CHAPTER 2
REVIEW OF LITERATURE
2.1 Introduction

The concept of social security and various issues related to it have been extensively discussed and debated in economic literature. Issues related to social security varies from definition of social security, its types to the effects of it on private saving, demography etc. The present chapter tries to give a glimpse of the existing literature on the topic of social security.

2.2 Definition of Social Security

International Labour Organisation (ILO) defines social security as “the protection which society provides for its members, through a series of public measures against the economic and social distress that otherwise would be caused by the stoppage or substantial reduction in earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and death; the provision of medical care; and the provisions of subsidies for families with children.” (Jhabvala, 1998). Sir William Beveridge, who is known as the father of British social security system, defines social security as the “security of an income to take the place of earning when they are interrupted by unemployment, sickness, or accident; to provide retirement benefits, to provide against loss of support by the death of the other person and to meet exceptional expenditure such as those connected with birth, death and marriage.” (Rajan et al., 2008). However these definitions of social security are inadequate for developing countries as they are based on the assumption that the most of the people are generally in a state of employment while the developing countries show a quite different picture.

To overcome the weaknesses of these definitions some other definitions were put forward. According to Subramanya (1994), “the concept of social security in its broadest sense should be understood to mean the support provided to the individual by the society to enable him/her to attain a reasonable standard of living and to protect the same from falling due to the occurrence of any contingency.” Thus, social security “should be considered as a legitimate insurance mechanism that insures all eligible consumption units against an inadequate income resulting from disability, retirement and death.”
2.3 Pay-As-You-Go vs. Funded System

Most of the social security systems of the world are either based on the Pay-As-You-Go (PAYG) principle or are funded systems. In the provision of social security, the advantage associated with the Pay-As-You-Go (PAYG) system is that there is no necessity to maintain a fund to cover the total liability of the system. Thus, in this system, all receipts in the form of payroll tax can be directly used for financing the pension benefits for the year.

Administratively the payroll tax is relatively simple for financing a PAYG system. If its effective burden rests on participants in the social security system it has the additional advantage that those who benefit from the system pay for it. But if the system is partially financed out of general revenues, the incidence of the system will probably be regressive, because persons excluded from coverage will also bear part of the burden of the taxes that finance it (Mackenzie, 1988). Some economists are in favour of shifting from payroll tax to consumption tax for PAYG financing. However, shift to consumption tax will increase capital accumulation and decrease interest rate only if population growth is taken as exogenous. With endogenous population growth, shift to consumption tax will decrease capital accumulation instead of increasing (Lin & Tian, 2003).

In PAYG, social security budget is balanced. According to Andreas Wagener (2003), in case of PAYG, “the risks of adverse changes in the economic environment is shifted away from the elderly and entirely loaded upon the contributors.” If the long-run growth rate of labour income exceeds the average rate of return on capital, the PAYG system helps each generation.

Some writers are of the view that in a mature PAYG retirement system, social security provides current and future workers with below market return. In a PAYG system, the current workers have to bear the burden of unfunded liability. In most of the countries, especially in the developed countries, the birth rates have decreased considerably over the years along with the decline in old age mortality. These demographic changes have resulted in the increased burden on the current workers. Lower birth rates lead to the
slowdown of the growth rate of the workforce as well as that of national labour income. This in turn reduces social security’s long run rate of return. However, decline in old age mortality has less effect on the long run rate of return of social security. In case of mortality decline, the number of persons bearing unfunded liability does not change and therefore it is possible to adjust to the situation of mortality decline by reducing the benefits of social security (Viard, 2002).

The Aaron’s Paradox (Aaron, 1966) shows that if the rate of economic growth expected is lower than the expected interest rate, the funded method should be adopted. However, if perfect information regarding the future performance of interest rates, wage growth rates and population growth rates are available, this rule cannot be applied. Again, due to the existence of uncertainty, rate of growth and rate of interest cannot be chosen as perfect indicators for choosing a pension system. Capacity of each system to manage risk associated with uncertainty can be regarded as a better criterion. However, it is a challenge to find out the future values of the relevant variables and to correct any errors of estimation. (Eguia & Serrano, 2003-2004).

