Chapter 4

Approaches to Optimal Life Insurance Protection

"There is no intrinsic difference between property and life value appraisals with respect to difficulty or scientific accuracy. The time is near when there will be expert appraisers... to appraise life values for business and family purposes in the same sense that property values are now subjected to specialized appraisal".

--S.S.Huebner

"The human life value and its protection should be regarded as constituting the principal economic link between the present and succeeding generations".

--Harold D. Skipper, Jr.

Everyone is bound to die, though the time of death is uncertain. The only certainty in anyone's life is that it will end. The breadwinner of a family may die before attaining a certain age, and his/her premature death can cause great financial and economic insecurity to individual members, as the family's share of his/her earnings is lost forever. In many cases, a breadwinner who dies prematurely has outstanding, unfulfilled financial obligations such as dependents to support, children to educate, a mortgage to pay off, and other instalment debts. On top of that, the income received by the members of family after the breadwinner's death may be insufficient to meet their full needs. Also, the income that accrues to the surviving dependents from some other sources may be insufficient for maintaining the family's previous standard of living. The inevitable result is financial and economic insecurity.

The hazard of untimely death is financially as significant as that of fire accident with respect to property. Whereas all life values are subject to the hazard of premature death, only a fraction of the nation's property values are subject to the fire hazard.
Moreover, when fire occurs, the loss to property involved is only partial, whereas premature death always means a total loss of the current earning capacity of the individual. Besides, premature death of the breadwinner of a family entails certain economic and non-economic costs that are unavoidable. First of all, the breadwinner's earned income is terminated resulting in the loss of his/her human life value. Second, additional expenditure relating to the last illness, and funeral of the deceased, the probate and estate settlement costs, is incurred. Third, because of insufficient income, some families may fall into poverty, forcing them to run into debts. Finally, certain non-economic costs such as emotional grief of the surviving dependents, their affected health, loss of a role model to the family, and counselling and guidance for children are incurred.

From a practical stand point this means having adequate life insurance to cover the hazard of death and its economic consequences. Hence the need for an optimal life insurance protection which " makes many blades of grass grow where few would otherwise exist ".3 by way of systematizing and stimulating personal endeavour, conserving life, credit, and savings and by directing investments.

The chapter is divided into three parts. Part I deals with economic justification of life insurance and financial impact of premature death on the family. Part II pertains to the most vital issue of determining the correct amount of life insurance to own. Part III examines different approaches to optimal life insurance protection.
(A) Economic Justification of Life Insurance

Life insurance can be used to alleviate the financial consequences of premature death. For, planning for the financial consequences of a premature death is an essential part of life insurance. As Kenneth Black Jr. and Harold D. Skipper, Jr. rightly point out, "The Institution of life insurance provides a vehicle to which individuals can secure their human life values (their potential estates), while seeking their goals (risk-taking), with the assurance that their families will not suffer if their skills and talents are eliminated by premature death or disability". Generally, the consequences of premature death are too large to ignore and cannot be totally covered with our own resources. Life insurance protects a given family against the risk of the premature death of its breadwinner. The purchase of life insurance is economically justified if the insured earns an income, and others are dependent on that earning capacity for at least part of the financial support. If the breadwinner dies prematurely, the life insurance can be used to restore the family's share of the deceased breadwinner's earnings.

The economic value of human life may be defined as "the capitalized monetary worth of the earning capacity resulting from the economic forces that are incorporated within our being: namely, our character and health, our education, training and experience, our personality and industry, our creative power, and our driving force to realize the economic images of the mind". In short, it is the cause of all other values and not merely an effect. As the saying goes, "Man liveth not unto himself alone". Instead, he or she lives for the benefit of others. As S.S. Huebner rightly observes, "whenever
continuance of a life is financially valuable to others, either to family dependents, business associates, or to educational and philanthropic institutions, the necessity for life and health insurance is present. Thus, life insurance is concerned with the organization and management of the economic value of human lives.

Life insurance is a necessary business proposition from the family's standpoint. The care of one's family is one's first and most important business. The death or disability of the head of the family should not involve its impairment or dissolution. The idea of providing only to the present must give way to the recognition of the fact that a person's responsibility to his or her family is not limited to years of survival only. As Huebner rightly observes, "Emphasis should be laid on the 'crime of not insuring', and the finger of the scorn should be pointed at any breadwinner who, although provided well while alive, has not seen fit to discount the uncertain future for the benefit of a dependent household". From this it is clear that life insurance is a sure means of changing uncertainty to certainty and it is the opposite of gambling. The individual who does not insure gambles with the greatest of all values --- life.

