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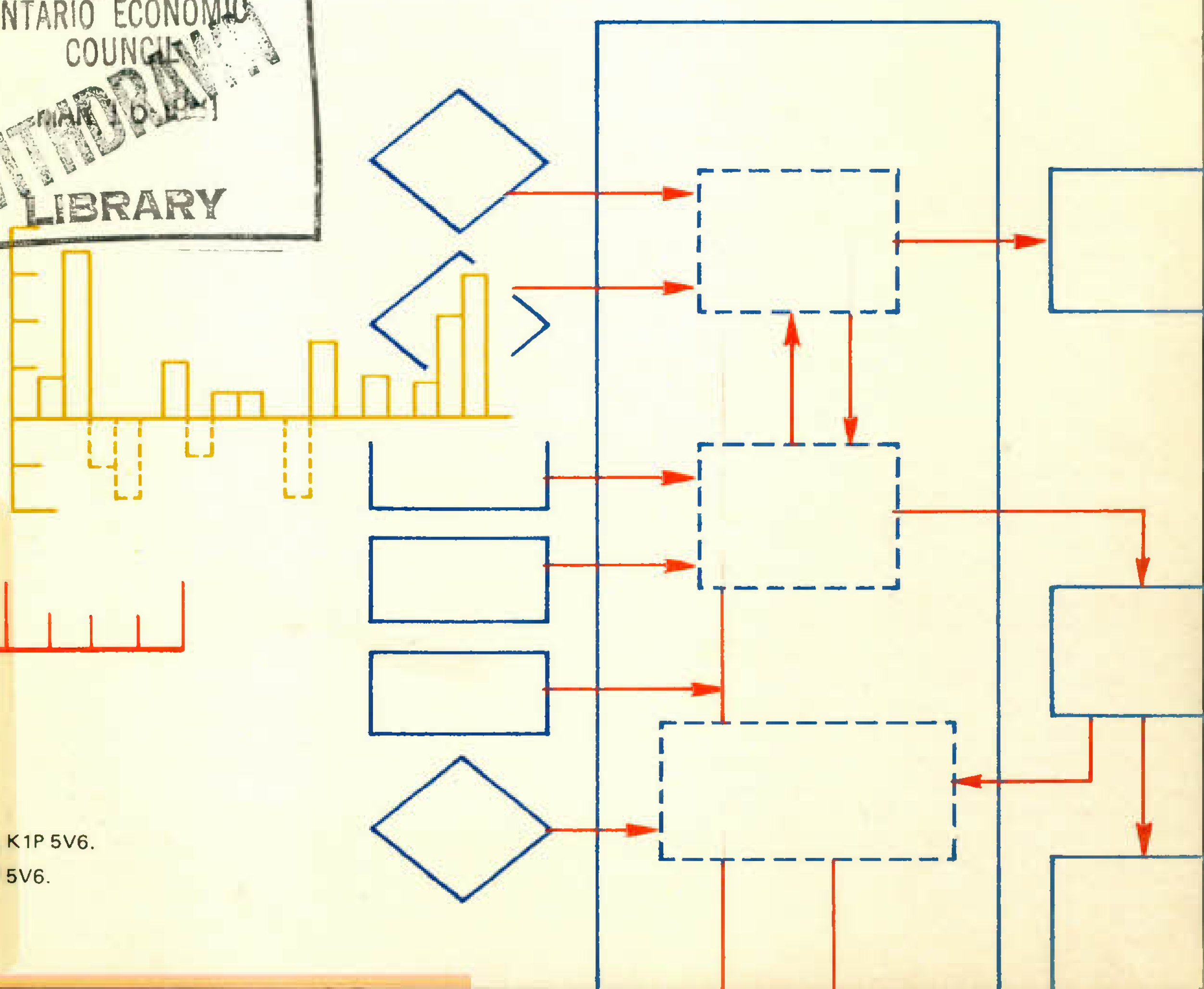

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DISCUSSION PAPER NO. 188

Reverse Mortgages: A New Class of Financial Instruments for the Elderly

by Henry Bartel and Michael J. Daly

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Résumé

Selon des projections à long terme effectuées par le Conseil économique du Canada, le nombre de personnes âgées de 65 ans et plus s'établira à 7 millions d'ici l'an 2031, ce qui entraînera une forte augmentation de ce groupe d'âge en proportion de la population totale du Canada. Une telle situation est susceptible d'accroître les pressions financières sur les travailleurs appelés à supporter les personnes âgées (dont un bon nombre auront probablement de faibles revenus en raison de leur retraite) par l'intermédiaire des divers programmes publics de soutien du revenu des personnes de cette catégorie. Cet état de choses s'aggrave encore, du moins dans le court terme immédiat, par suite de l'érosion par l'inflation de la valeur réelle des rentes de retraite.

Il devient donc de plus en plus impérieux de trouver des moyens d'alléger le fardeau que le contribuable doit assumer pour le soutien des personnes âgées et pour leur assurer des rentes de retraite satisfaisantes. Les hypothèques inversées constituent un moyen de contrebalancer une partie de ce fardeau.

Bien qu'un grand nombre de personnes âgées aient des revenus très faibles, elles disposent souvent d'un avoir considérable sous la forme de la propriété d'une maison.

Malheureusement, une maison n'est pas un avoir liquide divisible. Cela tient dans une large mesure à l'incapacité du marché privé des capitaux d'offrir les instruments financiers qui permettraient au propriétaire âgé d'équilibrer sa situation en matière de revenu et de richesse. Cette imperfection du marché des capitaux contraint les personnes âgées à faire un choix sans retour. D'une part, elles peuvent conserver la pleine propriété d'une maison et accepter une rente de retraite peu élevée; d'autre part, afin d'obtenir une rente de retraite plus élevée, elles peuvent vendre leur maison et aller vivre à loyer. Un tel déménagement les laisse d'ailleurs de plus en plus exposées aux ravages de l'inflation. Les régimes publics de retraite comportent aussi de sérieuses entraves fiscales qui ont pour effet de décourager les propriétaires retraités à faible revenu de liquider la richesse que représente leur maison et empêchent donc l'introduction des hypothèses inversées au Canada.

Contrairement aux prêts hypothécaires ordinaires, où l'emprunteur hypothèque son revenu futur en vue de disposer immédiatement d'un avoir réel, l'hypothèque inversée crée un lien sur une maison afin d'assurer un revenu futur et de liquider ainsi une richesse déjà accumulée. En supprimant une imperfection assez appréciable du marché des capitaux, les hypothèques inversées contribueraient à résoudre le dilemme auquel fait face une bonne partie de la population âgée du Canada. Cette initiative serait particulièrement avantageuse pour les personnes seules ou les propriétaires veuves de 75 ans et plus. Ces nouveaux types d'instruments financiers, qui ont été bien accueillis au Royaume-Uni et en France, accroîtraient non seulement les revenus de bon nombre de propriétaires âgés, mais leur permettraient également de demeurer dans leur maison, tout en se donnant une certaine protection contre l'inflation.

