Public Disclosure Authorized

Public Disclosure Authorized

SP DISCUSSION PAPER NO. 9803

20047

Building an Environment for Pension Reform in Developing Countries

Olivia S. Mitchell

January 1998

Social Protection
LABOR MARKETS, PENSIONS, SOCIAL ASSISTANCE
THE WORLD BANK

Building an Environment for Pension Reform in Developing Countries

Olivia S. Mitchell
3641 Locust Walk
307 CPC – Wharton School
University of Pennsylvania
Philadelphia, PA 19104-6218

January 1998

TABLE OF CONTENTS

ABSTRACT v

ACKNOWLEDGEMENT vii

I. INTRODUCTION 1

II. MANAGING OLD-AGE RISK 1
- 1. Protection Against Individual Risk 1
  - Risk Avoidance for Individuals and their Families 2
  - Insurance for Workers and the Retired 2
- 2. Protection Against Retirement System Risk 3
  - Risk Avoidance in Pension Management 4
  - Pension System Insurance 5
- 3. Protection Against Country-Wide Risk 5
  - Country-Wide Risk Reduction 5
  - Insurance against Country-Wide Risk 6
- 4. What Remains: Systematic or Nondiversifiable Global Risk 7

III. STRENGTHENING INSTITUTIONS SUPPORTIVE OF PENSION REFORM 7
- 1. Establishing a Credible National Old-Age Income System 7
- 2. Financing the System and Tax Reform 8
- 3. Why Reforming Financial Infrastructure Is Important 9
  - The Role of Strong Banks in Pension Reform 9
  - The Role of Stock Markets in Pension Reform 10
  - The Role of Insurance Sector Reform 11
  - The Role of Corporate Governance 12
- 4. Labor Market Reforms and Old-Age Protection 12
- 5. Monetary Policy Can Also Influence Pension Reform 13

III. SEQUENCING OF INSTITUTIONAL REFORMS SUPPORTIVE OF PENSION SYSTEM 13

IV. CONCLUSIONS 15

REFERENCES 17

ABSTRACT

Fiscal problems are prompting many developing nations to amend and sometimes restructure their national old-age programs. As they do so, these countries seek guidance on how to design market and regulatory structures to enhance their chances of success. This paper investigates the types of risks facing participants in retirement systems, and examines which financial, regulatory, and labor market institutions appear most supportive of retirement system reforms, and most urgently needed, in developing countries.

ACKNOWLEDGEMENT

Mitchell is the International Foundation of Employee Benefit Plans Professor of Insurance and Risk Management, and Executive Director of the Pension Research Council, at the Wharton School; she is also a Research Associate at the National Bureau of Economic Research. Research support for this paper was provided by the World Bank, Social Protection Department. Helpful comments were provided by Emily Andrews, Asli Demirguc-Kunt, Louise Fox, Robert Holzmann, Estelle James, Chiekh Kane, David Lindeman, Don McIsaac, Joyce Manchester, Robert Palacios, and Anita Schwarz. Opinions are solely those of the author and not those of any institutions with which she is associated.

I. INTRODUCTION

Not so long ago, old age was believed to be a demographic phenomenon reserved for the rich countries of the world. But population aging is now recognized as a potent demographic trend not only in developed nations, but also in the developing world.[1] As a result of this worldwide aging trend, pension systems in many countries have begun to face financial stress. Actual or prospective retirement system insolvency is prompting many governments to restructure their national retirement programs, sometimes working "at the margin" by making changes in retirement ages and contribution rules, and other times by restructuring the system from the ground up.[2] The problems faced by these nations are not uniform, nor are their old-age program reform efforts identical in structure and intent. Nevertheless, their ultimate goals are generally the same: to create an environment in which promised old-age benefits are made more affordable, efficient, and equitable.

As international pension reform proceeds, policymakers seek guidance on how to reform their old-age systems, and also how to build an environment supportive of long-range changes in provision for old age. This paper has two objectives: (1) to explore how retirement systems can protect participants against a range of micro- and macroeconomic risks, and (2) to show how retirement system reforms can be supported by other institutional and regulatory changes.

Our discussion begins with an examination of the risks against which participants might be protected in a well-functioning retirement system. Next we explore how old-age systems rely on other financial, legal, and economic institutions to fulfill their mission – including banks and insurers, regulatory agencies, the legal system, and the labor market. Pension reform is seen to be most successful when the supportive institutions are constructed so as to enhance the retirement system's objectives. We conclude with some thoughts on the sequencing of public pension reforms, paying due attention to the role of these supportive institutions.

II. MANAGING OLD-AGE RISK

Retirement systems are intended to handle four key risks confronting people in old age, namely **individual risk; retirement system risk; country-wide risk; and nondiversifiable (global) risk.** Designing a retirement system that can effectively cushion an aging population against these risks requires (1) understanding the source of the risk; (2) determining how to avoid and reduce the risks where possible (with due regard to the costs and benefits of doing so); and (3) designing mechanisms for insuring against these risks.[3] This section identifies what market institutions and regulatory structures would be most useful in limiting or protecting against these risks.[4]

1. Protection Against Individual Risk

One reason people face old-age insecurity is that they are unable to protect themselves and their families against consumption shortfalls in old age. This is sometimes due to personal attributes such as low earnings ability and/or inability to save. Alternatively, it might be due to myopia, such as when people underestimate their likely life expectancy in retirement. Yet another source of insecurity is health or

[1] By 2010, most Latin America and Asian nations will experience substantial increases in the fraction of the population over age 60 (Ahmad et al 1991; Grosh 1990; ILO 1989).
[2] For a review of old-age systems reforms around the world see Williamson and Pampel (1993); World Bank (1994); and Demirguc-Kunt and Scharz (1996).
[3] Additional rationales sometimes offered for government intervention in old-age retirement income include raising national saving; stimulating capital markets and economic growth; bailing out poorly performing government-owned enterprises; subsidizing housing markets; and funding investment in "infrastructure" or other "social targets" (Mitchell and Hsin forthcoming). These we consider ancillary effects of social security systems, but do not hold them to be potent reasons to have an old-age system (Fields and Mitchell 1993).
[4] Bodie (1990) also identifies a range of risks against which pension systems can protect; he does not, however, follow the organizational logic identified here.

employment shocks – workers may experience unanticipated earnings declines due to disability or job loss due to unemployment.[5] It is useful to think of two approaches that may be used to handle such risks – *risk avoidance* and *insurance.*

Risk Avoidance for Individuals and their Families

Focusing first on risk avoidance, workers might curtail their risk of old-age poverty by improving their **earnings capacity**. This enables them and their families to retire later, and to save more on their own, both of which diminish the chance of inadequate consumption in old age. Such an approach encompasses investments in worker education, health, skills training, and perhaps labor market mobility (if jobs are lacking where the workers reside). Similarly worker **training in financial planning** is useful for reducing the probability of suffering retirement consumption shortfalls. This is because better informed decision makers are likely to save more and more effectively, to protect against old-age shortfalls. The general goal, of course, is to increase workers' awareness of the need for retirement saving and enhance their understanding of investment principles. To this end, for example, Uruguay recently launched a public education campaign emphasizing the importance of saving for retirement (in connection with its pension privatization reform; see Mitchell 1997). Also employer-based **retirement education** efforts in the US have been found to result in substantial improvements in workers' voluntary retirement saving rates (Clark and Schieber forthcoming; Mitchell and Moore 1997).

Having suggested that greater retirement saving would enhance retirement security, the question arises as to what people should invest in. It may be that having a strong **stock market** is helpful for a powerful and reliable pension system, though little is known about whether pension systems are spurred by stock market growth or vice versa. It does appear that stock market growth enhances overall economic development (Demirguc-Kunt and Levine 1996a).

Moving beyond the individual and family form of saving to the workplace, a measure of protection against old-age consumption shortfalls can also be achieved by encouraging specific retirement program features in company, occupational, or national pension systems. For example, workers are more likely to contribute to an group pension program when **retirement payouts are linked closely to contributions**, as contrasted to a plan where taxes paid are unrelated to benefits paid out (World Bank 1994). As a result, defined contribution pension plans are more likely to diminish retirement system evasion than are means-tested or redistributive defined benefit alternatives. A related argument is that workers who can take their pension savings with them as they move across the labor market are more likely to amass retirement savings for old age. Hence rules permitting **easier job mobility via pension vesting and portability** are likely to attract and retain more workers in an employment-based retirement system.

Tax reform is a step governments can take to help cut old-age insecurity due to individual risk. This is because high payroll taxes encourage movement into informal sector work, where workers are often excluded from participation in retirement programs (Gruber 1995). Payroll taxes tend to be quite high in many developing countries, with the result that substantial segments of the population remain outside the public retirement system. **Lower payroll taxes** may well enhance compliance with the system, generating more retirement income (Manchester 1997). Also, offering workers **tax subsidies** to save for retirement, or moving toward a **consumption tax** rather than an income tax, enhances participation in pension and other deferred saving programs (Dilnot 1996). Hence tax policy can increase old-age consumption by inducing workers to participate in the retirement system and inducing them to save more over their worklives.