Economists have generally taken the stand that life insurance is not essentially a "producer of wealth" inasmuch as its fundamental mission is to distribute funds from the fortunate to the unfortunate. This view, which interprets life insurance as belonging to the field of distribution rather than production, is untenable. It reflects only the property viewpoint and overlooks largely the causal relation of the human life value to the creation of property values. But, "upon careful analysis, life insurance will be found to be a direct and powerful force in the creation of wealth."
Thus, life insurance can be said to be a real producer of wealth in that it relieves the policyholder of worry, which is one of the greatest curses of man, and thereby increasing his initiative and efficiency. To give an example, let us assume that the head of a family invests Rs.10,000 in a business pursuit. If it were not for life insurance, the owner of this capital could not safely afford to invest this sum and assume the speculative hazard common to most business enterprises, because of the fear that the capital might be lost and that no provision would exist for his dependents in case of his premature death or disability.

Some people vehemently argue that it is better to save than to purchase life insurance. While good savings habits should certainly be encouraged, it is to be realized that savings cannot be a substitute for insurance under any circumstances. Whereas savings can yield only a small amount at the start, an insurance policy guarantees the full face value from its beginning thereby hedging the policy owner against loss through early death or incapacity to have sufficient working time to save adequately through other means. To depend entirely on saving as a means of providing for future could prove disastrous financially, if an individual's ability to accumulate such a savings fund is defeated by disability or death before the savings have reached any appreciable sum. It is, therefore, unwise to practice saving to the exclusion of life and health insurance. Anyway, as it is rightly suggested if "both should be practiced, and, if only one is possible because of limited means, insurance should be selected because of its much greater certainty in leaving a stipulated fund for the support of the family whenever the breadwinner's income producing capacity is cut short by death or interrupted by disability" 9
Furthermore, life insurance furnishes a safe and profitable investment. Not only does life insurance furnish a profitable and a safe investment, but also modern policies make it possible for the insured to arrange for safeguarding the proceeds of the policy for the benefit of the named beneficiaries in case of death. Modern income arrangements furnish a guarantee against such a contingency by providing that the beneficiary shall receive an annual /quarterly/monthly income of a stipulated sum following the death of the insured. Moreover the proceeds of the life policy may be left in the company at interest during the lifetime of the beneficiary, or for a designated number of years.

Besides, from an economic viewpoint, life insurance forces and encourages thrift for a great majority of people. It is the common assertion of many individuals who were the holders of endowment insurance policies that, at the end of fifteen/, twenty/ twenty five/ years, they became the possessors of a considerable sum of money, which, under other circumstances, they would never have accumulated. In other words, life insurance tends to bring about compulsory saving, and represents the accumulation of small funds that, in all probability would not have been accumulated, over a long period of years into a substantial amount.

As it has already been noted, breadwinners may die with outstanding financial obligations, and dependents to support. This creates the problem of financial insecurity as discussed earlier. However, the financial impact of premature death on the family concerned is not uniform, but depends on the type of the family in which the breadwinner dies. Hence the need to consider the financial impact of premature death on different types of families.
(B) Financial Impact of Premature Death

The composition and structure of the family have changed significantly over time. As a result, the premature death of a breadwinner has more severe financial impact on certain types of families than on others. In general the different types of families in India include (i) single people (ii) single parent (iii) two income parents (iv) traditional families (v) blended families and (vi) sandwiched families.

(i) Single People Families

The number of single people has increased in recent years because of various reasons. The younger adults are postponing marriage and a sizable number of young and middle aged adults are single because of divorce. Also, there are older adults who are single because of the death of their life-partners. Generally, the premature death of a single person who has no dependents to support, or outstanding financial obligations to fulfil, is not likely to create any financial problem for others. These single people, therefore, need no large amount of life insurance except a modest amount for burial purposes and uninsured medical bills.

(ii) Single-parent Families

The number of single-parent families with children under 14 years of age has increased in recent years in India, as in many countries in the West, for various domestic and social reasons. Premature death of a family head in a single-parent family can certainly cause acute economic insecurity for the surviving children. Hence the need for large amounts of life on a family head within this group.
(iii) Two Income Parents

The traditional family in which only the husband works is being replaced rapidly by families in which both the husband and the wife work. This is mainly due to the fact that the majority of married women with children are forced to work outside the home in order to maintain good standard of living. In two-income families with children the death of one income earner can cause considerable economic insecurity for the surviving members of family inasmuch as both incomes are normally required to maintain the family's standard of living. The need for life insurance on family's head in this group is great since life insurance can replace the income that is lost.

