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A Study of Residential Housing Demand in India

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NHB-NIBM Monograph

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Abstract

The empirical research on housing market in India is scarce due to the paucity of information. The monograph on “A Study of Residential Housing Demand in India” is the outcome of a Study conducted by the National Institute of Bank Management (NIBM) for National Housing Bank (NHB) and partially addresses advice of Reserve Bank of India to NHB on studying the housing and real estate sector. This study provides exhaustive empirical research and detailed analysis (both micro and macro level) of current status and future growth potential of housing industry in India, its back-ward and forward linkages, financing structure and nature of underlying risk

Broadly, the study analyzes the following key issues:

- a) Nature of the residential housing demand at present ownership vs. rental (individual and corporate), gender-wise, age-wise, education-wise, profession-wise, income class-wise break-up (i.e. based on the purchasing power), etc. and estimation of current demand for housing
- b) Correlation of projected housing demand with other economic factors such as induced demand for cement, steel, (backward linkage), employment benefits, etc. so that the multiplier effect of housing can be estimated at the national level. Other relevant correlations such as with other assets say car, two-wheeler, TV, (for low income group) may also be considered.
- c) Factors reckoned at time of purchase of houses and nature of their financing.
- d) Based on published data on demographics, household expenditure, etc., projection of housing demand for the next 5 years using econometric models.
- e) Broad profile and trends in the projected demand for housing using time series forecasting techniques.
- f) Identification of emerging trends in housing and housing finance.
- g) The study also includes correlating the existing profile of housing loan borrowers of select banks and HFCs to understand the correlation between borrower characteristics and loan parameters such as asset quality, delinquencies, period of loans, collateral values etc. We also examine the link between loan delinquency and value of collateral to further pinpoint the importance of valuation in the housing sector.
- h) Study specifically looks at the issues regarding collateral of the housing loan portfolio including their value, based on data collected from few banks and HFC
- i) Suggestions for the Development of Housing Loan Mortgage market

Key Words: Housing Demand Estimation, Micro & Macro Analysis, Default Risk, Financial Institutions

Key Findings

Macro Findings

- Net 68 million Indians (assuming average size of households is 3) will require independent housing and thereby they will add to the housing demand of the nation due to age-demographic effect. This may be one rational estimate of housing demand in Indian by 2015 due to age-demographic effect. In case of urban population, the additional need for housing would be 31 million (1/3 of 94 million).
- We have also done projections of **realized demand for housing through credit supply channel till 2012**. Following this method, **additional demand for housing is forecasted by us for 2012-13 is around 6.79 million** (which is closure to figure projected by 11th Planning Commission. We have also created three scenarios depending upon various 'loan growth' rates (2.35%, 250% and 3.30%) to project housing demand for 2012-13 viz. 5.97, 6.35 and 7.62 million respectively.
- We studied possible Linkage between Housing Demand and Other Sectors like Steel and Cement Production The coefficients of the estimated equations depict that a **10% increase in realized demand for house** (proxied by number of loans disbursed by HFCs and Banks) **results in 4.59% increase in steel production and 4.67% increase in cement production**.
- We also studied possible Linkage between Household Leverage, Housing Demand and GDP Growth. We have found linkage between Housing sector GDP and household sector leverage and PSBs housing loan disbursement. We also found evidence of linkage between house hold leverage and GDP.
- **House price index (computed by us) moves in with the economic cycle** and it becomes more evident when the growth profile is matched with the expansion in bank credit growth to housing (especially during 2004 onwards when banks stepped up the lending to housing segment).

Micro Findings

In our micro-study of the determinants of housing Demand, we **profiled the borrowers** in terms of Location, Gender, Age, Income, House Size etc based on large sample data obtained from HFCs and Banks. Some Key findings are listed below:

- **A typical borrower** would most likely to be a male in the age group of 40 to 50 having an average monthly income of Rs.10000 who prefers to buy a house of the size of 100 square meters.
- Though **most of the borrowers are in the age group of 40-50**, a significant **25% are below 35 years of age**. It is also found that there is a falling trend in average age profile of the housing demand. A statistical un-paired t-test **confirms that the year wise fall in average age is significant at 1% or better level** except between year 2006 and 2007.
- It is found that **income and price elasticity of demand is less than unity**. An increase in house price by 10%, ceteris paribus, results in a 4.6% decrease in housing demand as affordability comes down. With a10% increase in the monthly

- income of the borrower leads to increase in housing demand area by 5.96% (or approximately 6%).
- The demand for **house-size is found to be inversely related with the age** of the borrowers. The number of dependence, which capture the financial liability of the borrower, is found to have negatively significant implying thereby more the number of dependents in a family reduces the affordability and hence the size of the house.
 - **Urban people have greater demand for bigger house in comparison to suburban counterparts.** The **demand for house in terms of size in the rural area is lesser than the people live in suburban area**; access to housing loan, capacity/affordability might be reasons driving the same.

Risk Analysis in Housing

We studied **various factors that cause housing loan default**. These factors were collected from the HFC's loan history files. The borrower specific parameters normally used by the HFCs while granting loan and pricing of such loans include age, income, occupation, service & length of service, number of dependents, collateral information, guarantor etc. apart from property specific information. In a set of regression exercises, we have found the following interesting observations:

- Bigger the size of house (in square meter), lower is the risk of default.
- Higher the monthly income, lower the chance of default because of higher ability to pay.
- Greater the value of asset (ln_asset_val), lesser the risk of default because of greater affordability due to wealth effect.
- **Security value** (original book value of property) **as proportion to the original loan** amount factor (secval_loanamt or we call it as LTV) is an important and highly significant determinant of risk of default in housing loan. Higher the security margin available to the bank (real margin in this case), lower is the chance of default in home loan.
- **With a 10% decrease in LTV, the odds of default increases by 2.173%.**
- This collateral margin is also a significant determinant of rate of recovery of defaulted loans. **A 10% increase in the ratio (secval_loanamt) lead to 0.38% increase in the recovery rate (rr).** Further, due to the presence of guarantee, bank's likelihood of recovery is more.
- **EMI to Income ratio is positively associated with the estimated likelihood of default.** A 10% increase in EMI to Income ratio is estimated to increase the likelihood of default by 4.52%!
- **The likelihood of default in housing loan decreases significantly with the presence of additional collateral.** The **presence of more number of co-borrowers reduces the risk of default.** Interestingly, higher the co-borrower's monthly income, lesser is the chance of default because of availability of second line of source of income.
- As no. of dependents increases, probability of default also significantly rises because of higher financial burden.

- Rural and semi urban people are riskier than the urban borrowers. However, we have found that borrowers located in big cities are riskier than medium and smaller cities. This may be because with the activation of personal loan segment by commercial banks and easy access to such loans especially in the metro area prompted the existing home loan borrowers to overstretch their financial commitments with a consequential deleterious effect on home loan default rate in this segment.
- **An increase in GDP growth rate reduces the likelihood of default.**

Target Audience: Who will benefit from this report?

This report would be of immense relevance to Government, RBI, NHB, banks and HFCs as well as academia. It can also act as guidance to local authorities and sub-regions on understanding their local housing market. The study would provide guidance on housing needs assessments and can be used as a manual for undertaking housing market assessments and facilitate future projections and valuation. Finally, we believe that such report will benefit the industry in facilitating relevant financing, banking, and monetary policy formulation and provide them a better risk perspective to meet the growing financial demands of the nation in coming future.

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