[5] We do not focus here on the risk of leaving one's dependents in poverty without life insurance. While many old-age public systems do provide dependent coverage for death of the breadwinner(s), retirement coverage and not life insurance is the focus of our discussion here.

Insurance for Workers and the Retired

A second approach to individual (or household) risk management involves insurance. For example, retirees who have accumulated retirement assets may run the risk of depleting their accumulated retirement assets before dying, a particular concern in a defined contribution pension plan. In this case having a well-developed **private annuity market** will make it easier and less expensive to obtain annuity benefits – insurance against living too long. Recent research suggests that private annuity markets do suffer from *adverse selection* – i.e. those individuals who purchase annuities tend to live longer than average – though this problem has declined over time and annuities are now more competitively priced as compared to 25 years ago (in the US at least; Mitchell et al. 1997). Some public pension systems offer an alternative to the private annuity market, by guaranteeing retirees a **life-long benefit** under the national old-age system. For example, under the Chilean privately-managed mandatory pension system, workers concerned about longevity are entitled to convert part of their asset accumulations into a real annuity at retirement (Diamond and Valdes Prieto 1994).

Shocks to earnings capacity due to poor health, disability, and/or skill obsolescence are also insurable, though **disability and unemployment insurance** systems. One problem with such systems is that they tend to suffer from *moral hazard*: that is, those who buy the insurance are likely to be able to influence the chances of needing the benefit. Hence, irrespective of whether a disability program is public or private, it is typically necessary to structure the system so as to require the worker to undergo **examination prior to receiving benefits**, as well as to **remain without coverage** for an initial period – which acts as a deductible – and to only receive **partial salary replacement** – which acts as co-insurance. These design features place some of the income risk on participants, as a means of reducing moral hazard.

While these programs are designed to meet needs due to unexpected changes in earnings capacity in old age, there is also the broader risk of people simply having low lifetime earnings, which generally translates into low old-age income as well. The social insurance literature suggests that sort of risk may not be dealt with well on the individual or family level, and may be protected against at the group level, in plans offered by workers' employers, unions, or at the government level.

At the firm or occupational level, for instance, having a group **pension plan** into which regular contributions are made tends to increase worker saving and, eventually, retirement income (Munnell 1976). Plan type can make a difference too: a defined contribution plan has the advantage of increasing participation due to its linking of contributions and benefits as mentioned above, but the DC plan yields low benefits to low lifetime earners. Thus consumption risk due to lifetime low income is not particularly well protected by a DC system, and **defined benefit pensions** are often valued as being more redistributive than DC plans.[6]

At the governmental level, a targeted way to protect against inadequate old-age consumption is **anti-poverty programs** with strict means testing. In Uruguay and Australia, for instance, the elderly poor are eligible for minimum benefits after a particular age, assuming they are not well-off (Davis 1993; Mitchell 1997). Such social assistance programs, however, tend to discourage work and saving among able-bodied people quite far up the income distribution (Hubbard et al 1995). Hence the conundrum presented by recent research on old-age support is that over-generous social insurance programs may actually reduce rather than raise private provision for old-age consumption.

[6] It is possible to design a DC plan that is redistributive. For example, low-wage workers participating in a national defined contribution plan might be provided with higher matching levels than the match rate paid to higher earners to provide a floor of security under retiree income; see Mitchell and Fields 1994.

2. Protection Against Retirement System Risk

A different but pervasive source of old-age risk arises when the pension or retirement system itself is poorly managed. These problems may arise because many different entities or agencies have responsibility for separate pieces of the old-age retirement system, depending on the industry and/or occupation of participants. They may also arise to the diversity of institutional forms for the retirement institution itself. Sometimes a pension system will be a separate legal entity from the sponsoring employer, union, or government employer, and other times the lines are less clearly drawn. For example, when old-age retirement systems are operated by politicians or their political appointees, undue pressures can have a deleterious influence on pension funding and asset management (Hsin and Mitchell 1994). In other cases, employers may offer a pension program that is not held separate from the rest of the sponsor's financial activities. This might occur, for example, when employers' or unions' retirement plans fail to manage the funds as fiduciaries and instead commingle funds or simply fail to hold reserves at all. Another such instance arises when an employer, government, and/or union fails to contribute as required to the pension fund, exposing it to the risk of bankruptcy and the nonpayment of promised benefits. This is particularly a problem for public sector employees in many parts of the world, as well as union-run pension funds.[7] Once again we find it useful to think of two approaches that may be used to handle such risks – *risk avoidance* and *insurance.*

Risk Avoidance in Pension Management

Management problems such as those just sketched arise due to a principal-agent problem, where retired plan participants have a strong interest in preserving the benefit flows, but retirement plan managers (and perhaps active workers) may be more concerned keeping the plan sponsor afloat. Mechanisms must therefore be designed to **reduce the potential for conflict of interest** issues inherent in this system.

Avoidance mechanisms include putting in place a regulatory structure for oversight of contributions including **computerization** and **record-keeping**. Actuarial staff should produce timely and **accurate reports** on plan liabilities and expected income. The system as a whole should be held accountable to **performance standards** for benefit eligibility, benefit amount accuracy, and grievances with regard to services rendered. If the pension plan is funded, investment and expense performance standards should be established for the asset managers in terms of services rendered, investment returns, and administrative costs.[8]

Several other steps can also reduce retirement system risk. For example, pension managers can be required to meet so-called **"prudent man" standards**, as under the ERISA (Employee Retirement Income Security Act of 1974) in the US. This requires trustees to manage a pension plan carefully according to accounting and financial principles; trustees are then held personally liable for misspent pension moneys. In addition, risk exposure will be more evident if pensions must **disclose information** to plan participants. Annual reports of pension system status to participants and government are also required whenever a pension plan has changed. Tracking pension inflows and outflows is facilitated when plans are required to follow **accounting conventions** such as those developed by the US Financial Accounting Standards Board (FASB); these require that publicly traded firms display their pension plan's status on the corporate balance sheet (McGill et al 1996). These include the requirement that pension systems **mark assets to market** and **make public actuarial assumptions** used in determining the pension plan's financial status. In Britain, a series of reforms passed subsequent to the Maxwell pension scandal now mandate periodic review and reporting to plan participants as well as the government (Dilnot 1996).

[7] For a discussion of pension funding patterns around the world see Davis (1993).
[8] For examples of comparisons of retirement system service delivery and administrative costs see Mitchell (1996a) and Demirguc-Kunt and Schwarz (1996).

In addition to these structures supportive of old-age system reform, it is important to ensure that pension participants have a clear claims. This often requires legal **recourse** to grieve and potentially sue malfeasant pension fund managers (including their employers and/or unions if these are charged with managing the retirement plans). **Vesting** and **portability** regulations also help reduce participant risks, as does making pensioners **senior creditors in bankruptcy** cases. Such rules increase the chance that a covered worker will keep a pension account even if the sponsoring employer runs into financial difficulty (Gustman et al. 1994) . Allowing employees to **select their own pension manager** also affords competitive pressure required to generate better pension plan performance.

Finally, pension systems are strengthened by **collateralization of the retirement promise**. In practice this requires that assets are actually accumulated and invested – i.e. the plan is **funded** – rather than having "book reserves" or "notional" accounts as practiced in Germany and Sweden (Ahrend 1996; Stahlberg 1995). In a defined benefit plan, actuaries must help determine the level of assets required for full funding; in a funded defined contribution plans, assets accumulating are automatically owned by the plan participants. Many countries also **restrict pension asset holdings**, in order to reduce the perceived chance that pension assets will lose value. Thus until recently, West Virginia's state pension was prohibited from holding any equities at all in its pension portfolio (Mitchell and Carr 1996). Pensions in other states of the US, and in many other countries, are required to hold a minimum fraction of assets in government bonds, or are prohibited from investing more than a specific fraction of the portfolio outside the domestic market (Mitchell and Barreto 1997). However this practice can expose the plan to other risks in turn, as we shall see below.

Pension System Insurance

Insurance can help secure retirement systems in several different ways. One approach is to require pension managers to **purchase trustee insurance,** which has been shown to improve pension plan funding and asset returns (Hsin and Mitchell 1997). Presumably this is because the premiums charged by private insurers reflect the risks associated with different pension plan money management and funding patterns.

There are also government mechanisms that can protect against pension plan risk. Some countries, such as the US and Canada, have provided **government guarantees** to defined benefit pension plans offered by private employers (Bodie et al 1996, Pesando 1996). A serious concern with these government insurance plans in the case of defined benefit pensions is that they fail to discourage pension underfunding, a behavior that then must be regulated (Ippolito 1996). In other countries, such as Germany, **risk-pooling employer solvency funds** diversify the risks of any one plan sponsor's bankruptcy (Bodie and Mitchell 1996). In the case of defined contribution pensions, oftentimes governments have offered rate of return guarantees, or minimum benefits. As Pennacchi (1997) notes, however, these guarantees can also have deleterious effects – by freeing participants from responsibility for monitoring their pension funds, and by encouraging pension managers to invest in non-optimal portfolios.). In general, reducing pension risk requires oversight of pension contributions, investments, and money management, as well as better funding.