Les hypothèques inversées permettraient une liberté de choix beaucoup plus grande aux nombreux propriétaires âgés qui pourraient utiliser leurs propres avoirs pour subvenir a leurs besoins. En fait, il est assez ironique de penser que face à des coûts croissants et à des tensions financières pesant sur la propriété d'une maison, le fait même de libérer un intérêt dans leur maison au moyen d'une hypothèque inversée peut créer le revenu permettant justement aux gens âgés de demeurer dans leur maison pour le reste de leur vie.

Enfin, nous proposons qu'une formule quelconque de dégrèvement fiscal soit adoptée afin d'encourager les programmes d'hypothèque inversée. Cette mesure pourrait se justifier pour des raisons d'équité et également en vertu du taux élevé de rendement social avantageux d'un tel programme.

ABSTRACT

According to long-term projections by the Economic Council of Canada, the number of people aged 65 and over will reach seven million by the year 2031, thereby resulting in a sharp increase in the 65+ age group as a proportion of Canada's total population. Such a situation is likely to lead to increased financial pressure on the working population to support the elderly (many of whom will probably have relatively low incomes due to their retirement) through the various government old age income support programs. This state of affairs is further aggravated, at least over the more immediate short term, as a result of the erosion of the real value of retirement incomes by inflation.

Consequently, it is becoming more and more imperative to find ways to alleviate the burden on the taxpayer of supporting our senior citizens and to provide them with adequate retirement incomes. Reverse mortgages are a means of offset as part of this burden.

While many of the elderly have very low incomes, it is often the case that they have a considerable asset in the form of their own houses. The problem, of course, is that a house does not constitute a divisible liquid asset. This is largely attributable to the failure of the private capital market to make available the financial instruments that would

enable the elderly homeowner to adjust his/her income and wealth position. Such a capital market imperfection compels elderly people to make an all-or-nothing choice. Either they retain full ownership of a house and accept a low retirement income, or alternatively, in order to generate a higher retirement income they sell the home and move to rented accommodation. Such a move leaves them increasingly susceptible to the ravages of inflation. There also exist some serious fiscal impediments in the public retirement income system which tend to discourage low-income retired homeowners from liquidating wealth embodied in their homes and so inhibit the introduction of reverse mortgages in Canada.

Unlike conventional mortgage loans, which entail mortgaging future income to acquire a real asset now, reverse mortgages involve the mortgaging of one's house to acquire a stream of future income and thereby liquidate wealth already accumulated. By removing a quite significant imperfection in the capital market, reverse mortgages would help resolve the foregoing dilemma faced by many of Canada's elderly population, being particularly beneficial to single or widowed female homeowners over the age of 75. These new types of financial instruments, which have proved to be successful in the United Kingdom and France, would not only increase the incomes of many elderly homeowners but also allow them to remain in their homes while at the same time providing some protection against inflation.

Reverse mortgages would greatly improve the freedom of choice open to many elderly homeowners who would be able to make use of their own assets to help themselves. Indeed, it may appear to be somewhat ironic that, faced with the rising costs and consequent financial strain of home ownership, the very act of parting with an interest in their home, through a reverse mortgage, may generate the income to financially enable senior citizens to remain there for the rest of their lives.

Finally, we would suggest that some form of tax concession be introduced to encourage reverse mortgage schemes. This could be justified on equity grounds and also by virtue of the high rate of social return ascribed to such schemes.

"To uproot the elderly from their accustomed surroundings is often a cruel if unavoidable act. There is a certain serenity about living with the same furniture and the same neighbours, not necessarily because of their quality but because they are familiar and comfortable. Perhaps this is because of past associations or memories of happy or sad events. There is an aura about old houses and it becomes a part of the people who live in them. If they are forced to conclude after retirement that they can no longer stay in their home..., they leave something of themselves behind. Probably, the most usual reason for moving is that retirement income is no longer sufficient to pay for the costs of their home." (Retirement Without Tears, p. 110)

I. INTRODUCTION

Although many senior citizens have low incomes - over 50 per cent of individuals aged 65 and over are recipients of the Guaranteed Income Supplement (GIS) - it is nevertheless often the case that a large proportion of them have considerable amounts of wealth in the form of their own home. In fact, approximately two thirds of household heads aged 65 and over own a home without any mortgage outstanding.

Upon retirement, many elderly homeowners are faced with the following dilemma. If they wish to remain in the house in which they have spent most of their lives and to which they may have an emotional attachment, they must accept what is often an inadequate retirement income while eventually leaving a sizeable bequest to their heirs.

Alternatively, they can sell their home, which many are reluctant to do, and move to rented accommodation. In so doing, they generate for themselves a higher retirement income from the proceeds realized upon the sale of their house. However, uncertainty as to their life expectancy tends to deter them from selling. As long as they retain ownership of and continue to live in their house, they are provided with an inflation-proof "rent-free" non-taxable[1] service. If they sell their house, the capital derived from the sale and the income it generates could be depleted before their death. Moreover, insofar as house prices keep pace with the overall inflation rate, a house constitutes an asset whose real value is maintained during inflationary periods, and therefore affords some protection against increases in the cost-of-living.

The objective of a reverse mortgage is to allow individuals to convert some of the equity they have in their homes into a steady income stream, without giving up residence in them. It is the reverse of a conventional mortgage in the sense that the individual receives a monthly payment rather than making one.

II. TYPES OF REVERSE MORTGAGE SCHEMES

Two methods of arranging for such a scheme are possible. One method is the straightforward reverse mortgage (RM) in which the monthly payment received accumulates over time as a lien against the house. The other method is the RAM or reverse annuity mortgage, which involves the explicit purchase of an annuity with the proceeds of the mortgage loan.

If the individual puts a low priority on retaining ownership of the house and is interested primarily in a steady income for life with a guaranteed life-time tenancy, then he/she may elect the "home reversion" scheme, a variant of the basic RAM idea.[2]

Home Reversion

The home reversion or "split equity" plan involves the outright sale of the house in return for a lump-sum payment and/or a life annuity from the proceeds. The important consideration here is that this plan requires a deferred sale. Thus, the householder no longer owns the house, although he or she can continue to live in it until death, at a nominal rent fixed at the outset.

Such a scheme has already been in operation for a number of years in Britain. Home Reversions Limited, a private company, offers a plan whereby it purchases the individual's house outright in return for both a guaranteed fixed annuity for life, and life-time occupancy. The current market value of the house is discounted by the individual's or couple's life expectancy, and annuity payments continue until the death of the last survivor, at which time the property is released to the company. The annuity, less a fixed nominal rent of one point per month, is paid monthly in advance. The contract requires the annuitant to purchase insurance covering the property and to maintain the property in good condition. A minimum age of 69 years is recommended for entering into this plan because the annual annuity benefit at younger ages does not seem to be worthwhile financially.

Variations on the basic scheme allow the annuitant to retain some equity in the house, with a corresponding reduction in the annuity. This variation would permit the individual to obtain some of the potential appreciation in the value of the house, whether in real or nominal terms by retaining, say 50 per cent of the annuity.

A more personalized variation of the home reversion plan has been in operation in France (and to a lesser extent in Belgium and Italy) for decades, and according to that country's Ministry of Finance it remains a popular practice. It is estimated that about 400,000 elderly people in France receive "rentes viagères" income not only on their houses or small farms but also on apartments and even houseboats.

