RETHINKING PENSION REFORM

This book presents a unique academic and practical perspective on managing pension funds to clarify the global debate on social security. The authors establish the basic choices in designing any system to help policy makers develop a system that achieves all their objectives. They examine reforms in Latin America to highlight flaws, and to estimate the true cost of these reforms and factors that affect these costs. The authors go on to discuss how the United States and Spain can implement robust systems incorporating many of the ideal features. The success of reforms depends on financial innovation to mitigate key risks, and some innovations are discussed that also demonstrate how pension reform choices affect the achievement of retirement objectives. Finally, the authors examine some proposed hybrid options to show how the beneficial features of these hybrids can be captured through good design in a single fund.

The late Franco Modigliani was Institute Professor Emeritus and Senior Lecturer in Economics, Finance, and Accounting at MIT and received the Nobel Memorial Prize in Economic Science in 1985 for his pioneering work in analyzing the functioning of financial markets and the behavior of household savers. Much of his writing relates to social security, capital markets, money supply, the euro, and unemployment. He wrote and edited numerous books, including The Debate over Stabilization Policy (Cambridge University Press, 1986) and the autobiographical Adventures of an Economist. Professor Modigliani's professional papers are collected in five volumes, published between 1980 and 1989.

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Rethinking Pension Reform

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# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>vii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>xi</td>
</tr>
<tr>
<td>A Tribute to Franco</td>
<td>xv</td>
</tr>
<tr>
<td>1 A Primer on Pension Reform</td>
<td>1</td>
</tr>
<tr>
<td>2 A Taxonomy of Pension Reform Issues</td>
<td>17</td>
</tr>
<tr>
<td>3 An Evaluation of Pension Reforms</td>
<td>42</td>
</tr>
<tr>
<td>4 Welfare Costs of Defined Contribution Schemes</td>
<td>71</td>
</tr>
<tr>
<td>5 The Transition from PAYGO to Funding with a Common Portfolio: Application to the United States</td>
<td>103</td>
</tr>
<tr>
<td>6 Social Security Reform in Spain</td>
<td>145</td>
</tr>
<tr>
<td>7 The “Two-Pension Fund” Theorem</td>
<td>189</td>
</tr>
<tr>
<td>8 The Case for Mixed Systems and Variable Contributions:</td>
<td>204</td>
</tr>
<tr>
<td>Improving the Performance of Pension Systems</td>
<td></td>
</tr>
<tr>
<td>References</td>
<td>225</td>
</tr>
<tr>
<td>Index</td>
<td>235</td>
</tr>
</tbody>
</table>
Preface

An important issue sweeping the globe is the immediate impact of worldwide population aging on the provision of old age pensions. Recognition of the trend in aging has spurred an extensive debate on measures to ensure the provision of postretirement livelihood for elderly citizens (Economist 2002, Chand and Jaeger 1996). This subject has led to a new breed of specialists in pension reform who advocate various proposals based on their political, social, or economic biases. As a result, there is a heated debate on pension reform involving extreme positions that are often supported by parties with vested interests. Widely divergent views in the debate have, unfortunately, blurred the distinction between differences based on values and political leanings and those based on differences in economic analysis (NASI 1999, ACSS 1997, Barr 2000). In addition, two distinct issues to be considered with respect to any proposed reform are (a) what the system should look like for the future, and (b) how one should achieve that system if it is different from the current model given present economic and political realities (the transition problem). Analysts have strong and differing views on both these issues (ACSS 1997, Schieber and Shoven 1999).

The problem of pension reform has acquired new urgency. Many countries adopted an innovative scheme for financing pensions. First proposed by Chancellor Otto von Bismarck in the nineteenth century and then adopted by many countries in the 1930s, this scheme is called “pay-as-you-go” (PAYGO). Traditional pension systems were “funded”; that is, pensions were paid out of the capital accumulated from the contributions of participants, employers, or both through the duration of the participants’ working life. Under the PAYGO method, pensions are paid out of the current contributions of active members.

