Guest Editorial

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This special issue of *The Geneva Papers on Risk and Insurance—Issues and Practice* contains nine academic papers dealing with the challenge to retirement systems posed by ageing societies, slow economic growth, fiscal imbalances and the increasing cost of retirement. Although this issue has been overshadowed by the financial crisis, it is likely to become a major concern of political decision-makers and insurance industry leaders in the next quarter century.

Almost exactly a quarter century ago, in 1987, The Geneva Association created a research programme devoted to global retirement challenges called *The Four Pillars*. The programme, now renamed Life and Pensions, noted that there are four main sources of income for retirees: State social security and social assistance systems (1st pillar); employment-based pensions (2nd pillar); private savings (3rd pillar) and continued employment (4th pillar).

The Four Pillars programme celebrated its 25th anniversary in 2012. The anniversary was marked with the publication of Geneva Report No. 6 entitled *Addressing the Challenge of Global Ageing—Funding Issues and Insurance Solutions*, which made the case for the Four Pillars approach in the current global economic environment. This was followed by a conference called *The Four Pillars: The Next 25 Years*, held in Geneva. This volume of *The Geneva Papers on Risk and Insurance—Issues and Practice* is the last part of the celebration. Each of the papers studies a particular country. But the research findings are of general applicability.

The first and second papers in this volume examine the first pillar. In most countries, this is a pay-as-you-go (PAYG) programme. In the long run, the rate of return equals the sum of the rates of growth of the workforce and taxable wages. As a result of declining fertility and stagnant real wages, many PAYG programmes are financially unsustainable. Reforms in some countries have included transitions from a defined benefit to a notional defined contribution benefit formula, which, advocates argue, will contribute to long-term stability and sustainability. The first paper, by Michele Belloni and Carlo Maccheroni, studies the Italian reform. They identify a weakness, namely the use of period as opposed to cohort mortality tables.

In most first pillar programmes, individuals with high lifetime earnings achieve lower rates of return on contributions. But high-income households may still value the opportunity to

invest in a low-risk asset with uncorrelated returns, or create more efficient portfolios when security provided by the first pillar is taken into consideration. In the second paper, Krzysztof Ostaszewski demonstrates that first pillar programmes act as “safe anchors” for personal investment portfolios of workers. Risk-averse participants in social security programmes may place a high value on the opportunity to invest in a low-risk asset class with returns that are uncorrelated with those in financial markets, while risk-tolerant households will increase the level of risk in their personal portfolios to achieve an optimal trade-off between risk and return.

There is considerable heterogeneity in second pillar pension design. In some countries, investment and longevity risk is retained by employers and financial institutions. In others, these risks are borne by the participant. But mandating the purchase of an annuity will not completely eliminate investment risk, because annuity rates fluctuate over time. The third paper, by Martin Eling, examines the impact of the Swiss response to this problem, namely, to legislate a rate at which accumulated assets are annuitised. It calculates the resultant intergenerational transfers, argues that the intervention has undermined the financial stability of the system and discusses policy options. The fourth paper, by Wei Sun and Anthony Webb, compares alternative drawdown rules of thumb in the context of the United States’ defined contribution system, where annuitisation is voluntary. They show that consuming the percentages of remaining wealth that households are required by law to withdraw from their defined contribution accounts compares favourably with the alternatives, including the purchase of an annuity, and is close to the theoretical optimum.

One important source of heterogeneity in second pillar plan design is in the prevalence of book reserve plans, which are common in Germany and Japan. The fifth paper, by Shingo Goto and Noriyoshi Yanase, investigates the firm characteristics associated with sponsoring a book reserve plan. Their results suggest that firms with a stronger demand for financial flexibility prefer such plans. Their findings contribute to an understanding of why defined contribution plans have displaced defined benefit plans in Anglo-Saxon countries (with the possible exception of Canada, where defined benefit plans still play a significant role).

The next two papers examine longevity risk. The first, by Cappelletti, Guazzarotti and Tommasino, investigates the demand for annuities using data from the Italian Survey of Household Income and Wealth. Until recently, the Italian PAYG pension plan, in common with those of many other European countries, provided households with high replacement rates, so that most households had little need to purchase additional longevity insurance. As replacement rates decline and an increasing share of the responsibility for financing post-retirement consumption is passed on to households, a potential concern is that households will fail to appreciate or insure against the risk of outliving their wealth. The above paper shows that Italians appear more willing to consider the purchase of an annuity than households in Anglo-Saxon countries. But poorer and less educated households are more annuity-averse, suggesting a need for a mandate, or if this is viewed as too coercive, a combination of financial education and appropriately designed default annuitisation strategies.

The paper by Joseph Tien reports the results of an economic experiment in which Taiwanese individuals are exposed to longevity risk. In accordance with the predictions of economic theory, Tien finds that individuals respond to longevity risk by decreasing consumption. Worryingly, the researcher also finds that they respond by increasing their portfolio allocation to risky assets. The paper illustrates the value of economic experiments as a tool for uncovering behavioural biases that may result in households making

inappropriate financial decisions—an essential first step in designing interventions that will educate and guide households towards more appropriate choices.

The final two papers study the fourth pillar. When pension systems were first introduced, the retirement age was typically set at 65. Workers who were lucky enough to survive to that age faced a short remaining lifespan and were likely to suffer work-limiting disabilities, so providing a universal pension was both cheap and equitable. With improvements in health, and declines in the prevalence of physically demanding work, a significant proportion of workers are now able to delay retirement past traditional retirement ages. One solution to the pension crisis is therefore to encourage delayed and phased retirement. But pension systems often incorporate significant disincentives to continued employment. The paper by Tunga Kantarci, Ingrid Smeets and Arthur van Soest calculates the pension incentives to delayed and partial retirement in the Dutch state and occupational pension systems. They find that although occupational pensions contain approximately actuarially fair incentives, the state pension incorporates strong disincentives to delayed retirement for low-income groups. This paper illustrates the importance of carefully modelling the interactions between the first and second pillars, and incorporating the impact of income and payroll taxes, rather than focusing exclusively on the first pillar and on pre-tax income. The paper by Yue-hua Zhang and co-authors examines the impact of health on retirement age in China. The population of China is ageing rapidly, and an increase in the retirement age of urban workers is a demographic necessity. This paper illustrates the importance of incorporating the health status of the population in any analysis of proposed pension reform.

In advanced industrial countries, the past 25 years have been a golden age for pensioners. The next quarter century will be different; it will be a period of great challenges for retirement systems. It is likely that PAYG replacement rates will be reduced over the coming 25 years. But it is unlikely that first pillar systems will be dismantled completely, or even replaced by funded, individual accounts. However, given the reduction in the role of the first pillar, retirees will be called upon to place greater reliance on the remaining three pillars. This requires widespread participation in second- and third-tier programmes, the use of accumulated second- and third-tier plan balances to fund lifetime income, as well as reducing the barriers and disincentives to work at older ages and changing the perception of working in retirement to a welcome and valuable contribution by retirees. The papers in this special edition will assist political decision-makers and insurance industry leaders in achieving these goals.