CHAPTER- II

REVIEW OF LITERATURE ON REVERSE MORTGAGE

2.1 Introduction

Reverse mortgage is an innovative financial arrangement through which senior citizens can liquidate some of their housing wealth and get the much needed cash inflows at a time when they need it most. This is done by mortgaging their house property with a lending institution. The best part is that they get the money at a time when they may not be eligible for any other loan. They also get the life time right to stay in their own home. Reverse mortgage thus has the potential to become an important option of financing the post retirement life of significant and fast growing urban middle class senior citizens in India who could be termed as ‘house rich but cash- poor’.

Academicians as well as housing finance practitioners agree about the enormous size of reverse mortgage market. The feasibility studies done before the launch of the product and research studies done by academic and professional people are very upbeat about the potential demand for this product in urban areas. The current volumes however, present a very dismal picture. Even after five years of its launch, only about 10000 people have used this financing option.

Despite great potential theoretically, the aged people interest in this novel retirement financing option has been very low. Given the importance of the product in the context of providing retirement solution to the burgeoning old age urban middle class owning house property, the current poor response need to be thoroughly researched. In this context it becomes important to review the existing research work done on the various dimensions of Reverse Mortgage in India and abroad. This could help in identifying the important research gaps and scope for future research.

2.2 Historical Perspective
The problem of aged people having insufficient cash inflows after retirement is not a recent phenomenon. There is a long history associated with the use of methods of releasing home equity to finance retirement (Huan and Mahoney, 2002). Almost 400 years ago, European investors used to purchase homes of elderly persons by providing immediate cash flows and allowed them to stay rent-free in same house for rest of their lives. During the crash of 1929, a new financial product with the name ‘home-equity reversion’ got created in England. This was a sort of equity release scheme through which a home owner sold all or part of his home to a lender in return for regular income or lump sum or both but he continued to live in same home, usually rent free until death.

Equity release schemes in some form or the other now exist in most of the European Union member countries. These schemes in Europe mostly began with traditional private home reversion. These were gradually replaced by sale model equity release schemes which were nothing but organised form of home reversion scheme. Finally, it gave way to loan model equity release scheme which was similar to reverse mortgage.

At one time shared appreciation mortgages were issued by the Bank of Scotland and Barclays Bank in the UK. In this home equity release option, the homeowner paid interest on money borrowed against the mortgage of the house at a low rate relative to market interest rates. But in return, the lender took a proportionate share in the capital appreciation of the house over the mortgage period. The product was withdrawn later due to the inability of providers to attract funds from long term investors like pension funds to finance the scheme.

Closely related to the concept of reverse mortgages is the French system of viager, a middle age practice that is still popular in some countries of Europe. It is a sort of private contractual arrangement between the buyer and the seller of a property. The buyer pays the seller a down payment and rest of the amount is payable in form of monthly payments en viager (i.e., for life). Upon the seller’s death, the buyer gets title to the property. This system is used mostly by the old people with no living heirs. Some elderly people also use viager to prevent automatic inheritance of property by
children who may have neglected them. The French government promotes this system to reduce dependence on social security programmes.

The concept of releasing home equity was later brought into U.S and became popularly known as home-equity conversion loans or reverse mortgages in the 1970s and 1980s. In the U.S. this product has developed the most. The product started gaining widespread acceptance only from 1988 when U.S. Federal Government began sponsorship of its own reverse mortgage program. It authorised the Department of Housing and Urban Development (HUD) to create the Home Equity Conversion Mortgage (HECM) program. This program is insured by the U.S. Federal Housing Administration. At present, HECM program is most popular in U.S.

The reverse mortgage loan in various forms is currently available in numerous countries, notably the U.S., Great Britain, France, Australia, Canada, New Zealand, Japan and Singapore where it is attracting more and more consumers. Reverse Mortgage scheme has been particularly famous and quite successful in US. In India this concept has been taken from US and is being customized to suit our local needs. Most commercial banks are offering this product in India since 2008.

Recently one new method of releasing the home equity by elders has become quite popular in most urban areas in India, where property prices have almost touched the roof. This is conveniently called builder arrangement. In this, a senior citizen having a high value house property in good location but facing a cash crunch can enter into an arrangement with builder to construct multi-story flats at his property. In most such arrangements the builder gets a share in the property in the form of one floor. In return, builder takes the responsibility of construction and also pays a substantial sum to the owner. The owner gets the much needed cash and continues to live at the same place. This method doesn’t involve mortgage of house property with which most seniors are uncomfortable. This is thus becoming a convenient method of releasing some home equity by the cash strapped retirees.

2.3 Survey of Existing Literature
Most research studies on reverse mortgages have focused on their potential market, ability to reduce the poverty among the elderly, retiree’s attitude towards housing, debt and financial independence, risks associated with the product, appropriate pricing of the product and the technical difficulties associated with effectively marketing the product.

Most of the research work has been done on reverse mortgage and related issues in developed countries, especially US. As this is a new concept and introduced in India only very recently in 2008, not much research work has been done on the topic relevant to Indian conditions. An extensive review of literature has been undertaken to enhance the existing level of understanding in this area and to identify the issues that need to be researched. The review of literature has been organised in this chapter on the basis of broad issues connected with reverse mortgage, on which the research has already been done either in India or abroad. The broad themes covered in the current chapter on literature review include:

- Life cycle consumption smoothening hypothesis and use of housing equity through reverse mortgage.
- Potential size of reverse mortgage market.
- Risk, pricing and insurance aspects of reverse mortgage.
- Retirees attitude towards home ownership, borrowing, financial independence and leaving an inheritance.
- Borrowers and lenders experiences with the reverse mortgage product.
- Demographic factors and choice of product features.

2.3.1. Life Cycle Consumption Smoothening Hypothesis and Use of Housing Equity through Reverse Mortgage

The fundamental theory behind the reverse mortgage was developed during 1950s by Franco Modigliani. According to life-cycle model, developed by Modigliani and Brumberg (1954), Friedman (1957) and Ando and Modigliani (1963) individuals make their saving choices to smooth consumption over their lifetime. Theoretically, households build savings during their working period and use those savings to meet their consumption needs at old age. House property is the largest component of senior
citizens savings accumulated during their working life in most countries. If the people with housing wealth want to smooth consumption over their life-cycle, they should reduce their housing wealth by switching from ownership to renting or selling the existing unit and moving to a smaller unit or use the option of reverse mortgage to release and use some housing equity with age.

