Annuities

Regulating withdrawals from individual pension accounts

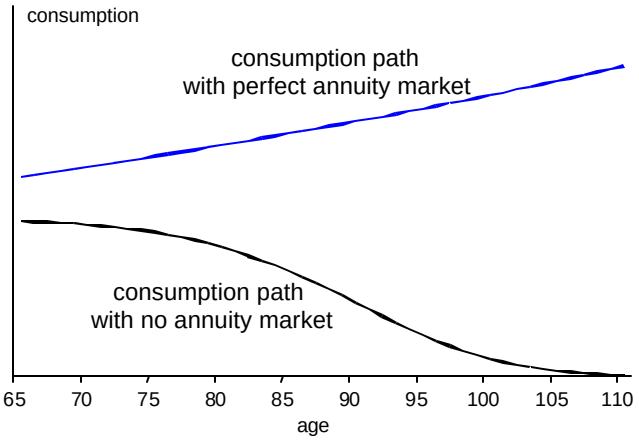
Pension, to most people, implies a regular payment from a specific age—such as retirement—until death. Individual retirement accounts are a vehicle for retirement savings but they do not become a pension in the conventional sense of the word until they are converted to an 'annuity'. How much and what type of annuitization should be mandated are key policy questions facing reformers.

The value of annuities

Economists believe that annuities can make people better off. The intuition is straightforward. Life expectancy is normally uncertain. So people would have to spend accumulated wealth slowly after retirement to ensure an adequate income should they live a long time. This kind of self-insurance is costly because it increases the chances that people will consume less than they could have if they knew when they were going to die. This cost can be reduced with annuities, which pool risk across individuals.

An annuity is a kind of insurance against the risk of exhausting savings in old age. The benefit of this 'longevity insurance' depends on how conservative people are. More cautious individuals would spend less of their savings in the early years of retirement if there were no annuities as they sought to avoid any chance of running out of money toward the end of their lives. The benefit also depends on interest rates, life expectancy and how much people plan for the long term. Under reasonable assumptions about each of these variables, an annuity has been estimated to be worth 50-100 per cent of wealth at age 65.

Annuities can raise welfare 1



Demand for annuities

Given these impressive magnitudes, it would seem safe to expect that there would be significant demand for annuities. But in fact, actual demand is quite limited. This is because the decision whether to buy an annuity is affected by transaction costs, market imperfections and other factors, which were not considered above. Understanding these reasons is important when thinking about how governments should intervene in the benefit withdrawal stage of an individual accounts system.

This briefing is part of the World Bank's Pension Reform Primer: a comprehensive, up-to-date resource for people designing and implementing pension reforms around the world. For more information, please contact Social Protection, Human Development Network, World Bank, 1818 H Street NW, Washington, D.C. 20433; telephone +1 202 458 5267; fax +1 202 614 0471; e-mail socialprotection@worldbank.org. All Pension Reform Primer material is available on the internet at www.worldbank.org/pensions

Adverse selection

One possible explanation for low annuity demand is a market failure known as 'adverse selection'. The potential for adverse selection is often used to justify government intervention in annuities markets.

Adverse selection can occur when people know something about their mortality risk that annuity providers find costly or impossible to find out. This information asymmetry means that people with higher mortality could expect to lose out from buying an annuity. The average life expectancy of annuitants increases, so providers must raise the price. This drives still more people out of the market. The market fails, because some people are unable to buy a fairly priced annuity.

A number of studies have documented annuity prices significantly higher than those that would be charged if insurance companies were to base their calculations on the relevant interest rates and projected population mortality. In other words, annuity prices were not 'actuarially fair'. Depending on the discount rate applied, the premium paid by annuitants in the United Kingdom and the United States was typically between 7 and 15 per cent. This evidence, combined with the observation that annuitants live longer than the general population, provides support for the market failure explanation.

Other factors reducing demand

But there are many other potential explanations for underdeveloped annuity markets. These fall into two categories: factors reducing the desirability of longevity insurance or means of providing a viable alternative to annuity products offered in the market.

