CHAPTER – 2
REVIEW OF LITERATURE

During the last one decade there has been significant demographic change in India's population due to globalization and improved medical facility and lifestyle. The fall of joint family system and rise in nuclear family system has brought new dimension to the care and welfare of Elderly. The population of aged people above 60 yrs as on 2009 is estimated at 90 million, i.e. around 8% of total population. According to UN the population of 60+ in 2050 will be around 20%. Life expectancy has increased 60% in last 60 years from 42 yrs in 1950 to 69yrs in 2009.

Housing wealth constitutes most of the non-pension wealth of the elderly population. The problem that many elderly homeowners face is how to tap this housing wealth for consumption without selling the house and moving. One possible solution to this problem lies in a relatively unusual financial instrument called the reverse mortgage, which allows the consumer to spend the equity while continuing to live in the house.

Although reverse mortgages have been in existence for more than a decade, their acceptance among consumers and financial institutions has been slow. Among the barriers to acceptance so far has been the lack of consumer familiarity with the product, the high cost of originating these loans, the lack of liquidity and diversification for lenders, unfavorable required accounting treatment, regulatory and legal uncertainties, and concerns over consumer protection. Nevertheless, as solutions to these problems are gradually worked out, the reverse mortgage may prove to be a financial product of choice for many elderly homeowners, especially in the future when the numbers of elderly increase relative to the population as a whole.

Not so long ago, old age was believed to be a demographic phenomenon reserved for the rich countries of the world. But population aging is now recognized as a potent demographic trend not only in developed nations, but also in the developing world. As a result of this worldwide aging trend, retirement systems in many countries have begun to face financial stress. The problems faced by these nations are not uniform, nor are their old-age program reform efforts identical in structure and intent. Nevertheless, their ultimate goals are generally the same: to create an environment in which promised old-
age benefits are made more affordable, efficient, and equitable. All this prompting many governments to introduce innovative schemes like reverse mortgage for social security of old age people.

Reverse mortgage as a concept is not a recent one. There is evidence that as far back as 400 years in Europe, investors purchased homes from elderly homeowners and allowed them to continue living in the house for the rest of their lives, without them being liable for any rent payments.

Equity Release Products (ERPs) generally relate to either a Reverse Mortgage Product or a Home Reversion Scheme (Terry & Gibson 2006).

According to Rajagopalan (2002), many countries face budgetary constraints in terms of sustaining old-age income and social schemes. He argues that government’s inability to provide such schemes at the level required, combined with the quality of life that elderly people now expect, will fuel a massive demand for financial products tailored to the elderly. These would need to be safe and may involve systematic liquidation of assets to finance consumption, the managing of longevity and inflation risks, and the imparting of liquidity to illiquid assets. ERPs are well positioned to provide this (Rajagopalan 2002).

In many developed countries, Home Equity Release Products (ERPs) have been promoted as a means of accessing equity locked up in a residence, particularly after the holder of the property has retired (Gibler & Reed 2003). Research shows that debtfree property forms the major part of most elderly people’s net assets (Caplin 2000; Actuarial Profession 2005). However, despite this wealth of property ownership, many elderly people do not have sufficient income to meet their retirement needs, leading to the phrase ‘Asset Rich, Income Poor’ (ASIC 2005). ERPs have been developed to address this dilemma and are designed to provide elderly people with income while using the equity they have in their homes as security.

Reverse mortgages are designed for elderly homeowners to access their home equity while continuing to live in their homes (Bartel, Daly & Wrage 1980; Gibler & Reed 2003). Most often, a reverse mortgage is described as an annuity to the homeowner for the length of time that he/she remains in the house.
Mayer and Simons (1994) draw comparisons with normal mortgages: A reverse mortgage allows the elderly homeowner to borrow against the equity accumulated in the home, without moving or being forced to sell the house. Unlike a conventional mortgage where the homeowner makes periodic payments to the lender, a reverse mortgage provides payments from the lender to the homeowner. The loan is repaid with interest when the borrower sells the house, moves permanently, or dies.

The main advantage of a reverse mortgage over other means of tapping home equity lies in its repayment schedule. In contrast to conventional second mortgages or home-equity lines of credit, a reverse mortgage does not require the homeowner to make payments of interest and principal during the term of the loan. Since the elderly homeowner may need to tap home equity precisely because his/her income is insufficient to cover living expenses, it is likely that he/she would not have the income to make payments on a second mortgage or a home-equity line of credit (Mayer & Simons 1994).

The amount of money that can be borrowed by means of a reverse mortgage generally depends on the borrowers’ age and the value of the home. Typically, the older the borrower and the greater the home value, the more funds can be made available via loan advances (Redfoot, Scholen & Brown 2007).

Reverse mortgages are a financial product that is similar to home equity loans except that the borrower does not pay back the loan until she dies or permanently moves out of the house. They were first introduced about 20 years ago. The most common type of reverse mortgage loans is the Home Equity Conversion Mortgage (HECM), insured by the Federal Housing Administration (FHA) and constituting over 90% of all reverse mortgage loans originated in the U.S. market. A HECM loan is a reverse mortgage secured by the borrower’s home equity. In a forward mortgage, the borrower’s home equity increases over time and her mortgage debt decreases over time. In a reverse mortgage, on the other hand, the borrower’s home equity declines over time and her mortgage debt grows over time. Congress established the Home Equity Conversion Mortgage (HECM) program in 1987 and authorized the Department of Housing and Urban Development (HUD) to administer the program. The first HECM loan was made in 1989. Since then, the HECM program has been the dominant reverse mortgage product in the United States.
Housing wealth is often the largest non-pension wealth component for many elderly homeowners. The 2004 Survey of Consumer Finances (SCF) data suggest that for 27.8% of homeowners aged 62 or above, housing wealth represents at least 80% of their total wealth. In addition, 13.3% of homeowners aged 62 or above have a house-value-to-income ratio of at least 10. Economists believe that reverse mortgages have the potential to increase consumption of house-rich but cash-poor elderly homeowners while allowing them to continue living in their homes.

From its inception in 1989 to the end of 2007, out of tens of millions of eligible homeowners, only about 400,000 loans have been originated through the HECM program. A number of factors have been suggested in explaining the small size of the reverse mortgage market, including but not limited to high costs, regulatory and legal barriers, moral hazard and adverse selection, financial awareness and literacy, perception of housing equity as a safety net for large medical expenses, bequest motives, and the difficulties associated with reverse mortgage securitization. On the other hand, the reverse mortgage market in recent years has experienced significant growth. In the early 1990s, only a few hundred HECM loans were originated each year. In contrast, over 100,000 reverse mortgage loans were originated through the HECM program in 2007 alone. The researcher has examined all HECM loans that were originated between 1989 and 2007. All 18 years of HECM loan data has been taken as basis for secondary data. (Reverse Mortgages: A Closer Look at HECM Loans, Tonja Bowen Bishop, Hui Shan, September, 2008)

William A. Phillips and Stephen B. Gwin (1992) paper have attempted to identify the actuarial considerations that go into the design, pricing and reserving of reverse mortgage as a product. It explain that “reverse mortgages allow older homeowners to convert their home equity into cash without having to sell their homes..” and “There are three kinds of reverse mortgages: term, split-term and tenure..”. The paper described five types of risk normally exist in entering into a reverse-mortgage-lending operation viz. Length-of-residency risk, Interest rate risk, General home appreciation risk, Specific home appreciation risk and Expense risk.

In addition researchers depicted that the appraisal of the home's value can be a source of conflict. Because all increase in the value of the home goes to the lender, an
understated appraisal at loan origination increases the shared-appreciation fee and thereby increases the profit and margins for the lender. On the other hand, the customer has a great incentive to argue for a higher appraisal, because it would increase the monthly amount received from the lender. Thus, disagreements are likely and add conflict to the sales process. Likewise, at loan termination the lender receives the maximum amount of money when the appraised value is as high as possible, while the borrower is benefited by a lower appraisal. Even in a fair appraisal, the borrower often perceives that the lender has taken too much fee. For this reason, the federal reverse mortgage demonstration, as well as some state laws, has limited the amount of shared appreciation that the lender can receive. William A. Phillips and Stephen B. Gwin (1992) concluded that reverse mortgages have a unique set of design considerations and require sophisticated pricing, marketing, administrative, and asset management strategies to ensure the profitability of the product and the future solvency of the lender.

Scholen provides an excellent discussion of reverse mortgages from the viewpoint of a consumer advisor. He not only compares features of various reverse mortgages but also identifies alternatives to reverse mortgages and describes how a decision to enter into a reverse mortgage is made.

Garnett and Guttentag provide a good description of shared-appreciation reverse mortgages. In a 100 percent shared-appreciation reverse mortgage, the lender would receive principal repayment and accumulated interest (usually at a fixed rate) plus the entire increase in the home's value from the date of origination to the date the loan is repaid.

Ibbotson and Siegel demonstrated that real estate has near-zero correlations with stocks and long-term corporate bonds and very high correlation with inflation. They also discuss the relatively low standard deviation of annual changes in residential housing prices. Because risk charges and option costs increase with volatility, the actuary can use such information to measure the relative size of the various risks in a reverse mortgage and to help devise strategies to hedge these risks.

An approach that takes into account interest sensitivity is discussed by Diventi and Herzog. Their stochastic simulation approach explicitly takes into account many of the possible risks in calculating the amount of money available to a homeowner for a
given interest rate. Whatever methodology is used for pricing, it is critical that the actuary not price by considering only averages. Much of the risk costs arise from the inevitable deviation of individual home values from their expected values, even if the assumed averages are accurate.

An empirical distribution function including both risks could be developed based on a stochastic simulation like the one discussed by Diventi and Herzog. Each reverse mortgage product design will need its own reserve formula that reflects the product's specific repayment provisions and guarantees, such as shared appreciation, equity conservation, and selling expenses borne by the lender.

Benjamin proposes that the value of the house be used to pay for all the future living expenses of the older homeowner regardless of whether he/she spends the rest of his/her life in the house. Benjamin's ideas are for residents of Great Britain. Of course, there are major differences in the health care systems and the real estate markets of Great Britain and the U.S.

