations of rise in interest rates may increase the urgency of demanding home loans in the current time period, gloomy expectations about the future course of income may discourage households from borrowing.

Owing to the mixed impact of house prices, the empirical results do not give a clear indication about its role. Despite the data not supporting our hypothesis, the significance of house prices cannot be denied. It may be recalled that for the Indian economy, hardening of house prices in the later years of the decade of 2000 caused a slowdown in the housing purchase activity in the short term, and it remained subdued till the house prices got rationalized. Given the pace of urbanization and the sense of urgency that it lends to house purchase activities, house prices will beyond doubt have a positive trend and therefore be a cause of increased demand for home loans in the medium and long term. While the aggregative nature of the data may not elicit the impact of house prices, it is beyond doubt that relative stability in property prices is important for the expansion of the housing finance sector.

MODEL IX: $D_{HL} = \alpha + \beta_1 PCI + \beta_2 PCI^a + \beta_3 NR^e + \varepsilon$

It is postulated that while current income determines the eligibility of a household for home loan, the expectations regarding their incomes over the tenure of the loan and the expected home loan interest rates are equally important in a household's decision to opt for a home loan. This model combines the current year's per capita income, the anticipated income and the expected home loan interest rates to examine the variations in the demand for home loans. The explanatory power of the model has improved to 90% and the D-W statistic equals the ideal value of two showing absence of the problem of autocorrelation.

The coefficient of current year's income, no doubt, has increased due to collinearity between the two variants of income. However, both the income variables are found to be highly significant. Beta value for current year' income is greater than that for anticipated income, which is as per expectation. The expected home loan interest rate is also significant although the magnitude of its coefficient is smaller in the presence of two income variants. The constant term has a negative sign consistent with the importance of the income variables, and is found to be significant at 1% level.

SECTION 6.4

EMPIRICAL ANALYSIS OF GROSS DEMAND FOR HOME LOANS: PART I

We use the term 'Gross Demand' to represent the level of outstanding home loans at any given point of time. Prevailing rates of interest and income levels of households can influence households' decision to hold or prepay home loans or to take add-on loans if they wish to. Over a period of time, economic, social and psychological changes such as, increase in urbanization, increase in double income families, spread of nuclear family systems, increasing housing aspirations, attitudinal changes in favour of debt, etc., can influence the total mortgage debt held by households at any given point of time. This section seeks to analyze these factors as determinants of gross demand for home loans using simple and multiple regression models. Further objective of analyzing 'gross' as against 'incremental' demand for home loans is to test if the results obtained for models with incremental demand for home loans are also substantiated in the case of gross demand variable or not. If they do, it would strengthen the robustness of the statistical relationships observed in the previous section. Table 6.2 presents the regression results for the dependent variable 'Gross demand for home loans' under four alternative models.

Table 6.2
REGRESSION RESULTS-2
DEPENDENT VARIABLE: GROSS DEMAND FOR HOME LOANS (GD_{HL})
PERIOD: 1990-91 to 2009-10

VARIABLE / MODEL	Constant	NR	PCI	YRS	WPI	Adjusted R^2	D-W
I	**374173 (3.11)***	**–21165 (–2.44)****				**0.215**	**0.181**
II	**–296574 (–8.52)***	**6066.76 (3.25)***	**15.69 (23.87)***			**0.977**	**2.169**
III	**–310621 (–5.31)***	**7042.84 (1.88)*****	**15.064 (6.91)***	**1154.8 (0.30)**		**0.976**	**2.134**
IV	**–310211 (–4.05)***	**6613.56 (1.99)*****	**15.183 (5.80)****		**40.654 (0.20)**	**0.976**	**2.111**

Figures in brackets are *t* values. ***** Significant at 1% level. **Significant at 5% level.
*** Significant at 10% level. **YRS** = Number of Years

INTERPRETATION OF MODELS

MODEL I: $GD_{HL} = \alpha + \beta_1 NR + \varepsilon$

The first model is basic in nature that runs the regression of demand for home loans on the nominal home loan interest rate. The outstanding home loans of SCBs are found to be negatively correlated with the interest rates. The beta coefficient has a negative sign and is significant at 5% level of significance. It provides strong empirical evidence for *a priori* expectation that the demand for home loan behaves as per the law of demand with respect to the cost variable, i.e., the rate of interest. The intercept is also significant with a positive sign, which meets the expectation in the sense that it indicates the maximum loans that would be demanded at zero interest cost.

The model with interest rate as the sole explanatory variable however, explains only 22% of the variations in the demand for home loans as indicated by the low adjusted R^2 value of 0.215. The D-W statistic is extremely low at 0.181 indicating high positive autocorrelation. However, the model serves the purpose of establishing the inverse relationship with the rate of interest, despite the dependent variable being measured in terms of 'outstanding home loans' rather than 'incremental home loans'. It strengthens the robustness of the result obtained for similar model in the previous section.

MODEL II: $GD_{HL} = \alpha + \beta_1 NR + \beta_2 PCI + \varepsilon$

The second model includes two independent variables, namely, home loan interest rate and the PC NNP at constant prices. Income is a scale variable in the demand function for housing loans in as much as it determines the ability of households to borrow. Adding PC NNP as the scale variable along with interest rate substantially improves the explanatory power of the model with an adjusted R^2 value of 0.977. The D-W statistic of 2.169 indicates absence of autocorrelation. The F statistic for the model as a whole is highly significant. The constant term has turned negative which is consistent with the income variable in the sense that it indicates that households become eligible for home loans only after their income reaches a certain minimum critical level.

Income is found to have a positive impact on the demand for housing loans and is significant at 1% level. The result lends credibility to the widely held belief that rising income levels

have raised the housing aspirations of households in India like never before, particularly in the case of the growing middle-income class, and has enabled them to demand greater housing finance. Not only does it improve the ability of households to borrow more, but it also makes more households eligible to borrow. This volume effect is borne out by the steep rise in the outstanding loans, particularly in the second decade under study. The PC NNP recorded a much higher average annual growth rate of 5.48% in the decade of 2000-10 compared to 3.62% in the decade of 1990-2000.

The coefficient of interest rate has turned positive and is significant at 1% level. The positive relationship implies that when interest rates decline, they translate into lower outstanding home loans. Whereas, when interest rates increase, they translate into higher debt servicing resulting into higher outstanding home loans. Moreover, at higher interest costs, households may also opt for longer maturity period which results into greater outstanding home loans. This is consistent with the housing finance experience in India, particularly in the second decade under study, in which much of the changes were concentrated. In the second decade, the correlation between interest rates and home loans is found to be positive as interest rates stabilized between 2003 and 2006, and thereafter started firming up. With floating rates preferred in India, it led to increase in home loans outstanding with the banks.

Moreover, the decade of 1990s was a period when changes in the housing finance sector were in their initial phase. Households most likely were still on their learning curve so that the impact of the changes took time to manifest in their behaviour. In the decade of 2000, one can expect a lot of delayed and cumulative effects of various social and economic factors, resulting into positive relationship between interest rates and outstanding home loans. Further, the analysis is based on ‘outstanding home loans and not ‘incremental home loans’ and therefore positive relationship with interest rates is quite likely due to increased house purchase activities, among other things.

Another plausible reason behind the positive relationship between interest rates and outstanding home loans could be the aggregative form of data on outstanding home loans and the generic home loan interest rates applied to them. Therefore, *a priori* negative relationship between the two fails to emerge, particularly in the presence of the income variable. This is because the interest cost of home loans could be a more crucial factor for borrowers when

comparing *between* lenders with regard to the rates offered by them. This is exemplified in the relationship between home loan interest rates and corresponding housing loans of various bank groups. The examination reveals that on an average the home loan interest rates of SBI and Associate banks as well as the nationalized banks were lower and their home loans were higher. On the other hand, the home loan interest rates of domestic private sector banks were higher and their home loans comparatively lower. Among all bank groups, home loan rates of the foreign banks were the highest on an average and their outstanding housing loans the lowest. This suggests that the demand for housing loans is after all inversely related with the rates of interest.

Moreover, apart from the rate of interest charged on home loans, the terms and conditions of credit are also important considerations attached to the cost of credit. These include, for example, daily, monthly or yearly reducing balance of principal loan amount, the loan-to-value ratio, maturity period, flexibility to convert home loans availed at variable rates into fixed rate loans and vice-versa, prepayment flexibility and charges, and factors such as preference for public sector banks vis-à-vis private banks. As the home loan interest rate in this analysis is generic in nature, it does not account for the diverse elements of credit terms and conditions practiced by lenders.

MODEL III: $GD_{HL} = \alpha + \beta_1 NR + \beta_2 PCI + \beta_3 YRS + \varepsilon$

In the third model the gross demand for housing loans is regressed on home loan interest rate, income and number of years, which is included to capture the changes over time that could influence the demand for home loans. It is anticipated that over a period of time house purchase activities would gain momentum due to several economic, social and demographic factors as discussed in Chapter 3, and therefore the variable 'number of years' would exert a positive effect on the demand for home loans.

While the inclusion of the time variable has not added to the explanatory power of the model, it has lowered the D-W statistic to 2.134, bringing it further close to the ideal value of two. Both interest rate and PC NNP have positive coefficients and are found to be significant at 10% and 1% levels respectively. The time variable has the expected positive sign for its beta coefficient, but its individual impact on the dependent variable is not significant. However, the model as a whole is statistically significant in terms of the F statistic. Though not found

to be significant, the number of years or the time factor has a crucial role in widening and deepening the housing finance institutions, and bringing about delayed and cumulative effects of various demographic factors, which cannot be denied.

MODEL IV: $GD_{HL} = \alpha + \beta_1 NR + \beta_2 PCI + \beta_3 WPI + \varepsilon$

This model replaces the time variable by the Wholesale Price Index to capture the impact of inflation in house prices on the demand for housing finance. The model gives a high adjusted R^2 value of 0.976. The D-W statistic is remarkably close to two.

Independently, the variables home loan interest rates and PCI have positive and statistically significant effect at 10% and 5% levels of significance respectively. As house prices increase, households require bigger housing loans at given income levels and at the prevailing interest rates. This is substantiated by the positive beta coefficient for WPI. While the model as a whole is significant in terms of F statistic, the WPI is not found to be statistically significant in its individual capacity.

One reason for the insignificance of the variable could be the peculiar interrelationship between interest rates, incomes and house prices. Ownership of a house is an important priority for any household. On the one hand, the ability of households to manage sufficient funds for down payments and debt servicing are determined by income and the rate of interest, and are more important factors in the house purchase decisions. House prices, on the other hand, are more likely to impact households' decision on the *type* of housing rather than the demand for housing per se. Moreover, increase in house prices also imply capital gains for households in relation to the interest cost paid by them. For all these reasons, we may expect the demand for home loans to increase when house prices rise, however, how significant would the effect be, depends on the relative magnitude of the changes in income, interest rates, house prices and other relevant variables for a household at the micro level. Incidentally, the empirical results of a study on the demand for housing in UK by Chandrasekar and Krishnamoorthy (2010) also show positive effect of interest rates, which they attribute to households' expectations of making capital gains on the housing asset on account of increase in house prices.

SECTION 6.5

EMPIRICAL ANALYSIS OF GROSS DEMAND FOR HOME LOANS: PART II

The main focus of this section is urbanization. It attempts to capture the role of increased urbanization in the total demand for home loans, along with other basic variables. Increased rural-urban migration in search for jobs, growing number of nuclear families and rising aspirations for home ownership are manifested in rapid expansion of cities. Rising land prices are also a compelling force for households to look at housing options in the outskirts of cities. There is also a growing trend of purchasing a second home for investment purpose and as weekend homes. The upward trend in house purchase has induced the launching of new housing projects and speculative buying in the sub-urban areas. The combined effect of all this is visible in the rapid pace of urbanization. To capture the impact of urbanization, the ratio of urban to total population has been used as a determinant of the demand for housing loans. The results are presented in Table 6.3.

TABLE 6.3
REGRESSION RESULTS-3
DEPENDENT VARIABLE: GROSS DEMAND FOR HOME LOANS (GD_{HL})
PERIOD: 2000-01 to 2009-10

MODEL / VARIABLE	I	II
Constant	**–3982088 (–10.835)***	**–1538600 (–2.156)*****
URBN	**143258 (11.258)***	**47289 (1.712)*****
NR	**-**	**6248.5 (0.700)**
PCI	**-**	**10.56 (3.627)***
Adjusted R^2	**0.933**	**0.972**
D-W	**1.814**	**2.498**

Figures in brackets are *t* values. * Significant at 1% level.
*** Significant at 10% level.
URBN = Ratio of Urban Population to Total Population

INTERPRETATION OF MODELS

MODEL I: $GD_{HL} = \alpha + \beta_1 URBN + \varepsilon$

The first model tests for the role of urbanization in influencing the level of outstanding home loans. A high degree of positive correlation is observed between the proportion of urban population in the total population and outstanding housing loans. The regression generates a high R^2 value of 0.933 and a D-W statistic of 1.814 which indicates near absence of autocorrelation. The variable is found to positively affect the demand for home loans and is highly significant at an alpha level of one percent.

MODEL II: $GD_{HL} = \alpha + \beta_1 URBN + \beta_2 NR + \beta_3 PCI + \varepsilon$

Examining the combined impact of urbanization, home loan interest rate and income, improves the explanatory power of the model to 97%. The D-W statistic is slightly above two. Income exhibits a positive coefficient and is highly significant. The urban population ratio is found to be statistically significant at a significance level of 10%. It may also be noted that in the presence of PCI, there is drastic fall in the value of the beta coefficient of the measure of urbanization. This could be indicative of multicollinearity between the two variables, as increased income generation has been generally linked to increased urbanization. The interest rate is not found to be a significant factor in the demand function for housing loans in the presence of the income and urbanization variables.

Empirical results suggest that rapid pace of urbanization, as manifested in increased construction of dwelling units in the cities and the expansion of cities in their peripheries, positively affects the demand for housing loans. Increase in the ratio of urban population is found to have had a positive impact on the sectoral share of housing loans in the total credit extended by the banking sector as well. Moreover, in the presence of the urbanization variable, the rate of interest is not found to be significant. This implies that when house purchase activities gain momentum, housing finance simply acts a means to the end and the interest cost of housing finance is not an impending factor for households. Rather, it is the pace of urbanization and the level of incomes which reinforce each other and positively influence the demand for home loans.

SECTION 6.6

EMPIRICAL ANALYSIS OF THE SECTORAL SHARE OF HOME LOANS IN TOTAL CREDIT OF SCBs

The analyses in this chapter so far were based on absolute values of the variables such as incremental and total outstanding home loans of SCBs and current and anticipated per capita income. The models provide sufficient evidence of their significance in determining the demand for housing loans. While both incremental and outstanding home loans of commercial banks have no doubt increased, there is also an increase in the share of housing loans in the total credit extended to all sectors by the commercial banks. In this analysis, the percentage share of home loans in the total outstanding loans of SCBs to all sectors is taken as a proxy variable to reflect the demand for home loans. Over the years, the relative flow of funds from the commercial banks to the retail home loans sector has increased. From merely 2.65% in 1990-91, the sectoral share of home loans peaked at 12.03% in 2005-06. In the year 2009-10, it stood at 9%. This analysis seeks to inquire if the positive trend in the sectoral share of home loans, as a proxy for demand for home loans, is affected by the same set of explanatory variables.

The model presented in this section is a supportive model to the analyses carried out so far. The sectoral share of home loans is regressed on three variables, namely, the home loan interest rate, the growth rate in per capita net national product and the ratio of urban population in total population. The model is presented in Table 6.4.

Table 6.4
REGRESSION RESULTS-4
DEPENDENT VARIABLE: SECTORAL SHARE (%) OF HOME LOANS IN TOTAL CREDIT OF SCBs
PERIOD: 2000-01 TO 2009-10

VARIABLE	Coefficients and *t* Values
Constant	**– 33.161 (–1.804)*** **
NR	**–1.355 (–2.335)** **
grPCI	**0.635 (3.052)** **
URBN	**1.894 (2.501)** **
Adjusted R^2	**0.838**
D-W Statistic	**2.553**

Figures in brackets are *t* values. **Significant at 5% level. *** Significant at 10% level.
grPCI = Growth Rate of Per Capita Income

MODEL: $D_{HL} = \alpha + \beta_1 NR + \beta_2 grPCI + \beta_3 URBN + \varepsilon$

The model is highly significant with 84% variation in the dependent variable being explained by it. At 2.553, the measure of autocorrelation is not too far from the ideal value of two, suggesting that there is no serious problem of autocorrelation. Interestingly, interest rates have a significant negative impact on the sectoral share of home loans in total bank credit. In other words, the fall in the home loan interest rates does provide an explanation for the increased share of home loans in the total outstanding loans of the commercial banks across all sectors. It is found to be significant at a significance level of 5%.

