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Pension Reform or Pension Default? A Note on Pension Reform and Country Risk

By

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This note explores the impact of pension reform on country risk. Emphasis is placed on conceptual issues, empirical issues and evidence from Latin American countries which have or are currently in the process of transition from a pure public pay-as-you-go (PAYGO) pension system, to a multi-pillar pension system with a fully funded component.

I. Conceptual Issues

Implicit Pension Liabilities and Solvency

In the academic literature, inter-temporal budget constraint models, pioneered by Hamilton and Flavin (1986) and Wilcox (1989), play an important role in assessing public sector solvency. These models typically try to assess if, in net-present-value terms, future revenues are equal to future expenditures. To maintain long-run public sector solvency, adjustments are required if, in net-present value terms, expenditures exceed revenues.

In the context of financing old age security, this argument is extended to the concept of implicit pension liabilities (IPD). It is often argued that standard debt sustainability indicators should be enriched with a measure of implicit pension liabilities to provide a better performance indicators for fiscal sustainability and solvency. (Holzmann, Palacios and Zviniene, 2001).

While previous studies (Feldstein and Seligman 1981, Moody’s 1998) show that markets and rating agencies take unfunded pension liabilities of corporations into account when determining share prices and ratings, Truglia (2000, 2002) argues that the situation is entirely different for the impact of unfunded public pension liabilities on sovereign credit risk.

Truglia (2000, 2002) states that to-date, net-present-value estimates of implicit pension liabilities have not influenced Moody’s sovereign credit risk ratings. The reason for this is that

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1 I would like to thank Augusto de la Torre, Luis Serven, Robert Palacios, Klaus Schmidt-Hebbel and Vincent Truglia for helpful comments and suggestions. The usual disclaimer applies.

2 Implicit pension debt (IPD) refers to the direct and implicit liabilities that the present pension system imposes on government finances. The size of implicit pension debt is affected by factors such as the pension system, pension benefit levels, retirement age, replacement rate, indexation mechanism and discount rate. IPD depends further on the age distribution of the covered population and on a set of assumptions about economic and population growth, wages growth, vesting rules and future rules of the pension system.

3 Vincent Truglia is managing director of the Sovereign Risk Unit at Moody’s Investor Service.

4 Truglia emphasizes that to-date implicit pension liabilities have not influenced Moody’s rating, however, this does not imply that this will not be the case in the future. “The longer governments wait to tackle this problem, the higher the risk that our assessment is wrong. Therefore, if governments do not tackle these issues in a timely manner, and if
for one, net present value calculations are highly susceptible to sizeable swings depending on relatively small changes in a number of parameters. As governments can radically reduce the net present value of implicit pension liabilities through relatively small changes in existing pension schemes, i.e., by changing the retirement age, net present values of implicit pension liabilities might overstate the urgency for drastic reforms.

Second, and more importantly, while net-present-value calculations of future pension liabilities provide a projection of a given scenario, they do not assign a probability that this projection will actually come true. Assessing fiscal solvency on the grounds of projected implicit pension liabilities alone does not account for the fact that policy makers tend to change the parameters of the present pension system, and hence the level of implicit pension liabilities before financing concerns become too pressing.

While a pension promise is similar to a government bond in the sense that it represents a claim on future income, it is well recognized that society treats both claims quite differently. It is generally accepted that pension promises may be changed in ways that debt instruments would never be altered. Truglia (2002) points out that while no industrialized country has defaulted on its debt since World War II, almost every industrialized country has adjusted their pension system in ways that changed the original contract, i.e., by increasing the retirement age and/or changing the benefit formula. The fact that pension reform is generally not referred to as pension default illustrates that society differentiates between changes in contractual terms of public pension and debt claims.

