The Political Economy of Structural Pension Reform

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Abstract

This paper examines the political economy of structural social security reform—the shift from a publicly managed, pay-as-you-go, defined benefit system to one that includes a defined contribution, funded, privately managed pillar. We analyze the connection between the pre-existing conditions in a country and the reforms that are likely to succeed and describe some of the strategies that policy-makers have used to overcome opposition to reform. The paper addresses three central questions. How have political and economic forces influenced the probability of structural reform? How have these factors influenced the nature of reform, especially its public-private mix? How have reforming countries overcome resistance from powerful interest groups? We answer the first two questions through quantitative analysis and the third question through qualitative case studies of a smaller number of reforming countries in Latin America and the transition economies. We provide examples of the many trade-offs and forms of compensation that governments have used to build a coalition in favor of reform when political power is dispersed. Results of the analysis show that a large implicit pension debt (the present value of the pension obligations of the government to contributors under the old pay-as-you-go system) helps put pension reform on the political agenda but then constrains the degree of funding and privatization that can be achieved—this offers evidence of path dependency. The existence of private financial organizations such as funded voluntary pension plans signals institutional interests that speed the adoption of a mandatory funded pillar. Factors such as cultural, linguistic and geographic proximity to "first movers" play a key role in explaining how reform ideas diffuse across countries.

The Political Economy of Structural Pension Reform

Many policies that are desirable for economic reasons have not been implemented for political reasons. This discrepancy between economics and politics has led both economists and political scientists to begin thinking about the political economy of reform. They have already done considerable work on the political economy of macroeconomic reform and trade policy, emphasizing factors such as incomplete information, time inconsistency of preferences, credibility problems, path dependency and interest groups as major obstacles to reform (Grindle and Thomas 1991; Nelson 1990 and 1994; Rodrik 1994; Tommasi and Velasco 1995). There is relatively less work on the political economy of sectoral reform (but see Nelson 1997; James 1986, 1993, 1998b). This study addresses this gap, using the case of pension reform.

Public pension schemes are the largest fiscal program in many countries, and through the world these schemes are in serious trouble. Declining fertility rates and increasing life expectancy have exerted financial pressures on traditional pay-as-you-go, defined benefit (PAYG DB) systems, threatening their sustainability. Thus far, most countries have reacted by altering the parameters (rates of contributions, benefit calculations and retirement age) of their existing systems. But a growing number of diverse countries, such as Argentina, Sweden, Hungary and Kazakhstan, have carried out major structural changes, shifting from single-pillar schemes to "multi-pillar" schemes that add a fully funded, defined contribution (FF DC) pillar to a downsized PAYG DB pillar. Although funded systems can in principle

be publicly or privately managed, the recent wave of multi-pillar reforms has conferred management responsibility for the second or funded pillar to the private sector, which invests pension funds in the market. Proponents of multi-pillar systems argue that they are more fiscally sustainable and growth-enhancing, due to favorable impacts on labor markets, long term saving and financial market development. Opponents dispute these claims.

This paper does not seek to evaluate these economic arguments about the merits of multi-pillar systems. Rather, it examines the political economy of the reform process by analyzing the connection between the pre-existing conditions in a country and the reforms that are likely to succeed and by describing some of the strategies that policy-makers have used to overcome opposition to reform. The paper addresses three central questions:

- How have political and economic forces influenced the probability of structural pension reform?
- How have these factors influenced the nature of the reform, particularly its public-private mix?
- How have reforming countries overcome resistance from powerful interest groups?

In the first section of the paper, we use quantitative analysis to answer the first two questions. In the second section we answer the third question using qualitative case studies of a smaller number of reforming countries in Latin America and the transition economies. These provide more detailed analyses of political strategy than can the econometric analysis.

Mandatory multi-pillar systems are a relatively new way of providing social security. Chile was the first country to implement this system, in 1981, followed within the same decade by Switzerland and the United Kingdom. Six other countries implemented structural reforms during the first half of the 1990s, and eleven more countries undertook reforms in the second half of the 1990s (Figure 1). Among the structural reformers, eight are in Latin America, nine in Europe and three in the Asia/Pacific region. Since structural reform is under consideration in many additional countries, we are not yet at an equilibrium. Therefore, by taking this snapshot, it is more accurate to say that we are analyzing the speed of reform rather than the ultimate probability of reform. Is this process random, or can we predict which conditions are more fertile for reform? We hypothesize that factors such as cultural, linguistic and geographic proximity to "first movers" play a key role in explaining how reform ideas diffuse across countries via communications and demonstration effects and find econometric support for this argument. Additionally, we expect (and find) that the existence of private financial organizations such as funded voluntary pension plans signals institutional interests that speed the adoption of a funded mandatory pillar.

Among countries that have implemented structural reforms, the details vary in many ways. In this paper we focus on differences in the public-private mix of benefits. The proportion of total expected benefits that stem from the private pillar ranges all the way from 0 to 100 percent. Again, we analyze whether this choice is random or follows some predictable order. We hypothesize that path dependency plays a strong role here: legacies from past systems become incentives or constraints on design possibilities for new systems. In particular, we expect the size of the implicit pension debt (the present value of the pension obligations of the government to contributors under the old PAYG system) to play

a pivotal role in determining the degree of funding and privatization that can be achieved by reforming countries, and our econometric results strongly support this expectation.

Pension reform involves winners and losers. Governments that successfully reform must gain majority support and mitigate minority opposition through a variety of techniques that increase the number of winners, decrease the number of losers, and change peoples' perceptions about the category into which they fit. We hypothesize that the shape of the new pension system, in particular its public-private mix, depends in part on the fragmentation of power within the political system, which determines how many and which groups must be placated. The first section of the paper examines quantitative evidence for this hypothesis, and the second section gives examples of many trade-offs that reformers have made to accommodate dissenting groups when political power is dispersed.

The Timing and Nature of The Pension Reform Package

In this section we assess the effects of several variables on the probability and nature of pension reform through econometric analysis. The size of the implicit pension debt is the most important explanatory variable, but several other variables also effect the outcome.

Dependent Variables

In this analysis we examine two dependent variables: (i) the probability that a country has undertaken a structural reform (PROB), and (ii) among those that have done so, the magnitude of expected benefits from the new funded, privately managed pillar relative to total benefits in the multi-pillar system (%PVT).

Probability of Structural Reform (PROB)

The definition of the first dependent variable is fairly straightforward, and we use a probit to analyze it. We considered countries to have adopted a structural reform if the government has mandated the establishment of a privately managed, funded pillar through legislation or other official action or if it has changed the format of its PAYG pillar from DB to notional DC, in which benefits ultimately depend on contributions plus a shadow rate of interest imputed by the government.

Private sector share (%PVT)

The second independent variable, %PVT, is somewhat more complex. The public-private division of responsibility is clearly a salient feature of new social security systems, but it is also a multi-dimensional concept, making quantification difficult. Most basically, it is evident in terms of the inputs or outputs of the system, that is, in terms of the share of total contributions going to the private pillar or the share of total benefits that the private pillar is expected to generate. Unfortunately, the input or contribution going to the public pillar is often unknown: in some cases (for example, Australia and Chile) the public pillar is financed through general government revenues rather than an earmarked payroll tax, and in other cases (for example, Argentina and Poland) a single payroll tax covers the

transition deficit stemming from the old system jointly with the on-going costs of the public pillar in the new system. Therefore, we employ an output or benefit-based measure of "privateness" in the reformed pension schemes. In this measure we define %PVT as the proportion of the total expected benefit that derives from the private pillar.

Even expected benefits, used in this paper, are also not easy to measure. To develop this variable, we simulate the benefits that a typical worker can expect to get from the public versus private pillars in the long run. For the public pillar benefit we simply apply the stated rules or formula of the state-guaranteed pension, even though this guarantee is always subject to change in the future. This expected benefit will vary widely among workers. For example, in the case of a minimum pension guarantee, a high earner will get nothing from the state, since his or her private pillar benefit will exceed the minimum, while a low earner (and most women workers) will depend heavily on this guarantee. Similarly, in countries with flat benefits (uniform for all contributors), the public share of total benefits will be much higher for women and low wage earners generally, while this is not true when the state benefit is positively related to earnings. We circumscribe this heterogeneity problem by using the "average wage" worker in each country (according to the ILO statistical compendium for 1995 urban manufacturing employment).

