

Enabling Conditions for Second Pillars of Pension Systems

Heinz Rudolph

Roberto Rocha

The World Bank
Financial Systems Department
Policy Development Division
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Abstract

This note adds to the existing literature by examining the enabling conditions for the creation of mandatory funded pension funds, and identifying additional factors that are important to consider in the early stages of the reform. The note stresses the importance of some factors that had already been identified in previous literature but not fully observed by reforming countries, including the

strong and lasting commitment of the authorities with the reform, the fiscal commitment with the reform, and some basic financial infrastructure. The analysis is also extended to analyze the role of supervision in the early stages of the reform and the role of the government in fostering the development of the domestic capital market.

This paper—a product of the Policy Development Division, Financial Systems Department—is part of a larger effort in the department to disseminate lessons from the introduction of mandatory funded pension funds. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at hrudolph@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

ENABLING CONDITIONS FOR SECOND PILLARS OF PENSION SYSTEMS

**By
Heinz Rudolph and Roberto Rocha¹**

¹ World Bank, FPDFS.

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INTRODUCTION

Over the past decade the World Bank has promoted pension reforms entailing the introduction of multi-pillar pension systems. This approach to reform has many positive aspects but has not been exempt from problems. Multi-pillar pension reforms typically included the introduction of a second pillar, in which mandatory savings are accumulated in individual accounts. The new second pillars were expected to contribute to the primary objective of a more diversified and sustainable pension system and also contribute to secondary objectives, such as higher savings ratios, faster capital market development and improved growth performance. A recent report by the Independent Evaluation Group (IEG) of the World Bank² concludes that these secondary benefits have not materialized in some of the countries that have implemented these reforms. The Board of Directors of the World Bank has called for a better understanding of the preconditions that should be met in reforming countries, to improve the prospects of reforms that include a new second pillar.³

Various World Bank documents have addressed the issue of preconditions for a successful second pillar.⁴ The literature identifies the three basic sets of factors that need to be in place to enhance the prospects of a pension reform: macroeconomic stability, a sound financial infrastructure, and adequate regulatory and supervisory capacity. The discussion on macroeconomic stability is usually focused on the need to maintain low inflation, so as to enable the development of long-term capital market instruments suitable for pension funds. Regarding financial infrastructure, the literature concludes that the existence of a core number of sound banks and insurance companies is sufficient for the early stages of the reform.⁵ These institutions would ensure the proper management of contributions, payments, and individual accounts, and the provision of custodial services. They would also ensure the provision of life and disability insurance, in the cases where this type of insurance is shifted to the private sector. Finally, the literature stresses the need for effective regulation and

² World Bank (2005)

³ Since the IRG paper was published, a number of reforming countries, including Argentina, Bolivia, El Salvador and Slovakia began policy discussions that may have consequences for the sustainability of their second pillars.

⁴ See Vittas (1998), Vittas (1999), Impavido, Musalem and Vittas (2002), Glaessner and Valdes (1998), and Holzmann and Hinz (2005).

⁵ Glaessner and Valdes (1998) conclude that this is the most important pre-condition in small countries.

supervision, while also identifying the areas of regulation that are essential in the early phases, such as licensing.

The general conclusion of the literature is that the preconditions for a second pillar are not very demanding, and that the gradual accumulation of pension assets provides the time for policy-makers to improve the institutional and regulatory environment during reform implementation. While the literature identifies the main issues and provides reasonable policy recommendations overall, it does not examine the pre-conditions in sufficient detail, and does not exhaust the issues that policy-makers should take into consideration in the early phase of a reform.

This note adds to the existing literature by examining the pre-conditions in more detail, and identifying additional factors which are important to take into consideration in the early stages of the reform. The note also stresses the importance of some factors that had already been identified but not fully observed by reforming countries. This note benefits from additional information accumulated from two sources since the first reforms. First, the note benefits from a recent and in-depth analysis of the cases of Chile, Colombia, Hungary, Kazakhstan, Mexico, and Poland.⁶ Second, the note also benefits from the intensive worldwide effort in recent years to develop regulatory and supervisory standards in the areas of accounting, auditing, payments, government debt markets, banking, insurance, and securities.

This note identifies a set of pre-conditions that need to be met at the time of the reform and a roadmap for the first five years of reform implementation, containing policy actions that may contribute to an orderly development of the second pillar. While the note identifies specific elements that need to be in place at the start of the reform, it stresses the need to pursue an active and complementary capital market development agenda.

The note concludes that the most important precondition for a new second pillar is a strong and lasting commitment of the authorities to the reform, reflected in institutional arrangements to oversee reform implementation. The success of a new second pillar requires not only strong political support at the time of the reform, but also constant monitoring of the reform during the implementation period, through the creation of a permanent committee or the appointment of a designated official. The committee or the official should have sufficient resources and authority to identify and implement the necessary regulatory changes and promote the development of market infrastructure that ensures the success of the second pillar.

The fiscal consequences of a pension reform should be clearly identified and understood before the reform, and reforming governments should have a clear strategy for financing the transition to the new pension system. While the optimal

⁶ Rocha (2005), Impavido and Rocha (2005), Rudolph and Rocha (2006), Rudolph, et. al (2006), World Bank (2006).

financing strategy will depend on specific country conditions, in most cases it should include parametric reforms to the existing pay-as-you-go (PAYG) system, possibly combined with fiscal measures that ensure that the reform will not be primarily debt-financed. Governments should not rely on a debt financing strategy, because of the negative consequences for the cost of debt financing, capital market development, and the diversification of pension fund portfolios.

Some basic financial infrastructure needs to be present at the time of the reform. The note identifies specific requirements in the areas of payments and security settlement systems, custody, and trading platforms. It also stresses the importance of accurate, transparent and enforced accounting, financial reporting and valuation systems that promote fair valuation of instruments and the need for independent and competent auditors to promote self regulation. The note identifies a more rigorous set of preconditions for countries that decide to transfer disability and survivorship insurance to the second pillar, as in these cases it becomes necessary to have the whole regulatory and institutional framework for the payout phase in place at the start of the reform.