However, most research does not support the hypothesis that the elderly are likely to release their housing wealth in old age. They rarely use it through any home equity release method to support higher level of consumption during retirement. Evidence from a number of studies (Menchick and David 1983; Auerbach and Kotlikoff 1987; Hubbard, Skinner and Zeldes 1994; Venti and Wise 2004) suggests that elderly households do not use their savings in old age to the extent predicted by life-cycle models. These studies have shown that elderly wealth accumulation continues after retirement, when households should be reducing their savings. Much of the literature attributes the high savings of retirees to the desire of the elderly to leave bequests.

Short (1984) in his study found that savings pattern during retirement seemed to be an extension of savings and spending patterns developed during working years. Participants in the survey who were relatively high savers in the early years continued to save as they aged.

Hurd (1990) also points out that even those elderly, who spend their non-housing financial assets during retirement, apparently choose to maintain their housing equity. Studies by Skinner (1989), Engelhart (1996) and Levin (1998) also observed that housing wealth does not seem to impact consumption and savings decisions of elderly homeowners.

A number of studies have discussed nature of housing equity of the elderly from several angles. First, most elderly have a strong attachment to their home and for them home is an emotional and psychological resource (Gibler & Rabianski, 1993). Second, high transaction costs associated with selling of a residential house property also discourage the elderly from transferring housing wealth into consumption (Gibler & Rabianski, 1993). Third, most retirees do not regard housing wealth as fungible asset. They regard their house simply as a place to live in and thus do not make any consumption decisions based on that asset (Walker, 2003).
**Venti and Wise (1989, 1990, and 2004),** in a series of studies show that elderly homeowners do not reduce their housing wealth in the absence of precipitating events such as the death of a spouse or entry to a nursing home.

To what extent one should consider housing equity as retirement savings depends on the extent to which elderly homeowners are willing to consume their housing wealth. Most seniors prefer staying in their homes for as long as they can. In a survey sponsored by the **American Association of Retired Persons (2000),** 95% of persons aged 75 and above agreed that they would like to stay in their current residence for as long as possible.

**Bishop and Shan (2008)** using HUD data on all HECM loans made from 1989 to 2007, found that very few eligible homeowners have used reverse mortgages to achieve consumption smoothing until recently when the reverse mortgage market in the U.S. witnessed substantial growth. From its inception in 1989 to the end of 2007, out of tens of millions of eligible homeowners, less than 400,000 loans have been originated through the HECM program.

Several papers dispute the conclusion that elderly households have significant bequest motives that can explain their savings patterns. Using panel data, **Hurd (1990)** showed that changes in wealth over time are similar for individual elderly households, both with and without children, and thus reject the bequest hypothesis.

**Venti and Wise (2001; 2004)** also find in their study that asset de accumulation rates do not vary by family composition or presence of children. This contradicts one basic argument of the bequest hypothesis, namely that elderly households with children tend to decumulate wealth more slowly than singles.

Many research studies listed above have shown that elderly homeowners have strong psychological attachment to their homes and wish to stay there as long as possible. If this indeed is true, then reverse mortgages, which provide additional liquidity to elderly homeowners while allowing them to continue living in their homes, could be a great welfare improving measure for many retirees.

### 2.3.2 Potential Size of Reverse Mortgage Market

The concept of using residential house property to supplement retirement income through a reverse mortgage has been a topic for researchers since 1960s in the United
States (Scholen and Chen, 1980). The results of most research studies have shown that liquidating housing wealth through a reverse mortgage can significantly reduce the number of elders in poverty (Mayer and Simons, 1994; Merrill et al., 1994; Morgan et al., 1996; Rasmussen et al., 1996; Kutty, 1998; Fratantoni, 1999). These studies have provided evidence of strong demand for reverse mortgages among elderly homeowners in the U.S.

Maurice Weinrobe (1987) in one of the earlier studies found that over 36 per cent of the 345 home owners interviewed under California RAM (Reverse Annuity Mortgage) Programme elected to enter into reverse mortgage.

Venti and Wise (1991) analyzed the 1984 Survey of Income and Program Participation (SIPP) data in US and found that a reverse mortgage in the form of annuity would substantially improve the income of the single elderly who are very old.

Mayer and Simons (1994) used the 1990 Survey of Income and Program Participation (SIPP) data and Census data to show that more than six million elderly homeowners could increase their monthly incomes by using reverse mortgages. Although the reverse mortgage payment was found to be small for most households, nevertheless they showed that it would raise income for almost 1.5 million elderly persons above poverty level. This is because of the fact that housing wealth constitutes most of the non-pension wealth of elderly population. The study also found that the majority of borrowers have chosen the line-of-credit option. This was attributed to the fact that many elderly households had very little liquid wealth. They opined that availability of a lump sum payment that protect against various financial shocks related to housing, health care etc. could be very valuable to many elderly homeowners.

Merrill, Finkel, and Kutty (1994), using the 1989 American Housing Survey (AHS) data, counted the number of homeowners who could be categorised in the 'prime group' of beneficiaries from reverse mortgages. This group included home owners aged 70 or above, with an annual income of less than equal to $30,000, with home equity between $100,000 and $200,000, and who had lived in their homes for last 10 years or more. They counted about 8,00,000 people in this prime group, thereby indicating a large number of potential beneficiaries. They argued that homes with value below $1,00,000 would result in annuity payments too small to be worthwhile.
Those valued above $2,00,000 would indicate that their owners are wealthy and have other assets and would not need to tap home equity.

**Linda S Klein and C F Sirmans (1994)** examined the economic impact of the home equity conversion programmes. They studied 765 annuities issued over a period of five years and found that the average annual income of the elderly participants had increased by 88 per cent.

**Rasmussen, Megbolugbe, and Simmons (1996)** analyzed the potential size of the reverse mortgage market. They observed that there are two motives for obtaining a reverse mortgage. One to draw down wealth as one ages (life-cycle motive). Second, to diversify illiquid housing wealth (asset management motive). They noted that for many households the annuity value may not be large, but the addition to liquid wealth is substantial.

**Rasmussen, Megbolugbe, and Morgan (1997)** explored the importance of investment motives for obtaining a reverse mortgage and noted how certain expenditures, such as long-term care insurance, mid-career human capital investments, and children’s college costs, may be better financed with a reverse mortgage. Reverse mortgage by make housing equity more readily accessible allows homeowners flexibility in financing large expenditures.

**Kutty (1998)** empirical work indicates that the use of home equity conversion mortgage products could possibly raise about 29% of the poor elderly homeowners in the US above the poverty line.

