A Global Look at the Reform of Public Pension Systems

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Abstract

This article provides a descriptive and introductory overview of issues driving the initiatives to reform public pensions in the international arena. This includes a presentation of select international demographic and fiscal highlights relevant to social security arrangements around the world, along with a review of the reforms and pension arrangements in Chile and the United Kingdom. A discussion of the current state of social security and reform proposals in the United States is also provided.

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1. Introduction

The provision for the security and welfare of the elderly has been a concern for societies throughout history. Most cultures developed traditions of respect for the old that prompted informal arrangements for their care. However, the need for formal arrangements for the provision of old-age security became increasingly essential in the wake of the Industrial Revolution, the decline in agrarian populations relative to urban center populations and the erosion of extended family structures. The consequences of these demographic and economic changes that arose in the mid- to late-1800s created segments of the U.S. population that were ill prepared to cope with the economic calamities of the 1930s that produced rampant unemployment and plunging asset values. The elderly comprised one particularly vulnerable segment of the population, and U.S. policy makers turned their efforts toward enhancing the economic security of these individuals. In the throes of the Great Depression, these efforts produced the Social Security Act of 1935 that improved the economic security of the elderly and the unemployed. However, the intellectual foundation for this legislation is hardly a uniquely American one. In fact when U.S. policymakers were designing the system embodied within the 1935 Social Security Act they looked internationally for models to adopt or modify for implementation. For example, the German model implemented by Bismarck in 1889 was one of the systems that the U.S. looked at prior to passage of the 1935 Act. The German system required mandatory participation and provided retirement and disability benefits, where contributions made into the system came from workers, employers and the government.[1] Presently, the U.S. is again encountering demographic and economic forces that suggest policy makers should focus on the issue of retirement security. And once more, the international arena may provide models that serve as rich intellectual input for producing policies that effectively address this issue.

Today the U.S. system operates essentially on an unfunded pay-as-you-go (PAYGO) basis. In 1983 the National Commission on Social Security recommended the accumulation of a reserve fund to gradually move away from a purely unfunded PAYGO system. Nevertheless, the system still largely operates on a PAYGO basis with 90 percent of payroll taxes being immediately paid as benefits (Feldstein, 1998).

However, certain demographic and fiscal realities have raised concerns about the sustainability of the system in its current form. The large cohort of the population born between 1946 and 1964 is moving toward retirement. Advances in medical technology and healthcare have increased the longevity of retirees that will increase required benefit payments. In 1960, the life expectancy of a sixty year old male was about 15 years and 19 years for a female, while in 2030 this is expected to increase to 21 and 23 years, respectively (OECD HealthData 2000). According to the 2001 Final Report of the President's Commission on Strengthening Social Security (CSSS, 2001, hereafter), by 2075 the life expectancy at 65 for males will be about 20 years and 23 years for women. Together with declining fertility rates this will produce a population with a greater proportion of people in their retirement years and a correspondingly smaller proportion of working age individuals. This implies fewer workers supporting each retiree in the current system. According to the President's Commission (2001), the ratio of workers to beneficiaries is projected to be less than 2 in 2030. These demographic trends have raised concerns about the system's capability to provide promised benefit payments at current payroll tax levels. The confluence of demographic trends and fiscal conditions has elevated the reform of the Social Security system to a major subject of debate among policy makers. The importance of effective policy action in addressing this crucial issue is obvious given the enormity of the system itself. At annual expenditures of about $400 billion, Social Security spending represents almost 25% of the federal budget. This perhaps partially explains the prolonged debate pertaining to the consequences of reforming the largest public spending program in the world.

Despite the current concerns and debate surrounding the possible need for reforming the U.S. Social Security system, the roots of the issue are not uniquely American. Similar demographic trends and fiscal challenges are facing many developed and emerging market countries. Most interestingly, a number of these countries have moved to reform their public pension systems. In many cases the reforms that were implemented reflected some variation of a multi-pillar approach to designing and reforming public pension systems first espoused in the mid-1990s (World Bank Report, 1994). In general, the first pillar is a mandatory public defined benefit plan that may operate on a pay-as-you-go (PAYGO) basis. The second pillar consists of a mandatory defined contribution or individual retirement account component, and there may also be a third pillar that consists of a voluntary defined contribution plan.[2] The first pillar is intended to provide some certain level of retirement benefits, while the second pillar is motivated by the expectation of earning higher rates of return on funds invested in a wider set of investment choices. The first pillar essentially provides a minimum guaranteed benefit while the second (and also the voluntary third pillar if applicable) is meant to enhance or at least maintain benefits in the face of adverse demographic trends while reducing the need to raise taxes or to cut benefits. In recent years many countries have moved toward implementing some elements of private defined contribution plans and away from pure public defined benefit systems. Some of these countries include Argentina, Bolivia, Columbia, Hungary, Kazakhstan, Latvia, Peru, Poland, Sweden, and Uruguay, while Hong Kong, Croatia and Venezuela were scheduled to introduce multi-pillar systems beginning in 2000 (Orszag and Stiglitz, 2001). China has also implemented a two tiered social security system with a defined benefit PAYGO component and a system of individual accounts for employees in urban, state-owned enterprises (Feldstein, 1998).

Given that the three reform models generated by the President's Commission on Strengthening Social Security (CSSS) allow for private retirement accounts, a review of the pioneering Chilean privatization reforms implemented in 1981 is relevant. However, critics argue that the transferability of the insights from the Chilean model have limited relevance for the highly developed American economy. Therefore, this article also reviews the reform approach pursued in the United Kingdom. The U.K. is a developed economy with demographic features similar to the U.S., so the pension arrangements in this country may be more relevant for those searching for appropriate reform models.

The objective of this paper is to provide a broad look at some of the forces driving pension reform issues around the world and to convey the major elements of reforms and reform proposals that were implemented or advocated in Chile, the U.K. and the U.S. The article is by no means exhaustive and should rather be viewed as a descriptive and introductory overview of issues driving the discussions about the reform of public pensions in the international arena. The remainder of the paper is organized as follows.

Section 2 provides a general overview of select international demographic and fiscal highlights relevant to social security arrangements around the world. Section 3 provides a review of the reforms and pension arrangements of Chile and the United Kingdom. Section 4 focuses on the current state of social security and reform proposals in the United States. Section 5 concludes the paper.