Government institutions need to adjust their policies and strategies to support the pension reform. The government should build its capacity for managing public debt and be prepared to adopt a debt management strategy that meets the needs of institutional investors, establishes a benchmark for private issues, and promotes capital market development. The supervisory agency should be prepared to handle the first challenges of the reform, including licensing and an early consolidation of the pension fund industry in the case of open pension funds.

The document is structured into six sections, which are organized according to the type of preconditions that need to be met at the time of a pension reform. The second section addresses the need for commitment to the pension reform. The third section identifies the fiscal policies that must be in place at the time of the reform and during the period of implementation. The fourth section deals with financial sector infrastructure and is divided into two subsections: the first deals with conditions that should be met at the time of the reform, and the second with conditions that should be met during the first five years of implementation. The fifth section examines the regulatory and supervisory framework, and the last section concludes.

COMMITMENT OF THE AUTHORITIES TO THE REFORM

The most important precondition for a pension reform is a strong and lasting commitment of the authorities to maintain macroeconomic stability, to pursue a coherent and complementary capital market reform agenda, and to create an effective regulatory and supervisory agency.⁷ Authorities need to be aware that

⁷ In the cases of Hungary and Slovakia, pension reforms were approved with tight majorities at their respective Parliaments. In both cases, the governments that followed the reforming government did not support the reform process. Impavido and Rocha (2006) provide an analysis of the Hungarian case.

pension reform is a continuous process and requires an ongoing commitment during the transition period. Although initial conditions are an important element of a reform, successful reforms also require a continuous process of improvements in legislation, regulation, and capacity building that need to take place in the first years of implementation. The lack of commitment to sound fiscal policies is one of the factors that have affected most reforms, leading to lower savings and undiversified pension portfolios. This has been aggravated by lingering deficiencies in the financial infrastructure and capital market regulation that do not foster the development of new instruments suitable for pension funds, and that do not reduce the risks inherent in transactions among different parties.

It is essential to have in place appropriate institutional arrangements, ensuring the government's capacity to handle the developmental issues of a pension reform. In many reforming countries the task forces or consultative groups that were formed during the period of preparation were dissolved during the period of implementation. This led in many cases to an institutional vacuum and lack of capacity to identify problems and formulate solutions. The appropriate arrangements could entail the creation of a permanent committee or a designated official to manage the reform process. This committee or official should have sufficient resources and authority to coordinate with the pension fund supervisor and other government agencies, including ministries of Finance, Justice, Labor and Social Security, the Central Bank, and banking, securities, and insurance supervisors. For example, in the case of Chile, there has been a continuous follow-up of the reform through the Capital Markets Committee, coordinated by the Ministry of Finance and including all the supervisory agencies.

FISCAL AND MACROECONOMIC STABILITY

In most countries, the introduction of a second pillar entails the partial (or full) diversion of contributions from the public pay-as-you-go (PAYG) system to individual accounts in the second pillar. In the absence of offsetting measures this results in larger deficits in the public PAYG system and in the general government. Governments need to continue paying benefits to current pensioners and older workers while suffering a loss of revenues related to the diversion of contributions to second pillar accounts. This transition deficit may increase over time, as the share of the labor force enrolled in the new system increases. The transition period may last for 35-40 years.

A critical issue in pension reform relates to the strategy adopted for financing the transition to the new system. A tax-financed transition requires offsetting the fiscal losses caused by the introduction of the second pillar through tax increases or expenditure cuts (which may include parametric reforms to the PAYG system). It burdens current taxpayers temporarily but could increase domestic savings and boost

growth performance, benefiting all generations.⁸ A debt-financed transition involves maintaining the balance of other taxes and expenditures constant and financing the fiscal losses caused by the second pillar through explicit debt issues. National savings ratios may remain stable, but the explicit public debt increases and the burden of pension imbalances continues to be shifted to future generations.⁹

It is essential to have a sound strategy for financing the transition based on solid analytical tools. Countries should not implement pension reform without a clear evaluation of the fiscal impact of the reform based on solid actuarial projections. The optimal financing strategy depends on initial conditions, including the overall fiscal balance, the initial and projected financial situation of the PAYG system, the stock of explicit debt and the tax burden. Governments that are already running large deficits should not initiate a second pillar, especially in cases where there are severe imbalances in the existing PAYG system contributing to the general deficit. In these situations, the introduction of the second pillar can only be justified when it is part of a broader reform package including strong parametric reforms to the PAYG.

Countries should not introduce a second pillar when the explicit government debt is not perceived as sustainable. The sustainability of explicit government debt depends on the interest rate-output growth differential, the primary balance and the currency denomination.¹⁰ These variables depend, in turn, on other fundamental factors such as savings and investment ratios, the depth of capital markets, the level and volatility of government revenues, the debt maturity structure, and the initial size of the debt to GDP ratio. Therefore, it is difficult to determine thresholds that would apply to all countries. For example, the Maastricht agreement for EU countries entails a maximum ratio of government debt to GDP of 60 percent. However, the evidence suggests that these ceilings are too high for most emerging economies, since half of all government defaults or restructurings since 1970 have taken place in countries with ratios of external debt to GDP below 60 percent.¹¹ Moody's (2006) shows that investment grade countries have government debt to GDP ratios around 38 - 43 percent. This range probably captures more accurately the market perception of debt sustainability for most emerging countries, although the assessment of

⁸ Kotlikoff (1995 and 1996) simulates the impact of different financing strategies on growth and the welfare of different generations. Kotlikoff, Smetters and Walliser (2001) provide further simulations of the impact of different types of taxes on the welfare of different generations.

⁹ Under certain assumptions, savings ratios and the sum of the implicit pension debt and the explicit debt may remain stable as a share of GDP, but if the pre-reform situation entailed a bias against future generations this bias is maintained.