The private pillar is more problematic to simulate because the expected benefit will depend on: (i) the number and timing of years of payroll contributions, (ii) the rate of return to the invested funds, (iii) the rate of wage growth over working life, and (iv) the percentage of the payroll contributed. Consider, for example, a 10 percent contribution rate to the private pillar that is projected to yield a 40 percent replacement rate of final wage. A one percentage point increase in the contribution rate will increase the private benefit by 10 percent, or 4 percentage points, while an increase of one percentage point in the annual rate of return will increase the benefit by 20 percent, or 8 percentage points. Although the contribution rate is determined by law in each country, the remaining variables must be assumed, and the results of our simulations are highly dependent on these assumptions. In our base case we made fairly standard assumptions: (i) 35 years of payroll contributions, (ii) 4.5 percent rate of return on investments, and (iii) 2 percent yearly growth in wages. In this analysis we make uniform assumptions about these variables across countries (unless the government has dictated specific interest rates), but in the real world differences in growth rates, interest rates and average contributory years across countries will also lead to differences in their total benefits and the private share.

Table 1 and figure 2 display the results of the simulation for the public and private benefits and %PVT for the "average" worker in each reforming country. The private share varies from 0 percent in Latvia and Italy to 100 percent in Chile and El Salvador. Most OECD countries are in the middle. It is clear that significant variations exist in the anticipated role for state versus market mechanisms in the provision of future pension benefits. We explore whether these differences are random or follow some systematic pattern.

Independent Variables and Hypotheses About Their Impact

Our major hypothesis concerns the impact of the implicit pension debt (IPD) on PROB and %PVT. For reasons given below, we hypothesize that a large IPD increases the probability or speed of a major reform but decreases the %PVT that will eventually emerge. Other variables may have smaller effects.

Implicit Pension Debt (IPD)

The term "implicit pension debt" has, unfortunately, been used to mean several different things (see Van der Noord and Herd 1994), such as:

- *the stock of obligations accrued to date* (also known as *the termination hypothesis*)—the present value of the accrued rights that current workers have in the old system at the current time;
- *closed system flows*—the present value of the future cash flow deficit, taking into account all future benefits and contributions of current affiliates; and
- *open system flows*—the present value of the future cash flow deficit, taking into account all benefits and contributions of current and future affiliates, up to some specified date.

Each of these concepts has different uses. For our purposes, the first concept is most relevant, since it informs us of the obligations of the old system that remain and must somehow be financed when a country makes a transition from a PAYG public system to a new system with a privately managed, funded pillar. Additionally, the first IPD concept is the one most analogous to the explicit debt that is matched by bonds, which reveals how much the government owes today. By construction, it will be larger in countries with mature systems, older populations, a high level of coverage, and generous benefits. We measure it as a proportion of GDP.

When part of the old contribution is put into the funded pillar, governments face the "transition cost problem." They must continue to meet their existing obligations by raising contribution rates or other taxes or by issuing bonds, thereby converting the implicit debt to explicit debt. Each of these options, however, has disadvantages. Higher taxes or "contributions" are always unpopular, and the governing party may fear that increasing them will have political costs. At the same time, the government may not want to increase the explicit debt, which is more transparent and readily measured than the implicit debt. Policy-makers may fear that a large explicit debt will lower their credit rating or upset financial markets. Some governments face debt limits that are imposed either by their own rules or by external actors such as the IMF or the European Monetary Union. Further, an explicit debt will raise the government's interest costs. Finally, pure debt finance means that pension reform will not have the positive impact on national saving that is often sought by reformers. These considerations set economic and political limits to the feasible amount of debt financing of structural reform, even though the conversion of implicit to explicit debt does not increase the total public debt.

These constraints on financing a pension transition suggest that a large IPD might have somewhat different effects on the probability and the nature of reform. On the one hand, it may bring social

security to the forefront of the political agenda, hence increasing the probability of undertaking a major reform. On the other hand, once governments have decided to tackle the problem via structural reform, the transition cost problem stemming from a large IPD will dominate and lead to a less aggressive reform. We expect that, when they are confronted with the practical difficulties of financing the reform via debt or taxes, governments with a large IPD will choose a small %PVT in order to reduce their short run cash flow problem by keeping more money flowing into the public PAYG pillar.

Beyond this purely financial argument, a high IPD may also be a proxy for other kinds of path dependencies such as public pressure to retain acquired rights under the old scheme or the strength of an entrenched social security bureaucracy that will resist reform. A high IPD means many pensioners and older workers expect to receive large benefits under the old system and fear that radical change may lead to loss of support for keeping these promises. Social security bureaucracies that managed the old public system may have accumulated power through their monopolistic handling of large sums of money and the employment of large numbers of workers. They are likely to oppose reforms that strip them of this power. The same may be true, in some cases, of labor unions that participated in the administration of public social security systems. This political challenge from older workers and entrenched bureaucrats, proxied by the magnitude of the IPD, strengthens our hypothesis that the outcome for countries with a large IPD will be a less radical reform, or a smaller %PVT.

The next problem concerns the measurement of the IPD. In some cases direct estimates are available, as a result of studies done during the reform process and for other policy reasons (Van der Noord and Herd 1994, Kane and Palacios 1996). For countries for which a precise measure of the IPD is unavailable, we imputed it. Because this variable plays an important role in our analysis, we imputed it in two ways, based on current public pension spending and on the age distribution of the population, to ensure that our results were not sensitive to the imputation method.

In the spending-based method we regressed IPD on public pension spending (as a percentage of GDP) for the set of known countries and used the coefficients of this equation to impute the IPD of the countries for which we do not have direct observations. Current pension spending is not a precise predictor of total obligations, especially for immature systems with few eligible retirees, but the fit is quite good—our equation explained 78 percent of the variance in IPD. However, this method of imputing IPD might introduce an omitted variable problem: a high level of current pension spending might be correlated with a "taste" for a large public sector, so if IPD leads to a small %PVT, we don't know whether this is due to the IPD per se or to the preferences with which it is correlated. To address this problem we added to the equation a second variable, total government spending on goods and services as a percentage of GDP (GOV), designed to control for taste for public spending. We also used a second method to impute IPD that is more exogenous and less correlated with omitted variables.

One of the major determinants of the IPD is the age distribution of the population. An older population corresponds to more pensioners and workers near retirement and a greater present value of their accrued pension rights. Therefore, as a second method, we regressed IPD on the percentage of the population over age 60 for the set of known countries and imputed IPD for the others based on this

equation. Because this measure does not take account of generosity of benefits, it explains only 68 percent of the variance in IPD, slightly less than the previous method. This age-based method has the advantage that it avoids the omitted variable problem discussed above. However, it has the potential disadvantage of introducing a new omitted variable—political pressure coming from older workers and pensioners to retain the current system, which may be correlated with our age-based imputed IPD. This is not really a problem for us, as we interpret a high IPD as operating, in part, through these generational pressures. As we shall see below, most of our results are robust to the choice of imputation method.

Government Spending (GOV)

Although economists generally assume uniform tastes, it is possible that some societies have a preference for or political ideology in favor of more public sector intervention in the economy that would also influence the nature of their social security systems. To test this hypothesis we introduced government spending on goods and services as a percentage of GDP (GOV) into the equation, expecting that it might signal such social preferences and therefore lead to a smaller %PVT as well as a smaller probability of structural reform.

Explicit Debt (DEBT)

From an economic point of view, the implicit and explicit debt are largely interchangeable (except that legally it may be easier to renege on the implicit debt, which may therefore already be discounted). But from a political viewpoint they may be quite different, since the explicit debt is much more transparent than the implicit debt. For many governments the level of explicit public debt is an important factor shaping the choice of policy designs, and international organizations such as the IMF reinforce this predisposition. We therefore include DEBT, the explicit debt as a proportion of GDP, in our analysis.

A large explicit debt may make officials in the Ministry of Finance keenly aware of the need for a pension reform that reduces the government's future fiscal obligation. Additionally, the creation of a funded pillar may raise the domestic savings available to hold the national debt on a long term basis, thereby reducing its reliance on foreign creditors and short term loans. For example, policy-makers in Mexico claimed this was an important motivating factor. At the same time, high levels of debt may become an obstacle to structural reform because of the difficulties in increasing the debt still further to cover the short run transitional costs of reform. The net impact of explicit public debt on the probability of structural reform is therefore unclear.