The sectoral share of home loans is found to be positively related to the rate of growth in per capita income and the latter is significant at two percent level of significance. A positive rate of growth in the per capita income is related to a positive change in the sectoral share of home loans, which strengthens the results obtained in the previous sections regarding the role of the income variable.

The degree of urbanization, measured by the ratio of urban population to total population, is also found to be a statistically significant impact on the sectoral share of home loans. The constant term is also found to be significant at ten percent and bears a negative sign. It is

consistent with the fact that sectoral share of home loans would show an upward trend only once the pace of urbanization and the growth in personal incomes gain momentum. The above analysis strengthens the robustness of the results obtained in the earlier sections as it supports *a priori* expectations even when the variables are examined in relative terms.

SECTION 6.7

EMPIRICAL ANALYSIS OF LOGARITHMIC MODELS OF DEMAND FOR HOME LOANS

The analyses in the Sections 6.3 to 6.5 were based on absolute values of the variables examined, while that in Section 6.6 was based on relative values of the variables. Although the variables were tested for linearity, and robust results too have been obtained, the differences in the magnitudes of the variables and their measurement units may be a matter of statistical concern. This section therefore seeks to test the variables in their logarithmic forms. Not only would it improve the linearity of the relationship between variables and make them comparable in terms of units of measurement, but the coefficients obtained in the analysis would also indicate the values of elasticity of demand for home loans with respect to various independent variables. The analysis has been carried out for incremental as well as gross demand for home loans.

Section 6.7.1: Analysis of Incremental Demand for Home Loans: Log Models

This section investigates into the logarithmic models that measure the demand for home loans in the form incremental home loans of SCBs. Five alternative log models have been tested which includes both bivariate and multivariate analysis. Table 6.5 presents the regression results for incremental demand for home loans.

TABLE 6.5
REGRESSION RESULTS-5
DEPENDENT VARIABLE: INCREMENTAL DEMAND FOR HOUSING LOANS (log D_{HL})
PERIOD OF STUDY: 1990-91 TO 2009-10

VARIABLE / MODEL	Constant	log NR	log PCI	log PCI[a]	Adjusted R^2	D-W
I	31.060 (10.171)*	–8.642 (–7.370)*			0.748	1.253
II	–33.187 (–5.605)*		4.268 (7.062)*		0.731	0.612
III	–41.641 (–9.056)*			5.062 (10.871)*	0.887	1.468
IV	–1.857 (–0.230)	–5.210 (–4.491)*	2.451 (4.233)*		0.873	1.761
V	–21.546 (–1.916)***	–2.709 (–1.927)***		3.743 (4.642)*	0.905	1.811

Figures in brackets are *t* values. * Significant at 1% level. **Significant at 5% level. *** Significant at 10% level

INTERPRETATION OF MODELS

MODEL I: $\log D_{HL} = \alpha + \beta_1 \log NR + \varepsilon$

The first basic model tests the significance of the interest rate variable. It is found to have a significant negative impact on the incremental demand for home loans. Its beta coefficient indicates a high interest elasticity of demand for home loans of –8.6. The value of the coefficient of determination, 0.748, indicates that interest rate as a single explanatory variable provides substantial explanation for the variations in the incremental demand for home loans. The D-W statistic of 1.253 also cannot be considered to indicate a very serious issue of autocorrelation, although a higher value would be desirable.

MODEL II: $\log D_{HL} = \alpha + \beta_1 \log PCI + \varepsilon$

The model with income as the sole explanatory variable explains 73% of the total variation in the demand for home loans. It has a highly significant positive coefficient, indicating an income elasticity of 4.3. However, the model has a serious problem of autocorrelation.

MODEL III: $\log D_{HL} = \alpha + \beta_1 \log PCI^a + \varepsilon$

Given the poor results of current year's income as an independent variable, the third model replaces it with anticipated income. There is sizable improvement in the explanatory power of the model to nearly 89% and in the measure of autocorrelation to 1.468. The variable is highly significant. The elasticity of demand for home loans with respect to anticipated income is found to be quite high at 5.06.

MODEL IV: $\log D_{HL} = \alpha + \beta_1 \log NR + \beta_2 \log PCI + \varepsilon$

The fourth model tests for the significance of the cost and scale variable together. The model explains 83% changes in the dependent variable. The D-W statistic has improved to 1.761, which is very close to the ideal value of two. It is interesting to note that the interest rate continues to exert a significant negative impact on the demand for home loans even in the presence of the income variable, although the interest elasticity has declined from –8.6 to –5.2. Likewise, income exerts a positive effect on the incremental demand for home loans but in the presence of interest rate, income elasticity has reduced to nearly half from 4.2 to 2.4. Nonetheless both the coefficients suggest that demand for home loans is highly elastic to these variables.

MODEL V: $\log D_{HL} = \alpha + \beta_1 \log NR + \beta_2 \log PCI^a + \varepsilon$

Replacing the current year's income with anticipated income, and taken along with the interest rate improves the value of adjusted R^2 to 0.90 and the D-W value to 1.811, indicating absence of autocorrelation. It is remarkable that the interest rate continues to exhibit a significant negative effect on the demand for home loans in the presence of the higher income anticipated in the future. However, there is a further fall in the interest elasticity of the demand for home loans from –5.2 to –2.7. It suggests that with expectations of increments in income in the future, households become less sensitive to interest rates. This is consistent with the fact the commercial banks largely cater to borrowers working in the organized sector, who get systematic pay hikes at regular intervals.

In the presence of the interest cost variable, there is a decline in the magnitude of elasticity of demand with respect to income expected by households in the future. The results of the model are highly consistent with *a priori* expectations for each variable. The intercept too is significant and has a negative value, which is consistent with the income variable rather than the rate of interest.

It may be noted that models, which include the variables 'number of years' as a proxy for socio-economic changes, and WPI as a proxy for house prices, are found to be significant but are not reported here because though the two variables have positive beta coefficients, they were not found to be significant in their individual capacity. Likewise, the real rate of interest also bore a negative sign but was not found to be significant. The expected rate of interest is also not found to be statistically significant in influencing the incremental demand for home loans and therefore such models are not included in the table.

Section 6.7.2: Analysis of Gross Demand for Home Loans: Log Models

This section examines the determinants of the gross demand for home loans. The variables have been taken in their log formulations. Three alternative models have been analyzed. The results are presented in Table 6.6.

TABLE 6.6
REGRESSION RESULTS-6
DEPENDENT VARIABLE: GROSS DEMAND FOR HOUSING LOANS (log GD_{HL})
PERIOD OF STUDY: 1990-91 TO 2009-10

VARIABLE / MODEL	Constant	log NR	log PCI	log PCI[a]	Adjusted R^2	D-W
I	28.463 (8.083)*	– 6.974 (–5.158)*			0.587	0.448
II	–21.641 (–5.657)*	–1.752 (–3.186)*	3.731 (13.595)*		0.965	1.178
III	–26.823 (–5.318)*	–0.450 (–0.714)		3.843 (10.627)*	0.968	1.571

Figures in brackets are *t* values. * Significant at 1% level.

INTERPRETATION OF MODELS

MODEL I: $\log GD_{HL} = \alpha + \beta_1 \log NR + \varepsilon$

The first basic model tests for the role of the nominal interest rate in determining the gross demand for home loans. It is noteworthy that despite being the gross demand for home loans, which is represented by the outstanding home loans that have been contracted at different rates of interest, it is still found to be negatively related with the interest rate. The interest elasticity of gross demand for home loans is high at –6.9. However, the explanatory power of the model is only 59%, which is as expected. With important regressors missing in the model, the D-W statistic is very low, indicating positive autocorrelation. The intercept bears a positive sign and is highly significant. It not only implies the maximum loan that households would demand at zero interest rate but also means that income and/or wealth are important scale variables which determine the upper limit of the positive intercept even when interest cost is zero.

MODEL II: $\log GD_{HL} = \alpha + \beta_1 \log NR + \beta_2 \log PCI + \varepsilon$

With the inclusion of the income variable, the intercept has turned negative which indicates that a minimum qualifying level of income is necessary for availing home loans. The explanatory power of the model has improved to 96% and D-W value is also above one, although not completely satisfactory. Most importantly, despite being the gross demand for home loans, the interest rate continues to exert negative and statistically significant effect even as income positively affects outstanding level of home loans. But, as can be observed, there is substantial decline in the interest elasticity of home loans to –1.7. It may e noted that the income elasticity of gross demand for home loans at 3.7 is relatively lower than that in the case of incremental demand for home loans, which meets normal expectations.

MODEL III: $\log GD_{HL} = \alpha + \beta_1 \log NR + \beta_2 \log PCI^a + \varepsilon$

The third model replaces the current year's income by the anticipated income. Both the adjusted R^2 and D-W statistic have improved to 0.968 and 1.571 respectively. Anticipated income is found to have a significant positive impact on the gross demand for home loans, which follows *a priori* expectations. Higher incomes expected in the future do increase the level of outstanding home loans, particularly, that part which represents new loans. Greater

outstanding home loans at higher anticipated incomes may also be the outcome of several other conflicting factors. For instance, penalties on prepayments may discourage borrowers from making prepayments. Likewise, households may prefer to hold on to mortgage debt for longer period, particularly, when interest rates are lower, so that they can divert their increased incomes to satisfy other competing needs and aspirations.

An important change in the result is the insignificance of the interest rate even as it bears a negative sign. The model suggests that in the presence of higher income anticipated in the future, the rate of interest does not exert strong influence on the demand for home loans. In the case of incremental demand for home loans, there is an unambiguous negative relation with the rate of interest, but it is not so in the case of outstanding home loans as they have been contracted at different rates of interest.

It may be noted that as in the case of models of incremental demand for home loans, the models of gross demand for home loans too do not establish the statistical significance of the time variable and WPI, although the two appear with positive sign. These models are therefore not shown in the table.

SECTION 6.8

EMPIRICAL ANALYSIS OF HOME LOAN DISBURSALS OF HDFC

The analyses carried out so far were based on the outstanding home loans of commercial banks which have constituted about 70% of the total housing finance market, for more than a decade. The home loans demanded from the Housing Finance Companies are not represented in the above analyses. Foremost among the HFCs is the Housing Development Finance Corporation (HDFC) which claimed 17% share of the home loans market in India in 2010.

In this section, an analysis of the determinants of the demand for home loans is carried out by examining the data on home loans disbursals of HDFC available from its annual reports. The objective of the study is to investigate if the results obtained in the econometric analysis of housing loans of scheduled commercial banks are substantiated and consolidated in the case of HDFC, as a representative housing finance company. The analysis covers a period of 19 years from 1992-93 to 2010-11. The independent variables include the home loan interest

rate of HDFC and per capita net national product at constant prices. Three alternative models have been examined using simple and multiple regression analysis. Results are shown in Table 6.7.

Table 6.7
REGRESSION RESULTS-7
DEPENDENT VARIABLE: HOME LOAN DISBURSALS OF HDFC ($HDFC_{HL}$)
PERIOD: 1992-93 to 2010-11

MODEL / VARIABLE	I	II	III
Constant	**59616 (4.287)***	**–26051 (–11.117)***	**–29855 (–4.241)***
NR_{HDFC}	**–3376.07 (–3.248)***		**196.63 (0.575)**
PCI	**-**	**2.021 (17.845)***	**2.083 (13.091)***
Adjusted R^2	**0.347**	**0.949**	**0.947**
D-W	**0.211**	**0.946**	**1.042**

Figures in brackets are *t* values. * Significant at 1% level
NR_{HDFC}: Nominal home loan interest rate of HDFC

MODEL I: $HDFC_{HL} = \alpha + \beta_1 NR_{HDFC} + \varepsilon$

The first basic model of the analysis takes the HDFC home loan interest rate as the single regressor. As anticipated the interest cost exhibits a negative impact on the home loan disbursals and is significant at 1% level of significance. Of course, the sole explanatory variable is not sufficient to explain major part of the variation in the demand for home loans as is evident in the low values of Adjusted R^2 as well as D-W statistic. The intercept term is positive and significant at 1%, indicating the maximum home loans that would be demanded at zero interest cost. Alternatively it indicates the average effect all excluded explanatory variables in the models.

MODEL II: $HDFC_{HL} = \alpha + \beta_1 PCI + \varepsilon$

When the home loan disbursals of HDFC are regressed on PC NNP there is considerable improvement in the goodness of fit to 0.949. The D-W statistic has increased to 0.946 but the model still has a problem of autocorrelation. The results support *a priori* expectations that income positively affects the demand for home loans. It is found to be significant at one

percent level. Interestingly, the intercept has a negative sign which is consistent with the explanatory variable of the model.

MODEL III: $HDFC_{HL} = \alpha + \beta_1 NR_{HDFC} + \beta_2 PCI + \varepsilon$

The third model includes both interest rate and income as explanatory variables. Results show income to be a consistently positive and significant influence on the home loan disbursals of HDFC. In its presence the interest is no longer found to be significant. Income being the overpowering variable, the intercept bears a negative sign and is significant at one percent level of significance. It is consistent with the fact that households become eligible for home loans only at minimum positive qualifying level of income.

There is no improvement in the explanatory power of the model, although the D-W value has improved slightly to 1.042. However, it does not do away with the problem of autocorrelation. The high value of Adjusted R^2 combined with poor value of D-W statistic suggests that a different set of the explanatory variables involving competitive terms and conditions vis-à-vis those of rivals may provide better explanation for the variation in home loans at an institutional level.

CONCLUSION:

The results of the empirical analysis of the housing loan disbursals of HDFC, as a representative of HFCs operating in India, are similar to the results obtained in the case of scheduled commercial banks. The similarities are as follows. In its independent impact, interest rate is found to negatively influence the demand for home loans both for SCBs and HDFC. The income variable is found to be the most significant influence on the demand for home loans and in the presence of the income variable, interest rate is found to be a secondary determinant of the demand for home loans in case of both HDFC and the commercial banks. It needs to be borne in mind that this analysis involves a comparison of the results obtained for one HFC vis-à-vis those for the entire group of commercial banks. Therefore the inter-institutional competitive interplay does not get reflected in the analysis. The variables that would enter the model in case of inter-institutional analysis are different and cannot be captured by generic variables. However, on the whole, it may be concluded that the results obtained for HDFC substantiate those obtained in the case of SCBs.

CHAPTER 7

CONCLUSIONS

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The Indian housing finance sector has come a long way from its earlier phase of government domination to an increasingly market oriented system in the present times. Institutional developments in the form of HUDCO, NHB and HDFC brought the much needed focus to the housing finance sector and propelled the system into a higher growth trajectory. In the 1990s, the process of liberalization of the economy and deregulation of the financial sector provided further impetus to the sector with the entry of private financial institutions and banks. As a result, the housing finance sector in India witnessed voluminous growth and qualitative transformation over the past two decades. From a subdued sector lacking vigor to a sophisticated one with active involvement of all stake holders, the housing finance sector has matured to a great extent. Further, the liberalization of the housing finance sector has paved the way for rapid growth of housing finance in India.

Notwithstanding the dynamism of the sector, the recorded history of the housing finance sector in India is relatively young. Most studies in the context of housing finance in India are those that address the issues of the role of government vis-à-vis the market, the issues of resource allocation, policies and reforms, issues of housing affordability; studies examining the structure of housing finance in India; case studies on housing finance by institutions and so on. There are studies examining the determinants of housing finance or the economic behaviour of borrowers and lenders but with limited treatment in terms of institutions, regions or aspects covered. No studies were found that analyze the intricacies of the housing finance structure or its determinants in India.

The present study has attempted to fill the gap pertaining to housing finance literature of India through a comprehensive study of important key factors, bringing them at one place, particularly with reference to the urban housing finance sector where much of the housing activity is concentrated. The symptoms revealed by the examination of the sector provide useful insights to policy makers and lending institutions. It highlights the areas that need greater focus, and sharpens the understanding of the links between key factors for the development of an inclusive housing finance sector.