The "vente en viager", as it is called, is a transaction between two parties arranged in a legal manner through a "notaire" who specializes in property matters. It involves a complex negotiation in which the value of the property, the age and health of the owner or owners, and the resources of the would-be buyer come into play. In effect, the elderly person sells his or her property to a buyer and the price, minus a down-payment ("bouquet"), is divided by the seller's life expectancy calculated by the "notaire" with the resulting amount paid by the buyer to the seller as a monthly ("rente viagère") income until the latter dies, whereupon the payment ceases and the house reverts to the buyer. This system not only is enshrined in property law but also is included in French income tax regulations.

Although this practice is increasing in the United Kingdom, it is declining in France for two primary reasons. First, owing to the personalized nature of the arrangement, the buyer takes a considerable gamble, as there is no mortality risk-sharing on the part of buyers. Second, as a result of the absence of an effective secondary market, the buyer must contemplate living in the same community indefinitely. In a mobile society, such a home reversion or split equity arrangement would not be a particularly attractive investment for an individual. The answer to these problems would appear to be the establishment of a more institutionalized and sophisticated market such as that which has developed in the United Kingdom.

Reverse Mortgages

The reverse mortgage is strictly a debt instrument that does not confer any ownership rights on the issuing company. Thus, rather than sell part or all of the house, a loan is arranged with the house as security. The homeowner receives a periodic payment, calculated over either a fixed term or for life, which, in accumulating over time as a mortgage loan secured by the house, is worked out so as not to exceed some proportion (say 75 per cent) of the current market value of the house. The mortgage loan falls due for repayment at some prescribed future date.

In the spring of 1979, the Metropolitan Trust Company, the first company in Canada to offer such a scheme, began test-marketing its "Independent Income Mortgage" in Toronto. The program worked as follows: every year, for a maximum of ten years, the company pays the individual a mutually agreed upon fixed sum, discounted at the going interest rate (currently 11 per cent). The principal accumulates in the form of a mortgage on the house. An initial fee of $500 is charged, with an annual amount of $100 thereafter, to cover all costs (appraisal, administration, and so on). Thus, for example, to receive an annual net income of about $3,000 the homeowner would incur a mortgage liability of about $60,000 by the end of the ten years.

As the money is a pure loan, no income tax considerations are involved. Furthermore, no problem exists as to the retired person's possible qualification for benefits under various income-tested public assistance programs. Under this particular scheme, no income requirement or age limit is imposed. In one sense the risk to the individual is negligible since he or she can cancel the contract at any time. Risk does exist, however, to the extent that the contract provides for interest payments that vary with prevailing market mortgage rates.

At the end of the ten years, the individual has a number of options. Renewal for another term is possible if the house has appreciated sufficiently (up to 75 per cent of the increased value). Or, the debt can be converted into a regular first mortgage loan to be repaid by the mortgagee or members of the mortgagee's family. Alternatively, the individual may sell the home at its new value, pay off the debt, and keep the remainder. (Death of the spouse leaves all options open for the survivor.) If the house appreciates at just under 3½ per cent a year, the increase in equity after ten years will more than offset the total accumulated mortgage interest.

The major disadvantage of the reverse mortgage, as originally offered by Metro Trust, is that such a contract is for a fixed term only, as only life insurance companies can offer lifetime contracts under current legislation. This limitation presents the danger of leaving elderly persons with up to 75 per cent of their equity depleted exactly at a time when they are most vulnerable to reductions in their income. The spectre of forcing an elderly person out of his or her house at such a time could create such adverse publicity that companies in Britain refuse to engage in fixed-term arrangements. Partly for this reason but also because of certain provisions of that country's Finance Act[3], the reverse annuity mortgage with its lifetime guarantee feature has garnered much appeal, although it is a more complicated financial arrangement.

<u>Reverse Annuity Mortgages</u>

Like the reverse mortgage, the RAM is a pure debt instrument. A mortgage loan is taken out which, in turn, is used to purchase a lifetime annuity. Repayment of the principal is deferred until the death of the owner, or prior sale of the property. The periodic annuity payment made to the individual is reduced by the interest on the mortgage loan.

What this translates to in monetary terms can best be understood by looking at an actual example from Britain (Illustration I). A 75 year old woman owning a £20,000 house takes out a £16,000 (80 per cent) mortgage for which she receives an annuity guaranteed for life. The gross annuity per annum is £1,654. If she is a taxpayer, the minimum tax rate of 30 per cent applies to the interest component of the annuity which amounts to £53 per annum. Conversely, she also receives a tax refund on the mortgage interest payable which, at 30 per cent, adds £288 to the net annuity. After paying the £960 mortgage interest (here fixed at 6 per cent), she ends up with an annual income of £929. Note that if she is a non-taxpayer, her annual income is reduced to £694.

Thus, under the current British scheme, the attractiveness of a RAM to the homeowner is due largely to the tax refund earned on the mortgage loan interest. If the pensioner has no other taxable income, the amount of the annuity will be substantially less. In such a case, the value of the house, in conjunction with the individual's age (and thus life expectancy), will be of crucial importance. The higher the tax rate to which the individual is subject,

Illustration I

British Example of RAM Benefits for a 75 Year Old Woman, Owning a £20,000 House

	Annual Income £
1. Gross annuity payable for life	1,654
2. Less income tax at 30% on annuity interest* element of £177	53
3. Net annuity	1,601
4. Less mortgage loan interest fixed at 6%	960
5. Actual annual income	641
6. Add tax refund on mortgage interest	288
Effective increase in annual income if annuitant is a taxpayer	929
If annuitant is a non-taxpayer effective increase would be (item 1 minus item 4)	694

Source A detailed illustration of a Home Income Plan as offered by Hambro Provident Assurance Limited, London, England, 1979.

* Note that the annuity interest element, for purposes of taxation, is calculated as a constant amount over the term of the annuity.

the larger will be the tax refund on the mortgage interest and, thus, the higher will be the final annnuity proceeds. In general, the British schemes advise a minimum age of 70 or 72 years before this package becomes particularly attractive for individuals of any tax-bracket.

Variations on the basic RAM scheme include, for example, a lump-sum payment which precedes the basic annuity; a reappraisal of the house after, say, the first five years with the annuity readjusted accordingly; and a life annuity proceded by a guaranteed fixed-term annuity whereby the annual payment is increased by some constant factor. For example, if higher expenditures such as increased medical expenses, home care services, and so on are anticipated in later years, the pensioner might like to see the annuity payment increase by 5 or 10 per cent each year.