The impact on %PVT is similarly ambiguous. On the one hand, high levels of public debt may diminish the %PVT among the reforming countries because of their need to avoid the appearance that they are not credit-worthy and to stay within any externally or internally imposed debt ceiling (Brooks 1999; Maxfield 1997). On the other hand, if they expect that creditors will react favorably to radical pension reform as a sign of fiscal responsibility, this effect may be reversed.

Level of Domestic Savings (SAVINGS)

Among the perceived macroeconomic benefits of structural reform are those relating to an enhanced level of domestic savings. Policy-makers plagued by low levels of capital accumulation have been attracted by the potential to increase national saving and develop local capital markets through the creation of funded components to their pension systems (Brooks 1999). Also attractive is the possibility of creating a "loyal" source of savings that is committed for the long term, is not subject to capital flight, permits longer maturities on public debt and reduces dependence on foreign capital. While the theoretical arguments continue on the link between pension reform and aggregate savings, the growth of private savings and financial markets in Chile has been attributed, in part, to its pension reform. We expect that the lower the level of domestic savings as a percent of GDP (SAVINGS), the greater the value of these potential macroeconomic effects of funding and the more likely a country is to implement a multi-pillar pension reform.

The expected impact of a low level of domestic savings on the %PVT is less clear. On the one hand, the desire for more national saving might lead reforming governments to design a scheme with a high %PVT. On the other hand, for countries with little saving to begin with, partial debt financing of the transition costs of extensive reform might use up much of the available savings, and a low level of savings may signal a high discount rate. As a result, they may choose a pension reform with a lower %PVT. Overall, the expected impact of domestic savings levels on the %PVT in reformed pension schemes is ambiguous.

Effective Number of Political Parties (PARTIES)

Most of the preceding variables have a substantial economic interpretation, albeit with political overtones. We now consider a purely political variable, the degree of concentration of political power, as evidenced by the number of political parties in the country.

Political parties provide the principal means for the articulation of differentiated interests in a government. These solve collective action problems among politicians and structure the legislative process along distinct partisan dimensions (Cox and McCubbins 1993). The structure of a political party system, particularly the number of parties it contains, affects the range of interests represented in the reform process and, as a result, the extent of bargaining necessary to build a legislative majority (Sartori 1976).

Multipartism is widely associated with the inclusion of a broad range of interests, including potential "losers," into the reform decision. The extreme version of multipartism, the highly fragmented party system, is associated with unstable political coalitions, credibility problems, and unreliable "veto partners" in reforming governments (Haggard and Kaufman 1992). Accordingly, political theorists have argued that the proliferation of political parties in the legislative arena will impede radical reforms. As the effective number of political parties increases, the capacity of the governing party to push through difficult reforms decreases (Shugart and Haggard 1997). The governing party will not always want a radical reform, but if it does, greater dispersion of political power may enable entrenched interests

to block reform (Immergut 1992, Tsebelis 1990). We hypothesize that the governing party may be unable to undertake a structural pension reform in the presence of a highly fragmented legislative arena. Where structural reforms are implemented, we expect that fragmentation requires more extensive negotiations to pass the reform, resulting in a more moderate design with a smaller %PVT.

Although it is a very rough measure of the dispersion of interests represented in the political process, we use the "effective number of parties" to measure the degree of legislative fragmentation. This variable is measured by $N=1/3p_i^2$, where p_i is the share of seats occupied by the ith party represented in the lower house of the legislature (Laakso and Taagepera 1979; Taagepera and Shugart 1989).

Pre-Existing Funded Plans (PREPLAN)

We hypothesize that the existing institutional structures of pension provision have important effects on the likelihood and success of structural pension reforms. In several OECD countries large privately managed, funded pension plans linked to occupational structures existed on a quasi-voluntary, collectively bargained basis even before the issue of mandatory funded plans arose (Ebbinhaus 1998). In many such countries, in fact, the mandatory funded second pillar came into being when the government made these plans mandatory for everyone. This was the case with Australia and Switzerland. We expect that the prior existence of funded occupational pension schemes (as represented by a dummy PREPLAN) increases the probability of structural reform because it implies lower transition costs and the existence of political constituencies that favor funded systems (financial institutions that will benefit from managing the funds). For similar reasons it may lead to a higher %PVT, although this is less clear. This is because employers are part of the political negotiation about these employer-sponsored plans, and they may be willing to provide "some" benefits but not "most" benefits.

Spanish

One of the issues with which we are concerned is the diffusion of new reform ideas. Countries learn about reform ideas and how they work in other countries (the demonstration effect) by media communication, movement of people and commerce. We would expect that linguistic and geographic proximity would facilitate this learning process. Chile was the first country to adopt the multi-pillar system, in 1981. We therefore use a dummy for "Spanish as the dominant language" as our simple proxy for speed of diffusion.

Other Variables

A variety of other variables undoubtedly help to explain the reform decision in any particular case. For instance, alternative funding sources, such as the pre-existing treasury surplus in the case of Chile or privatization assets in Bolivia, may facilitate the adoption of structural reform. Similarly, a total breakdown of the old system (as manifested in high evasion and arrears rates, an effective retirement age that is much lower than the legal age, large system deficits and government defaults on benefit payments) is likely to facilitate structural reform insofar as it diminishes both the credibility and option

of reverting to the old system. In contrast, strong pensioners' organizations or labor unions may impede reform, since these groups may fear that their benefits will be cut in the process (Pierson 1996). Given our small sample size, however, along with the difficulty in obtaining consistent data on these variables for all countries, it is impossible to include all of them in the regression analysis. The second section of the paper, which discusses key strategies employed by reforming governments to overcome resistance from powerful interest groups, analyzes several of these factors.

Descriptive Statistics

Table 2 presents data on the mean values of the main independent variables for three groups of countries: 19 reformers, 44 non-reformers in their regions and 86 non-reformers around the world. Most striking is the increase in the IPD as we move from the world-wide non-reformers to regional non-reformers to reformers (87 percent, 122 percent and 139 percent of GDP, respectively, when IPD is imputed according to public pension spending; 91 percent, 127 percent and 134 percent when using an age-based imputation). This is consistent with the expectation that a high IPD "puts pension reform on the agenda," both for individual countries and regionally. Interestingly, an opposite effect is seen for DEBT, which falls from 82 percent and 64 percent to 45 percent of GDP as we move from non-reformers to reformers. This suggests that the transparency of the explicit debt and its use as a measure of credit-worthiness may inhibit reforms that will further raise the explicit debt in highly indebted countries. PREPLAN is much higher among the reformers (0.26 versus 0.04 and 0.02) as is the dominance of the Spanish language (0.4 versus 0.2 and 0.1). All of these means values are consistent with our predictions. There is relatively little difference in SAVINGS, PARTIES or GOV among the reformers and non-reformers. Interestingly, the world-wide non-reformers are most dissimilar from the reformers, with the regional non-reformers in-between, suggesting that regional effects may be at work and other countries within the region are likely to reform before those outside do.

Preliminary Results: Rank Order Correlation between IPD and Public-Private Pillars

As a simplified measure of the relationship between IPD and %PVT, we ranked all reforming countries by their IPDs and compared this with the rank order of their %PVT as well as the type of public pillar in the new system (Table 3 and James 1998b). We classified countries into three groups, according to their %PVT as given in Table 1: The first category has a %PVT > 90%, and its public pillar usually consists of a modest minimum pension guarantee. The second category has a %PVT between 45 and 60%; most of these countries offer a universal or means-tested flat public benefit that is medium in size and is often financed by general revenues. The third category includes those systems whose %PVT is 40% or less and whose public benefits are large, positively related to earnings and financed by a payroll tax. We observe a very close inverse rank order correlation between size of the IPD and %PVT.

However, these simple descriptive statistics and rank order correlations do not have the

explanatory power of multiple regression analysis, which considers all the explanatory variables simultaneously and treats %PVT as a continuous variable. We proceed now to that analysis.

Econometric Methodology

We carried out two sets of analyses, to estimate (i) the likelihood of structural reform and (ii) the degree of privatization in the subset of reformers. The first is a probit analysis that estimates the likelihood of a structural reform among two samples of countries: 64 countries from Latin America, Europe, OECD and the former Soviet Union (the regions from which the reformers came) and 105 countries that added observations from Asia and Africa (all the countries for which we could get the relevant data). We used two samples because we conjectured that regional fixed effects might be at work, that the political economy of reform might be different in Asian and African countries where coverage is low and confined mainly to civil servants and employees of large enterprises, many of which are state-owned. Additionally, we did not have data on PARTIES for the larger sample but wanted to test robustness to sample size for the other variables. As discussed above, we used two alternative methods for imputing one important explanatory variable, %PVT.