3. Protection Against Country-wide Risk

Retirement system's ability to protect retirees' economic security also depends on a strong and reliable macroeconomy. Specifically, retirement systems are not likely to fare well when threatened by an unpredictable tax environment, erratic inflation, and/or volatile legal and other property rights. These country-level concerns become magnified many times over in the case of pension systems seeking to invest and maintain financial soundness for the very long term. Here too it is useful to think of two approaches that could be designed to handle such risks – *risk avoidance* and *insurance*.

Country-Wide Risk Reduction

A central concern to those seeking to strengthen retirement systems in developing countries is that of **banking system weakness.** This is because funded pension systems usually hold at least some national and commercial bank assets, so that weak banks threaten the overall survival of the retirement program. In fact, many experts have suggested that banking reform is an essential precursor to retirement system development (Patrick 1996; Schmidt-Hebbel 1993; Stiglitz 1993). The central important of banking reform was highlighted during the mid-1980's, when the Chilean government had to take over several major banks because of massive bad loans, a process which Edwards (1996a and b) argues was essential for the survival of the new funded DC pension system that had begun to invest in bank assets. Banking system weakness is also a major concern in many other nations currently moving toward retirement system reform, including nations in Eastern Europe (Turner and Rajnes 1996).

A related banking system risk facing many developing country pension systems is that of domestic **currency risk.** This involves both domestic inflation and exchange rate risk, since domestically-invested assets often cannot be properly inflation indexed. More generally, there is the risk of having a **small and poorly-functioning capital market**, a situation common to many smaller developing nations around the world. When there are only a few publicly-held companies, it is naturally difficult for the pension system to diversify very widely by holding only these few domestic holdings. And when the capital market is thin, it is difficult to value the domestic assets properly, making it difficult for a pension program to take good account of risk and potential returns associated with a potential investment venture.

Risks of this sort are not necessarily obstacles to pension reform, inasmuch as they may be handled in a variety of ways. Focusing first on what a pension system can do, national risk may often be curtailed by moving to greater **international diversification of pension assets** (Kotlikoff 1995). This point is strengthened by recent research showing that people in developed countries hold portfolios far too concentrated in domestic market capital assets (Baxter and Jermann 1997). Since human capital is (in general) nondiversifiable, and labor income growth and domestic capital market returns are strongly positively correlated, workers would diversify better by selling short their home country's assets and holding their wealth in an internationally diversified portfolios. This research has focused only on developed nations to date, but it is possible that similar findings would apply to the developing country arena.

We note that though international diversification of pension assets would curtail pension participant domestic capital market risk, in practice many developing countries have been reluctant to let pension assets flow to the exterior. For instance, most of the Latin American pension systems strictly limit foreign investment holdings by retirement systems, and even in Chile where up to 20% of the pension may legally be invested outside the country, less than one percent of assets is actually held in non-Chilean investments (World Bank 1996).

Another mechanism to protect the retirement system against domestic risk would involve **legal system reform**, designed to reduce fraud and to increase the possibility that contracts will be paid when due. A useful approach might be to establish a regulatory body similar to the US Securities and Exchange Commission (SEC), charged with limiting self-dealing and insider trading. To this end a range of reporting and disclosure mechanisms could be put in place in order to elaborate the nature of long-term investment contracts.

On a related front, most countries also need to undertake comprehensive **insurance regulation reform** (Outreville 1990, 1996 b and c). This is particularly needful when, as in many developing nations, confidence in insurers is low due to past political experiences and also to poor past investment performance. Insurers in particular suffer in times of economic transition since their ability to forecast economic and demographic futures is likely to be impaired, making even more difficult the process of stabilizing this sector of the financial sector.

Insurance against Country-Wide Risk

A different national risk that affects retirement systems is the **risk of inflation** eroding benefit payments. Inflation has been demonstrated to have significant deleterious effects on pension payouts in unfunded systems across a wide range of countries; some public pension systems in Eastern Europe have experienced massive benefit cuts due to inflation over time (World Bank 1994). An old-age system must be concerned about this risk because it affects both pension assets and pension liabilities.

In the case of an unfunded plan, a pension system will depend on the tax base to generate a steady flow of revenue – but this tax base often shrinks in times of falling real wages and rising tax evasion. A funded plan will depend more heavily on asset returns to cover promises, but these asset values will fall with inflation unless there is some formal mechanism to keep up. A way to reduce this inflationary risk is to have governments issue **inflation indexed bonds.** These are already offered by governments in Australia, Brazil, Chile, the UK and recently the US, and initial evidence suggests that these do appeal to pension managers for some component of the pension portfolio. An alternative approach might be to have governments issue (real) **sovereign debt guarantees** to protect against country-specific risk (MacIsaac and Babbel 1994), though this is not yet a reality.

4. What Remains: Systematic or Nondiversifiable Global Risk

Having identified several types of economic risks that old-age systems can help protect against, some factors are impossible to avoid and/or insure against. That is, retirement systems will always be susceptible to internationally nondiversifiable risks, including those arising from war and other political disruptions, global natural disasters, epidemics of international proportions, massive capital shocks, and other factors not well understood or predictable. In this case, governments and other old-age plan sponsors would best admit that some risks simply cannot be protected against, and thus popular opinion and political expectations will be met with honest assessments of system difficulties, should such eventualities occur.

III. STRENGTHENING INSTITUTIONS SUPPORTIVE OF PENSION REFORM

Reforming a retirement program is facilitated if key social, economic, and legal institutions supportive of this mission are also in place. In this section we explore how a range of supportive institutions can help reduce and perhaps insure some of the risks facing old-age programs. The supporting entities we have in mind include financial institutions such as, most directly, pension regulatory agencies, as well as financial and labor market institutions. When these are strong, they can enhance the financing, benefit payout, money management, and recordkeeping functions required by a well-functioning old-age system (Schmidt-Hebbel 1993; Holzmann 1996; Vittas 1995a and b). In what follows here, we seek to identify which supporting institutions are essential and useful in moving to a more solvent, efficient, and equitable national retirement system.

1. Establishing a Credible National Old-Age Income System

When designing a sustainable old-age system, it must be recalled that such a system must be credible for dozens, ideally hundreds, of years. That is, the goal of a retirement program is to enhance workers' expectations of benefits when old, over many cohorts – and the system is anticipated to be in effect for very long time into the future. As a result, one of the fundamental efforts of old-age system reform is to structure an environment in which such long-term retirement claims are taken to be sustainable for the long run.

Toward this end, countries generally find it critically important to **define long-term old-age contractual obligations**, and also to institute **a supervisory mechanism** for monitoring and enforcing

these. This is obviously needed when the old-age reform involves private investment of workers' contributions in a defined contribution type account. But it is also important in a defined benefit environment since promised benefits will be judged more trustworthy when such long-term legal claims can be enforced.

The practical implementation of this idea is to establish a pension oversight body, often called a "**pension superintendency**". This has been done in many Latin American countries, where it is charged with regulating and overseeing the pension arena. Typically such an agency oversees standardized information disclosure, ensures maintenance of records, reviews collection of pension investment and administrative cost data, and enforces laws on pension fund reserves and management. Having such an institution clearly strengthens participants' rights and increases confidence in the system.

One feature of a well-run pension supervisory agency is that it be independent of the pension funds themselves, so as to minimize conflict of interest. This protects against politicians seeking to sway investment decisions, or channeling private funds into "socially targeted" investments earning below-market returns or embodying above-average risk. Having a formal grievance mechanism for addressing participants' contributions and investment problems can be a useful step for building confidence as well (Bodie at al. 1996; Hsin and Mitchell 1994). Rarely does this process spring fully formed: rather the process is often evolutionary, as described by Bustamante (1996) in his discussion of the group that interprets and regulates Chile's pension law.

When discussing the role of a pension regulatory structure it is also important to mention the role of **government protection against pension fund insolvency**. Such guarantees are used in some developed nations (Bodie at al. 1996), and are increasingly being adopted in developing countries as well (Mitchell and Barreto 1997). In the case of a defined contribution system, for instance, a protective law may require that pension managers be relieved of their duties if they earn less than some amount below the average rate of return; this practice has been adopted in Chile and Mexico. In other countries, pension regulations require that a minimum real rate of return be earned on pension investments. Where defined benefit pensions are the norm, it is not uncommon to have a government insurance agency backstop of private funds in cases of insolvency, as mentioned above. One problem with such government guarantees is that they represent potentially massive claims on the national tax system, should pension performance be less than robust (Pennacchi 1997). Any government reforming its old-age system should think carefully before offering such a guarantee, and thoroughly analyze the potential costs of a guarantee before proceeding with adoption. Developed country experience suggests that private market insurance of these guarantees should be required to the extent possible, though pricing the insurance premiums may be difficult for countries lacking experience with such a system (Ippolito 1996).

2. Financing the System and Tax Reform

Tax reform is often seen as critical for financing retirement system reforms, since mandatory pension systems depend on tax collection for revenue. In addition, reformers must recognize that **tax evasion** is endogenous – that is, the higher the payroll tax rate for mandatory retirement system participants, the less likely will people be to work "on the books" and hence submit their earnings to the payroll tax. This is an important issue empirically: higher payroll tax rates have been found to cut taxable payrolls in Chile quite substantially (Gruber 1995), and Manchester (1997) concludes that the decoupling of high payroll tax rates from benefit entitlements induces evasion.