However, the case of a married working couple without children is different. Premature death of one income earner is unlikely to cause serious financial problems for the surviving spouse. The employed surviving spouse is already supporting himself/herself. Besides, working couples without children need not incur child-care costs, and they do not have the problem of providing costly education for the children. So, the need for large amounts of life insurance by income-earners is considerably reduced.

(iv) Traditional Families

In the traditional families only the husband is the income earner, and the mother stays home to care for the children. Premature death of the earning husband can result in a loss of financial support to both the surviving wife and children. The problem becomes intensified if the husbands die with sizable debts and financial obligations, and if the widows with the children are not eligible for Social Security survivor benefits. So, the need for life insurance on family head is greater than in most other cases.
(V) Blended Families

Blended families are those in which a divorced spouse with children remarries, and the new spouse also has children. Even if both spouses are employed at the time of remarriage, the death of one spouse may result in a reduction in family's standard of living, since its share of that income is lost. Also, in many blended families older children are present from the previous marriage, and additional children are born out of the new marriage resulting in expensive child-care costs and limited funds for the children's education. Naturally, the need for a substantial amount of life insurance for family heads within this group is called for.

(vi) Sandwiched Families

A Sandwiched family is a family in which a son or daughter with children is also supporting an aged parent or parents. Premature death of a working spouse in a sandwiched family can cause considerable economic insecurity to the surviving members of the family resulting in a loss of financial support to both the surviving children and parent or parents. So, the need for adequate life insurance becomes imperative.

II

Amount of Life Insurance to Own

Life insurance was regarded generally as a philanthropic act of the family head for the benefit of his or her dependents. Little emphasis was given to the thought of the spouse's right, the child's just claim, and the insured's living advantages from the insurance for which premiums were paid. The family head acted in a somewhat autocratic
manner, and gave an amount of insurance protection to his/her dependents in the sense of a voluntary gift without much thought of the 'moral', 'religious', and 'conscience' viewpoints. So to say, the insured was generally uninformed of the living values in his/her personal insurance estate. The head of the family just picked some insurance figure, often under pressure from some sales men, "without any attempt at thoughtful appraisal of the monetary value of his/her life as it related to those whom he owed the definite and sacred responsibility of economic protection". Hence the need for a careful appraisal of the human life value for life and health insurances purposes.

Perhaps, the most fundamental question in insurance management is how much insurance to buy. Although this is widely regarded as an initial decision, more often than not in it occurs near the end of insuring process. The question of how much insurance to buy is always asked at some specific time relation to some specific set of circumstances. It is, first necessary to determine what insurable risks exist. Then, the problem of how much insurance to buy will be solved for the most part.

The correct amount of life insurance to own is an individual matter, since it varies with the individual and his/her particular situation regarding age, number of dependents, occupation, size of income, and future prospects. In spite of these variations, however, there are certain factors common to the situation in which all men and women with children and other dependents find themselves. Life insurance is basically intended to compensate the beneficiary for a money loss, which is sustained because of the death of the insured. Where the insured is the breadwinner, it is the value of the future income to the family that is lost. And life insurance is geared to compensate for this loss.
But, traditionally, many simple rules have been applied to determine the true insurance needs of a family. Life insurance and financial planners have proposed certain arbitrary rules, such as five or six times annual earnings, for determining the amount of life insurance to own. These rules are meaningless since they do not consider that family size, needs, and financial goals vary from family to family. Even insurance planners, applying standard rules of thumb, disagree sharply on how much insurance a given family, with certain basic responsibilities, should carry. However, in the words of L.I. Dublin and A.J. Lotka, "as an ideal, the family of the deceased breadwinner would wish to have access to a sum of money which, invested at current rates of interest, would be sufficient, by the use of part of the principal as well as the interest each year, to keep its finances on the same, or nearly the same level after his death as it would have been during his normal lifetime".11

No doubt, some formulae have been developed in an attempt to establish the proper relationship between family income and the amount of insurance to carry. For instance, a rule of thumb that 10 percent of gross family income should be devoted to life insurance premiums, has gained some acceptance of late. This ratio sounds rather unrealistic at lower income levels. Another rule states that "the typical wage earner should carry insurance equal to some specified multiple of annual gross income, while persons in the higher income groups should capitalize a higher multiple of annual earnings".12 However, a scientific approach to the amount of insurance needed reveals that such rules of thumb are too simplistic to take into consideration either accumulated assets or family composition or objectives.
It must be noted that in any actual practical place it is wholly out of his/her reach for the breadwinner to purchase life insurance in an amount equal to the present value of his/her net future earnings. However, for the individual considering his/her insurance programme, it is very helpful to bear in mind his/her money value to his/her family.

