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Book reviews

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Financial Risk Management for Pension Plans. By Leslaw Gajeck and Krzysztof M. Ostaszewski. Elsevier, 2004, 366 pages, ISBN 0-444-51674-3, Price $99.00. doi:10.1017/S1474747205212416

Risk management for pension plans has, possibly belatedly, become a popular topic in both the US and the UK. It is surprising that there is such a dearth of books on this subject, despite the large body of academic articles. My online search on this topic turned up only two volumes, one of which is the subject of this review.

While this book is an excellent account of the actuarial mathematics of pensions and insurance, one cannot help feeling that it has been given the wrong title. Some numbers illustrate this view. Section 1 of the book, "Fundamentals", covers the essentials of actuarial mathematics and is 156 pages long. Section 2, "Valuation of Assets and Liabilities", 126 pages long, examines the actuarial and financial concepts underlying the valuation of plan assets and liabilities. This leaves only 62 pages for Section 3, "Financial Risk Management", much of which is a description of existing classifications of different types of risks for insurance companies. A reader misled by the title will be disappointed, if he expects a more comprehensive discussion of the risks facing pension plans, how these risks affect different stakeholders, and the technical or practical tools that managers or trustees could use to measure and manage these risks.

The book opens with a presentation of the fundamentals of actuarial mathematics and the valuation of pension assets and liabilities. Topics covered include the theory of interest and the valuation of contingent claims such as life insurance and annuities. Different concepts of pension plan valuation in the US such as normal cost, funded and unfunded liabilities, and methods of calculating contributions (here called funding methods) are discussed. An interesting section covers the random fluctuation of pension fund liabilities due to sampling fluctuations in observed mortality, but the discussion assumes that interest rates and the underlying mortality distribution are known. This section would be very useful for risk management purposes if it included the case where interest rates and mortality rates were unknown. A final chapter examines different methods of valuing assets, including no arbitrage and equilibrium models.

These chapters are a technical but very readable account of the actuarial mathematics of pensions and insurance. They will be useful to those teaching actuarial courses or studying for the actuarial examinations, particularly in the United States. Concepts are well-illustrated with examples, and exercises - many of which are questions from past examinations – are included. Although the book explains difficult concepts well, the presentation is probably too technical to be used by most students as a textbook, except for supplementary reading.

The third portion of the book covering risk management is more problematic. There is no discussion of precisely which risks are being managed, and on whose behalf. One would imagine that the risks which beneficiaries are exposed to are quite different to the risks which firm sponsors face in relation to the pension fund. For instance, beneficiaries of a pension fund might wish to evaluate the risk of corporate insolvency, and possibly even insure themselves against it, while the sponsor might be more interested in the volatility of required pension fund contributions. The Section describes some standard risk classification and measurement systems such as that defined by the Society of Actuaries' Committee on Valuation and Related Matters in 1979, and the National Association of Insurance Commissioners' 1993 Risk Based Capital system for life insurance companies. However, there is little indication of how these measurement systems might be applied to pension plans.

The next topic is the management of interest rate risk. Duration, convexity, and immunization are examined in the case of flat yield curves. Immunisation against more complex types of interest rate changes is then covered. Practical issues in immunising pension liabilities against interest rate changes – notably the lack of suitable long-term assets to match pension liabilities – are well covered. In the final chapter of the financial risk management section, the authors examine a stochastic approach to financial risk management of pension funds. A small section discusses asset allocation and how this might be used as a risk management tool. Value-at-Risk and shortfall control methodologies are briefly discussed, in addition to the standard Markowitz one-period model. Most of this chapter, however, returns to the theme of interest rate risk.

There is little about the management of the other major risks facing pension schemes in a world where mortality rates, the probability of corporate default, and asset returns besides interest rates, are unknown. Topics one would like to see in a book about pension risk management might include the optimal asset mix for fully funded and under-funded pension schemes, securitisation of pension liabilities, the question of pension bond issues, and possibly an examination of systemic risk in the occupational defined benefit pension system in the United States. Thus those seeking a good text on actuarial mathematics and interest-rate immunisation should consider reading this book. Those looking for a book dealing with other important areas of risk management for pension funds should probably look elsewhere.