Housing wealth is often the most important wealth component for many elderly homeowners in the United States. Reverse mortgages allow elderly homeowners to consume housing wealth without having to sell or move out of their homes. However, very few eligible homeowners used reverse mortgages to achieve consumption smoothing until recent years when the reverse mortgage market in the U.S. has witnessed substantial growth. Tonja Bowen Bishop and Hui Shan (2008) examined all Home Equity Conversion Mortgage (HECM) loans that were originated between 1989 and 2007 and insured by the Federal Housing Administration (FHA). The paper characteristics of HECM loans and HECM borrowers have evolved over time, compared borrowers with non-borrowers, and analyzed loan outcomes using a hazard model. In addition, the researchers conducted numerical simulations on HECM loans that were originated in 2007 to illustrate how the profitability of the FHA insurance program depends on factors such as termination rates, housing price appreciation, and the payment schedule. The analysis performed in this paper serves as the first step to understand the implication of recent growth in the reverse mortgage market. The results suggested policy makers who are evaluating the current HECM program should practice caution in predicting future profitability.
Originally the concept of reverse mortgage was originated from France (Huan & Mahoney, 2002, p. 29) and imported to United States in the 1970-1980s where it became known as reverse mortgage (Bhuyan, 2011, p. 8-9; Desai, 2010, p. 84; Godfrey & Malmgren, 2006, p. 35; Huan & Mahoney, 2002, p. 29). The largest market for reverse mortgage is found in the United States. Canada, United Kingdom and Australia also have a reverse mortgage market which is growing but these markets are still relatively small compared to the market in the United States (Creighton et al., 2005, p. 428). There is also potential in European countries such as Belgium, Germany, France and the Nederland which is due to the demographic structure where an ageing population is evident and where home ownership is common (Huan & Mahoney, 2002, p. 34-35). Although there is a clear potential of reverse mortgage it has not developed as fast as expected (Caplin, 2000, p. 1) which could depend on limited acceptance by the consumers (Bhuyan, 2011, p. 18).

Reverse mortgage as a research area is still relatively unexplored and much is still to be discovered. Among those previous studies that has been done many has focused on estimating potential demand for reverse mortgage on the market (Leviton, 2001, p. 3; Merrill, Finkel, & Kutty, 1994, p. 259; Shan, 2011, p. 745) and studied why the market size is not as large as expected (Caplin, 2000, p. 1; Leviton, 2001, p. 3; Shan, 2011, p. 745-746; Venti & Wise, 1991, p. 393). Much of the research regarding the potential demand for reverse mortgage has been conducted in the United States (Kutty, 1998; Shan, 2011). Other countries where studies has been conducted in order to study the potential demand for the product is for example Hong Kong (Chou et al., 2006), Australia (Hickey, 2012; Ong, 2008; Reed, 2009a) and India (Desai, 2010; Kaur Brar, 2011). Considering the fact that the majority of the studies are made in an American context it would be interesting and necessary to further investigate reverse mortgage in a different geographical area.

A number of prior studies have been of descriptive nature in the sense that they only described the features of reverse mortgage and its pros and cons (Godfrey & Malmgren, 2006; Huan & Mahoney, 2002; Kaur Brar, 2011; Nakajima, 2012). Other previous reverse mortgage studies have been focusing on whether or not reverse mortgage improves economic well-being. Somewhat contradictory conclusions have been
found regarding to what extent reverse mortgage can affect the economic well-being of the elderly borrowers (Ong, 2008, p. 62). Two researchers that have been studying this aspect of reverse mortgage and economic well-being are Mayer and Simons (1994a, 1994b). They found that reverse mortgage borrowers economic well-being could increase by over 20 percent in the United States (Mayer & Simons, 1994b, p. 246). On the other hand Venti and Wise (1991) concluded that reverse mortgage borrowers economic well-being would only improve very little in United States (Venti & Wise, 1991, p. 393). These contradictory conclusions where made using the same dataset which further highlights the contradictory nature in these conclusions made my Mayer and Simons (1994b, p. 246), and, Venti and Wise (1991, p. 393). Ong´s findings which was done on the Australian reverse mortgage market suggest that reverse mortgage will improve economic well-being significantly (2008, p. 74). Other studies regarding reverse mortgage are focusing on poverty alleviation for the elderly borrowers. In the United Kingdom research implicate that poverty will only be reduced marginally with the use of reverse mortgage (Hancock, 1998, p. 249). This could be compared to the findings made by Leviton (2001, p. 3), Mayer and Simons (1994b, p. 253) and Kutty (1998, p. 113) which states that poverty will be reduced considerably when using mortgage. This also shows additional contradictory findings in reverse mortgage research and further emphasizes the need for additional research.

The majority of the reverse mortgage research has been conducted by using quantitative methods and also with an economic and demographic perspective. This indicates the need for more qualitative research in reverse mortgage to be conducted in order to get a deeper understanding in the area compare to the more general and broad contributions of the quantitative studies (Leviton, 2001, p. 3). Quantitative methods have been used in a variety of reverse mortgage studies, for example when comparing different retirement income strategies (Malhotra, 2012) and reverse mortgage as a supplement to retirement income (Rose, 2009). Surveys are also a common used method to gather information in reverse mortgage research (Chou et al., 2006; Desai, 2010; Mayer & Simons, 1994b; Merrill et al., 1994; Rasmussen, Megbolugbe, & Morgan, 1995, p. 8). One survey investigated demand and acceptance of reverse mortgage in India (Desai, 2010). Another study used a survey to find out potential demand in Hong Kong and tried
to estimate how many citizens in Hong Kong that were willing to apply for a reverse mortgage (Chou et al., 2006). Surveys regarding attitudes on reverse mortgage has also been conducted (Leviton, 2001) but not in the same extent as the surveys focusing on demand.

When evaluating retirement saving adequacy, economists and financial planners have to decide whether housing equity should be included as consumable wealth. Because housing is both a consumption good and an investment good, the correct treatment of housing equity may not be obvious in the retirement saving context. For example, while Mitchell and Moore (1998) add housing equity to household net worth, Bernheim et. al. (2000) exclude it in their calculation. More recently, Sinai and Souleles (2008) suggest that the fraction of “consumable housing equity” ranges from 60% to 99% for elderly homeowners depending on their age.

To what degree we should consider housing equity as retirement savings depends on to what degree elderly homeowners are willing and able to consume their housing wealth. It is well known that many seniors prefer staying in their homes for as long as they can. For example, in a survey sponsored by the American Association of Retired Persons (AARP), 95% of persons 75 and older agreed with the statement “What I’d really like to do is stay in my current residence as long as possible.” A series of studies by Venti and Wise (e.g. Venti and Wise (1989, 1990, and 2004)) 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. If elderly homeowners have strong psychological attachment to their homes, then reverse mortgages, which generate additional income and liquid wealth for elderly homeowners while allowing them to continue living in their homes, may be welfare-improving for many households.

A number of studies have estimated the potential size of the reverse mortgage market. Venti and Wise (1991) analyze the 1984 Survey of Income and Program Participation (SIPP) data and find that a reverse mortgage in the form of annuity payments would substantially affect the income of the single elderly who are very old. Merrill et al. (1994) use the 1989 American Housing Survey (AHS) data to show that out of the 12 million elderly homeowners who own their homes free and clear, 800,000 could benefit substantially from reverse mortgages. Instead of looking only at the median
household and focusing on the income-increasing aspect of reverse mortgages, Mayer and Simons (1994) examine the whole distribution of elderly households and consider both income increases and debt reductions as benefits of reverse mortgages. As a result, they find a much larger potential market for reverse mortgages than previous studies: over 6 million homeowners in the U.S. could increase their effective monthly income by at least 20%.

In practice, the reverse mortgage market is much smaller than expected. For example, the HECM program represents 90% of the U.S. reverse mortgage market. During the first ten years since its inception, less than 40,000 loans were originated through the HECM program. On the demand side, a number of factors could have prevented reverse mortgages from becoming more popular among elderly homeowners. First, elderly homeowners with strong bequest motives may not find reverse mortgages attractive because reverse mortgages reduce the amount of wealth they can leave to their estates. However, Mayer and Simons (1994) estimate that more than 1.3 million homeowners have no children. For these homeowners, bequest motives are less likely to explain the lack of demand for reverse mortgages. Second, the probability of shouldering large medical expenses increases over time for the elderly. In the absence of other forms of protections such as Long-Term Care Insurance (LTCI), many elderly homeowners use their housing equity to self-insure.

Using a survey conducted on 2,673 homeowners aged 50-65, Munnell et al. (2007) report 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. Davidoff (2008) present a model suggesting that such behaviors may even be optimal. This self-insurance mechanism may explain why the elderly do not want to purchase the annuity type of reverse mortgages, but it does not explain why they do not want to purchase the Line of Credit (LOC) type of reverse mortgages. Third, certain features of the HECM program and its interaction with other welfare programs may be undesirable. For example, a HECM loan usually requires large upfront costs, the amount of home equity against which one can borrow is capped by the FHA mortgage limit, and the additional income received from a HECM loan may disqualify one from public assistance such as Supplemental Security Income (SSI) or Medicaid. Fourth,
reverse mortgages are complex financial products and can be particularly challenging to elderly homeowners. Conversations with players in the industry suggest that many senior homeowners have misconceptions about reverse mortgages. Lastly, the elderly may value owning their homes free and clear so much that they are averse to the idea of borrowing against their homes.

On the supply side, lenders face various obstacles as well. First, reverse mortgages are significantly different from traditional “forward” mortgages. Lenders with little experience in the reverse mortgage market often confront unfamiliar documentation requirements. For example, lenders who are accustomed to forward mortgages have to prepare different documents for reverse mortgages to satisfy the Truth-in-Lending Act requirements. As a result, lenders must designate reverse mortgage specialists among their employees. Because the HECM program caps origination fees charged by lenders, such a move is only economical if there is a sufficient volume of HECM loan origination. Another consideration is that different states have different regulations with respect to reverse mortgages. To comply with such regulations, lenders who operate in multiple states have to bear additional costs. In addition, due to the unconventional cash-flow pattern, reverse mortgages are difficult to securitize and finance. In fact, according to Szymanoski et al. (2007), HECM loans were not securitized until August 2006. Finally, the Fair Housing Act prohibits pricing loans based on sex, despite the fact the males and females impose very different mortality risks.