Although research is limited, it appears that when older people sell their homes, it is mostly to access these funds for an emergency. Older homeowners may wish to hold their house as a kind of insurance against high-cost events in old age (Megbolugbe, Sa-Aadu, and Shilling 1997). Researchers have found that unexpected health problems are a major reason for older people to sell their homes. The probability of incurring large medical expenses increases over time for the elderly. In the absence of other forms of protections such as long term health insurance, many elderly homeowners preserve their housing equity to self-insure.
Munnell et al. (2007) using a survey conducted on 2,673 homeowners aged 50-65, reported that nearly half of the respondents who claim not planning to tap their housing equity in retirement list “insurance against living and health expenses” as the reason.

Hancock (1998) do not support the potential beneficial effects of reverse mortgage. The study examined the impact of equity release scheme on the net income of the older homeowners in Britain and found that increased income was not significant for some of the oldest homeowners.

Olivia S. Mitchell and John Piggott (2004) in a research study, “Unlocking Housing Equity in Japan”, explored the feasibility of developing the reverse mortgage market in Japan. The study reached several conclusions. First, it showed that Japan offers an environment conducive to the development, implementation, and encouragement of reverse mortgages. Japanese senior citizens command relatively high levels of home equity by international standards. Consequently, this demographic group could expect substantial value from unlocking home equity with a reverse mortgage. In addition, the decline in Japanese fertility over the last few decades implies that older households will have fewer children. This means, the elderly could curtail their supply of bequests to the next generation and use their home equity for consumption purposes during their lifetimes.

The study also concluded that the use of reverse mortgages could alleviate some of the financial strain that population aging imposes on the Japanese economy and budget. Evidence suggests that many older Japanese have quite high levels of home equity, notwithstanding the recent decline in real estate prices in that nation. At the same time, Japanese life expectancy rates are also among the highest in the world. The high life expectancies combined with very low fertility means, that the Japanese retirement systems face almost certain future insolvency. Releasing equity in housing through reverse mortgages could be the best mechanism to improve consumption, reduce government pension liability and mitigate the demand for long-term care facilities in Japan.

Stucki (2005) in an article titled, “Using Reverse Mortgages To Manage the Financial Risk of Long-Term Care” examined the use of reverse mortgages to help impaired
elders in US to continue living in their own home. The analysis was based on the 2000 Health and Retirement Study and data from the housing and mortgage industries. The analysis in this paper suggests that with an estimated $2.1 trillion tied up in home equity, this asset has the potential to dramatically increase the ability of seniors to pay for long-term care at home. Demand for long-term care service under the Medicaid program is growing so fast that it will bankrupt state budgets unless another form of financing is found. This research suggests that use of home equity, particularly through a reverse mortgage, can be an important retirement resource to help impaired elders pay for long-term care services in the home and thereby fill some critical gaps in nation's long-term care financing system.

National Council on the Aging, USA (2004) in a report titled, “Use Your Home to Stay at Home: Expanding the Use of Reverse Mortgages for Long-Term Care: A Blueprint for Action”, made estimates of the number of seniors who could benefit from reverse mortgages, the potential savings for the medicaid and recommendations on promoting their use. The research report was based on proprietary data on 20,329 current holders of reverse mortgages and its comparison with publicly available data from the 2001 American Housing Survey of the U.S. Census Bureau. It was also based on 100 telephone interviews of seniors and 100 adult children of seniors to learn about consumer attitudes toward the use of reverse mortgages. The key findings of the report were:

- Almost half (48 percent) of homeowners age 62 and older (13.2 million) are candidates for using a reverse mortgage for long-term care at home. By liquidating their housing wealth through reverse mortgages, these candidates would be able to access $953 billion through Home Equity Conversion Mortgage loans.

- Older households could receive $72,128 on average from a Home Equity Conversion Mortgage to pay for immediate needs.

- Popularising reverse mortgages could save Medicaid from $3.3 billion to $5 billion annually by 2010, representing 6 to 9 percent of total projected annual Medicaid expenditures.
Chia N.C. and A.K.C. Tsui (2005) assessed the viability of reverse mortgage as an instrument to finance retirement expenditures for the ‘asset-rich and cash-poor’ elderly Singaporeans. Some local private insurance firms in Singapore are already providing reverse mortgage but the market has remained thin with very few users. In Singapore there is deliberate public policy to encourage home ownership. To achieve this, the government has over a long period subsidised the house prices and allowed the easy withdrawal of provident fund savings to finance the purchase of public housing. Due to these policy measures 85% of Singapore’s population resides in public housing with 93% of the public housing residents owning their residential units. As a consequence house property has become most important non-financial asset for Singaporean’s.

While the provision of early withdrawal from the provident fund savings has helped in the housing finance, it has also diluted its original intent as a retirement saving scheme. This has reduced the accumulated amount available for retirement needs of most retirees and has created a sizeable class of ‘asset-rich and cash-poor’ households. Unlocking this substantial housing equity has become an important issue to support the old age consumption in Singapore. The simulation results from the study suggest that focus of public policy should shift from providing houses to providing reverse mortgages. Findings also indicate that property values are inadequate to support retirement expenditure at 70 percent replacement ratio. However, if the homeowners are willing to lower their expectation to 54 percent, then it could be achieved through a reverse mortgage scheme provided by the public supplier.

SEQUAL(Senior Australians Equity Release Association of Lenders) study (2008) conducted a national telephone survey in 2007 of approximately 1,000 Australians aged 60 years and above in order to assess their knowledge and perception of reverse mortgages. It found that old Australians lack knowledge about financial matters. Most respondents in the survey did not know much about the ongoing fees associated with aged care. They had heard of reverse mortgage but had no clear idea of what it actually is. The studies found that large majority of seniors came to know about reverse mortgages by advertisements through TV, magazines and radio. This suggests that media coverage is important channel to promote awareness
of reverse mortgages. While 78% of respondents were aware of reverse mortgages, only 40% knew the basics of the product. These findings suggest that more needs to be done in educating consumers about the actual features of reverse mortgages.

Due to negative coverage in media many eligible seniors have become a lot more apprehensive about reverse mortgages in recent years. The results of the study suggest that the growth in reverse mortgage market is being driven mainly by middle-income consumers who have been the biggest beneficiaries of the property boom in recent past.

Rachel Onga (2008) investigated the extent to which reverse mortgages can improve the economic well-being of elderly Australian homeowners. The findings from this paper indicate that the scope for reverse mortgages to improve economic well-being is considerable in Australia. Senior property owners who are likely to receive the maximum gain from reverse mortgages are very elderly, single female having significant housing equity. However, in areas where residential property price appreciation is slow, people who enter reverse mortgages face the risk of being left with little housing equity to bequest or draw when need it most.