Why have so many countries opted for PAYGO? The simple reason is, in a funded system, the pension is paid out of the accumulated capital stock of each retiree’s account. Therefore, only those who have contributed for their entire working life will receive a full pension. Participants who are close to retirement and did not contribute to the pension system receive nothing. Under PAYGO, however, current workers’
Contributions are used to pay full pensions to all workers from day one as if they had contributed in full throughout their working life. For this reason, when a universal mandatory pension system is begun, PAYGO provides the most appealing solution. The decision to use PAYGO is, in effect, a transfer to pensioners who, without having contributed, receive a pension at the expense of future generations that lose the capital accumulation of a funded system (generally without understanding the implications of the choice).

The PAYGO scheme can, in principle, be sustained indefinitely, if several conditions hold (Samuelson 1975). To begin with, the development of taxable wages that are taxed at a fixed contribution rate (we are assuming they are fixed) must be sufficient to pay the pensions. Pension payments, however, are influenced by the number of retirees and the promises made to them (which, over time, became more generous). The rate of taxable income growth depends on population, productivity, and wage growth. Problems arise when revenue and benefits are not balanced. In fact, some analysts feel that economic growth allows nations to run one of the most remarkable Ponzi schemes around.

Such problems have arisen in most public pension systems relying on PAYGO financing (i.e., in most parts of the world). These systems, generally identified as social security schemes, are heading for insolvency in several countries. Given current contribution levels, these systems will be unable, in most cases, to pay promised benefits in the foreseeable future unless they undergo drastic changes. This is the unavoidable consequence of two factors: (i) the ratio of contributing workers to pensioners receiving benefits will decline dramatically in the coming decades (in some cases, this level has dropped from forty workers per retiree to two to three workers per retiree), and (ii) the estimates for productivity growth are being scaled down. Challenging demographics of declining population growth and increasing longevity have a serious impact on the population pyramid.

Blahous (2000) has reported that, in the United States, in 1940, the average male lived 61.4 years and the average female 65.7 years. In 2000, this average climbed to 73.6 years for males and 79.5 years for females. Given this improvement in longevity, there is urgent need for speedy action on pension reform. If PAYGO is to be maintained, countries face a choice of highly undesirable alternatives, namely, (i) to raise taxes, (ii) to cut benefits, or (iii) some combination of the two. The problems are not immediate, and procrastinating is possible without immediate consequences. However, the longer the solution is postponed, the higher will be the costs to be borne by future generations. A profusion of proposals on social security reform have been offered in the United States and other countries by individuals, academicians, politicians, consultants, lobby groups, and international development agencies. Many, however, have confused social security with private arrangements for the provision
of retirement wealth. Currently, several popular proposals have taken the direction followed by Chile.

Chile was one of the first countries to reform its pension system in 1981 by moving away from PAYGO to a total, or partial, return to some form of funded system (Pinera 1997). This shift was based primarily on the premise that investing accumulated assets in income-yielding assets would provide a significantly higher return than the implicit return offered by PAYGO, which is the long-run growth rate of wages.

This transition was effected by requiring individuals to redirect their contributions to individual accounts invested in financial assets managed by private firms. The system would eventually eliminate the role of social security and the public sector, and for that reason has come to be known as the "privatization of social security." This approach soon became the standard and was replicated in numerous other developing countries – often at the urging or coercion of agencies such as the World Bank. Many academicians and politicians in developed countries, such as the United States, favor this approach (Ferrara 1982). The Chilean model, however, suffers from very serious flaws, which can be corrected by better design. Countries such as Australia and Hungary have opted for systems whereby collective arrangements attempt to mitigate the problems in individual account models. In addition, several countries are in a position to make the transition from systems on the verge of bankruptcy to a more robust system that protects retirees from (i) retiring poor, (ii) bearing unnecessary risk, or (iii) being forced to make decisions on investment matters in which they have little or no expertise.