Reverse Mortgages Versus Reverse Annuity Mortgages

No conceptual difference exists between a Reverse Mortgage and a Reverse Annuity Mortgage, although institutional, legislative, and regulatory factors may make one more desirable than the other. For example, the currently offered, strict RM is available for a fixed term only. Nor is there any reason why that particular scheme could not be offered on a lifetime basis. It may be the case that, as in

Canada, only life insurance companies, and not trust companies, can engage in "guaranteed-for-life" business. Still, instead of using an arbitrarily chosen term for the RM, the term could be set for a period equal to the individual's life expectancy or, given prior knowledge of the dispersion about the life expectancy, be set at some value such that the individual could be, say, 95 per cent certain that the stream of RM benefits would not terminate prior to death. Alternatively, the RM could be made renewable indefinitely, with the annual payments calculated (reduced) to assure that the available home equity would not be exhausted prior to the end of the full life expectancy. Under this arrangement, the individual still suffers the risk of living past his/her life expectancy, the point at which the mortgageable equity is fully liquidated. Whether one could insure at reasonable cost separately against this particular contingency only, on a cost-feasible basis, is difficult to assess at the moment, because the program is in its infancy and the demand for such an insurance scheme has yet to be determined[4].

Risk works both ways, however. Under the RM, the individual assumes the risk of outliving the term of the contract. Under the RAM, the individual's heirs assume the risk of his/her not living long enough. These risks arise because the annuity payment is based on the pensioner's life expectancy. The longer the life expectancy, the smaller will be the periodic payment. However, if the individual should die six months after fully paying for a 15-year expected-life annuity, the remaining $14\frac{1}{2}$ years accrue to the company instead of the heirs[5]. The life insurance company is entitled to the gain because it assumes the risk that an individual will live past his/her life expectancy. The risk to the insurance company is pooled, and thus is significantly lower than the risk to the individual and the heirs.

Another problem with the RAM is that its earned-income component, i.e. the interest portion of the annuity received, is treated as taxable income. This interest income also reduces the dollar amount of government support to pensioners because many of the government retirement income programs are income-tested. Yet, conceptually, the annuity interest component serves only as an offset against the mortgage interest that falls due, the reconciliation of which is accomplished "internally" with a straight reverse mortgage. Unfortunately, income-tested government support programs are unlikely to consider the associated mortgage interest payment in their income support calculations. In Canada such mortgage interest is not tax deductible if incurred expressly to facilitate the earning of annuity income. Thus, while it is true that the mortgage interest deductibility feature, as currently operated in Britain, makes the RAM particularly attractive for certain age-sex-house equity combinations, this advantage also extends with equal force to the straight RM. The optimal choice between the RM and the RAM would therefore appear to depend much more on who will bear the mortality risk, and the institutional constraints which are operative at that time.

III. REVERSE MORTGAGES IN CANADA

As we have noted in the previous section, various schemes exist abroad allowing elderly homeowners to tap the capital they have built up in their homes and provide themselves with an additional source of retirement income. The practice of "vente en viager" has been widespread in France for some time. In the United Kingdom, reverse mortgages (with and without life annuities) have become increasingly popular over the past decade. Since Hambro Provident first introduced their scheme in 1972, approximately 3,000 plans have been written and they are currently writing £1 million worth of business per month, representing approximately 60 plans per month, while at the Save and Prosper Group between five and ten plans a month are completed. In the United States, the Federal Home Loan Bank Board only last year introduced legislation allowing federally chartered savings and loan companies to issue reverse annuity mortgages.

By contrast, similar schemes are extremely rare in Canada. Nevertheless, the idea is not entire foreign. Under the Old Age Pension Act of 1927, provincial authorities were empowered to recover from the estate of deceased pensioners the total amounts of the pension paid to them, together with interest at 5 per cent compounded annually (Bryden, 1974). This is, of course, no longer the case. However, in British Columbia the Real Property Tax Deferment

Act of 1974 allows a homeowner over the age of 65 who has resided in the Province for at least a year to defer annual property taxes, provided the property is occupied by the owner as his/her principal residence. Taxes may be deferred until the property is sold or transferred, at which time the payment is due equal to the total deferred taxes plus an annually compounded interest charge of 8 per cent. The amount of deferred taxes plus interest charges is secured by a Crown lien registered against the property. More recently, the Nova Scotia Government proposed a plan to improve pensions for retired homeowners using their houses as equity. Upon the pensioner's death, the house would be put up for sale, by the government agency administering the plan, in order to recover monies paid in pension benefits, with the deceased person's immediate family having the first option to buy the property.

Of primary interest are reverse mortgages. The fact that they are not more widespread in Canada may be attributed to a number of factors. To begin with, there is the apparent reluctance (or inability due to government regulation[6]) of the private financial sector to make available reverse mortgages. Moreover, whereas considerable tax concessions are designed to encourage these schemes in both the United Kingdom and the United States, no similar incentives exist in Canada[7]. Finally, the fact that the notion of a reverse mortgage is rather unconventional and not well understood would tend to impede its acceptance as a source of retirement income by elderly homeowners who, quite naturally, tend to be extremely cautious.

The Determinants of Reverse Annuity Mortgage Income

The amount of income derived from a RAM depends upon a number of factors, the most obvious of which are the value of the home and the amount of the loan used to purchase the annuity income. RAM income would also be determined by the annuitant's age and sex, whether the person wishes to take out the annuity jointly with his or her spouse, as well as prevailing interest rates. In addition, to the extent that any RAM income is taxed or reduces the benefits to which the annuitant is entitled under the Guaranteed Income Supplement, this will tend to offset the impact of a RAM on total disposable income.

Illustration II demonstrates how the income of an individual or couple (in the case of a joint-life annuity) is increased by a RAM, and how the increase in income varies according to sex and age. With respect to non-taxpayers, for a female the amount of income derived from a RAM more than doubles, from $494 to $1,103, if she purchases the RAM at age 70 instead of age 65. It increases to $1,872 if she postpones purchase until age 75. A male at each age is significantly better off, simply because his expectancy is

Illustration II

Calculations of Annual RAM Benefit by Sex, Age and Type of Annuity*

	Female			Male			Couple (Last Survivor)		
	65(17.5)	70(13.8)	75(10.6)	65(13.7)	70(10.9)	75(8.5)	65(20.0)	70(16.5)	75(13.3)
					$				
Gross Annuity (@ 6%)									
Capital element	2,224	2,853	3,632	2,853	3,632	4,441	1,900	2,358	2,853
Interest element	1,470	1,450	1,440	1,450	1,440	1,440	1,500	1,460	1,450
Total	3,694	4,303	5,072	4,303	5,072	5,881	3,400	3,818	4,303
Less Mortgage Interest (@ 8%)	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200
Non-taxpayer Income	494	1,103	1,872	1,103	1,872	2,681	200	618	1,103
Less Income Tax (@ 10%)	147	145	144	145	144	144	150	146	145
Taxpayer Income	347	959	1,718	959	1,728	2,537	41	471	959
GIS Recipient Income	-241	378	1,152	378	1,152	1,961	-550	-112	378

* Notes

1. The example is calculated for a house valued at $50,000 with an 80 per cent ($40,000) mortgage.
2. Figures are: on an annual basis; rounded to the nearest dollar; and may not add due to rounding.
3. Life expectancy is always rounded to first decimal point to give the term of the annuity.
4. Column headings XX(YY.Y) represent the case of an individual, or male/female couple, aged XX, with a life expectancy of YY.Y years.
5. Last survivor annuities are for male/female couples, with the female aged XX and the male 5 years older. The life expectancy YY.Y is calculated to the death of the surviving spouse.
6. GIS Recipient Income is derived by deducting one-half of the interest element of gross annuity from the non-taxpayer's income.
7. Experience in the United Kingdom indicates that a difference of two percentage points between the annuity and mortgage interest rates is sufficient to render RAMs a profitable proposition.
8. For tax purposes the interest element is calculated as a fixed amount over the term of the annuity.

approximately five years lower. Thus, a 70 year old female, for example, will receive benefits equivalent to those of a 65 year old male. If, however, a married couple acquires a RAM jointly, so that the benefits continue to be paid until the death of the last surviving spouse, the number of expected annuity payments will increase to the point where the periodic payment approaches an unacceptably small amount. Thus, for a 70 year old male who takes out a RAM with his 65 year old wife, instead of alone, the annual benefit is reduced from $1,872 to $618. This illustration demonstrates why, in Britain, there are suggested minimum age requirements, especially for couples.