Centre for Retirement Research (CRR) at Boston College (2009), in a new research found that more than 60 percent of households could face the risk of being financially unprepared for retirement. Their latest analysis of the National Retirement Risk Index (NRRI) examined, how not using home equity could increase the risk of U.S. households not in a position to maintain their pre-retirement standard of living in retirement. The research showed that even after the recent financial crises, home equity still remains a major financial asset and can significantly impact retirement security. How the future retirees decide to use their home equity could determine how well they live in retirement.

In India, number of articles and studies based on demographic projections and surveys have indicated a great potential for reverse mortgage (Bardhan and Barua, 2003; Rajagopalan, 2006; Vaidyanathan and Venkataraman, 2006; Celent, 2008; Iyer and Tripathi, 2009). They have made a strong case for popularising reverse mortgage as a significant retirement financing option for the growing senior citizen population in India.
Bardhan and Barua (2003) observed in their study that as per census data, between 1991 and 2001, India's population grew by about 21 per cent, while the number of households grew by about 27 per cent from 151 million to 192 million. This indicates that families are becoming smaller in size. The number of dwellings during the same period grew by about 28 percent from 195 to 249 million. The number of households who own their dwellings rose to 166 million from about 130 million. It is also assessed that about 16 million houses are locked up and are not let out because of archaic laws that discourage renting of premises.

The government has been giving significant tax concessions for house building in the last few years in the form of rebate on payment of interest on loan as well as principal repayments. This coupled with a decline in the interest rates on home loans has led to substantial investments by individuals in the housing sector. Given the low returns from investments in financial assets in India, a large percentage of the savings of the household sector is being invested in the housing sector. The increasing life expectancy and decreasing family size is taking our country to a situation similar to the one prevailing in the western countries where there are a large number of aged people who are house rich but cash poor. This is particularly true for the middle class senior citizens residing in the metro cities. The potential for reverse mortgage in India is therefore quite high. Popularising this option could promote many welfare enhancing factors like old age security, a spurt in economic activity in the form of new constructions and additional mortgage business for the banks.

Shah (2005) in a study on Indian pension reforms observed that after 1993 India has made good progress on poverty elimination for those who can work. But the likely poverty of the continuously rising aged population is the next important issue. India has been experiencing the breakdown of traditional support structures, where the aged people in the family used to live with their children and get support from them. An important factor that has affected these traditional relationships is geographical mobility of the young population. Young and working people are increasingly finding
employment at places which are distant from their parent’s home. This is making it difficult for the retirees to live with their children in old age.

India does not have a comprehensive old age income and social security system. Two pension mechanisms exist at present. These are the civil servants’ defined benefit pension, which covered about 26 million workers and the other is the ‘organised sector’ system run by the Employees Provident Fund Organisation (EPFO) which covered about 15 million workers. These two systems together cover just 11% of the workforce. The remaining fraction of the workforce i.e. 89% lies in the ‘uncovered sector’ and has no formal pension system. Even this limited coverage is producing significant fiscal stress. Many advanced countries, which have liberal pension systems, are now burdened with pension-related debt of over 100% of GDP.

Asher (2007) in a paper on “Pension reforms in India” argue that both the level and pace of aging are going to provide significant challenges for Indian planners. The challenge of financing the retired life of the rising aged population will be greater if the current retirement age of 60 is not increased. As women life expectancy is higher, greater feminization of population is taking place. Making provision for financing of post retirement life therefore ranks high in social priorities. The paper also stressed the need to promote financial and pension literacy.

Rajagopalan (2006), explored the prospects for reverse mortgage (RM) products in India. Developed countries presently are facing severe budgetary pressures in sustaining their current universal and liberal old age social and income security programmes. Looking at the projected population of the aged, developing countries too are on that path. These budgetary pressures would create a massive demand for financial products suited to the elderly. These should provide for safe investment avenues, systematic liquidation of illiquid assets to finance consumption and managing the longevity and inflation risks. As bulk of the savings of aged people on retirement is typically locked in their residential house property, reverse mortgage could become an important option to increase the incomes of the elderly. Demographic projections indicate that reverse mortgage
could have good prospects in India, starting with urban areas of Kerala, Tamil Nadu, Goa, Chandigarh and possibly all metros.

**National Housing Bank (2006)** commissioned a research before launching this product and found that there were 3.87 million house-owning individuals above 65 years in India in March 2006. It estimated the market size for the scheme in India to be Rs 5,000 crore.

**Vaidyanathan and Venkataraman (2006)** have concluded that households are better off investing in a house during the asset accumulation phase as compared to investing in financial assets. The reason for this is because there are tax breaks on both interest payable on housing loan as well as loan repayment. At the same time, ownership of the home acts as a hedge against house rent appreciation. Post retirement, at the asset decumulation stage, the Reverse Mortgage is a good option of providing old age support. They have made a strong case for the introduction of reverse mortgage in India.

**Celent (2008)**, a global consultancy firm in a report titled, ‘Reverse Mortgage Market: Early Days for India’, examined the opportunity and challenges associated with this product from the lender’s perspective. The report observed that senior citizen population in India is growing rapidly due to lower fertility rates, improved healthcare, and better nutrition. The senior population is estimated to become 117 million by 2015, growing from the current population of 87 million. This represents a huge opportunity for the reverse mortgage loan market. The report estimated the Reverse Mortgage market size at around 6 million households with a total of US$113 billion home equity by 2015 across both urban and rural India.

The report highlighted that the living arrangement among seniors indicates a sizable market opportunity for this product. The report observed that 80 per cent of senior citizens in India live with their children, while only 15 per cent either live alone or just with their spouses. This 15 per cent is expected to grow to 25 per cent by 2015. The report concluded that though there is great potential for this market, but it required the building of an ecosystem that would make the product more viable for lenders in an Indian context. There is
lot to be done by regulatory institutions and lenders before this product makes any significant progress in India.

Iyer and Tripathi (2009) in a study titled, “Assessment of Reverse Mortgage Products in Indian Market”, made an attempt to gauge the potential for reverse mortgage market by conducting a primary survey and then projecting the results of the same along with demographic trends. They conducted a sample survey between the last quarter of the year 2007 and the second quarter of 2008 in Delhi and the adjoining National Capital Region (NCR). This was a stratified sample survey as the respondents were chosen on the basis of their age to be at least 58 years. This was done only because the concept of RM was likely to be appealing only at this age or later. Sample size was 200 respondents.

They found that majority of the respondents in their sample were eligible for reverse mortgage loan. Contrary to expectations, the bequest motive was found to be not very strong. More than half the respondents indicated that the main source of their monthly income was pension. Three fourth of the respondents were satisfied with their current level of income. More than two third of respondents had not heard about reverse mortgage, indicating a very low awareness about the scheme. When explained about the concept, 90% respondents expressed interest in it but surprisingly only 10% said that they will definitely use it.