¹⁰ IMF (2003) and Celasun, Debrun and Ostry (2006) propose a sustainability condition that depends on the interest rate-output growth differential and a parameter of the government's reaction function. For the case of emerging economies, Hausmann (2003) and Hausmann and Velasco (2005) argue that governments' inability to borrow at long maturities and fixed rates in domestic currency forces them to opt for hard currency or short-term domestic currency debt, which makes debt service sensitive to interest rate and real exchange rate shocks. Consequently, the sustainability of public debt is also affected by its currency denomination.

¹¹ Reinhart, Rogoff and Savastano (2003).

sustainability would still need to be country-specific.¹² Van Wijnbergen (2007) suggests that backward looking indicators (such as current levels of debt) need to be complemented by a forward looking fiscal sustainability assessment that takes into account the risks the country faces, including the risk of sudden interruptions in financing flows.

Stylized simulations of pension reform indicate that for most countries the optimal financing strategy is probably a mixed one. It may involve an element of debt finance in the early stages of the transition but should evolve progressively towards more tax finance during implementation.¹³ Debt-financed transitions have at best a neutral impact on national savings, and may have a negative impact if the interest rate on explicit debt is higher than the implicit interest rate on the implicit pension debt. This may be the case when the debt ratio is already high and the government is already paying a risk premium.¹⁴ Excessive debt finance will also hinder the development of the capital market and affect the capacity of pension funds to diversify portfolios.

Some reforming countries have failed to maintain fiscal discipline during the period of implementation and have relied excessively on debt finance. In these countries savings ratios have declined, pension portfolios have remained undiversified, and the impact of the reform on capital market development has been modest. For example, in Colombia, Hungary, and Poland, fiscal deficits increased above and beyond the revenue losses to the second pillar. In all these countries savings ratios declined and pension portfolio have remained undiversified, consisting largely of government bonds. Although the fiscal situation has recently improved the transition has still been primarily debt-financed.¹⁵ By contrast, in Chile, the fiscal adjustment implemented at the start of the reform contributed to the increase in national savings, and enabled pension funds to diversify portfolios and finance the private sector already in the early stages of the transition. The factors probably contributed to Chile's impressive growth performance in this period.¹⁶

On the other extreme, some reforming countries with large fiscal surpluses and national savings, driven by massive foreign exchange inflows, have experienced very poor returns on second pillar assets. There are reforming countries such as Kazakhstan that are commodity exporters and have experienced a prolonged boom in

¹² Reinhart, Rogoff and Savastano (2003), Oviedo (2006), and Mendoza and Oviedo (2003) examine the role of macroeconomic fundamentals in debt sustainability. Note that the assessment of sustainability can be complicated further by the possibility of multiple equilibria related to different market perceptions (see Calvo (1988), Sachs, Tornell and Velasco (1996) and Palley (2004).

¹³ Kotlikoff (1995 and 1996) shows that a mixed financing strategy increases savings and growth in the transition to the new steady-state, while also contributing to an improved intergenerational burden sharing. Corbo and Schmidt-Hebbel (2003) show that Chile's high growth rates after the reform were due in part to a tax-financed transition. Kotlikoff (1996) shows that capital accumulation may reduce interest rates and reduce the cost of debt service, but this would be difficult to achieve in a pure debt-financed transition.

¹⁴ The risk premium could increase further if the market does not treat implicit and explicit debt equivalently. The impact of the swap of implicit for explicit debt on the risk premium has not been tested.

¹⁵ Rudolph et al (2006), Impavido and Rocha (2006), and Rudolph and Rocha (2007).

¹⁶ Corbo and Schmidt-Hebbel (2003), Chile Pensions Commission (2006).

commodity prices (e.g. oil). This situation led to large fiscal surpluses, eliminated the need for debt issues and hindered the development of a benchmark yield curve. Moreover, private issuers have not issued instruments because of abundant access to cheap capital from domestic banks and abroad. Pension funds have been forced to invest primarily in foreign assets due to the lack of domestic instruments, and have earned negative returns in domestic currency due to the currency appreciation.¹⁷

The analysis of actual reform cases supports the view that the optimal financing strategy for most emerging countries is a mixed one. Most countries have initiated reforms with fiscal deficits of around 3 percent of GDP or higher, savings ratios around 20 percent of GDP or lower, and debt ratios above 30 percent of GDP. In these cases, a mixed strategy with a strong tax component would have produced more positive outcomes on savings, portfolio diversification, and capital market development, possibly contributing to a better growth performance. At the same time, the analysis of actual reform cases also shows that commodity exporters would need to reevaluate the appropriateness of introducing a second pillar, as in these cases the implicit returns on a balanced PAYG system may be higher than the returns on a funded scheme.¹⁸

FINANCIAL INFRASTRUCTURE

This section addresses financial sector pre-conditions for a pension reform, and is divided into two parts. The first part identifies the preconditions that need to be in place at the time of the reform, while the second part provides a roadmap for further institutional and regulatory improvements that should be introduced within the first five years of reform implementation. Moreover, the preconditions at the initial stage are divided in those that are essential and those that are highly desirable. The preconditions classified as highly desirable at the start of the reform become essential within a period of five years. The analysis assumes that an important part of the pension assets are invested in the domestic market.¹⁹

Preconditions at the Start of the Pension Reform

Legal Framework

It is essential to ensure the existence of rule of law and the provision of a basic legal framework to the protection of citizens against the arbitrary use of state

¹⁷ See World Bank (2006).

¹⁸ Under these conditions the economy has excessive savings and is dynamically inefficient (see, e.g. Feldstein (1995)). The authors are unaware of theoretical research examining how countries can meet debt solvency conditions and the dynamic efficiency condition simultaneously.

¹⁹ Most of the preconditions are not necessary in the case that pension assets are fully invested in foreign securities through foreign platforms. The main challenge in this case are in the legal framework, payment system and the provision of currency hedges (foreign exchange derivatives may not be available at reasonable prices and maturities).

authority and lawless acts of organizations and individuals. Laws properly adopted by a country must be applied, interpreted and enforced by an independent judiciary. The existence of a basic and coherent group of laws builds the confidence of the population and investors in a market economy, and reduces the perceived risk of conducting transactions. The basic legal framework includes commercial law, banking law, securities law, and other laws and regulations that address the issues of contractual relations, property rights, and creditor rights, including proper collateral and insolvency regimes. Corruption is an important element to consider, as it may affect the success of a pension reform.