The broad findings and conclusions of the analytical work carried out under the present study are summarized in this chapter. Section 7.1 summarizes the findings regarding the review of the housing finance market in India. Section 7.2 highlights the salient features of the Indian housing finance sector. Section 7.3 recapitulates the findings of the analysis of the outstanding home loans of the commercial banks against various parameters while Section 7.4 sums up the results of the empirical analysis of the demand for housing finance in urban India. Section 7.5 reviews the major concerns for the housing finance sector that need to be addressed by every country. Section 7.6 deals with future outlook and policy recommendations for the sector and concludes with comments on the limitations of the present study and the scope for further research.

SECTION 7.1

STRUCTURE OF HOUSING FINANCE SECTOR IN INDIA

The Indian housing finance sector is characterized by an oligopolistic structure with four major players, namely, HDFC, ICICI Bank, SBI and Associates, and LICHFL. Together, they dominated the domestic mortgage market, accounting for 55% of the total housing credit in India as on March 31, 2010. While SBI and Associates and HDFC held 17% share of the market each, ICICI group claims a share of 13%. This is followed by LICHFL which had a market share of 8% as on March 31, 2010. The combined volume of home loan disbursals of these four major lenders for the year 2009-10 was Rs.257112.67 crores.

In 2010-11, the housing finance market was worth more than Rs.5.5 lac crores, with the outstanding home loans of HFCs at Rs.186,438 crores while that of commercial banks at Rs.367,364 crores. This amounts to a market share of 33% held by HFCs and 67% by commercial banks. The annual growth rate of outstanding housing loans of the SCBs has declined in the recent years owing to the global liquidity crisis which led to a cautious approach in lending. In the year 2004-05, their growth rate per annum was 51%, which came down to 7% in the year 2008-09. While the annual growth rate of outstanding home loans of HFCs has been relatively lower; for the years 2006-07 to 2009-10, it has exceeded the rates of growth experienced by the SCBs. The NHB plays a crucial role by providing refinance

facility to banks and HFCs. The total refinance extended by NHB increased from Rs.132 crores in 1989-90 to Rs.11723 crores in 2010-11.

Comparison of housing finance sectors across countries reveals that while most of the developed countries have well developed housing finance markets, the Asian countries have underdeveloped housing finance sectors as reflected in low mortgage penetration. In most of the Asian countries and in India, one can observe a distinct shift towards greater marketization of the housing finance sector, even as governments focus on low-income housing. It may be reasonably concluded that there is some kind of convergence observed across most countries of the world with regard to their housing finance systems. Majority of the countries appear to follow the same pattern of structural transformation of the sector. The increase in the volume of housing finance in emerging economies is concurrent with the adoption of the tenets of liberalization and marketization.

SECTION 7.2

FUNCTIONING OF THE HOUSING FINANCE SECTOR IN INDIA

Over the years, the mix of market orientation of the housing finance system and an enabling regulatory framework has lent the much desired vibrancy to the housing market. Lower interest costs, stable property prices, rising personal incomes, and tax incentives for owner occupied homes are some of the factors that have contributed to the increase in the demand for housing finance. The summary of these factors is presented in the following sub-sections.

Section 7.2.1: Interest Rate Liberalization and Lending Practices

One of the factors responsible for the upsurge in housing finance is the home loan interest rate. Prior to 1994, the cost of home loans was regulated by the NHB which sought to maintain interest rate differentials vis-à-vis the size of the loan. Post 1994, this regulation was partially liberalized by giving lending institutions the freedom to charge market rates of interest for home loans above INR 25000. Severe liquidity crisis in the economy in the year 1996-97 pulled the home loan rates to 17-18 percent per annum. However, strong downward trend in home loan interest rate in India was observed from 2000 to 2005 with a 15-year

home loan cost falling to an unprecedented low level of 7.5%. Lower interest rates brought the anticipated increase in the loan amount demanded by borrowers.

Until 1999 only fixed rates were offered on home loans. With the entry of commercial banks in a big way by the year 2000, adjustable rates were offered to suit their liability structures. With the growing preference for floating rate loans, HFCs too followed suit. There were competitive reductions in the interest rates which benefitted borrowers immensely. Banks and HFCs offered to re-price most high-cost fixed rate loans by converting them to floating rates for a nominal fee. The firming up of interest rates in the later half of the decade of 2000 due to global factors saw the emergence of hybrid loans with a mix of fixed and floating rates with a view to attract borrowers. Despite the gradual upward movement in interest rates, close to 85% of home loan transactions in India are at floating rates as they are lower than the fixed rates and because borrowers expect the rates to even out over the tenure of the loan.

In developed financial markets, borrowers have the freedom to choose an external benchmark rate when opting for variable rate loans. This could be the London Inter-bank Offer Rate (LIBOR) or a government security rate. Borrowers in India do not enjoy any such liberty. Moreover, the experience so far reveals that lenders indulge in discriminatory practices between existing and new borrowers. In this context RBI has made it mandatory for banks to treat new and existing borrowers at par in extending the benefit of decline in the floating home loan rates. Another asymmetry in lending practices is that increases in interest rates are more readily passed on to customers by increasing the monthly installment payments. But in the case of declining interest rate scenario, the home loan rates or the EMI are not reduced with the same alacrity. Instead, the lenders make do with reducing the loan tenure, which may or may not benefit variable home loan borrowers in the long run.

Since April 2010, the RBI has recommended the replacement of the system of BPLR by a system of base rate below which no lending is allowed. Such a system is aimed at bringing greater transparency in the operations of the banks so that interest rates charged by them are rational and sustainable. The base rate system also aims at averting the situation of undue competitive cuts in home loan interest rates by banks that could result into a sub-prime like crisis experienced in the US. In October 2011, the RBI and the NHB made regulatory changes, disallowing lenders to charge prepayment penalties on floating rate mortgages,

since such products already factor in fluctuations in the interest rates. Prepayment penalties can be charged by banks and HFCs only in the case of fixed rate home loans, although this clause is not applicable if the borrower pays from her own sources.

Section 7.2.2: Rising Personal Incomes

Along with the unprecedented fall in interest rates, rising personal incomes is another crucial factor that has worked in favour of the housing finance sector. The number of double income households and the rate of household formation have increased due to the expansion of employment opportunities in the manufacturing and service sectors in the urban centres. Moreover, the proportion of population in the productive age group being high and increasing implies greater borrowing capacity. The impact of these factors is seen in the expansion of the housing finance market in India. The residential construction sector has come of age with improvement in the quantity and quality of construction, and due to relatively stable prices. The ratio of residential property price to the annual income of the borrower has declined dramatically owing to the rising levels of income. This has improved housing affordability to a great extent. The average nominal income of a household in the urban areas has grown at an average compound rate of 10% since the mid 1990s (CRISIL, 2006). The outlook for income is quite positive as revealed in the human resource surveys for the year 2011 that projected the average increase in salaries to be 20% (LICHFL Annual Report, 2010-11). This has lent the much needed confidence to the real estate sector.

Section 7.2.3: Fiscal Incentives

Tax benefits offered by government to individuals availing home loans have further reinforced the effects of favorable demographic changes and rising disposable incomes for a large section of the society. They considerably reduce the effective rates of interest on loans. Interest payments on housing loan up to Rs.1.5 lac per annum are eligible for deduction from borrower's gross income. Under Section 80C, repayment of principal amount of home loan up to Rs.1 lac per annum is also deductible from taxable income. Tax saving on this account makes it more rational for a household to opt for a home loan. Similarly, deductions are also allowed for interest on loans taken for acquisition/construction as well as renewal or repair of rental housing. As stated in Wadhwa (2003), in the case of owner-occupied housing, no

deduction is allowed for maintenance as it is not considered as an investment good; the imputed rental income is considered to be nil and no income tax is levied on it.

The fiscal benefits are extended for the purchase of second home also, subject to accounting for the actual or notional rental income as additional income less cost of maintenance and municipal taxes by the borrower. It has thus boosted the demand for housing finance in India. Tax incentives on payment of principal loan amount also encourage borrowers to prepay which in turn favourably affects the availability of funds with the lending institutions.

Tax incentives with the aim of encouraging investment in housing have also been extended to financial institutions funding specified housing projects, to enterprises undertaking housing projects, and to housing finance companies. Lenders are allowed tax deduction up to a maximum amount of 20% of profits earned out of financing residential construction or purchase, provided the amount is carried to a special reserve account meant for housing finance. Tax incentives are extended to developers of LIG and MIG segment housing to encourage private sector to cater to their housing needs. Through these incentives the government aims to make the housing sector more attractive to the developers and lenders, and to make housing as well as housing finance more affordable for the final consumer.

Despite the favourable impact of fiscal incentives, there is an element of regressiveness involved in them as tax incentives benefit only those households who have taxable incomes. Through increased demand for housing and for housing finance, the exemption of interest payments from the calculation of taxable income enables higher income households to effectively shift to lower income tax brackets. It thereby indirectly subsidizes house purchase for those with purchasing power. The effect is even more inequitable because fiscal benefits are applicable to second home buyers as well, while a large section of the population employed in the unorganized sector and without any meaningful social security provisions, remains excluded from the organized housing finance system.

Section 7.2.4: Customization of Loan Products

The fallout of increased competition has been the customization of loan products and flexible repayment options, as banks and financial institutions vie for a larger share of the pie of the housing finance market. Lenders have responded by making finance available to a wider group of potential borrowers than before. Thus the housing finance market has turned into a

buyers' market with diverse needs of borrowers acting as the driving force for competitors. The repayment options offered include 'step-up repayment facilities' that link repayment schedules and quantum to borrower's expected increase in income. Under a flexible loan installment plan the repayment schedule is split into lower initial installments followed by higher installments in the residual term. Another facility known as the 'balloon repayment facility' offers the option to repay on redemption of a financial investment which is given as a security for the loan. Such flexibility goes a long way in augmenting the accessibility to housing finance as per the borrower's individual needs.

Increased competition has also led to increase in the tenure of housing loans. Both fixed and floating rate loans are offered with a maximum maturity period of 25 years. Some public sector banks, though, are in favour of home loans up to a maturity period of ten years in order to have a better balance in their asset-liability holdings. Opting for longer tenure enables households to be eligible for larger loan sizes; allows borrowers to keep the debt servicing burden at low levels and subsequently, to reduce the total interest payments by making partial prepayments as and when their resources permit.

An important component of housing loans is the loan-to-value ratios. The competitive environment has led to increase in the ratio to as high as 90 to 95 percent, with some private sector banks offering to cover 100% costs. In the bid to attract customers, they also offer to cover the cost of registration or the cost of foreclosure penalties in cases of balance loan transfers. Some lenders place no limits on loan amounts and only consider the borrower's repayment capacity. However as non-performing assets began to build up, lenders were compelled to check imprudent lending practices. Regulators too were quick to respond to these developments with stricter rules.

A related aspect of loan is the 'installment to income' ratio. Prudent approach to credit risk stipulates the ratio of 35 to 40 percent as appropriate. However, increased competition has led some lenders, particularly domestic and foreign private sector lenders, to allow liberal loans in this regard too.

Besides extending loans for acquiring or constructing a house, lenders also offer home improvement loans for internal and external repairs, home extension loans as well as home equity loans. The latter are advances against the value and security of the residential property

owned by the client. Short term bridge loans are also offered, which help the customers in the interim period between the sale of their old home and the purchase of a new home. Loans are also granted for purchase of land before the construction of a residential unit.

The above enumeration of the diverse loan products offered by banks and financial institutions is an evidence of the vibrancy of the housing finance sector in India. Besides these, financial firms are also seen entering into tie-ups with developers and co-hosting property exhibitions with the latter (UN-Habitat, 2008). Apart from provision of housing loans, lenders also provide technical and legal advice, and professional guidance.

Section 7.2.5: Features of the Indian Housing Finance Market

A typical mortgage contract in India can be summarized as follows: An average loan size of Rs.15 lac at an average home loan interest rate of 12% and an average effective maturity of 13 years. The mortgage contracts are usually of the simplest form in terms of amortizing loans and predominantly on floating rates and carry prepayment penalties. While the maximum loan at origination carries a loan-to-value ratio of 85%, the average LTV is found to be 65%. The Indian home loan borrower is typically salaried with an average age of 37 years (Nenova, 2010). The borrowers predominantly comprise first time home buyers.

Chandrasekar and Krishnamoorthy (2010) report the results of a market survey carried out in 2008-09 on 17 major HFIs in India having a combined market share of 90%. They found that floating rate mortgages are highly preferred by Indian borrowers as is evident from the fact that 80% of home loans extended in India are at floating rates. The reason behind the preference is found in the 2 to 2.75 percent spread between fixed and floating rates. The survey results show that 50% of the HFIs charged interest rates between 11 to 13 percent, followed by 42% that charged 8 to 10 percent. Higher interest rates in the range of 14-15 percent were charged by only 8% of the lenders. 69% of lenders offered home loans for the maximum period of 20 years, followed by 15% who offered tenure of ten years. Only one or two HFIs out of 17, offered maximum loan tenure of 25 years. Same was the case with loan tenure of 15 years. The average effective tenure of 46% of borrowers is reported to be 11 to 15 years. 39% of borrowers had an average maturity of 5 to 10 years and only 15% had loans contracts operative for 16 to 20 years. The survey results reveal that 61% of HFIs offered loans with high LTV of 76 to 85 percent, followed by 31% offering LTV between 66 to 75

percent. However, 50% of borrowers opted for lower LTV of 50 to 60 percent. Only in the case of 17% of borrowers the LTV ranged between 71 and 85 percent.

Interesting inferences, about which the report is silent, can be deduced out of these data. The higher proportion of HFIs offering liberal housing finance is indicative of the high degree of competition among lenders. Longer duration of loans allows borrowers with relatively lower income to qualify for home loans and to demand bigger loan sizes. However, it is worth noting that while more lenders (69%) offered loans for longer duration of 20 years, only 15% of borrowers held the loan for so long. Moreover, a high proportion (39%) of borrowers held the loans for the short duration of five to ten years. This implies that borrowers prefer to economize on the interest cost component of the loan by taking loans for shorter duration. Since shorter duration implies relatively higher debt servicing per month, it also indicates that the borrowers belong to relatively higher income brackets and/or they are willing to dedicate a greater percentage of their income to build home equity at a faster pace.

Lower effective average tenures suggest that borrowers have experienced increased incomes and were able to make prepayments. It also hints at the deliberate practice of borrowers to opt for longer maturity at the origination of the loan contract, not only to qualify for larger loan sizes but also to keep debt servicing within conservative limits until they are able to restore a healthy cash balance in the household budgets. Lower burden of repayments helps households to service debt more comfortably and also build up surpluses for prepayments.

Further, it may not be too far fetched to say that shorter effective maturity is indicative of the Indian mindset that places high value on early discharge of debts, particularly, housing debts. This is perhaps one of the important forces behind prudent housing finance practices by both lenders and borrowers that have so far helped keep credit risks at low levels.

The fact that as high as 50% borrowers opted for LTV of 50 to 60 percent suggests two things. Firstly, it may imply that the clientele of HFIs hold substantial resources to make higher down payments. This is supported by the fact that a sizable proportion, i.e., one-third of the borrowers, is found to belong to the income bracket of 5 to 10 lacs per annum. Secondly, it also implies that some households could not qualify for higher LTV due to lower income. This is reflected in the fact that 50% borrowers belonged to the income group of Rs.1.5 to Rs.3 lacs per annum as per the survey conducted in 2008-09.

Section 7.2.6: Concluding Remarks

To summarize the key factors operating on the demand side of housing finance, declining interest rates, rapid improvement in income levels, tax incentives offered to borrowers and diversity in loan products have induced rapid growth of housing finance. Besides these, a significant factor responsible for the transformation of the housing finance sector has been the change in the attitude of the Indian household. From being reluctant to create debt, the Indian psyche has opened up to the so called 'western' culture of credit supported consumerism, particularly in the case of the large middle class of India. It is no longer averse to debt, and in fact credit has become a normal practice even when consumers have the purchasing power. These views are also endorsed in Cardozo (2003), UN-Habitat Series, 2008 and Nenova (2010). The changing mind-set is clearly evident in the increased use of credit cards, auto loans, personal loans and housing loans.

On the supply side, the important factor that has brought vibrancy to the housing finance system is the rising competition between lenders as the number of new entrants has increased over time. This in turn has resulted into introduction of innovative mortgage products. Another factor on the supply side is the increasing collaboration between lending institutions and housing developers, which has smoothened the functioning of the sector.