Besides the factors discussed above, economists have also recognized that reverse mortgage markets may suffer from adverse selection and moral hazard problems. Because reverse mortgage loans are not due until the borrower dies, sells the house, or permanently moves out, people who know they are likely to stay in their homes for a long time will find reverse mortgages more attractive than others. However, Davidoff and Welke (2007) find advantageous selection in the HECM program. In other words, HECM borrowers appear to exit their homes at a faster pace than the general population. The authors suggest that higher discount rate among the borrowers combined with housing price appreciation may explain observed advantageous selection. Furthermore, economists are concerned that the moral hazard problem on home maintenance would make lenders think twice before entering the reverse mortgage market. Davidoff (2006)
uses AHS data to show that homeowners over 75 spend less on routine maintenance than younger owners of similar homes. However, in practice, the moral hazard problem is mitigated because borrowers are the residual claimant of the house, and because lenders are insured against the risk that the proceeds from a home sale fall short of the loan balance.

Overall, most of the studies on reverse mortgages do not have loan-level data and therefore, have to rely on hypothetical borrowers (e.g. Venti and Wise (1991), Merrill et al. (1994), Mayer and Simons (1994), Sun et al. (2006), and Sinai and Souleles (2008)). Among the few studies that do look at loan-level data, Davidoff (2006) and Szymanoski et al. (2007) focus only on termination rates of HECM loans, and Case and Schnare (1994) and Rodda et al. (2000) analyze only the data from earlier years of the HECM program. Given that 88% of all HECM loans originated between 1989 and 2007 were taken out after 2000, the field calls for research using more recent data. This paper aims to fill the gap. It contributes to the existing literature in two ways. First, this paper performs comprehensive analysis on all HECM loans originated before the end of 2007. The evidence shown here provide useful information on how HECM borrowers are different from the general population and how the characteristics of these borrowers change over time. Second, we use numerical simulations to project outcomes of the loans taken out in 2007. Our simulation results demonstrate how insurance claims, HECM profitability and borrower costs depend on loan termination rates, housing price appreciation, and payment schedules. The high sensitivity of these outcomes to the underlying assumption advocate caution on the part of those design future HECM reforms.

As explained in Szymanoski (1994), designers of the HECM program made modeling assumptions to address uncertainty about the inflows and outflows associated with an insured loan, and then set program parameters to satisfy a zero-profit condition. To address interest rate uncertainty, the original HUD model uses the ten-year Treasury rate plus the lender’s margin as a risk-adjusted expected interest rate for the life of the loan. Future house prices are expected to follow a geometric Brownian motion process, with average nominal increases of 4% and a standard deviation of 10%. Loan termination rates are crudely approximated by multiplying age-specific female mortality
rates by a factor of 1.3.8 This model determined the age and interest-rate specific principal limit factors, or the fraction of the MCA available at origination, for all HECM loans in the FHA insurance program. Recent comparisons of empirical loan outcomes to the model suggest that the original assumptions about loan termination and HECM profits may be too conservative.

Szymanoski et al (2007) shows that actual loan terminations have occurred at a significantly faster rate than the HUD model anticipated. Further, an AARP survey found that large up-front costs contributed to many homeowners’ decisions to forego taking out a HECM loan. These differences are consistent with the findings of Case and Schnare (1994) and Rodda et al. (2000) that HECM borrowers are mostly from metropolitan areas.

In the early 1990s, projections of potential demand for reverse mortgages ranged from 800,000 older households (Merrill, Finkel, and Kutty, 1993) to more than 11 million (Rasmussen, Megbolugbe, and Morgen, 1995). A more recent study (Stucki, 2005) estimated the potential market at 13.2 million older households. Moving from the potential market to actual uses of reverse mortgages, however, has proven to be a very slow process. Only in the past few years has the number of loans grown substantially. Twenty years after the program was created, the federal Home Equity Conversion Mortgage (HECM) insurance program, which accounts for roughly 90 percent of all reverse mortgages, had insured only 345,762 loans by the end of fiscal year 2007. Of these, nearly one-third (31 percent or 107,367 loans) were insured in FY 2007 alone. Two-thirds (66 percent) were insured in the most recent three years of the program, FY 2005–2007 (U.S. Department of Housing and Urban Development, 2007b).

The Home Equity Conversion Mortgage (HECM) Insurance Demonstration was enacted in 1988. By implementing the first mortgage insurance program of its kind, FHA’s pioneering design effort had to address a number of challenges associated with pooling and pricing the combined risks of borrower longevity, interest rate variability, and property appreciation on a national basis—all with no direct experience data on the risks and performance of reverse mortgage loans. Perhaps as important in the long run as the development of the insurance model were the data that FHA collected and published on loan risks and performance through evaluation reports in 1992, 1995, 2000, and 2003
The most extensive and significant data came in a 2007 HUD report on the program’s financial performance over the entire history of the HECM program, from 1990 to 2006 (Szymanoski, Enriquez, and DiVenti, 2007).

Consumer awareness among individuals ages 45 and older increased from 51 percent who had heard of reverse mortgages in 1999 to 70 percent in 2007, according to surveys conducted by AARP. The share of respondents who knew someone with a reverse mortgage increased from 3 percent to 7 percent. But the share of homeowners ages 62 and older who indicated they had taken out a reverse mortgage remained constant at 1 percent, and the share of individuals ages 45 and older who indicated a willingness to consider a reverse mortgage in the future declined from 19 percent to 14 percent. A Harris survey (2007) found that reverse mortgages ranked last among various mortgage products in terms of respondents’ understanding of the product. Only 25 percent said they had favorable impressions of reverse mortgages, compared to 71 percent who reported favorable impressions of fixed-rate, forward mortgages.

Over time three major reverse mortgage products became available to consumers in the U.S. They are the Home Equity Conversion Mortgage Program (HECM), the Home Keeper reverse mortgage, and the Cash Account Plan. At present, a relatively new reverse mortgage, the “Senior Equity Reverse Mortgage,” is only available in Arizona, California, Delaware, the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Texas, and Virginia. All of the plans provide the borrower with lifetime occupancy of the home—“tenure” reverse mortgages. The availability of tenure reverse mortgages is likely the cause of the dramatic growth of reverse mortgages in the past few years.

**The Home Equity Conversion Mortgage Program (HECM)**

The Housing and Community Development Act of 1987 (P.L. 100-242) authorized the Home Equity Conversion Mortgage Program (HECM) in the Department of Housing and Urban Development (HUD) as a demonstration program. It was the first nationwide reverse mortgage program which offered the possibility of lifetime occupancy to elderly homeowners. As noted above, such mortgages are referred to as tenure reverse mortgages.
The borrowers must be elderly homeowners who own and occupy their homes. The interest rate on the loan may be fixed or adjustable. The homeowner and the lender may agree to share in any future appreciation in the value of the property. The program has been made permanent and the law was amended to permit its use for one-to four-family residences if the owner occupies one of the units. The borrower can choose from five payment plans:

- **Tenure**—equal monthly payments as long as at least one borrower lives and continues to occupy the property as a principal residence.
- **Term**—equal monthly payments for a fixed period of months selected by the borrower.
- **Line of Credit**—installments at times and in amount of borrower’s choosing until the line of credit is exhausted.
- **Modified Tenure**—combination of line of credit with monthly payments for as long as the borrower remains in the home.
- **Modified Term**—combination of line of credit with monthly payments for a fixed period of months selected by the borrower.

Prior law provided that the HECM loan may not exceed the Federal Housing Administration (FHA) mortgage limit for the area in which the property is located. The Housing and Economic Recovery Act of 2008, P.L. 110-289, establishes a national HECM limit equal to the conforming loan limit for the Federal Home Loan Mortgage Corporation (Freddie Mac). The mortgage must be a first mortgage, which, in essence, implies that any previous mortgage must be fully repaid either prior to the HECM or from the initial proceeds of the HECM. Prior to obtaining a loan, borrowers must be provided with counseling by third parties who will explain the financial implications of entering into home equity conversion mortgages as well as explain the options, other than home equity conversion mortgages, that may be available to elderly homeowners. To prevent displacement of the elderly homeowners, HECMs must include terms that give the homeowner the option of deferring repayment of the loan until the death of the homeowner, the voluntary sale of the home, or the occurrence of some other events as prescribed by HUD regulations. The borrowers may prepay the loans without penalty.
Borrowers are required to purchase insurance from FHA. The insurance serves two purposes: (1) it protects lenders from suffering losses if the final loan balance exceeds the proceeds from the sale of a home, and (2) it continues monthly payments to the homeowner if the lender defaults on the loan. At loan origination borrowers are required to pay an up-front mortgage insurance premium (MIP) of 2% of the maximum mortgage amount. In addition, borrowers pay an annual insurance premium of 0.5% of the loan balance. Borrowers do not directly pay the insurance premiums. Instead, lenders make the payments to FHA on behalf of the borrowers and the cost of the insurance is added to the borrower’s loan balance.

A lender may choose either the assignment option or the coinsurance option when originating the loan. Under the assignment option, HUD will collect all the MIP and the lender may assign the loan to HUD at the point that the loan balance equals the maximum HUD claim amount for the area. Under the coinsurance option, the lender may keep part of the MIP and forfeit the right to assign the case to HUD.

To date, data indicate that all lenders have chosen the assignment option. By choosing this option, effectively, lenders are shifting the collateral risk to HUD.

The American Homeownership and Economic Opportunity Act of 2000 (P.L. 106-569) amended the National Housing Act (12 USC 1715z-20) to waive the up-front insurance premium provided that the HECM proceeds are used to pay for long-term care insurance. The regulations to implement this change have never been finalized. This provision was eliminated by Section 2122 of P.L. 110-289.

When the home is eventually sold, HUD will pay the lender the difference between the loan balance and sales price if the sales price is the lesser of the two. The claim paid to the lender may not exceed the lesser of (1) the appraised value of the property when the loan was originated, or (2) the maximum HUD-insured loan for the area.

The Federal National Mortgage Association (Fannie Mae) has been purchasing the home equity conversion mortgages originated under the program.
The Home Keeper Mortgage
Since November 1996, Fannie Mae had also been offering its own reverse mortgage product: the “Home Keeper Mortgage.” This was the only conventional reverse mortgage that was available on a nationwide basis. Private lenders have developed proprietary reverse mortgage products but they are generally only available in a few states.

In September 2008, Fannie Mae announced that, after December 31, 2008, Fannie Mae will no longer purchase Home Keeper mortgages. Fannie Mae noted that it no longer sees a significant role for the Home Keeper mortgage in light of the expansion of HECMs.