Brown(2008) reiterated Aaron’s view by mentioning that if the rate of growth of the contribution base of a social security system is less than the rate of return on investment, a funded system should be preferred and vice versa. But the rate at which the contribution base of a social security system grows depends on various factors like the growth rate of the work force, higher rates of labour force participation, growth in real wage etc.

The PAYG system favours the earlier generation too much while a funded system is in excessive favour of the later generations. This implies that in case of a PAYG system the burden falls heavily on the younger generation while opposite is the case in a funded system. (Mirrlees, 1997).
2.4 Social Security and Private Saving

Regarding the impacts of social security on private saving, Feldstein (1977) provided evidence that other things remaining the same, the countries with larger social security system tended to have lower private saving rates. Without social security, people have strong incentive to save during their working years to provide financial support during their retirement years. Empirical studies show that the PAYG systems are associated with lower rates of national saving and in countries where PAYG system is operating, a transition from PAYG to funded system can provide opportunity to increase national saving (Samwick, 2000). Contrary to the funded system, a pay-as-you-go system lacks financial sustainability when population is ageing rapidly. However, in both the systems, there is a cost involved in adjusting the real effective return to the real return necessary to achieve the target pension. Real effective return is the income available at any time with accumulated savings while the real return is the income needed to access the desired expenditure. Empirical study shows that individuals will not adjust contributions when effective return is less than desired return leading to insufficient savings. In that case, there will be reduction in pensions (Eguia & Serrano, 2003-2004). In a PAYG public pension, intergenerational transfer from young to old takes place which discourages private saving and reduces capital accumulation (Wigger, 1999). Moreover, in a perfect pay-as-you-go system, the saving will be low for another reason. In such a system, there is perfect altruism. As the consumption of the retirees is entirely financed by the currently working population, there is no need of saving. This will adversely affect growth. However, the pay-as-you-go system is often supplemented by other funded systems like employer provided pensions or private investment for retirement (Merrilees, 1997).

Social security reduces dynamic inefficiency by reducing over accumulation of capital. Dynamic inefficiency is the difference between the return on capital and the population growth rate. With population growth, a larger social security system is required and the optimal replacement rate also increases. In an uncertain lifetime model, mortality risk causes the agents to discount the future more heavily and to save less. They consume earlier in life and those who survive extreme old age consume less than they otherwise
would. This reduces over accumulation of capital and also reduces social security replacement rate (Imrohoroglu et al., 1995).

The negative correlation between social security and private saving is not accepted by many writers. Leimer & Lesnoy (1983) showed that there are no sufficient evidences to support the hypothesis that social security had reduced private saving. In 1974, Martin Feldstein concluded that the introduction of social security had reduced private savings in United States by 50 per cent. He used two measures of social security: gross social security wealth which is the estimated actuarial value of future benefits expected by individuals, and net social security wealth which is defined as a gross social security wealth less the estimated actuarial value of future payroll taxes that individuals expect to pay. In 1980, Leimer and Lesnoy expressed their doubt on Feldstein’s conclusion but in 1982, Feldstein provided new evidence supporting his original conclusion.

Although people save for many reasons, one of the primary reasons for saving is for retirement. In the presence of social security such savings decline. Aggregate savings in the economy is the difference between the saving by the younger generation and the dissaving by the older generation. Since generally the younger generation is larger and richer than the older generation, aggregate saving is normally positive without social security. Younger generation saves for retirement in the form of real and financial assets. But in the presence of social security, accumulation of retirement wealth takes place in the form of ‘social security wealth’ and workers save less in anticipation of promised future social security benefits. In a pay-as-you-go social security system, contributions do not flow into the capital market, rather they are used to pay the benefits of the current retirees. Thus if the individuals save less in anticipation of future promised benefits, social security will reduce private saving.

Arguments can also be provided to support the view that social security does not reduce private saving. As social security benefits are linked to retirement, they can induce early retirement, thus increasing the retirement years and decreasing the working years. It may induce the workers to increase the rate of savings. Again, people save for contingencies and for bequests also. But, the effect of social security on savings for
contingencies is unclear. Emergencies can happen in the working years and in that case, it is not possible to use social security wealth for meeting emergencies. It asserts the need of private saving. Moreover as social security wealth cannot be bequeathed, savings for bequests is also not affected by social security. Thus all types of private savings are not affected by social security; at best it can have some effect on savings for retirement.