A related problem endemic in developing countries everywhere is that of tax system "**technical weaknesses**". For example, the US recently revealed that its Internal Revenue Service was inconsistent in its data collection efforts, failed to have quality assurance criteria regarding its software, and did not systematically assess consumer satisfaction and costs of tax collection (USGAO 1996b). Lack of voluntary compliance was estimated at approximately 17% of potential revenues (USGAO 1996a). How extensive problems are in the tax collection arena in developing nations is harder to estimate but no doubt endemic, and threatens the ability of countries to raise revenue needed for old-age benefits.

Of course another way tax policy affects old-age well-being has to do with the **tax status of pensions**. Sheltering pension contributions from income taxes powerfully influences peoples' willingness to contribute, to maintain their inside buildups, and to manage payouts from pension plans (Dilnot 1996). This implies that tax reform should consider how tax rates influence peoples' willingness to save via pensions. In particular, **exempting pension contributions from taxable income** is generally considered a tax program supportive of pension reform.[9]

3. Why Reforming Financial Infrastructure Is Important

Some argue that retirement system reform works most effectively when such an effort is paired with financial infrastructure reforms (e.g. Vittas 1995a). By financial infrastructure, we mean the "legal and accounting procedures, the organization of trading and clearing facilities, and the regulatory structures that govern the relations among the users of the financial system" (Merton and Bodie 1995). Obviously financial system reforms are undertaken for a variety of reasons associated with spurring growth generally, not just to assist in the restructuring of a pension system. But in this section the goal is to ask how improved performance of banks, stock markets, and insurance companies can facilitate pension reform.[10]

The Role of Strong Banks in Pension Reform

Particularly in developing countries, the **banking system** plays a key role in mobilizing savings and making them accessible to borrowers; as McKinnon (1973) noted almost a quarter-century ago, banks are the primary and sometimes the only financial institution to mobilize saving in developing countries. Lack of confidence in the financial system can produce bank runs, a phenomenon that most economists agree requires government protection to mitigate if not prevent. But since most pension funds hold large portions of their assets in bank bonds, bank reform is generally seen as critical for pension reform (and financial market development in general, especially in the Soviet bloc economies; see Stiglitz 1993). A stable banking environment requires "clear evaluation of bank assets, the monitoring of bank behavior, and the enforceability of remedies in the face of bank default" (Santomero 1996, p. 6). Therefore the most commonly agreed-on functions required to protect a nation's banking system include (a) a licensing group that screens out bad bank managers; (b) a supervisory group that limits bank managers' risky portfolios; (c) a termination or wind-up agency that can shut down insolvent banks before creditors are left penniless, and (d) a method of securing lending at last resort (Santomero 1996).

These points clearly apply powerfully to pension savers, who care not only about short-term returns on money saved but also about preserving consumption in retirement against the wide range of risks described above. Those saving for retirement have the longest time horizon, implying that it is this group that depends the most on financial institutions' ability to carefully evaluate and properly monitor long-term investment projects. Hence banking system reform clearly strengthens institutions supportive of pension reform efforts.[11]

---

[9] Of course a wide range of tax laws also affect national investment levels generally, as when capital gains tax rates influence investors' willingness to hold domestic securities in developing countries (Demirguc-Kunt and Huzinga 1995; Levine 1991).

[10] Recent experiences in Latin America highlight the cost of not managing banks well: thus far the Brazilian government has had to provide more than $20 billion in loans to fortify *Banco do Brasil* along with two other private banks, and recently took over *Banespa*, a Sao Paolo state bank $19 billion in debt (Economist 1996b). In Venezuela over half of all commercial banks required government insolvency fund support; Mexico's peso crisis in 1994 was in part attributed to the recognition that several important banks had overextended. These problems extend to other contents as well: 20 nations in Africa experienced banking crises from 1988 to 1996, banks in Eastern Europe have been bailed out several times, and several banks in Asia have come under scrutiny following the collapse of a Korean steel company that put $3 billion in bank loans in jeopardy (Economist 1997). Many of the banks in developing countries are government-owned, a factor that makes overhaul politically delicate: in China, for instance, state-run banks control more than 90% of all bank assets, in India the figure is over 70%, and in Brazil it is close to 50% (Economist 1997: 11) In countries formerly part of the Soviet Union (FSU) the transition has been made more complex by the fact that enterprise reform and privatization is often necessary before bank reform can be undertaken.

[11] It is worth acknowledging that there are other financial institutions capable of handling some of the functions that banks have traditionally managed. In the US, for instance, the rapidly growing mutual fund industry has captured large parts of the defined

As one might imagine, the recent and promised future proliferation of financial intermediaries makes the scope of potential regulation to protect the old-age system ever more complex. In other words, not only must governments consider bank regulation as a necessary step in pension reform, but also they also must put in place **regulation covering many other types of saving/investment institutions** increasingly growing in popularity. Only by requiring disclosure and spelling out precisely governments' role in the event of insolvency, will consumers be protected against fraudulent pyramid schemes (witness the recent problems in Albania) and guided into more stable long-term investments.

Whether a developing nation must "grow its own" financial system regulatory structure is a matter subject to great debate. Existing banks are sometimes inadequately capitalized to protect against highly volatile asset movements in developing countries, and developing countries might find it useful to encourage foreign banks to open branches meeting international regulatory standards (Economist 1997: 33). There is also room for international agencies to help form and maintain an **umbrella structure** offering participating countries a standard format for financial system reporting and regulation (Fields and Mitchell 1993).[12] A rationale for having developing countries subscribe to international banking standards is that internationally agreed-on **accounting and disclosure rules** are thought to limit the need for bank bailouts. Advantages would accrue to domestic investors, including those amassing assets in funded pension systems, and also foreign investors.[13]

The Role of Stock Markets in Pension Reform

In addition to a well-functioning banking system, many have argued that pension reform programs benefit from having a smoothly functioning and well regulated **stock market.** Of course stock market development is most crucial when the pension system is a funded one with investments for the long term. In this event, the most important role of the stock market is to value risky domestic assets.[14] To this end, some countries have established a **government rating agency** to oversee investment valuation: in Chile, for instance, the government-run Risk Rating Commission contributed heavily to the growth of the stock market and hence to pension privatization in that country (Bustamante 1996).

Though many agree that having a stock market is useful for pension reform, it seems unlikely to be a necessary precondition. For one thing, **government securities** constitute the bulk of financial instruments available in developing countries, as in Mexico where government securities account for 35% of bank holdings, and in Brazil 40% (Allen and Santomero 1996; Economist 1977). These assets frequently constitute the majority of pension assets in the early stage of fund development. For another thing, the **global bond market** is becoming accessible to developing countries; for instance several Latin American cities have recently sold bonds on the world capital market (Wall Street Journal 1997).

As a result of these developments, small countries may not need devote extensive resources to establishing domestic stock markets. That is, governments seeking to reform their old-age systems can facilitate pension systems' **access to international scale economies and financial expertise.** In addition,

---

contribution pension arena in the last decade, and even defined benefit pension plans are being ðutsourced", or managed by consulting firms partnering with financial groups such as mutual funds or trust companies (Hoffman and Santomero 1997).

[12] One such structure already in place is the Concordat outlining minimum recommended capital standards for bank reserves (Herring and Santomero 1995). The International Monetary Fund is also working to improve oversight of international banks, and several regional groups are also discussing cooperation along similar lines (Economist 1997: 17).

[13] Sometimes requiring greater bank transparency and reporting forces a country to come to terms with outstanding and massive bank debts already incurred, often concentrated on the books of state-operated banks. This might be destabilizing for a pension system heavily invested in paper issued by such banks.

[14] Having a strong stock market can also enhance national growth rates according to Boyd and Smith (1996), and Demirguc-Kunt and Levine (1996a and b). Further, developing country stock has apparently been quite a good investment in recent years, as experts have shown that emerging markets have demonstrated high returns and low covariance with the global market (Goetzman and Jorion 1997b). This may explain the recent global proliferation of developing-country stock markets: almost 20,000 companies have been listed on more than 60 emerging economy stock markets in the last decade, with capitalization estimated at around $2 billion (World Bank 1996).

recent research shows that global asset indices have experienced lower volatility than single-market indexes over the last century (Davis 1996; Goetzman and Jorion 1997a; Mitchell 1996a; Hsin and Mitchell 1997). As a result, international diversification of pension portfolios is frequently recommended to reduce pensioners' dependence on a single (domestic) capital market. This lesson has been resisted by some countries undertaking pension reform as they drastically limit foreign investment by pension savers (e.g. Chile, Argentina, Mexico, Peru, Colombia; see Mitchell 1996b; Mitchell and Barreto 1997).

Another reason that a strong domestic stock market need not be a precondition for pension reform is that stocks have not been a particularly important source of new funds for investment in the past (Stiglitz 1993). This is evidently true even for the US and the UK – despite the fact that these two nations have the oldest and best developed stock markets in the world. Having a large stock market in developing countries has not been a barrier to mounting a pension reform in Peru, Colombia, Chile, and Argentina, and Bolivia's current reform is occurring simultaneously with privatization of government-run enterprises and the development of a capital market (Fittipaldi 1994). Of course, having a strong stock market can likely facilitate retirement system reform, particularly if listing firms also follow internationally accepted accounting standards, affording investors (or their agents) the needed information on risk and return potential.

