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### **What lessons can we learn from systematic reform, in particular in countries that have funded systems?**

Funded pension systems: Lessons from reforms

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## Funded pension systems: Lessons from reforms

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### 1. Introduction

Traditional pay-as-you-go social security programs are under stress because of population aging. Population aging is occurring because people are living longer and because in many countries the birth rate has declined. While birth rates may have stabilized in a number of countries, increases in longevity are projected to continue.

Population aging raises the ratio of retirees to workers. That change is equivalent to raising the price of providing benefits to older persons in a pay-as-you-go system (Turner 1984). For example, the ratio of retirement age to working age men in France is projected to rise from 37 to 62 percent between 2005 and 2040 (Kinsell and He, 2009). Thus, in 2005, it cost French workers EUR37 to raise benefits of retirees by EUR100, but in 2040 it will cost French workers EUR62 to achieve the same increase in benefits for retirees.

This problem with unfunded systems is being dealt with in some countries by increasing the role of funding in providing retirement income. Funded pension systems are less affected by population aging than are pay-as-you-go systems.

While often the focus is on mandatory individual accounts, funded pension systems come in different forms. They can be voluntary or mandatory. They can be add-ons to social security or carve-outs from social security. Social security itself can contain funding. They can be managed by the government or managed in the private sector.

This report discusses advantages and disadvantages of funding in a pension system. First, it discusses issues with mandatory individual account systems, considering the experience in Chile, other Latin American countries, countries in Eastern Europe, and Sweden. Second, it discusses the partial funding of a traditional Social Security system, using Canada as an example. Finally, it discusses why individuals make errors in managing investments, which is relevant to any type of individual account system with individual management of investments.

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## 2. Examining the case for individual accounts

A number of advantages have been claimed for funding of pension systems. These include increased national savings, improved functioning of capital markets in countries that do not already have well functioning capital markets, restored sustainability of the retirement income system, and diversification of risks (Holzmann and Guven, 2009).

One of the presumed advantages of a funded system with individual accounts is that benefits are closely tied to contributions (Holzmann and Guven, 2009). With a funded individual account pension system, workers, and possibly also employers, contribute to an individual account for each period of work. Thus, benefits are based on work over an entire career, rather than on the last few years of work. This link between contributions and benefits is presumed to have desirable incentive effects. Workers, it is thought, will not view the contributions as a tax payment because this direct link will demonstrate to them the value of the future benefits gained. The direct link presumably will reduce the problem of contribution evasion, which is a problem in many social security programs around the world.

This presumed advantage has not materialized (Table 1). For most countries in Latin America with individual account systems, less than half of the workforce is covered. The coverage rates in Guatemala, El Salvador, and Peru are less than one-fifth of the workforce. Contribution evasion thus continues to be a problem in the countries having mandatory individual account systems. Why that continues to be a case, however, has received relatively little attention.

**Table 1. Coverage rates under selected mandatory individual account systems, 2008**

Country	Coverage rate (%)
Chile	65
Mexico	55
Dominican Republic	45
El Salvador	33
Guatemala	18
Peru	13

*Source:* Kinsell and He, 2009.

One possible explanation for this failure to improve coverage is that the direct link between contributions and benefits is much weaker than originally thought (Gillion et al., 2000). The same level of contributions can produce much different levels of benefit depending on the timing of swings in the capital market. These variations include variations in interest rates, which can have a large effect on the value of annual annuitized benefits. Thus, for these reasons the connections between contributions and benefits in an individual account system are weak. This is true even for people investing the same amount over the same time period, due to large differences in accumulated account balances resulting from differences in portfolios. Over most periods, portfolios invested in stocks considerably outperform portfolios invested in bonds, but the reverse holds over some periods.

An additional argument for adopting these plans was that they would be less subject to political manipulation than traditional social security programs. That result also largely has not occurred (Bertranou et al., 2009).