The Cash Account Plan
Financial Freedom Senior Funding Corp., of Irvine, CA, offers the “Cash Account Plan” as a proprietary reverse mortgage product. The Cash Account Plan is available to seniors 62 years or older who own homes with a minimum value of $75,000. It differs from the two products above in that it does not offer the borrowers an option of getting monthly payments. It provides an open-end line of credit that is available for as long as the borrower occupies the home. The borrower can draw on the line of credit in full or part at any time; the minimum draw is $500. The unused portion of the line of credit grows by 5% annually. Eligible home types include owner-occupied single-family detached, manufactured, condominium, Planned Unit Development units, or one-to four-unit residences if one unit is owner-occupied. Borrowers are required to obtain counseling from an independent counselor prior to obtaining the loans.

A monthly servicing fee is automatically added to the loan. The interest rate charged to the borrower is equal to the current six-month London Interbank Offered Rate (LIBOR) plus 5 percentage points. The rate is adjusted semi-annually, but the interest rate may never rise more than 6 percentage points above the initial rate.

The Cash Account Plan is available in two forms: the Standard Option and the Zero Point Option. Under the Standard Option, a borrower pays a loan origination fee that is equal to 2% on the first $500,000 of loan balance, 1.5% on the next $500,000, and 1% on the balance in excess of $1 million.

Under the Zero Point Option, the borrower pays no loan origination fee. Closing
costs, including third party costs and excluding state and local taxes, will not exceed $3,500. At closing the borrower is required to take a draw on the line of credit, and the minimum draw at closing is 75% of the line of credit. Subsequent draws have a minimum of $500. Full prepayment is permitted and, while there are no prepayment penalties, partial prepayment on the initial draw is not permitted for the first five years. The Zero Point Option is generally marketed to elderly homeowners with homes valued at $450,000 or more.

On June 18, 2008, Financial Freedom announced that it was suspending the Cash Account Plan.

This action was taken largely because of liquidity problems of IndyMac, the parent company of Financial Freedom.

**Senior Equity Reverse Mortgage**

In late 2006, Reverse Mortgage of America, a subsidiary of Seattle Mortgage, introduced “The Lifestyle Plan.” It was the first new reverse mortgage product to be introduced in nearly a decade. In 2007, Bank of America purchased the reverse mortgage products of Seattle Mortgage. The mortgages are being marketed as the “Senior Equity Reverse Mortgage,” and at present are only available in Arizona, California, Delaware, the District of Columbia, Georgia, Maryland, North Carolina, South Carolina, Texas, and Virginia.

Like the Cash Account Plan, the Senior Equity Reverse Mortgage allows homeowners age 62 and older to use some of the equity in their homes while continuing to live there. It is designed for owners of high-value homes, up to $10 million. Borrowers may choose to receive their funds in a single lump sum, in regular monthly installments, as a line of credit, or any combination of these options. So, unlike the Cash Account Plan, the Senior Equity Reverse Mortgage offers a monthly payment to borrowers.

The interest rate on the Senior Equity Reverse Mortgage is the six-month LIBOR Index, plus 2.95 percentage points. The interest rate may vary, but may not exceed 18%. Borrowers pay a loan origination fee of 1% of the home value but not more than $10,000. Borrowers also pay a monthly servicing fee of $25.

The proceeds from a Senior Equity Reverse Mortgage may be used to purchase a primary residence or a second home. The borrower would be responsible for a down
payment equal to the difference between the value of the new home and the amount of funds received from the Senior Equity Reverse Mortgage.

Cindy R. Stokes, 2010 study titled An Analysis of Reverse Mortgage Clients emphasized upon better understanding of the retirement preparedness of current seniors seeking reverse mortgages, which could lead to improved counseling services, early retirement intervention awareness, and encourage increased pre-retirement preparation. This study was unique in that it analyzed clients seeking counseling for a reverse mortgage rather than just the borrowers who originated a reverse mortgage. It also looked at their reasons for seeking the reverse mortgage. Younger clients were more likely to desire to pay off an existing forward mortgage; older clients were more likely to need increased income.

Regardless of the affordability pressures, many older Americans are unwilling or unable to downscale their housing (Apgar & Di, 2005). Because employer-sponsored pensions often make the difference between a retiree living comfortably compared to barely making ends meet, they are a vital source of retirement income. During the early 1980s, the majority of pension plans were traditional employer-sponsored defined benefit plans, which provide a benefit for life based on earnings and tenure (Munnell & Muldoon, 2008).


Lusardi and Mitchell (2007) have identified housing wealth as the key element of saving for many ready-to-retire Americans. They further found that most “older Americans do not plan to sell their homes to pay for additional retirement expenses”

With longer life spans, inadequate retirement savings, and increased debts, including mortgage and consumer debt, Moschis and Burkhalter (2007) identified “retirement income adequacy” as a major concern for current and future retirees.

The reverse mortgage allows homeowners to tap into their housing equity, the largest non-pension asset for most U.S. households, to help finance their retirement (Eschtruth et al., 2006); it converts home equity into liquid assets (Szymanoski, Enriquez, & DiVenti, 2007). Housing equity can be accessed by selling the residence, but retirees still need a place to live. It can also be accessed through a home equity line of credit, but
such lines usually require monthly repayments. Reverse mortgages are secured by the equity in the home, not by the borrower’s capacity to repay, and allows the homeowner to consume part of their home equity while still living in their home without the responsibility to make repayments (HUD, 2008a). It is depicted that Reverse mortgages are very expensive (HUD, 2008a).

A reverse mortgage is a loan against the borrower’s home that the borrower does not need to repay for as long as the borrower meets certain conditions. These conditions, among others, require the borrower to live in the home, pay property taxes and homeowners’ insurance, maintain the property, and retain the title in his or her name. Reverse mortgages typically are “rising debt, falling equity” loans, in which the loan balance increases and the home equity decreases over time. As the borrower receives payments from the lender, the lender adds the principal and interest to the loan balance, reducing the homeowner’s equity. This is the opposite of what happens in forward mortgages, which are characterized as “falling debt, rising equity” loans. With forward mortgages, monthly loan payments made to the lender add to the borrower’s home equity and decrease the loan balance.

Andrew D. Eschtruth, Wei Sun, and Anthony Webb, 2006 study Will Reverse Mortgages Rescue The Baby Boomers? analyzed the impact of fluctuating interest rates on performance of reverse mortgage in delivery security to retirees. The study depicted that at current interest rates, which are still relatively low, a household could receive about half of the value of its home through a reverse mortgage. While this amount can be significant for many retirees, it does not guarantee retirement security and, given fluctuations in interest rates, this amount is subject to considerable uncertainty.

David Sun and Michael Sherris (2010) work on Risk Based Capital and Pricing for Reverse Mortgages Revisited developed methodology to assess risk, pricing and capital requirements for reverse mortgage products for providers in the Australian market using Vector Autoregressive Model (VAR). The analysis shows that both termination rates and changes in investment return spreads have a significant impact on the level of capital required to insure against credit losses.
Makoto Nakajima and Irina A. Telyukova, 2011 paper entitled *Reverse Mortgage Loans: A Quantitative Analysis* analyzed reverse mortgage loans in a rich structural life-cycle model in retirement. The model indicated that the reverse mortgages are used by the borrowers to pay for medical expenses while remaining in their home and the HECM Saver, which is a recently-introduced reverse mortgage contract, pushes up demand for reverse mortgages.

Nakajima and Telyukova (2011) find that elderly homeowners become severely borrowing-constrained as they age, as it becomes very costly to access their home equity, and that these constraints force many homeowners to sell their homes, when faced with large expense shocks. In this environment, it seems that an equity borrowing product targeted toward the elderly would be able to relax that constraint, and hence benefit many homeowners. Empirical studies have come to similar conclusions. For example, Rasmussen et al. (1995) argue, using 1990 U.S. Census data, that almost 80 percent of homeowner households of age 69 or above should benefit from reverse mortgages. Using a more conservative approach, Merrill et al. (1994) find that about 9 percent of homeowner households over age 69 could benefit from reverse mortgage loans. Despite the apparent benefits, only about 1.4 percent of elderly homeowners were using reverse mortgages in 2009, although this represents the highest level of demand to date, as the take-up of reverse mortgages increased dramatically between 2000 and 2009.

Redfoot et al. (2007) explore better design of reverse mortgage loans by interviewing reverse mortgage borrowers and those who considered reverse mortgages, but eventually decided not to utilize them. Michelangeli (2010) uses a structural model with moving shocks and finds that, in spite of the benefits, many households would suffer from using reverse mortgages because of involuntary moving shocks.

Hurd (1989) estimated the life-cycle model with mortality risk and bequest motives and finds that the intended bequests are small. Ameriks et al. (2011) estimated the relative strength of the bequest motives and public care aversion, and find that the data imply both are significant. De Nardi et al. (2010) estimate in detail out-of-pocket (OOP) medical expenditure shocks using the Health and Retirement Study, and find that large OOP medical expenditure shocks are the main driving force for retirement
saving, to the effect that bequest motives no longer matter. Venti and Wise (2004) study how elderly households reduce home equity. Nakajima and Telyukova (2011) emphasize the role of housing and collateralized borrowing in shaping the retirement saving, and find that bequest motives and homeownership motives are key in accounting for the retirement saving puzzle, in addition to medical expense uncertainty.

Chambers et al. (2009) constructed a general equilibrium model with a focus on the optimal choice between conventional fixed-rate mortgages and newer mortgages with alternative repayment schedules. Campbell and Cocco (2003) investigate the optimal choice for homebuyers between conventional fixed-rate mortgages (FRM) and more recent adjustable-rate mortgages (ARM).

Yaari (1965), many explanations for the low demand of annuities are proposed. Dushi and Webb (2004) argue that individuals already have significant amount of annuitized wealth in the form of Social Security and Defined Benefits pension plans. Mitchell et al. (1999) find that annuity prices are too high compared with actuarially fair prices in the U.S. data. Lockwood (forthcoming) find importance of bequest motives and the inability of annuitized wealth to be bequeathed. Turra and Mitchell (2004) study the role of medical expenditure risks. A recent paper by Pashchenko (2004) investigates the relative importance of the existing explanations of the annuity puzzle.