The Role of Insurance Sector Reform

A strong and competitive insurance market is another important element in building a robust financial system, and probably critical for pension reform – particularly in the case of funded pension plans. This is because at the point of retirement, people will seek to purchase annuities with their pension accruals, in order to protect against longevity. Nevertheless, annuities can emerge only when an economy offers reliable insurance firms that can make these products appealing. Unfortunately insurers in developing countries have suffered performance problems over the years. In Bolivia for instance, 15 insurance firms failed since 1960, and products sold by the remaining firms were seriously eroded by inflation (McIsaac and Babbell 1994). In other cases, high administrative costs and adverse selection (only those expecting to live long buy the coverage) are perceived to be an obstacle to annuity purchase (Mitchell et al 1997).

To strengthen insurer operation in developing countries, it is important to **reform insurance law and regulation**. This is accomplished by better licensing of insurance companies and their agents, enhancing reporting and disclosure, and requiring minimum capital requirements (Demirguc-Kunt 1996). In addition governments typically restrict the riskiness of assets that may held by insurers to limit the probability of default (Brady et al 1995). Many nations also try to spell out what happens in the event of an insurance firm insolvency, and some governments establish guarantee funds to cover this eventuality. On a related theme, some countries have regulations regarding insurance **commissions**, on the theory that consumer protection requires limitations on what insurance agents can charge. The difficulty, of course, is that mandated commission structures sometimes exaggerate rather than reduce insurance costs. Better information in this area may be shortly forthcoming inasmuch as on-line and indeed international computer insurance sales have now become possible, enhancing global competition in insurance products.

Another pension-specific issue in the insurance context has to do with the dearth of **actuaries** capable of pricing products such as lifetime annuities. This is particularly a problem in countries where life expectancies are changing quickly, and often no statistical databases are available with which to project future mortality patterns. It may be that there is a need for some sort of **international financial advisory organization** to collect and project mortality rates, offer regulatory guidelines for insurers, and disclosure standards as well as reserve requirements in insurance as well as for the other financial sectors discussed earlier (Fields and Mitchell 1993). The idea would be that adhering to these guidelines would make developing countries' insurance companies more competitive and less costly in the long run.

Of course in considering this option it must be recognized that state-owned monopolies frequently control the market in developing countries, limiting competition and keeping prices of insurance products

high. The view that insurance deserves "infant industry" protection is a perspective out of favor in trade circles, but still heard in many insurance circles (Kruger 1997; Skipper 1987). However research shows that monopolistic insurance markets hinder income and growth potential, and have negative impacts on the market for reinsurance as well (Outreville 1996b). In this event, it may be possible **for regional Common Markets** to establish reciprocity policies for insurers operating across participating nations, enabling developing countries to devise more competitive and better functioning insurance markets (Outreville 1996a). In addition, weakening government monopoly over insurance also increases the demand for reinsurance services (Outreville 1996c). All of these insurance market developments can strengthen the ability of pension systems to cover longevity risk, a key requirement of old-age retirement systems.

In addition to improving the general position of insurers in developing countries, those who would reform pensions must also recognize that **tax protecting** the buildups held by insurers accumulating until retirement can be critical in increasing pension saving.

The Role of Corporate Governance

In recent years a new literature has grown up linking a nation's legal system and its investment environment. Controversy rages over which "causes" which, but it does appear that markets protective of shareholder rights produce better investment growth (La Porta et al 1996). What this means to the pension context is that pension participants are most likely to benefit from a common-law type system in which **investor rights are upheld over managers' interests**. Of course the general issue of pension governance is a complex topic, beyond the scope of the present analysis. Suffice it to say that the corporate governance questions raised by US pension fund managers of late will undoubtedly become more salient in other nations over the next few years (Useem 1996).

4. Labor Market Reforms and Old-Age Protection

Governments seeking to protect against old-age consumption shortfalls would also do well to consider labor market reforms consistent with greater retirement security. One concern is that developing countries frequently have extensive regulations governing formal sector employment, including high taxes and labor protections that make employment quite expensive. One source of such labor costs is a country's social security system, where generous benefits must be paid for with high payroll taxes. In Brazil until recently, for instance, workers could retire with only 6 years of contribution into the national pension system, and many nations have payroll taxes of 40-60%, discouraging the demand for labor. As a consequence, countries undertaking pension reforms often implement a two-pronged approach, seeking to both **lower payroll tax rates** and also to **cut benefits** from public pension systems by raising eligibility barriers, increasing retirement ages, and curtailing benefit formulas. These changes are labor market reforms in and of themselves, reducing the relative price of labor, linking benefits to contributions, and shrinking the size of the government-provided public pension promise.

In addition, there are various other so-called labor market reforms that may be supportive of retirement reform, including policies making the **labor market more flexible**. In Chile this included cutting severance pay benefits that firms had to pay laid off workers, and curtailing the power of labor unions to strike as well as bargain European style industry-wide contracts (Edwards and Edwards 1991).[15]

Others hold up wage flexibility as an important way to increase market flexibility. While it might not be directly tied to pension reform, it is likely that higher minimum wage policy induces flows out of the formal into the informal sector – where workers are then excluded from formal pension coverage. Some have argued, in fact, that automatic national wage indexation implemented in Chile in 1979 retarded the structural changes needed to undergo to further economic reform (Edwards and Edwards 1991). The fact that the social security payroll tax at the time was over 36% exacerbated these wage rigidity problems.

---

[15] As a consequence Chilean workers' unionization declined by 2/3 between 1973 and 1985 (Velasco 1994).

Pension reform also often demand a second labor market effort – namely **civil service reform.** This is often most evident when a large unfunded government-run pension is in need of overhaul: typically new human resource policies are required to encourage civil servants to do better budget projections, manage human and capital resources better, and provide better services to plan participants. Redesigned compensation and reward systems for remaining public servants can increase their accountability and make their pay more dependent on performance. If successful, a better managed public system will be less expensive and higher quality services will be provided.[16]

5. Monetary Policy Can Also Influence Pension Reform

It is beyond the scope of the present paper to describe why and how a developing country might seek to reform its monetary policy. Nevertheless when discussing which institutions are supportive of pension system reform, it must be recalled that **monetary stability** is often seen as key in building confidence in a developing country's economy (Herring and Santomero 1995; Sachs et al 1996).

The relevance to pension reform is immediate. Investors, including participants in a nation's pension system, need to believe institutional promises to deliver future consumption. Monetary instability, particularly hyperinflation, hurts this credibility by reducing lenders' ability to manage default risk (Gleizer 1995). Pension participants are particularly vulnerable to having benefits eroded by inflation in developing countries (World Bank 1994). The fact is, if retirees' real consumption needs cannot be protected by domestically traded assets, this greatly undermines peoples' willingness to pay into the system and also undercuts their economic security in old age. As noted earlier, a possible solution would be to allow workers to **devote a portion of their retirement saving to foreign investment** to reduce the threat of inflation risk. Another alternative would be for governments **to issue inflation-index linked bonds**. As long as the indexation process was seen as invulnerable to political suasion, and the government reliably paid off on these bonds, this mechanism would help protect pension participants against inflation.

IV. SEQUENCING OF INSTITUTIONAL REFORMS SUPPORTIVE OF PENSION SYSTEMS

Thus far we have described key institutional reforms supportive of pension system redesign. We next consider the important but elusive subject of "sequencing" – namely, which supporting institutions must be put in place first, and which can be implemented simultaneously, or even deferred until a retirement system reform is instituted. We note that this question is almost uninteresting to theorists, since economic growth is believed to be furthered by liberalization of all markets in a developing country, both domestic and external (Kreuger 1997). But those working with the practical issues of old-age system reforms in developing countries frequently confront the question of **"what should come first – pension reform or other reforms?"**

Neither practitioners nor researchers have a single, unique response to this question; in fact, Vittas has suggested that the best approach is probably to take advantage of reform opportunities when feasible, then working incrementally as conditions permit (1995a). Having said this, it remains the case that many countries implementing a retirement system reform are typically compelled to do so by old-age system insolvency. Hence the option of letting a public pension system default and cease payments is not often politically viable, inasmuch as the elderly population relying on government benefits can often organize

[16] Between 1973 and 1990 the government workforce shrank by over 50% or 175,000 jobs in Chile, and by 305,000 jobs in Argentina. This was mainly due to "outsourcing" much of public education to local and municipal governments, but it was also in part the result of turning over portions of the retirement system to the private sector (Reid 1992).

substantial political support. Indeed countries from Russia to Argentina have faced politically destabilizing retiree demonstrations when government-provided benefits have been delayed or reduced in the past.[17]

Against this backdrop, the **first step** in most countries' pension reform is typically to **restructure the public old-age support system** so as to ensure that some level of benefit promises can be met. Achieving this objective will depend on the old-age system the country has inherited. For example, if a public benefit program is costly because people file for disability at too early an age, as in Uruguay, the first step in reform should tighten eligibility standards and perhaps target benefits as a function of need (Mitchell 1997). In other cases, public benefits have been used to facilitate the privatization of government-owned enterprises, by paying for early retirement. Here, public pension reform requires restating the goal of support for *old age*, not for the "losers" (e.g. unemployed workers) in a transition economy (Fields and Mitchell 1993). If evasion is a problem, because benefit levels are only loosely tied to workers' contributions as in Brazil, the needed reform must raise both retirement ages and the years of service required to qualify for benefits (Gill 1997). If benefit levels are too high to be sustained, there must be a careful financial analysis of what is sustainable in the long run, and benefit cuts implemented.[18] Hence the sorts of reforms undertaken depend both on the cause of the system's financial problems, and the tools available with which to make payouts more affordable.