2. International Demographic Trends and Fiscal Characteristics of Public Retirement Systems

A. International Demographic Trends

Developed Countries

U.S. demographic trends are similar to those of other developed countries and in some cases the demographic challenges confronting other developed countries are even more pronounced. Tables 1 and 2 provide a sampling of demographic characteristics from different regions around the world. In 2000 the countries classified as high-income OECD (Organization for Economic Cooperation and Development) countries had the greatest percentage of populations above the age of 60, whereas Africa and the Middle East had the youngest populations. The percentage of the population over the age of 60 in the U.S. is exceeded by a number of countries. For example the percentages in the U.S. and U.K. were 16.3 and 20.8 percent in 2000, whereas these figures were 22.7, 23.7, 23.6 and 23.1 percent in Germany, Greece, Italy and Japan, respectively.[3] Table 2 presents a more telling demographic indicator that shows the ratio of the working age population between the ages of 20 and 59 relative to the population above the age of 60. The ratio for the U.S. and the U.K. in 2000 was 3.4 and 2.6 respectively. However, Japan, Italy, Greece and Germany have among the lowest ratios at 2.4, 2.4, 2.3 and 2.5, respectively. Moreover, for these countries the ratios are projected to shrink precariously to 1.2 for Greece and 1.1 for Japan, Italy and Germany in 2040. The projection for the United Kingdom and the United States for 2040 is 1.6 and 1.7 respectively. In effect, the projected demographic trends in the high-income developed countries suggest that over the next three to four decades the number of workers relative to retirement age individuals will shrink substantially. For government pension arrangements structured as pay-as-you-go systems, the working populations of countries providing financial support for state pension systems will decrease relative to the number of retirees being supported.

Emerging Market Countries

The forces of demographic change will also affect the less economically advanced countries of the world. According to the World Bank (1994) the estimated percentage increase in the population over 60 years old by 2030 is projected to be 14% in the OECD countries, this figure is projected to be 28% for developing countries. Overall, the world population over 60 years old is expected to triple by 2030 from its 1990 levels. However, in the case of these emerging market countries the challenges will come from a somewhat different demographic angle within substantially different environments. With the exception of Eastern Europe and the countries of the former Soviet Union, Tables 3 and 4 show that in general, the emerging market countries have substantially younger populations with more available workers between the ages of 20 and 59 relative to the respective populations over the age of 60. In 2000, the emerging market countries of Sub-Sahara Africa and Northern Africa and the Middle East had the lowest percentage of populations over the age of 60 at 5.0 and 6.5 percent respectively, while this figure was 9.0 and 7.2 percent in Latin America and Asia respectively. On average, among the East European emerging market countries, the percentage of the population above 60 was 15.7 percent in 2000.

Table 1
Percentage of Population over Sixty Years Old, 2000-2040

Economy	2000	2010	2020	2030	2040	Percent Change 2000-2040
High-income OECD	**19.6**	**22.4**	**26.5**	**30.7**	**32.6**	**65.79**
Latin America and the Caribbean	**9.0**	**9.9**	**12.3**	**16.3**	**20.0**	**121.76**
Eastern Europe and Former Soviet Union	**15.7**	**16.8**	**20.5**	**23.3**	**25.9**	**64.80**
North Africa and the Middle East	**6.5**	**8.0**	**11.4**	**14.3**	**17.0**	**159.65**
Sub-Sahara Africa	**5.0**	**5.0**	**5.6**	**7.0**	**8.9**	**76.29**
Asia	**7.2**	**8.4**	**11.3**	**14.8**	**17.5**	**142.03**

Source: Data used in table obtained from World Bank at
http://wbln0018/worldbank.org**.**

The ratio of workers between the ages of 20 and 59 to people older than 60 was highest in Sub-Sahara Africa and North Africa and the Middle East at 8.6, while in Latin America and Asia this figure was 6.2 and 7.3, respectively. For the Eastern European countries the ratio of prime working age individuals to those above 60 was on average 3.8.

Table 2

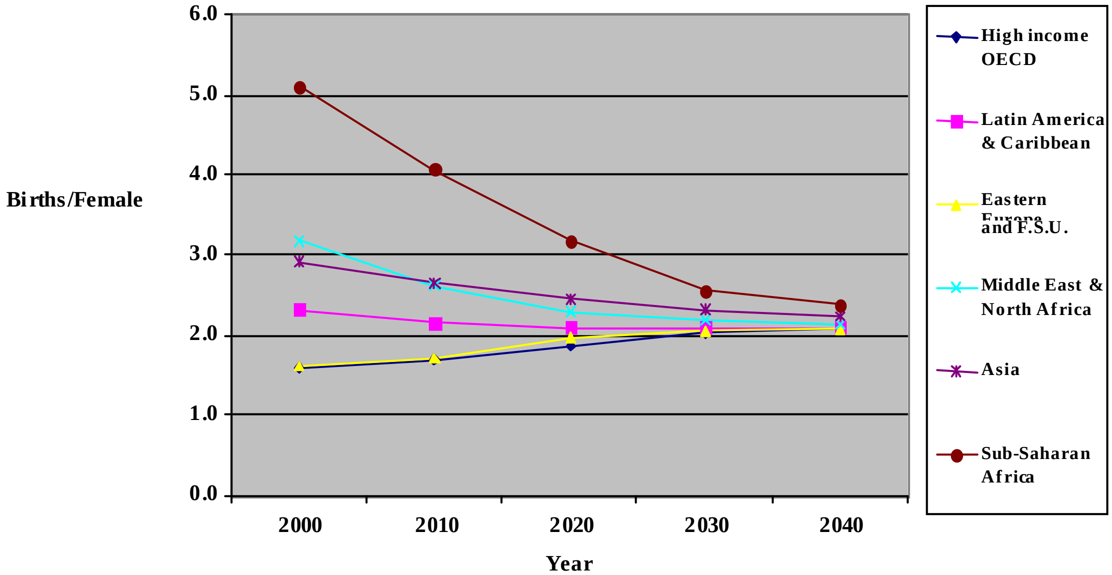
Population aged 20 to 59 divided by Population over 60 years old

Economy	2000	2010	2020	2030	2040	Percent Change 2000-2040
High-income OECD	**2.9**	**2.5**	**2.0**	**1.6**	**1.4**	**-50.87**
Latin America and the Caribbean	**6.2**	**6.1**	**5.2**	**3.8**	**2.9**	**-53.70**
Eastern Europe and Former Soviet Union	**3.8**	**4.0**	**3.1**	**2.5**	**2.1**	**-44.42**
North Africa and the Middle East	**8.6**	**7.4**	**5.8**	**4.5**	**3.7**	**-56.82**
Sub-Sahara Africa	**8.6**	**9.5**	**9.2**	**8.2**	**6.9**	**-20.13**
Asia	**7.3**	**6.7**	**5.6**	**4.4**	**3.7**	**-49.58**