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Private Pensions and Public Policies. By William G. Gale, John B. Shoven and Mark J. Warshawsky, Editors. Brookings Inst. Press, 2004, ISBN 0-8157-0239-6, 406 pages, Price $59.95. doi:10.1017/S1474747205222412

At a time when discussions of retirement income programs are increasingly relevant, this volume offers several highly-detailed and policy-relevant investigations of the interactions between private pensions, public pensions, and public policy related to retirement income. Many, though not all, of the chapters are carefully crafted, and they will be highly relevant to current and future debates. Even in cases where the tightness of the analysis leaves something to be desired, the issues raised are important and interesting, and they highlight areas in which there is a need for better data and more rigorous analysis. Two related messages emerge from this book. First, the interactions among retirement income programs are complex and require detailed and careful analysis if any single component is altered. The familiar metaphor of the three-legged stool of retirement security – with Social Security, private pensions, and personal saving as the legs – does not do justice to the many complex interactions among the three legs. Second, there are many fundamental relationships about existing retirement income systems not well-understood, along with the responses of individuals and firms to these systems. Importantly, many of these gaps in knowledge will directly impact how well we are able to anticipate responses by individuals, employers, and the structure of pension plans, as retirement policies are reformed over the next decade.

Individual chapters tackle a number of interesting and detailed questions. In the first chapter, Robert L. Clark and Sylvester Schieber examine the relatively new phenomenon of "hybrid" pension plans, which combine features of traditional defined benefit (DB) plans in which benefits are determined by formulas involving salary and years of service with other features of defined contribution (DC) plans. After providing a useful primer on the mechanics of these new plans, the authors consider the effects of conversions to hybrid plans on individual workers' benefit levels. Specifically, they ask whether hybrid plans appear to be a way of systematically cutting benefits, as has sometimes been alleged. This turns out to be a difficult question to answer, given the complexity of the plans involved. The authors show that, across a sample of 76 plan conversions, there is great dispersion in the ratio of total benefits under the hybrid versus the original pension plans for a given worker. In light of this diversity across plans, it is disappointing that much of the remaining analysis of the chapter focuses on a single pension plan transition, approached as a case-study. Comments by the discussant point out another weakness of this chapter – the data used are never very clearly described. It would be nice to know more about the data used here, as well as about other sources of data on these plan transitions.

Despite these criticisms, this chapter is informative and highlights one broader gap in our collective knowledge about pensions; we lack a solid understanding of the process by which firms determine the structure of pension plans. This gap in our knowledge about firms' roles in structuring pensions is echoed in Chapter 9 which considers the effects of non-discrimination rules that limit the extent to which firms can offer different levels of pension benefits to highly- and less highly-compensated employees.

The analysis by Alan Gustman and Thomas Steinmeier documents extensive differences between self- and firm-reports of pension plan and Social Security benefits available to respondents in the Health and Retirement Study (HRS), suggesting that many people are poorly informed about the their pensions. The authors note two implications from their work. First, researchers and consumers of the pension and benefits data from the HRS must take care to interpret model estimates using different types of pension data, as results will depend upon the source and accuracy of the underlying questions. Given the huge number of studies with policy-relevant findings that rely on the HRS, such an understanding is important not only for those directly using the data, but also for the larger number of individuals who will be consumers of such studies. A second set of implications may be more immediately relevant to those who worry about the how misinformation about retirement income programs affect individual behavior. This chapter, and the detailed comments by Karl Scholz that follow, point to the need for more careful thinking about how to incorporate the gaps in pension and SS knowledge into standard economic models of retirement, saving, and other decisions.