Better **recordkeeping technology** typically is another high priority of public plan restructuring, and most developing countries will usually need to **modernize and computerize tax collection and benefit records**. While many Latin American nations have had social security systems in place for decades, they often rely on workers to keep track of their own earnings and taxes paid via a passbook or "carnet" system. But workers may lose their records, and in addition a passbook system is open to fraud if employers and/or workers collude to report lower earnings than actually received to limit tax liability. Benefit tracking is also required, to ensure that payments cease on the recipient's death, that means-tested benefits are not granted to the well-off, and that dependents or survivors of deceased workers receive their entitlements if any. In addition this recordkeeping function should also help **track system costs and performance measures**, so as to inform policymakers of system performance.

A **second step** needed to build the environment for better retirement security is to **strengthen financial markets** – for all the reasons identified above. Even if an unfunded public plan is the mainstay of a country's refurbished retirement system, workers and employers can still be encouraged to respond to the downsizing of public plan benefits by setting up their own privately-managed pensions. This is desirable to take pressure off government-provided benefits in the future.

By contrast, when a mandatory funded system is adopted, program success depends critically on having a store of value in which to deposit moneys associated with the pension fund. This suggests to many that financial reforms must be an important precursor to the establishment of a funded system (Holzmann 1997). Most crucially, a **market for government securities** seems to be essential in the early stages of pension reform, since government bonds are often held in pension systems during their start-up phase. Indeed several Latin American countries adopting mandatory funded defined contribution pensions began by requiring that all pension assets be invested in government bonds. Later these requirements were relaxed as local capital markets developed, with funds held in bank bonds and certificates as banking reform occurred, and in domestic equity as enterprise privatization proceeded (Arrau et al. 1993; Merton and Bodie 1995; Fittipaldi 1994). Forcing funded pensions to initially hold only government bonds allows other financial sector reforms to take place in tandem with pension growth; this was Chile's approach, where banking reforms and stock market development continued throughout the 1980's rather than occurring at a single point in time (Diamond and Valdes Prieto 1994).

---

[17] For recent experience in Chile see Arrau (1994); Edwards and Edwards (1991); Wallich (1983); for Turkey see Demirguc-Kunt (1996); for information on the former Soviet economies see Fox (1994) and Holzmann (1997); evidence for several Asian nations is summarized in Asian Development Bank (1996), Vittas (1996 and no date) and Hussain (1994).

[18] What this sustainable level is will obviously depend on the country. World Bank experts tend to recommend replacement ratios of 30-40% of the average economy-wide wage (Vittas 1995a and b; World Bank 1994) though additional poverty considerations might indicate a higher rate for a floor benefit.

The risk of requiring that pension funds be held entirely in government bonds is that this leaves the pension system vulnerable to low returns and susceptible to political meddling in pension fund management. This is a real concern, since in the past, governmentally-managed pension funds have frequently produced negative real returns.[19] Instead, participant funds must be transferred over time into widely traded and valued financial assets with well-understood risk and return characteristics compatible with world capital markets.

A more diversified pension portfolio could help protect against such risks particularly if pension money is permitted to be **invested outside the domestic market.** Developing countries are sometimes reluctant to liberalize capital flows and exchange controls, and frequently this happens only late in the development process (Edwards and Edwards 1991). On the other hand many experts roundly criticize the delay of exchange rate liberalization, in Chile in particular, as the single most critical flaw in the economic program instituted during the 1980's (Bosworth et al 1994). We do not seek to resolve this issue here, but merely point out that foreign investments in the pension portfolios would strengthen protection against country specific political risk.

The **third step** in creating institutions supportive of pension reforms is to **reform the insurance market** in ways identified in Section II, above. Of course, funded pensions take many years to accumulate, so a government could delay reforming insurance markets until retirement payouts become a reality. On the other hand, deferring insurance market reform may seriously undermine confidence in a funded pension system. That is, if workers and employers believe that private insurers will not be able to deliver benefits covering real consumption needs, they will be less likely to participate and pay legally required taxes to the system. Supplementing this perspective is the view of international insurance experts, who deem the development of insurance markets as "supply-leading" -- namely that a well-defined regulatory environment precedes the demand for insurance services (Outreville 1990).

Next we come to the question of what priority should be accorded **restructuring of labor market institutions**, in supporting pension system reform. Reducing individual risk of old-age poverty relies on improving workers' education and financial literacy, enhancing their lifetime earnings and saving rates. Of course, investment in human capital is usually key in any development program, but the possibility of spillovers for the old-age program may not be widely appreciated. Similarly some of the other reforms already discussed, such as tax reform and public pension rationalization, will also have positive effects on workers' incentives to participate in the formal sector, and employers' ability to hire and keep their employees.

Last but certainly not least, there is the question of how to handle the **cost of transition** from an unfunded to a funded system, a key problem in many pension reform programs. This so-called transition problem arises because taxes must typically be levied to both cover benefits for the already-retired, and also to build up a funded account to cover active workers. Moving to a funded system therefore requires double-taxation of current workers, unless by good fortune the government has accumulated a budget surplus, as was true in Chile at the time it instituted its private plan. More commonly, however, countries undergoing old-age system reform confront already large government deficits, and adopting a funded plan could well increase needs for revenue. Therefore while a budget surplus is a desirable precursor to retirement system reform, it is by no means a necessary condition (Mitchell and Zeldes 1996).

V. CONCLUSIONS

Retirement system reform is one of the highest priority policy issues of the developing world. In this paper we have argued that a country's ability to construct a market and regulatory environment supportive of its pension system powerfully influences the chances of pension system success. These

[19] See World Bank (1994) and Hsin and Mitchell (1994). On the other hand there have also been long periods during which stock markets around the world did not perform particularly well (c.f. Goetzmann and Jorion 1997a and b).

include individual risk, retirement system risk, country risk, and nondiversifiable risk. An effective retirement system reform plan should seek to better protect participants against these risks by *first* understanding the source of the risk; *second,* figuring out how to avoid and reduce the risks; and *third,* where possible insuring against these risks. Each country faces old-age problems specific to its own history and institutions, but effective reform depends on reducing or insuring against the risks faced by participants in the system. While there are many paths to reforming retirement systems, what matters in the end is whether reforms can be said to improve system solvency, increase adequacy, efficiency, and equity; and enhance national saving (TIRS 1996).

A reform program necessarily takes place against a backdrop of institutions that can potentially be supportive of retirement system growth. We have argued here that the first step is to restructure any existing public old-age income system to achieve solvency. This usually requires investing in information technology to track taxes and benefits as well as performance standards and program efficiency. Restructuring the tax collection mechanism often requires tighter links between contributions and benefits, if possible while reducing payroll taxes and devising funded accounts. A second priority area for reform is the banking and insurance sector. The goal of this effort is to increase participants' confidence in the system as a long term store of value. Having a large and active stock market is not essential for funded pensions, if participants (or the fund managers) have access to world capital markets. However, most pension plans seem to rely at least initially on government bonds, so these and reliable banks are essential to pension plan development. Internationalization of a pension portfolio can help investors take advantage of modern accounting, regulatory, and risk pricing techniques, which explains why so many pension experts favor liberalization along this frontier. We have also shown that strengthening the labor market can help in old-age income reform as well.

In the end, of course, a stable retirement system reflects a balancing of retiree demands for old-age support against workers' willingness and ability to pay for this support. Specifically, if a funded pension system is intended, available options for the transition path are strongly influenced by government budget deficits and macroeconomic conditions. Overarching these immediate-term considerations must be a longer term perspective. That is, instituting a credible retirement system for the long term depends on growing workers' assets as they build up over the work life, and insuring reliable flows of retirement consumption for decades in old-age.

REFERENCES

Ahmad, E., J. Dreze, J. Hills, and A. Sen (1991). *Social Security in Developing Countries,* Oxford: Oxford University Press.

Ahrend, Peter (1996). "Pension Financial Security in Germany", in: Bodie, Zvi and Olivia S. Mitchell (eds): *Securing Employer-Based Pensions: An International Perspective.* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Allen, Franklin and Anthony M. Santomero (1996). "The Theory of Financial Intermediation", Wharton School Financial Institutions Center Working Paper 96-32.

Arrau, Patricio (1994). "Fondos de Capitales y Desarollo del Mercado de Capitales en Chile". Unpublished paper.

Arrau, Patricio, Salvador Valdes Prieto, and Klaus Schmidt-Hebbel (1993). "Privately Managed Pension Systems: Design Issues and the Chilean Experience", World Bank, Washington, D.C., April.