Source: Data used in table obtained from World Bank at
http://wbln0018/worldbank.org**.**

Tables 3 and 4 suggest that the current and projected demographic trends in Africa, Asia, Latin America and the Middle East are less onerous in terms of the potential for sustaining retirement programs on a pay-as-you-go basis. However, with rapid industrialization and rising incomes, fertility rates tend to drop. Advances in medical technology will also extend life spans. The is a good development, but taken together with decreasing fertility rates, the ratio of workers available to support an increasing number the retirees will also decrease. Therefore, decisions pertaining to the design of pension systems capable of coping with these changing demographic patterns is also important to emerging market countries (see Figures 1 and 2).

Figure 1
Fertility Rates by Region, 2000-2040



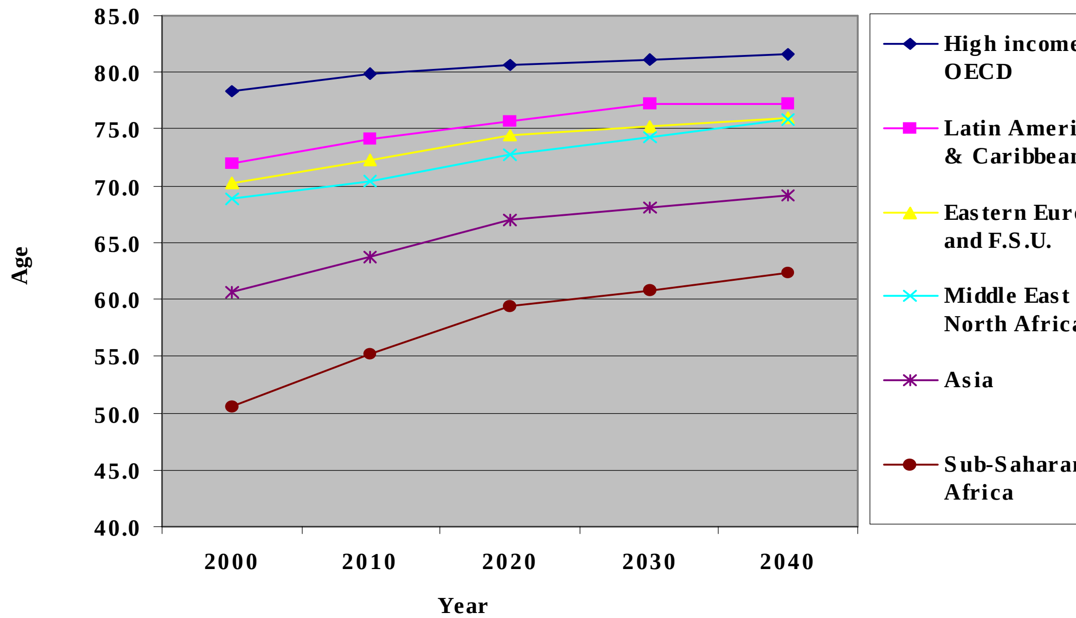
Source: Data for figure from World Bank Statistics at http://wbln0018/worldbank.org

Overall, the global demographic trends show that the high-income OECD countries currently have the oldest populations with on average the lowest ratios of people between the ages of 20 and 59 to individuals above the age of 60. However, in less than four decades projections indicate that the greatest percentage increases in elderly will occur in North Africa and the Middle East, along with the largest percentage declines in the number of younger workers available to support those above the age of 60.

<u>B. Fiscal Conditions of Public Pension Systems</u>

This section attempts to provide a brief overview of public pension expenditures and pension taxes around the world.

Figure 2
Life Expectancy at Birth



Source: Data for figure from World Bank Statistics at http://wbln0018/worldbank.org

Pension Taxes

On average, the available information shows that the public pension systems in Eastern Europe have the highest pension tax burdens. This ranges from a high of 45 percent pension tax as a percentage of gross wages in Poland, and lows in Estonia and Latvia of 20 percent. The high pension taxes across the region are a legacy of between forty and seventy years of central planning. Moreover, the predominant portion of the public pension tax burden falls on employers and not employees. On average, the total pension tax as a percentage of gross wages is 19.4 percent in the high-income OECD countries. Portugal's total pension tax was highest at 34.8 percent, while it was lowest in

Table 3
Pension Tax as a Percentage of Gross Wage

Region	Employer	Employee	Total
High-Income OECD countries	**11.4**	**8.1**	**19.4**
Latin America and the Caribbean	**6.6**	**5.1**	**11.7**
Eastern Europe and F.S.U.	**26.2**	**4.9**	**30.6**
North Africa and the Middle East	**8.0**	**5.4**	**13.4**
Sub-Saharan Africa	**6.0**	**3.5**	**9.6**
Asia	**7.9**	**5.7**	**13.6**

Source: Average figures computed from available country data from World Bank Statistics at worldbank.org. Data was not available for all countries in each region.

Canada at 6.0 percent. The U.S. total pension tax rate is 12.4 percent where the employee and employer contribution rates are 6.2 percent, respectively. Total pension taxes on average are lower in Latin America, Asia and the Middle East. Pension taxes are lowest in Sub-Saharan Africa.

Pension Expenditures

The highest degree of public pension spending relative to GDP is found in the high income OECD countries where on average it is about 10 percent. This ranges from a high of 15 percent in Italy to a low of 4.6 percent in Australia. On average the public pension spending of the East European and Former Soviet Union countries is 7.11 percent. However, this percentage is generally higher for the Central European countries in this region. For example, the public pension spending relative to GDP is 14.4, 9.7, 9.8 and 13.6 percent in Poland, Hungary, the Czech Republic and Slovenia, respectively. In some of the former Soviet Union countries it is relatively low such as in Azerbaijan,

Table 4
Public Pension Spending as Percent of GDP

High-Income OECD countries	10.01
Latin America and Caribbean	3.47
East Europe and Former Soviet Union.	7.11
North Africa and Middle East.	3.07
Sub-Saharan Africa	0.66
Asia	1.98

Source: Averages computed using World Bank Statistics. Also see Palacios and Pallares-Miralless (2000).