In attempting to clarify the global debate on social security, we focus on some analytical issues relating to the debate and go on to propose a reform framework. Chapter 1 provides definitions of key terms and examples of different pension systems and reforms around the world. Chapter 2 establishes the basic choices available to policy makers in designing a system for their country. These principles are meant to guide them in their attempt to develop the system most likely to achieve the many objectives of any public pension system. However, several countries are not starting with a clean slate and have to consider their current systems, the political and economic realities of their countries, and the likelihood of a feasible transition to the optimal social security system. It is useful to articulate the Ideal Model or tabula rasa, and to address separately whether initial conditions make the shift socially desirable, which is a distinction highlighted by Orszag and Stiglitz (2001). In examining some current reforms in Latin America, Chapter 3 highlights their flaws. Chapter 4 provides a framework to estimate the true cost of these reforms and factors that affect these costs. This sets the stage for Chapters 5 and 6, which discuss how countries on the brink of undertaking reforms, such as the United States and Spain,
can implement robust systems incorporating many of the ideal features. Because the dynamics of any transition determines whether any reform will be broadly accepted or rejected, we consider several possible transition scenarios to highlight complex trade-offs inherent in any transition to a new system. These analyses attempt to address concerns relating to intergenerational equity (i.e., whether or not certain generations or cohorts are disadvantaged compared with others). The success of these reforms is unlikely unless there is significant innovation in financial markets to provide products that allow for the mitigation of certain key risks. Some of these innovations are discussed in Chapter 7. The main contribution of Chapter 7 is to show how the existence of a DB and a DC plan is critical for the success of pension reform. Finally, there is a general consensus that no one system can satisfy the goals of a reform program; hence, we examine some proposed hybrid options and show how the beneficial features of these hybrids can be captured through good design in a single structure (Chapter 8). Chapter 8 also introduces variable contributions as a mechanism for managing the risk associated with ensuring guaranteed replacement rates.

Previous research has demonstrated that this topic is multifaceted, and we do not profess to address all of them. Several analysts have examined the impact of changing benefits to save pension systems. Some analysts have looked at manipulating the retirement age, changing the basis for inflation indexation, adjusting benefit calculations, and suitably modifying survivor spouse pensions (e.g., Diamond and Orszag 2002, World Bank 1994). Others have explored issues relating to whether certain groups, such as minorities or divorced spouses, should be favored as in NASI (1999) or whether systems truly redistribute wealth the way they are supposed to. We address the former set of issues briefly in the context of Spain’s reform proposal (Chapter 6). Initially, we develop a simple benefit structure that could be more effective for future generations and solve many of the existing problems. Later chapters on transition issues treat benefits as a given, for our solution is relatively independent and flexible in relation to benefit structures (as demonstrated in Chapters 5 and 6). In short, our work is directed to solving the problem of financing benefits rather than inquiring whether the benefits are appropriate. Although others emphasize political issues (Blahous 2000), we address the issue of political risk without supporting any particular political stance. We consider situations in the United States and Spain, but with the aim of being more global we emphasize the analytical framework. Finally, we consider specific financial innovations in the hope that our research will provide another clue to solving social security crises worldwide. Given the polarity of the debate, we anticipate as much criticism as support of our position. Our purpose will be served if the analytical framework we provide furthers the rigorous analysis of reform options.
Acknowledgments

Franco and I had talked about working together on a paper ever since I earned my Ph.D. in 1992, but my job trading derivatives and even managing pension assets for the World Bank did not lend itself to a rigorous academic collaboration – especially of the quality required by Franco. In the spring of 1998, I was asked to join a World Bank mission to China to talk about effective management of pension assets to Chinese government officials. I had made a similar trip to Jordan in 1996 but had not digested the magnitude of the problem affecting these countries. On the bus ride from Shanghai to Hang Zhou (where the conference was to be held), I overheard my World Bank colleagues, who advised countries on pension reform, criticize defined benefit (DB) plans in favor of defined contribution (DC) plans without their ever having had the experience of managing or evaluating the risks of either. Needless to say, my training under Franco did not allow me to tolerate this, and, at the conference, I publicly disagreed with their recommendations, leading one of my colleagues to suggest that I was a “technocrat” and knew nothing about pension reform or savings. I was accompanied by a wonderfully smart young colleague – Ronald van der Wouden – who was kind enough to spend his free time in China to help me develop the guaranteed return, defined benefit concept. On the way back to Washington, D.C., I had a heated argument with another World Bank colleague and ran the risk of being thrown off the plane and even out of the business class lounge at Narita Airport. This experience showed that I had been trained well by Franco!