Institutional Framework

Payments System

It is essential to have a core number of solvent banks able to provide an adequate infrastructure for large value and retail payments. A group of solvent and well managed banks may allow pensions funds administrators to make payments and collect contributions with confidence. The presence of foreign banks may contribute to the faster absorption of adequate technology and management capacity. At the initial stages of the reform, large value transactions may be done through checks or money orders, but as the amounts increase, the risks and costs of check-based systems become too onerous and it becomes necessary to move to more efficient systems.

It is essential to have an IT system able to process and conciliate the flows of funds and the flows of information. One of the major problems in the initial stages of the pension system is the integration and conciliation of the flow of data with the flow of resources. Depending on whether the collection of contributions is centralized or not, the needs for centralization of information could be different. Many reforming countries faced payments problems in the initial stages, and had to make great efforts to remedy these problems. The system should be able to identify contributors, pensioners and employers. In some cases it may require to issue social security cards or another form of personal identification in order to carry a personified reporting system and facilitate the submission of information by the employers.

It is desirable to have an automated clearinghouse as a mechanism for centralizing the flow of data and integrating it with payments. The centralization of the flow of data and the creation of an automated clearinghouse may enhance the efficiency of the payments system, generating economies of scale and relieve the burden on employers. Automated clearinghouses have the advantage of being able to process payments timely and efficiently at lower cost while reducing operational risks.

It is desirable to build a safe and efficient large value payment system based on legislation that adheres to best international principles and practices.²⁰ Due to their transactions with financial instruments, pension fund administrators are expected to become important users of the large value payment system. Failures or lack of standards in this area may jeopardize the security of the pension funds. In this context it becomes necessary to introduce laws and regulations on payments such as rules on electronic signature and documents, validation of netting, and settlement finality. The agenda should also include standards and procedures agreed by the participants such as codes and hours of operation.

It is desirable to introduce arrangements for medium and large companies to pay contributions electronically. There are different models for reporting information, including manually filled forms, printouts from official software and electronic data transfers (either through software or online). The operational risks and costs associated with manual transactions are high and there should be efforts to introduce an electronic system. Electronic reporting may substantially reduce the administrative costs and operational risks of the pension system. For example, in the case of Poland, companies with more than 5 workers must conduct their transactions in electronic form, leading more than 90 percent of the transactions to be conducted electronically.

Securities Settlement System

It is essential to implement a plan of convergence to Delivery versus Payment (DvP). The soundness and safety of the settlement system are paramount for all financial institutions, investors, and issuers. The clearance and settlement process includes capturing trade information, trade matching, confirming and affirming institutional investor's trades, clearing and settlement. The major settlement risk is counterparty risk (credit/principal risk). DvP is one of the primary means by which a market can reduce the risk inherent in securities transactions. The DvP concept seeks to eliminate counterparty risk from securities transactions by ensuring that sellers give up their securities if, and only if, they receive full payment and vice versa.

It is desirable to have a reliable settlement system for processing trades, that is cost effective and convenient for its participants, and a solid legal framework that supports the implementation of DvP. It would be useful to have a prompt and effective trade processing system that operates with a short elapsed time between trade date and settlement date, to increase the confidence of market participants in the capital market. It is desirable that domestic systems use internationally recognized securities identification numbering standards. The legal framework that support DvP should contemplate enforceability of transactions, protection of customer assets (particularly against insolvency of custodians), immobilization or dematerialization of securities, netting arrangements, securities lending (including repurchase

²⁰ BIS (2001).

agreements), finality of settlement, default rules, prompt liquidation of assets pledged or transferred as collateral, and protection of the interests of beneficial owners.

Exchange or Electronic Trading Platform

It is desirable to have an efficient trading platform on which pension funds can trade their assets. This might take the form of an exchange or electronic trading platform. These arrangements are even more important in systems based on open funds, where member can switch across funds. Open pension funds should only be allowed to operate through secure platforms that guarantee market prices in all secondary market transactions. This condition applies especially to securities other than short-term CDs and government bills. Stock exchanges and electronic platforms with high levels of transparency provide the necessary financial infrastructure for pension funds to operate, in terms of anonymity of counterparts and price clearing. Some OTC markets have advanced in transparency, but are still far from ensuring efficient price clearing.

Custodian and Depository Institutions

It is essential to have an independent depository institution that enables book entry transfer of financial instruments. The depository holds the titles of securities and allows only authorized individuals to transfer the property of the instruments. The depository institution reduces operational risks and the risks of fraud in cases of stolen documents. The depository could be an independent private institution or could be managed by the government or the Central Bank.²¹ In the case of a privately owned institution, governance arrangements should be well articulated and fully transparent. Governance arrangements should minimize the conflicts between the objectives of owners, users, and other interested parties, and as far as possible resolve any remaining conflicts. Broadest industry participation should be promoted and membership standards for system operators should be established in order to minimize risk. For example, in the case of Chile, in the first 12 years of the reform, securities were deposited at the Central Bank until the creation of a private central depository system (DCV) with broad participation of all financial institutions.

It is essential that pension fund managers and custodians employ accounting practices and safekeeping procedures that fully protect the assets of the pension fund, particularly against the creditors of pension fund managers. Custody risk is the risk of a loss on securities held in custody originated as a consequence of a pension fund manager's insolvency, negligence, fraud, poor administration or inadequate record keeping. Laws and regulations should ensure that the custodian employs procedures ensuring that all pension fund assets are appropriately accounted

²¹ The private institution could be foreign, but in this case it should be subject to national regulation. An exception may apply to cases where it operates under common market arrangements such as the EU.

for and kept safe. Pension fund assets also must be protected against the claims of the pension fund manager creditors or other custodians that the law may authorize.