Therefore, before attempting to determine the adequacy of life insurance for any given family, one significant point should be borne in mind. Practically, every head of the family, irrespective of his or her financial status, dreams that in the event of a premature death even if the surviving spouse is unwilling or unable to work, the financial life style of the family should not be affected adversely. Needless to say, that this dream can be realized only if the flow of income to the family continues unabated. The breadwinner may want the family to receive the same income if he/she, by any chance, dies prematurely. Even then, it is unwise to determine the family's life insurance needs on this basis. A more logical objective would be to plan for providing family income in the range of 60 to 75 percent of the insured's gross pay at the time of death, after allowing for final expenses, debt payments, and financing for children's education.

Ideally, the life of each productive member of society ought to be insured for an amount equal to his/her full economic value, as measured by contribution to those who depend on that income. But, practically attaining this ideal is difficult even when death benefits are available and employed benefit plans are taken into account. The basic obstacle is that when both the economic value and the needs are at their maximum at younger ages, the funds available for premium payments are at their minimum. In the lower income groups, since the bulk of the family income is spent on necessities of life very little is saved. As the family income rises, aggregate expenditures for consumer
goods increase though they constitute a smaller percentage of total income. In other words, though more money is available for insurance premium and other forms of savings, the need for insurance may have declined considerably. Also, a person's human life value normally declines with passing time. For example, as a person approaches retirement age, the number of remaining productive years in his/her working lifetime declines. Therefore, the economic worth of a person's life, like depreciable business property, is subject to a gradual reduction in its value over the person's working lifetime. So, the insured has to make provision for the declining economic value of his/her life, and provide a fund for meeting his/her future obligations including his/her own self-maintenance. Hence the need for application of systematic approaches in the determination of how much life and health insurance should be carried.

Nevertheless, the technically accurate method of computing the monetary value of an individual is considered to be too complex for general use. For, it involves an estimate of the individual's personal earnings for each year from his or her present age to the date of retirement, taking into account the normal trend of earnings and inflation. The complexity of the problem also emanates from the fact that from each year's income the cost of self-maintenance, life insurance premiums, and personal income taxes is deducted. The residual income for each year is then discounted at an assumed rate of interest and against the possibility of its not being earned. Furthermore, in the latter calculation the three contingencies of premature death, disability and loss of employment have to be considered. The monetary value of the life in question is, thus, to be calculated by adding up the discounted values of the each year of potential income.
The ticklish question of how much insurance to buy may be solved by applying a group of principles to the situation. A combination of three elements -- (i) the value of exposure, (ii) the ability to absorb loss, and (iii) the value of available insurance -- is designed to give us the solution to the problem of estimating adequate amount of insurance.15

(i) The Value of Exposure

The value of loss exposure can be measured by carefully determining (a) forms of loss to which assets are exposed, (b) rupee value of anticipated money loss (c) rupee value of anticipated catastrophe loss, (d) frequency of anticipated loss, and (e) techniques available for eliminating or reducing loss. This determination exercise makes great demand on imagination, intuition, and the other elements of judgmental processes, which temper scientific approach.

(ii) The Ability to Absorb Loss

Once the value of exposures has been determined, the next step is to decide how much of this kind of exposure one is prepared to accept on non-insured basis, which includes self-insurance. Some of the questions that should be asked at this point are -- (a) what is corporate policy on self-assumption? (b) what part of normal anticipated loss could be accepted as a direct cost without adverse affect upon the profit and loss statement?, (c) how much of the catastrophe loss potential can be observed ?, (d) how frequently can the corporation/individual accept uninsured loss ?, (e) what are the effects of deductibles, franchises, and other forms of self assumption already in existence in insurance programme? and (f) what are the effects of the changing ability of the
corporation/individual to absorb non-insured loss? All these questions are assigned to measure the potential for cumulative adversity. Before the buyer can make a sound decision, he must have some idea of his/her maximum need for protection. This presupposes knowledge of the physical assets to be protected, together with a fairly clear idea of the third-party liability exposures for both bodily injury and property damage.