Illustration II, as well as III, focuses on three types of annuitant: non-taxpayer, taxpayer and GIS recipient. Not surprisingly, the non-taxpayer benefits most from the RAM scheme. (This contrasts with the situation in the United Kingdom and United States where the taxpayer who has the most to gain by virtue of the income tax deductibility or mortgage interest payments in connection with RAMs.) The GIS recipient benefits least due to the fact that he faces an effective marginal tax rate of 50 per cent.

The sensitivity of the net income from the RAM to different interest rates may be the subject of greatest concern. Illustration IV shows that there is an unambiguous and significant decrease in all types of annual incomes

Illustration III

Annual Benefit to 75 Year Old Woman Subject to Different Tax Rates

	Annual Income with			
	0% Tax	10% Tax	20% Tax	50% Tax
Gross Annuity (@ 6%)	$5,072	5,072	5,072	5,072
Less Mortgage Interest (@ 8%)	3,200	3,200	3,200	3,200
Income Tax Payable	-	144	287	720
	$2,072	1,728	1,585	1,152

Notes

1. The example is calculated for a house valued at $50,000 with an 80 per cent ($40,000) mortgage.
2. Figures are: on an annual basis; rounded to the nearest dollar; and may not add due to rounding.

Source Own calculations.

associated with higher interest rates. This results from two factors: first although the interest element of the gross annuity increases, mortgage interest payments increase even faster; second, the higher interest income earned on the annuity is taxable and it is taken into account in the assessment of GIS entitlements. It follows, therefore, that with successively higher levels of inflation which drive up nominal interest rates, the house owner will be worse off in terms of his potential RAM income. Moreover, the two-point interest spread we have assumed between the annuity rate and the mortgage rate may become insufficient to cover rising administrative and other costs. Finally, since a tendency exists during periods of inflation to shorten maturity terms, life insurers may become increasingly reluctant to commit themselves to annuities exceeding 10 years at fixed annuity rates, unless they can offset this liability with an investment of equal term such as holding the associated mortgage themselves. Yet if variable rate RAMs are considered, some elderly homeowners may be discouraged from purchasing them because of the uncertain dollar income.

Illustration IV

Annual RAM Benefit to 75 Year Old Women Subject to Different Annuity/Mortgage Rates

	Annual Income with Annuity/Mortgage Rates of			
	0/2%	6/8%	8/10%	10-12%
Gross Annuity	3,632	5,072	5,603	6,159
Less Mortgage Interest	800	3,200	4,000	4,800
Non-taxpayer Income	2,832	1,872	1,603	1,359
Less Income Tax (@ 10%)	-	144	197	252
Taxpayer Income	2,832	1,728	1,406	1,106
GIS Recipient Income	2,832	1,152	618	99

Notes

1. The example is calculated for a house valued at $50,000 with an 80 per cent ($40,000) mortgage.

2. Figures are: on an annual basis; rounded to the nearest dollar; and may not add due to rounding.

3. Successively higher interest rates are assumed on the basis of various expectations about future inflation rates. A constant 2-point spread is assumed for administrative and other cost considerations.

Reverse Annuity Mortgages and Inflation

Inflation not only drives up interest rates and thus reduces the potential RAM benefit, it also drives up house values. The current market price of the house will be higher therefore offsetting some of the loss incurred from higher interest rates. More importantly, however, the appreciation in the value of the house can be used by the pensioner to increase the annuity payment.

Consider Illustrations V and VI. Suppose that the average price of a house increases at 8 per cent per year due either to a 3 per cent real appreciation plus a 5 per cent inflationary factor, or due to zero real appreciation and an 8 per cent nominal price rise. After five years, the $50,000 house used in this example will have a market value of $73,466. With an 80 per cent mortgage, this increase would allow $58,773 to be used for a RAM. But $40,000 was previously committed, leaving $18,773 available for a "new" or additional RAM. Illustration II showed the RAM benefit at the original value of the house. Illustration V shows the additional RAM benefits that accrue from the $18,773, using the same assumptions, but having increased everyone's age by five years. Illustration VI shows the total RAM benefits that would start in the sixth year and last for life.

Illustration V

Calculation of Incremental Annual RAM Benefit Arising After Five Year Appreciation in House Value by Sex, Age and Type of Annuity*

	Female			Male			Couple (Last Survivor)		
	70(13.8)	75(10.6)	80(7.9)	70(10.9)	75(8.5)	80(6.4)	70(16.5)	75(13.3)	80(10.6)
					$				
Gross Annuity (@ 6%)									
Capital element	1,340	1,630	2,343	1,710	2,090	2,683	1,102	1,340	1,710
Interest element	680	670	680	670	670	680	690	680	670
Total	2,020	2,300	3,023	2,380	2,760	3,363	1,792	2,020	2,380
Less Mortgage Interest (@ 8%)	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502
Non-taxpayer Income	518	878	1,521	878	1,258	1,861	290	518	878
Less Income Tax (@ 10%)	68	67	68	67	67	68	69	68	67
Taxpayer Income	450	811	1,454	811	1,191	1,793	221	450	811
GIS Recipient Income	178	543	1,181	543	923	1,521	55	178	543

* Notes

1. This example is calculated for a house initially valued at $50,000 that appreciates at 8 per cent per year for 5 years to $73,466. With an 80 per cent mortgage, this raises the mortgage amount from $40,000 to $58,773, allowing an additional RAM to be raised for $18,773 at the end of the 5 years.
2. Figures are: on an annual basis; rounded to the nearest dollar; and may not add due to rounding.
3. Life expectancy is always rounded to first decimal point to give the term of the annuity.
4. Column headings XX(YY.Y) represent the case of an individual, or male/female couple, aged XX, with a life expectancy of YY.Y years.
5. Last survivor annuities are for male/female couples, with the female aged XX and the male 5 years older. The life expectancy YY.Y is calculated to the death of the surviving spouse.
6. GIS Recipient Income derived by deducting one half of the interest element of gross annuity from the non-taxpayer's income.

Source Own calculations.