Turkmenistan and Armenia at 2.5, 2.3 and 3.0 percent, respectively. The Latin American region also shows wide variation in public spending on pensions. At the high end, there are the countries of Brazil, Chile and Uruguay at 9.8, 5.8 and 15 percent respectively. For a host of countries, including Guyana, Belize and Honduras it is less than 1 percent. The available data shows that the Sub-Saharan countries tend to realize the lowest amount of public pension spending relative to GDP. In Asia the figure ranges from 6.5 percent in Malaysia to 0.9 in Pakistan (All numbers from World Bank Statistics).

Rates of Returns

In unfunded public PAYGO systems a rate of return concept frequently referred to considers the benefit payments that participants receive compared with the contributions made into the system. In the early years of a system this return is relatively high since participants realize benefits for a longer period while making contributions over a shorter period. However, as a PAYGO system matures, participants on average have contributed for longer periods of time relative to those who have retired in the early years of the program. The steady state rate of return to PAYGO systems roughly equals the growth rate of average earnings plus the rate of population growth (see Davis, 1996). The real rate of return for the U.S. social security system has been approximated at figures as low as 2.6 percent (see Feldstein, 1998 and 1.2 percent in Davis, 1995). This points to a key motivation for proponents wishing to reform PAYGO systems. Advocates of integrating a mandatory defined contribution pillar with existing PAYGO systems contend that the higher returns on financial and real assets in the long-run would not only reduce the need to increase payroll taxes or cut benefits, but the higher rates of return may actually enhance benefits. Iglesias and Palacios (2000) and Palacios and Pallares-Miralles (2000) report that the difference between real publicly-managed pension fund returns and bank deposit rates is small and even negative for many countries, whereas the difference between real private pension fund returns and a proxy on PAYGO returns is substantially larger. Palacios and Pallares-Miralles (2000) contend that this points to the benefits that may be derived in shifting from pure PAYGO systems to defined contribution arrangements. Other sources show that for the emerging market countries of Egypt, Peru, Turkey, Venezuela, and Zambia, public pension funds experienced rates of return ranging from -12 percent to -37 percent (World Bank, 1994). Iglesias and Palacios (2001) attribute the poor returns realized by public pension funds to formal restrictions of investment choices, such as required investments in government securities.

3. Pension Reform in Chile and the United Kingdom

Chile

The country of Chile has a historical record of being on the forefront of innovation in the area of the provision of public pensions. In 1924 it implemented a system of social security for its citizens. This preceded the introduction of social security in the United States by a decade. Eventually, the Chilean social security system was afflicted with problems similar to the ones being encountered by the U.S. system today. Even though payroll taxes had increased to more than 26 percent, the system was in deficit and straining the county's fiscal budget. Projections indicated further financial deterioration of the system that pointed to necessary tax increases and reduced benefits to maintain the system.

However, in lieu of proceeding down this path, Chilean policy makers introduced reforms in 1981 that included a provision of individually owned, privately invested retirement accounts called Pension Retirement Accounts or PRAs. Under the privatization plan, employees and employers no longer pay a social security tax to the government. Rather employees contribute 10 percent of wages into the PRA. According to Jose Pinera (2002), the 10 percent figure was determined based on the assumption of a 4 percent average real rate of return that would produce sufficient funds upon retirement to provide a pension benefit equal to about 70 percent of final salary. Workers may contribute up to an additional 10 percent on a voluntary basis.

PRAs are managed by any of the private pension fund companies called Administradora de Fondos de Pensiones or AFPs that workers select. The AFPs are strictly regulated by a special government body called the Superintendency of AFP. Each AFP's sole function is to operate five mutual funds with varying proportions of bond and equity assets. Contrary to caricatures of irrational investors squandering their retirement savings through reckless internet day trading, there are restrictions to the PRA investment allocations. For example, Table 5 shows that the maximum PRA allocation to common

Table 5

Pension Portfolio Restrictions in Chile (1994)

Asset Type	Maximum Percentage of Portfolio
Mortgages	80
Company Bonds	50
Government Bonds	45
Common Stocks	30
Foreign Securities	12
Securities of single company	7

Source: Turner and Watanabe (1995) where original source given as Chilean Pension Regulations.

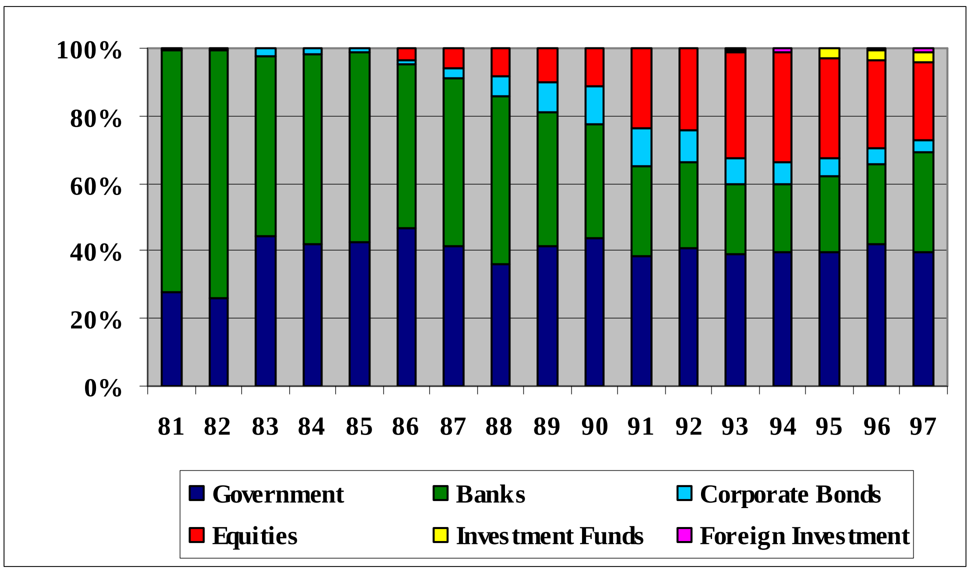
equity is 30 percent and no more than 7 percent can be in the common stock of a single company. Government securities (central bank and treasury instruments) and banks (time deposits and mortgage bonds represent the largest investment allocations of PRAs (see Figure 3). Another feature of the Chilean system designed to reduce extreme risks is a guarantee backed by the government of a minimum pension of approximately 22 percent of average earnings for individuals retiring after 20 years of contributions so that any shortfall in AFP returns is made up (Davis (1995)).

