Chapter 1

Turning Wealth into Lifetime Income: The Challenge Ahead

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In the last century, governments have shouldered a growing share of financial provision for the elderly. This trend was sustainable as long as populations were kept young by above-replacement fertility rates, so that growing labor forces provided a ready source for financing the retired. But as the twentieth century ended and the twenty-first began, the reality of population aging has made it clear that such promises are exerting a burdensome fiscal strain. While government payouts will likely continue to increase for many decades, it is now evident that future retirees will not be as well off as they had thought. Indeed, several countries have already reduced government-financed retirement promises by raising the retirement age, changing benefit indexation, and reducing retiree and dependent benefits. This process has been exacerbated by the steady decline in defined benefit occupational pensions which formerly paid lifetime benefits. Today, however, workers are more likely to receive defined contribution plans (if any pension at all), which provide retirees with lump sums or phased withdrawals.

This trend presents a substantial social challenge, especially when seen in the context of a globally aging population. The United Nations (2008) has estimated that the number of people in the world over the age of 60 totaled a little over three-quarters of a billion in 2008; by 2050, over 2 billion people are expected to be over age 60, or a 250 percent increase. Those over 80 are expected to increase from about 105 million today to nearly 400 million by mid-century. In the same period, total population will increase from 6.9 to 9.1 billion – a rise of about 31 percent. The retreat of the public sector and the burgeoning of an ageing world are clearly related, but their combined impact compounds the magnitude of the issue.

In the international context, there are only three major sources of longevity insurance. First is large families, which played a central role in old-age support in the past. Second is state provision, which was primarily a twentieth-century phenomenon and faces challenges in the future. Third is the insurance industry, which is able to pay for some long-lived retirees by

pooling survival risk across others who do not live long. A question we take up in this volume is whether the twenty-first century is likely to be an era of more general and formalized private longevity insurance provision through annuities. We have gathered a global group of experts to examine current practice in both developed and emerging economies, to provide guidance to address several questions including: What do annuity markets look like today? What is the potential to transform this product type into a familiar and widely used financial instrument like a mortgage or life insurance? What is the appropriate regulatory structure for lifetime payout annuities?

To answer these questions, we analyze a variety of countries. Some have mandatory annuitization (the United Kingdom, Sweden); others have mandatory accumulation plans without requiring annuitization (Australia, Chile, Switzerland); and still others remain heavily dependent on traditional social security with private annuities representing what might best be described as a residual market (Germany, Japan). Also in some nations, innovations in longevity insurance products have been embraced, apparently rather successfully (e.g., in Canada and the United States; Milevsky and Shao 2011). And in others – notably among emerging economies – India stands out as a country of nearly 1 billion people without a significant annuity market. Not included in this study is China, as it has only just started down this track with its incipient Enterprise Annuity program.

The demographic context

As we have argued earlier, the global demographic transition underpins a renewed interest in annuity markets. Accordingly, it is instructive to summarize the demographic profiles of the countries represented in the volume, outlined in Table 1.1. We include some 'old' economies, such as Germany and Japan, some younger developed countries such as the United Kingdom, Australia, Canada, and the United States, and still other nations that are exporting their young workers such as India. In every case, however, all are aging. Thus, across developed countries, fertility rates are now below the 2.1 rate required to sustain a steady state population, and in some countries the figures are low indeed. As a result, the aged dependency ratio is set to increase, most notably in Japan where the 2050 projection of 0.74 means there will be only 1.37 workers to support each retiree.

TABLE 1.1 Demographic profiles of selected countries (current and projected)

Country	Population (millions)	Total fertility rate	Life expectancy at birth	Aged dependency ratio	2050 aged dependency ratio
Australia	21.5	1.85	82.2	0.21	0.40
Canada	33.9	1.62	81.4	0.20	0.43
Chile	17.1	1.89	79.1	0.13	0.36
Germany	82.1	1.34	80.5	0.31	0.59
India	1214.5	2.52	65.2	0.08	0.20
Japan	127.0	1.27	83.7	0.35	0.74
Sweden	9.3	1.85	81.6	0.28	0.41
Switzerland	7.6	1.49	82.5	0.26	0.45
The United Kingdom	61.9	1.85	80.1	0.25	0.38
The United States	317.6	2.02	79.9	0.19	0.35

Source: United Nations (2008).

The demand for annuities

One theme that emerges from the studies in this volume is that voluntary life annuity markets are generally thin. This is not a surprise, since annuity markets are characterized by asymmetric information; accordingly, in the absence of appropriate regulatory support, they tend not to be efficient. In general, low demand for annuities is explained by several factors, including retiree bequest motives, their reluctance to lose discretionary control over their capital, the crowding-out of private annuities by public pensions, and adverse selection, where price is increased and value reduced for those with normal life expectancies.