“When assessing credit risk, the fact that society distinguishes among claims on future income flows in a way that favors creditors over pensioners and other beneficiaries of government income transfers, [indicates that] the risk posed by future pension claims may be less than net-present-value calculations would seem to indicate. As a results, in practice, large future pension claims have not greatly influenced our ratings of government debt in the industrialized world, even where net present value calculations would indicate very substantial claims on government resources over a 20-30 year time horizon. We simply expect that the government will “default” in the future on its pension promises as currently written in law in a way that will favor creditors.” (Truglia 2002, p. 2)

Reform Optimism and Liquidity Constraints

A significant issue concerning the switch from a pure PAYGO system to a multi-pillar system with a funded pillar, are transition costs. Transition costs arise through the need to pay off the debt of the old system. In many cases, transition cost have proven higher than expected. On the one hand social security reformers may have been too optimistic in their assumptions on key macro variables, such as growth in income and tax revenues, for future transition deficits. On the other hand projections generally only accounted for partial transition costs (e.g., Mesa-Lago 2000). Although transition deficits associated with minimum pension guarantees, explicit or implicit guarantees of minimum returns of private pension funds, costs of recognition bonds, - now increasingly associated with potentially explosive costs-, were considered in pre-reform projections of transition deficits, the validity of simulations rested on the assumptions taken.

we see the debt begin to build up too rapidly, the implication is clear: a government’s debt would have to be downgraded.” (Truglia, 2000, p. 207)
With the benefit of hindsight, these assumptions may have proven overly optimistic in some cases. Further, insufficient regulation of the “rules of the game” of transition from the PAYGO to the fully funded system, as in the case of Bolivia, led to a higher than expected number of beneficiaries under the old system. As a result, the actual payment of benefits under the old system has far exceeded projections made when the new legislation was drafted.

The Chilean experience shows that initial projections of the transition costs have understated the true fiscal costs by more than half (Mesa-Lago 2000). While only time will reveal the full costs of system transition, in the short-run the need to finance these cash burdens has imposed severe liquidity constraints. They have also induced governments to borrow heavily from privately administered pension funds, thus greatly reducing risk diversification in pension funds. These issues are explored in more detail below.

II. Towards a Framework

The fact that Moody’s does not account for implicit pension liabilities in their country risk ratings does not rule out that pension reforms (and in particular the financing of the transition deficit) have no impact on country risk premia. It is often argued that during the transition period, when implicit debt is made explicit, the market perception of sovereign risk might rise as the observable debt burden increases.

To date no careful empirical study exists that analyzes the impact of pension reforms on country risk. The lack of empirical studies possibly reflects the difficulty of such a task. In an attempt to better understand potential links between pension reform and country risk, we use the literature on country risk as a starting point to develop some guideline for future research.

The literature suggests a number of fundamentals as possible determinants for country risk including measures of liquidity and solvency, macroeconomic fundamentals and external shocks (see e.g., Edwards 1986, Haque et al. 1996, Cline and Barnes 1997, Eichengreen and Mody 1998, Kamin and von Kleist 1999, Min 2000, Fiess 2002).

Within this framework, two main channels of how pension reform might impact country risk can be established. First, pension reform can change the level of implicit and explicit liabilities and as such, potentially impact the perception of solvency. Second, it is widely argued, however not generally accepted, that pension reform positively impacts economic growth. The relationship between pension reform and growth stems from an assumed direct effect that pension reform may have on growth through savings and capital accumulation, and through an indirect growth effect through the development of capital markets.\(^5\)

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\(^5\) Proponents of a link between pension reform and economic growth usually point out that the reform positively affects national saving and capital accumulation and hence contributes to economic growth. The relationship between pension reforms and capital market development is also often considered important for economic growth. It is usually argued that pension funds and other institutional investors create long-term contractual savings and stimulate the development of securities market. To the extent that development of financial markets lead to independent and robust contribution to economic growth, radical pension reforms could be conducive to accelerating economic growth.
However the causal links between pension reform and economic growth are often considered ambiguous, on both theoretical and empirical grounds (Singh 1996, Linciano 2000) and extremely difficult to quantify and prove, as empirical analyses have to deal with complex dynamic interactions and severe data restrictions (James 1996).  