We begin with *bequests.* Standard life annuities are, by definition, exhausted when people die. Yet people often want to leave some of their wealth to their family or even to charity. As well as concern for their family's well-being, bequests can be used to encourage relatives to look after them in their old age in exchange for the promise of the inheritance. Bequests, whether strategic or altruistic, can reduce the usefulness of annuities.

Precautionary savings can also reduce the demand for annuities. A sudden medical emergency requires liquidity and flexibility that is impossible if wealth is fully annuitized. In the absence of health insurance, this motive can be a serious disincentive to purchasing an annuity.

There are at least two important substitutes for annuities purchased from private insurers. The first is a *public pension.* In the United Kingdom and the United States, more than half of the average household's wealth is held in the form of a public pension. This proportion is even higher in countries with more generous benefits, such as France, Germany and Italy.

The second substitute—the *family*—can be described as an 'incomplete' annuities market. In theory, even a small family unit can make informal arrangements providing much of the benefit of buying an annuity. The advantages of keeping it in the family include low monitoring and transaction costs. And depending on the social sanctions that are possible, enforcement mechanisms in this informal market may be very effective. Simulations have shown that intra-family arrangements could generate as much as three-quarters of the welfare gains from an actuarially fair annuity market.

Empirical studies have not found much evidence of transfers within families that fit this model. But this is hardly surprising: the studies have focused on industrialized countries with broad public and private annuity provision. In contrast, within-family provision may well be important in traditional societies and rural communities. Here, the transaction costs of buying annuities are highest while informal contracts are common practice.

The desire for liquid assets or bequeathable wealth and the availability of substitutes for private annuities must be taken into account when designing benefit rules in a defined contribution pension system. Also, transaction costs and the state of the insurance sector (including regulatory capacity) should be borne in mind.

Why limit withdrawals?

The fact that few people buy annuities voluntarily poses a challenge for reforms relying on defined contribution schemes. To reduce old age poverty and provide a reasonable degree of earnings replacement in retirement, government intervention may be warranted.

Mandatory provision for income in old age is usually justified on two grounds. First, paternalism. People are myopic, and left to their own devices will not save enough. Others may be forward looking, but may lack the information needed to make sensible savings choices. Secondly, there is the phenomenon economists call 'moral hazard'. People will not save enough if they expect government to rescue them in their old age. And governments in many countries cannot credibly commit to leave pensioners destitute.

These same arguments apply to withdrawals in retirement savings systems. Myopic people might spend their savings early in retirement. And public safety nets encourage even the forward looking to spend to use up their wealth and then rely on government support. Lack of information—on inflation or life expectancy, for example—can also mean people make choices they later regret.

Mandating annuities

Forcing people to convert the whole of their retirement savings into an annuity is an obvious solution to the problems of myopia, lack of information and moral hazard. It also seems a sensible response to the possibility of 'adverse selection' mentioned earlier.

But we have already noted several reasons why people can find annuities unattractive, even when they have perfect foresight. Mandating annuities could reduce the welfare of these people, for example, by preventing them from leaving money to their children. Moreover, public policy objectives can be achieved without requiring full annuitization of wealth.

Minimum annuity levels

The tensions between individual preferences and public policy objectives point to the need to strike a careful balance as opposed to a blanket mandate to annuitize. This balance will be different in each country but a sensible starting point is to require people to take out an annuity of a minimum level. No one will be left destitute as a result of myopia. And, if the minimum is set higher than the safety net income, it mitigates the moral hazard problem.

A gap between the social safety net income and the minimum annuity is advisable for two reasons. First, the social safety net might be uprated more rapidly (by earnings, for example) than the annuity. So after a long period of retirement, the annuity might actually fall below the safety net.

Secondly, the safety net income is often set at a level that is much lower than would be a reasonable replacement rate for an average wage worker. People with a reasonable level of accumulated retirement savings should not be permitted, through myopia, to dissipate this wealth and then fall to the safety net level. Another way to avoid such a situation is to mandate not only the minimum annuity level but also a minimum replacement rate target based on the worker's own pre-retirement earnings. Naturally, the higher this mandated replacement rate, the greater the likelihood that the certain individuals will, in their view, hold too much of their wealth in the form of an annuity.