Nevertheless, two countries studied in this volume, Chile and Switzerland, do host substantial voluntary markets for annuities. What is interesting about these two nations is that both rely heavily on mandatory accumulation policies for retirement. Thus, Ruiz and Mitchell (2011) show that in Chile, a combination of policy settings and market features combine to generate high annuity demand. There, annuities represent good value with a relatively high money's worth ratio (MWR). Also of particular interest is the establishment of an online bidding mechanism in which all providers participate, making market information much more accessible. Access to accumulations is available to early retirees, if they have substantial balances taken as an annuity. Additionally, pension payouts have been limited to those having twenty years of contributions, leading

risk-averse retirees with relatively modest accumulations to nevertheless choose annuitization.[1]

Switzerland also stands out as a nation with a strong voluntary annuity market. Bütler and Staubli (2011) suggest several explanations for the penetration of the Swiss market. First, good money's worth values are important, and in many cases, these exceed unity. But second, behavioral factors are also influential. For instance, information provided to pension fund members emphasizes what Brown et al. (2008) refer to as a 'consumption' frame, as opposed to an accumulation or returns frame, and much political debate is conducted in terms of consumption outcomes. And third, defaults matter. While MWRs for the mandatory accumulations are very high, super-mandatory conversions lead to lower MWRs for that portion of annuitization. Yet, most retirees make polar choices, and most annuitize both the mandatory and super-mandatory components of their retirement benefits. Indeed, the Swiss case shows that lower income individuals with access to means-tested government benefits are less likely to annuitize. This is consistent with the view that crowding-out is important.

Chile and Switzerland both rely on a mandatory accumulation policy as a mainstay of earnings-related retirement provision. They share this characteristic with Australia, as analyzed in this volume by Bateman and Piggott (2011). The surprising fact, however, is that while Chile and Switzerland have strong voluntary annuity markets, in Australia they are almost nonexistent. Thus, in the nine months to September 2009, only seventeen life annuities were sold in the entire nation. One reason is that Australia lacks the traditional defined benefit social security system, and instead it has a means-tested pension that is quite generous as a poverty alleviation instrument. For instance, for a single individual, it delivers about 28 percent of average fulltime earnings, wage indexed, and this is available to all eligible residents at age 65 regardless of labor force participation history. Couples receive about 41 percent of average earnings. Over half the eligible retired population today receives the full age pension and over three-quarters receive some means-tested benefit. As a result, there seems to be little residual demand for private annuities.

Over the last decade, the Australian annuities market has ebbed and flowed in response to policy decisions which have affected the way in which annuity purchase impacts upon the means-tested first-pillar, tax rules, and the impact of decisions taken by the national prudential (regulatory) authority. Framing would appear to provide part of the explanation, since Australia's pension industry emphasizes accumulations and returns, while downplaying the level of consumption an accumulation might deliver. In addition, the authors suggest that policy coordination might be a possible explanation, a theme to which we return later.

In several other countries described in this volume, the conventional wisdom also seems to apply, namely that voluntary annuities are often a hard sell. Interestingly, this remains true even when MWRs are high, in part because publicly provided social security can crowd out private provision as in the United Kingdom. Thus, Cannon and Tonks (2011) report that, while the UK compulsory annuity market is very active, the voluntary market is very small. The same applies to Sweden, as noted by Palmer and Larsson (2011). In Germany, as reported by Kaschützke and Maurer (2011), annuities also have high MWRs, yet market volume remains small. And Sakamoto (2011) likewise reports very low take-ups of voluntary annuities in Japan.

Progress and obstacles in insuring the risk

Innovations in the annuity market are also of interest, despite obstacles to efficient supply raised in several of the chapters. As Asher and Vasudevan (2011) point out, it is essential to have disaggregated morbidity and mortality databases in order for the market to work efficiently, and for investors to learn how to match assets and long-term liabilities. At the same time, greater financial literacy and more robust regulation are also greatly needed. While Asher and Vasudevan write about the Indian context, these points are also relevant in most other countries as well. To illustrate our points, we offer a brief and selective discussion focusing on longevity projections and risks, product innovation, and policy coordination to support longevity insurance markets.

Longevity projections and risks

Many approaches have been used and proposed to project mortality. Mortality improvements have been estimated from medical scenarios, but this has consistently underestimated mortality. Analysts have often claimed biological limits for humankind only for mortality improvements to overtake their projections, sometimes within a few years (Oeppen and Vaupel 2002).

Demographers rely more heavily on extrapolation of past trends. Lee and Carter (1992) both formalized and popularized extrapolative methods, which give better estimates of life expectancy but often imply an implausible degree of accuracy (Alho 1992). Their approach also has limitations. Some analysts argue that future mortality improvements will now have to come at older ages, thus reducing the impact on life expectancy at birth. Others suggest that developments such as the increased incidence of obesity will inhibit future increases in life expectancy in developed countries (Olshansky et al. 2005).