Illustration VI

Calculations of Combined Annual RAM Income by Sex, Age and Tupe of Annuity*

	Female			Male			Couple (Last Survivor)		
	65(17.5)	70(13.8)	75(10.6)	65(13.7)	70(10.9)	75(8.5)	65(20.0)	70(16.5)	75(13.3)
	70(13.8)	75(10.6)	80(7.9)	70(10.9)	75(8.5)	80(6.4)	70(16.5)	75(13.3)	80(10.6)
					$				
Gross Annuity (@ 6%)									
Capital element	3,564	4,563	5,975	4,563	5,722	7,124	3,002	3,698	4,563
Interest element	2,150	2,120	2,120	2,120	2,110	2,120	2,190	2,140	2,120
Total	5,714	6,683	8.095	6,683	7,832	9,244	5,192	5,838	6,683
Less Mortgage Interest (@ 8%)	4,702	4,702	4,702	4,702	4,702	4,702	4,702	4,702	4,702
Non-taxpayer Income	1,012	1,981	3,393	1,981	3,130	4,542	490	1,136	1,981
Less Income Tax (@ 10%)	215	212	212	212	211	212	219	214	212
Taxpayer Income	797	1,770	3,182	1,770	2,919	4,330	272	921	1,770
GIS Recipient Income	-37	906	2,318	906	2,075	3,467	-395	66	906

* Notes

1. The example is calculated for an individual who takes out a RAM for a house valued at $50,000 with an 80 per cent ($40,000) mortgage and then, after 5 years, takes out another RAM for $18,773, which reflects the increase in the price of the house being appreciated at 8 per cent per year. In other words, it adds Illustrations II and V together.
2. Figures are: on an annual basis; rounded to the nearest dollar; and may not add due to rounding.
3. Life expectancy is always rounded to first decimal point to give the term of the annuity.
4. Column headings XX(YY.Y) represent the case of an individual, or male/female couple, aged XX, with a life expectancy of YY.Y years.
5. Last survivor annuities are for male/female couples, with the female aged XX and the male 5 years older. The life expectancy YY.Y is calculated to the death of the surviving spouse.
6. GIS Recipient Income is derived by deducting one-half of the interest element of gross annuity from the non-taxpayer's income.

Source Own calculations.

Interestingly enough, the increase in benefits is substantial, in many cases a near doubling of benefits. This result underscores the sensitivity of RAM benefits to the age factor, in this case an increase of five years, with the resulting reduction in the life expectancy.

The frequency with which such a readjustment of RAM benefits can be undertaken depends on the rate of price increases; as well as on the cost of house appraisal and associated administrative costs.

In principle, it would be possible to use increases in the value of the house as collateral for futher loans. In this way the reverse mortgage plan holder has a source of income which can, insofar as house prices keep pace with inflation, be adjusted to match increases in the cost of living. (Where no further loan is taken, the increase in the value of the house would pass to the deceased's estate.)

The straight RM scheme as offered by Metro Trust in Toronto had this built in possibility, because it allowed an annual house reappraisal with an option to change the payment made to the elderly homeowner. Recall that the total cost associated with this reappraisal was a fixed and guaranteed $100 per year. In the case of the RAM, moreover, it should be possible to increase the annual benefit by more than the inflation rate because of the continuously reduced life expectancy the individual would have remaining. It thus becomes a variable annuity, with periodic increases in income linked to inflation rates.

The importance of homeownership as a hedge against inflation and, as a consequence, of reverse mortgages as a means for generating an indexed stream of income is amply illustrated by comparing changes in the Consumer Price Index with house prices. The caveat applies, of course, that this historical experience may not continue into the future. Since 1971, the Consumer Price Index has risen from 100.0 to 175.2 with an associated average rate of inflation of over 7.6 per cent (see Table 1). House prices, over the same period (using average MLS prices per transaction), have risen by an average of just over 11.7 per cent (see Table 2). In other words, using the same base year of 1971, the MLS price index rose from 100.0 to 231.0.

Computing the same figures over the time span of 1960 to 1978, shows the value of home-ownership even more dramatically. The Consumer Price Index rose from 74.3 to 175.2 -- an almost two-and-a-half times increase. The constructed MLS transaction price index, a proxy for house prices, rose from 57.8 to 231.0 -- a four-fold increase. It has clearly paid to own one's home (see Chart 1).

Table 1

Consumer Price Index and Inflation Rates

Year	Consumer Price Index	Year to Year Percentage Change
	(Per cent)	
1960	74.3	1.36
1961	75.0	0.94
1962	75.9	1.20
1963	77.2	1.71
1964	78.6	1.81
1965	80.5	2.42
1966	83.5	3.73
1967	86.5	3.59
1968	90.0	4.05
1969	94.1	4.56
1970	97.2	3.29
1971	100.0	2.88
1972	104.8	4.80
1973	112.7	7.54
1974	125.0	10.91
1975	138.5	10.80
1976	148.9	7.51
1977	160.8	7.99
1978	175.2	8.96

Source <u>Bank of Canada Review</u>, 1978, and previous editions.

Table 2

Average Dollar Value per MLS Transaction in Canada
(Average of all Regions -- In Current Dollars)

Year	Average MLS Price[1]	Index[2]	House Prices[3]
1960	$ 14,196	57.8	..
1961	14,133	57.5	..
1962	14,285	58.1	..
1963	14,428	58.7	..
1964	15,066	61.3	..
1965	15,917	64.8	..
1966	17,536	71.3	..
1967	19,112	77.8	..
1968	21,272	86.5	..
1969	23,600	96.0	..
1970	23,376	95.1	..
1971	24,581	100.0	..
1972	26,494	108.2	..
1973	32,306	131.4	..
1974	41,057	167.0	$41,773
1975	45,878	186.6	47,201
1976	51,359	208.9	50,807
1977	53,888	219.2	52,796
1978	56,778	231.0	54,816

Notes

1. The average dollar value per MLS transaction includes non-residential transactions.

Source Canadian Real Estate Association.

2. The index was artificially constructed for comparative purposes only, arbitrarily setting the 1971 price equal to 100.0.

Source Own calculations.