Despite being a lucrative sector and despite the positive changes witnessed, it is evident from the discussions on the issues plaguing the sector, in Chapter 4, that availability of funds to the sector is not spontaneous, particularly towards the lower income households and that policy intervention is sought to attract the desired flow of resources. Much of the increase in lending has been the result of housing being brought under priority sector lending for the commercial banks. Wadhwa (2003) draws attention to the important questions that need to be addressed, such as why is it that resources will not flow into the housing sector voluntarily even as there is a huge shortage in the sector?; why is the rate of return from investment in housing not sufficient to encourage investment in this sector? The author opines that there would be minimal want for government intervention, leave for lowest income groups, if the housing market was freed from various constraints. Although there has been rapid growth of housing finance in India, the existence of acute housing shortage underlines the importance of 'alternate models for inclusive housing development in India', (Manoj, 2010).

SECTION 7.3

TRENDS IN HOME LOANS AND PERFORMANCE OF BANKS

Section 7.3.1: Performance of Outstanding Home Loans of SCBs

1. Volume of Outstanding Home Loans

The housing finance sector in India has witnessed unprecedented growth in the volume of home loans across India, particularly in the last decade. The outstanding home loans of SCBs, excluding RRBs, stood at Rs.3258.11 crores as on March 1991. At the end of the fiscal year 2009-10, the outstanding home loans were Rs.302037.24 crores, recording an average annual growth rate of 28% over the 20 year period. The growth was particularly more pronounced in the 2000s. This can be gauged from the fact that between 1990-2000 there was a 7.5 times increase in the outstanding home loans; but the same growth was achieved in only half the period, i.e., between 2000 and 2005.

2. Number of Home Loan Accounts

Along with the increase in the volume of home loans over time, the housing finance sector has also become wider in terms of the number of households who have availed home loans. The number of home loan accounts with the banking sector increased from 6.4 lacs to 57.38 lacs, recording a growth of nearly 800% over a period of two decades.

3. Average Home Loan Size

The robustness of the growth in home loans is substantiated by the increase in the average loan size. At just Rs.50000 in 1990-91, the average home loan size has grown more than ten fold to Rs.520,000 by end of the year 2009-10, with much of the change coming about in the last decade. This change is highly correlated with the increased per capita income.

4. Share of Home Loans in Total Credit of Commercial Banks

The growth in the demand for home loans and the thrust on retail lending, particularly in the second decade, is borne out by the increased share of home loans in the total credit extended by the banking sector. For the entire decade of 1990, the share of home loans remained largely flat between 3 to 4 percent. Around the mid-2000, the sectoral share peaked at 12% and is currently around 9%. Moreover, the ratio of home loans to time deposits with the

commercial banks has also improved substantially from 0.18 in 1990-91 to 0.56 in the year 2009-10, indicating increased flow of funds to the housing finance sector.

5. Home Loans and National Income

The expansion in home loans is found to be highly correlated with increase in national income, per capita income and household savings. With the increased pace of growth in National Income in the second decade under study, the upward trend in outstanding home loans also became steeper. In fact the rate of growth in home loans has out-paced the rate of growth of National Income as indicated by the increase in the ratio of home loans to NNP, from as low as 0.34% in 1990-91 to 7.65% in 2009-10. It suggests that the increase in income has scaled up households' affordability of home loans. Further, the modest ratio of mortgage debt to National Income indicates huge scope for housing finance to grow in the future. Increase in household savings and time deposits also indicate increase in financial flows towards the banking sector, thereby augmenting the funds available for housing finance.

6. Home Loans and Interest Rates

Home loan interest rates exhibit a negative trend for the period of study. Home loans are found to have a negative correlation of –0.51 with the home loan interest rates for the 20 year period, although the magnitude of the coefficient of correlation is not very high. Interestingly, decade-wise analysis reveals much stronger negative correlation in the first decade. Its correlation coefficient is –0.72 which is significant at 5% level of significance.

In the later part of second decade, as the sector gained momentum, interest rates hardened a little, generating a mildly positive correlation of 0.43 between home loans and interest rates; although it is statistically significant only at a higher significance level of 21%. Given the fact that home loan products in India have undergone innovative changes in the form of adjustable rates and hybrid loans, it is more likely that interest rate per se may not be of utmost importance as compared to the *type* of interest rate that borrowers can choose to suit their affordability criteria. Moreover, capital gains to home buyers on account of increase in property prices generally outweigh the increased interest cost of a home loan, so that higher interest costs may not discourage borrowers. It may be concluded that the scale variables such as income and wealth are more decisive in determining the level of home loans rather than cost variables such as interest rates and house prices.

Section 7.3.2: Bank Group-Wise Performance of Home Loans

Nationalized banks have retained the highest share of the total outstanding home loans of the banking sector, followed by SBI and Associate Banks. However, the relative market shares of various bank groups have undergone a change over the 20 year period of study. The share of nationalized banks reduced from 69% in 1990-91 to 40% in 2009-10, while the share of SBI and group increased from 25% to 33% over the same period, gaining additional 8% market share. The most remarkable gain has been achieved by the private banks. Their share increased from merely 4% in 1990-91 to 22% in 2009-10, recording a gain of 4.5 times. The share of foreign banks more than doubled from 2% to 5% over the same period, although in terms of magnitude their share has remained marginal.

While public sector banks have maintained their growth rates in home loans, the private sector banks experienced much greater annual growth rates, particularly in the second decade under examination. Home loans of nationalized banks grew at 24% on an average in the 20 year period; SBI and Associates registered a growth of 29% over the same period. In the two decades, home loans of foreign banks grew at 43% while private banks clocked a strong average growth rate of 57%, which is also the highest among all bank groups.

Notwithstanding these developments, the relative shares of the various bank groups highlight the traditional preference of households for public sector banks. A comparatively better performance of private and foreign banks suggests widening and deepening of the housing loan segment of the financial system, although strict comparison cannot be made with larger public sector bank groups because of lower base figures of private and foreign banks.

Section 7.3.3: Size-Wise Distribution of Home Loans

Over the period of time, the modal loan size has graduated to higher levels in a systematic manner, indicating the favourable impact of rising personal incomes and lower interest rates, and growing housing aspirations of the middle class, in particular. It is also indicative of rising house prices which necessitate bigger loan sizes. In the first decade only one loan size, i.e., Rs.25000 to Rs. 2 lacs was dominant. There is a complete contrast in the second decade with a reasonably balanced share of four to five popular loan sizes ranging from Rs. 2 lacs to Rs.50 lacs These changes can be attributed to the liberal housing finance terms and conditions offered by banks, which enabled households to borrow larger sums of money.

Relating the home loan size to the income class of borrowers on the assumption that lenders generally lend up to three times the annual income of the borrower, one can observe a more balanced spread of loans across various income groups. There is gradual tilt in favour of higher income groups in the loan disbursed by the banking sector and a crowding out of households with lower incomes, particularly in the decade of 2000. Given that this coincides with the period which witnessed hardening of interest rates and firming up of property prices, it may be inferred that a greater share of home loans has indeed gone to relatively higher income groups. With the rise in house prices, there is a serious compromise on the element of affordability for the larger mass of population.

Section 7.3.4: Interest Rate-Wise Distribution of Home Loans

The analysis of interest rate-wise distribution of outstanding home loans indicates that keeping other things constant, more loans are held at lower rates than at higher rates. The combined share of outstanding home loans at interest rates lower than 10% was three-fourth of all outstanding home loans in the year 1990-91. Their ratio reduced to 40% in the mid-1990s as home loan interest rates hardened over that period.

A completely different picture emerges in the decade of 2000. The proportion of home loans at interest rates up to 10% rose to 86% in the year 2005-06, reflecting aggressive home loan practices of the commercial banks. Moreover, during the years 2004-05 to 2006-07, there were no loans outstanding at rates above 14%. It is quite likely that this was due to balance loan transfers to lower rates of interest and because of loans held on floating rates. Towards the end of the decade of 2000, inflationary trends led to increase in interest rates as most home loans were on floating rates. Moreover, the global financial downturn following the sub-prime crisis in the US led to the RBI and NHB adopting tighter norms. These factors led to phasing out of home loans with lower rates and increase in volume of home loans with higher rates of interest.

While there are more loans outstanding at lower rates than at higher rates, due to the generic nature of the interest rate, and because the data shows outstanding home loans that have originated at different interest rates, often the impact of interest rate as a cost variable is not strongly brought across. This would require a study at disaggregate level, involving comparative analysis of different banks.

Section 7.3.5: Population Group-Wise Distribution of Home Loans

The analysis of home loans against population groups, namely, Metropolitan, Urban, Semi-urban and Rural population unearths a strong urban bias in the lending activities of banks. The non-rural centres constituted 87%, 90% and 92% of the total outstanding home loans in the years 1990-91, 1999-00 and 2009-10 respectively.

The urban bias is commensurate with increase in the number of cities in India. With the increased rate of growth of urban population and greater concentration of house purchase activities in the urban centres, commercial banks are bound to find greater profitability in lending to the metropolitan and urban population. In fact rapid urbanization is manifested in horizontal and vertical spread of residential construction. Inadequate documentation and ambiguity in the nature of income in the rural sector is also a major deterrent for commercial banks in lending to the rural sector.

Section 7.3.6: Region-wise Distribution of Outstanding Home Loans

Examination of home loan data in terms of their region-wise distribution reveals that the southern region has the highest volume of home loans through out the 20 year period. This is as anticipated because three out of top six metropolitan centres, namely, Bengaluru, Chennai and Hyderabad are located in the southern region. The second highest volume of home loans for the period of study is concentrated in the western region of India which comprises the states of Maharashtra and Gujarat. Together, the two states have 10 metropolitan cities.

It may be concluded that regions having states with more number of metropolitan cities, relatively higher urban population and greater economic prosperity have a greater volume of outstanding home loans. It implies that the level of urbanization and incomes are important factors influencing the level of home loans.

SECTION 7.4

RESULTS OF ECONOMETRIC ANALYSIS OF THE DEMAND FOR HOME LOANS IN URBAN INDIA

The examination of the outstanding home loans of commercial banks indicate that home loan interest rates, incomes of the borrowers and urbanization are critical factors influencing the demand for home loans. Increased average loan size and greater proportion of loans of bigger sizes suggest that increasing house prices affect the quantum of loans demanded by households. In order to test and quantify the impact of these factors, the present study undertook an econometric analysis of the demand for home loans. This section summarizes the results of the empirical analysis. The results are consistent with the trends and patterns observed in the outstanding home loans.

Home Loan Interest Rate

With *a priori* expectation that interest rates have a negative effect on the demand for home loans, the present study sought to test its significance for the Indian economy. The empirical findings clearly bring out the inverse relationship between the two variables. This is true, both for models with incremental home loans and total outstanding home loans, as measures of demand for home loans. Further, the inverse relationship is also proved statistically whether the variables are taken in their absolute values or in logarithmic forms.

The models in the log forms show high negative interest elasticity of demand for home loans. In bivariate analysis, the interest elasticity of incremental demand for home loans is found to be as high as –8.6, while for gross demand for home loans, it is –6.9. In multivariate analysis involving income, there is a reduction in the interest elasticity of incremental demand for home loans to –5.2, and to –1.7 for gross demand for home loans.

In the case of models measuring gross demand for home loans in absolute terms, the rate of interest is found to have a significant positive impact when taken in conjunction with the income variable. This is because decline in interest rates translate into lower debt servicing and result into lower outstanding home loans. Whereas, when interest rates increase, they translate into higher debt servicing, resulting into higher outstanding home loans. Moreover,

at higher interest costs, households tend to opt for longer maturity period which may result into greater outstanding home loans with the banks.

Interestingly, despite the positive relationship found between interest rates and gross demand for home loans, when outstanding home loans are segregated bank group-wise and examined against their respective rates of interest, it clearly brings out the inverse relationship. In other words, the bank groups with lower lending rates are found to have more outstanding home loans. Moreover, differences among bank groups in other terms and conditions of credit are also important considerations attached to the cost of credit. It suggests that the interest cost of home loan could be a more crucial factor for borrowers when comparing *between* lenders with regard to the rates offered by them. However, the combined data on home loans and the generic nature of home loan interest rates fail to unfold these interrelationships.

Income of Borrowers

The empirical analysis clearly establishes the role of income as the most significant determinant of the demand for home loans. Irrespective of whether demand for home loans is measured in absolute values or in log forms, income consistently exerts positive effect. The income elasticity of incremental demand for home loans is found to be as high as 4.2 in bivariate analysis. In multivariate analysis involving the rate of interest, the income elasticity of incremental demand for home loans is lower at 2.4. In the case of gross demand for home loans, income elasticity is found to be 3.7 in the presence of the interest variable.

As home loan is generally multiple times the borrower's annual income and involves a long tenure, anticipated income plays an important role in the size of home loans demanded. Empirical results show positive impact of anticipated income on the demand for home loans. The magnitude of the coefficient of anticipated income is found to be lower in the presence of interest rate. This implies that during an upturn in the economic activities, while the demand for housing finance is expected to grow, high rates of interest may weaken the income effect to some extent. The net effect on the demand for housing finance would depend on the relative strength of changes in income, interest rates and property prices. It may be further inferred that high economic growth, stable property prices and liberal housing credit make up an environment conducive for the housing finance sector to flourish.

House Prices

House prices may affect the demand for home loans in two ways. Increase in house prices would entail bigger loans at given levels of interest rates and income. Capital gains in form of increasing house prices may induce increase in the demand for home loans. When both interest rates and income levels are rising, the impact of house prices would depend on the relative strength of the change in each variable. Rapid and sharp increase in house prices may lead to fall in demand for home loans, particularly in the case of lower income households, as they are likely to discourage households from purchasing a house or may compel them to compromise on the house size and/or location.

Owing to the mixed impact of house prices, the empirical results do not give a clear indication regarding its role. The coefficient of the WPI, used as a proxy for house prices, is found to have a positive sign implying that the demand for home loans would increase when house prices rise and vice-versa. However, it is not found to be statistically significant. Despite the data not supporting our hypothesis, the significance of house prices cannot be denied. It may be recalled that for the Indian economy, hardening of house prices in the later years of the decade of 2000 caused a slowdown in the housing sector and it remained subdued till the house prices got rationalized. While the aggregative nature of the data may not bring forth the impact of house prices, it is beyond doubt that relative stability in property prices is important for the expansion of the housing finance sector.

Urbanization

Empirical results suggest that rapid pace of urbanization, manifested in increased construction of dwelling units in the cities and expansion of cities in their peripheries, positively affects the demand for housing loans. Increase in the ratio of urban population is also found to have had a positive impact on the share of housing loans in the total credit extended to all sectors by the banking sector. Moreover, in the presence of the urbanization variable, the rate of interest is not found to be significant. This implies that when house purchase activities gain momentum, housing finance simply acts a means to the end rather than a deciding factor. The pace of urbanization and the level of income reinforce each other and positively influence the demand for home loans.

Number of Years

Several economic, social and demographic factors are likely to influence the demand for home loans. These include changing spending attitudes and growing housing aspirations of households in India, faster rate of household formation on account of increase in the number of nuclear families, increase in double income households, decline in the average age of first time buyers, increased trend of second home purchases with an investment motive, emergence of the trend among single women to invest in housing, etc. The present study sought to represent these factors through a dummy variable, namely, the number of years. Results indicate positive impact of the same on the demand for home loans, although the impact was not found to be statistically significant for the period of study.

SECTION 7.5

ISSUES OF CONCERN FOR THE HOUSING FINANCE SYSTEM

With the expansion of the housing finance sector, several issues of concern arise for the regulatory authorities. As the sector becomes more and more sophisticated, it often tends to conceal the risks involved at various points between the original lender and the borrower. Therefore the issue of stability of the sector becomes utmost important. Increased involvement and integration of the banking and financial institutions, the capital markets, and the real estate sector raise caveats that need continuous monitoring and responsive regulatory changes. The following sub-sections discuss the important issues of concern for the housing finance sector. The housing finance experience of other countries provides useful guidelines for carving the expansion path for the Indian housing finance sector.

Section 7.5.1: Increased Household Indebtedness

The recent global developments in housing finance systems have raised concerns regarding the increased household indebtedness and rising house prices. On the supply side, the common developments include increased loan-to-value ratios, longer maturity period, more liberal credit, wider range of loan contracts for borrowers and greater reliance on capital market funding through securitization of home loans. No doubt there have been efficiency gains on account of better management of capital, and increased competition, as reflected in

lower mortgage costs. Housing finance has become more affordable and more easily accessible. However, this has encouraged new categories of households to enter the housing market, encouraging sub-prime lending in countries where it is permitted. There has also been an increase in the number of households willing to undertake undue risk by over-borrowing on floating interest rates. The cumulative effect of these changes is the rise in household indebtedness and in house prices as well. Liberal practices related to income qualifications combined with liberal loan-to-value ratios make households vulnerable in the event of upward pressure in inflation and interest rates.