Current actuarial approaches, including those used by the Society of Actuaries and the UK Institute of Actuaries, are based on actuarial life tables. Here, mortality projections are, at best, crude and based on high-, medium-, and low-projected deterministic tables (or sometimes they assume deterministic improvement trends). These tables therefore offer limited guidance on the risk arising from longevity changes and hence have major limitations for pricing or capital assessment for insurers.

Increasingly, in the international sphere, attention is being placed on alternative and more sophisticated models better-suited to risk management and pricing. Active life expectancy, which is the period of life free from disability, is important for financial products and longevity risks. Modern stochastic modeling incorporating disability-specific mortality indicates higher active life expectancies than cruder models and provides a basis for assessing morbidity risks and their financial impact (Manton and Land 2000).

What is still lacking, however, is an integrated approach based on modern statistical models that captures the essential characteristics of mortality and morbidity data across different populations, takes into account mortality and morbidity risk factors, produces estimates of risk for longevity products, and recognizes the need for professional and commercial application and acceptance. Developing this framework could greatly enhance the development of more robust annuity markets, since it would provide the basis for risk spreading through reinsurance. Reinsurance is occurring, but it is limited in its reach.

Product innovation

The life payout annuity has been around for a long time, and until recently, there has been remarkably little innovation in its basic form. In this volume, however, several authors discuss product innovations that may make annuities more attractive. For instance, Webb (2011) emphasizes the importance of the mortality multiplier, pointing out that annuities are most effective when used to finance consumption at advanced old age. The advanced life deferred annuity (ALDA), so named by Milevsky (2005), could be purchased at retirement or earlier, and it would provide an inflation-indexed income stream starting at some advanced age, and conditional on survival to that age. Such products can be very reasonably priced because of the size of the survival credit embedded within them; a related product was also discussed by Bateman et al. (2001).

While the ALDA gains leverage from increasing mortality rates at later ages, a more sophisticated product analyzed by Milevsky and Shao (2011) is the Guaranteed Lifetime Withdrawal Benefit (GLWB). This is an investment product which has attached to it a provision for a life annuity

payment contingent on the invested portfolio falling below some wealth threshold (or some other sort of index of declining market performance). It can potentially be a very efficient instrument since it delivers insurance when the consumer needs it, that is, when the market declines. The authors report that this product has become popular in Canada; whether this represents a step toward more widespread sales of industry-based longevity insurance remains to be seen.

Policy coordination to promote longevity insurance

The longevity insurance market faces a key difficulty: information is not symmetric between buyer and seller, resulting in adverse selection. This problem, combined with the other challenges documented earlier, means that such regulatory support may be needed to have annuities develop and function efficiently. The discussion by Asher and Vasudevan (2011) takes up the key challenges to be met by coordinated government policy.

In the real world, of course, policy surrounding longevity insurance products and associated market regulation tends to be divided across several agencies. For instance, in Australia, a product provider requires approvals and agreements from the Australian Prudential Regulator Authority (APRA), the Taxation Office, and the Department of Family and Community Services, which administers the age pension (Bateman and Piggott 2011). Not only do these agencies approach their regulatory responsibilities in isolation from one another but also none has a mandate to support the longevity insurance market. As a result, it becomes difficult to devise and market an innovative product. Furthermore, incentives to purchase life annuities rather than take lump sums have been entirely removed. Accordingly, a plausible reason for the success of the annuity markets in Chile and Switzerland is that coordinated regulation supports these markets. Where this is absent, the market struggles.

Unfortunately, it appears that coordinated policy is the exception rather than the rule. In Japan, for example, Sakamoto (2011) points to a taxation anomaly making life annuities an unattractive purchase, and in India, Asher and Vasudevan (2011) suggest that policy on life annuities is sorely underdeveloped.

Conclusion

In the old days, longevity risk management was first and foremost a family obligation. When development, migration, and the scattering of families became more common, government and employers became the mainstays of longevity insurance in the twentieth century. In the twenty-first century,

demographic shift and government overspending has put all three of these sources under stress. Smaller families mean fewer children, so many are becoming increasingly vulnerable to an old age without substantial family support. The public sector, with its growing number of retirees to support, is backing away from promises which were, perhaps, unrealistic from the start.

What remains, then, is self-provision, mediated by the financial and insurance sector. The developed world may be just at the beginning of large-scale reliance on the private sector to deliver this insurance. Yet, as this volume shows, much new knowledge will be needed to make the private sector efficient. Knowledge about increasing longevity, and the distributions of outcomes around such projections, is at an early stage. Knowledge to inform regulatory specification, such as risk-based solvency requirements required to effectively price annuities, is also sparse and undeveloped. The role of asset–liability matching, and the possibility that governments may be able to structure debt issues to allow matching to be better achieved, remains largely unexplored. In sum, much remains to be done to deal with the demands of a robust privately based longevity insurance regime. The next decade will determine how well we can meet this challenge.

Note

[1] Recent changes to minimum benefit requirements will make these much easier to obtain, and this may impact annuity demand.

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