The work by Dan Maki continues this theme and seeks to measure the effects of financial education programs on the savings and other behavior of consumers. Taken together, these two chapters point to another area where we have much to learn. Models of retirement decision-making must be aware of the possibility that such decisions are made in an environment that often departs from the long-horizon, full-information, life-cycle setting. For policy considerations, such issues are certainly relevant to private accounts that impose additional informational decision-making responsibility concerning rates of return and portfolio allocations on individual citizens.

Another important chapter by Jagadeesh Gokhale, Laurence Kotlikoff, and Mark Warshawsky, asks whether the current limits on contributions to defined contribution pensions are binding and whether they serve to limit retirement saving among some groups. Much of the chapter documents the extent to which age-specific savings requirements for retirement are greater than contribution limits. If individuals are off of "optimal" savings path for any reason, their calculations may not necessarily imply that the contribution limits are binding. Some additional information about *actual* rather than *optimal* saving would strengthen this analysis. The overall message here is that the legislative limits on DC contributions have some potential to affect retirement savings, at least for some segments of the population.

The difficult but important question of how private pensions might respond to changes in the Social Security system is addressed in a chapter by Andrew Samwick. Obviously, we cannot foresee the exact nature of Social Security reform, and so this analysis must be somewhat speculative. But an important point is that we also lack a full understanding of what drives individual savings behavior, and filling this gap in knowledge will be necessary to best anticipate the effects of future Social Security reform. Kent Smetters assesses the impact of eliminating risk to Social Security beneficiaries that might accompany some reform plans. He starts from the reasonable, but not universally acknowledged, premise that there are large differences between a reform in which the level of benefits is unchanged in expected value and one in which a particular level of benefits (probably the current level) is guaranteed. Two broad classes of risk are considered: market risks involving uncertain returns on assets, and political economy risks that involve the possibility of the government altering benefit levels for future cohorts. A difficulty in this discussion is that assigning relative levels of some of the risks considered is inevitably subjective. Some readers will likely disagree with the assigned levels of various types of risks, yet the chapter provides an important framework for evaluating reform proposals in a way that goes beyond statements about the average expected level of benefits.

While space constraints means we can only sample some of the book's chapters, it should be clear that a strength of the volume is its focus on well-defined and highly relevant questions concerning various aspects of retirement income. Few may labor under the illusion that Social Security and related reforms are simple matters, but this volume serves as a reminder of the myriad details that solid analysis in this area must consider, and also the many relevant questions that remain unanswered.

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The Economics of Social Security in Japan. By Toshiaki Tachibanaki, Editor. Edward Elgar Publishing Ltd, 2004, ISBN 1-84376-682-5, 320 pages, Price $115.00. doi:10.1017/S1474747205232419

Japan is experiencing a rapid aging trend, which poses a major challenge to social security policies. As the current system evidently requires reform, it is critically important to know the facts and to understand the impacts of various policy options. This book consists of 10 chapters focusing on a wide range of issues related to aging in Japan. Specific topics covered include public pension policy, legislation on corporate pension plans, health care costs, childcare, and public policy for the disabled. Several chapters evaluate the effects of recent policy changes or examine the likely impacts of the reforms.

The first section of the book takes up the Japanese public pension system. Professor Tachibanaki argues that Japan has never been a welfare state, and he provides several policy recommendations including the idea that (1) firms should withdraw from providing fringe benefit for employees; and that (2) public pension benefits should be financed through tax (progressive consumption tax or expenditure tax). Henry Aaron and Britt Harris discuss the relationships between various types of uncertainty and stability of pension systems. They examine whether an indexing provision in pension system is desirable and feasible, in order to cope with uncertainty. It concludes that indexing with respect to projections is technically problematic. David Miles and Alec Cerny's model of the Japanese economy integrates uncertainty and endogenous factor prices, used to examine the consequences of public pension reform options. They show a pension reform of keeping the contribution rate to 17.5 percent of salary versus drastically reducing benefits would lead to higher economic growth. Such reforms would improve the welfare of future generations significantly, while reducing the welfare level of those who are currently working. Labor supply aspects of the Japanese public pension system are taken up in a chapter by Fumio Ohtake and Hisaki

Yamaga, who assess how the earnings test for pension beneficiaries influences older men's labor supply. They show that the 1995 reform which supposedly diminished disincentive effect in labor supply for this group, did boost participation but did not affect working hours.