Asian Development Bank (1996). "The Financial Sector and Asian Development", Asian Development Outlook, 1995-6. Oxford University Press.

Baxter, Marianne and Urban J. Jermann (1997). "The International Diversification Puzzle is Worse than You Think", *American Economic Review* 87(1) March: 170-180.

Bodie, Z. (1990). "Pensions as Retirement Income Insurance", *Journal of Economic Literature* 28: 28-49, March.

Bodie, Z. and R.C. Merton (1992). "Pension Reform and Privatization in International Perspective: The Case of Israel", Harvard Business School Working Paper 92-082, May.

Bodie, Zvi and Olivia S. Mitchell (1996). "Retirement Income Security In An Aging World", in: Bodie, Zvi and Olivia S. Mitchell (eds): *Securing Employer-Based Pensions: An International Perspective,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Bodie, Zvi, Olivia S. Mitchell, and John Turner, Eds. (1996). *Securing Employer-Provided Pensions: An International Perspective.* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Bosworth, Barry P. Rudiger Dornbusch, and Raul Laban (1994). *The Chilean Economy: Policy Lessons and Challenges,* Washington, D.C.: Brookings Institution.

Boyd, John and Bruce Smith (1996). "The Coevolution of the Real and Financial Sectors in the Growth Process", *World Bank Economic Review* 10 (2): 371-292.

Brady, Justin L., Joyce H. Mellinger, Kenneth N. Scoles Jr. (1995). *The Regulation of Insurance,* Malvern, PA: The Insurance Institute of America.

Bustamante, Julio (1996). "15 Years of Regulation and Supervising Chile's Pension System", EDI Conference on "Pension Systems: From Crisis to Reform", November.

Clark, Robert L. and Sylvester J. Scheiber. "Factors Affecting Participation Rates and Contribution Levels in 401(k) Plans," in: Mitchell, Olivia S. and Sylvester Schieber (eds): *Living With Defined*

Contribution Pensions, Philadelphia, PA: Pension Research Council and University of Pennsylvania Press, forthcoming.

Davis, E. Philip (1996). "The Role of Institutional Investors in the Evolution of Financial Structure and Behavior", Working Paper presented at the Federal Reserve Bank of Australia Conference on The Future of the Financial System, July.

Davis, E. Philip (1993). "The Structure, Regulation, and Performance of Pension Funds in Nine industrial Countries", World Bank Working Paper, Policy Research Department, Washington, D.C.

Demirguc-Kunt, Asli (1996). "Turkish Securities Markets", World Bank, Washington, D.C.

Demirguc-Kunt, Asli, and Harry Huzinga (1995). "Barriers to Portfolio Investments in Emerging Stock Markets", *Journal of Development Economics* 47: 355-374.

Demirguc-Kunt, Asli, and Ross Levine (1996a). "Stock Market Development and Financial Intermediaries: Stylized Facts", *World Bank Economic Review.* 10(2) 1996: 291-321.

Demirguc-Kunt, Asli, and Ross Levine (1996b). "Stock Markets, Corporate Finance, and Economic Growth: An Overview", *World Bank Economic Review.* 10(2) 1996: 223-239.

Demirguc-Kunt, Asli, and Anita M. Schwarz (1996). "Taking Stock of Pension Reforms Around the World", Paper presented at EDI Conference on "Pension Systems: From Crisis to Reform", EDI, World Bank, Washington, D.C.

Diamond, P. and S. Valdes Prieto (1994). "Social Security Reform", in Bosworth, B., R. Dornbusch, and R. Laban (eds): *The Chilean Economy,* Washington, D.C.: Brookings.

Dilnot, Andrew (1996). "The Taxation of Private Pensions", in: Bodie, Zvi and Olivia S. Mitchell (eds): *Securing Employer-Based Pensions: An International Perspective,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Economist (1997). "Banking in Emerging Markets", April 12, 1997: 5-40.

Economist (1996). "Global Accounting's Roadblock", April 27, 1996: 79-80. [1996a]

Economist (1996). "Pensions", November 30, 1996: 105. [1996b]

Edwards, Sebastian (1996). "The Chilean Pension Reform", Unpublished paper March [1996a].

Edwards, Sebastian (1995). *Crisis and Reform in Latin America,* Oxford: Oxford University Press.

Edwards, Sebastian (1996). "Public Sector Deficits and Macroeconomic Stability in Developing Economies", NBER WP 5407, January [1996b].

Edwards, Sebastian and Alejandra Cox Edwards (1991). *Monetarism and Liberalization: The Chilean Experiment.* Chicago: University of Chicago Press.

Fields, Gary S. and Olivia S. Mitchell (1993). "Reforming Social Security and Social Safety Net Programs in Developing Countries", Joint Ministerial Committee of the Boards of Governors of the World Bank and the International Monetary Fund, *Annual Report of the Joint Ministerial Committee.*

Fittipaldi, S. (1994). "The Power of Private Pensions: Bolivia", *US/Latin Trade,* August.

Fox, L. (1994). "Old-Age Security in Transitional Economies", World Bank, Policy Research Department, Washington, D.C.

Goetzmann, William N. and Philippe Jorion (1997). "A Century of Global Stock Markets", NBER WP 5901, January. [1997a]

Goetzmann, William N. and Philippe Jorion (1997). "Re-emerging Markets", NBER Working Paper 5906, January. [1997b]

Grosh, M.E. (1990). "Social Spending in Latin America", World Bank Discussion Paper, Washington, D.C.

Gruber, Jonathan (1995). "The Incidence of Payroll Taxation: Evidence from Chile", NBER Working Paper 5053. March.

Gustman, A., O. Mitchell, and T. Steinmeier (1994). "The Role of Pensions in the Labor Market", *Industrial and Labor Relations Review.*

Herring, Richard J. and Anthony M. Santomero (1995). "The Role of the Financial Sector in Economic Performance", Wharton Financial Institutions Center Working paper 95-08, July.

Hoffman, Paul and Anthony M. Santomero (1997). "Life Insurance Firms in the Retirement Market: Is the News All Bad?" Wharton Financial Institutions Center Working Paper, April.

Holzmann, Robert (1996). "Pension Reform, Financial Market Development, and Economic Growth: Preliminary Evidence from Chile", IMF Working Paper, August.

Holzmann, Robert (1997). "Starting Over in Pensions: The Challenges Facing Central and Eastern Europe", World Bank Working Paper, revised June [1997a].

Holzmann, Robert (1997). "On the Economic Benefits and Fiscal Requirements of Moving from Unfunded to Funded Pensions", American Institute for Contemporary German Studies Research Report no. 4, Johns Hopkins University [1997b].

Hsin, Ping Lung and Olivia S. Mitchell (1997). "Are Public Pension Plans Administratively Efficient?" in: Mitchell, Olivia S. and Marc Twinney (eds): *Positioning Pensions for the 21st Century,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Hsin, Ping Lung and Olivia S. Mitchell (1994). "The Political Economy of Public Pensions: Pension Funding, Governance, and Fiscal Stress", in: Arrau, P. and K. Schmidt-Hebbel (eds): *Revista de Analisis Economico: Special Issue on Pension Systems and Reform* 9(1) June: 151-168

Hubbard, R.G., J. Skinner, and S. Zeldes (1995). "Precautionary Saving and Social Insurance", *Journal of Political Economy.*

Hussain, A. (1994). "Social Security in Present-Day China and its Reform", *American Economic Review* May.

International Labour Office (ILO) (1989). *From Pyramid to Pillar,* Geneva: International Labour Office.

Ippolito, Richard (1996). *The Economics of Pension Insurance,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Kotlikoff, L. (1995). "Privatization of Social Security", NBER Working Paper 5330, October.

Kruger, Anne (1997). "Trade Policy and Economic Development", *American Economic Review* 87(1) March: 1-22.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert Vishny (1996). "Legal Determinants of External Finance", NBER Working Paper 5661, July.

Levine, Ross. (1991). "Stock Markets, Growth, and Tax Policy", *Journal of Finance*. 46 (4) September: 1445-1465.

Manchester, Joyce (1997). "Taxing Social Security", Pension Research Council Working Paper 97-27, The Wharton School, May.

McGill, Dan, Kyle Brown, Gordon Goodfellow, and Sylvester Schieber (1996). *Fundamentals of Private Pensions*, Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

McIsaac, Don and David Babbel (1994). "Development of the Bolivian Insurance Industry", World Bank Working Paper.

McKinnon, R.I. (1973). *Money and Capital in Economic Development*, Washington, D.C.: The Brookings Institution.

Merton, Robert C. and Zvi Bodie (1995). "Financial Infrastructure and Public Policy", in: Dwight Crane et al. *The Global Financial System: A Functional Perspective,* Boston: Harvard Business School Press.

Mitchell, Olivia S. (1996). "Administrative Costs in Public and Private Pension Systems", NBER Working Paper, August [1996a].

Mitchell, Olivia S. (1996). "Exporting Chilean Social Security Reform", presented at the Council on Foreign Relations Conference on the Global Pension Crisis, November, NY. [1996b].

Mitchell, Olivia S. (1997). "Social Security Reform in Uruguay", Pension Research Council Working Paper 96-20. The Wharton School.