Older generation may like to compensate their children for payment of taxes for social security, for which they may tend to save more for bequests. But, if such intergenerational transfers are made in the form of expenditures on health and education, total savings will decline and more human capital will be created in comparison to physical capital.

Theoretically, it is difficult to find out the effect of social security on private saving. To a great extent, it depends on the importance of retirement saving relative to total saving (Lesnoy & Leimer, 1985)

Development of funded pensions actually contributes to higher aggregate savings. However, for this the funded pension schemes should be mandatory rather than voluntary and it should effectively cover the low savers group. Funded pensions can contribute to higher savings if a large portion of workers are forced to save through pension plans at a rate higher than that is offered in other forms of savings. Moreover, the excess savings should not be offset by borrowing. A positive link between funded pension and higher savings may not take place because increase in saving for pension may lead to reduction in other forms of savings. Precautionary savings may decline due to the increased credibility of pension schemes.

Funded pensions may increase the awareness among general population to save for retirement. Again, it may induce early retirement leading to more savings in the working years.

Empirical study shows the difference among the OECD and non-OECD countries regarding the impact of funded pension on savings. In non-OECD countries, there is
The positive impact of funded pension on savings due to tight borrowing constraints and near mandatory nature of funded schemes. But in OECD countries, funded pension schemes do not lead to increase in savings because capital market is more developed in such countries and the funded schemes are not mandatory in nature (Bailliu & Reisen, 1998).

Schroder (1983) maintains that in an economy in which growth of total income is determined by labour productivity, the influence of a decrease in social security contributions on private voluntary saving depends on the relationship between labour productivity and the interest rate.

### 2.5 Demographic Change and Social Security

Demographic changes affect the PAYG Social Security programmes. Proportionate increase in the aging population puts more burdens on the working population for funding social securities. Most of the developed countries are facing this problem and considering reforms in the existing PAYG system. Japan with the fastest growing proportion of elderly in the world, is planning the nation’s social security reform (Ozawa, 1985). In the U.S.A., increase in the aging population caused by falling fertility and increased life expectancy, has put pressure on the social security funding. In 1990, each retiree, on average, had 4.7 current workers to support them, which is projected to fall to less than 2.0 after 2030 (Hyman, 2005). Since social security revenue and expenditures are often closely related with employment and earnings, changes in demographic conditions affect not only institutions of social security directly, but also to a great degree indirectly via their effects on the labour market (Schmahl, 1990). PAYG systems are more vulnerable to demographic changes and political risks while funded systems have capital market risks. But, a fully funded system may also be threatened by the population aging if it rests too firmly on the defined-benefit principle (Borsch-Supan & Miegel, 2003).

Social security system in turn can also lead to demographic changes. Galasso et al. (2008) maintains that "in traditional societies, old age support was guaranteed by
intergenerational transfers within the family from the young to the old. The progressive weakening of family ties in modern societies has justified the introduction of social security systems. Yet, the presence of social security enabled families to substitute public for private transfers as a support for old age, and thus provided incentives to have fewer children.” In many societies one of the important reasons behind bearing the costs of child rearing is the expectation that the children will transfer back the resources to the parents when the latter reach the old age. Such expectation is much higher in a society where there is non-existent or underdeveloped capital market.

A PAYG public pension system diminishes the importance of children as insurance goods and reduces the demand for children. If the fertility reducing effect of a public pension system offsets the saving reducing effect, per capita income may increase. This happens when the contribution rate of PAYG public pension is less than the critical value. Demand for children may also be stimulated as a result of PAYG system if children are viewed not merely as insurance goods, but also as consumption goods. Generally, small amount of public pension stimulates per capita income growth, but increase in public pension reduces it. For small or large public pensions, an increase in pension reduces fertility although medium sized public pensions may stimulate fertility depending on the internal rate of return of the public pension schemes. Most of the developing countries are faced with the problem of overpopulation and the fertility behavior in these countries is mainly influenced by the motivation of old age security. Introduction of small sized PAYG schemes in these countries can reduce fertility. On the other hand, the developed countries have the problems of slowdown of per capita income growth rate and the fall in fertility posing challenges before the already existing PAYG pension schemes. These problems can be solved by cutting down the large scale intergenerational transfers (Wigger, 1999).

2.6 Social Security and Redistribution

Social security measures help in intergenerational redistribution by redistributing resources from the younger to the older generation. In most of the countries social security benefits act as a major form of redistribution (Poutvaara, 2006). But, the
redistributional benefit of social security is not limited to the intergenerational transfers, they help in intragenerational redistribution also. The contributions of a social security scheme are linked to wage income, but the benefits are not that much linked to wage income. As a result, social security system redistributes from high to low income households (Tabellini, 2000). Intragenerational transfers arising out of the social security system alter the pattern of investment in human capital and as a result it reduces the disparity of income within the economy (Black, 1987).

2.7 Time of Retirement

Various factors influence the time at which the workers retire from work. Crettez & Maitre (2002) maintain that ageing of the population resulting from increasing life expectancy and falling birthrates have caused serious problems to pay-as-you-go social security schemes of many countries. To overcome this problem, four measures are generally suggested, namely, decrease in benefits, increase in contributions, increase in saving rates and raise in the retirement age. Optimal retirement age is dependent on the population growth rate and elasticity of substitution of old generation’s labour for young generation’s labour play the major role in explaining this dependence. If the elasticity is less than one, optimal retirement age will increase with the increase in the population growth rate and vice versa. On the other hand, if the elasticity of substitution of old generation’s labour for young generation’s labour is greater than one, optimal retirement age will be a decreasing function of the population growth rate.

In a PAYG system a high contribution rate and the guaranteed high pension may induce workers to retire earlier. However, in a fully funded defined contribution plan, early retirement will reduce the pension of the contributor because the costs are internalized. Therefore, in such a system workers have the incentive to continue working to increase their lifetime income. This is helpful to the economy also because the supply of experienced labour increases welfare (James, 1997).

Mirrlees (1997) opines that aged people now-a-days stay healthier longer than their parents or grandparents. Moreover, inventions of many types of equipment due to the advancement of science have made the works physically less demanding. Therefore,
the aged people can work longer than the earlier generations and thus the fall in labour force due to fall in birth rate can be offset to a great extent.

Cyclical fluctuations also have impact on the time of retirement. Increasing demand for labour at the time of boom leads to delay of the time of retirement. Low unemployment and high income in such a period lengthen the working life. But, the ‘wealth effect’ of the gains in asset price at the time of boom may have a reverse effect by encouraging the early retirement. However, empirical evidence shows that the impact of wealth effect on retirement timing is negligible in comparison to the effect of labour market condition on it (Disney, Ratcliffe & Smith, 2015).

2.8 Reforms in Social Security

Both developed and developing countries of the world are faced with the challenges of pension reform although they differ regarding the models of reforms. Some countries have adopted parametric reforms where the risk is still borne by the pension providers. Under parametric reforms, the existing pay-as-you-go unfunded system is retained, but some changes are made like increase in pensionable age, change in the earning base for calculation of pension etc. Most of the OECD countries introduced parametric reforms. In some other countries, systematic reforms are adopted where the risk is transferred to the pensioners through a direct shift from the defined benefit (DB) to the defined contribution (DC) system. There are two types of DC model: (1) the multi-pillar World Bank model and (2) the Notional Defined Contribution (NDC) model. The multi pillar model generally constitute three pillars, namely, tax-financed unfunded pillar for redistribution; a mandatory, privately managed fully funded pillar for retirement savings and a voluntary pillar for additional savings for old age security. Most of the Latin American countries have adopted this multi pillar system. Under the NDC system, contributions are made by the members, but the rate of interest is determined by the government. Therefore, individual investment risk is lower than the DC system. The NDC system is introduced by the countries like Sweden, Hungary, Poland etc. for the second tier of their pension system. Ideally a DC system should be characterized by active participation of individuals by exercising choice, since the risk tolerance and
return requirements differ from person to person. But, experience has shown that in many countries, the participants opt for the default options, based on life cycle investments. The asset allocation under the default option is age based as against that of mutual funds which aim at minimization of risk through portfolio diversification over a single period. The default option is based on the assumption that risk tolerance diminishes with age (Sadhak, 2009).