In addition, a negative feature is that the individual account plans have removed an element of redistribution of income and solidarity from the social security program. The plans

generally contain no element that is explicitly redistributive, though plans that are annuitized tend to redistribute toward higher-income persons because of their longer life expectancy.

### **3. Funded individual account pension systems**

Mandatory funded individual account pension systems are now used in a number of countries, primarily in Latin America and in Central and Eastern Europe. They can be provided in addition to an existing pay-as-you-go system or can partially or fully replace such a system.

#### **Latin America**

In 1981, Chile reformed its retirement income system, introducing mandatory funded individual accounts that replaced its traditional social security program. Beginning in the 1990s, ten other Latin American countries followed Chile. Those countries are Mexico, Uruguay, Argentina, Dominican Republic, Peru, Bolivia, Costa Rica, El Salvador, Colombia, and Panama.

In recent years, countries have undertaken a second round of pension reforms to strengthen the public component of retirement income and address the problems created by individual accounts. Recent reforms are resulting in a significant return of public components in old-age income support systems to reach a better balance of protection against social risks. Chile illustrates this trend, where a comprehensive pension reform bill was approved in 2008.

In the recent round of reforms, public involvement in the provision of social security has increased in three ways:

- allowing workers to switch back to the PAYG scheme;
- incorporating solidarity and income redistribution mechanisms; and
- creating new public pension reserve funds (Bertranou et al., 2009).

Both Peru and Uruguay have passed legislation allowing workers to switch back to the traditional pay-as-you-go program. The most extreme case of retrenching is Argentina, where mandatory individual accounts were eliminated in 2008. Argentina has ended its individual account system and returned to a traditional defined-benefit pay-as-you-go plan. Argentina is the only country so far to do so.

While the initial reforms weakened social safety nets and income redistribution in some countries, the second round of reforms has sought to strengthen those elements of the retirement income system. El Salvador created a subsidy for workers whose individual account benefits were lower than the benefits they would have received under the former pay-as-you-go plan. Chile in 2008 introduced two new programs, replacing programs already in existence, that are designed to help lower-income workers. Colombia in 2003 introduced a plan that pays non-contributory benefits and matching contributions to low-income workers.

Reforms since 2005 have been designed to improve the individual account systems, including:

- extending mandatory contributions to workers not currently covered;
- lowering costs to account holders; and
- changing the investment rules for pension assets (Bertranou et al., 2009).

Initially, in most reforms self-employed workers were not required to participate in the individual accounts system, but had the option of voluntarily participating. Most of those

workers did not. Recent reforms have extended mandatory coverage to self-employed workers, including reforms in Costa Rica, Colombia, Mexico, and Chile.

High fees charged to participants have been a problem in many countries, resulting in reduced benefits for workers and high profits for financial institutions. Initially, it was thought that competition among service providers would result in low fees. However, competition has taken non-price forms, such as advertising that focuses on images, or incentives for switching providers. That may occur in part because in most countries the fees that participants pay are not clearly disclosed. Countries have recognized the problem of high fees, and are attempting to deal with it. For example, in Chile new entrants who do not choose a pension fund provider are automatically assigned to the provider with the lowest fees. In Mexico, workers are allowed to transfer between pension fund management companies once a year. However, to encourage them to choose a low fee provider, they are permitted to transfer to the fund with the highest rate of return, net of fees, any time.

Initially following reforms, in many countries pension fund investments were heavily concentrated in government bonds. Investing in government bonds does not lead to the benefits of funding promised by reformers because it does not increase investments in productive capital. Gradually, countries have relaxed restrictions and made a greater range of investments available.

The structure of an individual account may induce some workers to take on too much financial market risk. In the Chilean system, there is an indirect incentive for low-income workers to invest in the riskiest mutual funds. If those funds perform well, they keep the gains. If they perform poorly, the workers can claim social assistance benefits.