(iii) The Value of Available Insurance

The fundamental information necessary to determine the appropriateness of rate and premium for a given form of insurance protection, one can rely upon the insurance sources -- counselors, brokers and agents who have the facilities to offer this service for a fee. An insurance manager can also act independently in measuring the value of available insurance. Insurance seminars are also greatly helpful in this regard. In any event the individual must be in a position to "determine whether a contract offered by an insurer is appropriate to the loss exposure concerned, and to make a rough test of the validity of the net premium by determining its percentage relationship to the underwriters maximum possible loss under the contract."\(^{16}\)

III

Approaches to Optimal Life Insurance

However, in the determination of the optimal life insurance, there are three basic approaches--- (1) the human life value approach, (2) the needs approach, and (3) the capital retention approach.
(1) Human Life Value Approach

The human life value is based on the fact that every person, who earns more than is necessary for his or her own self-maintenance has monetary value to those who are dependent upon him or her. It may, therefore, be defined as "the present value of the family's share of the deceased breadwinner's future earnings". In other words, it is the capitalized value of that part of the earnings of the individual devoted to the support of the family dependents, business associates, and others who benefit from his or her economic capacity. Logically, the amount of life and health insurance to be taken follows from the extent to which the individual wishes to capitalize his/her life value and protect his/her potential earning power.

The human life value concept, then, provides a normative economic approach to life and health insurance planning, suggesting how one ought to behave. In other words, it provides an economic rationale for life and health insurance purchase from a replacement cost perspective. However, what we have to bear in mind is that the human life value concept provides an economic rationale for the purchase of life insurance, but not an economic explanation for its purchase. Anyway, life insurance and health insurance make possible the preservation of an individual's human capital in the face of uncertain lifetime. As Kenneth Black, Jr. and Harold D. Skipper, Jr. rightly point out, "the human life value concept provides the philosophical basis for operationalizing the insurance purchase decision."

The human life value should be recognized as the creator of substantially all property values. It is the key to the turning of property into a productive force. That is to say, it is
the 'cause' and property values are the 'effect'. According to Redja the following steps can calculate the human life value:

(a) Estimate of the individual's average annual earnings in his or her productive lifetime.
(b) Deduction of federal and state income taxes, life and health insurance premiums, and the cost of self-maintenance.
(c) Determination of the number of years from the person's present age to the contemplated age of retirement.
(d) Use of a reasonable discount rate; determine the present value of the family's share of earnings for the period mentioned in step 3.

To illustrate the above steps for calculating human life value, we can take the example of one Mr. Lakshman, aged 25, married, and has two children. He earns Rs.100,000 annually and plans to retire at the age of 65 years, assuming that his earnings will remain constant. Of this amount Rs.40,000 is used for his personal needs and life and health insurance. The remaining Rs.60,000 is used to support his family. This stream of income is then discounted to the present in order to determine Lakshman's human life value. Using a reasonable discount rate of 6%, the present value of Rs.1 payable annually for 40 years is Rs.60,000; therefore, Lakshman has a human life value of Rs.3,61,200 (Rs.60,000*Rs.60.20=Rs.3,61,200). This sum represents the present value of the family's share of Lakshman's earnings that would be lost if he should die prematurely. However, it may be noted that a person's human
life value has a tendency to decrease, as he or she gets older since there is a shorter period of earnings as each year passes.

The major advantage of the human life value approach is that it measures, if not precisely, the economic value of human life. Thus, with appropriate amounts of life and health insurance, the insured can be certain that the income flow to his or her family will continue uninterrupted whether he or she lives, dies, or is disabled. But, at the same time, the human life value approach has its own inherent limitations that come in the way of measuring accurately the correct amount of life insurance to own.\(^{19}\) For instance, other sources of income such as Social Security survival benefits are not considered while calculating the amount of life insurance to own. Also, it is unrealistic to assume that earnings and expenses remain constant. For, the amount of income allocated to the family can quickly change depending on several factors such as divorce, birth or death in the family.

(2) Needs Approach

The second approach to the problem of determining how much life and health insurance should a person carry is to analyze the various needs that would be experienced by the family in the event of the premature death or disability of the breadwinner. This technique is termed the 'needs approach'. Under this method, the various family needs of a given individual must be met in the event of his or her premature death or disability. After considering other sources of income and financial assets, the needs of the family are converted into specific amounts of life insurance. The difference between the funds needed to meet the financial objectives or needs of the family, and those available from
other sources, represents the amount of life and health insurance needed. A critical
analysis of the needs approach reveals that it tailors our life insurance protection to our
individual needs. However, the 'needs approach', from a purely sales standpoint, has been
regarded as more realistic than the 'human life value' approach.  