They noted that due to increasing population and proportion of old aged, India is likely to have about 28 million eligible borrowers by 2016. They estimated the potential for this market to be close to $500 billion by the end of the current decade. They concluded that Reverse Mortgage Loan scheme has a tremendous potential as the requirement for it exists as well as increasing. Their primary survey results have shown that the target population not only needs but is also reasonably interested in it. The Government of India wish to promote it because other social security systems are insufficient. The scheme was found to be advantageous to all the stakeholders i.e. borrowers, lenders and the government. The study also identified the opportunities and threats associated with this loan scheme.
2.3.3 Risks, Pricing and Insurance Aspects of Reverse Mortgage

An important feature of reverse mortgage design is that the borrower or their legal heirs should never owe the lender more than the resale value of the home. This is known as ‘non-recourse’ clause in the loan agreement. Due to this clause, the success of reverse mortgage programme will depend on the future levels of mortgage debt and property values.

This feature often gives rise to concerns of adverse selection and moral hazard. Moral hazard risk arises because it is believed that a borrower may have little or no incentive to maintain property, once the accumulated loan balance approaches property value. The risk of adverse selection arises because it is believed that reverse mortgage option is mostly used by homeowners who are expected to live unduly long. Over this long period most loan balances will grow to more than property values thereby causing a huge loss to lender. Some of the studies have shown concern that adverse selection and moral hazard will operate in a manner so as to cause a possible loss to lender by reducing the collateral value below loan balances on due date. The lenders would either limit the amount of loans or charge an interest rate premium to counter the moral hazard and/or adverse selection risk. (Syzmanoski, 1990; Miceli and Sirmans, 1994; Shiller and Weiss, 2000; Caplin, 2002).


Edward Szymanoski, Jr. (1994) analyzed the risk associated with reverse mortgage and presented a pricing model for the HECM mortgage insurance. The main risk on the loan for a lender is that the loan amount can be more than the property value at some future date. The model developed by Szymanoski presents a good analytical tool for pricing the HECM mortgage insurance.

Boehm and Ehrhardt (1994) developed a valuation model that quantified the interest rate risk inherent in fixed rate reverse mortgages. The study showed that interest rate risk of reverse mortgages was greater than that of either a typical coupon bond or a
regular mortgage. Therefore, it is important that a lender in reverse mortgage transaction should consider changes in future interest rates.

Davidoff (2006) used American Housing Survey data to show that homeowners over 75 spend less on routine maintenance of their house property than younger owners of similar homes. The study observed that in practice, the moral hazard problem is mitigated because borrowers remain the residual claimant of the house value, and also because lenders are insured against the risk that the proceeds from the sale of property fall short of the loan balance. This was contrary to the earlier held general view that moral hazard problem on home maintenance could make lenders think twice before entering the reverse mortgage business.

Davidoff and Welke (2007) found advantageous selection in the government insured reverse mortgage program in US. Earlier many studies had pointed that reverse mortgage markets may suffer from adverse selection. As reverse mortgage loans are not due until the borrower dies, sell the house, or permanently moves out, people who know that they are going to stay in their homes for a long time will find reverse mortgages more attractive than others. In this study HECM borrowers were found to exit their homes at a faster pace than the general population. The authors suggest that property price appreciation may explain observed advantageous selection.

Wang, Valdez and Piggott (2007) argue in their paper that due to continued increasing longevity, the market for reverse mortgages has matured. However, various risks involved in reverse mortgages, especially the longevity risk component, has restricted the development of the product to some extent. In this paper, they have suggested using securitization to deal with the longevity risk to the lender. Their results indicate that the mortality securitization is a good method to control the longevity risk in reverse mortgages. They found that through the securitization transaction, the lender can achieve a long run protection with little premium.

Bishop and Shan (2008) examined all Home Equity Conversion Mortgage (HECM) loans that were originated between 1989 and 2007 in the US and insured by the Federal Housing Administration (FHA). They showed how characteristics of HECM loans and HECM borrowers have evolved over time. They conducted numerical simulations on
HECM loans to show how termination risks, property price appreciation and choice of payment schedules could affect the profitability of the HECM program. Their results suggest that profits are sensitive to assumptions made about the loan termination rates and property price appreciation rates. They found that although, HECM program has positive expected profits in the long run, the simulations result exhibit that a significant drop in house property prices for the recent borrowers could cause considerable losses in the short run. They have suggested that policy makers should practice caution while predicting future profitability of reverse mortgage loans. They advised against accepting the ongoing demand for reducing the current insurance premium on HECM loans, to reduce the overall cost associated with these loans.

Nishimura K. G. (2010), Deputy Governor, Bank of Japan, in a research paper titled, “Population Ageing, Macroeconomic Crisis and Policy Challenges”, found a high correlation internationally between asset market bubbles and demographical changes. Japan, United States, Spain and Ireland are examples of countries recently affected by the financial crisis. In these countries, the formation of asset market bubbles appears to coincide with a peaking inverse dependency ratio, which is the ratio of the working population to the non-working population. Meanwhile, busts in asset markets appear to occur when the inverse dependency ratio declines noticeably. The relative abundance of young people was found to coincide with sharply higher property prices. In contrast, the relative abundance of aged people was found to be leading to lower property prices. If this model has a reasonable explanatory power, we should expect movement in residential property prices to coincide with the movement in the inverse dependency ratio.

This favourable demographic background (increasing inverse dependency ratio) in India might be the reason for the excessive optimism in the real estate sector leading to heavy investment and long period of sustained increase in property prices in all the metros. But with declining fertility and increase in longevity, India too will experience a significant rise in its elderly population and decline in its working population in next 15-20 years leading to decrease in inverse dependency ratio.
If the above analysis has predictive power, that could be the time for the property price bubble to burst. This scenario could pose a significant risk for the lenders in reverse mortgage market. As these are very long term products, it is possible that by the time most loan agreements have run a good period and started redeeming themselves either due to end of tenure or death of property owner, we could see a major downward correction in property prices, possibly causing a major loss to lender. The loan amounts in such a scenario could grow to significantly more than the property values. The lender must remain conservative and be watchful of every movement in property prices for the sake of its own long term solvency.

Michael and David (2010) in their research paper titled “Risk Based Capital and Pricing for Reverse Mortgages Revisited” argue that product providers need to assess the risks in offering reverse mortgage products. The study observed that it is important to consider the product sensitivity to future uncertainties like possible interest rate fluctuations because recent financial crisis showed that interest rate spreads can increase dramatically. The study used a vector autoregressive model for financial variables like interest rates and house prices based on Australian data.