The second analysis is an ordinary least squares regression predicting %PVT in the nineteen reforming countries included in the analysis. This is admittedly a small sample, driven by the fact that only a small number of countries have undertaken structural reforms thus far. It will be important to rerun these regressions in subsequent years, as the number of reformers grows.

Since some variables used to explain the probability of structural reform are likewise expected to affect %PVT, there is a possibility of bias in the results, owing to covariation in the error terms of these equations. In view of this possibility, we tested for selection bias using a Heckman two-stage selection model, and found no evidence of such bias. We therefore present the results for these equations separately below. The mean values for all variables are presented in table 2, the OLS results in table 4 and the probit results in table 5.

Results: OLS Analysis of %PVT

Our strongest result concerns the determination of %PVT among countries that have undergone structural reform (table 4). Recall that %PVT in these countries ranges from 0 percent in Italy and Latvia to 100 percent in Kazakhstan and Peru. Our regressions explain 84 percent of the variance. Clearly, systematic forces are at work, and the nature of reform is not random.

Most striking in explaining these variations is the strong impact of the IPD, which is almost always significant at the 0.1 percent level, whether the spending-based or the age-based imputation methods are used. When IPD is the only explanatory variable in the model, a change from an IPD of 50 to 100 percent of GDP decreases the degree of private provision by 20 percentage points. This is consistent with our predictions and with the simplified picture presented in table 3. The close negative relationship between IPD and %PVT is illustrated in figures 3A and 3B. Choices made about social

security in the past limit (but do not completely determine) the feasible set for the future. This is probably our strongest econometric result.

Also of interest is the fact that PREPLAN and PARTIES show up as significant when the age-based imputation is used but not with the spending-based imputation. This suggests that current pension spending already incorporates some of the effects of these institutional variables, thereby hiding their independent effects. It is possible that the existence of more voluntary funded schemes implies smaller public pension spending and that more fragmented political parties lead to greater public pension spending ex ante. Thus, when the spending-based imputation method is used, PREPLAN and PARTIES are negatively and positively correlated with IPD, respectively, and the IPD picks up their effects. When the uncorrelated age-based imputation method is used, we find that PREPLAN has a strong independent positive impact, increasing %PVT by 22 percentage points, while fragmented PARTIES decreases %PVT, as predicted. Moreover, both variables affect other features of the reform: in PREPLAN countries the new schemes have been built along occupational group choice lines rather than the individual choice that dominates in countries without powerful pre-existing private pension plans. In countries with fragmented political systems, much of the bargaining has been about issues of distributional concern to specific groups, as discussed in the second section.

None of the other variables in the regression is significant in the OLS equation predicting %PVT, whether taken singly or as a group. Despite its possible proxying for "taste for public spending," GOV is never significant, nor does it change the significance of IPD. Anecdotal evidence about the importance of SAVINGS and DEBT is not borne out statistically. Although the implicit and explicit debt are largely interchangeable economically, clearly they have different political effects.

Results: Probability of Structural Reform (PROB)

We find quite a different pattern of explanatory factors in the probit analysis determining the probability of reform (table 5). Table 6 translates these probit results into reform probabilities. The probabilities are all much higher in the regional sample, consistent with the fact that these are the regions that contain the reformers. But the pattern of significance is quite similar for the regional and global samples and the two imputation methods, so we discuss them all simultaneously. Table 7 presents some evidence on the accuracy of our predictions. Over-all, we predict the reform-no reform decision accurately for over 80% of the countries. However, it is clear that we are less successful in predicting reform probability or timing than we are in predicting %PVT. In particular, the actual proportion that reformed consistently exceeds our predictions.

The significantly positive effect of IPD on PROB is consistent with the agenda-setting theory of IPD and with the descriptive statistics in table 2. An increase in IPD from 50 to 100 percent of GDP doubles the probability of structural reform and a further increase from 100% to 200% doubles it again (table 6); the two increases together raise the probability of reform more than 30 percentage points.

DEBT and SAVINGS have no significant impact here, as was the case in predicting %PVT. Nor

does the fractionalization of political PARTIES—in contrast to theory and evidence from the literature on macroeconomic reform. Possibly this is because the numerous variations in the details of sectoral reforms discussed in the second section mute the effects of resistance resulting from fractionalized parties. At the same time, these three variables taken as a group increase the log likelihood and the accuracy of our predictions to a small extent.

Perhaps most interesting is the consistently strong impact of PREPLAN and SPANISH on the probability of reform. In both samples and all specifications these are significant at the 1 percent level, and each increases the probability of reform by over 50 percentage points (note that none of the countries are both PREPLAN and SPANISH). Two thirds of the reforming countries were either PREPLAN or SPANISH while this is true of only 25 percent of the non-reformers in the regional sample and 12 percent in the global sample. The influence of PREPLAN is additional evidence of the path-dependency of reforms; the existence of voluntary private funded plans in many OECD countries made it easier for them to extend this model by mandating it.

The influence of Spanish is particularly interesting as it throws light on how reform ideas diffuse across countries. We may not be able to predict "first movers"—why was Chile the first to implement a multi-pillar reform? This may have been a random event resulting from the conjunction of fertile economic conditions and a receptive powerful political regime. But once a first move has occurred, other countries may learn from it about possibilities and impacts via a demonstration effect. Successful reform in one country increases the perceived probability of success and therefore decreases the perceived political and economic costs of reform in other countries. Countries are likely to learn more quickly from others that are linked by geographic, linguistic or commercial proximity. Thus, it appears to be no accident that the majority of Spanish-speaking Latin American countries have reformed, that non-Spanish-speaking Latin countries have been slower to reform, that most reforming countries with a low IPD were in Latin America and that structural reform in other regions has been far less prevalent.

At the same time, structural reform has not been limited to Spanish-speaking countries; in fact, the majority of reformers are not Spanish-speaking. Since the 1994 publication of *Averting the Old Age Crisis*, the World Bank's analysis of global social security problems, the World Bank and other international organizations have accelerated the diffusion of ideas via conferences, technical assistance and study tours. This diffusion process may help explain why actual reformers exceed predicted reformers, and why the transition economies in Eastern Europe are now reforming (and adopting the Chilean model) even though they are not Spanish-speaking and did not have large pre-existing private pension plans.

Strategies for Overcoming Opposition to Structural Reform

In the first section we saw that our capacity to explain the shape of structural pension reform, particularly its public-private mix, is much greater than our capacity to predict whether any structural reform will actually take place. While concerns about a growing IPD may put reform on the political agenda in a country and reform innovations may diffuse from culturally proximate countries and through

supportive institutions, a large random term remains in determining exactly where these innovations will be implemented. This random term may subsume factors such as the commitment of key policy-makers and their skill in building coalitions favoring reform.

Pension reform and other social sector reforms are more complicated politically than "first generation" structural adjustment reforms, both in terms of the political processes required for passage and the conditions needed for long term success (Nelson 1997). Whereas structural adjustment reforms could be designed by insulated technicians, implemented through executive decree, and rarely target particular groups, social sector reforms directly affect the interests and eventually require the active participation of consumers and producers as well as approval by an elected legislature. These groups are likely to have strong views that policy-makers must take into account. Through persuasion, negotiation, trade-offs, compensation, and subtle reshaping of the reform, a majority of stakeholders must be convinced that they will come out ahead, especially in a democracy. But even Chile, which was not a democracy at the time of passage, followed many of the strategies described below in order to gain popular support. Some politicians will be more adept at this process than others, which results in the large random term in the probit analysis discussed earlier.

<u>Generational Politics</u>

Many of the expected benefits of structural reform (for example, sustainability, positive impact on long term saving, reduced evasion and labor informality, and improved economic competitiveness) are long run benefits and therefore inherently uncertain. If they do materialize, the major beneficiaries will be the younger generation—those under age 40—who will have an opportunity to build up substantial rights in the funded pillar and whose benefits from the existing system are in jeopardy. The young are often in favor of reform for these reasons, and we have seen that reforming countries with a predominantly young population, and correspondingly low IPD, are more likely to end up with a large %PVT. But even the young face considerable uncertainty about the outcome. Although the expected long run return may be positive, risk is inherent in DC systems, in which pensions ultimately depend on volatile investment earnings. Moreover, this group is difficult to mobilize on pension reform issues since retirement is many years away and they have more pressing concerns such as finding jobs and raising families.