Insecurity relates not only to loss of life, destruction of homes, and personal
property, but also to the lack of the uncertainty of individuals regarding one or more of
their needs. Humanistic psychologists like Gold Stein, C.R. Rogers, and A.H. Maslow
agree that human needs are almost unlimited and change over time. As soon as one need
is satisfied another appears. However, they also suggest that a priority of need levels
exist. A. H. Maslow, a pioneer researcher in this area, developed a need priority of five
levels. First come the physiological needs like hunger and then the safety needs like fear,
the love needs, the esteem needs and finally the need for self-actualization. The
significant point is that need levels have a sequence of domination. For instance, when
physiological needs are satisfied safety needs tend to dominate. As N.E. Bhagavathy
points out, "progressing from the basic biological needs through the psychological needs.
Maslow's hierarchy of needs culminates in the needs for self-actualization". 

Thus, individuals strive to satisfy their needs, as they perceive them from a frame
of reference that has been built over a lifetime of individual, family, and other
environmental influences. What is more, "each individual is dominated by a need level
that is reflective of his or her economic, psychological and social circumstances". 

In order to determine the amount of life and health insurance needed by the
breadwinner through the use of the 'needs approach', first of all, the financial objectives
or needs of the family are to be established. Naturally, the needs differ from family to
family, and within a family group, over a period of time. All the same, certain general categories of needs that are most likely to be found in any family situation can be established. These categories of needs, in the order of their importance, are (i) estate clearance fund, (ii) readjustment income, (iii) income during the dependency period, (iv) life income for surviving dependent spouse, (v) special needs, and (vi) retirement needs.

(i) Estate Clearance Fund

An estate clearance fund, also known as cleanup fund, is immediately needed to meet the expenses arising from the insured's death, and also to liquidate all current outstanding obligations. Ready cash should be available for meeting many types of expenses and obligations such as (a) hospital expenses, (b) burial expenses, (c) personal obligations like household bills, instalment payments, and personal loans, (d) unpaid pledges, the cost of estate administration, and (e) estate, inheritance, income and property taxes. It is difficult to estimate precisely the size of the fund that will be needed since an individual's obligations vary from year to year. The needs will also vary with the size of the estate. However, a cleanup fund equal to half the annual family income is said to suffice though individual circumstances may justify a larger amount.

(ii) Readjustment Income

During a one or two-year period following the breadwinner's death, the family should receive approximately the same amount it received while the family head was alive. The purpose of this readjustment period is to give the family fairly sufficient time to adjust their living standards to different level. Normally there is an emotional shock
and considerable grief when the family head dies unexpectedly. By providing an equivalent amount of income to the family during this period, a financial shock is avoided. Whatever may be the period of readjustment, the income during this period should be approximately equal to the family's share of the breadwinner's earnings at the time of his/her death.

(iii) Income during Dependency Period

After the expiration of the readjustment period, necessary income should be provided to the family of the deceased until the dependent children, if any are able to support themselves. The family should receive income during this period so that the surviving spouse can remain at home, if necessary to take care of children during their formative years. For example, a wife who is already employed may like to continue working even after the death of her husband. Even then it is advisable to supplement the family's income during this period not only to compensate for the loss of financial support owing to the death of the husband, but also to cover any extra childcare expenses that may be incurred by the working spouse.

(iv) Life Income for Surviving Dependent Spouse

The dependents on the departed soul normally consist of not only the children but also the spouse. When the children are grown the surviving spouse may be middle-aged, and the occupational skills that he/she possesses may be obsolete. So, it may be difficult for him/her to find a job that will pay an adequate salary. Hence the need to plan for a life income to surviving spouse. Two income periods -- income during the blackout period, and income after the blackout period to supplement Social Security benefits--- are
considered for the purpose. The blackout period refers to the period from the time Social Security survivor benefits to the time they are resumed at age 62. However, reduced benefits are payable at age 60. So, it is desirable to provide income to the surviving spouse during the blackout period, as also to supplement Social Security benefits at retirement.

(v) Special Needs

There are certain special needs -- (a) mortgage redemption needs, (b) educational needs, (c) emergency needs and (d) retirement needs -- that may not be found in every family situation. Even when they are found they are not likely to enjoy as high a priority as those needs discussed above.

(a) Mortgage Redemption Needs

Most of the homes are burdened with a mortgage, and it is highly probable that an unliquidated balance will still be outstanding upon the death of a person with dependent children. In many cases, however, the survivors continue to occupy the family residence, and funds are needed to pay off the mortgage.