Caplin (2002), reverse mortgage loans are beneficial for elderly homeowners since many of them fail to qualify for conventional mortgage loans because of income requirements.

Thomas Davidoff and Gerd Welke, 2007 research work on Selection and Moral Hazard in the Reverse Mortgage Market found that unlike non-borrowers, reverse mortgage borrowers react significantly to rising home values relative to outstanding mortgage debt by selling their homes. This excess sensitivity is not driven by very slow mobility among those close to default. While mortality rates for reverse mortgage borrowers exceed those for non-borrowers, the researchers found that the difference in mortality rates is small relative to the exit rates from home between HECM borrowers and the AHS comparison group.

de Meza and Webb (2001) argued that heterogeneity in risk aversion can make the insured a lower risk than the uninsured, and incompletely insured risk averters
undertake costly steps to avoid the low utility insured states. Chiappori and Salanié (2000), Finkelstein and McGarry (2003) find that older individuals who purchase long term medical care insurance are less likely to wind up in long term care than non-purchasers. The proposed explanation is that more risk averse consumers are likely both to seek insurance and to behave in a way that avoids the insured event. Cohen and Einav (2004) find complicated selection effects relating both to underlying probability of accidents and to risk aversion in the Israeli auto insurance market. Szymanoski (1994) and Rodda et al. (2000) suggest that those in ill health may find reverse mortgages attractive, so that borrowers may die quickly leave rapidly for nursing homes.

Ashley Bruner, 2009 thesis titled Only One CHIP to Count: The Reverse Mortgage Monopoly in Canada found that ‘Aging in Place’ (AIP) theory encouraging seniors to remain in their homes as long as possible increases the quality of life for seniors as well as presents concrete benefits for provincial governments.

The choice to remain in one’s home can impose significant costs on seniors; home modifications and home health care services are essential to AIP but their high cost is a barrier to usage. Home-owning seniors have a significant source of wealth that can ease the financial burden of AIP – the equity in their homes; however, this asset is not accessible without selling the home and relocating. This study investigates one solution to unlocking the equity in homes: reverse mortgages. Key findings in the study will inform the development and recommendation of policy options to strengthen the provision and use of reverse mortgages in Canada.

Homeownership is beneficial to both seniors and multiple levels of government. Not only do most seniors own their homes, but they wish to remain there for as long as possible, even if their health declines (Frank, 2002; CMHC, 2008; Sabia, 2008; Burnholt & Windle, 2004). The desire to remain in one’s home, despite deteriorating health or home conditions is commonly referred to as ‘aging in place’ (AIP) (Oswald & Rowles, 2006) AIP does not have a universal definition, but a broad understanding of this term is an elder adult “remaining living in the community with some level of independence, rather than residential care” (Davey, 2004, p. 46).

Remaining in one’s home rather than moving to institutionalized care such as a nursing home or hospitalization results in happier, healthier seniors (Chappell, 2004).
Health care use is most intensive and costly in the last years of one’s life (Canadian Institute for Health Information, 2005). The increased demand on health care in older age is due to natural health declines accompanying aging (Rotermann, 2006). Health promotion - “the process of enabling people to increase control over, and to improve, their health” (Ottawa Charter for Health Promotion, 1986, p. 7) is a preventative measure that can help decrease the demand for costly health services. Health promotion allows people to age well, reduce chronic conditions, and reduce costs to the health care system (Special Senate Committee on Aging, 2009). The healthier a senior is, the less they will require health care services. On average, seniors who remain in their homes and age in place have better physical, psychological, and clinical outcomes than those who live in institutional care settings – they are more independent and have a higher QOL (Marek 2005; Castle, 2001; Markus, 1971; Killian, 1970).

The Canadian study illustrates the nuanced and dynamic relationship between place and health for a senior. Seniors who move from their home to other accommodations such as nursing homes or assisted living facilities may have lower baseline health levels, so they may have a reduced life expectancy before their relocation (Orestis, 2007); this means that higher levels of mortality may not due to relocation, but rather the pre-existing declining health of the individual. Despite conflicting research, however, it is agreed that mortality rates are higher for seniors who are involuntarily relocated (Oswald, 2004); and that in general, those most at risk for involuntary relocation are frail seniors with declining health and financial status (Pruchno, 1988). Although seniors prefer to remain in their homes, aging presents a natural functional decline that may result in AIP being a risky course for seniors.

In general, studies agree that elderly single homeowners (80 years or older) benefit most from RM’s (Hancock, 1998b; Kutty, 1998; Kutty 1999; Venti and Wise, 1991). Likely, this is because older seniors typically receive a larger loan amount, and the tenure is shorter than younger seniors. This situation is beneficial because a shorter length of mortgage means a larger loan amount and less compounding interest. The literature also indicates that single elderly women (80+) are the primary users of RM’s. On average, women live longer than men; the life expectancy of a woman is 83 years while for men it is 79 (Statistics Canada: Life Expectancy, 2010). In living longer women are
more exposed to the financial and housing challenges in old age. RM’s are primarily used as a financial resource to address challenges of aging rather than for leisure expenses (Hancock, 1998b; Leviton, 2001; Morgan et al., 1996; Ong, 2008; Pierre, 2009). These demographic trends on RM’s, however, are not definitive.

The marketing of RM’s is done mainly through financial institutions, and the product receives little exposure in mainstream media (Reed, 2006).

Richard Reed and Karen M. Gibler, 2003 *The Case for Reverse Mortgages in Australia - Applying the USA Experience* found that the Australian reverse mortgage industry can benefit from the experience of overseas housing markets, especially in the USA, and tailor a product that will suit both the elderly household, the financier, and society at large. With rapidly growing superannuation and insurance funds, this appears to be an ideal opportunity to tap into the security of a residential mortgage whilst increasing the overall standard of living for our elderly Australians.

Even though the current Australian property boom has caused many people’s wealth to soar, numerous older homeowners now find themselves with greater assets but little cash income (Whittaker, 2002). Daily household expenses have also increased while many of these households have little or no flexibility built into their regular cash flow streams. A similar scenario also confronted many elderly households in the USA, although the market responded with a number of organizations offering reverse mortgages as a solution to this dilemma and the concept is gradually gaining acceptance (Peterson, 2002).

Both the interest and any shared appreciation component added to the loan balance are taxable as current income, even though the lender has not received any payments from the borrower (Boehm and Ehrhardt, 1994).

Lenders still face the risks of longevity, interest rate changes, and future property values (Szymanoski, 1994). The uncertainty of borrower longevity and tenure makes it difficult to estimate the timing of repayment and, therefore, the return the loan will yield. To avoid crossover risk, the loan amount must be set low enough to ensure the collateral will retain sufficient value to cover the lien as the property ages over this uncertain period (Rasmussen, Megbolugbe and Morgan, 1997). A moral hazard problem exists as the homeowner has little financial incentive to make expenditures for improvements or
maintenance that would help maintain the value of the property (Schillerand Weiss, 2000) and may be physically unable to do so. Though empirical research is yet to be undertaken in this area, as the equity level is diluted there may be a gradual decrease in the overall maintenance conducted by the homeowner. Over the long term this may have adversely affect the gentrification in a neighbourhood in a similar manner to a high proportion of rental properties, resulting in lower overall house values (Reed and Greenhalgh, 2002).

Longevity risk is a diversifiable risk that can be effectively managed through the pooling of a large number of loans. Then the lender or insurer can rely on mortality tables to estimate future loan terminations. Although one might expect an adverse selection problem, with borrowers expecting to live a long life opting for an annuity program, experience has shown that many borrowers are attracted to reverse mortgage programs specifically because they are ill (Szymanoski, 1994). As a protection against crossover risk in individual properties, lenders limit the initial principal on the loan to approximately 50 percent of the home value with the exact percentage dependent upon the borrower’s age and current interest rates (Szymanoski, 1994; U.S. HUD, 2000).

Researchers such as Palumbo (1999) find that precautionary saving for uncertain medical expenses helps explain the slow rate of dissaving among elderly families. If they take out a reverse mortgage and use the equity to pay for current living expenses, then the savings would not be there when needed. This may explain why research has revealed that homeowners tend to use reverse mortgages only as a last resort (Leviton, 1999). The opportunities for using reverse mortgages to pay for long-term care insurance, home modifications, and in-home care have not been fully explored or promoted to the aging population (Rasmussen, Megbolugbe and Morgan, 1997).

Researchers have argued that because a house is the principal asset passed on to heirs in the USA, a bequest motive prevents many older homeowners from considering a reverse mortgage (Mayer and Simons, 1994).

It has been demonstrated that reverse mortgages can potentially be a great benefit to an aging population, but it is important that the products are structured to meet the needs of this group (Fratantoni, 1999)

Deokho Choa and Seungryul Mab (2005) work entitled Payment Plans of Reverse Mortgage System in the Korean Housing Market paper examined the effects of reverse
mortgages on increasing the quality of life or the level of expenditure for the elderly homeowners in the Korean housing financial market. Trends of monthly advances of each payment methods showed the fact that the levels of constant monthly payments became higher than the levels of graduated payments in the former term, but after a certain time of contract period, about halfway of the remainder of the borrower’s expected life, the situation is changed and the levels of graduated payments become higher than the levels of constant monthly payments.

Korea has experienced the rapid increase in the number of elderly households and gradually approached the aging society, and social security system for them becomes a big social issue. Korean government recently tries to employ a reverse mortgage system as a social security system which is insured by the government (Cho, et al., 2004). This system is a loan against a borrower’s home that they do not have to pay back as long as they live in their own housing and which is the reverse type of the payment pattern of traditional forward mortgage.