According to Pinera (1999) the average real rate of return for AFP investments was 11 percent between 1981 and 1998. Furthermore, pension benefits have been replacing about 78 percent of a typical worker's income averaged over the ten years just prior to retirement.

Related Issues

Despite the benefits of the Chilean model pointed to by advocates of the partial privatization of social security, there is some evidence that the administrative costs associated with individual retirement accounts are high. James, Smalout, and Vittas (2001) find that individual accounts invested in the retail market in the AFPs have annual fees in the range of 0.8-1.5 percent of assets, with marketing expenses representing the largest component of these costs. However, they find that in countries where individual accounts exist within systems that aggregate small accounts and limit investment choices fees can be reduced to 0.6 percent of assets and may be as low as 0.2 percent. Diamond (1994) provides some evidence that the administrative costs of Chile's privatized pension system exceed those that prevailed under the preceding pay-as-you-go system.

Figure 3
The Composition of Chilean Pension Funds (% of Total, 1981-1997)



Source: Figure from World Bank Statistics at http://wbln0018/worldbank.org , also see Palacios and Pallares-Miralles (2000).

However, Edwards (1998) shows that over time, with the growth in increased size of the program, the administrative costs of the Chilean system have fallen. This is consistent with the economies of scale that Mitchell (1998) finds in the administration of both public and private pensions.

Despite concerns related to the control of administrative costs, the Chilean pension privatization reforms exhibit a number of positive achievements. Edwards (1998) reports that the Chilean the savings rate has increased from less than 10 percent in 1986 to about 29 percent in 1996. The replacement rate afforded by the Chilean pension system has been approximated at 80 percent. (Pinera, 1999 and 2002). In addition, payroll taxes have been reduced and the growth of pension funds have been pointed to as important contributors to the development of Chile's economy and capital markets (Pinera, 1999 and 2002).

United Kingdom

Turner and Watanabe (1995) characterize the public pension system in the United Kingdom as a "pay-or-play" system since there is flexibility to partially opt out of the state pension on a voluntary basis. The U.K. system is essentially a two-tier system that evolved from two key pieces of legislation. All workers earning more than a prescribed minimum income make contributions to the social security system that goes toward a basic state pension (BSP) (Daykin, 1996). The first-tier BSP is a PAYGO system that currently provides participants with benefit payments amounting to about $100 per week (Orszag, 2001). In 1961, a second-tier consisting of a graduated pension was added to the system. Under this law employers also obtained the right to opt out this second-tier if they substituted an alternative private defined benefit plans for employees. These alternative plans became known as occupational pension plans. In 1978 the second-tier graduated pensions were replaced with a State Earnings Related Pension System (SERPS). Benefits were enhanced and if employers contracted out of SERPS the benefits of the private pensions had to be at least as generous as those being supplied by the SERPS. SERPS is essentially a government defined benefit system that provides an earnings related benefit similar to the U.S. Social Security System. However, it is possible to opt out of this second tier of the social security system if employees are members of an acceptable occupational pension plan or a personal pension. Occupational pension plans typically provide benefits above those provided by SERPS. Employers have the discretion to set up such occupational pension plans, and employees have the choice to join or not to. Employees who do not enroll in an occupational pension plan and do not have a suitable private plan are automatic participants in SERPS. By the mid-1990s, about 75 percent of the labor force had opted out of SERPS (Blundell and Johnson (1999)). In summary, employees who opt out of the government run second-tier SERPS have two alternatives. Either they set up individual retirement accounts or they participate in an employer occupational plan that can either be a defined benefit plan or a defined contribution plan. Workers who decide to opt out of the SERPS receive a tax rebate and do not accrue SERPS benefits. The U.K. system currently essentially maintains this two-tier structure today. However, the second-tier SERPS was scheduled to be substituted with a State Second Pension that increases benefits for lower income participants in April 2002 (Orszag, 2001).

Related Issues

The flexibility embodied in the U.K. public pension arrangement has been cited as a factor in determining the relative financial health of the system. Blundell and Johnson (1999) indicate that tax rates are not predicted to increase, even though the number of retirees are projected to increase from about 10.4 million in the mid-1990s to 11.5 million in 2020 and 14 million in 2050. This represents an increase from about 16 percent to 24 percent of the population that will be comprised of retirees. According to Chand and Jaeger (1996) public expenditures are projected to amount to 4.6% of GDP by 2050. In comparison this figure is 26% for the US and more than 100 percent in France, Japan and Germany (Budd and Campell, 1998).

Despite the fiscal benefits of the U.K. pension arrangement pertaining to the sustainability of the program itself, there are concerns that may be relevant to the move toward partial privatization in the U.S. It is unclear whether many individuals have the ability to make good decisions about opting out of the state system. The question of whether individuals get good advice and who should provide it becomes relevant. In the 1990s this became an issue as many individuals accused financial firms of providing misleading advise pertaining to the opting out decision. U.K. regulators investigated and in what came to known as the "mis-selling" scandal, financial firms were forced to repay $15 billion to people that received misleading advice (Orszag, 2001). Another issue that is particularly relevant to a voluntary defined contribution component of a public pension system is whether the decision to opt out is a one time decision or whether individuals can switch back and forth on an ongoing basis. In the U.K. system individuals can move in and out of SERPS and this has been pointed to as a factor that can ultimately increase the administrative costs of the program (Orszag, 2001).

4. State of Pension Reform in the United States

President Franklin D. Roosevelt once remarked that social legislation such as the Social Security Act of 1935 should "be improved and strengthened in light of additional experience and understanding (CSSS, 2001)." In fact since its enactment there have been numerous modifications to the 1935 Act. The original intent was to provide benefits during the old-age of workers who have retired from employment in industry and commerce. Amendments by Congress in 1939 added benefits for dependents of retirees and surviving dependents of deceased workers. In 1956, the addition of Disability Insurance broadened the scope of the system. Further amendments followed in 1958, 1967, 1972, 1977, 1983 and 1994.[4] The historical record is encouraging in the sense that it has shown that the Social Security system has been amenable for adaptation to changing economic conditions (e.g. cost of living adjustments during rising inflation rates in 1972) and program deficiencies (e.g. 1967 amendments added disability benefits for widows and widowers over the age of 50).