Two chapters consider issues of defined contribution corporate pension. The corporate pension system in Japan is explained in detail by Robert Clark and Olivia Mitchell, who emphasize recent legislative reforms. Currently it is too early to know how the DC plans will affect workers and firms, so it is interesting to assess future developments. The chapter by John Piggott, Sachi Purcal, and Meredith Williams, analyzes the effect of investment choice on the distribution of wealth, in light of the fact that DC plans require people to make investment decisions for their retirement saving. They simulate the accumulated wealth distribution under four investment strategies (all-equity, balanced, age-phased, and safe), and they conclude that the age-phased portfolio reduces the variance in the final accumulated wealth without a large sacrifice in mean return. Further it offers the highest median return among the four strategies.

The issue of rising health expenditures in Japan is taken on by Yasushi Iwamoto who begins with an overview of the trend in national health expenditure. He then argues that: (1) insurers should play a more active role, and for that purpose, the government should outsource a part of health insurance system; (2) it is necessary to have a scheme that impartially evaluates the quality of medical care; (3) simply introducing a US-style managed care into the Japanese health care system would not be effective because the Japanese system is publicly-run. The chapter by Tadashi Yagi takes up the issue of social infrastructure in an aging economy. The author looks at the pattern of preference towards barrier-free investments, and he finds that older people or people with disability tend to prefer rather small level of investments completed in a short period. He also finds that people with no disability have a sense of responsibility to make barrier-free investments.

Two chapters are on child-care, fertility and women's labor supply. Yasushi Ohkusa analyzes the relationship between child-care policies and fertility decisions, in a conjoint analysis on a unique survey dataset. His results imply that boosting the fertility rate through changes in policy would require significant policy changes. For example, to increase the fertility rate by 0.1 through the extension of childcare leave, the length of leave should be twice as long as the current level (one year). Kawaguchi reviews child-care leave legislation in Japan, and then he analyzes the determinants of taking child-care leave. He finds that women with high education and women who work in the public sector are more likely to take child-care leave than others.

Overall, while the papers in this volume deal with important issues associated with aging in Japan and they provide many interesting findings, there are some reservations. First, some of policy implications and recommendations do not follow from the reported results. Second, it is difficult to understand each of the analysis in the context of the entire Japanese social security system (the Introduction is not sufficient). Nonetheless, the volume contains many challenging analyses on aging issues in Japan, and it adds a useful contribution to the literature.

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Ageing and Pension Reform Around the World: Evidence from Eleven Countries. By Bonoli, Giuliano and Shinkawa, Toshimitsu (eds.). Edward Elgar, 2005, ISBN 1-84376-771-6, 279 pages, Price $120.00. doi:10.1017/S1474747205242415

This conference volume plus an introduction reviews pension reform in 11 countries: Italy, Germany, France, Sweden, the United Kingdom, Switzerland, Japan, Taiwan, Korea, the United States, and Canada. In each case the chapters describe the retirement income systems in the respective countries. But the main focus is on the political process that has led to reforms in nearly all the countries over the past decade, an exception being the United States, which has not had a major reform for more than 20 years.

Given its focus on the political process, the book might more aptly be titled *Ageing and the Politics of Pension Reform in the OECD*. Those looking for a global viewpoint will not find information about South America, Africa, Central and Eastern Europe, Central Asia, the Middle East, the Caribbean, or the island states of the Pacific. Nonetheless, the book does discuss pension reforms in a wide range of high-income countries. While economists tend to take the outcomes of reforms as given and analyze the effects of the structures of different social security systems, this book focuses on the process that leads to reforms.