Mayer and Simons (1994a) analyzed the potential of reverse mortgages to increase the income and liquid wealth of the elderly by identifying households with relatively high levels of housing equity and their studies showed a larger potential market for reverse mortgages than previous studies. Mayer and Simons (1994b) asserted that widespread use of reverse mortgages could reduce the pressure on the welfare system, thereby reducing transfers from the younger to the older generation. Case and Schnare (1994) evaluated the demand for the HECM program. Their findings suggested strong demand for reverse mortgages among “house-rich, cash-poor” elderly homeowners, either to supplement the deficient current incomes or to provide a reserve payment against unexpected lump sum expenses. Merrial, et al. (1994) estimated the potential size of the market for unrestricted reverse mortgages. Rasmussen, et al. (1995) estimated the potential demand for reverse mortgages among elderly home-owning households by using the 1990 U.S. Census Public Use Micro-data Sample. They found that there existed higher demand for reverse mortgages than that advanced in the studies of Mayer and Simons (1994a) and Merrial, et.al. (1994) in the primary market for reverse mortgages consisted of households with heads over age 69, housing equity exceeding $30,000, and no mortgage. Fratantoni (1999) showed that if the elderly, primarily concerned with the
impact of unavoidable expenditure shocks on their standard of living, were likely to be better off with a credit line plan, which gave them access to a large sum of money, rather than getting an additional fixed component to their income. Lim and Cho (1999), Cho and Ma (2004), Cho, et al. (2004) showed the fact that there also exist lots of potential demands for reverse mortgage to the elderly homeowners in the Korean housing market, and they noted that a reverse mortgage system would perform an important role to supplement current social security systems for elderly homeowners.

Several scholars noted the risks of reverse mortgage system. Boehm and Ehrhardt (1992) asserted that the cash flows of a reverse mortgage mirrored those of a life insurance policy in pattern, so the interest rate volatility of the life insurance policies could be hedged with reverse mortgages. Boehm and Ehrhardt (1994) developed and applied a valuation model that quantified the interest rate risk inherent in fixed rate reverse mortgages and showed that the interest rate risk of reverse mortgages was greater than that of either a typical coupon bond or a regular mortgage. They asserted that unless financial institutions measured the risk inherent in reverse mortgages correctly and hedge it appropriately, they were likely to experience unexpected volatility.

Szymanoski (1994) demonstrated how borrower longevity, interest rates and property value changed all affecting pricing, and why the HECM model focused on property value as the primary source of uncertainty. Chinloy and Megbolugbe (1994) developed a pricing model for a reverse mortgage by deriving the model’s optional structure and characteristics. One risk of default is that the borrower will remain in the house after the negatively amortizing loan balance exceeds the value of the house. The crossover default risk depends on the relationship between the negative amortization schedule and the behavior of house prices. They estimated the value of the crossover option. Quercia (1997) identified that older homeowners in general, those 62 years of age or older, experienced house value appreciation in line with assumptions of the HECM program. In contrast, housing-rich, income-poor homeowners age 71 or older experienced appreciation lower than assumed. They also found that FHA’s expected dropout rate was significantly lower than those estimated.

Eventually the HECM program offers several important protections for the borrower. First, in no case can the borrower be forced to sell the home to pay off the
mortgage loan. Second, regardless of the length of time before the borrower moves, dies or the house is sold, the borrower’s liability is limited to the value of the home because the reverse mortgage is a nonrecourse loan. Finally, the borrower is protected if the lender fails to make payments to the borrower, in which case the Department of Housing and Urban Development (HUD) will make the payments. The lender in the HECM program is eventually protected from these risks by FHA mortgage insurance (Rodda, et al., 2000).

The HECM plan also provides a wide array of cash advance choices and it permits borrowers to choose from several payment plans and to change payment plans at any time according their needs. Rasmussen, et al. (1995) asserted that the life-cycle hypothesis of consumption suggested a desire to draw down wealth holdings during retirement and a demand on the reverse mortgages to tap housing wealth, and a low-income elderly household with significant housing equity could substantially increase its income by drawing down housing equity in the form of an annuity. Frantantoni (1999) showed that if the elderly were primarily concerned with the impact of unavoidable expenditure shocked on their standard of living, they were likely to be better off with credit line plan, which gave them access to a large sum of money, rather than adding an additional fixed amount to their income. Rodda et al. (2000) reported that around two-thirds of the HECM participants chose the credit line as their payment option. Meanwhile, Case and Schnare (1994) reported that although the HECM provided borrowers with the flexibility to adapt the payment stream to their changing financial circumstances, the flexibility of the program tended to complicate its origination and servicing.

J.M. Luiz & G. Stobie research work is an exploration of demand and supply issues that affect the suppliers of Home Equity Release Products (ERPs) (both internationally and in South Africa). The study found factors such as increased life expectancy, decreased savings rates and changing attitudes towards debt are just some of the driving forces of demand.

One of the key driving forces in the development of the ERP market is the very high percentage of wealth that elderly people have tied up in property (Gardner 2003). Home equity is the major type of wealth held by most elderly people, and according to
the 1989 survey of consumer finances in the USA, more than 80% of retired households own their own homes (Williams & Kao 1997). Mitchell and Piggott (2004) claim that in most developed countries, enormous wealth is held in residential property. Sodha (2005) found that the number of pensioners who will be ‘income poor’ but relatively ‘housing-rich’ is set to grow over the next 10–15 years.

Mitchell and Moore (1997) and Dazinger, Van der Gaag, Smolensky & Taussig (1983) state that retirees will bear increasing responsibility for ensuring their own wellbeing in retirement. Davey (1998) found that in many countries the state is seeking to reduce its level of support for older people in the face of increasing aging populations. This means that greater responsibility for supporting retired people will shift to retirees themselves and their families.

Chen (2003) claims that the need for spendable cash among retirees is likely to increase, as more and more individuals of the baby boom generation face the risk of requiring long-term care in the next several decades. Chen states that converting home equity would seem to be a means of satisfying several desires. It can augment the income needed for health and long-term care, or for other needs or desires in later life. It can enable older adults to stay in their homes, providing substance to the often repeated ideal of ‘aging in place’. Davey (2005) argues that current older generations are traditionally financially conservative and risk adverse.

Rajagopalan (2002) claims that the basic source of risk facing suppliers is the unique problem of predicting accumulated future loan balances under a reverse mortgage at the time of origination. A reverse mortgage is a ‘rising debt’ instrument. Since reverse mortgages are non-recourse loans, even if the collateral property appreciates in value, it might still be lower than the loan balance at the time of disposal of the property. Insufficient return for the supplier is mentioned as a supply problem (Terry & Gibson 2006). Davey (2005) points out that the payment of annuities or lump sums is a major drain on the cash resources of the lender. This may present serious liquidity problems depending on cash flows, the range of other assets held and the likely maturity dates of the portfolio (which are difficult to predict).
Christopher J. Mayer and Katerina V. Simons, (1993) paper entitled *reverse Mortgages and the Liquidity of Housing Wealth* showed that the potential market for reverse mortgages is large. Financial institutions could also benefit from reverse mortgages, by using the product to hedge existing life insurance contracts and to maintain or develop new relationships with the sizable and growing elderly population. The growth of a market for reverse mortgages, however, will depend not only on the size of the potential market, but also on institutional constraints, the structure and attractiveness of private-sector reverse mortgage contracts, and consumer acceptance.

Venti and Wise (1989, 1990) argue that if elderly households wanted to reduce their housing equity, then those households would move to smaller houses. They show that elderly homeowners who have moved recently are as likely to increase as to decrease their housing equity, rejecting the hypothesis that high transaction costs associated with selling a house and moving leave the elderly with "too much" housing equity.

Others argue that the elderly might choose not to consume their housing equity, as they might do in the usual life-cycle model, because they intend to use this wealth as a bequest. Consistent with a strong bequest motive, several cross-section studies (Mier (1979) and Menchick and David (1983) are examples) show that wealth accumulation increases after retirement. Kotlikoff and Summers (1981) estimate that about 80 percent of household wealth is inherited—indicating that bequests are an important component in aggregate wealth accumulation.

Evidence also exists showing that the bequest motive is not very important in explaining individual savings behavior. The Kotlikoff and Summers estimates might not reflect the desired behavior of most elderly because of the skewed distribution of wealth and unintended bequests due to early death. Hurd (1987, 1990) attributes the cross-sectional evidence that the elderly continue saving after retirement to difficulties in detecting individual savings trajectories using aggregate data, especially given that wealthier households may live longer than their poorer counterparts. Using panel data, Hurd shows that changes in wealth (net saving) over time are similar for individual elderly households, both with and without children, and thus he rejects the hypothesis that the bequest motive is important in explaining the savings of the elderly.
Venti and Wise (1991) use the 1984 Survey of Income and Program Participation (SIPP) to estimate the impact of a reverse mortgage on the income and assets of homeowners age 55 and older. They find that the median elderly homeowner, even in the lowest third of the income distribution, would only have a small percentage increase in income from a reverse mortgage. Although they note that most elderly could substantially increase their liquid wealth with a lump-sum payment from a reverse mortgage, Venti and Wise conclude that the potential market for reverse mortgages is limited to single persons who are very old.

Merril, Finkel and Kutty (1992) use a different data set—the American Housing Surveys—and assume that the potential market for reverse mortgages is composed of households aged 70 or older, with annual incomes less than $30,000, Owning fully paid-off houses valued between $100,000 and $200,000, who have lived in their homes at least 10 years. They find that about 800,000 households in the United States meet those criteria, out of 12 million elderly homeowners aged 62 and older. Looking at metropolitan areas, the paper concludes that most of these elderly live in California and the Northeast, areas that have had large real increases in house prices.

The work of Liang Wang, John Piggott and Emiliano A. Valdez, 2007 entitled Securitization of longevity risk in reverse mortgages addressed one method of transferring and financing the risks associated with these products through the form of securitization. The results provide an indication of the economic benefits derived from developing survivor bonds to securitize the “longevity risk component” of reverse mortgage products.

The Kang (2010) work on The Cost And Benefit Of Reverse Mortgages explained that many elderly citizens have found great benefits associated with converting their home equity into a lump sum cash or periodic income. The loan is pretty easy to obtain since it does not require high underwriting standards such as job, income, other debt, credit history, etc. The significant drawback of the loan is high financing/transaction costs such as a loan origination fee, closing costs, a mortgage insurance premium, servicing fees, etc. These expenses can be relatively costly if the loan amount is small.

Edward Szymanoski, Jr. (1994) analyzes the risk associated with reverse mortgage and presents 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. The model developed by Szymanoski presents a good analytical tool for pricing the HECM mortgage insurance. Another study by David Rodda, Ken Lam and Andrew Youn (2004) discusses the low-cost refinancing issue of reverse mortgage. Their study presents a stochastic model in which interest rates and home values are allowed to change over time. The main conclusion of their stochastic modeling is that “low-cost refinancing would reduce the net asset value of the fund by 54% starting from the current low interest rates. Therefore, low-cost refinancing enhances the ability of senior owners to tap the equity in their house without unduly jeopardizing the soundness of the insurance fund.” (p.614, Rodda, Lam and Youn)

R. Rajagopalan, 2008 paper on Reverse Mortgage Products for the Indian Market: An Exploration of Issues found that demographic projections indicate that RM could have reasonable prospects in India, to begin with in urban areas of Kerala, Tamil Nadu, Goa, Chandigarh and possibly all metros. There are however no solid secondary data relevant to RM available. These include mortality amongst the elderly, current home ownership amongst the elderly, trends in appreciation in home value and long term interest rates. The research recommended that location specific assessment of market potential, documentation of legal and regulatory issues and real estate markets would be necessary for growth of RM.