Not only has mortgage debt increased, one also witnesses a growing culture of credit oriented consumerism in the form of personal loans for purchase of household consumer durables, automobiles, and credit cards in traditional societies like India. The expansion of the consumption basket with a lust for variety and immediate gratification has only fuelled the demand quotient. The expanding population of the Indian middle class in general, and the Indian youth in particular, adds to the magnitude of this cultural shift. As larger proportion of future income is being pledged to support desires for current consumption, it raises concerns for the financial system across countries, unless prudential practices are in place. As regards housing debt per capita, the debt service costs have not risen as rapidly. However, regulatory authorities need to look at total household indebtedness rather than housing debt in isolation, so that sound practices are followed by both lenders as well as borrowers.

Section 7.5.2: Increased Sub-Prime Lending

Credit risk is not a problematic area for housing finance institutions in India in the current situation, given that the sector is predominantly lending to the salaried class in the organized sector. However, it is bound to become a crucial issue as lenders attempt to extend mortgage activities down the income scale to include households with lower and variable incomes. The rapid rise in sub-prime lending in some countries is a case in point. Cut throat competition among lenders has drawn them into undertaking increased risk by compromising on the asset quality. This practice has reinforced the cycle of easy lending leading to higher property prices. An upward trend in property prices inflates the value of households' assets vis-à-vis their liabilities, which permits further borrowing. Given the complexities of the new mortgage products, households may end up borrowing too much on account of inability to

assess their debt-servicing capacity over a longer time horizon. The US is a case in point where more and more borrowers opted for interest-only loans and in some cases also availed negative amortization options, and where property prices rose rapidly, encouraging sub-prime lending. In the event of downturn in house prices from a level of over-heated real estate sector coupled with increase in interest rates, the position of households may get severely jeopardized, particularly for sub-prime borrowers.

The sub-prime crisis has exposed the dangers of securitization and raised doubts about its efficacy as an instrument of investment. It has proved that imprudent financial practices, complex measures of rating and valuation, and sophisticated instruments of risk management can neither substitute the wisdom that lies in a common sense approach, nor can it mask hidden inconsistencies of a system for long. In this context, the RBI commands applaud for intervening at the right time and to the right degree by taking measures to regulate as well as cushion the financial sector in general and the housing finance sector in particular to withstand the global financial crisis.

Section 7.5.3: Increased Levels of Risk

Ability to identify**,** assess and manage risks involved in financial activities is crucial for the commercial viability and sustainability of any financial institution. The types of risks include liquidity risks arising out of mismatch in asset-liability maturity, market risks due to changes in interest rates, credit risks related to asset quality and borrower-characteristics, and management risks occurring due to poor regulatory system and ineffective legal framework.

The mismatch between the tenure of assets and liabilities lends an element of instability to the financial system. Banks typically fund housing loans from deposits which constitute their short term liabilities. To the extent that banks enjoy a steady base of deposits, it does not pose a serious problem. Non-bank financial institutions do not enjoy this advantage, particularly the smaller HFCs which are not allowed to raise public deposits. When housing finance is provided out of short term funds raised from the capital markets, it exposes lenders to a situation of heightened risk, making them vulnerable to global financial upheavals which transmit through the capital markets.

The interest rate risk is addressed by lenders by offering variable rate mortgages which shift the risk to the borrower. However, this raises the likelihood of another type of risk, that is,

credit risk. Many borrowers may be unable to bear the burden of increased debt servicing resulting from higher interest rates. It may lead to increase in delays and defaults in repayments.

Rapid increase in home loans due to easy availability of cheap credit combined with lax income qualifying norms increase the demand for housing units resulting into steep rise in property prices. These may be further inflated by increased speculative activities. In such a scenario, monetary tightening induced by factors exogenous to the housing finance sector can increase the risk of defaults on account of increase in interest rates. Inability to service loans would lead to foreclosure, and the attempt of lenders to liquidate the property in the market would cause house prices to spiral down, adding the risk of capital loss. The severity of these factors and the degree of exposure to these factors would determine the extent of adverse effects on the profitability and liquidity of the lending institutions.

Simultaneous decline in house prices and the bond markets may affect households more adversely thereby compromising their consumption levels. The Netherlands in recent years and the United Kingdom in the early 1990s are cases in point, which suggest that housing downturns have wider economic ramifications, particularly when households are over stretched in their exposure to housing finance related risks of negative equity and foreclosures. However, evaluation in most countries indicates that only intense shocks in interest rates, incomes and house prices tend to significantly affect households' ability to service their mortgages (CGFS, 2006).

Policy makers also need to take cognizance of the undue credit risks that banks and financial institutions may be exposed to in meeting credit targets set by fiscal and monetary authorities. The refinance facility extended by the NHB, no doubt, provides the necessary incentives to banks and housing finance companies in terms of availability of funds for profitable lending. However, a fine balance is required in setting income class-wise targets and the potential credit risks involved in it so that lenders do not unduly relax norms of scrutinizing loan applications. The regulatory authorities need to put in place a proper monitoring mechanism to avoid situations of crisis.

Further risks arise from the absence of a well developed legal framework. Unless ownership rights and titles to land are clear, the formal housing finance sector would shy away from

lending. Legal cases of land disputes typically remain unresolved for several years, at times for decades. Moreover, even in cases where ownership titles are clear, poor enforceability of foreclosure laws in the event of default, are strong disincentives for lending institutions. Even when loan collateral enforceability is in place, the process may involve high cost and may be time consuming, practically making them ineffective.

Securitization of mortgage loans, however, has changed the nature of risks undertaken by financial institutions. There is shift from risks related to credit and interest rates, to operational risks and risks associated with liquidity management. An important issue for consideration is the risk implication for mortgage lending as a business. No doubt, mortgage lending is basically a low-risk business as the housing asset is collateralized, and the requirements under the capital adequacy norms have apparently put lending institutions in a fairly comfortable position to withstand drastically adverse retail credit scenarios. However, the highly liberal approach in lending norms practiced by some countries in recent times has raised concerns regarding the vulnerability of the system in the future period. India needs to avert such situations from building up.

Unlike western countries where the share of housing related loans in the portfolio of banks is as high as 50%, in India it is relatively low at around 10%. However, primary mortgage markets are domestic in their location which may result into concentration of lending, thereby increasing their vulnerability in the event of systemic shocks. This is particularly true for specialized housing finance institutions.

Gyntelberg, Johansson and Persson (2007) present an interesting discussion on the central bank approaches to measure risks of financial instability arising out of rapid expansion of housing finance debt among households. These measures include the distribution of debt and debt service ratio across different income quintiles and the measurement of financial margin, which is a more comprehensive measure of debt affordability of households.

As per the first measure, the greater the share of household debts held by lower-income quintiles, the higher is the risk involved in lending to the household sector. As regards the second measure, the vulnerability of a borrowing household is gauged by the proportion of income devoted to debt servicing across various income quintiles. Higher debt service ratios

for lower income groups, combined with greater share of debt of these sections of the population and higher or rising mortgage rates spells greater risk in household sector lending.

The third measure of risk further sharpens the earlier two measures of vulnerability by focusing on the financial margin available with the indebted households. This is measured by taking into account the true ability of households to pay after deducting liabilities like debt servicing and other items of expenditure. Such a measure gives adequate representation to household size and composition which have an important bearing on their cost of living. The proportion of households with very little margin is more likely to default under adverse financial market conditions. Therefore, the greater the proportion of households with poor economic margins and the greater the proportion of debt held by such households, the higher would be the risk that the banking sector is exposed to. In case of Indian economy, some of these measures may become quite useful to conduct stress tests on financial sectors for the purpose of policy guidance to RBI and NHB.

Section 7.5.4: Increased Dependence on Capital Markets

With increased disintermediation of the banks and financial institutions particularly in developed countries, lenders are increasingly depending on the capital markets rather than deposits for funding. Greater dependence on capital markets is expected to lend greater liquidity and thereby attract more funds to the sector. Not only would the housing finance sector become more mature, it would result into formation of integrated financial markets with the resultant economy-wide allocative efficiency.

Despite these positive changes, there are several risk factors and warnings that demand attention. Thus while capital markets provide funds and allow international financial institutions to diversify risks to non-domestic mortgages; it also exposes them to adverse effects of upheavals in foreign housing markets. Moreover, global diversification of housing finance portfolios can make it difficult to determine who bears the ultimate burden of risks. It also masks the emergence of new risk concentrations, if any. These risks can negate the benefits derived from global diversification and wider access to funds. It poses a great challenge for policy makers and central banks to exercise good judgment and prudence in overseeing the smooth functioning of the housing finance sector.

SECTION 7.6

POLICY RECOMMENDATIONS

Strong macro economic fundamentals, gradually phased financial reforms, prudent management of the financial sector and a cultural tilt towards thriftiness have stood the Indian economy in good stead so far. The Indian financial sector has become more diverse and advanced over the years, operating with autonomy and efficiency amidst greater deregulation and international competition. The monetary authority in India has been prompt in responding to global financial crisis by taking pre-emptive measures to regulate the functioning of mortgage lending institutions. The prudential norms guiding housing finance lending by banks and HFCs have kept NPAs under check. At the same time the central bank has introduced gradual reforms in the housing finance sector. Despite being limited in its reach, the housing finance market grew at the average rate of 30 percent between the years 2003 and 2008. After a short lull on account the global crisis, the sector has regained momentum because of softening of interest rates and correction in property prices. The future of the housing finance sector in India, no doubt, is promising due to factors such as higher proportion of population belonging to the productive age group, increasing urbanization, increase in the number of middle class households, and an expanding financial sector. For this reason, policy makers need to be proactive in creating an enabling environment for extending the reach of the housing finance sector in the desired direction. The policy suggestions emerging out of this research work are as under.

- The empirical findings of the econometric study and the detailed analysis of the trends and pattern of the outstanding home loans of the banking sector have important implications for housing finance policy in India. The high degree of interest elasticity of the demand for home loans suggests that liberal credit terms and conditions for the housing sector would lead to expansion of the housing finance sector through favourable impact on borrowers. This implies that adopting a policy of moderate home loan interest rates would enable many more households to meet their housing demand. The significance of the policy of easy credit can be further gauged from the fact that the interest elasticity of the demand for home loans is high even in the presence of the income variable.

- Empirical results show a fall in the interest elasticity of home loans in the presence of the income variable, implying that borrowers with higher incomes are less sensitive to interest rates. This substantiates the fact that interest rate has a differential impact on borrowers belonging to different income classes. Households with lower incomes are more sensitive to interest rates than those with higher incomes. The housing and financial requirements of the various segments also differ a lot from each other. These differences need to be identified and accommodated in effective policy formulations at the macro level as well as in the provision of suitably structured home loan products at the micro level. Segmenting the housing finance market according to income levels of the households can help build a comprehensive housing finance system. Therefore, lowering of home loan interest rates can be an effective policy tool for meeting housing demand, particularly when targeted towards low income households. It is recommended that interest rate subsidies be linked to the income class of the borrowers. This would enable the establishment of a more inclusive housing finance market. It may be recalled that under the housing finance subsidy schemes of the government (ISHUP), the interest subsidy is linked to the loan amount and not to the income of the borrowers. No doubt the scheme is targeted at urban poor; however, incorporating income levels of the borrowers with differentiated interest rate subsidy on home loans would enable a more focused targeting of beneficiaries. Along with income linked interest rate subsidy scheme, liberal credit terms such as suitable tenure and repayment schedules would be more effective in improving the housing conditions of households belonging to the lower income classes. Incidentally, HUDCO does follow a progressive interest rate policy linked to income level of borrowers however, its institutional capacity and role as an apex public sector specialized HFI is entirely different from banks and HFCs which function on market principles.

- Given the high income elasticity of the demand for home loans, there is a strong case for continuation of tax incentives on home loans extended under Section 80C. With rising inflation and increase in the cost of housing construction, there is a need to increase the limits of tax exemptions on interest payments on home loans. This would reduce the effective interest rates on home loans and improve the housing affordability for many households. Increased house purchase activities would have multiplier effect on the

national income, given its strong forward and backward linkages. Empirical results establish that the demand for housing finance increases with expectations of higher incomes. This fact needs to be incorporated in the formulation of credit policy so that excessively liberal housing finance does not lead to overheating of the housing sector during the phase of economic prosperity.

- Tax incentives, by enabling borrowers to shift to lower income tax brackets, are more favourably inclined towards higher income borrowers and particularly so when applied to the purchase of second homes. Tax saving has been an overriding motive behind second home purchases apart from the investment motive. Therefore, the social merit in extending tax incentives on home loans for second homes is debatable. It results into multiple advantages to higher income groups in the form of easy access to credit, tax benefits, and increase in housing asset portfolio. It encourages speculative purchase of housing, fueling residential property prices, and draws more housing developers to cater to the high end market and neglect low and moderate income housing. It draws more housing finance funds towards higher income classes, leaving fewer funds for housing finance needs of the lower income classes. In the light of this, tax incentives can be made more equitable in nature by introducing a scheme of incentives that favours lower income households and is focused on first time home buyers.

- Taking cognizance of discriminatory practices of the lending institutions, policy makers need to take corrective measures that make home loan practices more transparent and that require lenders to be equally responsive in the event of both rising and falling interest rates, and towards existing and new borrowers. Moreover, cumbersome loan application procedures which involves filling of forms and lengthy processing also act as constraints to borrowings. These could be simplified and made more borrower-friendly.

- To foster the growth of the housing finance market, India needs to focus on strengthening its mortgage market infrastructure, so that there is steady and substantial flow of long term funds towards the sector. Mortgage market infrastructure includes expanding the institutional capacity, instituting a strong, speedy and fair legal enforcement system in relation to the mortgage foreclosures, improving credit information systems, establishing insurance mortgage system and an enabling regulatory framework.

- Steady availability of long term funds is crucial for the smooth functioning of the housing finance system. No doubt, with the bright prospects for the expansion of the insurance sector, it will continue to be a reliable source of long term funds for housing finance. However, expansion of the mortgage market requires more diverse sources of funds. In this context, securitization of mortgage assets and a secondary market for the same are significant sources of long term funds. Securitization offers an efficient financial product with the potential of spreading risks across widely distributed investors. The investors can limit their risk exposure by the amount of investment they make, while simultaneously ensuring liquidity. Moreover, it would help housing finance lenders to have healthier balance sheets, and also to improve their risk profile. Rationalization and uniformity of house property registration fees across states is a pre-requisite to facilitate securitization of home loans. Since securitization separates the functions of loan origination and risk bearing, the regulatory and supervisory roles of the RBI and the NHB need to be further strengthened to avoid sub-prime crisis like situation.

  Further, enabling the mortgage insurance activities to grow would also play a complementary role by encouraging more funds to flow to the sector. Mortgage insurance is a crucial mode of risk-sharing (Tiwari, 2001). It would go a long way in inducing lending institutions to extend home loans to household with lower and variable incomes. When home loans are insured, housing finance institutions can pass on the risk arising out of prepayments and defaults to mortgage insurance companies. Insurance companies make profit through premiums they charge and bear the risk of termination of contracts. Presence of mortgage insurance would thus induce lending institutions to widen the scope of their operations by reaching out to the so far neglected sections of the society. It would encourage lenders to offer more liberal terms of credit such as lower rates of interest, higher LTV ratios, longer maturity and higher debt service to income ratios, in general, and for lower income households, in particular. Lenders could also offer innovative loan instruments such as ones which allow variable repayments to suit variable income patterns of borrowers or individuals working in the unorganized sector.

  It must be borne in mind that it is the insistence on regularity of incomes that results into the practice of following set formula on which home loans are extended. Such a system tends to shut out several potential borrowers from the mortgage market but who may

have reasonable ability to afford home finance. It is in this context that mortgage insurance can lend a great degree of confidence to lenders to look beyond traditional practices of operation. Incidentally, mortgage insurance is an integral part of mortgage systems in the US, UK, Canada, Australia and New Zealand. It is one the major contributing factor to the high mortgage debt to GDP ratios for these countries. There are important lessons to be learnt by India in its approach and strategies of housing finance under both private and public sectors. More importantly, India needs to focus on the proper implementation of well intentioned housing finance policies so as to achieve the desired results.