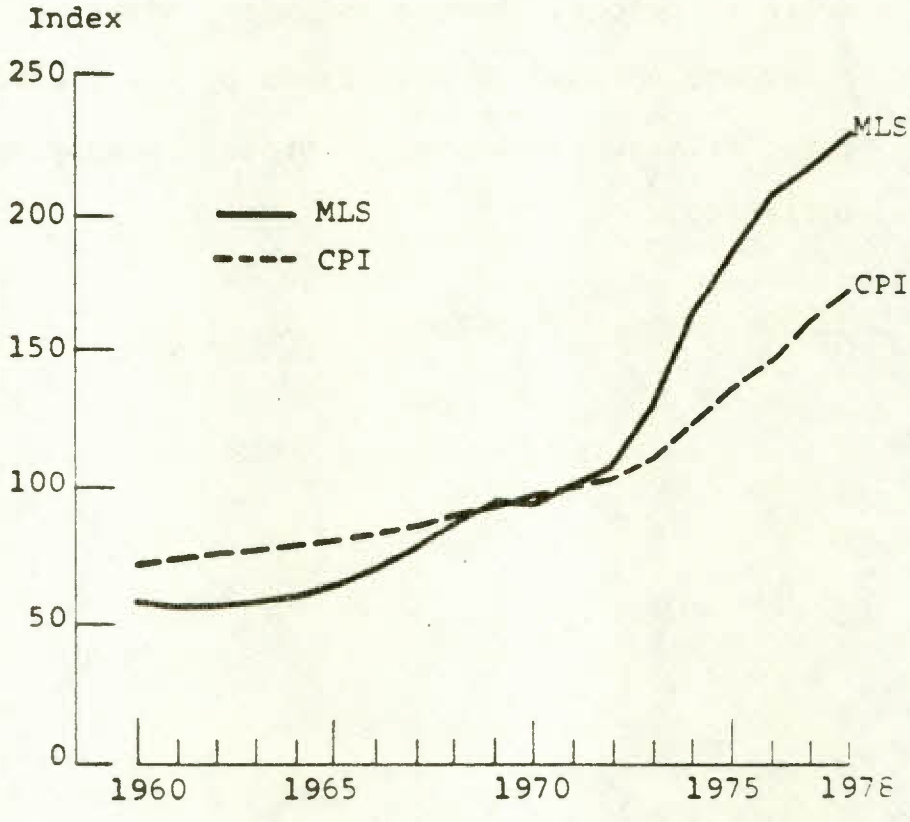
3. These prices are with respect to residential transactions only, and are not available on a Canada-wide basis prior to 1974.

Source Central Mortgage and Housing Corporation.

Chart 1

Comparison of the Time Path of the Consumer Price Index (CPI) and the Multiple Listing Service Index (MLSI), 1960-1978

(1971 = 100)



Source 1 Index constructed on basis of data from the Canadian Real Estate Association.

2 Bank of Canada Review -- various issues.

Obviously, to the extent that people have saved for retirement, their choice of saving in the form of home-ownership has been a particularly wise one. A reverse mortgage would enable homeowners to convert this form of wealth from an illiquid asset into a stream of income whose real value is protected from inflation. At the same time, the individual is assured the same real service from the house as before. Such a financial instrument would help to alleviate a major problem faced by the elderly, that is, their relative inability to protect themselves against inflation.

IV. ADVANTAGES AND PROBLEMS

No doubt, the somewhat unconventional nature of reverse mortgage schemes would tend to impede their acceptance as a method of dissaving by elderly homeowners who quite naturally tend to be extremely cautious. Not only would many of the elderly not have heard about reverse mortgages, but they would probably not fully understand them or how to go about arranging them. It would be difficult for senior citizens to obtain reliable information and advice, and they would tend to be concerned about the associated lender's and legal fees as well as other hidden costs. In sum, the fear of the unknown and of the possibility of making a costly mistake so late in life will tend to deter many of the elderly from considering changes in their finances that could in fact be in their own interest.

Experience in the United Kingdom shows that even the basic idea of the plan is difficult to explain to the elderly, since both a mortgage and an annuity are involved, both of which are terms that evoke strong emotional feelings. Explaining compound interest and the difference between paying today or some time in the future upon death have been difficult concepts to bring across. Nevertheless, despite these obvious difficulties, reverse annuity mortgage schemes and their variants would have a number of advantages.

First and foremost, they would remove an imperfection from the financial market which compels people to make an all-or-nothing choice. Either they retain full ownership of their home and accept a low retirement income, or alternatively they sell their home in order to generate a higher retirement income and move to rented accommodation. This new type of financial instrument would go a significant way towards alleviating the difficulty the elderly have in adjusting the way in which they hold and consume their wealth.

Second, this new class of financial instruments would permit elderly homeowners to fine-tune the amount of any bequest (embodied in the value of their home) which they might want to leave to their heirs. It has been argued that many of the elderly, faced with uncertainty, lack of knowledge, and more or less inadequate market solutions to their liquidity problems, may leave larger bequests than they would like to. Hence, economic efficiency would be increased if they could reorganize their asset portfolio in the presence of more and better information and if financial instruments more suited to their specific needs were more readily available.

Third, reverse mortgages would be particularly beneficial to lower-income homeowners who are much more "locked in" than higher-income groups. This is due to the fact that although the absolute amount of home equity rises with income, the ratio of home equity to income is higher among lower-income groups.

Fourth, to the extent that house prices keep pace with or exceed the overall rate of inflation, the house could still provide some protection against price increases, especially where the reverse mortgage is increased periodically in line with the value of the house. Of course this does not apply to the home reversion plan, since the latter plan involves a deferred sale and hence the elderly person no longers owns the house.

Finally, it is worth emphasizing that the implementation of such reverse mortgage schemes would not entail very much, if any, government involvement. In fact, it has been argued that because of the low income of elderly homeowners at present, there has been mounting pressure on various levels of government to increase financial support through tax-transfer programmes such as OAS/GIS as well as other provincial and municipal programmes. The pressure is likely to increase over the next 50 years as Canada's population ages unless some alternative ways are found to provide the elderly with adequate retirement income.

The current availability of such government retirement income programmes has enabled a larger portion of the elderly to maintain their house equity and pass it on intact to their heirs. Basically, this amounts to a subsidy by the government to the bequests, which raises the delicate question of the incidence of government transfer payments. Who is the real beneficiary: the elderly person or his/her estate? (Davis, 1978)

These various types of reverse mortgage and home reversion plans have not been immune from criticism. It is suggested that such schemes would result in "over-housing" of senior citizens. However, one could argue that this kind of situation is not different from that which exists in the case of young couples who buy a house with a conventional mortgage before rearing a family, or for that matter other individuals or couples in different circumstances.

It has also been claimed that these schemes would encourage elderly persons to stay in homes which they cannot afford to maintain and, as a result, their houses are more likely to fall into disrepair. Hence, the implication that they would be better off selling and moving into something more manageable. Yet it is often forgotten that some individuals will opt to remain in their homes, almost regardless of their income. In this case, to the extent that inadequate income prevents them from maintaining their home, reverse mortgage schemes by increasing their retirement incomes could mean that individuals can afford the maintenance cost. Indeed, it is still in a person's own interest to maintain the house if he or she is to benefit from any future increase in its value. (Under the reversion plan, individuals would presumably have the same responsibilities as any other tenant.)

Unfortunately, there are two basic fiscal impediments to RAMs in Canada. First, interest payments are not tax deductible if the mortgage loan is used to purchase an annuity. Second, any interest income derived from the annuity is taxable and reduces entitlements to both the GIS and, where applicable, provincial supplements to the elderly.[8] It follows, therefore, that the introduction of reverse mortgages in Canada would be greatly facilitated if mortgage interest payments in connection with these particular schemes were in some way tax deductible, as in the United Kingdom and the United States, or perhaps subsidized, in view of the potentially high rate of social return to such schemes.

For example, one might consider a special tax credit for the elderly to cover reverse mortgage interest payments. However, such a scheme would only be of benefit to those individuals who are taxpayers - the people who are most in need of help are not taxpayers but GIS recipients.