2.3.4  Retirees Attitude towards Home Ownership, Borrowing, Financial Independence and Leaving an Inheritance

Limited research has been done on the senior’s attitude to borrowing. Mason and Bearden (1980) found that one-third of older respondents believed that using credit to buy something is a bad practice. Nelson (1980) in a survey of Wisconsin homeowners aged 65 and above showed that three-fourth of the respondents preferred getting on with less income than taking a loan. Huck (1987) ascertained that older consumers do not generally like buying on credit.

Kotlikoff and Summers (1981) estimated that about 80 percent of household wealth is inherited, indicating thereby that bequests are an important component in aggregate wealth accumulation.
Families and individuals in the United States and many other Western European countries view owning a home as superior to living on rent for social and psychological reasons (Apgar 2004). But the growth of new forms of home equity loans has made borrowing against home equity easy, fast and inexpensive activity (Canner et al. 1998).

Leviton (1998) used interviews with elderly homeowners to analyse their process of decision making in respect to housing, financial options and reverse mortgage. She found that most homeowners wished to leave a financial inheritance to their family and therefore look upon reverse mortgage as a last resort.

2.3.5. Borrowers and lenders Experiences with Reverse Mortgage

A considerable amount of research has been done in US to identify the problems that could limit the use of the reverse mortgage program for seniors (Rodda et al. 2000, Caplin 2001). These typically include:

- High upfront loan costs.
- Limits on the maximum size of the loan.
- Lack of awareness leading to misconceptions about loan features

It was suggested that addressing these problems could increase the appeal of reverse mortgages for the retirees.

Andrew Caplin (2001) gave a good survey of the reverse mortgage market in the U.S. with particular emphasis on the history, prospects and problems associated with the reverse mortgage market. The study drew attention to the psychological, program level, regulatory, fiscal and legal obstacles to further spread of reverse mortgage. These were referred to as the ‘inertial forces’ affecting innovative financial products. Some such problems identified by the study were:

- Very high transaction costs: However, with growing volumes and increased awareness there is declining trend in these costs.
• Risk of moral hazard: As the borrower is responsible for home maintenance, he may show less interest in it with decrease in his equity. Also, it may not be easy to enforce the foreclosure clause due to borrower failure to maintain the property. Negative publicity and potential litigation could make it very painful, difficult and goodwill damaging for the lender.

• Less equity for emergency: As home equity is an important part of precautionary savings, if a homeowner has substantially used this equity through reverse mortgage, his ability to meet unforeseen expenses could be seriously impaired.

• Aversion to debt: Many retirees could be simply reluctant to take on debt against a house on which they have spent so much of their lifetime saving to build.

• Low fees paid to loan originators: This leads to lack of motivation to aggressively market the product.

In UK one of the major reasons found for reluctance to use reverse mortgage lied in the loss of state income support entitlement and other benefits that can be withheld from a UK citizen who uses this loan facility (Huan et al. 2002).

**Bardhan, A.D. and S. K. Barua (2003)** in an article, “Home Equity Conversion: Prospects in India”, observed that the problems with reverse mortgages could come from both the demand, as well as the supply-side. On the demand side, borrower faces conflict of interest between the desire to maximise the lifetime consumption and wish to bequeath homes to the children. There is also considerable uncertainty about future preferences of the retirees. There is a very high level of risk aversion, when a decision in relation to the mortgage of primary residence is to be taken. These factors play an important part in restricting demand. On the supply-side, the lender is faced with moral hazard issues relating to maintenance of the house, as the borrower may be losing equity in it over time. Another problem faced by the lender is related to complicated risk profile of this product. A range of uncertainties like expected future home value, borrower’s life expectancy and interest rate movements could make the optimum pricing of the product quite difficult.
Olivia S. Mitchell and John Piggott (2004) in a research study, “Unlocking Housing Equity in Japan”, concluded that these products will be appealing only when the regulatory infrastructure within which they operate is appropriately developed. Appropriate policy initiatives are also needed like exempting reverse mortgages from capital gains tax and transactions tax, along with making annuity income flows non taxable. In addition increased information flows would also be required regarding new and existing housing trades and borrower’s credit worthiness which could permit the securitization of housing loans. Reinsurance mechanisms should also be established to offer protection to lenders against crossover risk. In Japan, the demand for reverse mortgages will be dampened by declining residential housing values as well as low interest rates and long life expectancies.

National Council on the Aging, USA (2004) report, identified many barriers to greater use of reverse mortgages in US. These were found to be:

i. **Product features**: High up-front costs and apprehensions about loan features deter many prospective borrowers.

ii. **Consumer attitudes**: Many elders wish to preserve home equity to meet various needs, like making a bequest, ensuring a comfortable place to live or protecting themselves against long term care expenses. Many seniors prefer to use home equity by selling their homes when confronted with long-term care expenses rather than taking reverse mortgage.

iii. **Government policy**: The study found few government incentives to encourage seniors to use home equity for long-term care.

iv. **Lack of awareness**: Although reverse mortgages are easily available, very few eligible seniors use them because most of them do not know about them.

The report recommended the following policy changes to improve market for reverse mortgages:

i. Increased educational efforts to increase target group awareness and acceptance of reverse mortgages.
ii. As this is a complex product, it calls for increased consumer protections with defined standards of disclosure for lenders as well as improved counselling for old age and often vulnerable borrowers.

iii. Attempt should be made to reduce the cost of these loans by designing new products with improved features. Additional government incentives in the form of paying some or all of the closing costs could motivate many senior homeowners to consider this option.

Chia and Tsui (2005) while assessing the viability of reverse mortgage in Singapore concluded that social dimensions like bequest motive and psychological dimensions like reluctance to mortgage the home are significant obstacles to the success of reverse mortgage. If such social and psychological norms continue to prevail, the demand for reverse mortgage may remain thin even with the government support.

In many studies, consumers have expressed lack of confidence in the product. This could possibly be due to the fact that statutory requirements of lending institutions regarding the obligation to provide some information to consumers, is simply not respected. The advice on equity release products is often inadequate. For instance, recent research by the Financial Services Authority (FSA) in the United Kingdom (2005) shows that more than 70% of lenders, do not collect enough information about their clients to assess the suitability of product for them. Also, more than 60% of advisers do not advise their clients about the negative aspects of equity release products.