The President's Commission to Strengthen Social Security produced their Final Report in 2001 (CSSS, 2001). The commission was co-chaired by Daniel Patrick Moynihan and Richard Parsons and was guided by a number of principles laid out by President George W. Bush. These principles are as follows (from CSSS, 2001):

- Modernization must not change Social Security benefits for retirees or near retirees.
- The entire Social Security surplus must be dedicated to Social Security only.
- Social Security payroll taxes must not be increased.
- Government must not invest social security funds in the stock market.
- Modernization must preserve Social Security's disability and survivors components.

- Modernization must include individually controlled, voluntary personal retirement accounts which will augment the social security safety net.

Within the framework of these guiding principles, the Commission generated three reform models. Among the common features of all three models are the inclusion of voluntary personal retirement accounts and the expectation that future retirees will receive benefits that are equal to or greater then those received by current retirees on an inflation adjusted basis.

Under Reform Model 1, workers will be able to voluntarily invest 2 percent of their taxable wages in a personal account. The tradeoff involves an offset of traditional Social Security benefits by the worker's personal account contributions compounded at an interest rate of 3.5 percent above inflation (CSSS, 2001). With Reform Model 2 workers will be able to redirect 4 percent of their payroll taxes up to $1000 annually into a personal account (where the maximum contribution is indexed annually to wage growth). In turn, traditional Social Security benefits will be offset by the personal account contributions compounded at an interest rate of 2 percent (CSSS, 2001). Reform Model 3 stipulates that personal accounts will be created by a match of part of the payroll tax of 2.5 percent up to $1000 annually (where this is indexed annually for wage growth) for any worker who contributes an additional 1 percent of wages subject to social security payroll taxes. The additional 1 percent contribution is partly subsidized in a progressive manner with refundable tax credits. The offset of traditional Social Security benefits under Reform Model 3 will equal the worker's personal account contribution compounded at an interest rate of 2.5 percent over inflation (CSSS, 2001).

A major finding of the Commission is that financial security will be enhanced through asset ownership relative to a claim to future benefits dependent upon unknown future political developments. The Commission stresses the voluntary attributes of the reform models, with no apparent compulsion of individuals to partially opt into personal account arrangements. It is interesting that in hearings on the Commission's work, Anita Schwartz of the World Bank noted that it was predicted that only 15 percent of 600,000 individuals would voluntarily opt out of Uruguay's traditional social security system. However, when the time came to make a decision, over two-thirds chose to opt out of the traditional system and into personal accounts (CSSS, 2001 and also see Mitchell and Barreto, 1997 for an overview of pension reforms in Uruguay and other Latin American countries). This outcome is attributed to the preference of individuals for some type of property ownership, in lieu of future promises subject to political developments and discretion. In addition, Kotlikoff, Walliser and Smetters (1998) show that privatizing the U.S. public pension system can be achieved on a progressive basis.

The reforms outlined in the Commission's Final Report (2001) have the benefit of augmenting the current system in a way that preserves or enhances the retirement benefits of individuals and reinforces the long-term sustainability of the program. However, the U.K. and Chilean reform experiences are particularly useful in crystallizing the issues that will ultimately be important in determining the attributes of the system after partial privatization. The seemingly attractive voluntary feature of the proposals may actually adversely impact administrative costs, particularly if participants have unlimited scope to move between the voluntary retirement accounts and the existing system (Orszag, 2001). Furthermore, the issue of how individuals are advised on there decisions and who advises them needs to be clarified. It can be relegated to the government or financial professionals acceptable to regulators or a combination of both. This arrangement will be critical in facilitating the reformed program's capability to enhance the well being of participants. This is particularly obvious in light of the Security and Exchanges (SEC) finding that over 50 percent of Americans cannot distinguish between a stock and a bond and only 16 percent have a clear understanding of what an IRA (Individual Retirement Account) is. The Chilean arrangement of setting strict restrictions on the maximum funds allocated to particular assets would provide a useful framework for addressing this issue. Similarly, adjusting the acceptable and allowable asset allocations on a chronological basis over the life cycle of participants will be important. However, the participants would still retain the right of making choices within a particular asset class.

An Alternative to the Commission's Proposals

The major motivation for the partial privatization of social security is that the higher returns earned would mitigate the need to either cut benefits, raise payroll taxes or to significantly extend the age of retirement. However, one of President Bush's principles in guiding the Commission's work is that the government should not invest money in the stock market. Dispensing with this principle has major implications for the government's direct involvement in corporate governance. In such a case, the government's role would extend far beyond that of regulator and enforcer of the rules, and into the direct management of companies with listed stock. For this reason, it is difficult to find clear and coherent positions from commentators that advocate the investment in the stock market by social security. Eliminating this option, and if the partial privatization of social security with voluntary retirement accounts is also opposed, the simple enhancement of the social security trust fund becomes a somewhat unclear solution to ensuring the long-term sustainability of social security.

Ferrara and Tanner (1998) report projections showing that in 2013, the U.S. Social Security system will be spending more in benefits than it collects in taxes. In principle, benefits will continue to be paid after this point by drawing upon the Social Security Trust Fund. It is estimated that the trust fund will enable benefits to be paid until 2032. Unfortunately, the benefits of the trust fund as it now exists are not obvious and convincing. The money that went into the trust fund has already been spent. It now consists of specially issued government bonds and an accounting entry that attributes interest to the remaining government bonds. The actual money that came into the fund over and above what was needed for benefits was used to finance the general operations of the government. O'Neill (2002) asserts that the Social Security Trust Fund is simply an accounting measure and not an accumulation of assets that can be used to pay promised future retirement benefits. Issues pertaining to "lock boxes" or raiding "surpluses" is irrelevant to the long term viability of the essentially PAYGO social security program. The likely motivation for originally creating a trust fund was political. According to John Cogan the trust fund was a "labeling devise designed to provide political protection against the charge that the funds were being misspent" (O'Neill, 2002). The critical point is that when the need comes to draw down the trust fund, the federal government will be required to return borrowed funds as represented by the trust fund bonds. It can pay off these bonds from federal budget surpluses (if any), raising taxes or borrowing. Budget surpluses (or deficits) are difficult to time since a big determinant is the overall state of the economy. Budgets tend toward surplus during economic expansions and toward deficits during periods of slow growth (or war). Counting on budget surpluses in the post-2013 years is a highly uncertain proposition. Raising taxes to generate money to replace trust fund bonds may impair economic growth, especially if the timing of the required tax increases occur when the economy can least withstand such increases. Borrowing on a scale required to raise funds to payoff the trust fund bonds may crowd out private borrowing, and hence increasing interest rates at a time when the economy can least afford such increases. Placing the trust fund off-limits for any other purpose does not really alleviate the uncertainty surrounding these issues since the trust funds are still restricted from investing these funds in the private sector where returns are higher. Without these higher returns, the choices between, or a combination of, lower benefits, higher payroll taxes or extended retirement ages would still need to be confronted.