After being accused of having no understanding of macroeconomics and savings, I called Franco for assistance. He, at the time, was trying to convince the Italians that they were going down the wrong path in reforming their pension system. We finally met up in Martha’s Vineyard in the summer of 1998, and I laid out the reason why I felt DB dominates DC when participation is mandatory (as my poor wife, Shaila, sat patiently through this discussion). Once Franco grasped the essence, there was no stopping him in generating one creative idea after the next to support DB plans. The chapter exploring the taxonomy of pension reform issues (Chapter 2) was
developed over a dinner in Washington, D.C., in the fall of 1998 as Franco mapped out on a napkin the ideas he planned to present at a World Bank conference for Latin American reforms the following morning (and Shaila and I worked feverishly all night to develop the graphs and tables for his presentation). That conference was also the genesis for Chapter 3 (the critique of the Latin American reforms), as we met a number of key policy makers from the region and got a firsthand account of how decisions had been made in the reform process. Chapter 4 is the result of the infamous China trip during which Ronnie took a half-baked idea and demonstrated through his models why we were on the right track. Chapter 5 represents a labor of love, for we started a variation of this paper in late 1998 and never really finished it because the United States always gave us something new to work on -- either a revised actuarial study, a change in government or government finances, or a new proposal by the incumbent administration. However, it was work on this paper that was the seed for Franco's brilliant concept of the swap between the U.S. Treasury and the Social Security Administration. Chapter 6 owes its origin to a brilliant student of Franco's -- Pedro Sainz de Baranda -- undertaking a Herculean effort to pull together a credible proposal for Spain. We have taken his work and adapted it to our framework, and we are deeply indebted to him for expanding the scope of our approach by including benefit reforms. Chapter 7 has a bit of a tainted history. I wrote this paper in 1998–99 in response to a prize offer by the Institute of International Finance (IIF) because I needed to prove that I had decent research capabilities for my green card application. I was first informed that I was a prize winner and had to be in Washington, D.C., for the award ceremony in a few weeks, only to be told a few days later that a big mistake had been made and the prize had been revoked (and no first prize was to be awarded!). Franco, outraged at this behavior, called several of his friends who were on the IIF committee to protest such an unfair decision -- if for no other reason than that the IIF never told me why the prize had been withdrawn or whether the approach was wrong. So this chapter makes its appearance here with less fanfare. Once again, Ronnie and I had spent time mulling this over in the context of the World Bank's own pension reform plan -- with the World Bank smartly choosing to keep a DB plan as the anchor. We were trying to find a way to help participants until it dawned on me that we could take a few liberties with economic theory to create the “Two-Pension Fund Separation” theorem. Chapter 8 is really the cornerstone of the book, and Franco and I troubled Ronnie no end (in between his wedding preparations) to make our intuition work with the simulations. It took another trip to Martha's Vineyard in July 2003 to come full circle and tie up all the loose ends.