Mitchell, Olivia S. and Flavio Barreto (1997). "After Chile, What? Second-Round Social Security Reforms in Latin America", Pension Research Council Working Paper 97-4, The Wharton School, February.

Mitchell, Olivia S. and Rod Carr (1996). "State and Local Pension Plans", in: Rosenbloom, Jerry (ed.): *Handbook of Employee Benefits,* Chicago, IL: Irwin, 1207-1222.

Mitchell, Olivia S. and Gary Fields (1994). "Designing Pension Systems for Developing Countries", prepared for World Bank ESP Division, October, revised. Pension Research Council Working Paper 95-12.

Mitchell, Olivia S. and James Moore (1997). "Retirement Wealth Accumulation and Decumulation: New Developments and Outstanding Opportunities", The Wharton School, Financial Institutions Research Center Working Paper, May.

Mitchell, Olivia S. and Ping-Lung Hsin (forthcoming). "Managing Public Sector Pensions", in: Shoven, John and Sylvester Schieber (eds.): *Public Policy Toward Pensions,* New York, NY: Twentieth Century Fund.

Mitchell, Olivia S., Jim Poterba, and Mark Warshawsky (1997). "New Evidence on the Money's Worth of Individual Annuities", NBER Working Paper 6002, April.

Mitchell, Olivia S. and Stephen Zeldes (1996). "A Framework for Analyzing Social Security Privatization", *American Economic Review.* 86 (2) May: 363-367.

Munnell, Alicia (1976). "Private Pensions and Saving: New Evidence", *Journal of Political Economy,* 1033-1060.

Outreville, J. Francois (1990). "The Economic Significance of Insurance Markets in Developing Countries", *Journal of Risk and Insurance,* LVII(3): 490-498.

Outreville, J. Francois (1996). "Insurance in Central America", in: Greenway, D. and John Whalley (eds): *The World Economy,* Oxford: Blackwell Publishers. [1996a]

Outreville, J. Francois (1996). "Life Insurance Markets in Developing Countries", *Journal of Risk and Insurance.* 63 (2): 263-278 [1996b].

Outreville, J. Francois (1996). "Reinsurance in Developing Countries", UNCTAD Discussion Paper 121, October [1996c].

Patrick, Hugh (1996). "Financial Development and Economic Growth in Underdeveloped Countries", *Economic Development and Cultural Change.* 14: 174-189.

Pennacchi, George (1997). "Government Guarantees for Old-Age Income", Pension Research Council Working Paper 97-10, The Wharton School.

Pesando, James (1996). "The Government's Role in Insuring Pensions," in: Bodie, Zvi and Olivia S. Mitchell (eds.): *Securing Employer-Based Pensions: An International Perspective,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Reid, Gary (1992). "Civil Service Reform in Latin America: Lessons From Experience", LATPS Occasional Paper Series No. 6, World Bank, May.

Reid, Gary and Olivia S. Mitchell (1995). "Social Security Administration in Latin America and the Caribbean". Paper prepared for Public Sector Modernization and Private Sector Development Unit, World Bank Working Paper, March.

Sachs, Jeffrey, Aaron Tornell, and Andres Velasco (1996). "Financial Crises in Emerging Markets: The Lessons from 1995", NBER Working Paper 5576, May.

Santomero, Anthony (1996). "The Regulatory and Public Policy Agenda for Effective Intermediation in Post-Socialist Economies", Wharton School Financial Institutions Center Working paper 96-34, October.

Schmidt-Hebbel, Klaus (1993). "Pension Reform Transitions from State Pay As You Go to Privately Managed Fully Funded Systems", World Bank Working Paper, June.

Skipper, Harold D. Jr. (1987). "Protectionism in the Provision of International Insurance Services", *Journal of Risk and Insurance,* 54: 55-85.

Stahlberg, Ann-Charlotte (1995). "Pension Reform in Sweden", *Scand. J. Soc. Welfare:* 267-273.

Stiglitz, J.E. (1993). *Financial Systems for Eastern Europe's Emerging Economies,* San Francisco, CA: ICS Press.

Technical Panel on Trends in Income and Retirement Saving (TIRS) (1996). *Final Report,* In Report of the 1994-95 Advisory Council on Social Security, US Social Security Administration. (available at www.ssa.gov)

Turner, John A. and David Rajnes (1996). "Private Pension Systems in Eastern Europe", in: Bodie, Zvi and Olivia S. Mitchell (eds.): *Securing Employer-Based Pensions: An International Perspective,* Philadelphia, PA: Pension Research Council and University of Pennsylvania Press.

Useem, Michael (1996). *The New Investor Capitalism,* New York: Basic Books.

US General Accounting Office (USGAO) (1996). "IRS Has Made Progress but Major Challenges Remain", Report GAO/AIMD-96-109, June. [1996a]

US General Accounting Office (USGAO) (1996). "Tax Systems Modernization", Report GAO/AIMD-96-106, June. [1996b]

Velasco, Andres (1994). "The State and Economic Policy: Chile 1952-92", in: *The Chilean Economy: Policy Lessons and Challenges,* Washington, D.C.: Brookings Institution.

Vittas, Dmitri (1996). "Contractual Savings and Term Finance", World Bank, Washington, D.C.

Vittas, Dmitri (1995). "Sequencing Social Security, Pension and Insurance Reform", Policy Research Working paper 1551. World Bank, Financial Sector Development Department, December [1995a].

Vittas, Dmitri (1995). "Strengths and Weaknesses of the Chilean Pension Reform", World Bank, Washington, D.C. May [1995b].

Vittas, Dmitri. "Swiss Chilanpore: The Way Forward for Pension Reform?" World Bank, Financial Policy and Systems Division, no date.

Wallich, Christine (1983). "Savings Mobilization through Social Security: The Experience of Chile During 1916-77", World Bank Staff Working Paper Number 553, Washington, D.C.

Wall Street Journal (1997). "Some Latin American Cities Are Eager to Issue Bonds on the Global Market", May 5.

Williamson, J. and F. Pampel (1993). *Old-Age Security in Comparative Perspective,* Oxford: Oxford University Press.

World Bank (1994). *Averting the Old Age Crisis,* World Bank Policy Research Report. Oxford: Oxford University Press.

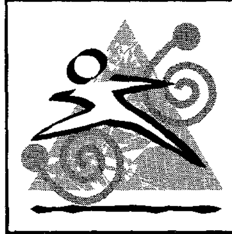
World Bank (1996). *Investment Funds in Emerging Markets,* Washington D.C.: World Bank and International Finance Corporation.

Social Protection Discussion Paper Series

No.	Title
9801	World Bank Lending for Labor Markets: 1991 to 1996
9802	Export Processing Zones: A Review in Need of Update
9803	Building an Environment for Pension Reform in Developing Countries
9804	Risks in Pensions and Annuities: Efficient Designs
9805	The Hungarian Pension System in Transition
9806	Government Guarantees on Pension Fund Returns
9807	A World Bank Perspective on Pension Reform
9808	Women and Labor Market Changes in the Global Economy: Growth Helps, Inequalities Hurt and Public Policy Matters
9809	Financing the Transition to Multipillar
9810	Pension Reform in Britain
9811	An Alternative Technical Education System: A Case Study of Mexico
9812	The Role of Choice in the Transition to a Funded Pension System
9813	Unemployment Benefits
9814	Family Allowances
9815	The Quest for Pension Reform: Poland's Security through Diversity
9816	Getting an Earful: A Review of Beneficiary Assessments of Social Funds
9817	Supervising Mandatory Funded Pension Systems: Issues and Challenges
9901	Active Labor Market Programs: A Review of the Evidence from Evaluations
9902	World Bank Lending for Labor Markets: 1991 to 1998
9903	A Bundle of Joy or an Expensive Luxury: A Comparative Analysis of the Economic Environment for Family Formation in Western Europe
9904	Social Protection as Social Risk Management: Conceptual Underpinnings for the Social Protection Sector Strategy Paper
9905	The Effects of Legislative Change on Female Labour Supply: Marriage and Divorce, Child and Spousal Support, Property Division and Pension Splitting

Social Protection Discussion Paper Series continued

No.	Title
9906	Optimal Unemployment Insurance: A Guide to the Literature
9907	Collecting and Transferring Pension Contributions



Summary Findings

Fiscal problems are prompting many developing nations to amend and sometimes restructure their national old-age programs. As they do so, these countries seek guidance on how to design market and regulatory structures to enhance their chances of success. This paper investigates the types of risks facing participants in retirement systems, and examines which financial, regulatory, and labor market institutions appear most supportive of retirement system reforms, and most urgently needed, in developing countries.

HUMAN DEVELOPMENT NETWORK

About this series...

Papers in this series are not formal publications of the World Bank. They present preliminary and unpolished results of analysis that are circulated to encourage discussion and comment; citation and the use of such a paper should take account of its provisional character. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent. For free copies of this paper, please contact the Social Protection Advisory Service, The World Bank, 1818 H Street, N.W., Room G8-138, Washington, D.C. 20433-0001. Telephone: (202) 458-5267, Fax: (202) 614-0471, E-mail: socialprotection@worldbank.org or visit the Social Protection website at www.worldbank.org/sp.