Finally, in mandating the minimum annuity, policymakers must take the interests of scheme members' dependants into account. Widows tend to be poorer than the rest of the elderly and women tend to live longer than men. If people can tie their annuity to their own life alone, then the government might have to support many surviving spouses. Problems of myopia and moral hazard suggest that at least the minimum annuity should be required to provide for survivors. Of course, the stream of income required to maintain living standards need not be as high as when both spouses were alive.

Indexation

The purpose of mandating annuities will be undermined if the purchasing power of the payment declines over time. Even low levels of inflation can dramatically affect living standards.

For example, 2½ per cent inflation over 25 years would nearly halve the value of a level (unindexed) annuity.

Inflation indexed annuities are not common. Even when they are widely available, as in the United Kingdom, take up is very low. This suggests another kind of myopia: people are unaware of the longer-term effects of inflation on their benefits. In economics terms, 'money illusion' is at work. Inflation protection should therefore be required for at least the minimum mandatory annuity and perhaps for all annuity products.

So that private insurers can offer inflation protection, the government will probably need to issue indexed public bonds. These allow annuity providers to insure their liabilities. But finance ministries have often opposed indexed bonds because they legitimize inflation and inflationary expectations. If people are protected from inflation's adverse effects, the argument goes, they will be reluctant to support painful macroeconomic stabilization programs.

Broader macroeconomic concerns must of course take precedence over the narrower interests of the retirement income system. But, once expectations of permanently high inflation are eliminated, there are more effective means of ensuring stability and credibility, such as an independent central bank.

Draw-downs and annuity options

A draw-down is an alternative way of spreading accumulated retirement savings over time. Rather than purchasing an annuity, an individual withdraws his balance according to a preset formula that takes into account average life expectancy and the interest rate. The main problem with draw-down is the risk that people might outlive their resources. A draw-down option could also exacerbate adverse selection: people with shorter life expectancy are able to opt out of the annuity market.

Scheduled withdrawals are useful for people who want to share in the investment returns (and risks) of the provider. In contrast, a standard life annuity contract is based implicitly on a fixed rate of return. Since insurance companies assume all the risk, the implicit interest rate is usually closer to the yield on government bonds with a similar duration.

An alternative product is a variable annuity. This is again an irrevocable contract, but the buyer shares in the risk and the return of investing the fund. If returns are low, future payments can be reduced (and vice versa). In Argentina, for example, annuities must generate at least a 4 per cent nominal rate of return. Above that level, annuity buyers and sellers can agree to split the returns in any way they agree.

Many other variants that customize the level and duration of the annuity income stream and associated risks can be offered. Some contracts allow for a fixed period of payments, say 20 years, even if the annuitant dies before the period is up. Some annuities allow for deferral of payments for several years. Limited inflation protection can be purchased at lower cost than a fully indexed annuity. An infinite number of combinations can be devised.

Timing of withdrawal

The value of accumulated retirement savings can, depending on how funds are invested, be volatile. Annuity rates also vary over time with long-term interest rates. In the United Kingdom, for example, an annuity for a 65 year old man fell from over 15 per cent of the fund in 1990 to around 10 per cent in 1998.

Variations in the fund value and annuity rates mean the time at which retirement savings are converted to an annuity can have enormous effects on pension income. So, for example, if people are forced to convert to an annuity at a set pensionable age, they will lose out if that coincides with, say, a stock-market crash. This 'timing risk' can be mitigated by allowing people to choose when they annuitize drawing down retirement savings in the meantime. But even professionals fail to predict stock-market and interest rate trends.

There is a better solution to the problem of timing risk. Annuitization can be thought of as a one-time portfolio shift, from a broad range of investments to a narrow portfolio: the investments of the insurer backing the annuity, predominantly

in bonds. Variable annuities are based on a broader portfolio. The insurer invests in a range of assets, and the annuity pay-out adjusts to reflect their value. This obviates the need for the one-time portfolio shift associated with timing risk. Variable annuities are also a better way of delivering the flexibility of investments achieved by drawdown.