Accounting, Auditing and Valuation

It is essential to have a set of independent external auditors with the capacity to provide a professional opinion on the financial statements of pension funds and pension fund managers. External auditors play an important role in certifying to contributors and other stakeholders that the information provided in the financial statements is correct. This requires technical competence, professionalism and independence of external auditors. It is necessary to have a minimum set of principles and guidelines ensuring that external auditors independent and professional in the exercise of their duties. As the reform is implemented it may be desirable to expand the scope of external audits to include assessments of the quality of risk management systems and internal controls (see section 4.2).

It is essential that pension fund portfolios are valued on a mark-to-market basis in a context of accurate, transparent and enforced systems of accounting and financial reporting. Regular reports should be made public and external auditors should provide their professional opinion about the fairness of the financial accounts in representing the value of the pension assets. Mark-to-market valuation allows contributors to monitor the value of their pension funds on a regular basis and to compare the return performance of different pension fund managers. Mark-to-market valuation is critical in systems based on open pension funds, where contributors can switch across pension funds (voting with their feet). The lack of accurate valuation implies non-transparent and unintended transfers of income across pension fund members.

It is essential to have at least one independent provider of data on asset prices to value the portfolios of pension funds on a regular basis. Efficient asset valuation is one of the critical elements for the soundness of a second pillar based on open pension funds. Manipulation of price data may be very damaging to the health of the second pillar, as it may lead pension fund managers to make misguided buying and selling decisions and contributors to make wrong selection decisions as well (moving funds to another fund manager based on distorted information). It is essential to have at least an independent price provider that could be private or public.²² The provider should be prepared to value all the assets of a pension fund on a regular basis, preferably daily. The price vector should take into consideration a high percentage of market transactions.

It is desirable to start the process of convergence of local accounting standards to International Financial Reporting Standards (IFRS), to avoid misinterpretation and confusion about the value of the funds. Local accounting

²² There are good experiences in many countries. In the case of Chile, the price vector is provided by the pension supervisor and in Colombia, by a private price vendor.

standards should be broadly similar to international standards at the start of the reform, and there should be an effort to migrate towards IFRS during the first years of implementation. In order to ensure effective implementation of the standards, it is important that convergence to IFRS may include appropriate training and certification of accountants. The most frequent sources of ambiguity, misunderstanding and misrepresentation are the following: (i) consolidation of subsidiaries accounts; (ii) related party transactions; (iii) contingent liabilities; (iv) unrealized gains and losses from securities investments, and forward, swap or futures positions; and (v) financial leasing.

Preparation for the Payout Phase

It is essential to ensure a sound framework for the payout phase in the countries that decide to shift disability and survivorship insurance (DSI) to the second pillar. Institutions and retirement instruments should be fully operative. If DSI is provided by the second pillar at the start of the reform, it is essential to have a core number of solvent insurance companies with the capacity to provide this insurance. The government must also ensure the existence of a sound regulatory framework for retirement products (annuities, phased withdrawals) and providers (life insurance companies, pension fund managers). It is essential to provide adequate consumer protection, by enhancing the transparency of these markets and defining key parameters such as discount rates and mortality tables. In the cases where DSI remains in the first pillar, these actions could take place more gradually. The international experience in this area is mixed. Many Latin American countries (e.g., Chile, Argentina, and Colombia) have moved DSI to the second pillar, whereas Central European countries (e.g., Hungary and Poland) have decided to maintain it in the first pillar.

Availability of Financial Instruments

It is expected that in the initial stages of the system, the bulk of the portfolio of pension funds will be comprised by bank deposits, CDs, and government bonds. This has been the case in most reforming countries. Therefore it is necessary to ensure that these markets work appropriately in the initial stages of the reform. Moreover, there is symbiotic relationship between the public debt market and the young pension fund sector that should be exploited up to an optimal level.

Bank Deposits and CDs

It is essential to have a core number of sound banks, in order to ensure the availability of basic and sound instruments in the early stages of the reform. This requires the existence of a group of well managed and capitalized banks subject to a sound regulatory and supervisory framework. The presence of foreign banks,

with headquarters in countries with consolidated supervision, may help bring high standards to the host country.

Government Bonds

It is essential to start the reform with a well articulated strategy of public debt management. The government should have a strategy for the development of the government debt market, including the development of a yield curve that provides the necessary benchmark for private instruments, including mortgage-related securities (mortgage bonds, mortgage-backed securities) and corporate bonds. The strategy should not be guided by the single objective of minimizing short-run financing costs, but should also take into account developmental objectives. The government should enhance communications with all investors, including pension funds and insurance companies, and take into account the needs of these investors in the formulation of its debt management strategy.

It is essential to ensure that government securities are sold and traded at market prices. The government should move away from funding below market rates with captive sources of funding and commit to fund at market rates. Market rates could be reached through different systems such as auctioning, underwriting, syndication, or tap selling. The optimal system would depend on the characteristics of the country and the depth of the capital market. Some countries allow pension funds to participate directly in the auctions, while in other cases they have to buy bonds through dealers at the secondary market. Both systems can operate equally well.

It is desirable that the government moves towards dematerialized securities. Dematerialized securities reduce a number of operational risks and facilitate trading. The issuance of dematerialized instruments usually requires laws on electronic signature and documents, and the development of a platform for selling the bonds at the market. The investment is relatively small compared to the benefits that dematerialized instruments may bring to the market, including the setting of the benchmark for the rest of fixed income instruments issued at the market. Appropriate standardization of instruments as bullet coupon bonds may help to give liquidity to the benchmarks set by the government.

It is highly desirable to introduce a clear organizational structure inside the Debt Management Office. The Debt Management Office or the institution in charge of the government debt management should have the back, middle and front office functions clearly defined. This would avoid conflicts of interest and ensure appropriate checks and balances.

Additional Conditions that Should Be Met within the First Five Years of Implementation

Institutional Framework

Payment Systems

It is essential to put in place a proper regulatory framework for transactions with foreign jurisdictions. After the first few years of the reform, it is expected that pension funds will begin investing in foreign securities. Procedures, rules and standards for operating with multicurrency instruments and transactions with foreign jurisdictions should be in place.