In contrast, pension reform is a salient issue to older workers, and the most crucial issue to retirees. In some cases, most notably Uruguay, politically potent pensioners' organizations have formed around this issue. In most countries pensioners have the highest voting rates and considerable time to invest in political activity. They often see little perceived gain but potential real cost to them from the reform. They may fear that the privatization of part of the social security system will undermine political support for the public benefits upon which they depend—the "generational compact" will have been broken. If taxes are raised to help finance the transition, they may have to pay part of the taxes without reaping the benefits.

To some degree, then, pension politics is generational politics—the interests of the young versus the old. But more basically, both groups need to be won over. Policy-makers who want to enact structural reform must convince the young that they will benefit despite the risk, and they must neutralize the opposition of the older generations by promising that they will not be hurt. This process explains some of the common features found in pension reforms, such as the use of debt finance and the promise of second pillar guarantees.

Pensioners and older workers

Almost universally, pension reforms have protected the rights of older workers and retirees. In most cases older workers (over the age of 50), who will have few years in which to build up individual accounts and who might feel threatened by the uncertainty inherent in financial markets, have been exempted from the new system or strongly encouraged to stay in the old system, and their old-system benefits have been assured. The challenge is to make these promises of protection credible, most convincingly through granting immediate gains, such as the payment of pension arrears (Kazakhstan) or improved public pillar benefits and indexation (Hungary). We saw earlier that countries with many older workers and pensioners (and a large resulting IPD) are likely to retain a large public pillar, thereby demonstrating that contributions will continue to flow in to pay existing pensioners. In almost every case governments have used partial debt-financing for the transition, thereby absolving pensioners of the costs and largely passing them on to younger generations that will also gain the most. When tax financing has been used, the largest component has often been the payroll tax, which again absolves pensioners of the cost.

Younger Workers

At the same time, governments have taken measures in every case to allay the fears younger workers might have about risk regarding their DC plans in the second pillar. These often involve elaborate guarantees by the state, the employer or the pension fund. In Hungary the state guarantees that the second pillar will pay at least 25 percent of the first pillar benefit. This protects workers from downside risk and allows them to reap the full potential benefits of high returns. In Switzerland employers choose the investment manager and must guarantee a minimum nominal rate of return of 4 percent over the worker's tenure with them. The state-run fund that has attracted most affiliates in Uruguay guarantees at least a 2 percent real rate of return on all assets. In Chile and most Latin American countries pension funds keep reserves that are used to recompense individual accounts if their returns deviate substantially (by 50 percent or 2 percentage points, whichever is greater) from the average industry return. Stringent portfolio limits further inhibit risky investments in all Latin American and transition countries that have reformed. These guarantees and portfolio limits have economic costs in terms of non-optimal investments and moral hazard problems, but these are invisible to most workers. They have the more visible political benefits of allaying fears that workers will lose their retirement savings.

Even with these guarantees, switching into the new system has often been voluntary for the

entire generation of current workers, so those who prefer the old system retain their rights to stay there. Besides allaying fears and opposition, this is also a way of reducing the transition deficit, since the total contributions of non-switchers continue to flow into the PAYG system. Moreover, if switching is voluntary, the government can set a lower rate of compensation for past service, based on the preferences of young and less risk averse workers. This saves the government money while at the same time ensuring that no worker will feel he or she has been made worse off, since he or she has choice. Hungary, in particular, devoted considerable attention to choosing the minimum rate of compensation that would induce the "right" number of workers to switch, consistent with its cash flow deficit limits. But even after careful analysis, the government overpaid, in the sense that more workers switched than was expected or desired.

While governments have designed reform policies to convince both pensioners and workers that they will gain from change, they have also taken active steps to convince them that the status quo is not sustainable, the old system is not functioning well, and under the reversion option of the old PAYG system, they will all lose. In Chile, Jose Pinera, the Minister of Labor who processed the reform, went on radio and television weekly to convince workers that they did not want their money to continue disappearing into a "black hole." Hungary and Poland mounted active public relations campaigns, with separate messages targeted to the young and old. In Argentina, Peru and Kazakhstan, where the government was in arrears in paying pensioners and evasion was rife, the evidence visibly demonstrated that the old systems were not working even without a public relations campaign. By all these means— that involved persuasion combined with promises of continued and improved benefits for existing pensioners, guarantees of benefits from the new second pillar, voluntary switching, partial debt-financing of the transition and emphasizing the poor performance of the reversion option, the existing PAYG system—policy-makers have tried to assure broad groups of young and old workers as well as pensioners that they would not be worse off, and most would be better off, after a structural reform.

<u>Institutional Politics</u>

Labor unions, social security bureaucrats and financial institutions are key stakeholders in the politics of pension reform. The first two groups are often, although not always, in opposition to reform. This may be particularly true of labor unions representing public sector employees, where international competitiveness is not a major issue and labor demand may be perceived as inelastic.

Labor Unions

There are several reasons why labor unions may resist reform. They may be especially responsive to the interests of their older members, with whom mutual loyalty and social networks have been built up over the years, rather than their younger members whose job-based affiliation may be only temporary. Union leaders may also support public spending on education, health and other services for their members and their families, and may fear that these services will be cut to help finance the transition. In addition, unions often play an active formalized role in running the old social security systems, which gives

them substantial power over resources and jobs.

To some extent, the reform can overcome the opposition of unions by giving them a role to play in the new system. In Argentina, for example, in response to intense early opposition from labor, the government offered unions the opportunity to operate pension funds in the new system. While their members would not be required to join these funds, the unions obviously hoped that loyalty would hold. This was a crucial deal that won the support of labor leaders and the votes in the congress necessary to enact the reform. Similar deals were made in Hungary and Poland, where OPZZ and Solidarity (the main unions), respectively, are founders (in international joint ventures) of two of the new pension funds. Indeed, Solidarity, a union that was pro-market from the start, was actively involved in the entire Polish reform process, and one of its officials, Ewa Lewicka, became Plenipotentiary for Social Security Reform in the final stage. Involving labor unions in designing the reform is probably a shrewd move, but it will only work with unions that are basically sympathetic to the objectives of the reform. This is most likely to be the case with unions representing private sector workers in competitive environments, which perceive low payroll taxes and efficiency as beneficial for survival and growth.

Social Security Bureaucrats

For similar reasons, social security bureaucrats often oppose a structural reform that will introduce competition into the system and take away their monopolistic control over resources. In some cases, their fears have been assuaged by giving them authority in the new system as well. For example, in Mexico and Poland the government gave the social security bureaucracy responsibility for handling collections, record-keeping and the administration of health and survivors' insurance. Thus, the "privateness" of these reforms, if measured according to bureaucratic decentralization, is much less than privateness as measured according to investment control and benefit provision. This administrative centralization, again, is an option only if the old bureaucracy has the ability and willingness to carry out rather than undermine these functions. In Poland the price of involving the bureaucracy was several months' delay in crediting the early contributions to individual workers and their designated pension funds. In Hungary the old bureaucracy was too outspokenly opposed to structural reform to entrust it with administering the new system.

Private Financial Institutions

In contrast to unions and social security bureaucracies, private financial institutions may have a positive interest in reform. As seen in the first section, countries with large voluntary, funded pension plans (PREPLAN) are more likely to reform. Most developing and transitional countries do not have these plans or other large well-functioning financial institutions before the reform; in fact, one object of the reform is to help them grow. But where these institutions do exist, they often have particular interests that must be accommodated to gain their active support. For example, in Hungary the voluntary pension funds that existed before the reform lobbied successfully for regulations in the mandatory system that matched their own organizational structure, thereby facilitating their participation in the mandatory

pillar. This accounts for the fact that the legal structure of the private pillar in Hungary differs from that in many other reforming countries. In OECD countries as well, the private mandatory pillar was set up to build upon, rather than replace, the large collectively bargained pension system that already existed.

The Politics of Compensation

Generational and institutional interests shape important dimensions of pension reform and help explain how the new system is administered, who can set up pension funds, how the transition is financed and what guarantees are offered. However, pension reform involves many narrow distributional issues that need to be addressed directly. The government has many tools at its disposal to compensate potential losers, including the power to exempt certain groups from the terms of the reform, to grant cash benefits and tax relief to particular groups, to make political appointments that will further its reform efforts, and to make trade offs among or link reforms in multiple sectors, depending on its priorities (Edwards and Lederman 1998). Governments have utilized each of these strategies to build support for pension reform.