Early international experience

Only two of the countries with mandatory, individual accounts—Australia and Hong Kong—allow members access to the whole fund balance when they retire. Australians generally take a lump-sum pay-out at retirement. (What happens thereafter is complicated by the presence of an income and asset tested public pension program.) Hong Kong will only begin collecting mandatory contributions in late 2000, so there is no experience of withdrawals yet.

Another dozen countries with individual account schemes restrict withdrawals in one way or another. In the United Kingdom, for example, people can take out a lump-sum of up to a quarter of their accumulated pension fund. They can draw down the rest of the fund gradually after retirement. But they must buy an annuity with the remainder by age 75 at the latest. Sweden will force people to buy annuities with their mandatory pension funds. Sweden is the only country where the government provides all annuities. The new schemes in Hungary and Poland also require annuitization but with private insurers.

Latin American schemes strongly encourage annuities but most allow for scheduled withdrawals. In Chile, about half of the quarter million pensioners in the new private scheme have opted for some form of annuity.

Regulations

Once the decision is made to restrict withdrawals, a series of difficult regulatory choices arise. Several have already been mentioned. For example, what are the specific types of annuities allowed and who can offer them? What is the minimum annuity that the retiring worker must purchase? The rules governing pricing and the way these complex products are sold lead to additional regulations. Finally, there may be implicit or explicit guarantees which may necessitate further rules and a process for monitoring them.

The most basic decision is the benefit level below which restrictions will be applied. In Latin America, the minimum annuity level is usually set both in terms of the worker's own pre-retirement earnings and some absolute minimum specified by the government. For example, workers in Argentina, Peru and Chile have the option of taking a lump sum if the remainder of the balance would allow them to purchase an annuity that provides a replacement rate of 70 percent.

In Chile, the minimum is determined according to a formula which states that if the individual can purchase an annuity of value equal to or greater than the higher of 1.2 times the minimum pension or a 70 percent replacement rate of the previous five years' average real earnings, the rest of the balance can be taken in the form of a lump sum. Since the ceiling on taxable earnings is twice the average wage, this means that highest mandated annuity is 140 percent of the average wage. This type of rule also provides flexibility with regard to the retirement age.

Annuity providers

During the accumulation stage, some countries with individual accounts have relied on specialized institutions. This is true for all of the Latin American reforms and is also the case in Hungary and Poland. In contrast, with the exception of Argentina and perhaps Poland, most of these systems allow annuities to be purchased from regular life insurance companies and not only specialized firms.

The problem with requiring specialized institutions is that separate capital requirements, staff and other costs of doing business are increased. This may limit competition and is likely to result in higher transaction costs for annuitants. On the other hand, weaker providers could lead to default and trigger expensive guarantees. A compromise is to allow life insurance companies to participate

but to require stricter standards for acquiring a license to sell annuities in the mandatory system.

Regulating annuity prices

Annuity providers might offer different annuity prices according to individual characteristics that are related to life expectancy. Sex, marital status, income and parents' longevity are all attributes that affect people's mortality risk. If insurers do not take account of available information, they might be undercut by competitors offering better terms to better risks. They would face their own individual adverse selection effects.

However, differential annuity pricing raises some important public policy issues. For example, lower annuity payments to a woman than to a man with the same accumulated retirement fund is actuarially accurate. Even though people are aware that women live longer on average, governments often require insurers to offer unisex annuity rates. The redistribution from men to women that this implies is justified as a way of avoiding the perception of discrimination when women receive lower annuity rates. Some other issues may become even more important in the future. For example, the use of private medical information and the potential for genetic testing are key sources of longevity information that will become easier to obtain in the next decades.

In practice, most of the countries with individual account schemes impose strict regulations on the way annuities are calculated and sold. Governments specify age-specific survival expectations used in the calculations. These may differ from national mortality data as is the case in Argentina, Chile, Colombia and Peru where special tables were sanctioned. All of these tables have significantly lower mortality rates than those found in population-based tables. The difference persists even compared with projected mortality, ranging from around 3 per cent in Argentina to almost 14 per cent in Peru. The lack of reliable mortality data on potential annuitants poses a major challenge to annuity providers and supervisory authorities.