5. Conclusion

This article sought to provide a broad descriptive overview of the demographic and fiscal trends that are prompting policy makers to pursue public pension reforms around the world. Outlines of the reforms in Chile and the United Kingdom were also provided, along with elements of proposals relevant to the reform of the U.S. public retirement system. It is hoped that the descriptive account of the issues identified in this paper highlighted two important points relevant to the pension reform debate in the U.S. The first point is that the challenges raising concerns about the currently configured U.S. Social Security system are common to many countries around the world. In almost all cases where policymakers moved to ensure retirement security for their citizens, it was done in much poorer countries with less mature political institutions. These societies were able to absorb, and in many cases they embraced, the costs of change that accompanied public pension reform. The variety of reform approaches pursued around the world provide ample models for U.S. policymakers as they move toward implementing changes, just as their predecessors looked to the international arena for guidance in designing the system enacted by the 1935 Social Security Act. It is unlikely that a consensus will be achieved to move along the lines of the radical pension privatization introduced in Chile. More likely reforms will stress partial and voluntary privatization within the framework presented by the President's Commission on Strengthening Social Security (CSSS, 2001) with similarities to the system found in the United Kingdom. According to Bodie (1990), the integration of Social Security benefits with pensions provided by private employers is one way of mitigating against the risk of not receiving the real benefits of payments promised by the public system. He suggests that a pension system comprised of both a public and private component can be looked upon as a way to reduce pension risk by diversifying across providers. Extending this line of analysis suggests the merits of the U.K. social security system where sponsors of private plans and employees can to a certain extent opt out of the system, where the mandatory basic defined benefit pension balances the greater risk (and opportunity) of the voluntary private component.

A second point of the description provided in the text that hopefully is evident is that in the face of demographic and financial challenges straining public pension systems, policymakers around the world have acted. Even countries with deeply rooted socialistic traditions such as Germany and Italy, have been prompted by demographic trends and fiscal realities to debate the issue of reforming public pensions with some elements of privatization (see The Economist, August 1, 2002). In 2008 the oldest of the 1946-1964 cohort will begin receiving Social Security checks. However, former Democratic Senator Bob Kerrey and former Republican Senator Warren Rudman nicely point out that doing nothing about the longer term sustainability of the current system is a policy in itself (2002). In a refreshing bipartisan burst of clarity and directness they point out that if nothing is done in reforming the current system, retirement benefits will be cut by 16 percent for today's 30 year-olds, by 29 percent for today's 20 year-olds and by 35 percent for today's newly born babies. To prevent such benefit cuts for younger cohorts, payroll taxes would need to increase to approximately 40 percent in 2041. They call this the "Social Security Do Nothing Act." They suggest that those criticizing reform proposals currently on the table without bringing forth their own recommendations are by default opting for the "Do Nothing" policy. This article modestly suggests that a global glimpse at pension reform activity around the world can easily generate insights for designing reform models that improve on the "Do Nothing" policy.

Notes

[1] Brief History of Social Security, 2002, U.S. Social Security Administration, www.ssa.gov.

[2] A mandatory defined contribution plan such as one that may comprise the second pillar is sometimes referred to as a fully funded system, but it should be noted that defined contribution plans are by definition fully funded while defined benefit pension plans can be underfunded, overfunded, or neither if the market value of assets in the pension fund exactly matches the present value of future retirement promises.

[3] Regional and specific country numbers from World Bank Statistics. A listing of countries included in each region as classified by the World Bank is also included in the Appendix.

[4] Legislation in 1965 established Medicare and Medicaid. This paper does not address these programs since they embody unique issues that go beyond the scope of this article, where the focus is on retirement income.

Appendix

Countries Comprising World Bank's High-Income OECD and Regional Classifications

High-Income OECD	Latin America and the Caribbean	Eastern Europe and Former Soviet Union	North Africa and the Middle East	Sub-Sahara Africa	Asia
Australia	Argentina	Albania	Algeria	Angola	Afghanistan
Austria	Bahamas	Armenia	Bahrain	Benin	Bangladesh
Belgium	Barbados	Azerbaijan	Cyprus	Botswana	Bhutan
Canada	Belize	Belarus	Egypt	Burkina Faso	Brunei
Denmark	Bolivia	Bosnia	Iran	Burundi	Cambodia
Finland	Brazil	Bulgaria	Iraq	Cameroon	China
France	Chile	Croatia	Israel	Cape Verde	Fiji
Germany	Colombia	Czech Republic	Jordan	Central Af. Rep.	French Polynesia
Greece	Costa Rica	Estonia	Kuwait	Chad	Hong Kong
Iceland	Cuba	Georgia	Lebanon	Comoros	India
Ireland	Dominica	Hungary	Lybia	Congo, Dem.	Indonesia
Italy	Domenica Rep.	Kazakhstan	Malta	Congo, Rep.	Kiribati
Japan	Ecuador	Kyrgyztan	Morocco	Cote d'Ivoire	Korea, Dem.
Luxembourg	El Salvador	Latvia	Oman	Djibouti	Korea, Rep.
Netherlands	Grenada	Lithuania	Qatar	Equatorial Guinea	Lao
New Zealand	Guadalupe	Macedonia	Saudi Arabia	Eritrea	Macao
Norway	Guatemala	Moldova	Syria	Ethiopia	Malaysia
Portugal	Guyana	Poland	Tunisia	Gabon	Maldives
Spain	Haiti	Romania	Turkey	Gambia	Micronesia
Sweden	Honduras	Russia	UAE	Ghana	Mongolia
Switzerland	Jamaica	Slovak Republic	West Bank	Guinea	Myanmar
United Kingdom	Martinique	Slovenia	Yemen	Guinea Bissau	New Caledonia
United States	Mexico	Tajikinstan		Kenya	Nepal
	Netherlands Antilles	Turkmenistan		Lesotho	Pakistan
	Nicaragua	Ukraine		Liberia	Papua New Guinea
	Panama	Uzbekistan		Madagascar	Philippines
	Paraguay	Yugoslavia		Malawi	Singapore
	Peru			Mali	Solomon Islands
	St. Lucia			Mauritania	Sri Lanka
	St. Nevis and Kitts			Mauritius	Thailand
	St. Vicent and Grenadines			Mozambique	Tonga
	Suriname			Namibia	Vanuatu
	Trinidad and Tobago			Niger	Vietnam
	Uruguay			Nigeria	
	Venezuela			Rwanda	
				Sao Tome and Principe	
				Senegal	
				Seychelles	
				Sierra Leone	
				Somalia	
				South Africa	
				Sudan	
				Swaziland	
				Tanzania	
				Togo	
				Uganda	
				Zambia	
				Zimbabwe	

References

Averting the Old Age Crisis, The International Bank for Reconstruction and Development, The World Bank, 1994.