Chandrasekar et al. 2007 explain that India has the potential for a significant market for reverse mortgage if its economy continues at its current pace of growth, leading to increase in prosperity, real estate prices, disposable incomes, life expectancy and decrease in fertility rates in the population.

Despite the potential for reverse mortgage, there are several issues that may slow its spread as a reliable and acceptable means of income generation. It is a complex instrument and exposes the typical uninformed elderly borrower to fears of a debt burden, eviction and inability to leave a legacy behind by way of a bequest. Further, reverse mortgage has been introduced only this year and thus many pertinent issues regarding legal covenants and safety nets for borrowers, tax treatment under reverse mortgage, and other regulatory uncertainties are yet to be formalised. There is no sufficiently comprehensive secondary database available that could be useful to construct the
appropriate environment for reverse mortgage. The real estate market is not mature in India and much longer term trends in home appreciation are required to accurately value homes.

Abhay Kumar, 2012 explain that merely making an Act in Parliament may not help our elders to live with pride; serious efforts need to be done by GOI, NGOs and financial institutions to create awareness about the product. Banks and HFCs with the help of NHB are required to market the product aggressively. The front staff of the banks and housing finance companies should be trained accordingly to deal with senior citizen. Government can also come forward to extend guarantee to the lenders as US government does. This will help the lender to disburse the loan generously. The culture of joint families is still prevalent in most parts of India, although their number has been decreasing. In many cases joint family culture persists even though members stay in nuclear family. In this scenario, many elders would like to transfer their house to their near and dear rather than going for RML. The product should be customized to suit Socio family relation of India.

Andrew Caplin, 2000 work entitled *The Reverse Mortgage Market: Problems and Prospects*, investigated on supply and the demand sides of the market for reverse mortgages. On the demand side, standard forces as transactions costs and moral hazard, and on less standard, yet arguably more profound, psychological forces and on the supply side, regulatory uncertainty, and its impact on the incentive to innovate were identified. The study suggest that encouraging innovation is particularly important in a market such as the reverse mortgage market, in which psychological inertia makes it hard to predict exactly which products will succeed, and which will fail.

While Venti and Wise (1991) argue that a 10 percent income increase is surprisingly low, their numbers come very far from suggesting that the market has no potential. Indeed Rasmussen, Megbolugbe, and Morgan (1995) use essentially the same procedure to show that even when attention is restricted to households sixty-nine or older with income less than $30,000, there are 3 million who would gain at least 25 percent from the annuity reverse mortgage. The potential for the reverse mortgage to raise consumption at the lower end of the income spectrum is noteworthy.
A second paper by Venti and Wise (1990) argues that if there is really such a large frustrated desire to reduce housing equity, then we should expect to see a large number of older households moving to smaller homes. They find that the actual number of movers is relatively low, and that of those who actually do move, as many increase housing equity as decrease its consumption rather than housing equity. Furthermore Sheiner and Weil (1992) when one looks at the "older" old, there is indeed a relatively quick decline in housing equity at the end of life. They also provide evidence that much of the housing equity that is released in a house sale gets used almost immediately for consumption purposes (for further elaboration see Megbolugbe, Sa-Aadu, and Shilling (1997) and Venti and Wise, this volume). This has led Skinner (1996) to hypothesize that the most important use of reverse mortgages may be to help release funds for emergency purposes, as when there is a health problem. Housing equity is a potentially important form of precautionary saving, but only if it is tapped when the bad contingencies arise!

Lusardi (1999) shows that many households save very little for retirement, and report not having given retirement much thought. To back up their claims, many of them report being unaware even of the level of their social security benefits.

O'Donoghue and Rabin (1999) characterize this form of "avoidant" behavior as following from a more general tendency to excessive procrastination when actions involve current costs and future benefits. Starting from very different theoretical viewpoints, the work of Becker and Mulligan (1997) and Caplin and Leahy (1997) also suggests that households may be especially unwilling to spend current resources to prepare for possible future aversive events. Giving attention to an unpleasant future is itself unpleasant. This means that aversive futures will be highly discounted from the current perspective. At the most extreme level, a low level of consumption in a house owned free and clear may simply be preferable to a somewhat higher level in a house on which there is debt, with the corresponding increase in insecurity.

Rosenbaum, Goren, and Jacobs (1995) have argued that the uncertainties about the IRS attitude to reverse mortgages run far deeper than this. They argue that a reverse mortgage is a sale rather than a loan as a matter of legal definition, given the high probability that the entire value of the house will ultimately accrue to the granter of the mortgage. While IRS revenue procedure 91-3 states that the service will not rule whether
a particular structure shall be construed as a loan or recast as a sale, Rosenbaum et. al believe that the IRS will ultimately rule that reverse mortgages are sales rather than loans.

Richard G. Reed, 2009, work entitled The increasing use of reverse mortgages by older households investigated the uptake in reverse mortgages in Australia as a means of providing a viable long-term solution for older households to meet unforeseen expenses during retirement. The study depicted that ‘reverse mortgage’ is not yet fully understood by everyone, being either existing clients or the market in general. Reverse mortgages have not yet fully saturated the marketplace and they don’t have a high profile in the broader society, although their profile has increased substantially in recent times. Therefore it is important that the profile of reverse mortgages is raised so that it is better understood by seniors, either with existing or potential reverse mortgage borrowers.

The importance of superannuation is clearly acknowledged in society today. It is now accepted in society that older households, after ceasing full-time work, should be able to enjoy an increasingly active lifestyle after entering retirement without financial stress (Shiller 2000). The reverse mortgage market has rapidly expanded in Australia in recent years even though the financial product was introduced in the early 1990s and was not initially widely accepted due to poor timing and a lack of understanding in the market (Reed 2004). Since reverse mortgages were reintroduced they have become commonly accepted in society as a viable solution for accessing extra funds during retirement.

Seniors have been asked use caution and to be fully aware of the different options with regards to reverse mortgagees (Dillion 2008). Some concerns have been raised that reverse mortgage borrowers may be exploited, mainly because they don’t understand the full implications of undertaking out a mortgage (Davis 2008).

It should be noted that the provision of safe and affordable housing for citizens remaining a priority for all governments (Troy 2000). In addition, governments have had a vested interest in the housing market, and closely monitor the status of the market at any given time (Yates 2000). Nevertheless, a large proportion of the emphasis is placed on the lower end of the market at the ‘first home owner’ entry level - seemingly little attention is paid to existing older homeowners who are perceived to already be in the market place and have already overcome housing-related financial problems (Reed et al. 2002). However this is not correct in all circumstances with certain sectors of the older
homeowner bracket in need of priority assistance. Furthermore, it is the older homeowners who, although they may have a relatively large proportion of equity in their property, struggle with important tenure issues (Reed 2006).

While there have been links identified between housing and health, such studies have only focussed on homeownership as a means improving the location of housing from slum areas and therefore quality of life (Easterlow et al. 2000). There are clear intangible benefits attached to independent homeownership for older citizens as most would prefer to ‘age in place’ in their own home (Howden-Chapman et al. 1999). Even older residents who are not 100% active are often encouraged to remain at home where possible, rather than relocate into a nursing home or a medical facility for partial care (Weinberg et al. 2001). Alternatively, it is common to have live-in nursing care at home or a limited form of care on a regular basis for meal preparation and associated duties. This is accompanied by additional expenses that were not anticipated when calculating financial needs in retirement, although a reverse mortgage can meet these expenses and is often promoted in this manner (Reed 2006).

It has been argued that in western civilisations home ownership has a direct bearing on health and life expectancy in comparison to those living in rented properties (Macintyre et al. 1998). But if growing old in the family home is the preferred option, steps must be taken to address the growing gap between income and expenses without re-entering the workforce. A reverse mortgage has the ability to provide a viable solution, such as where a reverse mortgage enabled one applicant who required money to fund a new prosthetic leg and another required a wheelchair ramp to be installed (Boreham 2003). Nevertheless, there remains the potential for the improper application of reverse mortgages with long-term consequences. Due to changes in the level of house prices and perceptions towards lifestyle in society, the ability of older households to obtain and retain homeownership has been placed under substantial pressure. Clearly homeownership underpins the traditional Australian society, where a diminished ability to retain homeownership has the potential to directly and indirectly affect many sectors of society (Waxman 2005).

Olivia S. Mitchell and John Piggott, 2003, Housing Equity and Senior Security, found that establishing a RM tradition in Japan will not be overly easy. A strong financial
infrastructure is required to ensure the success of these products, including safeguards for borrowers against unscrupulous lenders; insurance to protect against inherently risky contracts; and a secondary market for reverse mortgages.

As more people become aware of the product (Caplin 2002; Caplin et al. 1997), it is to be expected that lenders will become better at marketing the product over time and the demand will rise as well.

Reverse mortgage product can succeed only if older homeowners are willing to draw down their housing wealth during retirement. Whether there is a decline in home equity at older ages even without RM$s, is a topic fraught with debate in US circles (cf Venti and Wise, 2001; Sheiner and Weil 1993). Caplin (1999) notes, a RM could therefore be both a risk management tool and a solution to consumption needs for elderly households.

In the Japanese case, a recent survey of the elderly showed that leaving an inheritance was most important for only 6 percent of respondents (Ishikawa and Yajima 2001). In the US, more than 75% of the people who applied for a RM in the United States reported having no children (Caplin 2002). This suggests that the low Japanese fertility rate may support the development of a Japanese RM market.

Prof. Suresha B and Dr. Gajendra Naidu, (2012) paper entitled Ethnical upshots on senior citizen finance in India - An empirical study on reverse Mortgage- need and challenges examined the pros, cons and need of reverse mortgage scheme in Indian society and challenges in the implementation of such senior citizen finance schemes in India. The study found that the scheme is not well accepted in India due to the family system. It is depicted that one of the main reasons of failure is lack of awareness.