One of the issues in countries with funded systems is the provision of survivors' benefits and disability benefits. In Chile, these are provided by the pension fund management company by contracting with an insurance company. An important aspect of the 2008 reform in Chile is that employers for the first time will be required to pay for survivors and disability insurance. Previously, those benefits were paid for by employees. This requirement is being phased in, starting with employers with 100 or more employees (Social Security Administration, 2009).

A new pro-child benefit in the Chilean system is a bonus payment for women raising a child, either her own biological child or an adopted child. The bonus payment can be received starting at age 65 and is paid per child.

## **Central, Eastern, and Southern Europe**

As of 2009, 14 countries that were formerly part of the Soviet Union or Soviet bloc in Central, Eastern, and Southern Europe have adopted mandatory individual account pensions. That number is roughly half of the countries of the region. All of these reforms have occurred since 1998. These countries include Bulgaria, Croatia, Estonia, Poland, Hungary, Kazakhstan, Kosovo, Latvia, Lithuania, the Republic of Macedonia, Romania, the Russian Federation, Slovakia, and the Ukraine (effective by 2011).

Of these 14 countries, 12 have retained a pay-as-you-go pension system along with the mandatory individual account system. Hungary, for example, has established a mandatory individual account system on top of a traditional pay-as-you-go social security system, as has Romania. Poland has also established a two-tier system, but where the base tier is a notional defined contribution system, similar to that established in Sweden. The only countries that have followed Chile and ended the pay-as-you-go system are Kosovo and Kazakhstan. Some

countries have established notional defined contribution plans following Sweden, such as Latvia, but these plans are funded on a pay-as-you-go basis, with limited funding.

Mandatory, funded individual account plans that are provided in addition to a pay-as-you-go system are expected to diversify risks because their risks are tied to the capital market. By comparison, the risks in a pay-as-you-go plan are more closely tied to the age structure of the population and changes in the labor market.

The experience with these plans has proven that political intervention affects their functioning. In 2009, Latvia temporarily reduced the mandatory contribution rate for its individual account pensions and transferred the difference to its unfunded pay-as-you-go pension. This move was designed to improve the financing of the pay-as-you-go pension.

In 2009, Slovakia started requiring that the pension fund management companies guarantee a zero percent rate of return every six months. If they fail to achieve that rate of return, they are obligated to make up the difference. If they exceed that rate of return, they are allowed to charge a management fee on the investment earnings. As a further reaction to the financial market declines, it allowed workers to temporarily opt out of the mandatory individual account system.

## **Sweden**

Sweden has a mandatory individual account system. Workers and employers contribute a total of 2.5 percent of wages to individual accounts and 16 percent to a pay-as-you-go social security system, which is a notional defined contribution system. Workers have a large number of choices of investment funds, and can choose up to five. If they make no choice, they automatically are enrolled in the default fund, which is managed by a government agency (Turner, 2004).

With individual accounts, individual workers usually are responsible for making investment decisions. Many workers, however, are uninformed about financial markets and investment theory and lack the interest to learn about these topics. Given the random fluctuations in financial markets, learning by doing is more difficult than in many other areas because there is not always a direct relationship between poor financial planning and an adverse outcome. Issues in financial markets can be complex, and some basic issues in individual financial management remain unresolved by financial experts.

Because the Swedish Premium Pension system gives workers a wide range of investment choices, the experience of that system provides examples of some of the problems that arise when participants manage their pension portfolios.

### **Participant investment choice**

The PPM, the government agency responsible for the Swedish Premium Pension system, has the goal that as many participants as possible actively choose their account investments. Nonetheless, a substantial percentage of workers do not choose a mutual fund for the investment of their account, and the PPM invests their contributions in the default fund.