- Sustained efforts are needed to introduce the necessary reforms in the housing sector. Important among these are land reforms that can play a significant role in improving housing affordability. Issues of inefficient land administration, poor record of property rights, high and varying property registration fees need to be addressed. The concerned authorities need to expedite the maintenance of computerized land records and property titles for facilitating voluntary flow of housing finance, and improving the administrative efficiency of the housing finance institutions. There is a need for uniform and transparent system of property registration across different states. Policy makers need to expedite the process of consolidation of agricultural land and revisit procedures pertaining to non-agricultural land, rules for zone categorization, city development plans, floor-space index etc. Incidentally, the maximum floor-space index in India is merely four compared to above ten in major cities of the world (Report on Indian Infrastructure and Servcies, 2011).

  Poor systems result into high transaction costs. According to a World Bank report (2009), in terms of complexities of property registration, the position of India is 93rd among 183 countries (Nenova, 2010). High registration fees have either discouraged people from formal registration or have led to evasive tactics in terms of understating of property values. While the sellers recover the understated amount in the form cash payment from buyers, the payment goes unreported. Such practices affect housing affordability as households have to arrange for greater down payments from internal sources.

Easing of procedural bottlenecks in the housing sector through suitable policy changes are inevitable for improving housing affordability in the light of rising land prices, labour costs and construction costs. The issue of poor housing affordability also needs to be addressed by improving the functioning of the rental housing market. These issues while not directly related to housing finance are crucial for the housing sector as such.

- Speculative build-up in house prices tends to have adverse effect on the housing aspirations of the low and middle income classes. If the housing condition of the vast majority of population in India is to be improved, policy makers need to provide the required tilt in the housing sector so that it caters to all income classes of the population, and to avoid house price bubbles from building up. In the rural housing market, micro-finance has been playing a significant role in low income housing, although in the urban centres the lower income groups are a largely neglected lot, even as they constitute more than 80% of the urban population. A systematic scheme of incentives needs to be put in place to encourage housing developers to build homes for all income classes. This is further significant in the light of the pace of urbanization in India.

- So far, the housing developer community has focused mainly on housing for the upper income groups but gradually they are coming to recognize the profit potential in low income housing as well. Pilot housing projects developed by linking monthly household incomes to the affordable sizes and prices of dwelling units, and based on home loans rather than subsidies, have been undertaken and have proved to be commercially successful. To scale up these projects, the government and the monetary authorities need to take measures to augment the flow of funds to the sector and ensure its access for low income households. In this context, there is great merit in linking community based people's organizations, non-governmental organization and commercial banks to form a housing finance triangle so that the need for housing and housing finance of the low income households could be addressed with greater focus (Srinivas, 1996).

- The scope of cooperative housing programmes also needs to be considered. Cooperatives have an effective internal control system to prevent households from speculative or illegal sale of housing units (Guhr (1984) as cited in Rondinelli, 1990). Moreover, the collective system of finance reduces the risk of defaulting on loans availed by members

due to the element of reciprocity involved in the cooperative system. In the absence of such an approach, any form of government intervention in the housing sector is bound to meet with limited success.

CONCLUSION

The detailed analysis of the trends and pattern of home loans carried out in this research work as well as the results of the empirical analysis converge to a great extent to support *a priori* expectations about the major determinants of the demand for housing finance in urban India. Having established robust results for the relevant variables of the housing finance sector at the macro economy level and having linked them meaningfully, the present study lays the foundation for undertaking the examination of the housing finance sector in India in greater detail.

The findings of the study need to be interpreted in the context of the limitations of the aggregative nature of the time series data and the research methodology employed. The generic nature of the variables limits the extent to which the finer aspects of housing finance can be elicited and construed. Several areas of inquiry such as the demand behaviour of borrowers with respect to non-interest rate terms and conditions of credit, the demand behaviour of borrowers in relation to fixed versus adjustable rate mortgages, borrower-characteristics vis-à-vis the features of home loan products, prepayment behaviour of borrowers, etc., would reveal the peculiarities of the demand for housing finance. However, on account of lack of disaggregate data at the macro economic level, the present study has not been able to incorporate such inquiries within its scope.

With suitable research methodology such as case studies and the use of micro level data, the results of the present study can be put to further test. The specific areas open for further inquiry are evident in the limitations of the present study mentioned above. Besides those, other potential areas for research are the issues of resource mobilization for the housing finance sector vis-à-vis other sectors of the economy, the impact of credit restraints on the home loan market, the impact of fiscal incentives on the housing finance sector, etc. These can offer useful insights for improving the efficacy of the housing finance sector in India, for which the present research work has provided a strong foundation.

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THEMATIC PRESENTATION OF THE REVIEW OF LITERATURE

I. STUDIES ON DETERMINANTS OF HOUSING FINANCE			II. STUDIES ON THE ROLE OF HOUSING FINANCE TERMS AND CONDITIONS	III. STUDIES ON BORROWER-CHARACTERISTICS AND NATURE OF HOME LOAN PRODUCTS
INCOME	**RATE OF INTEREST**	**INFLATION & HOUSE PRICES**		
Gelfand (1966, 1970) Lindsay (1971) Arcelus & Meltzer (1973) Kirby (1976) Charles (1977) Rosa (1978) Kent ((1980) Palvia 1980 Reidy (1983) Dynarski & Sheffrin (1985) Sa-Aadu & Sirmans (1995) Srinivas (1996) Saleh (1999) Hendershott et al (2000) Quigley & Raphael (2004) Bandyopadhyay & Saha (2009) Bhide et al (2009) Kumar & Fulwari (2012)	Fisher (1933) Dhrymes & Taubman (1969) Wallich (1971) Fisher & Seigman (1972) Arcelus & Meltzer (1973) Meltzer (1974) Smith (1976) Starr (1975) Rosa (1978) Kearl (1979) Kent ((1980) Green & Shoven (1986) Clauretie & Herbog (1990) Flavin & Yamashita (2002) Khan (2003) Green & Wachter (2005) Ellis (2006) Green & Wachter (2007) Chandrasekar & Krishnamoorthy(2010) Kumar & Fulwari (2012)	Arcelus & Meltzer (1973) Kearl (1979) Titman (1982) Reidy (1983) Alm & Follain (1984) Kapadia (1992) Renaud (1996) Campbell & Cocco (2003) Quigley & Raphael (2004)	Thompson (1947) Rathbun (1952) Vernon (1965) Gelfand (1966, 1970) Von Furstenburg (1969) Herzbog & James (1970) Lakshmanan et al (1976) Anderson & James (1977) Kent ((1980) Alm & Follain (1984) Rosen et al (1984) Dynarski & Sheffrin (1985) Chatterjee (1987) Hosios & Pesando (1991) Taylor & Jureindini (1994) Bandyopadhyay & Saha (2009) Buckley (1994) Ling He (2000)	Brueckner (1986) Dhillon, Shilling and Sirmans (1987) Brueckner & Follain (1988) Chari and Jagannathan (1989) Rosenthan & Zorn (1991) J. Sa-Aadu and Sirmans (1995) Miles (2004)

IV. STUDIES ON THE AVAILABILITY OF HOUSING FINANCE		V. STUDIES ON THE ROLE OF GOVERNMENT IN HOUSING FINANCE ISSUES IN INDIA	VI. STUDIES ON DEVELOPMENT OF MARKET BASED HOUSING FINANCE SYSTEMS	
Thompson (1947) Dwight (1971) Gramley (1971) Wallich (1971) Fisher & Seigman (1972) Gibson (1973) Swan (1973) Meltzer (1974) Kearl & Mishkin (1977) Rosa (1978) Dwight & Rosen (1979) Doling (1982) Stutz and Kartman (1982)	Meador (1982) Thom (1985) Jaffee (1985) Barth, Cordes & Yezer (1986) Mayo, Malpezzi & Gross (1986) Sullivan, Warren & Westbrook (1989) Buckley (1989, 1994) Mehta & Mehta (1991) Beaverstock (1992) Gropp et al (1997) Berkowitz & Hynes (1999) Tiwari (2001) Ellis (2006)	Lall (1987) Kundu (1988) Mehta & Mehta (1987, 1988, 1991) Wadhwa (1988, 2003) Garg (1998) Pugh (1990) Kapadia (1992) Nair (1999) Desai (2002)	McCrane (1971) Wallich (1971) Reidy (1983) Sternlieb & Hughes (1983) Renaud (1984, 1996) WB Report on Financial Intermediation (1985) Lall (1987) Kundu (1988) Buckley (1989) Genteel et al. (1991)	Thrift & Leyshon (1992) Beaverstock et al. (1992) Chen & Gao (1993) Order (1994) Goetz (1995) Garg (1998) Llanto & Basilio (1999) Uy (2006) Green & Wachter (2007) Warnock & Warnock (2007) Nenova (2010)

APPENDIX

APPENDIX TABLE 1

OUTSTANDING HOME LOANS OF SCHEDULED COMMERCIAL BANKS (Figures in INR Crores)					
YEAR	**SBI & ASSOCIATES**	**NATIONALIZED BANKS**	**FOREIGN BANKS**	**PRIVATE BANKS**	**SCBs (TOTAL)**
1990-91	830.38	2229.31	74.29	124.13	3258.11
1991-92	1163.43	2522.06	146.87	153.89	3986.25
1992-93	1611.22	2990.23	186.72	197.59	4985.76
1993-94	1756.44	3146.43	149.79	255.18	5307.84
1994-95	1824.59	3451.48	170.97	309.25	5756.29
1995-96	2260.23	4036.64	214.22	420.09	6931.18
1996-97	2683.54	4161.35	273.23	596.65	7714.77
1997-98	3194.60	5031.00	228.60	832.00	9286.20
1998-99	4082.10	6531.00	351.00	992.40	11956.50
1999-00	5827.90	9356.30	1250.20	1506.00	17940.40
2000-01	7978.80	12684.60	2012.00	1912.30	24587.70
2001-02	11142.50	15464.10	2918.40	2172.60	31697.60
2002-03	17650.50	22378.70	4235.40	3437.40	47702.00
2003-04	21248.60	34156.10	5705.80	22322.50	83433.00
2004-05	34219.10	47481.10	8760.80	33940.90	124401.90
2005-06	43315.50	72321.00	16348.50	47485.40	179470.40
2006-07	51166.70	88433.30	11355.10	74801.20	225756.30
2007-08	59225.70	89729.30	15850.10	80264.20	245069.30
2008-09	72898.00	110136.90	21646.60	76272.20	280953.70
2009-10	99610.23	121148.04	16077.55	65201.42	302037.20
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.					

APPENDIX TABLE 2

INCREMENTAL HOME LOANS OF SCHEDULED COMMERCIAL BANKS (Figures in INR Crores)					
YEAR	**SBI & ASSOCIATES**	**NATIONALIZED BANKS**	**FOREIGN BANKS**	**PRIVATE BANKS**	**SCBs (TOTAL)**
1991-92	333.05	292.75	72.58	29.76	728.14
1992-93	447.79	468.17	39.85	43.7	999.51
1993-94	145.22	156.2	-36.93	57.59	322.08
1994-95	68.15	305.05	21.18	54.07	448.45
1995-96	435.64	585.16	43.25	110.84	1174.89
1996-97	423.31	124.71	59.01	176.56	783.59
1997-98	511.06	869.65	-44.63	235.35	1571.43
1998-99	887.5	1500	122.4	160.4	2670.3
1999-00	1745.8	2825.3	899.2	513.6	5983.9
2000-01	2150.9	3328.3	761.8	406.3	6647.3
2001-02	3163.7	2779.5	906.4	260.3	7109.9
2002-03	6508	6914.6	1317	1264.8	16004.4
2003-04	3598.1	11777.4	1470.4	18885.1	35731
2004-05	12970.5	13325	3055	11618.4	40968.9
2005-06	9096.4	24839.9	7587.7	13544.5	55068.5
2006-07	7851.2	16112.3	-4993.4	27315.8	46285.9
2007-08	8059	1296	4495	5463	19313
2008-09	13672.3	20407.6	5796.5	-3992	35884.4
2009-10	26712.23	11011.14	-5569.05	-11070.8	21083.54
SOURCE: COMPUTATIONS BASED ON DATA ON OUTSTANDING HOME LOANS OF SCBs, (BSR, RBI).					

APPENDIX TABLE 3

SHARE OF OUTSTANDING HOME LOANS OF SCBs IN TOTAL SCB CREDIT			
YEAR	**OUTSTANDING HOME LOANS OF SCBs (INR CR)**	**TOTAL CREDIT OF SCBs TO ALL SECTORS (INR CR)**	**SHARE OF HOME LOANS IN TOTAL CREDIT OF SCBs TO ALL SECTORS (%)**
1990-91	3297.27	124202.9	2.65
1991-92	4032.09	136705.8	2.95
1992-93	5046.36	162467.3	3.11
1993-94	5386.41	175891.3	3.06
1994-95	5882.03	210939.1	2.79
1995-96	7113.6	254692.1	2.79
1996-97	7945.99	284373.3	2.79
1997-98	9631.5	329944.4	2.92
1998-99	12376.7	382425	3.24
1999-00	18524.9	460080.7	4.03
2000-01	25412.4	538433.8	4.72
2001-02	32825.9	655993.1	5
2002-03	49066.9	755968.8	6.49
2003-04	85346.5	880312	9.7
2004-05	126797	1152468	11
2005-06	182167.2	1513842	12.03
2006-07	228923.4	1947100	11.76
2007-08	248435	2417007	10.28
2008-09	284750.9	2847713	10
2009-10	306303.7	3345169	9.16
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI; COMPUTATIONS BASED ON DATA ON OUTSTANDING HOME LOANS OF SCBs.			

APPENDIX TABLE 4

BANK GROUP-WISE NUMBER OF HOME LOAN ACCOUNTS					
YEAR	SBI & ASSOCIATES	NATIONALIZED BANKS	FOREIGN BANKS	PRIVATE BANKS	SCBs (TOTAL)
1990-91	192721	414146	4694	29762	641323
1991-92	237960	456631	6276	32434	733301
1992-93	265075	466752	6663	35805	774295
1993-94	260560	460363	5006	39101	765030
1994-95	249746	484977	3412	44507	782642
1995-96	251875	476762	4447	50844	783928
1996-97	318905	585385	3592	72637	980519
1997-98	332569	598290	6715	78174	1015748
1998-99	349731	720731	9344	77967	1157773
1999-00	673146	1230708	57809	151860	2113523
2000-01	807989	1237237	35376	207999	2288601
2001-02	600143	891995	38752	129821	1660711
2002-03	1123085	1000208	51746	122904	2297943
2003-04	923444	1388219	63214	475411	2850288
2004-05	1155994	1610113	100543	577600	3444250
2005-06	1320428	2027079	124447	802669	4274623
2006-07	1575173	2151297	75829	939599	4741898
2007-08	1649279	2203452	94596	992187	4939514
2008-09	1835065	2474554	150997	957006	5417622
2009-10	2235035	2506984	97301	899152	5738472
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.					

APPENDIX TABLE 5

NUMBER OF HOME LOAN ACCOUNTS AND HOME LOAN SIZE			
YEAR	**TOTAL NO. OF HOME LOAN ACCOUNTS WITH SCBs**	**NUMBER OF NEW HOME LOAN ACCOUNTS**	**AVERAGE HOME LOAN SIZE (Rs.)**
1990-91	641323	-	50802
1991-92	733301	91978	54360
1992-93	774295	40994	64390
1993-94	765030	-9265	69380
1994-95	782642	17612	73549
1995-96	783928	1286	88416
1996-97	980519	196591	78680
1997-98	1015748	35229	91422
1998-99	1157773	142025	103271
1999-00	2113523	955750	84883
2000-01	2288601	175078	107435
2001-02	1660711	-627890	190867
2002-03	2297943	637232	207585
2003-04	2850288	552345	292717
2004-05	3444250	593962	361187
2005-06	4274623	830373	419850
2006-07	4741898	467275	476088
2007-08	4939514	197616	496140
2008-09	5417622	478108	518592
2009-10	5738472	320850	526337
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI; COMPUTATIONS BASED ON DATA ON HOME LOANS AND NO. OF HOME LOANS ACCOUNTS OF SCBs.			