India is a rich country in its family customs. It fosters living togetherness in all ages. Even today in this modern era of life, joint family system persists in majority of the Indian families. India strongly believes that children’s take care of their parents in their old age. A couple expects kids not only to get bigger their family, but also to safeguard their life after retirement. If culture is „the way society formulates and deals with the basic problems of human existence“ (Heesterman 1972:97), people living in different environments are likely to develop different cultures. But the very fact that human beings have been restless and have been migrating should indicate that they have not been
satisfied with either the way they had formulated the problem of existence or the way they dealt with it. Whatever may have been the reason, as a result of their migrations and through various means of communication people have been exposed to different cultures. Thus cultures have grown through a process of borrowing, retaining and inventing. The process is extremely complex, because even a thing like borrowing is not simple. The borrowed item goes through cultural processing and is only then adopted. Especially borrowing finance to live in the old age is believed to be a curse in the traditional counties like India. A planned life gives happy but the question unanswered is that, is it through the family system or financial system of the country.

**Indian Society – Family system** The beauty about the Indian culture lies in its age-long prevailing tradition of the joint family system. It's a system under which even extended members of a family like one's parents, children, the children's spouses and their offspring, etc. live together. The elder-most, usually the male member is the head in the joint Indian family system, who makes all important decisions and rules, whereas other family members abide by it dutifully with full respect.

**Importance Given to Protocol in Joint Family System in India**
A major factor that keeps all members, big and small, united in love and peace in a joint family system in India is the importance attached to protocol. This feature is very unique to Indian families and very special. Manners like respecting elders, touching their feet as a sign of respect, speaking in a dignified manner, taking elders' advice prior taking important decisions, etc. is something that Indian parents take care to inculcate in their kids from very beginning. The head of the family responds by caring and treating each member of the family the same.

**Discipline in Indian Joint Family System** The intention behind the formation of any social unit will fail to serve its purpose if discipline is lacking and the same applies to the joint family system as well. Due to this reason, discipline is another factor given utmost importance in the joint family system in India. As a rule, it's the say of the family head that prevails upon others. Incase of any disagreement, the matter is diligently sorted out
by taking suggestions from other adult members. One usually also has to follow fixed timings for returning home, eating, etc.

**What Researches on Joint Family System Reveal**
The reason why Indians are proving to emerge as a prosperous lot globally, many researches claim, is because of the significance they attach to the joint family system. All working cohesively to solve a problem faced by any one or more members of the joint family, is what works magic in keeping one tension-free, happy and contended even in today’s highly competitive environment. An Indian may be a top corporate honcho or a great sportsperson or a movie actor and so on in a particular professional field, but all these accomplishments relegate to the backseat when at home.

**Need for Reverse Mortgage: Senior Citizens**

**Lifestyle in India**
Senior Citizens are a treasure to our society. They have worked hard all these years for the development of the nation as well as the community. They possess a vast experience in different walks of life. As children migrate and settle in different cities, senior citizens are left to stay alone. Isolation and frail health exposes them to assaults and other such criminal acts. In their old age, they become financially dependent on their children’s. In this transformation of family system to nuclear families, children’s leave abroad for jobs or settle after marriage elsewhere leaving their parents alone. It is making parents to look for Alternative Avenues of finance to meet their old age incidental expenses. The Maintenance and Welfare of Parents and Senior Citizens Bill, 2007 is an initiative of the Ministry of Social Justice and Empowerment the Bill states that adult children and grandchildren who are earning members are required to maintain and take care of their parents or grandparents. Maintenance refers to the provision of proper food, clothing, housing and medical treatment. Reverse mortgages are becoming popular in developed countries like America. But it is difficult to take on in the traditional family system countries like India and china. Reverse mortgages are a special type of home loan that lets a homeowner convert the equity in his/her home into cash. They can give older citizens greater financial security to supplement social security, meet unexpected medical expenses, make home improvements, and more. In India the property generally
transferred to the next legal heir as per the law. In case of emergencies it is mortgaged to borrow money for meeting children higher education or daughter’s marriage. With the introduction of new system like reverse mortgage now Indian senior citizens can mortgage their property for a monthly payment, which is paid till the predetermined period or death. This system makes the senior citizens financially independent and provides them regular income to meet their medical expenses and livelihood. It frees them from being dependent on their children’s or relatives.

Kerstin Chavez Andersson and Josefina Sandström, 2013 Investigating a Psychological Perspective of Reverse Mortgage - How is Reverse Mortgage Perceived by Potential Borrowers in Sweden study found that the focus groups initial negative perception changed to become more positive towards reverse mortgage which indicates an evolution of perception regarding reverse mortgage. The study also contributes to disclose new reasons when potential borrowers would take the loan, new feelings and characteristics associated with the loan by the potential borrowers in the focus group.

Those pensioners who are considered to be cash poor and house rich are usually not qualified to get a standard home equity loan because of their low income (Caplin, 2000, p. 1-2) and insufficient creditworthiness (Shan, 2011, p. 746). Therefore, these standard home equity loans will not be an option for these cash poor house rich pensioners to get extra income from (Caplin, 2000, p. 1-2). A suggested potential viable solution to improve the economic standard for the pensioners, that needs extra income and that owns a house of value, is a reverse mortgage loan (Chou, Chow, & Chi, 2006, p. 716; Creighton, Jin, Piggott, & Valdez, 2005, p. 433). Studies have shown that by utilizing a reverse mortgage a substantial proportion of the poor pensioners will be reduced in the United States (Chou et al., 2006, p. 717; Mayer & Simons, 1994a, p. 22; 1994b, p. 253). This proves the potential usefulness of reverse mortgage for elderly in other geographical areas as well.

Peng Wang, 2011, Feasibility Study of Reverse Mortgages for Pension - A Case of Hangzhou, China, Lund University, thesis test the feasibility of carrying out reverse mortgages programme in Hangzhou by considering theoretical assumption (individual choice, structure choice and political consideration) and the empirical date (capacity of markets, funds of the operation and social and cultural acceptability). The thesis
concluded that the reverse mortgage is not only benefiting in economic perspective, but also positively impacting on social welfare. Moreover the operation of reverse mortgages programme involves bunch of funds, it is not easy for private financial institution to management and the insurance guarantee of government would provide a much more reliable, creditable and effective reverse mortgages system.

The reverse mortgage is one option to increase retirement income and/or decrease retirement debt (Opdyke, 2006). The reverse mortgage allows homeowners to tap into their housing equity, the largest non-pension asset for most U.S. households, to help finance their retirement (Eschtruth et al., 2006); it converts home equity into liquid assets (Szymanoski, Enriquez, & DiVenti, 2007).

Eschtruth and colleagues (2006), predict the number of reverse mortgages will continue to grow as more baby boomers enter retirement with insufficient wealth from other sources. Szymanski and colleagues (2007) also found that in the year 2006 single females represented the largest proportion of borrowers at 44% compared to 17% for single males and 39% for couples. Older women are more likely to be at an economic disadvantage than older men (DeVaney, 2008).

Retirees are spending more years in retirement (DeVaney, 2008) and entering retirement with higher levels of debt, including mortgage debt (Apgar & Di, 2005). Reverse mortgage originations are increasing steadily (NRMLA, 2009) by younger mortgagees (Szymanoski et al., 2007).

Older adults are less likely than younger people to realize when they are being victimized (Loonin & Renuart, 2006). Although a reverse mortgage is a legitimate financial product, some lenders market the product so aggressively that their tactics approach predatory lending and taking advantage of seniors (Twomey & Jurgens, 2009).

Opdyke (2006) noted that “reverse mortgages put a bundle of cash into a consumer’s hands, making an enticing target for financial-product sellers to exploit” (p. 2). AARP (2008) warns borrowers to be wary of anyone recommending a reverse mortgage as a means of purchasing a product they are selling, such as an annuity.

Reverse mortgages can provide households with a continuous stream of income after retirement. By enhancing the reverse mortgage market, households that are asset-rich but lack cash can therefore borrow against the equity in their residence without
having to sell it (McCarthy et al., 2002, Creighton et al., 2005). However, the reverse mortgage market is not without risks for any of the involved parties. The risk of reverse mortgages is that when the loan becomes due, the property might be worth less than the sales price. This crossover point is a function of longevity, interest rates, home appreciation (both general and specific), and expenses (Mitchell et al., 2006).

A concern put forward involving the house market is that housing prices will decline quite drastically when Baby Boomers’ housing demand is reduced because of old age, and hence a large number of properties will be up for sale (Mankiw and Weil, 1989), while the younger cohorts are less in number. However, other studies show that age has an insignificant or positive effect on housing prices. The possible positive outcome is due to the effect that income and education have on housing demands, and in general, Baby Boomers have good incomes and educations (for an overview, see Mitchell et al., 2006).

**Rational of the Study**

Gaps in the existing studies showed that there was a need to make a fresh attempt to understand the opportunities and challenges reverse mortgage on Indian banking sector as a number of improvements could be incorporated on account of gaps in the existing literature. The need for the study could be encapsulated in the following points:

- Most of the studies reported in the literature had been conducted in the developed countries. Since there was a significant impact of environment, culture, paying capacity, economy, habits etc. on customer behaviour, therefore, the concepts and practices pertaining to reverse mortgage as innovative product in Indian banking sector context would have to be different.
- Hardly any study had been reported on Indian banking sector. The need for such a study arose as banking services now occupied the prime position among the industrial scenario for the country. Banking services were the fastest growing sector of Indian economy and hence the need for focusing on this sector.
- Increased competition among the Indian banks required them to gather continuous information, analysis, and dissemination and use it to obtain a cutting edge in the present business scenario.
There were also methodological lacunae, which could be improved. The definition of concepts of ‘reverse mortgage’, ‘retiree objectives’, ‘family values” and “culture” needed to be defined in societal context of Indian scenario. The review of literature implied old aging, high assets cash low, 360 degree view, values, family culture, contributes implicitly and explicitly, separately and in combination. Most of what was stated in literature was judgmental.

Hence, the present study was conducted and it was a systematic attempt to analyze diverse dimensions of reverse mortgage for Indian banking sector because the successes of any innovative product depends upon the strategy, management directives, employee’s involvement, family bonding, impact of ethos and value on family system prevailed in any country.