(b) Educational Needs

The income provided for a surviving spouse during the period when the children are dependent may be adequate for secondary school expenses. But, if a college or a university education for one or more children is envisioned, additional income will be needed. Life insurance companies have a variety of policies that will meet this need in a very convenient manner.
(c) Emergency Needs

In the life of family unforeseen needs for money arise from time to time because of illness, surgery, major dental work, home repairs or many other reasons. It is unrealistic for the family income providers to leave enough income for such unexpected contingencies and eventualities. Therefore, a liquid fund from which additional income can be provided, as and when required, has to be set up.

(d) Retirement Needs

Retirement needs do not fall within the categories of needs described in the preceding paragraphs. When the family head retires, there is a need for an adequate retirement income. In most cases, typical wage earner will be eligible for Social Security retirement benefits, as well as private pension benefits from an employer. If, by any chance, retirement income from these sources is inadequate, it may be necessary to supplement the Social Security benefits from other sources such as cash value life insurance, individual investments and a retirement annuity.

Having determined the financial objectives and needs of the individual family in their order of priority, it is now necessary to find out what income or other benefits are available to meet these needs. In doing so, due consideration has to be given to the benefits available to the family from Social Security, investment income, present life and health insurance, anticipated inheritances, and other sources of income. And, the amount of life and health insurance needed is decided by the difference between the funds needed to meet the financial objectives of the family and those available from other sources.

To illustrate how the amount of life insurance needed is determined by the needs approach a hypothetical family situation is described. Rahul Dravid aged 39 earns
Rs.600,000 a year. He has a wife and two children aged 12 and 6. He has four primary financial needs — (1) to provide income to the family for 12 years until the younger child is 18, (2) to build a 20-year retirement fund for his wife, (3) to establish a college education fund for his children, (4) to provide for other miscellaneous expenses. He calculated his total financial needs taking into account the Social Security benefits his family would receive if he died. His total financial needs sum up to Rs.1,000,000. His total current assets, which also include available life and health insurance, sum up to Rs.500,000. And so, the additional life insurance needed is Rs.500,000 (Rs.1,000,000 - Rs.500,000 = Rs.500,000).

The needs approach has its own advantages and disadvantages. First, the needs approach is a reasonably accurate method for determining the amount of life insurance to own when specific family needs and objectives are recognized. Second, it considers other sources of income and financial assets available in determining the amount of life insurance to own. Third, if the present financial assets and life insurance are insufficient in meeting the estimated needs of the family, the inadequacy is quickly recognized by the needs approach. And finally the needs approach serves the purpose of recognizing needs during a period of disability or retirement.

The major disadvantage of the needs approach is that family needs must be periodically evaluated to determine if they are still appropriate as circumstances change. Naturally an individual family’s needs will change because of additional children being born and changes in sources of income. So, it becomes necessary to review the life and health insurance programmes periodically to take these changes into account. Second, the needs approach ignores inflation, which can result in a substantial understatement of the
amount of life insurance to own. Finally, this approach also ignores the preservation of estate assets for the children who will be the legal heirs.

**Contrast between Human Life Value Approach and Needs Approach**

As sound methods for estimating the amount of life insurance to own, the human life value approach and the needs approach fall a contrast to each other. The human life value approach requires that the life of each productive member of society should be insured for an amount equal to his or her full economic value, as measured by contributions to those who depend on that income. But, this ideal is difficult to attain in practical life. The basic obstacle is that when the economic value of an individual is the greatest, income for premium payments tends to be the lowest. The needs approach, on the other hand, is more realistic and practical. This method is used to approach the one pressing need of the time whereas the human life value approach includes the entire group of needs for all of life.

**(3) Capital Retention Approach**

Yet another method for estimating the amount of life insurance to own is the capital retention approach, also called Capital Needs Analysis, which is rapidly becoming popular. This is designed to accurately calculate a family's life insurance needs and it is based on the application of the present value concept. The starting point in capital retention approach, according to Sid Mittra, is "a valuation of income needs against the estimated income to be received upon the death of the breadwinner".24
Unlike the needs approach which assumes liquidation of the life insurance proceeds, the capital retention approach preserves the capital needed to provide income to the family. Based on the capital retention, the amount of life insurance needed can be estimated by (a) preparing a personal balance sheet, (b) determining the amount of income-producing capital, and (c) deciding the amount of additional capital needed, if any. The first step is to prepare a personal balance sheet that lists all assets and liabilities including all death benefits from life insurance and other sources. The second step is to determine the amount of liquid assets that can provide income to the family after subtracting the liabilities, cash needs, and non-income producing capital from total assets. The final step is to decide the amount of additional capital needed by involving a comparison of the income objective with other sources of income such as Social Security survivor benefits.