The interest rates used in annuity calculations are also regulated in Latin America. In Argentina, insurance companies are required to use a 4% per cent nominal rate for both reserves and pricing. In Chile, reserves had to be discounted at 3 per cent a year real until 1988. Since then, reserves are discounted at the long-term rate on the underlying assets. The situation in Peru and Colombia is similar, with a 4 per cent fixed interest rate for reserves in Colombia and 3 per cent in Peru. The rate used to calculate the annuity is not stipulated. It is typically around 4 per cent in Colombia and almost 6 per cent in Peru.

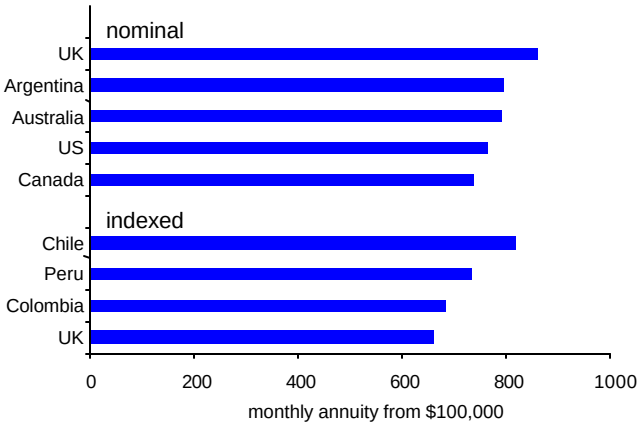
Figure 2 compares the monthly payment that could be purchased with $100,000 in Australia, Canada, the United Kingdom and the United States with quotes from four Latin American countries. The data are drawn from several sources, but they refer to the same kind of individual and the same type of annuity. In the four cases at the bottom of the chart, the annuity is price indexed. The five bars at the top refer to nominal annuities. Note that the Argentine annuity allows the holder to share in returns in excess of four percent.

The pay-out from a nominal annuity lies between $700 and $880 a month. Inflation indexed annuities range from around $620 in the UK to almost $820 in Chile. Interestingly, the indexed annuity in the United Kingdom pays a much lower amount than the indexed Latin American products: 60 per cent less than in Chile. Part of the explanation is the fact that Chilean annuitants have life expectancies that are five percent lower than their (voluntary) counterparts in the United Kingdom. Real interest rates are also higher in Chile. Unfortunately, because life expectancy of annuitants, interest rates and even the competitiveness of the insurance industry vary, these figures do not tell us how close these amounts come to providing a fair annuity.

This requires an estimate of the 'money's worth' of annuities sold. A widely used measure of this is the ratio of the fair annuity price to the market price. Several studies have measured the money's worth ratio in the United Kingdom and the United States. Typical results are in the 85-90 per cent range. But this does not measure the fairness of annuity prices to people buying them. Using

annuitants' life expectancies, the ratio tends to be very close to 100 per cent.

Annuity rates around the world 2



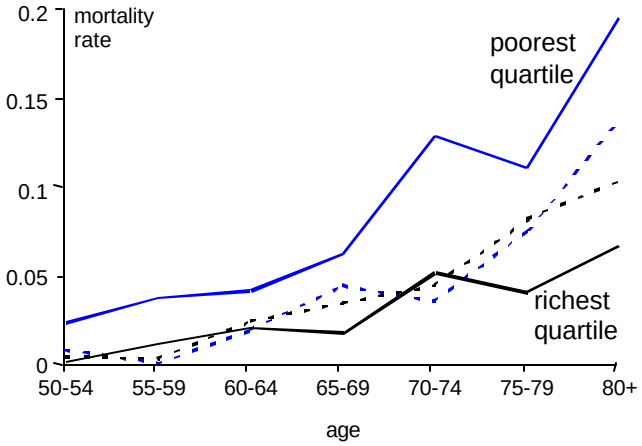
But this calculation is problematic, especially in developing countries. First, many countries do not have annuitant mortality tables or even projected life tables. So these have to be assumed. Secondly, few countries have long-term bond markets or, if they do, they are illiquid. It is difficult then to discount future annuity payments. Money's worth ratios also ignore the risk that an insurer will default, which will affect cross-country comparisons significantly. Finally, money's worth calculations implicitly assume that projected mortality is certain. In fact, demographers have often made serious errors in forecasting mortality. If this risk is taken into account, a significant part of the difference between 'fair' and observed annuity prices can be explained.