In 2000, participants made their initial investment choices in the Premium Pension system. All participants who wanted to make an active choice were required to submit a form to the PPM. Participants who did not choose or who wanted their funds to be invested in the government default fund did not have to take any action. About two-thirds of participants submitted the form. Women were somewhat more likely than men to make a choice, as were

high-income participants and participants aged 25-55 (Premium Pension Authority, 2001). Workers with higher income were more likely to make an active choice, while about half of participants with low income invested in the default fund. Since no action by workers was necessary to invest in the default fund, it is impossible to separate that fund's investors into those that wanted to invest in the default fund and those who ignored the fund selection process.

After the start of the system, most new PPM participants have been new entrants into the labor force and thus generally young. Of the 500,000 new participants in the system in spring 2001, 325,000 were age 18 to 27. Only 18 percent chose their funds; the remainder had their contributions invested in the default fund (Betson, 2001). The large percentage of new participants taking the default option may be the result of the large number of investment choices they were offered. Being overwhelmed by the number of choices, they decided to not make a choice, resulting in their being placed in the default.

About two-thirds of Swedish participants making a choice invested in equity funds and half the money invested was put in equity funds. Since balanced funds, generation funds (where the portfolio mix changes with the participant's age), and the default fund also invest in equities, taken together, more than 80 percent of the contributions of Swedish workers were invested in equities, which is far higher than the traditional advice of 60 percent in equities and 40 percent in bonds. One resulting risk is that workers who invest solely in the Swedish economy will be inadequately diversified because of the relatively small size and narrow range of economic activity in the Swedish economy, with its stock market dominated by a few large corporations. The statistics on participants' investments indicate, however, that a majority of workers have some international investments (Weaver, 2002).

## **Plan and investment information for participants**

The Swedish system was designed to reduce marketing costs and fees, which have been high in some countries, such as Chile. Because the funds do not know the identity of the workers participating with them, they are unable to target their advertising to workers who do not participate in their fund, or to offer incentives to workers to switch their accounts. Some funds, however, have attempted to target their advertising to particular groups by direct mail or by advertising in publications appealing to high-income workers or in areas where high-income workers live.

Funds participating in the system must provide information on fund asset values daily. This information is available to participants through the major daily Swedish newspapers, over the Internet, and at social security offices. Individual participants receive a single year-end statement presenting information about their investments in the Premium Pension but not providing information on the fees they have paid.

## **4. Other types of funded pension systems**

### **Canada**

The Canada Pension Plan (CPP) is the main social security program for Canada, except for the province of Québec which maintains a similar but separate plan. The CPP is a hybrid between a pay-as-you-go system and a fully funded system. It is partially funded, but unlike the fund in the U.S. Social Security system, it is not projected to run out of money. Benefits are designed to replace 25 percent of the worker's average wages into the future, and thus grow over time for successive cohorts at the growth rate of average wages.

Payroll taxes plus investment earnings in Canada are projected to be sufficiently higher than the pay-as-you-go rate so that the fund for the Canada Pension Plan will continue to grow over time, for at least the 75-year projection period. The Canada Pension Plan is financed with a combined employee-employer tax rate of 9.9 percent. Its fund is invested partially in the stock market. The system is designed so that a fund will be built up that will be adequate to pay for the retirement benefits of the Canadian baby boom and the aging of the population, so that there never will need to be further contribution rate increases nor benefit cuts. However, if a prolonged period of adverse financial markets occurs or if life expectancy increases considerably more rapidly than anticipated, or if another economic or demographic variable affecting funding turns out to be much more adverse to funding than expected, an adjustment may be needed.

An important feature of the funding of the Canadian system is that the Canada Pension Plan Investment Board has been structured so that it is shielded from political influence on its investment decisions. The board is responsible only to assure that the fund obtains the highest possible expected rate of return, given the level of risk that it bears.