Perhaps then, an equivalent tax credit could be applied to the negative income tax system embodied in the GIS, so that any reduction in the supplement resulting from the purchase of a RAM would be offset by a tax credit up to a specified maximum. Such an extention of the tax credit scheme would greatly increase the attractiveness of RAM's to homeowners who are GIS recipients. It is worth emphasizing that not only would the implementation of such an extension to the proposed tax credit scheme be costless to the taxpayer, but it would also improve the well-being of low-income elderly homeowners. Without some kind ot tax concession, it is difficult to see how a reverse annuity mortgage would be attractive to anyone except perhaps very old homeowners.

Alternatively, experience in the United Kingdom has shown that a 2 per cent spread between the annuity and mortgage interest rate is sufficient to render RAMs a profitable proposition to the insurance companies concerned. Hence, if the financial institution issuing the RAM were able to offer an annuity with zero interest rate combined with a 2 per cent mortgage loan, the annuitant would be better off since he or she would not receive any interest income and therefore the RAM would not affect taxable income or GIS entitlements. As demonstrated in Illustration II, such an arrangement would increase dramatically the annual income of a 75 year old female GIS recipient by $2,832. To a certain extent this is what happens in the United Kingdom where reverse mortgage interest rates are well below those of conventional mortgages.

Of course, it is likely that continued exposure to the reverse mortgage idea over a number of years will be required in order to achieve public acceptance of the idea. The fundamental objection on the part of the elderly to this type of home equity dissavings plan is with respect to their being charged interest on the monies received. In one sense this objection is understandable. Elderly homeowners would clearly be better off financially if they moved out of their house, sold it, and invested the proceeds, even though any interest income received is taxable. However, as Illustration VII shows, the mortgage interest is simply the price that the elderly have to pay in order to receive the financial and psychological benefits and security that derives from the lifetime tenancy of their house.

Needless to say, there are other alternatives. By way of example, Illustration VII compares a RAM scheme with two other possibilities open to a 75 year old female non-taxpayer who owns a home worth $50,000. She can remain in her home (Option A) from which she derives certain non-pecuniary benefits and which provides her with "rent free" services (and if she were a taxpayer or GIS recipient, non-taxable). In this case, she has to bear the burden of the property taxes plus maintenance costs (say, $1,000 per

Illustration VII

Three Options Available to a 75-Year Old Female Non-taxpayer Owning a $50,000 Home

	Option A (No Sale)	Option B (Sale)	Option C (RAM)
Non-pecuniary benefits from own home (excluding "rent free" source)	+	Nil	+
Less Rent	nil	$ 3,000	nil
Less Property taxes + maintenance costs	$ 1,000	nil	$ 1,000
Life annuity income generated from home[1]	nil	$ 5,072	$ 5,072
Less Mortgage interest payments	nil	nil	$ 3,200
Change in net income position relative to Option A	...	$ 3,072[2]	$ 1,872
Change in bequests relative to Option A	...	$ -40,000	$-40,000

1 See Illustration II for other examples: male/female, taxpayer/non-taxpayer/GIS recipient.

2 This figure includes a $1,000 saving due to the fact that property taxes and maintenance costs are no longer payable.

annum) associated with owning a house and then leave it to her heirs as a bequest worth $50,000. On the other hand, if she sells her house (Option B), moves to rented accommodation costing $3,000 annually and decides to use $40,000 from the proceeds of the sale to purchase a life annuity worth $5,072, she may then reduce bequests to $10,000. Under this option further benefits accrue to her since she no longer has to bear the property taxes and maintenance costs. Option B thus leaves her $3,072 per annum better off in income terms relative to Option A, although this has to be weighted against the loss of non-pecuniary benefits which she derives from remaining in her own home in a familiar social environment. Under a RAM scheme (Option C) she can remain in her home and purchase the same life annuity, but in so doing she has to pay $3,200 in mortgage interest thereby reducing the net annual income generated from $3,072 (Option B) to $1,872, not an insignificant sum of money if the elderly person in question is having difficulty paying property taxes and home maintenance costs. Indeed, in this respect, it is perhaps somewhat paradoxical that the very act of parting with an interest in their residence may generate the income to financially enable senior citizens to remain there for the rest of their lives.

V. CONCLUSION

Given that these plans are likely to be of primary benefit to homeowners aged 70 or over, particularly those who are single or widowed, one might expect that in the future as Canada's older population grows as a percentage of the total (the number in the 65 years-and-over age group is expected to more than triple by the year 2031), interest in reverse mortgages is likely to grow. Moreover, the increasing financial "burden" on the work force to support "poor" elderly homeowners through various government tax-transfer programmes could perhaps be relieved insofar as reverse mortgages become more readily available.

With the current fiscal impediments that affect the viability of reverse mortgage schemes in Canada, in conjunction with the inflationary pressures that result in the high interest/mortgage rates that have been observed in recent years, it is unlikely that acceptance of reverse mortgages will come very suddenly or become widespread in the short run. One answer to high interest/mortgage rates was implied to previously; namely, that variant of the RAM wherein the annuity was offered with zero interest rate in combination with a two per cent mortgage loan. In the final analysis, however, the only real resolution will arise with government's recognition that the growing financial burden to support an aging population will become so high that it will become necessary to target policies towards facilitating the tapping of the equity embodied in the homes of the elderly -- in this context through some variant of reverse mortgage schemes.

The optimal choice between home reversion, RMs and RAMs probably depends on who wishes to retain the security of ownership (equity), who will accept the mortality risk, and what institutional, legislative, regulatory and fiscal constraints are in operation. Most likely, all these instruments will find market acceptance, and many variations thereof will spring up to accommodate the diversity of perferences found in the market place. Such schemes, whether operated by government or private financial institutions, would serve to expand the freedom of choice open to Canada's elderly homeowners and, whatever happens, that can only be beneficial to them.

Footnotes

1 The fact that imputed rent is not taken into account in assessing GIS entitlements would also tend to encourage recipients to remain in their homes. Note that for every dollar of income received in addition to the Old Age Security (OAS) pension, the GIS is reduced by fifty cents. This means that GIS recipients face an effective marginal tax rate of 50 per cent.

2 In full legal terminology it is called 'house purchase with reversionary interest'. Strictly speaking, it is not a reverse mortgage at all as no loan is involved. Nevertheless, we will consider it under the general heading of reverse mortgages.

3 Under the Finance Act, 1974, mortgage interest payments on such a loan are deductible for income tax purposes provided not less than nine-tenths of the proceeds of the loan are applied to the purchase of a lifetime annuity by the person to whom the loan is made.

4 The fact that the market value of the house may appreciate during this time, could reduce such a risk considerably.

5 In the United Kingdom, Hambro Provident has a Capital Protection Plan whereby an individual can ensure that the loan amount repayable on early death will be limited.

6 For example, under current legislation only life insurance companies can offer life annuities.

7 Under the United Kingdom Finance Act, 1974, interest payments on reverse mortgage loans are deductible for income tax purposes provided not less than nine-tenths of the proceeds of the loan are applied to the purchase, by the person to whom it was made, of a lifetime annuity.

8 In provinces where there are additional supplements to the elderly, the combined GIS/provincial supplement tax-back rate could be as high as 100 per cent.

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