Exemption from the Reform (Exclusionary Compensation)

Every reforming country in Latin America has exempted certain powerful groups and allowed them to keep their own privileged schemes. Even in Chile, where an authoritarian military regime implemented the, the new pension system exempted the military itself—as did every other reforming country in Latin America. The judiciary often receives exemption, in order to ensure that a judicial decision will not render the reform invalid. In Uruguay the reform excluded special regimes for bankers, notaries and university professors. It is therefore critical to pay specific attention to the political landscape and organizational power of special interests in each country.

Governments often exempt public sector workers from the first stage of the reform. Their pensions, to begin with, tend to be higher than those of private sector workers. They are an older part of the work force, with more covered retirees. They are more articulate and better organized to maintain their benefits. Since their services face no market test and government directly pays their pensions, they have less to fear from unemployment and lack of competitiveness due to high payroll taxes. In some cases, as in Argentina, local public sector workers have been covered in second stage reforms, as it became clear that their localities would not have the resources to pay the promised benefits indefinitely.

Mexico offers a prime example of the strategic exemption of public sector workers in its 1995 reform. Technocrats within the Ministry of Finance and Central Bank had designed a proposal for a Chilean-style pension reform in 1990. Having encountered firm resistance to this plan within the cabinet, they shelved this design. But the following year, the government of the state of Nuevo Leon approached the same technocrats seeking technical assistance regarding the structural reform of the state-level pension system. With the expertise accumulated from their previous studies, the federal reformers lent assistance in designing a Chilean-style pension scheme for the public employees of Nuevo Leon. Organized interests did not become aware of the scheme until after the state assembly had already

ratified it. The consequence, according to the federal technocrats, was "brutal." The outpouring of public protests, strikes, and at times violent demonstrations led the state government to repeal the reform before its implementation.

In designing the reform proposal, the technicians had failed to understand the organizational and political power of the public sector unions, in particular that of the teachers. Nuevo Leon has a strong, well-organized teachers' union, which belongs to the state confederation of public sector employees (ISSSTE-Leon). In turn, ISSSTE-Leon is affiliated with the federal public sector union (ISSSTE), which lent both financial and organizational assistance for the protest against the pension reform.

Witnessing these events unfold, the technocrats in Mexico City drew valuable lessons that they applied to the national pension reform effort in 1995. Principally, they realized that where unions are broad and cohesive, their interests must be taken into account in designing the reform. Since the federal umbrella union of public sector employees had been alerted to the reform and had lent support to its undoing in Nuevo Leon, it was clear to the federal reformers that the 1995 pension reform would only prosper if ISSSTE were exempted from its terms. This led Mexico to exempt all public sector workers from the outset and therein avoid a battle that could have undermined the entire reform.

Direct financial compensation

Even after specified groups are exempted and guarantees are offered to others, direct financial compensation has often been used to build support for the reform or to convince workers to switch under a voluntary switching regime. In Uruguay, after five previous pension reform efforts had failed, the government devised a new plan that offered a cash subsidy to middle-income participants in the pension scheme. Workers have the option to divide their contribution between the public and private pillar, and those who choose to contribute 50 percent of their 15 percent contribution to the funded DC scheme receive a 25 percent subsidy from the government (providing their monthly income falls below 5,000 pesos or $500). The new plan was approved and more than 80 percent of people with the option have chosen to enter the capitalization scheme.

In Chile and Peru direct compensation came in the form of one-time salary increases to offset the added employee tax burden. In both countries the implementation of the market-based pension scheme involved shifting responsibility for contributions to workers instead of employers. An increase in the workers' gross wages when they entered the new system helped to offset the added burden and give them an incentive to switch.

Eliminating early retirement privileges (before age 55 and sometimes before age 50) was a key element of the reform in Poland, that would help make it financially sustainable and free up resources for the second pillar. But the main old trade union federation (OPZZ) was willing to support reform providing that the system maintained a low retirement age for key groups (such as miners) and/or provided direct compensation for those whose special privileges were about to end. The "new" trade union, Solidarity, also supported the miners. The government agreed that once the reform was passed a

special commission would be set up to figure out an equitable way to phase out these privileges, and this would involve temporary bridge financing. The compromise solution maintained these benefits in the medium term for middle age workers but got rid of them in the long run, and remunerated the transition group for their lost privileges. One might wonder why workers and unions were willing to go along with an agreement to negotiate after the reform was passed, rather than before, when their bargaining power would have been greater. The fact that Solidarity was in the government and one of its officials was Plenipotentiary for Social Security Reform undoubtedly increased the credibility of the government's promise and helped the reform to proceed through the legislature smoothly.

In Bolivia the state assumed responsibility for the unfunded debt of the supplementary pension scheme that had been negotiated by unions to overcome union resistance to the pension and privatization reform. Regulations then required that a high percentage of fund assets be invested in government bonds to finance the resulting deficit.

All of these examples showed how the government used cash compensation to offset lost benefits that were imposed on particular groups by the reform or to encourage voluntary participation in the new scheme.

Indirect and Cross-Compensation

Governments possess the ability to trade-off one policy for another or to link reforms, thereby strengthening both in the process. Thus, if pension reform is a priority issue, the government can compensate an opposition group in some other policy arena without changing the basic pension design. For example, in Mexico the government used tax breaks in other areas to compensate employers for their support of the 1992 Retirement Savings System (SAR), which required an additional 2 percent employer contribution. This was a precursor of the more successful 1995 reform.

In Argentina, the government promised to protect the privileges held by unions in the administration of health care (Obras Sociales) in exchange for labor support for the pension reform. This, along with the opportunity to run pension fund management companies, enabled the Argentine government to gain union support for reform. This strategic negotiation proved critical, in spite of the fact that the president's political party, the PJ, held a majority of seats in the Congress, which should have been sufficient to pass the reform directly. This incident also illustrates the importance of within-party negotiations. The unions were allied with the PJ, and a bloc of labor-linked deputies in the PJ held up discussion of the bill by refusing to concede the necessary quorum. As the legislative session approached the end, the government faced an elevated risk of losing the entire reform if it did not compromise. As a consequence of this compensatory arrangement, Argentina became the first democratic country to introduce privately managed individual capitalization accounts, although at the cost of "gaps" in the broader market-orientation of social services.

As the converse of trading off reforms, coupling of reforms may also help to build coalitions of support. Here again, the Argentine case is instructive, as it linked pension reform and privatization reform. In 1992, President Menem agreed to re-calculate the unpaid benefits owed by the government

to pensioners and to pay them off using 20 percent of the revenue collected from the initial sale of shares of the state-owned petroleum company, Yacimientos Petrolíferos Fiscales (YPF). Privatization had encountered opposition in the Congress, and it only gained acceptance when the government linked it to the solution to the pension dilemma. This arrangement enabled the government to quell the growing hostility from pensioners associations while advancing the march of privatization. By attaching provisions to the oil company privatization, Menem built a coalition of political support for privatization among current retirees who would not have been directly affected by the reform.

Injecting a portion of privatization revenues into the new pension plan also secured support for pension reform in Bolivia. The government used resources from privatization to create a basic pension benefit for all Bolivians over the age of 65, including those not in the contributory system. Additionally, privatization furnished an important source of revenue for financing the transitional costs of pension reform in Peru, Uruguay and Mexico. In Poland too, the government will use privatization assets in support of pension reform in a way that was hammered out with Solidarity officials.

Political Compensation

Broad political rewards comprise another tool that government can use to harness support for reform. Political compensation is a common tool for parties in power, across issues and countries. This may entail the appointment of influential members of one party or interest group to a key position in government, either as a signal to the group that its interests will be taken into account or as a direct exchange for support on a specific issue, such as pension reform.

In Uruguay, two of the three main political parties—the National Party (PN) and the Colorado Party (PC) dominated the governing coalition that introduced private pensions in 1995. The third dominant party, the left-wing Broad Front (FA) remained outside the government in opposition. During the negotiation over the pension reform, which occurred in the months between the election and inauguration of the new government, the PN and PC extended an invitation to the leftist New Space (NE) to join the government. Although the PN-PC coalition held the necessary two-thirds majority to pass the pension reform amendment, it offered the NE a cabinet position as well as a seat at the negotiating table. Though seemingly pointless, this maneuver was an effective political strategy for the government, since the NE represented left-wing and union interests. Anticipating that the pension reform would not only have to pass the hurdle of legislative approval, but potentially of public referendum as well, the government made the strategic decision to incorporate the left wing into the reform to avoid alienating it.