APPENDIX TABLE 6

BANK GROUP-WISE GROWTH IN OUTSTANDING HOME LOANS (%)					
YEAR	**SBI & ASSOCIATES**	**NATIONALIZED BANKS**	**FOREIGN BANKS**	**PRIVATE BANKS**	**SCBs (TOTAL)**
1991-92	40.11	13.13	97.7	23.97	22.35
1992-93	38.49	18.56	27.13	28.4	25.07
1993-94	9.01	5.22	-19.78	29.15	6.46
1994-95	3.88	9.7	14.14	21.19	8.45
1995-96	23.88	16.95	25.3	35.84	20.41
1996-97	18.73	3.09	27.55	42.03	11.31
1997-98	19.04	20.9	-16.33	39.45	20.37
1998-99	27.78	29.82	53.54	19.28	28.76
1999-00	42.77	43.26	256.18	51.75	50.05
2000-01	36.91	35.52	60.93	26.98	37.05
2001-02	39.65	21.91	45.05	13.61	28.92
2002-03	58.41	44.71	45.13	58.22	50.49
2003-04	20.39	52.63	34.71	549.4	74.9
2004-05	61.04	39.01	53.54	52.05	49.1
2005-06	26.58	52.32	86.61	39.91	44.27
2006-07	18.13	22.28	-30.54	57.52	25.79
2007-08	15.75	1.47	39.59	7.3	8.55
2008-09	23.09	22.74	36.57	-4.97	14.64
2009-10	36.64	10	-25.73	-14.51	7.5
SOURCE: COMPUTATIONS BASED ON BANK GROUP-WISE DATA ON OUTSTANDING HOME LOANS (BSR, RBI).					

APPENDIX TABLE 7

BANK GROUP-WISE GROWTH IN INCREMENTAL HOME LOANS (%)				
YEAR	**SBI & ASSOCIATES**	**NATIONALIZED BANKS**	**FOREIGN BANKS**	**PRIVATE BANKS**
1992-93	43.56	60.24	-45.09	46.84
1993-94	-67.57	-66.64	-192.67	31.78
1994-95	53.07	95.29	157.35	-0.06
1995-96	539.24	91.82	104.2	104.99
1996-97	-2.83	-78.69	36.44	59.29
1997-98	20.73	597.34	-175.63	33.3
1998-99	73.66	72.48	374.25	-31.85
1999-00	96.71	88.35	634.64	220.2
2000-01	23.2	17.8	-15.28	-20.89
2001-02	45.83	-16.49	18.98	-35.93
2002-03	105.71	148.77	45.3	385.9
2003-04	-44.76	70.33	11.65	1393.13
2004-05	253.44	13.14	107.77	-38.48
2005-06	-29.87	86.42	148.08	16.58
2006-07	-13.69	-35.14	-165.81	101.67
2007-08	2.65	-91.96	190	-80
2008-09	69.65	1474.66	28.95	-173.07
2009-10	95.37	-46.04	-195.08	-277.32
SOURCE: COMPUTATIONS BASED ON BANK GROUP-WISE DATA ON OUTSTANDING HOME LOANS.				

APPENDIX TABLE 8

SIZE-WISE DISTRIBUTION OF OUTSTANDING HOME LOANS OF SCBs (INR CRORES)											
YEAR	**less than 25000**	**25 K to 2 LAC**	**2 LAC to 5 LAC**	**5 LAC to 10 LAC**	**10 LAC to 25 LAC**	**25 LAC to 50 LAC**	**50 LAC to 1 CR**	**1 CR to 4 CR**	**4 CR to 6 CR**	**6 CR to 10 CR**	**above 10 CR**
1990-91	322.03	2378.23	151.99	83.27	71.02	44.26	55.15	83.23	15.79	23.21	69.08
1991-92	374.47	2821.53	269.29	194.25	105.08	49.38	58.44	104.29	18.05	18.73	18.58
1992-93	392.31	3241.12	410.06	341.27	132.67	52.46	78.63	146.51	49.17	47.84	154.31
1993-94	403.1	3444.76	476.36	341.12	145.25	63.21	80.4	183.95	49.36	44.71	154.19
1994-95	456.62	3988.25	496.59	105.6	102.92	88.08	103.03	291.4	85.19	26.7	137.64
1995-96	416.36	4619.29	659.34	235.84	132.6	117.98	143.1	346.01	124.58	103.65	214.86
1996-97	496.97	4945.7	880.88	172.92	238.62	114.2	122.55	300.18	149.56	174.73	349.75
1997-98	638.8	5336	1758.4	319.1	197.4	116.8	147.6	316.6	165.1	157.1	478.5
1998-99	466.1	6526.7	3268.6	571.6	278	141.4	141.5	296.4	142.4	207.6	336.4
1999-00	454.4	8919.1	5497.7	1140.3	496.6	183.6	141.5	298.3	192.9	192.1	1008.4
2000-01	552.1	9544	9232.9	1996.4	1053.3	322.5	208.3	432.4	198.4	183.6	1688.5
2001-02	280.1	10840.8	10979.7	4305.7	2197.9	772.7	314.2	482.6	182.2	219.6	2250.5
2002-03	555.6	12874.1	15973.7	8242.2	4624.9	1384.9	605.4	630.3	274.7	404.8	3496.3
2003-04	335.8	16041.5	25931.1	18902.2	13902.8	4121.1	1236.8	686.6	211.1	273.3	3704.1
2004-05	292.1	17111	36099.2	29086.9	21958.2	6883.5	3202.9	2503	557.8	833.2	8269.3
2005-06	309.6	19295	44020.1	41345.2	37215	13472.1	5651.6	4351.6	829.8	1017.5	14659.6
2006-07	411.6	18351	46922.7	50097.5	47555.8	18557.1	43508.4	2487.2	454.7	364.8	212.7
2007-08	303.3	18532.4	50275.1	52263.2	59262.8	28522.3	14754.7	10790.9	1507.5	1592.5	10630.4
2008-09	296.9	19147	56521.5	59299.6	72950.1	34616.7	15635.2	12231.9	2027.6	2076.7	9947.8
2009-10	302.51	17565.12	56146.36	66367.45	84880.01	39293.59	15927.89	11218.92	1653.57	1580.43	11370.82
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.											

APPENDIX TABLE 9

INTEREST RATE-WISE DISTRIBUTION OF OUTSTANDING HOME LOANS OF SCBs (INR CRORES)										
YEAR	**less than 6%**	**6% to 10%**	**10% to 12%**	**12% to 14%**	**14% to 15%**	**15% to 16%**	**16% to 17%**	**17% to 18%**	**18% to 20%**	**above 20%**
1990-91	1823.99	375.45	278.98	181.11	36.64	100.45	105.44	30.56	37.57	5.06
1991-92	2090.44	453.66	462.3	139.01	38.66	109.89	126.17	78.54	44.88	114.07
1992-93	2337.36	769.85	712.75	116.08	50.48	136.98	155.28	129.03	86.67	159.58
1993-94	2278.1	760.15	857.23	141.02	55.71	267.16	290.33	118.86	107.94	106.81
1994-95	2473.88	203.57	1155.29	254.39	247.42	278.58	329.88	175.1	189.15	118.15
1995-96	2402.12	203.31	1410.78	291.66	619.77	375	247.03	740.12	307.27	100.18
1996-97	2292.3	253.3	1547.03	420.59	928.71	432.9	362.53	666.62	429.66	115.35
1997-98	2508.4	240.5	2166.5	1200	1024.8	398.2	518.9	371.9	471.6	92.1
1998-99	617.2	59.4	1994.9	691.3	458.7	458.2	542.1	279.6	232.1	50.4
1999-00	718.9	111.6	3052.8	2536.5	909.3	621.4	732.7	199.1	174.2	94.8
2000-01	615.1	132.3	4004.9	6892.3	957.7	924.1	1027.7	319.7	297.8	144.8
2001-02	639.6	483.6	9009.3	8550.2	859.3	951.3	575.6	294.3	163.4	178.5
2002-03	719.3	6046.5	16833.2	6538.6	1173.6	1343	1092.6	100.1	1730.2	60.1
2003-04	2267.3	26040.4	25183.4	4779.4	674.8	1204.2	2076.8	2539.6	4203.3	0
2004-05	2895.8	82313.3	10781.5	13403.3	0.1	0	0	0	0	0
2005-06	3731	135257.6	13053.2	10521.3	0	0	0	0	0	0
2006-07	8196.4	147133.6	40072.6	14758.2	0	0	0	0	0	0
2007-08	1029.2	69315.3	112219.7	40581.6	3747.2	1801.7	473.4	338.4	39.2	53.6
2008-09	1225.9	87344.5	105362.7	56290.6	9739.7	3450.5	974.4	355	255	608.8
2009-10	1328.26	178725.11	75990.8	26946.38	2949.23	1529.33	571.55	176.86	155.13	66.39
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.										

APPENDIX TABLE 10

POPULATION GROUP-WISE DISTRIBUTION OF HOME LOANS OF SCBs (INR CRORES)				
YEAR	**METROPOLITAN**	**URBAN**	**SEMI-URBAN**	**RURAL**
1990-91	1140.33	1089.44	646.78	420.71
1991-92	1434.31	1331.36	801.97	464.45
1992-93	1924.41	1619.55	964.21	538.19
1993-94	1987.91	1786.29	1049.21	563.00
1994-95	2112.98	1764.81	1358.01	646.22
1995-96	2627.81	2108.17	1565.77	811.85
1996-97	2716.75	2547.41	1725.23	956.59
1997-98	3270.80	2978.30	2197.10	1185.30
1998-99	4125.30	4021.00	2870.00	1360.40
1999-00	6890.40	5581.70	4145.80	1907.00
2000-01	9946.60	7425.90	5506.20	2533.80
2001-02	13181.40	9790.40	6694.20	3159.90
2002-03	19945.20	14164.70	9570.40	5386.80
2003-04	40850.30	23073.10	13711.00	7712.10
2004-05	59981.10	34506.70	19285.00	13024.20
2005-06	94195.70	45829.60	23928.60	18213.40
2006-07	124677.10	55858.70	28364.30	20023.20
2007-08	123138.30	65456.40	32338.00	27502.20
2008-09	148137.30	76048.50	40276.50	20288.70
2009-10	148677.08	84064.56	48466.11	25098.93
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.				

APPENDIX TABLE 11

REGION-WISE DISTRIBUTION OF OUTSTANDING HOME LOANS OF SCBs (INR CRORES)						
YEAR	**NORTHERN**	**NORTH-EASTERN**	**EASTERN**	**CENTRAL**	**WESTERN**	**SOUTHERN**
1990-91	529.14	41.45	402.02	373.79	774.14	1176.72
1991-92	599.37	50.12	509.56	452.24	1113.71	1307.1
1992-93	687.33	76.64	605.51	598.42	1477.12	1601.31
1993-94	748.35	65.59	717.06	658.85	1414.4	1782.16
1994-95	984.9	83.55	824.5	678.74	1210.21	2100.14
1995-96	1292.37	80.65	1043.87	766.36	1487.18	2443.17
1996-97	1397.37	96.53	992.37	932.78	1701.76	2825.12
1997-98	1494.1	124.5	1317.6	1035.6	2068.6	3591.3
1998-99	2041.1	190.3	1625.8	1366.5	2317.3	4835.8
1999-00	3370.9	241.2	1972.4	2114.1	3782.4	7044.2
2000-01	4520.7	320.4	2808.8	3088.3	5633.2	9598.4
2001-02	5474.6	432.1	3981.2	4111.1	7186	12361.7
2002-03	8847.4	872.8	5531.9	6157.9	10053.5	18824.5
2003-04	16223.7	948.5	8381.7	9812.6	19944.4	31677.2
2004-05	23904.5	1775	11791.3	14728.1	29488.8	47334.3
2005-06	37938.9	2574.8	16114.5	19617.3	44132.3	64841.3
2006-07	41469	2804.4	21319.5	24539.3	59609.8	83217.9
2007-08	40579.7	3288.5	21778.8	31029.9	59427	97741.5
2008-09	51465.1	3507.5	25363.3	30090.2	69879	110396.8
2009-10	55613.38	4392.77	25798.58	29004.32	76708.04	114791.59
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.						

APPENDIX TABLE 12

OUTSTANDING HOME LOANS OF SCBs IN THE NORTH-EASTERN REGION (INR CRORES)								
OUTSTANDING HOME LOANS OF SCBs IN THE NORTHERN REGION (INR CRORES)								
YEAR	**HARYANA**	**HP**	**J & K**	**PUNJAB**	**RAJASTHAN**	**CHANDIGARH**	**DELHI**	**TOTAL**
1990-91	78.3	17.65	15.77	113.34	91.34	26.64	186.1	529.14
1991-92	79.82	18.95	17.92	141.26	116.65	28.45	196.32	599.37
1992-93	84.79	22.01	20.91	179.55	141.74	18.19	220.14	687.33
1993-94	90.91	23.06	25.42	171.99	164.51	47.59	224.87	748.35
1994-95	142.1	38.57	40.22	241.86	231.36	26.14	264.65	984.9
1995-96	156.74	44.23	43.45	378.36	192.33	53.12	424.14	1292.37
1996-97	184.63	47.3	53.99	435.53	257.87	68.53	349.52	1397.37
1997-98	199.9	53.1	70.3	412.6	324.6	55.4	378.2	1494.1
1998-99	277.1	72.3	93.4	446.6	550.5	70.3	530.9	2041.1
1999-00	451	137	116.3	636	795	84.1	1151.5	3370.9
2000-01	585.5	199.6	168.1	868.1	1095.4	135.7	1468.3	4520.7
2001-02	672.2	198.8	218.5	1191.2	1312.5	160.5	1720.9	5474.6
2002-03	1140.2	291.9	268.8	1713.7	1768.7	280.6	3383.5	8847.4
2003-04	1667.3	467.9	357.6	2780.9	2765.8	1058.5	7125.7	16223.7
2004-05	2718.7	690.1	429.3	4100	3849	1413.5	10703.9	23904.5
2005-06	6127	1102.1	549.6	5686.7	5969.2	2311	16193.3	37938.9
2006-07	5598.9	1381.2	742.2	6352.5	7443	2332.3	17618.9	41469
2007-08	5468.3	1247.7	905.6	5674.4	8657.1	1873.8	16752.8	40579.7
2008-09	7033.7	1624.7	910.9	6734.1	8705.2	2172.4	24284.1	51465.1
2009-10	8708.6	2006.74	1645.8	7656.42	10230.98	2228.75	23136.09	55613.38
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.								

APPENDIX TABLE 13

YEAR	ARUNACHAL PRADESH	ASSAM	MANIPUR	MEGHALAYA	MIZORAM	NAGALAND	TRIPURA	TOTAL
1990-91	0.48	32.81	1.5	1.42	0.29	0.9	4.05	41.45
1991-92	0.67	38.71	1.81	1.58	0.59	2.08	4.68	50.12
1992-93	0.63	45.43	2.48	17.15	2.51	2.92	5.52	76.64
1993-94	0.85	48.98	2.92	2.69	2.25	2.08	5.82	65.59
1994-95	0.9	58.56	3.34	9.32	3.66	2.02	5.75	83.55
1995-96	2.53	62.1	3.87	3.05	0.86	2.26	5.98	80.65
1996-97	1.46	76.42	4.42	2.94	1.15	2.41	7.73	96.53
1997-98	1.6	95.9	5.1	7.4	3.9	1.8	8.8	124.5
1998-99	1.6	148.7	7	11.7	7.2	3.9	10.2	190.3
1999-00	1.8	188.1	9.4	11.6	10.7	4	15.6	241.2
2000-01	3	242.7	12.1	15.3	21.9	5.2	20.2	320.4
2001-02	10	314.9	18.4	25.5	31.2	5.6	26.5	432.1
2002-03	6.4	703.5	26.5	30	64.4	6.4	35.6	872.8
2003-04	26.5	574.5	47.2	128.3	105.3	12.1	54.6	948.5
2004-05	33.1	980.4	105.8	393.9	151.6	16.1	94.1	1775
2005-06	38.8	1340.4	133.4	611.1	223.5	23.5	204.1	2574.8
2006-07	41.2	1739.5	186.1	151.7	315.9	58.5	311.5	2804.4
2007-08	101	1869.7	264.2	200.2	384.9	86.6	381.9	3288.5
2008-09	50.1	2041.2	268.2	233.2	358.8	100.4	455.6	3507.5
2009-10	73.46	2566.71	250.15	287.87	542.38	152.04	520.16	4392.77

SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.