Blundell, Richard and Paul Johnson, "Pensions and Retirement in the United Kingdom" in Social Security and Retirement around the World, Edited by Gruber, Jonathan and David A. Wise, The University of Chicago Press, 1999.

Bodie, Zvi (1990), "Management Pension and Retirement Assets: An International Perspective", *Journal of Financial Research*, 4(4), December, 419-60.

Brief History of Social Security, 2002, U.S. Social Security Administration, www.ssa.gov.

Budd, Alan, & Campbell, Nigel, 1998. The roles of the public and private sectors in the U.K. pension system. In Martin Feldstein (Ed.), Privatizing Social Security (pp. 99-127). Chicago: University of Chicago Press.

Chand, Sheetal K., & Jaeger, Albert.,1996. *Aging Populations and Public Pension Schemes.* (Occasional Paper No. 147). Washington, DC: International Monetary Fund. December 1996.

Davis, E. Philip. Pension Funds Retirement-Income Security and Capital Markets An International Perspective, Oxford University Press Inc., 1995.

Daykin, Christopher D., 1996. "Occupational Pension Provision in the United Kingdom", in Securing Employer-Based Pensions An International Perspective, Edited by Bodie, Zvi, Olivia S. Mitchell and John A. Turner, The Pension Research Council, The Wharton School of the University of Pennsylvania and The University of Pennsylvania Press, Philadelphia, 1996.

Diamond, Peter A. (1994). Privatization of social security: Lessons from Chile. *Revista de Análisis Económico*, 9 , 21-33.

Diamond, Peter A. (1996). Proposals to restructure Social Security. *Journal of Economic Perspectives*, 10 (3), 66-88.

Edwards, Sebastian. (1998). The Chilean pension reform: A Pioneering program. In Martin Feldstein (Ed.), Privatizing Social Security (pp. 33-57). Chicago: University of Chicago Press.

Feldstein, Martin. 1998, "Social security Pension Reform in China." National Bureau of Economic Research, Inc., Working Papers Series, Working Paper 6794. November 1998. Feldstein, Martin, 1998, "Introduction" in Martin Feldstein (Ed.), Privatizing Social Security (pp. 1-29). Chicago: University of Chicago Press.

Feldstein, Martin, James Poterba, and Louis Dicks-Mireaux, 1983. "The Effective Tax Rate and the Pretax Rate of Return," *Journal of Public Economic*s 21: 129-58.

Ferrara, Peter and Michael Tanner, 1998, A New Deal for Social Security. Washington: Cato Institute, 1998.

Final Report of President's Commission to Strengthen Social Security, 2001. "Strengthening Social Security and Creating Personal Wealth for All Americans" December 2001. Available at www.csss.gov.

Iglesias, Augusto and Roberto Palacios. 2000. "Managing Public Pension Reserves Part I: Evidence from the International Experience." Pension Reform Primer Paper Series. World Bank, Washington, D.C.

Kerrey Bob and Warren B. Rudman, "Social Security Shell Game." Washington Post, August 12, 2002

Kotlikoff, Laurence J., Smetters Kent A. and Jan Walliser, 1998."Social Security Privatization and Progressivity." National Bureau of Economic Research, Inc., Working Paper 6428. February 1998.

Mitchell, Olivia, 1998, "Administrative Costs in Public and Private Retirement Systems" in Martin Feldstein (Ed.), Privatizing Social Security (pp. 403-452). Chicago: University of Chicago Press.

Mitchell, Olivia and Barreto, Flavio Ataliba, 1997, "After Chile, What? Second-Round Pension Reforms in Latin America." National Bureau of Economic Research, Inc., Working Paper 6316. December 1997.

New Ideas about Old Age Security, 2001. Holzmann, Robert and Joseph E. Stiglitz, (editors) The World Bank.

O'Neill, June, 2002. "The Trust Fund, the Surplus, and the Real Social Security Problem" in Social Security Privatization, SSP No. 26, April 9, 2002 at www.socialsecurity.org.

Orszag, Peter R. and Joseph E. Stiglitz, 2001. "Rethinking Pension Reform: Ten Myths about Social Security Systems" in New Ideas about Old Age Security, 2001. Holzmann, Robert and Joseph E. Stiglitz, (editors) The World Bank.

Orszag, Peter, 2001. "Voluntary Individual Accounts: The Lessons from the U.K. Experience." Testimony before the Ways and Means Committee, Subcommittee on Social Security, U.S. House of Representative on July 31, 2001.

Orszag, Peter. (1999, February 11). Individual accounts in the United Kingdom: Lessons for the United States. Testimony before the Ways and Means Committee, U.S. House of Representatives.

Palacios, Robert and Montserrat Pallares-Mirralless, 2000, "International Patterns of Pension Provision." (April 2000) Paper can be found at www.worldbank.org

Pinera, Jose, 2002, "The Chilean Model." http://pensionreform.org.

Pinera, Jose,1999. A real solution to the Social Security crisis. Testimony before the Committee on Ways and Means, U.S. House of Representatives, February 11, 1999.

Turner, John and Noriyasu Watanabe, Private Pension Policies in Industrialized Countries A Comparative Analysis, W.E. Upjohn Institute for Employment Research, 1995.

Social Security and Retirement around the World, Edited by Gruber, Jonathan and David A. Wise, The University of Chicago Press, 1999.

Securing Employer-Based Pensions An International Perspective, Edited by Bodie, Zvi, Olivia S. Mitchell and John A. Turner, The Pension Research Council, The Wharton School of the University of Pennsylvania and The University of Pennsylvania Press, Philadelphia, 1996.

We Know What's Best for Your Old Age, Why Can't You See It?, The Economist, August 1, 2002.