Every three years, the system's Chief Actuary evaluates its financial sustainability. If the Chief Actuary determines that the system is not financially sustainable in the long run, legislation requires an automatic adjustment. The automatic adjustment occurs, however, only if the Canadian provincial finance ministers cannot first decide on an adjustment, an outcome which is considered to be unlikely. The automatic adjustment freezes benefit indexation for three years. In addition, it increases the contribution rate over that three-year period by an amount equal to half of the adjustment needed to reach the new long-term contribution rate required to restore solvency. That rate is maintained until the next triennial evaluation of the fund. Thus, the changes are borne both through an increase in contributions and a reduction in benefits (Brown, 2008).

If the changes in long run assumptions raise the projected steady state contribution rate required to maintain a constant ratio of assets to expenditures, then the contribution rate will be increased permanently. The need for an automatic adjustment has not arisen over the decade that the mechanism has been in place, and it is fairly unlikely that it will arise.

## **National pension reserve funds**

Several countries have established national pension reserve funds. These are funded accounts that are managed centrally by the government and are not owned by individuals but rather are owned by the state. The funds are designed to advance fund the pension obligations of the state. Chile, China, Estonia, Norway and several other countries have such funds. Chile has established two pension reserve funds, financed out of large government surpluses in recent years resulting from government sales of copper (Bertranou et al., 2009).

## **Employer-provided pensions**

Some countries mandate that employers provide pensions. Countries with mandatory employer-provided pensions include Australia, Bermuda, Iceland, Norway, and Switzerland. In the Netherlands and Sweden, employer-provided pensions are not mandated by law, but most employers are required to provide pensions because of widespread collective bargaining agreements.

Private pension fund assets in occupational and personal pension plans are sizeable in some countries. In 2005, they were equivalent to more than 115 percent of GDP in the Netherlands

and Switzerland. In the Organisation for Economic Co-operation and Development (OECD) countries as a whole, the 2005 weighted ratio of assets to GDP was 88 percent, and assets amounted to USD 18 trillion. The three largest private pension markets in terms of assets are in the United States, the United Kingdom, and Japan (Kinsell and He, 2009).

## 5. Why individuals make errors in managing pension investments

In many of the funded individual account systems, participants are responsible for making investment choices. Sometimes those choices are fairly simple. For example, in a number of countries the worker chooses between three funds – an aggressive fund, a conservative fund, and an intermediate fund. However, in Sweden, the participants face hundreds of fund options.

A Canadian survey found that many workers rated choosing the right individual account investment for their pension as more stressful than going to the dentist (Canadian Press, 2005). Nonetheless, not all workers are equally likely to make investment mistakes. Presumably, less sophisticated, less educated, less experienced investors are more likely to make mistakes. Low-income workers with small amounts of money invested in an individual account may not see a reason to exert effort or incur expense to gather complex financial information about managing it.

An understanding of why pension investors make errors when faced with many decisions, and the types of errors they make may facilitate the development of policy to protect pension investors from themselves. The role of such regulation may be particularly important if individual accounts are part of social security because they then become part of the worker's basic benefit.

An investor error can be defined as a pension participant's investment decision made counter to what economic and finance theory indicates is the appropriate decision for a rational investor maximizing wealth, given the investor's degree of risk aversion.

Pension participant investment errors fall into two broad categories: lack of information and poor information processing. Lack of information can include lack of knowledge about investing, lack of information about stock markets, and biased information about stock markets. Poor information processing can be due to faulty logic.

### Types of investor errors

Pension investor errors that result from these factors can be categorized under three broad headings: insufficient diversification, inappropriate level of risk holdings in a diversified portfolio, and inappropriate portfolio adjustments.

#### Insufficient diversification

**Failure to understand the basic principles of diversification.** This error leads to workers insufficiently diversifying between stocks and bonds, and also insufficiently diversifying within the stock portion of the portfolio. Unsophisticated investors may wrongly think that investing in an undiversified risky portfolio will be rewarded with commensurately higher expected return.