APPENDIX TABLE 14

OUTSTANDING HOME LOANS OF SCBs IN THE EASTERN REGION (INR CRORES)							
YEAR	**BIHAR**	**JHARKHAND**	**ORISSA**	**SIKKIM**	**WEST BENGAL**	**A&N ISLANDS**	**TOTAL**
1990-91	92.98	-	44.12	0.32	264.51	0.09	402.02
1991-92	105.73	-	67.32	0.29	336.12	0.1	509.56
1992-93	128.6	-	82.59	0.21	394.01	0.1	605.51
1993-94	160.97	-	99.34	0.43	456.12	0.2	717.06
1994-95	185.67	-	124.72	0.53	513.35	0.23	824.5
1995-96	206.51	-	151.34	0.69	684.92	0.41	1043.87
1996-97	227.32	-	142.56	0.78	621.22	0.49	992.37
1997-98	304.6	-	204.9	1.3	806	0.8	1317.6
1998-99	408.6	-	265.5	2.5	948.1	1.1	1625.8
1999-00	509.3	-	359.5	4.9	1094.1	4.6	1972.4
2000-01	695.3	202.2	539.7	14.6	1352.3	4.7	2808.8
2001-02	769.5	270.4	1018.9	25.2	1889.7	7.5	3981.2
2002-03	1080.6	371.8	1320.3	35.5	2714.6	9.1	5531.9
2003-04	1693.8	531.4	2317.6	73	3743.1	22.8	8381.7
2004-05	2187.9	628.8	3253.2	154.7	5523.5	43.2	11791.3
2005-06	3118.6	858.6	3819.1	234.8	8043.2	40.2	16114.5
2006-07	4888.5	1062.7	4108.1	343.6	10852.1	64.5	21319.5
2007-08	5562.1	1129.9	4100.3	360.1	10533.8	92.6	21778.8
2008-09	3881	1976.3	5000.6	356.8	14071.5	77.1	25363.3
2009-10	2494.68	2138.19	4927.22	371.89	15770.45	94.15	25796.58
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.							

APPENDIX TABLE 15

OUTSTANDING HOME LOANS OF SCBs IN THE CENTRAL REGION (INR CRORES)					
YEAR	**CHHATTISGARH**	**MP**	**UP**	**UTTARAKHAND**	**TOTAL**
1990-91	-	121.37	252.42	-	373.79
1991-92	-	143.29	308.95	-	452.24
1992-93	-	182.26	416.16	-	598.42
1993-94	-	200.1	458.75	-	658.85
1994-95	-	204.05	474.69	-	678.74
1995-96	-	259.83	506.53	-	766.36
1996-97	-	326.47	606.31	-	932.78
1997-98	-	359.9	675.7	-	1035.6
1998-99	-	480.1	886.4	-	1366.5
1999-00	-	790.9	1323.2	-	2114.1
2000-01	177	1171.7	1561.3	178.3	3088.3
2001-02	235.5	1367.2	2260.7	247.7	4111.1
2002-03	412.1	2022.7	3286	437.1	6157.9
2003-04	511.7	2923.4	5779	598.5	9812.6
2004-05	726.9	4314	8818	869.2	14728.1
2005-06	1030.6	5558.4	11865.9	1162.4	19617.3
2006-07	1524.8	6986.2	14579.6	1448.7	24539.3
2007-08	2666.6	8754.2	17995.6	1613.5	31029.9
2008-09	2089.1	8985.8	17130.1	1885.2	30090.2
2009-10	2680.37	8660.12	15452.07	2211.76	29004.32
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.					

APPENDIX TABLE 16

OUTSTANDING HOME LOANS OF SCBs IN THE WESTERN REGION (INR CRORES)						
YEAR	**GOA**	**GUJARAT**	**MAHARASHTRA**	**D&N HAVELI**	**DAMAN & DIU**	**TOTAL**
1990-91	12.13	232.62	528.87	0.21	0.31	774.14
1991-92	14.36	271.91	826.8	0.25	0.39	1113.71
1992-93	16.46	318.77	1141.32	0.32	0.25	1477.12
1993-94	17.49	307.63	1088.55	0.08	0.65	1414.4
1994-95	20.53	407.99	780.26	0.21	1.22	1210.21
1995-96	26.34	402.64	1056.99	0.27	0.94	1487.18
1996-97	30.68	433.85	1236.26	0.24	0.73	1701.76
1997-98	39.8	544.4	1482.8	0.4	1.2	2068.6
1998-99	54.2	693.9	1567	0.5	1.7	2317.3
1999-00	81.7	972.7	2725.7	0.5	1.8	3782.4
2000-01	105.1	1225.6	4299.7	0.9	1.9	5633.2
2001-02	109.3	1298.3	5773	2.9	2.5	7186
2002-03	199.7	1663.5	8180.4	6.2	3.7	10053.5
2003-04	291.2	3026.6	16611.7	8.8	6.1	19944.4
2004-05	411.4	4282.1	24776.2	10.3	8.8	29488.8
2005-06	549.6	6557.2	36994.9	16.5	14.1	44132.3
2006-07	751.5	10066.4	48750.6	25.4	15.9	59609.8
2007-08	868.7	12135.2	46377.6	29.4	16.1	59427
2008-09	1050.5	11854.8	56908.2	37.4	28.1	69879
2009-10	1361.69	13802.6	61438.9	61.9	42.95	76708.04
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.						

APPENDIX TABLE 17

OUTSTANDING HOME LOANS OF SCBs IN THE SOUTHERN REGION (INR CRORES)							
YEAR	**ANDHRA PRADESH**	**KARNATAKA**	**KERALA**	**TAMILNADU**	**LAKSHADWEEP**	**PUDUCHERRY**	**TOTAL**
1990-91	301.37	285.7	173.27	410.04	0.06	6.28	1176.72
1991-92	335.7	306.43	209.46	447.55	0.06	7.9	1307.1
1992-93	457.67	339.24	248.87	547.1	0.05	8.38	1601.31
1993-94	524.24	382.01	272.74	587.52	0.07	15.58	1782.16
1994-95	623.22	420.86	346.77	691.55	0.11	17.63	2100.14
1995-96	671.2	546.57	456.77	745.5	0.3	22.83	2443.17
1996-97	781.3	634.55	622.59	770.8	0.15	15.73	2825.12
1997-98	1049.8	828.6	816.9	882.3	0.2	13.5	3591.3
1998-99	1323.2	1192.8	1036.6	1247.1	0.2	35.9	4835.8
1999-00	1736.2	1788.3	1481.8	2008.3	0.1	29.5	7044.2
2000-01	2194	2425.6	1948	2995.1	0.2	35.5	9598.4
2001-02	2814.6	3204.4	2473	3821.6	0.4	47.7	12361.7
2002-03	4746.9	5294.2	3402.5	5304.7	0.2	76	18824.5
2003-04	7118.6	9369.5	5559.1	9507.5	1.3	121.2	31677.2
2004-05	11183.5	14294	8801.5	12862.1	2.9	190.3	47334.3
2005-06	13897.1	22123.3	11111	17432.1	4.7	273.1	64841.3
2006-07	19186	28314.2	13798.3	21556	4.4	359	83217.9
2007-08	23578.4	30910.2	15688.7	27209.1	5.7	349.4	97741.5
2008-09	28243.4	33233.6	18683	29685.2	6.8	544.8	110396.8
2009-10	31008.78	33940.64	21497.95	27752.82	6.53	584.87	114791.6
SOURCE: BASIC STATISTICAL RETURNS OF SCBs, RBI.							

APPENDIX TABLE 18

YEAR	NNP_{FC} (INR CR.)	PC NNP (INR)	ANNUAL GROWTH RATE IN PC NNP (%)	HOUSEHOLD GROSS FINANCIAL SAVINGS (INR CR.)	WPI	INFLATION (%)	BPLR (%)	REAL RATE OF INTEREST (%)
1990-91	967773	11535	3.1	104789	182.7	10.30	-	-
1991-92	976319	11406	-1.1	103495	207.8	13.70	16.5	2.8
1992-93	1028643	11796	3.4	123315	228.7	10.00	19.0	9.0
1993-94	1088897	12207	3.5	149534	247.8	8.40	19.0	10.6
1994-95	1159227	12739	4.4	188790	279.0	12.60	15.0	2.4
1995-96	1243724	13402	5.2	201015	301.3	8.00	16.5	8.5
1996-97	1346276	14231	6.2	220973	315.2	4.60	15.0	10.4
1997-98	1404018	14565	2.3	270308	329.1	4.40	14.0	9.6
1998-99	1497195	15231	4.6	329760	345.7	5.00	13.0	8.0
1999-00	1589672	15881	4.3	412516	360.0	4.10	13.5	9.4
2000-01	1648018	16173	1.8	454853	385.8	7.20	12.0	4.8
2001-02	1743998	16769	3.7	504165	399.7	3.60	12.0	8.4
2002-03	1806734	17109	2.0	563240	413.3	3.40	11.5	8.1
2003-04	1961817	18301	7.0	664064	435.9	5.50	11.0	5.5
2004-05	2629198	24143	5.6	763685	464.1	6.50	10.8	4.3
2005-06	2878410	26025	7.8	869176	484.4	4.40	10.8	6.4
2006-07	3150904	26083	7.9	994631	510.7	5.40	12.5	7.1
2007-08	3454264	30354	8.1	1119829	535.0	4.80	12.8	8.0
2008-09	3669890	31801	4.8	1331033	579.6	8.30	12.5	4.2
2009-10	3946540	33731	6.1	1536071	601.4	3.80	12.0	8.2

SOURCE: HANDBOOK OF STATISTICS OF INDIAN ECONOMY, RBI. Rate of inflation computed from the values of WPI; BPLR from RBI Publications on Structure of Interest Rates; Real Rate of interest, computed as explained in text.

APPENDIX TABLE 19

HOME LOANS OF HDFC				
YEAR	**HDFC HOME LOAN INTEREST RATE (%)**	**HOME LOAN APPROVALS (INR CRORES)**	**HOME LOAN DISBURSALS (INR CRORES)**	**CUMULATIVE HOUSING INVESTMENT (INR CRORES)**
1990-91	16	-	-	-
1991-92	16.5	-	-	-
1992-93	17.5	859.14	719.89	9053.21
1993-94	16	1024.77	889.07	11275.47
1994-95	15.5	1494.55	1211.66	15137.77
1995-96	17	2071.46	1683.55	19928.88
1996-97	19	2521.70	2100.78	26207.51
1997-98	16.75	3251.27	2753.61	32710.05
1998-99	15.25	4071.76	3424.27	40540.36
1999-00	14.5	5305.15	4492.74	50742.57
2000-01	12.5	6879.77	5803.01	64502.11
2001-02	11.5	9041.25	7616.56	82584.61
2002-03	9.75	11731.57	9950.17	103734.78
2003-04	8.75	15215.56	12696.82	134165.90
2004-05	9	19715.33	16206.75	173596.90
2005-06	9.25	25633.67	20679.20	224863.24
2006-07	11.25	33331.93	26177.99	291527.10
2007-08	12.5	42520.00	32874.99	376568.00
2008-09	11	49166.00	39650.00	474900.00
2009-10	9.25	60611.00	50413.00	596122.00
2010-11	10.5	75185.00	60314.00	746492.00
SOURCE: HDFC ANNUAL REPORTS				

APPENDIX TABLE 20

REFINANCE EXTENDED BY NATIONAL HOUSING BANK TO HOUSING FINANCE COMPANIES AND SCHEDULED COMMERCIAL BANKS (INR CR.)

YEAR	DISBURSEMENTS				OUTSTANDING			
	HFCs	SCBs	OTHERS	TOTAL	HFCs	SCBs	OTHER	TOTAL
1989-90	115	9	8	132	115	9	8	132
1990-91	308	23	54	385	425	29	63	517
1991-92	541	68	68	677	952	80	130	1162
1992-93	388	53	39	479	1284	127	161	1571
1993-94	241	9	54	303	1437	137	206	1780
1994-95	275	3	39	317	1604	135	214	1952
1995-96	248	22	64	333	1719	102	267	2088
1996-97	328	6	112	445	1893	82	364	2339
1997-98	381	8	138	528	2083	68	478	2629
1998-99	545	39	163	747	2444	88	607	3139
1999-00	651	2	188	842	2865	54	748	3666
2000-01	762	106	141	1008	3344	150	830	4325
2001-02	719	85	219	1024	3750	211	984	4946
2002-03	1772	798	140	2710	4629	935	1044	6607
2003-04	1851	1284	118	3253	4736	2259	1056	8052
2004-05	2623	5404	35	8062	4928	6720	819	12467
2005-06	1840	3791	2	5633	4888	10428	952	16268
2006-07	1210	4280	10	5500	4915	14011	348	19274
2007-08	1189	7398	0	8587	4750	11758	268	16776
2008-09	7055	3799	0	10854	10324	5972	166	16461
2009-10	2230	2430	40	8108	10441	6638	171	17250
2010-11	3308.67	8112	302	11723	-	-	-	-

SOURCE: REPORT ON TREND AND PROGRESS IN HOUSING IN INDIA, NHB, 2010; NHB ANNUAL REPORT, 2011.

OTHERS' include RRBs, the Scheduled Urban Cooperative Banks, ACHFs and ARDBs.

APPENDIX TABLE 21

CITY-WISE NHB RESIDEX															
PERIOD	**AMBD**	**BNGLR**	**BHPL**	**CHN**	**DLH**	**FRBD**	**HYBD**	**JPR**	**KLKT**	**KOCHI**	**LKNW**	**MMB**	**PTN**	**PUNE**	**SRT**
2007=100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Jan-June 2008	106	73	139	104	124	100	96	119	114	106	103	112	103	101	101
Jul-Dec 2008	100	76	151	95	130	121	92	115	140	95	102	117	100	97	98
Jan-Jun 2009	127	58	139	120	121	139	65	71	162	90	104	124	107	103	111
Jul-Dec 2009	128	59	162	143	113	145	81	63	185	83	119	126	119	117	123
Jan-Mar 2010	113	64	158	164	106	154	81	66	165	79	112	134	127	124	109
Apr-Jun 2010	131	68	153	183	110	152	82	61	176	83	133	160	124	135	136
Jul-Sept 2010	141	74	166	210	115	170	87	66	191	97	116	167	148	140	128
Oct-Dec 2010	164	101	173	214	123	176	87	66	213	101	152	173	146	141	133
Jan-Mar 2011	165	88	167	218	126	165	83	67	211	86	157	175	146	148	128
Apr-Jun 2011	169	92	224	248	147	220	91	64	194	107	160	181	146	150	149
Jul-Sept 2011	163	93	208	271	154	206	84	65	191	97	154	194	141	169	139
Oct-Dec 2011	167	100	211	296	167	218	79	64	190	82	165	193	140	184	152

CITIES: AHMEDABAD, BENGALURU, BHOPAL, CHENNAI, DELHI, FARIDABAD, HYDERABAD, JAIPUR, KOLKATA, KOCHI, LUCKNOW, MUMBAL, PATNA, PUNE, SURAT

SOURCE: NATIONAL HOUSING BANK

APPENDIX TABLE 22

HOUSING INVESTMENT BY HUDCO	
YEAR	**LOANS EXTENDED FOR HOUSING PROJECTS (INR CR.)**
1989-90	541.6
1990-91	735
1991-92	834
1992-93	858.91
1993-94	1003.58
1994-95	1121.5
1995-96	1241.8
1996-97	1575.9
1997-98	2263.2
1998-99	3200.71
1999-00	4372.74
2000-01	4829.32
2001-02	4661.78
2002-03	8179.68
2003-04	6136.27
2004-05	5920.88
2005-06	3766.52
2006-07	3452.75
2007-08	3754.02
2008-09	4020.07
2009-10	3098.07
2010-11	5105
2011-12	2136 P
SOURCE: HUDCO ANNUAL REPORTS P: Provisional	

APPENDIX TABLE 23

HOUSING INVESTMENTS BY HUDCO AND SCBs (INR CR.)		
YEAR	**URBAN HOUSING LOANS SANCTIONED BY HUDCO**	**OUTSTANDING HOME LOANS BY SCBs UNDER PRIORITY SECTOR**
2004-05	3645	90298
2005-06	1438.94	133200
2006-07	2878	160343
2007-08	2086.83	191878
2008-09	1339.89	203154
2009-10	2717	218000
2010-11	4852.03	230000
SOURCE: HUDCO ANNUAL REPORTS; RBI PUBLICATION		