Mortality and wealth

Perhaps the most difficult issue in annuity pricing is the potential for redistribution from those with lower lifetime income and wealth to higher income annuitants. This occurs when there is a positive relationship between longevity and wealth. Indeed, this is simply the corollary of the redistribution to groups that are systematically longer lived in public pension schemes. Studies have found such unintended redistribution in the Netherlands, Sweden, the United Kingdom, and the United States.

Figure 3 shows the wealth-mortality relationship for older households in the United States based on the Health and Retirement Study. People in the poorest quarter of the population are on average four times as likely to die in any period than the richest quarter.

Wealth and mortality in the US 3



This relationship has several important policy implications. First, it suggests that at least some of the observed differences between population and annuitant mortality rates can be explained by greater demand for annuities among people in the higher wealth quartiles. This casts some doubt on the evidence of adverse selection and supports a simpler explanation.

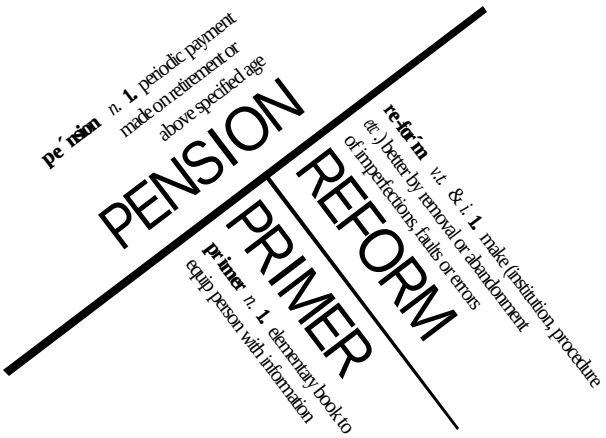
Another implication is that national mortality tables understate longevity in countries with partial pension system coverage, because people in the informal sector tend to be poorer than average. So their mortality rates are likely to be higher than those of members of the pension system.

Most important however, is the possibility that mandatory annuitization will lead to unintended redistribution away from workers with lower lifetime incomes. Jeffrey Brown of Harvard University finds that that these transfers could amount to as much as 20 per cent of pension assets for low-income workers in an individual accounts scheme. But he also suggests that these transfers can be reduced by allowing for guaranteed payment periods, bequest options and joint-life annuities. Of course, these options lead to

lower benefits for annuitants themselves since these options are more expensive than a standard life annuity.

Transparency and supervision

Efforts to improve consumer financial literacy and to regulate and supervise new pension systems have, naturally, tended to focus on the accumulation stage, as contributions and investment returns build up in retirement savings accounts. In contrast, there has been relatively little consideration of the conditions in the insurance sector and the supervisory apparatus required for the benefit stage of the system. Early experiences, especially in Latin America, highlight the need for better information and transparency in the new annuities markets. Parallel reforms in the insurance sector may be necessary to ensure the success of the reform.



Further reading

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Conclusions and recommendations

- regulation of withdrawals in pension systems based on individual accounts needs to balance public policy objectives and individual circumstances
- family arrangements can provide a large portion of the welfare gains of annuities
- and preferences vary including the desire to bequeath wealth and take precautions for medical expenses
- at the same time mandatory annuitization protects pensioners against longevity risk and reduces government's social safety net liabilities, by ensuring people do not spend all their savings early
- balancing these different objectives means that mandatory annuitisation of the whole of retirement savings is unlikely to be optimal
- the best strategy is to set a minimum, indexed annuity with adequate survivor's provision, with flexibility for any remaining retirement savings