**Picking specialized mutual funds rather than broad-based funds.** Investing in specialized mutual funds rather than broad-based funds makes diversification difficult to achieve with a small portfolio. Pension investors may fail to adequately diversify if their plan gives them a large number of fund choices, allowing them to pick funds that invest only in a narrow segment of the investment market.

**Picking investments one is familiar with rather than broadly diversifying.** This behavior may explain individuals failing to invest in foreign stocks, which can be a particularly serious problem in small countries where the local economy is not widely diversified. Fees charged in foreign stock funds, however, tend to be higher than in domestic stock funds, and investors may not have adequate protections in some foreign stock markets.

### **Too much or too little diversified risk**

Even participants who understand diversification and hold well-diversified portfolios may hold an inappropriate amount of diversified investment risk, given their investment time horizon and degree of risk aversion. Workers' degree of risk aversion depends on their attitude toward risk, but it also may be affected by their knowledge about financial risks. One theory that connects financial knowledge with investment choices is "uncertainty aversion".

The government may have a legitimate role in providing financial education when a mandatory individual account requires the participant to make portfolio decisions. Changes in behavior based on increased information are desirable. Investment education provided to pension participants appears to affect pension investment decisions (McCarthy and Turner, 2000).

### **Inappropriate portfolio choices and adjustments**

One source of errors in making portfolio choices is to ignore investment fees when deciding between different investments. This error is abetted by the investment industry's practice of generally only disclosing fees in the prospectus and not in other informational materials. Also, in educational material it provides to pension participants, it frequently does not list fees as a factor to consider in making portfolio choices.

### **Policy implications**

This discussion of common investment errors that individual pension investors make suggests a number of pension policies that could minimize the errors:

- Do not permit investment in individual stocks.
- Do not permit investment in mutual funds with narrow market focus.
- Do not permit all of a pension to be invested in highly risky investments such as high tech stocks.
- Put at least the majority of investments in passively managed mutual funds because they have lower fees.
- Consider investment fees when choosing an investment.
- Educate employees on common investment mistakes participants make.
- Limit the number of investment choices. Having too many investment choices may cause more workers to take the default option.

## 6. Conclusions

Funding can occur in a retirement income system through several different types of savings vehicles. It can occur through mandatory or voluntary individual accounts, through mandatory or voluntary employer-provided pensions, through the traditional social security program, or through a national savings program.

High fees and lack of adequate disclosure of fees have been a problem in many of the individual account systems. Recently, some countries have taken steps to address this issue.

It was thought that with funded individual accounts there would be a close connection between contributions and benefits and that this would lead to substantially higher coverage rates than had occurred in the traditional pay-as-you-go social security systems. That result has not materialized, and a possible explanation is that the connection between contributions and benefits is weak. It is weak because fluctuations and capital markets and fluctuations in interest rates used to calculate annuities can lead to widely varying outcomes.

It was thought that funded systems would lead to higher economic growth rates. The argument that underlies that connection contains a number of different steps – funding leads to higher savings – to higher investments. In reality, in some countries the investments have been largely in government bonds rather than in private sector investments. Even when private sector investments are made, those investments can be offset by lower rates of saving elsewhere, such as by workers saving less or borrowing more.

Individual accounts as part of social security generally rely on the individual to make investment decisions. Many low-income and low-educated workers have no experience or knowledge in managing investments. Even high-income and high-educated workers make predictable mistakes in managing investments. Experience with individual accounts as part of social security in Sweden indicates that many workers do not make an investment choice, and thus the structure of the default fund is an important aspect of the system design.

Financial education is a necessary aspect of a funded system with individual accounts, where individuals pick the investments. In considering the costs of funding in such a system, the costs of financial education should be included. The costs include not only the monetary costs but the costs in terms of time spent by participants. Participants are often busy adults with families and other priorities, and the time spent on financial education takes away from time on other activities.

Employers and the government may have a legitimate role in providing financial education when the pension plan they sponsor requires the participant to make portfolio decisions. Changes in behavior based on increased information are desirable.

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