This book is the result of many years of work on this topic by us, and we have benefitted significantly not only from those who collaborated with us on these topics, but also from those who were patient and considerate with their time in trying to
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educate us on the many facets of social security. In the former category, we thank Ronald van der Wouden, Pedro Sainz de Baranda, Maria Luisa Ceprini, and Kemal Asad-Syed. In the latter category, we express our deepest gratitude to Steve Goss, Chief Actuary of the Social Security Administration, for his generous, patient advice in an area where his knowledge is vastly superior to ours. We acknowledge the inspiration we received from Martin Feldstein's many publications demonstrating the power of compound interest. We are indebted to Peter Diamond, Alicia Munnell, and Alan Greenspan, who read earlier drafts of chapters and gave encouragement by noting some hopeful progress. We are indebted to Peter Diamond, Alicia Munnell, and Alan Greenspan, who read earlier drafts of chapters and gave encouragement by noting some hopeful progress. Thanks also to Andrew Abel, Albert Ando, Shadrach Appana, Mel Aronson, Mukul Asher, Daniel Barr, Nicholas Barr, Fennell Betson, David Blake, Alan Blinder, Barry Bluestone, Zvi Bodie, Barry Burr, Michael Clowes, Douglas Elmendorf, Cagatay Ergenekon, Stanley Fischer, Sheldon Friedman, Arnoldo Hax, Roger Hickey, Larry Kotlikoff, Assar Lindbeck, Perry Mehrling, Lawrence Meyers, Olivia Mitchell, Leah Modigliani, the late Senator Daniel Patrick Moynihan, Sanjay Muralidhar, Rudy Penner, Pete Peterson, Tom Phillips, Monika Quiesser, Stephen Roach, Dallas Salisbury, Louise Sheiner, Allen Sinai, Gene Sperling, R. Thilainathan, Laura Tyson, Masaharu Usuki, Jaime Villasenor, and Paul Volcker. We also thank Mavis Robertson, Fiona Reynolds, Richard Grant, and Ralph Willis for sharing their experiences on the Australian super-annuations schemes. In addition, we are grateful to participants of the World Bank’s Annual Conference on Development Economics (1999) for helpful comments.

We also thank Neetu Bhatia, Thomas Lissey, and Cybele Suarez for their dedicated assistance. Shaila Muralidhar and Denis Fernandes made a valiant effort to edit the document between our many changes. Thanks to Jamil Baz for introducing us to Scott Parris of Cambridge University Press and to Scott and his team for taking a mangled document and converting it into a readable book. Thanks also to our common friend, the late Kenneth McLeod (Stanford University Press), for his constant encouragement – he is sorely missed.

Serena Modigliani receives our unlimited thanks for putting up with all our idiosyncrasies, including fighting Franco when he wanted a computer brought to his hospital room and providing a reality check whenever we thought we had won the battle. She finally forced us to wrap up the project in July 2003. All errors are our own, and we apologize if we have missed mentioning someone.

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Disclaimer

The views expressed in this book by the authors and collaborators are their personal views and not those of the organizations they work for.
A Tribute to Franco

This book would not be complete without a tribute to Franco Modigliani, my co-author, mentor, and friend, who passed away in the final stages of preparing the manuscript for publication. I had promised his wife, Serena, that we would finish the book by August 1, 2003, as the work had dragged on for some time. After sending the completed draft to the publishers, I promptly left for the forests of Scandinavia. Two days later, Franco called me to say that he was not happy with Chapter 5 because we had left the reader with the impression that our solution to the social security crisis was arbitrary. So, “we” agreed to include an analytical appendix (Appendix 5.5) advocating our solution. My prior inclination had been to leave this and other work on variable contributions to a second edition. But Franco disagreed, and he worked tirelessly on this Appendix until its completion. On September 20, 2003 we agreed on all the changes to Appendix 5.5 save one, which was not included because Franco could not remember what it was. I re-sent the draft to the publisher and tried to call Franco on September 24 to see if I could track down that final change. As he had stirred the pot on Mr. Berlusconi getting a humanitarian award, he was impossible to reach and, on September 25, Franco moved on to bigger and better things. Therefore, I leave the blemish in Appendix 5.5 for someone else to find.

The next day, I dug out all the papers on the book – dating back over six years – to find a cartoon that Franco had sent me from The New Yorker Magazine (June 1999). It was his favorite, and he always got a big chuckle out of it. It shows a man alone on a small island with a helicopter hovering overhead. The punch line is, “Forget about me – save Social Security!” That to me is what this book is about, and I enclose the cartoon for others to enjoy. Franco often confided in me that saving social security globally was very dear to him because this was one of the few pieces of work that could improve people’s lives. It really troubled him that politicians would allow the enrichment of the wealthy at the cost of the poor. I trust that all his brilliant ideas, now recorded in this book, will help achieve that goal for current and future generations.
A Tribute to Franco

So, I dedicate this book to Franco and Serena – two people whose wisdom, kindness, generosity, honesty, righteousness, and humor have touched many lives. We are all better human beings from that interaction. I also want to thank my family, friends, and the Seths – without them I may never have met Franco and Serena!

A.S.M.
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