The government in Hungary agreed to postpone new elections for members of the Pension and Health Insurance Fund Board, which supervised the old system, thereby extending their terms in office and dampening their opposition. This would particularly benefit the trade union representatives, institutionalizing their control over substantial financial resources. This bargain was short-lived, however, as a new government came to office the following year and abolished the independent Pension and Health Insurance Funds altogether.

Conclusion

In this paper we have analyzed the political and economic forces that influence the probability of structural pension reform and help determine the nature of that reform, particularly its public-private mix. We find that somewhat different forces determine the probability of structural reform and the ultimate nature of that reform, although both depend on legacies from past systems that become constraints on design possibilities for new systems.

Most strikingly, a large implicit pension debt from the old pay-as-you-go social security system brings pension reform to the forefront of the political agenda, thereby increasing the probability of structural reform. But subsequently this same large IPD makes it more difficult to finance the transition to a funded system and to overcome resistance from entrenched bureaucrats and pensioners, thereby limiting the degree of funding and privatization that ultimately emerges. Also, well-established voluntary private pension plans facilitate the move toward a mandatory funded plan, with substantial private management, providing it is shaped in such a way that their role is maintained and extended, rather than displaced. Beyond this path dependency, we find that reform ideas diffuse along lines that depend on linguistic and geographic proximity. Communication, information and demonstration effects obviously play a crucial role.

While historical and institutional factors have considerable econometric explanatory power concerning the public-private mix of the new system, they are less successful in predicting whether or not structural reform will actually take place. This leaves an important role for the goals, creativity and ability of individual policy-makers to gauge the situations in their countries and come up with strategies that move reform forward. These strategies in countries that have successfully reformed involve shaping the design of the reform package to build a majority coalition of winners from reform, credibly promising pensioners that they will not suffer, postponing some painful adjustments, exempting certain influential groups, compensating groups that fear losses of power or money, and trading off policy concessions or political carrots in other areas. Governments have persuaded pensioners and younger workers, labor unions, social security bureaucrats and financial institutions to support the reform through these means.

To accomplish this requires key policy-makers who hold pension reform as a priority objective and who have the skills needed to negotiate the necessary deals. Country-specific pressures, constraints and opportunities also influence the exact details of the reforms that finally emerge. At the same time, similar difficulties and solutions occur in diverse places, suggesting that countries can learn from each other about the problems they will encounter and the menu of strategies that have been tried, tested, and are likely to work. International organizations such as the World Bank can play an important role in helping to diffuse this information.

Table 1.
Percent Private for the Average Worker after Structural Reform

Country	First pillar	Second pillar	Total Benefit	% Private
Argentina	33%	34%	67%	51%
Australia	25%	33%	58%	57%
Bolivia	4%	42%	46%	92%
Chile	0%	42%	42%	100%
Colombia	0%	42%	42%	100%
Denmark	28%	34%	62%	56%
El Salvador	0%	42%	42%	100%
Hungary	43%	27%	70%	39%
Italy	81%	0%	81%	0%
Kazakhstan	0%	38%	38%	100%
Latvia	49%	0%	49%	0%
Mexico	3%	27%	30%	91%
Netherlands	35%	35%	70%	50%
Peru	0%	42%	42%	100%
Poland	26%	25%	51%	49%
Sweden	35%	10%	45%	21%
Switzerland	30%	30%	60%	50%
UK	17%	17%	34%	49%
Uruguay	38%	25%	62%	40%

Source: Various reports on each system and simulations described in text.

Table 2
Means of Independent Variables for Reformers and Non-Reformers

	IPD (spending)	IPD (age-based)	PREPLAN	SPANISH	DEBT	SAVING	GOV	PARTIES
World-wide non-reformers (N=86)	15.9	-	87.4	90.8	0.02	0.1	82.4	15.9
Regional non-reformers (N=45)	18.4	3.9	121.8	127.2	0.04	0.2	64.4	16.3
Reformers (N=19)	14.9	3.3	138.8	133.9	0.26	0.4	45.1	19.1

Sources:
IPD for France, Italy, Germany, Japan, Canada, UK, US: Van den Noord & Herd 1994
IPD for other countries: Kane and Palacios, 1996 and authors' calculations
PREPLAN and *SPANISH:*authors' calculations
DEBT: Global Development Finance 1998 and OECD Government Statistics
SAVINGS and GOV: World Development Indicators, 1999
PARTIES: Political Handbook of the World, various years and Parline Legislative
Database Worldwide Elections

Definitions::
IPD is the Implicit Pension Debt, or present value of government liabilities for pension benefits to current pensioners and accrued rights of current workers. This is calculated as % of GDP.
PREPLAN is a dichotomous variable coded 1 for the existence of large occupational funded pension system: Australia, Canada, Denmark, Netherlands, Switzerland, United Kingdom and United States, 0 for all others.
SPANISH is a dichotomous variable coded 1 for predominantly Spanish-speaking countries, 0 for all others.
DEBT is Central Government Debt, average for years 1990-1995, except Chile: 1980.
SAVINGS is Gross National Savings (% of GDP) is equal to the gross domestic savings plus net income and net current transfers from abroad.
GOV is general government consumption (% of GDP) - including all current expenditures for all levels of government, excluding most government enterprises. It also includes capital expenditure on national defense and security.
PARTIES is a measure of political fragmentation, defined in the text. It is not available for several countries outside the reforming regions, so is excluded from the analyses of worldwide reformers.

The Regional set includes regions in which structural pension reform has occurred: Latin America, OECD countries and the Former Soviet Union.
The world-wide set includes all these plus a sample of countries from Africa and Asia.

Table 3: Implicit Pension Debt (IPD) and Pension Reform

Country	Age-IPD as % of GDP	Spending-IPD as % of GDP	% PVT	Type Public Pillar
Peru*	37	37	HI	————
Bolivia	45	65	HI	F
El Salvador	47	34	HI	MPG
Mexico	48	43	HI	MPG
Colombia	51	44	HI	MPG
Chile	79	112	HI	MPG
Kazakhstan	88	102	HI	MPG
United Kingdom*	118	118	MED	F

Argentina	125	100	MED	F
Poland	142	241	MED	ER
Australia+	145	96	MED	F(MT)
Netherlands+	174	198	MED	F
Latvia	175	179	LO	ER
Switzerland+	195	215	MED	F(ER)
Denmark+	198	170	MED	F
Italy*	203	203	LO	ER
Hungary*	213	213	LO	ER
Uruguay*	214	214	LO	ER
Sweden	226	197	LO	ER

Sources:
* Indicates actual IPD is used, calculated by the following sources: Hungary, Uruguay and Peru from Kane and Palacios 1996, United Kingdom and Italy from Van Den Noord and 1993. Other countries: Spending-based IPD simulated by authors based on current public expenditure (World Bank 1994). Age-based IPD simulated by authors based on 1990 population over age 60 (World Bank 1994).
IPD is present value of accrued rights of pensioners and workers, under old system.

%PVT is taken from Table 1 according to the following groups:
HI = >90%; MED = 49-60%; LO=40% or less
Types of public pillars; MPG = minimum pension guarantee, financed out of general revenues; F = flat (often supplemented with means-tested benefits), financed out of general revenues or payroll tax; F(MT) = flat with eligibility determined by means test; ER = earnings-related, financed out of payroll tax; F(ER) = ER with flat structure (max close to min). Peru has not yet implemented a first pillar but will probably have an MPG. In Bolivia flat benefit is financed by privatization revenues until these assets are exhausted; shape of first pillar thereafter is unknown.

+ Indicates PREPLAN countries.