Accounting, Auditing, and Valuation

In countries that have introduced second pillars based on open pension funds it is essential to introduce a single methodology for asset valuation. As the market becomes more sophisticated, it is necessary to introduce a single methodology of valuation and a single asset price vector for valuation of portfolios at each point in time. This would avoid manipulation of portfolio values and rates of return by pension fund managers, designed to induce switching into the fund.

In some countries it may be desirable to expand the scope of audits to include assessments of the quality of internal risk management systems and internal controls. The exposure of pension funds to operational and financial risks will tend to increase as the scale of operations increases and portfolios become more diversified. In some countries the expansion of the system may outpace the build up of supervisory capacity. In countries where the supervisor still lacks the capacity to assess the quality of risk management systems, it may be desirable to expand the scope of the external audits to include this function.

Ratings

It is essential to have at least one professional rating agency operating in the country. The investment regime for pension funds should encourage the use of ratings for eligible fixed income instruments. Rating agencies provide an independent opinion about the risk of fixed income instruments and therefore may contribute to more efficient pricing of these instruments and faster market development. The fixed income portfolio of pension funds should be composed to a large extent by rated instruments. The regulatory framework should include minimum requirements of independence and professionalism on domestic rating agencies.

Preparation for the Payout Phase

It is essential for the countries that decide to maintain DSI in the first pillar to elaborate the regulatory framework for the payout phase, in order to ensure that the payout system is operational when the first contributors begin retiring.

Although these countries may have a grace period of a few years to finalize the payout phase, the market needs to know in advance the retirement's products that are going to be offered, life insurance companies need to start accommodating their portfolios, and the Government Debt Management Office needs to start giving more emphasis to the issuance of long term inflation indexed instruments.

Availability of Financial Instruments

Mortgage-Backed Securities and Asset-Backed Securities

It would be essential to have in place a solid regulatory framework for securitization, providing the basis for the development of mortgage-backed securities and asset-backed securities. Mortgage bonds and mortgage-backed securities (MBS) are relatively simple instruments, with relatively long duration and low risk. MBSs should be one of the first instruments through which pension funds begin to diversify their portfolios. Pension funds and other institutional investors may contribute to the development of this market, by contributing to increased liquidity, transparency, and price efficiency. Their participation may generate positive spillover effects, by allowing the banks and other loan originators to manage better their risks and liquidity, and ultimately contributing to improved access to housing finance and improved affordability. However, pension funds and other institutional investors will participate in this market only if a number of elements are present, including an adequate legal, tax and accounting framework for securitization and secure bond issuance, facilities for lien registration, ability to enforce liens, ability to transfer (assign) security interest, and protection of investors against bankruptcy of originator or service.²³

Equity and Corporate Bonds

It would be essential to have in place a corporate law and securities law that protect the interests of stakeholders, including minority shareholders, as well as a market friendly tax regime. It is expected that pension funds will start investing in equity and corporate bonds within the first five years of reform implementation. The governance of issuing companies, registering requirements for equity, and issuance requirements for corporate bonds, are elements that need to be properly addressed in the regulatory framework. Proper minority shareholder protection rules would reduce the risks for pension funds (and other institutional investors) to invest in these instruments and promote market development. The law should promote an active participation of pension funds as minority shareholders of companies, through their participation at the Assemblies of shareholders and in the appointment of

²³ See Chiquier, Hassler and Lea (2004).

directors of the companies. A non discriminatory and market friendly tax regime should be in place.

Private Equity Funds

It would be essential to have in place a regulatory framework, including tax treatment, that facilitates the creation of general/limited partnerships. This format may provide the basis for the development of the private equity and venture capital industries. In some countries, these arrangements may be done through private contracts but in others a regulation should be in place that clarifies the rights and responsibilities of each of the parties. It is desirable to standardize the main covenants of these contracts in order to facilitate these investments.

Other Instruments

It would be essential to have available simple foreign exchange instruments and derivatives. As pension funds invest part of their portfolio abroad, they will increasingly need to hedge their currency positions. For this reason, it would be essential to develop simple derivatives such as currency forwards and swaps. The existence of capital controls may create distortions in the value of these instruments. Access to these instruments is even more critical for pension funds operating in small economies and constrained by a limited supply of domestic financial instruments.

THE REGULATORY AND SUPERVISORY FRAMEWORK

A competent pension supervisor, properly staffed and enjoying a reasonable degree of legal and operational independence needs to be in place at the start of the reform. It is not necessary to have a separate agency to supervise the pension sector. Pension supervision could be part of a broader integrated supervisory agency. This is the case of many developed and emerging countries that have second pillars today, such as Australia, Colombia, Denmark, Hungary, the Netherlands, Poland, Slovakia, and Sweden. Countries that decide to maintain a separate agency will need to ensure proper coordination channels with other supervisors, including proper sharing of information. This is essential for open pension systems, where pension funds are usually part of a financial conglomerate.

It is essential to ensure that the supervisory agency has the capacity to deal with the early challenges posed by the new system, including licensing and rapid consolidation of the market in the case of open pension funds. The supervisory agency should have the capacity to screen applicants and grant licenses only to qualified managers. There are a number of management companies with international

experience and high standards of operation that may contribute to the development of the second pillar. There should be no legal or political restrictions to the entry of these companies. In the early phases of implementation the supervisor must be able to assess the strengths and weaknesses of each financial group and the complex structures of financial conglomerates. In the case of open pension funds, consolidation of the market usually takes place in the first years of the reform and supervisors should be able to handle unfair market practices for recruiting contributors. The experience of other reforming countries shows that massive resources are spent in this phase (including the use of the sales force of related companies at subsidized prices) and consequences might be difficult to reverse.

It is essential to provide adequate resources for training and capacity building by the supervisory agency in the early stages of the system. The pension supervisory agency will need to build up capacity quickly, along with the growth of the industry and the sophistication of market players. The supervisory agency may need to address complex issues such as excessive fees that have affected some reforming countries or cross selling of pension products with banking or insurance products. If the supervisory agency lags behind the industry, pension fund managers may take advantage of this situation.