Australian Securities and Investments Commission (ASIC) report (2007) based on detailed interviews with 29 borrowers who took out a reverse mortgage loan found that the borrowers were in general satisfied with the reverse mortgage loan they had taken. Some responses to interview questions however suggested areas where problems could arise in future. Some borrowers could not clearly understand the trade-off between getting funds now and having less in the future. Most of borrowers did not understand the working of reverse mortgage. Few of the borrowers were found to have done any long-term planning about how their financial needs might change
over the next 10 to 15 years. ASIC has a role of consumer protection in cases of use of credit facilities. Reverse mortgage also fall under its jurisdiction.

In a SEQUAL (Senior Australians Equity Release Association of Lenders) study (2008), the 14 respondents with a reverse mortgage were generally very positive about the product. When asked how the reverse mortgage changed their life, almost half of the respondents stated that the product improved their lives significantly despite concerns about little equity left to access in later life. Respondents’ family and friends were in general supportive of their decision to use home equity, with almost three quarter of respondents saying that their close relations had a positive attitude towards their obtaining the loan. The majority of respondents answered in affirmative when they were asked whether they would recommend a reverse mortgage to their friends. It was observed that many eligible elders due to lack of awareness may have misconceptions about reverse mortgages and thus may be unwilling to explore such an option.

Canada’s ‘Consumer Union’(2007) research report titled, “The reverse mortgage : for an optimum control”, submitted to Industry Canada’s Office of Consumer Affairs, tried to judge the senior citizens awareness of different aspects of reverse mortgage, problems associated with reverse mortgages and to determine if current controls sufficiently ensure consumer protection. The report observed that the Canadian reverse mortgage market is in its infancy at present. But due to an aging population, rising property values and inadequate elderly income, there is a great potential for this product. The research was based on an online survey of 1000 people across Canada, who were homeowners and aged 60 and above.

The survey revealed that the targeted consumers were, by and large, aware of the product’s existence, through the media. However, those who claimed to know very little about it, represent more than three-fourths of respondents. Certain aspects like the size of the reverse mortgage loan and the methods of repayment were known to the majority of respondents. But the more negative aspects of the product like applicable interest rates, how the interest accumulates, associated costs and
responsibility of the owner for taxes were known to less than one-fourth of those responding.

Given a choice, most respondents preferred sale over reverse mortgage. About half the respondents said that the reverse mortgage would not be advantageous for them. One-fourth responded that this method of increasing their income would be beneficial. More than three-fourths of respondents indicated that the information about the pros and cons of reverse mortgage was not clear or was incomplete. Consumers opting for a reverse mortgage typically do so because they wish to continue living in their house. The reverse mortgage is a new, complex and risky product, whose user is an elderly person, generally considered to be more vulnerable due to an isolation, poor health or age. The report recommended that it was necessary to control the reverse mortgage market to ensure that complete information is provided to seniors interested in the product. The report further recommended the following steps:

- Lenders offering reverse mortgage should provide information about all the positive and negative aspects of the product.
- It should be mandatory for the borrower to consult an impartial financial counsellor before closing the deal.
- Loan with accumulated interest should never exceed the value of the property with which it is secured.
- Reverse mortgage deal shall never prematurely force the borrower from his home.

Centre for Retirement Research (CRR) at Boston College (2009) research study expressed the opinion that “Financial services firms need to acknowledge that existing reverse mortgages are often complicated and expensive and that the industry needs to develop innovative approaches to ensure that retirees have easy and efficient access to their equity.” In addition, the report says that “protecting home equity for their kids may be a luxury that future retirees can ill afford as social security replaces a smaller share of pre-retirement incomes”.

American Association of Retired Persons (AARP) Public Policy Institute (PPI) research report (Redfoot et al., 2007). This report presents the results of the first
nationally representative survey of reverse mortgage shoppers in US. The sample included older homeowners who have gone through reverse mortgage counselling and either took out a loan or decided against it. This study provides the first comprehensive look at consumer interest in reverse mortgages, their experiences with lenders and counsellors, why do some consumers decide against these loans, how loan proceeds are used and whether reverse mortgages meet the borrower needs. The report reached five main conclusions:

i. Federal Housing Administration (FHA) Home Equity Conversion Mortgage (HECM) program has been successful in creating the foundation for the financial infrastructure of the reverse mortgage industry.

ii. Ninety-three percent of borrowers in the survey stated that the reverse mortgages that they have taken had a positive effect on their lives.

iii. Loan costs were found to be too high. Two-third of borrowers stated that these costs are high. These high costs were cited as the main reason for deciding against a reverse mortgage loan.

iv. Consumer awareness and confidence in reverse mortgages is low. Most consumers stated that they do not know much about these loans. Due to lack of awareness, misunderstandings about certain aspects of reverse mortgages were common.

v. The study concluded that more research was needed on how seniors uses of reverse mortgages change over time and also on the likely long-term impact of these loans on their financial well-being.

Han B Kang (2010) in the paper titled “The Cost and Benefit of Reverse Mortgages” used empirical data to show high growth of reverse mortgages in US in last decade. They have concluded that reverse mortgages have substantially grown in popularity although the growth has slowed in recent years. A significant drawback of the loan was observed to be high transaction costs such as a loan origination fee, closing costs, a mortgage insurance premium, servicing fees, etc. These expenses could be relatively costly if the loan amount is small.
Rajagopalan R. (2006), in a paper titled, “Reverse Mortgage Products for the Indian Market: An Exploration of Issues”, has expressed the opinion that it is a complex product for both lender and borrower. Its complexity exposes a lender to several risks like mortality risks, interest rates risks and property value risks. At the same time it is a complex product for a vulnerable elderly borrower, creating fears of debt burden, eviction and inability to bequeath property. Legal, taxation and other regulatory uncertainties also play a role in restricting demand. Other problems could relate to availability of secondary data relevant to reverse mortgage. These include mortality amongst the elderly, current home ownership rates amongst the elderly, trends in appreciation in home value and long term interest rates. The paper recommends that further reverse mortgage specific research should be undertaken to enable design of products suited to local conditions.

Kasbekar (2008) in an article related to failure of reverse mortgage in India has observed that on the basis of demographic projections the number of senior citizens would be 140 Million by 2016 and 220 Million by 2030. This point towards the huge potential for reverse mortgage. He opined that the scheme has failed mainly because of confusion relating to tax treatment. Even the banks are not sure how they are going to account for the accrued interest while giving these loans. We have borrowed this concept from the west but we should understand that our culture, traditions, customs are different. The product must be suitably adjusted to meet local conditions to create wide acceptability.