The main hypothesis presented in the introduction is that population aging together with institutional structures best explain the variations in policy-making. Thus one of the main issues in the book is the role of political institutions in the outcome of policymaking. A corollary of this hypothesis is that the number of "veto points" in the institutional structure of the political process affects the policy outcomes. For example, in the United Kingdom, where the UK chapter claims has the most centralized system of government authority in Europe, the parliamentary structure where the Prime Minister comes from the majority party in Parliament has few veto points. By comparison, the United States, where the President often represents a different party than the majority party in at least one of the Houses of Congress, has considerably more veto points. Not surprisingly, the UK has had numerous reforms and the US rarely has a reform. A competing hypothesis, however, is that political institutions are of secondary importance to demographic and economic factors in setting fundamental parameters such as the age for eligibility of social security benefits. Thus, for example, the occupational system of early retirement pensions is similar in important ways in Russia and the United States even though the two political systems differ greatly. While it arguably is the case that there is path dependence based on the social security institutional structures in place, such as the level of generosity of the social security system, it is less clear that the institutional structures of the political system play an important role in the policy outcomes concerning the major structural parameters of retirement income systems.

Canada and the United States, neither of which has undergone a major reform, have much younger populations than the countries of Western Europe, which provides evidence as to the importance of demographic pressures as explaining the lack of reform in the United States and the fairly modest reform in Canada. However, both are categorized in the book as "Bismarkian-light" countries, meaning that they have earnings-related social security systems, but those systems are much less generous than in Europe. Thus, the relatively small burden of their social security systems is due both to having relatively young populations and to having relatively modest social security systems.

Another hypothesis maintained in the book is that the process of retrenchment in social policy differs from the policy of expansion. The politics of expansion deal with credit claiming, while the politics of retrenchment deal with blame avoidance. These strategies by politicians yield different types of reforms. With retrenchment, politicians attempt to obfuscate the reform through complex manipulation of parameters of the benefit formula and to dilute the reform's effects by postponing its implementation. In Italy, the implementation of its reforms has been put off far into the future. With blame avoidance, the book argues that incremental change is more likely than major change, presumably because incremental change is less noticed by the electorate. The chapter on Japan suggests that another blame avoidance strategy is to form a consensus. Sweden, which has had the most far-reaching reform of any country in Western Europe, was able to do so with broad consensus achieved over a period of years of consultation and negotiation.

The book presents a number of interesting hypotheses, and discusses them within the context of individual countries, but it does not systematically test them against the experience of all 11 countries. A problem encountered by the authors is finding a metric for reform. Part of the confusion may be that it appears the term "incremental" is given two different meanings. A reform can be incremental because it is a small change in a parameter, such as the early retirement age, or it can be incremental because it is a change within the current framework, rather than a paradigmatic change, such as introducing individual accounts. More clarity would have been useful. Overall, the book is written in lucid English, which is difficult to achieve when the authors have many different mother tongues. The volume presents a considerable amount of institutional information along with an attempt to conceptualize why countries have followed the reform paths they have taken. I recommend the book for people interested in learning about the pension systems and reforms in these countries, and for those interested in studying the pension reform process.

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Old Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform. By Robert Holzmann and Richard Hinz. The World Bank, 2005, ISBN 0-8213-6040-X, 232 pages, Price $25.00. doi:10.1017/S1474747205252411

It is fair to say that the World Bank's last book on pension reform, *Averting the Old-Age Crisis,* revolutionized the way global policymakers thought about the topic in the mid-1990's. Not only did that earlier volume introduce the idea of a multi-pillar approach to retirement income provision, but it also supported the contention that there were useful alternatives to then-prevalent pay-as-you-go public pension systems. Coming two decades after the Bank's earliest forays into pension reform and a decade after *Averting*, this new volume seeks to explain the World Bank's current perspectives on global pension reform. Its arrival is timely, given the recent induction of Paul Wolfowitz as World Bank President.