Quantifying and proving a relationship between implicit and explicit pension liabilities and country risk seems equally difficult. To do so it is necessary to disentangle at least two simultaneous effects which are not directly observable and likely to impact country risk in opposite directions: (1) an implicit-to-explicit debt conversion is likely to increase country risk if financial markets are myopic and suffer from fiscal illusion; and if governments are liquidity constrained; (2) if financial markets value implicit pension liabilities, a radical pension reform that manages to reduce the level of implicit pension liabilities is likely to be rewarded with a discount on country risk as long-term solvency is improved.

III. Empirical Issues

Figure 1 shows the EMBI spread, a series of idiosyncratic country risk (Fiess, 2002), the Institutional Investor’s Country Credit Rating Index and the debt/GDP ratio of Mexico from 1994 to 2000. Mexico’s pension reform was fully implemented in July 1997. Based on casual observation of the information provided in Figure 1, it appears that Mexico’s pension reform had no direct impact on country risk.

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6 The limited empirical evidence appears to indicate that growth effects of pension reform are positive. (e.g. Feldstein and Samwick 1996, Kotlikoff (1996), Holzmann (1997), Walker and Lefort (2002), Corbo and Schmidt-Hebbel 2003). However, since most of the empirical evidence for Latin America is for Chile, more country evidence is needed before this claim can be generalized.

7 If financial markets do not suffer from fiscal illusion, a trade-off between implicit and explicit pension liabilities should be of little consequence.
Figure 1: Did Pension Reform Impact on Mexico’s Country Risk?

Note: Increase in Credit Rating indicates a lower credit risk rating.

However, no visible impact does not imply that pension reform has no impact country risk at all. It is likely that a pension reform will impact country risk through multiple and highly complex dynamics, which might even cancel each other out. Below we list some empirical issues that need to be taken into account when considering the impact of pension reform on country risk.
Transition Financing

In theory, a government could pay off its total implicit debt by issuing checks to all transition workers and pensioners who have accrued rights under the old system. This would make all implicit debt immediately explicit at the time of the reform. For budgetary reasons, reforming countries generally did not choose this option (James 1999), but rather adopted a mixture of instruments to finance the transition deficit in order to spread out the fiscal costs of transition over time.  

The academic literature has not yet reached a consensus on how different transition deficit financing methods influence net efficiency gains of pension reforms. Simulation studies indicate that a different mix of instruments can have a substantial impact on the reform outcome, and hence on country risk.

New Implicit Liabilities

Measuring implicit pension liabilities is a difficult task and comparing implicit pension liabilities pre- and post reform is not straightforward as a counterfactual measure of implicit liabilities without reform is not observable. Country experiences show that many pension reforms have introduced new implicit liabilities, such as minimum pension guarantees, which might even have raised the level of implicit pension liabilities.

In the case of Chile, Schmidt-Hebbel (1999) and Schreiber (2001) find that the costs of minimum pension guarantees are not negligible. Schreiber (2001), treating wage growth as stochastic and aggregating over all pension affiliates, finds in simulations that the costs of minimum pension guarantees are directly related to capital market returns and wage growth. In particular, low capital market returns are found to lead to a high probability of costs in the double-digit range when expressed as a percentage of 1998 GDP. Mexico’s new pension system offers a “life-switch option” instead of recognition bonds to transition workers, it allows transition workers to chose upon retirement from the system (old or new) which will give them the highest level of benefits (Rodriguez 1999)). The costs of this “life-switch option” are also likely to be high if market returns are below expectations. While the costs of the Mexican “life-switch option” will be phased out when the last transition worker retires, the Colombian pension system allows workers to switch indefinitely between the public and the private system. This makes it even more difficult to put a cost on this new implicit pension liability.