The amount of life insurance needed as per the capital retention approach can be determined by (i) preparation of a personal balance sheet, (ii) computation of the amount of income-producing capital, and (iii) estimating the amount of additional capital needed.

(i) Preparation of personal balance sheet

The first step is to prepare a personal balance sheet that lists all assets and liabilities. The balance sheet should include all death benefits from life insurance and other sources of the person concerned. To cite an example Ram, aged 35, who earns Rs.12,00,000 annually, has a wife and two children aged three and five. If he should die by any chance, he wants his family to receive Rs.6,00,000 annually. He also wants to establish an emergency fund and an educational fund and pay off the mortgage. His
personal balance sheet, including death benefits from life insurance and his pension plan, is as follows:

<table>
<thead>
<tr>
<th>Assets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>25,00,000</td>
</tr>
<tr>
<td>Auto mobiles</td>
<td>3,00,000</td>
</tr>
<tr>
<td>Personal &amp; household property</td>
<td>9,00,000</td>
</tr>
<tr>
<td>Securities and investments</td>
<td>5,60,000</td>
</tr>
<tr>
<td>Checking Account</td>
<td>40,000</td>
</tr>
<tr>
<td>Individual &amp; group life insurance</td>
<td>20,00,000</td>
</tr>
<tr>
<td>Private pension death benefit</td>
<td>4,00,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>67,00,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortgage</td>
<td>20,00,000</td>
</tr>
<tr>
<td>Auto Loan</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Charge accounts and other bills</td>
<td>1,00,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23,00,000</td>
</tr>
</tbody>
</table>

(ii) Computation of the Amount of Income-Producing Capital

The next step is to compute the amount of liquid assets that can provide income to the Ram's family. This can be done by subtracting the liabilities, cash needs and non-income producing capital from total assets. Ram has 11,00,000 of capital that can produce income for his family. This is illustrated as follows:

<table>
<thead>
<tr>
<th>Total Assets</th>
<th>67,00,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Mortgage</td>
<td>20,00,000</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>3,00,000</td>
</tr>
<tr>
<td>Final expenses</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Emergency fund</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Educational fund</td>
<td>12,00,000</td>
</tr>
<tr>
<td>Non-income producing capital</td>
<td>17,00,000</td>
</tr>
<tr>
<td><strong>Total Deductions</strong></td>
<td>- 56,00,000</td>
</tr>
</tbody>
</table>
(iii) Estimating of the Amount of Additional Capital Needed

The final step is to estimate the amount of additional capital, if any that is needed. This step involves a comparison of the income objective with other sources of income, such as social security survivor benefits. In Ram's case, his family would have income shortage of Rs.2, 94,000 annually based on his present financial situation. Assuming that the liquid assets and life insurance proceeds can earn 6% annually, Ram needs an additional amount of Rs.49, 00,000 of life insurance to meets his financial goals. This is illustrated as follows:

<table>
<thead>
<tr>
<th>Income objective for family</th>
<th>Rs.6, 00,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Capital now available for income</td>
<td>(Rs.11, 00,000*6%)</td>
</tr>
<tr>
<td>Social security survivor benefits</td>
<td></td>
</tr>
<tr>
<td>Income Shortage</td>
<td>Rs.2, 94,000</td>
</tr>
<tr>
<td>Total new capital required</td>
<td>Rs.49, 00,000</td>
</tr>
<tr>
<td>(Rs.2, 94,000/0.06)</td>
<td></td>
</tr>
</tbody>
</table>

The capital retention approach, like the human life value approach and the needs approach, has certain advantages and disadvantages. It has the basic advantages of simplicity, easy understanding and preservation of capital. Besides, investment income on the emergency and educational funds can be used as a partial hedge against inflation. The investment income can also be accumulated to offset rising educational costs. The major disadvantage of the approach is that a larger amount of life insurance is required to produce a given amount of income.
The human life value approach to the optimality of life insurance is so vast in its monetary sense, and so significant to our national economy that it calls for an in-depth analysis which is taken up in the following chapter.
Notes and References

1. The problem of premature death has declined over time because of significant breakthrough in medical science, improvement in public health and sanitation and increase in health consciousness.


7. Ibid., 144

8. Ibid.

9. Ibid., 144


16. Ibid. Also see, H.P. Stellwagen, "A Rational Basis for Buying Insurance", Essays in the Theory of Risk and Insurance, 125-134