The present volume updates the World Bank's approach to pension reform by incorporating lessons from the past decade. Its strongest message is that Bank will continue to support a multi-pillar approach to pension reform, preferably with a funded component. But now the multi-pillar framework is to be thought of as a "blueprint" rather than a "benchmark." In making this distinction, the effort is to argue that pension reform must incorporate "as many of the pillars as possible" for retirement income, moving away from what some saw as the old, more prescriptive, three-pillar approach (with government, employment-based pensions, and private saving being the key elements).

More specifically, the new book argues that five pillars are now sensible, including: (i) a noncontributory or 'zero pillar' for minimal protection; (ii) a 'first pillar' contributory system linked to earnings that replaces a portion of income; (iii) a mandatory 'second pillar' which is essentially an individual savings account; (iv) a voluntary 'third pillar' arrangement that can take many forms (individual, employer-sponsored, defined benefit, defined contribution) but flexible and discretionary; and (v) a 'fourth pillar' in the form of informal intrafamily and intergenerational consumption smoothing for the elderly (including the provision of healthcare and housing). Compared to the Bank's previous position, the main changes are the addition of the 'zero pillar' for poverty alleviation, the 'fourth pillar' for non-pension consumption smoothing, and a more pragmatic definition of the mandatory 'second pillar' to include both funded and notional (unfunded) defined contribution arrangements.

The book is written in two parts. Part 1 presents the framework for the Bank's thinking on pension reforms, including the rationale for and foundations of the Bank's approach to pension reform, as well as pension reform criteria and a review of Bank involvement in pension reform for the last 20 years. Notable here is the admission of a need for better understanding of initial socioeconomic conditions, a recognition of the benefits of a pragmatic (rather than prescriptive) application of the multi-pillar approach, and the support of country-led innovations in pension design and implementation. This section also identifies the goals of pension reform, namely to achieve adequate, affordable, sustainable and robust pensions. The authors define "adequate" in terms of poverty alleviation and income replacement; "affordable" in terms of financing capacity of individuals and society; sustainable in terms of financial soundness, now and in the future; and "robust" in terms of the system's capacity to withstand major shocks. A related pension reform goal is the ability to make a contribution to economic development. It is emphasized that Bank pension reforms should be evaluated against these measurable outcomes, rather than simplistic policy prescriptions. This section concludes with a review of the Bank's lending for pension reforms over the past 20 years; here I was disappointed by the emphasis on numbers of loans and dollar amounts generated, rather than examples of successes (and failures).

In Part 2 the discussion turns to design and implementation issues, including a review of reform options and recent experience with pension reform in Latin America, Europe, and Asia. The idea is a good one – to show how the reform options might fulfill the goals and criteria set out and how they might be combined to provide stylized policy advice. Unfortunately, though the multi-pillar framework now includes the 'zero pillar' and the 'fourth pillar' at a conceptual level, this section offers little insight into how reforms affected poverty alleviation and consumption smoothing. This section is followed by views from Bank staffers on pillar design, financial sustainability, administrative and implementation issues, options for countries with small financial markets, and issues of political economy. This is particularly useful information for policymakers, as many of the themes are illustrated using experiences from client countries. Topics taken up include how to design poverty relief as well as disability and survivor benefits; there is also discussion of pension fund and political economy and governance, administrative preparedness and institutional support, pension taxation, investments and annuity markets, integrating civil service pensions, and regulation and supervision.

Overall, this new World Bank book makes a significant contribution to the literature on pension reform. Not only does it set out and explain the Bank's new multi-pillar approach to pension reform, but it also develops a basis for pension reform and offers criteria for evaluating actual as well as potential reforms. Finally, it provides considerable insights into policy development and implementation within the World Bank itself. The book should appeal to policymakers, academic researchers, pension practitioners, and those with a general interest in policy development within multi-lateral organizations.