Table 4
OLS: Predicting %Private

IPD based on public pension spending

(N=19)	1		2		3		4	
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
IPD	-0.004	-5.75*	-0.003	-4.28*	-0.003	-3.23*	-0.002	-2.05***
PREPLAN	-	-	-	-	0.07	0.61	0.12	0.89
SPANISH	-	-	-	-	-	-	0.03	0.16
GOV	-	-	-0.01	-1.59	0.02	-1.56	-0.02	-1.47
DEBT	-	-	-	-	-	-	0.001	0.41
SAVINGS	-	-	-	-	-	-	-0.01	-0.8
PARTIES	-	-	-	-	-0.04	-1.39	-0.04	-1.26
Const.	1.1	11.20*	1.24	9.66*	1.31	9.65*	1.37	4.13*
Adjusted R-sq	0.64		0.67		0.68		0.63	

IPD based on population > age 60

Variable								
IPD	-0.004	-7.10*	-0.005	-4.93*	-0.005	-5.93*	-0.005	-4.59*
PREPLAN	-	-	-	-	0.22	2.78**	0.23	2.51**
SPANISH	-	-	-	-	-	-	-0.08	-0.7
GOV	-	-	0.004	0.39	0.001	0.2	-0.001	-0.09
DEBT	-	-	-	-	-	-	0.0004	0.24
SAVINGS	-	-	-	-	-	-	-0.01	-1.23
PARTIES	-	-	-	-	-0.05	-2.13**	-0.05	-2.06***
Const.	1.2	12.90*	1.17	10.08*	1.3	13.6*	1.52	6.55*
Adjusted R-sq	0.73		0.72		0.84		0.82	

* Significant at .1% level   ** Significant at 5% level   *** Significant at 10% level
% Private is expressed as a decimal

Table 6A. Impact of IPD on Probability of Reform

	IPD = mean value		IPD = 50	IPD = 100	IPD = 200
Sample size = 64	Age-based IPD	Spending-based IPD		0.260	0.252 0.118
0.121	0.200 0.199	0.438 0.425			
Sample size = 105	Age-based IPD	Spending-based IPD		0.096	0.095 0.036
0.042	0.098 0.101	0.395 0.350			

Note: The predictions hold PREPLAN and SPANISH constant at their means.

Table 6B. Impact of PREPLAN and SPANISH on Probability of Reform

	Preplan=1	Preplan=0	Spanish=1	Spanish=0
Sample size = 64	Age-based IPD	Spending-based IPD		0.753 0.818 0.210
0.194	0.692 0.652	0.145 0.147		
Sample size = 105	Age-based IPD	Spending-based IPD		0.561 0.711 0.079
0.075	0.591 0.529	0.050 0.053		

Note: The predictions use the partial model, with IPD, PREPLAN and SPANISH only. All variables are held constant at their means except for the one being varied.

Table 7 Predicted versus Actual Reform

N = 64: regional

	Spending-based IPD —predictions		Age-based IPD—predictions	
Actual	Reform	No Reform	Reform	No Reform
Reform No Reform	**10** 4	9 **41**	**10** 3	9 **42**
% of predictions correct			80%	81%

N = 105: global

Actual	Reform	No Reform	Reform	No Reform
Reform No Reform	**8** 4	11 **82**	**8** 2	11 **84**
% of predictions correct			86%	88%

These predictions are based on the full model. The partial model (with IPD, PREPLAN and SPANISH only) yielded similar results but slightly less accuracy.

Figure 1.

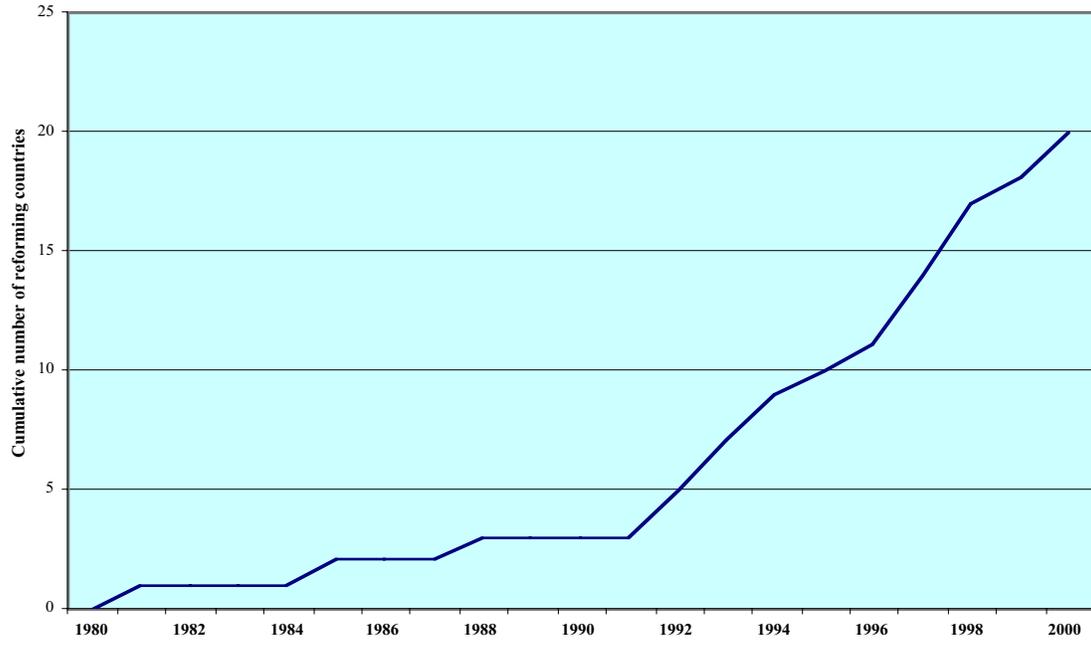**Diffusion of structural reform around the world, 1980-2000**

Figure 2.

Public-Private Mix of Pension Benefits
(Replacement Rate for Average Worker)
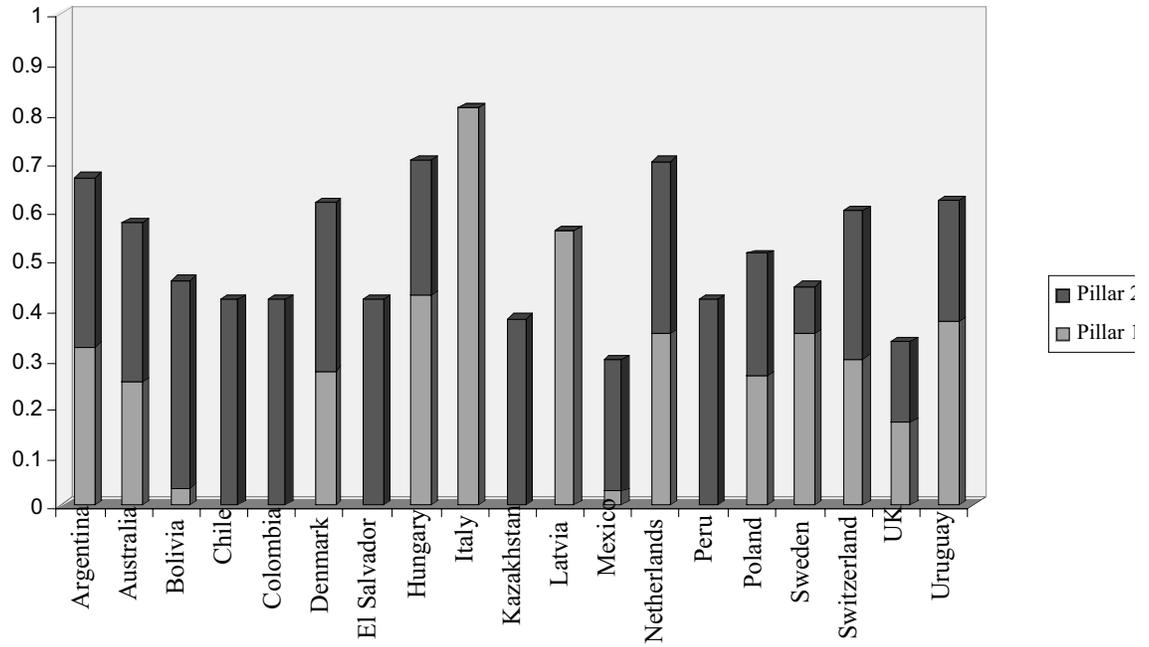

Legend:
- Pillar 2
- Pillar 1

Figure 3A.

**Relationship Between Spending-based IPD and Private Share of
Benefits in Reformed Pension Systems**

Figure 3B

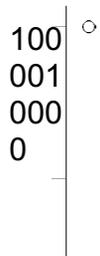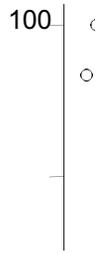**Relationship Between Age-based IPD and Private Share of
Benefits in Reformed Pension Systems**

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Notes

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