Brown (2008) maintains that the goal of every social security system is to minimize the risks so that the system can provide income security to the elderly. All types of risks such as investment risk, interest rate risk, inflation risk can be handled better in a commingled system than in case of individual accounts, because in a commingled system risks are shared among all participants while in an individual account, the account holder has to take all the risks. Moreover, in a commingled fund, per unit cost of investment management is also low. As both funded and PAYG systems have their own advantages and disadvantages, therefore a social security system having a mixture of both is preferable to reap the benefits of diversification.

The Western concept of social security cannot be directly applied in a developing country like India, characterized by pervading unemployment and underemployment, low productivity, low incomes and a large unorganized sector (Ghosh, 1993). In such a country, the social security programmes should be designed by keeping in view the country’s needs so as to provide maximum benefit to the maximum number of people. Sanyal et al. (2011) maintains that the defined benefit system of the civil service pension system of India imposed huge fiscal burden on the government. This fiscal constraint along with demographic transition and low coverage of the existing schemes necessitated pension reforms in the country. Moreover, creation of pension wealth is expected to help in economic development. Pension reforms in India in the first decade of the present century consists of mainly three initiatives, namely (a) Change in the Civil Servants’ Pension System from defined benefit to defined contribution, which was launched in 2004 (b) National Pension Scheme, launched on May 1, 2009 which extended the New Pension System (NPS) to all citizens and (c) NPS-Lite, launched on April 1, 2010.
With the introduction of the new schemes, the pension system of India has become more complicated as the old defined benefit system is still running for the employees who joined the government services before 01.01.2004. Moreover, there is separate pension scheme for the armed forces.

Auto Choice investment option under the National Pension Scheme is based on the age-based risk taking behavior. This investment option is for those who have little or no financial knowledge. Under the auto-choice, it is assumed that the younger population is capable of taking more risks in the financial market and therefore their funds will be invested more on equities. But as people get older, they become more risk averse and are likely to invest more in corporate and government bonds.

Default option is needed in a country like India which has low level of financial literacy and low per capita income. An efficient public policy can protect the interest of the investors selecting default option by providing guidelines on asset allocation pattern balancing between safety and high returns. Since “pension fund investment is a long term proposition and the fund is expected to undergo several business and stock market cycles”, a diversified portfolio must be considered to reduce the systematic risk. Hundred per cent equity investment is very risky; similarly hundred per cent investment in government bonds will compromise on the issue of high returns. Moreover, some liquid instruments should be included since any pension fund must have the required liquidity. Two asset allocation models can be considered for Indian NPS, they are ‘Age in Bond’ and ‘100 minus Age’. ‘Age in Bond’ model implies that the percentage of assets invested in bond or debt should be equal to the age of the investor. In the model ‘100 Minus Age’, the percentage of total investment that the investor invests in equity is 100 minus his or her age. The rest is invested in debt and other investments. As the age of the investor increases proportionate investment in equity declines and that in bond or debt increases. Thus, both the models are based on the assumption that the level of risk tolerance diminishes with age. (Sadhak, 2009).
2.9 Conclusion

There is no universally accepted definition of social security as the concept has to be defined in the backdrop of existing socio-economic and political reality. This is especially true when social security is defined in the context of the level of development of a country. As is evident in the above discussion that out of the two basic forms of social security the funded pension system is preferable over the PAYG system on one critical count; it does not impose the liability of the pension system on the non-beneficiaries. However, unlike the PAYG it is imperative to maintain a fund to cover the total liability of the system. In recent years, demographic changes in the form of population aging have put tremendous pressure on the existing PAYG systems in the mature western economies making the system unsustainable. Thus there is widespread evidence of such economies migrating to funded systems which are self supporting. Through social security both intergenerational and intragenerational transfers are achieved and it also affects the level of private saving in an economy, but there is no consensus regarding the extent and direction of this effect.

From the review of literature, it is found that different studies had been undertaken both nationally and internationally to study different aspects of social security and various issues related to it. But, in Assam there exists a research gap in this area as there is no such study till date. The present study is undertaken with an aim to fulfill this research gap by throwing lights on various aspects of social security of Assam mainly on that of retirement benefits. The study examines the penetration of retirement benefit plans in the state of Assam and also tries to find out the efficacy of retirement benefit plans as a poverty alleviation strategy. Various socio-economic effects of retirement benefits are also examined in the current study.