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Pensions at a Glance: Public policies across OECD Countries. By OECD. OECD Publishing, 2005, ISBN 92-64-01871-9, 202 pages, Price $29.00.
doi:10.1017/S1474747205262418

Pension reform is, will be, or should be on the economic policy agendas of virtually every OECD country, as they are on the cusp of dramatic demographic changes which carry with them far-reaching social, economic, and fiscal consequences. This volume offers a new approach to cross-country comparisons of current pension schemes and their implications for 30 OECD countries.

As Abraham Lincoln noted in the opening line of his speech to the Republican State Convention in Illinois on 17 June 1858: "If we could first know where we are, and whither we are tending, we could better judge what to do, and how to do it." This statement conveys the essence of this new OECD volume. It gives us a starting point – in Lincoln's words: "where are we?" It then asks Lincoln's second question: "to whither we are tending?" Based on this insight, it might then be expected that countries "could better judge what to do". Yet the report stops short at that point. In keeping with the mandate of an international agency, it rightly refrains from venturing prescriptions for individual countries on "how to do it".

That task is left for the economic and political processes of each specific country to grapple with – each to its own way.

An international agency can of course play a useful role in assembling information from its member states, presenting it in a manner that allows "apples to apples" cross-country comparisons. This gives policymakers and analysts the opportunity to benchmark both the parameters and outcomes of one system against those of other OECD countries. This is surely the real strength of the report. Here, it is worth noting that the expansion of the OECD membership adds a richness and diversity to the inter-country comparisons. At the same time, however, those using the comparisons must (implicitly at least) "hold other things constant", as the institutional and policy settings which give the richness to the comparisons simultaneously may confound the comparisons.

The microeconomic analysis, which is, in effect, a modest form of micro-simulation, is built on the parameters of all the individual countries' pension plans. Superimposed on these are a standard set of assumptions regarding economic performance (e.g. economic and wage growth, inflation, rates of return, etc.). This offers greater comparability by abstracting from cross-country differences arising from factors outside the pension plans, while still allowing the framework to be applied to an individual country with specific assumptions made for that country. The modeling framework generates for each country: (a) replacement rates (both gross and net of taxes) for prototypical individuals; (b) pension levels relative to economy-wide average earnings; and (c) pension wealth expressed a multiple of average earnings. In addition, the study reports a number of so-called key indicators. These include the weighted average pension level and pension wealth, where the weights are the based on the distribution of earnings averaged across 16 countries. Again, use of these standard weights helps in making results comparable across countries, reflecting only differences in the pension parameters themselves and abstracting from country circumstances. The results must therefore be used for relative comparisons, as they do not pretend to reflect the economic and policy environments of a specific country. One hopes that the software will be made available to analysts in individual countries who might seek to produce more tailored results.

The report also offers short summaries for each of the countries together with the key results from the modeling. Because the model is stylized, it is used to generate benefits for unmarried individuals working from age 20 until eligible for a public pension (typically at age 65). It therefore makes no provision for periods out of the labor market for child-rearing, further education, illness, or unemployment. A further limitation is that the model does not incorporate other country-specific allowances such as accommodation supplements, medical subsidies, or residential care subsidies. In short, it excludes a wide range of policies designed to complement pension payments targeted at the elderly (or for which the elderly qualify). This means that the results of the study cannot be used to compare the real incomes or living standards of the elderly across countries. An appendix is devoted to testing the sensitivity to some of the key assumptions. The message from this appears to be, perhaps unsurprisingly, that the degree of sensitivity is highly country-specific and varies by level of earnings.

Where to next? This report surely invites a sequel. A really useful contribution would be for the OECD team to revisit the question of pension reform in five years. What countries have undertaken reforms? How extensive were they? Are there some common patterns of reforms? Are these related to the starting positions? What exactly was done, and have the reforms made a difference? It is gratifying to note that the volume's preface promises that a biennial series will rely on the framework developed here to monitor pension reforms. In my judgment, such reports would build on and add significantly to the value of the information here. Meanwhile, this volume will surely be a handy compendium on the reference shelves of all serious students of pension policy.

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