Desai (2010) did a study to measure the potential for reverse mortgage loan in India. It was based on a sample survey of senior citizens in Vadodara, Gujarat. It concluded that since Indians are too much emotionally attached to their house, they are not likely to accept this product. At the same time most elders wish to leave a legacy for their heirs. The banks, too, have many apprehensions about this product. It is because of such apprehensions that banks are not seriously pushing this product. The present status of the scheme shows that it is nowhere near the expected level. Although most banks have formally announced the scheme but the volumes have been very low.
2.3.6. Demographic Factors and Choice of Product Features

A number of research studies have focused on the borrower’s characteristics in terms of age, sex, income, property value, location of property, family composition etc., and whether these characteristics have any effect on the choice of the product and its accompanying features.

Case and Schnare (1994) in a US study evaluated HECM borrower characteristics, including the determinants of product choice, using a sample of approximately 2,500 loans. As there are different payment options provided to the borrower, they calculated the probability of a borrower choosing each payment option as a function of age, family composition, property value, property location, and other characteristics. Their findings revealed that younger borrowers were more likely to elect the option of tenure payments. The relationship between income and payment option was found to be not strong. Single women or couples were more likely to choose credit line payment option than single men. High value property owners were found less likely to choose credit line option. They found a strong demand for reverse mortgage among elderly homeowners but observed that growth of the programme was adversely affected by shortage of qualified mortgage counsellors. Some legal and regulatory barriers were also found to be affecting demand.

Fratantoni (1999) research paper tried to explain the determinants of reverse mortgage product choice. It concluded that reverse mortgages have a great potential. But to realise this potential, the product should be suitably designed to meet the needs of the target group. The data set for this research consisted of 17,000 HECM government insured loans that originated between 1993 and 1997 in US. The simulation model developed for the research showed that if the retirees are mainly concerned about the impact of unavoidable expenditure shocks on their living standard, they are likely to be better off with a line of credit plan, which would give them immediate access to a large sum of money, rather than adding a small annuity amount to their income.

Reverse mortgages are theoretically seen as best option that could supplement the monthly cash flows of retirees much like pension. But the evidence from the U.S. Department of Housing and Urban Development’s (HUD’s) Home Equity Conversion Mortgage (HECM) program provides a different picture. The majority of borrowers
have shown their preference for line-of-credit payment option as the annuity payment associated with a reverse mortgage is quite small. The credit line payment option can provide immediate access to a substantial portion of housing equity. The theoretical and empirical findings in this research paper show that credit line payment option is the preferred choice for a majority of elderly homeowners.

**McConaghy (2004)** provide a very good overview of the government insured HECM program in US since its inception in 1989. He used the HECM data from 1989 to 1999 to identify borrower characteristics associated with repayment patterns. HECM repayment rates were compared with repayment rates among non-HECM elderly borrowers. An attempt was made to also analyse, whether refinancing with a HECM made sense. The results revealed that more than 60 percent reverse mortgages (HECMs) were repaid in less than 10 years. It was found that HECMs repayments were faster than non-HECM sample studied. On the issue of refinancing with HECM, it was observed that though refinancing would have increased borrowing amounts for majority of borrowers, it could lead to loss of equity because of significant transaction costs.

**Seunghyul Ma and Yongheng Deng (2006)** in their study titled “Insurance Premium Structure of Reverse Mortgage Loans in Korea” compared the reverse mortgage loans structured as constant monthly payments to those structured as graduated monthly payments which are indexed to the growth rate of consumer prices. They found that for the younger borrowers, the graduated monthly payment is better and for the old borrower, the constant monthly approach is more efficient. Sensitivity analysis of the reverse mortgage pricing models was conducted based on a set of scenarios with different house price appreciation rates, interest rates, estimated loan termination rates and costs of reverse mortgage. The sensitivity analyses confirmed that the younger borrowers are more sensitive to the change of loan terms. The study has suggested a model of reverse mortgage programme in Korea similar to government insured House Equity Conversion Programme in the US.

In a **SEQUAL (Senior Australians Equity Release Association of Lenders) study (2008)**, when respondents were asked whether they preferred a fixed or variable rate loan, 30% of respondents were found to be indifferent. Of the remaining respondents, 58% preferred fixed rates while 12% favoured variable rate loans. Most seniors
wished to protect as much equity as possible from their home. As much as 62% of respondents wished to protect more than half of their property value. For a majority of respondents a ‘no negative equity guarantee’ feature was an important part of loan agreement. For 42 percent respondents, ‘protected equity feature’ was an important feature that ensures passing on to legal heirs a guaranteed percentage of the property’s value when the loan is repaid. The other two most important product features were considered to be the interest rate and fees associated with reverse mortgage.

Shan (2009) used HUD data on all HECM loans made in US from 1989 to 2007. In all a sample of 375,392 observations were used. Each loan record had demographic information on the borrower, property, amount and terms of the loan. Her data analyses revealed a number of findings:

- Single males and single females were more likely than married couples to purchase reverse mortgages.
- A high growth rate in the demand for reverse mortgages was coming from younger elderly homeowners.
- Borrowers choosing line-of-credit payment plan, male borrowers, and borrowers with high property values terminate their loans sooner than other reverse mortgage borrowers.
- Loans with credit line plans were more likely to be assigned to HUD as compared to term or tenure plan. Loans with line of credit payment option therefore likely to be associated with higher risks of financial losses.
- Increase in house property prices have a positive effect on the demand for reverse mortgage loans.

2.4 Research Gap

Although there is considerable research work on the various aspects of reverse mortgages, most of the work has been done in the developed world especially US. India is the first developing country to have launched this unique product and has till date a very limited experience with it. Very limited comprehensive research has been done in India on this topic. Nevertheless, a large number of articles and write ups are
available on which the present study has relied. Most of the research work done in the
developed world also focuses on one or the other aspect of reverse mortgage.

In our country, no major survey work has been done to elicit the opinion of the senior
citizens who are eligible to use this loan facility. We have no information about their
awareness level, their retirement planning, their source of information about this loan
facility, their attitude towards financial independence, debt and bequest motive, their
apprehensions about the product and their thinking about its various social, cultural
and economic aspects. Also there has been no study to focus on the supply side of the
reverse mortgage. In this context, it is important to study the perceptions of the
institutions that are associated with the supply of reverse mortgage. These were major
research gaps in this field. The present research study based on a survey of senior
citizens and institutional respondents is a modest attempt to cover these gaps.

2.5 Summary

This chapter presented a review of literature on the reverse mortgage. This was
important to identify the areas that need to be researched. It discussed the evolution of
the product internationally. An extensive review of literature is then presented to
enhance the existing level of understanding in this area and to identify the issues that
need to be researched. The review of literature has been organised in this chapter on
the basis of broad issues connected with reverse mortgage, on which the research has
already been done either in India or abroad. Based on literature review, significant
research gaps are identified that provide focus to the current study.