CONCLUSIONS

The most important precondition for a pension reform is a strong and lasting commitment of the authorities to the reform. This requires, for the whole period of transition, the permanent monitoring of the reform by a permanent committee or a designated official. Improvements in market infrastructure and enhancements in legal framework also need to take place in the first years of the reform in order to ensure better returns with lower risks.

Solid analytical tools should be used to project the fiscal impact of the pension reform, and mechanisms of financing should be also defined ex ante.

Governments should avoid relying excessively on debt financing of the transition, because of the adverse consequences on the cost of financing and capital market development.

Some basic financial infrastructure needs to be in place at the start of the reform. A basic legal framework and a functional court system are needed to provide the basic foundations for a financial sector. A core group of solvent and well managed banks is needed in the early stages of the system providing the necessary payments infrastructure, as well basic instruments. Some institutions need to be present to support asset transactions, including exchanges or electronic trading platforms, and depository institutions, since all the transactions should be conducted through these markets. An appropriate set of accounting rules, auditors and independent providers of asset prices are necessary for ensuring fair valuation, transparency, comparability, and appropriate monitoring of pension funds. An

additional and more demanding set of preconditions must be met in the countries that decide to shift disability and survivorship insurance to the second pillar.

Government institutions need to be prepared to react appropriately to the pension reform. The government must be prepared to design and implement a clear debt management strategy that takes into consideration the evolution of the investor base (pension funds and insurance companies) and the objective of capital market development. The supervisory agency should be prepared to handle the first challenges of the reform: licensing and consolidation of the market in the case of open pension funds. Finally, resources should be made available to the pension supervisory agency for training and capacity building.

REFERENCES

- Bank for International Settlements. 2001. "Core Principles for Systematically Important Payment Systems." BIS Committee on Payments and Settlement Systems. January.
- Barr, Nicholas. 2006. "Pensions: Overview of the Issues." *Oxford Review of Economic Policy*, vol. 22, No 1.
- Barr, Nicholas and Peter Diamond. 2006. "The Economics of Pensions." *Oxford Review of Economic Policy*, vol. 22, No 1.
- Barro, Robert J. 1995. "Inflation and Economic Growth." *Bank of England Quarterly Bulletin*, pp. 166-176.
- Boyd, John H. and Bruce Champ. 2003. "Inflation and Financial Market Performance: What Have We Learned in the Last Ten Years?" Federal Reserve Bank of Cleveland *Working Paper* 03-17. December.
- Boyd, John H., Ross Levine and Bruce Smith. 2001. "The impact of Inflation on Financial Sector Performance." *Journal of Monetary Economics*, 47, pp 221-248.
- Calvo, Guillermo. 1988. "Servicing the Public Debt: The Role of Expectations." *The American Economic Review*, 78, 647-61.
- Corbo Vittorio and Klaus Schmidt-Hebbel. 2003. "Macroeconomic Effects of the Pension Reform in Chile." In *Pension Reforms: Results and Challenges*. International Federation of Pension Fund Administrators.
- Celasun, Oya, Xavier Debrun and Jonathan Ostry. 2006. "Primary Surplus Behavior and Risks to Fiscal Sustainability in Emerging Market Countries: A "Fan-Chart" Approach." *IMF Staff Papers*, vol 53 No 3. December.
- Chile Pensions Commission. 2006. *El Derecho a una Vida Digna en la Vejez: Hacia un Contrato Social con la Previsión en Chile*. Santiago, available at <http://www.consejoreformaprevisional.cl/view/presentacion.asp>
- Chiquier, Loic, Olivier Hassler and Michael Lea. 2004. "Mortgage Securities in Emerging Markets." *Policy Research Working Paper* 3370. The World Bank. Washington DC.
- Fama, Eugene and G. William Schwert. 1977. "Asset Returns and Inflation." *Journal of Financial Economics*, 5, 115-146.
- Feldstein, Martin. 1995. "Would Privatizing Social Security Raise Economic Welfare?." *NBER Working Paper Series* 5281 (September).

- Feldstein, Martin. 1996. "Transition to a Fully Funded Pension System: Five Economic Issues." *NBER Working Paper Series* 6149 (August).
- Glaessner Thomas and Salvador Valdes. 1998. "Pension Reform in Small Developing Countries." *Policy Research Working Paper* 1983. The World Bank.
- Hausmann, Ricardo. 2003. "Good Ratios, Bad Credit Ratings: The Role of Debt Structure." Kennedy School of Government. Harvard University. Mimeo.
- Hausmann, Ricardo, and Andrés Velasco. 2005. "The Causes of Financial Crises: Moral Failure Versus Market Failure." In *The Political Economy of Recurrent Debt*, edited by M.A. Centano, H. James, and J. Londregan. Princeton Institute for International and Regional Studies.
- Holzmann, Robert. 1998. "Financing the Transition to Multipillar." *Social Protection Discussion Paper Series* No 9809. The World Bank.
- Holzmann, Robert and Richard Hinz. 2005. *Old Age Income Support in the 21 Century*. The World Bank. Washington DC.
- Impavido, Gregorio, Alberto Musalem and Dimitri Vittas. 2002. Contractual Savings in Countries with a Small Financial Sector. *Policy Research Working Paper* 2841. The World Bank. Washington DC.
- Impavido, Gregorio and Roberto Rocha. 2006. Competition and Performance in the Hungarian Second Pillar. *Policy Research Working Paper* 3876. The World Bank. Washington DC.
- International Monetary Fund. 2003. "Public Debt in Emerging Markets: Is It Too High?" Chapter III in *World Economic Outlook, September 2003: Public Debt in Emerging Markets*, World Economic and Financial Surveys.
- Kotlikoff, Lawrence. 1995. "Privatization of Social Security: How it works and why it Matters." *NBER Working Paper Series* 5330 (October).
- Kotlikoff, Lawrence. 1996. "Simulating the Privatization of Social Security in General Equilibrium." *NBER Working Paper Series* 5776 (September).
- Kotlikoff, Lawrence, Kent Smetters and Jan Walliser. 2001. "Finding a Way out of America's Demographic Dilemma." *NBER Working Paper Series* 8258 (April).
- Mendoza, Enrique and Oviedo P. Marcelo. 2003. "Fiscal Policy and Macroeconomic Uncertainty in Developing Countries: The Tale of Tormented Insurer." *NBER Working Paper Series* 12586. October.

- Moody's. 2006. *Moody's Statistical Handbook: Country Credit*. Moodys's Investors Services. May.
- Oviedo, P. Marcelo. 2006. "Sustainable Fiscal Policy with Rising Public Debt-to-GDP Ratios." Draft. Iowa State University. November.
- Palley, Thomas. 2004. "Escaping the Debt Constraint on Growth: A suggested Monetary Policy for Brazil." *Revista de Economia Politica* (Brazil), 24, No 1 (93) 36-49. January-March.
- Reinhart, Carmen, K. Rogoff, and M. Savastano. 2003. "Debt Intolerance." NBER *Working Paper Series* 9908 (August).
- Rocha, Roberto, 2005, *The Chilean Second Pillar: Performance and Future Challenges*. Draft. The World Bank. Washington, DC.
- Rudolph, Heinz, H. Cheikrouhou, R. Rocha, and C. Thorburn. 2006. *Financial Sector Dimensions of the Colombian Pension System*. The World Bank, Washington DC.
- Rudolph, Heinz and Roberto Rocha. 2006. *Competition and Performance in the Polish Second Pillar*. The World Bank. Washington DC.
- Sachs, Jeffrey, Aaron Tornell and Andres Velasco. 1996. "The Mexican Peso Crisis: Sudden Death or Death Foretold?" *Journal of International Economics*, 41, 265-83.
- Vittas, Dimitri. 1998. *Institutional Investors and Securities Markets: Which Comes First? Policy Research Working Paper 2032*. Washington, DC. The World Bank.
- Vittas, Dimitri. 1999. *Pension Reform and Capital Market Development: "Feasibility" and Impact" Preconditions*. Development Research Group. The World Bank. Washington DC.
- Wijnbergen, Sweder van. 2007. "Prerequisites for Successful Pension Reform." Mimeo. The World Bank. Washington DC.
- World Bank. 2005. *Pension Reform and the Development of Pension Systems: An Evaluation of World Bank Assistance*. Independent Evaluation Group. The World Bank. Washington DC
- World Bank. 2006. *Republic of Kazakhstan: Developing Financial Instruments to Mobilize Domestic Resources for Infrastructure*. June. The World Bank. Washington DC.

ANNEX 1

Area	t+0		t+5
	Essential	Highly Desirable (Most essential in t + 5)	Essential
1. Institutional arrangements designed to monitor reform implementation	Permanent committee or designated authority		
2. Fiscal sustainability	Analytical tool to evaluate fiscal impact of the reform		
	Avoid excessive reliance on debt financing of the transition. Move towards tax-finance during implementation		
	Exceptional cases involving Dutch disease type of situations should re-evaluate the introduction of second pillar		
3. Financial Sector Infrastructure			
3.1 Legal Framework	Rule of Law		
	Basic set of laws: Commercial Law, Securities Law and other laws and regulations that address efficiently the issues of collateral and insolvency, contractual relations between parties, creditor rights and property rights.		
3.2 Institutional Framework			
a. Payment System	A core of solvent banks with infrastructure to process retail and large value payments.	A Large Value Payment system that may be in accordance to international principles. Laws, regulations and procedures that have specific applicability to payment system. An oversight system (Central Bank).	Legal issues associated to multiple currencies and foreign jurisdictions.
	An IT system for pension funds able to process and conciliate flows of contributions and information. The system should be able to identify contributors, pensioners and employers.	An Automated Clearinghouse (ACH) for retail payment system	
		Incentives for electronic payment of contributions by large and medium size companies	
b. Securities Settlement	Initiation of implementation of a plan aimed at	A prompt a reliable system for processing	

System	achieving final and irrevocable DvP and having an efficient settlement process.	trades and a solid legal framework to support DvP	
c. Exchange or Electronic Trading Platforms		Exchange or electronic trading platforms. All transactions in the secondary market should take place through formal exchanges.	
d. Custodian and Depository Institution	Existence of an independent depository institution. It can be public or private.		
	Custody should employ accounting practices and safekeeping procedures that fully protect customer's securities.		
e. Accounting, Auditing, Valuation and Rating	Mark-to-market valuation.	Convergence to IFRS	Independent rating agencies should rate fixed income instruments.
	Financial statements should be audited by external auditors.		
	At least one independent provider of information on asset prices, to be used for the valuation of pension fund portfolios. The provider could be a private or public institution.		
g. Preparation for the Payout Phase	Full legislation, regulation and institutional design of the payout phase if insurance of disability and survivorship is offered in the second pillar.	.	Full legislation, regulation and institutional design of the payout phase if insurance of disability and survivorship is offered in the first pillar.
3.3 Availability of Financial Instruments			
a. Bank Deposits and CDs	Core set of sound banks		
b. Government Bonds	Government needs to develop a medium-term debt management strategy that includes commitment to finance through the market.		
	The Debt Management Office should maintain open lines of communication with the market, getting inputs from pension funds, insurance companies, and other investors for the elaboration of the strategy.	Internal management at the Debt Management Office: back, middle and front office functions should be clearly defined	
		Dematerialization and standardization of debt instruments.	Progress in building a yield curve.

c. Mortgage backed Securities and Asset backed Securities			Adequate legal, tax and accounting framework for loan securitization and secure bond issuance and other related to liens and customer protection.
d. Equity and. Corporate Bonds			Commercial Code, Corporate, and Securities Law, providing solid governance structures, minority shareholder protection. Market friendly corporate tax system.
e. Private Equity Funds			Laws and regulation about Limited /General partnership structures
f. Currency Instruments			Financial integration. Introduction of regulation allowing basic instruments for hedging currency risk.
4. Regulatory and Supervisory Framework of Pension Funds			
	Supervisor well resourced and enjoying operational autonomy. Needs to be prepared to face licensing and early market consolidation	Coordination among regulators, if supervision is not part of integrated agency.	