The case of Bolivia is also instructive, as the transition proved more costly than initially anticipated (see Box 1). When the Bolivian reform was designed and implemented, insufficient attention was paid to the institutions that were to govern the transition from the old to the new

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8 There are many different ways to finance transition costs and countries usually apply a mixture of instruments (James 1999). Transition costs can be financed (1) through a reduction of the value of IPD: (i.e., by downsizing the old system through reducing benefits and increasing retirement age; by retaining a public PAYGO pillar in the new system, (2) through special revenue sources (i.e., privatization revenues from public enterprises) or use general taxation or borrowing (through fiscal adjustment or debt financing).

9 See Linciano 2000 for a review of recent simulation studies.
system. While a regulatory body was set-up to govern the new private pension funds, the system transition itself was insufficiently regulated, inviting fraudulent claims and a lax interpretation of the rules for transition workers. This has contributed to higher than expected transition costs.

If pension reform has adverse impacts on solvency and/or liquidity, it is likely that this should negatively impact a country’s risk premium.

Captive Finance

How private pension funds are regulated can also impact country risk. In Latin America, most pension funds’ investment strategies are affected by quantitative regulations that limit the extent of investment in specific kinds of assets. These restrictions are more severe for equities and foreign securities than for fixed-income securities. Investment in foreign securities is still not permitted in Colombia, El Salvador, Mexico, and Uruguay. Mexico and Uruguay also impose floors on investment in government securities.

Portfolio limits for pension funds can produce a guaranteed market for government bonds and thus help smooth a debt-financed transition. However, in the longer-term portfolio limits can undermine any benefits associated with a fully funded pension system for aggregate savings, economic growth and capital market development (Axia 2000).

Yermo (2002) further points out that while pension fund administrators in Latin America have been relatively efficient as financial risk managers, the system has not been effectively insulated from political interference. Pension funds are effectively used by the governments as captive sources of finance. In Argentina, the government has gone so far as to appropriate the pension assets kept in the banking system and defaulted on the government bonds after exerting pressure on the pension funds to increase their exposure to these assets.

Table 1: Pension Fund Portfolios (%) December 2000

<table>
<thead>
<tr>
<th></th>
<th>Gov’t Securities</th>
<th>Corporate bonds</th>
<th>Financial institution securities / deposits</th>
<th>Equities</th>
<th>Investment funds</th>
<th>Foreign securities</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>56.0</td>
<td>2.8</td>
<td>15.6</td>
<td>12.3</td>
<td>8.2</td>
<td>4.5</td>
<td>0.6</td>
<td>100</td>
</tr>
<tr>
<td>Bolivia</td>
<td>69.5</td>
<td>3.7</td>
<td>23.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>3.7</td>
<td>100</td>
</tr>
<tr>
<td>Chile</td>
<td>35.7</td>
<td>4.0</td>
<td>35.1</td>
<td>11.6</td>
<td>2.4</td>
<td>10.9</td>
<td>0.2</td>
<td>100</td>
</tr>
<tr>
<td>Colombia</td>
<td>48.8</td>
<td>18.6</td>
<td>27.1</td>
<td>2.3</td>
<td>0.0</td>
<td>0.0</td>
<td>3.2</td>
<td>100</td>
</tr>
<tr>
<td>El Salvador</td>
<td>71.3</td>
<td>0.0</td>
<td>25.3</td>
<td>3.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100</td>
</tr>
<tr>
<td>Mexico</td>
<td>92.6</td>
<td>5.4</td>
<td>2.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100</td>
</tr>
<tr>
<td>Peru</td>
<td>9.0</td>
<td>18.6</td>
<td>34.0</td>
<td>29.0</td>
<td>0.7</td>
<td>6.7</td>
<td>2.1</td>
<td>100</td>
</tr>
<tr>
<td>Uruguay</td>
<td>61.4</td>
<td>1.9</td>
<td>34.9</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.8</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note: Information for Colombia refers only to the mandatory pension fund system.*

*Source: AIOS, Superintendencia Bancaria de Colombia, Yermo (2002)*
Counterfactual

To fully assess the impact of pension reform it is necessary to make a comparison to a counterfactual, which is unfortunately unobservable. In the case of Bolivia (see Box 1), social unrest forced minimum pension increases. As social discontent about economic conditions is likely to have occurred independent of pension reform, it is plausible that pension expenditures would have also increased under an unreformed system.

Idiosyncratic Country Risk

Regarding country risk implications, an empirical investigation faces the problem of disentangling global risk from idiosyncratic risk, as only the latter is relevant when evaluating the impact of pension reform on country risk. Sovereign bond spreads are often used as a measure of country risk. However, bond spreads are affected both by idiosyncratic and global factors (Fiess, 2002). Global factors were primarily responsible for increasing country risk during the Asian and Russian crisis. As the Asian (1997) and Russian (1998) crises coincide in time with the implementation of many pension reforms in Latin America\(^{10}\), extreme care has to be taken when isolating the impact of pension reform on country risk. Intervention studies or time dummies are unlikely to be appropriate.

Isolating Pension Reform from other Structural Reforms

Pension reforms were generally not carried out in isolation. Corbo and Schmidt-Hebbel (2003) point out that the 1981 pension reform in Chile was part of a wider structural reform effort which included fiscal adjustment, labor market reform, financial liberalization and capital market reforms. The complementarities of these reforms make it extremely difficult to properly isolate the impact of a specific reform. It is further likely that their combined impact on growth or capital market development was larger than the individual impact of any given reform.

IV. Conclusion

This note argues that generalized statements that pension reform helps improve government finances are not necessarily true: (1) due to a different contractual nature of pension liabilities, a positive impact of pension reform on solvency is not as obvious as theoretical models claim; (2) pension reforms can create new implicit and explicit liabilities, (3) empirical evidence shows that pension reforms can produce severe cash-flow problems in excess of initially projected transition costs, and hence seriously constrain public sector liquidity.

Box 1: Bolivia – A Transition More Costly than Expected

In 1996, the Bolivian pension system was insolvent and illiquid. A structural pension reform was implemented which terminated the old defined benefit Social Security System and introduced a new system based on defined contributions paid by the employee and, to a lesser extent, by the employer. The new pensions are administered by private fund managers, under supervision of a regulatory body.

While at the time of the reform it was estimated that the transition costs were to decline steadily and disappear completely some time after 2037\(^1\), with the benefit of hindsight observers agree that this projection was far too optimistic. In fact, the transition related cash-flow gap has been steadily increasing from 4.0% in 1998 to 5.0% of GDP (see Figure 1).

The increase of Bolivia’s pension related deficit has been attributed to a series of factors (Revilla 2002, IMF 2003): The Government has allowed the law to be loosely interpreted allowing a higher number of early retirees. Some groups which were not initially covered have managed to retire under the old system. The number of fraudulent claims has also been on the rise, estimates indicate that half a point of GDP are fraudulent payments. Furthermore, the Pension Law introduced an indexation linked to the exchange rate which has proven very costly. The indexation mechanism was recently reversed. Finally, following social unrest, the government introduced a minimum pension of B$ 850 per month in 2001 - nearly twice the minimum salary. In many cases, the new minimum pension substantially exceeds original entitlements.

It is now realized that when the reform was designed and implemented, little or no attention was paid to the institutions that were to govern the transition from the old to the new system. While a regulatory body was set-up to govern the new private pension funds, the system transition itself was insufficiently regulated, inviting fraudulent claims, a lax interpretation of the rules for transition workers, and higher than expected transition costs.

\(^{1}\) Von Gersdorff (1997) estimated the fiscal cost of the pension reform as steadily declining from 2.72% in 1998 to about 1.95% in 2002 to 0.18% in 2037
Bibliography:


