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## APPENDIX D: MULTI-PILLAR PENSION SYSTEMS, TRANSITION COSTS, AND SAVINGS

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Multi-pillar pension systems create a government revenue shortfall if they divert contributions used to pay current pensions from the PAYG system to the funded pillar. This transition debt may be debt-financed or tax-financed. Often, a combination of the two is used, with parametric PAYG reforms reducing budgetary expenditures so that the transition cost is less.

Countries can also fund the transition costs of multi-pillar pension reforms by issuing recognition bonds and/or new government securities, which may be purchased by the pension funds. Countries in Europe and Central Asia tended to have high pension liabilities before the transition, so that a Chilean-style reform would have created an extremely high transition deficit requiring significant reductions in expenditures or significant increases in government debt with resulting high fiscal deficits. For that reason, the choice of a more substantial PAYG pillar was wise. By contrast, pension systems in Latin America and the Caribbean were much smaller because of restricted coverage. Chilean-style systems were more feasible, as the transitional debt was considerably lower.

### *Debt-financed transition*

If the reform is a partial privatization of the pension system without reductions in other expenditures, it will be entirely debt-financed. In that case, the impact on national savings should be roughly neutral because the revenue losses will be fully offset by the increase in private savings (the flows to the mandatory second pillar accounts). In other words, the increase in explicit public debt is offset by the decrease in implicit debt—that is, the obligations to future pensioners from the old PAYG system.

However, a debt-financed transition also could have a net negative impact on saving if the interest

rate on explicit debt is higher than the implicit interest rate on the former implicit debt (the rate of return to the PAYG system). In that case, the explicit debt may increase more than the implicit debt declines. A second way in which a debt-financed transition could have a negative impact on savings is if financial markets reacted adversely to the growth of the explicit debt, even with a decrease in implicit debt. As a result, the interest rate on the explicit debt could increase because of a perception of higher risk. A completely debt-financed transition will not have any capital market effect, and pension funds will primarily hold government bonds.

### *Tax-financed transition*

*Tax-financed transition* is the term used to describe a fiscal adjustment that offsets revenue losses from the diversion of contributions to accounts that are either partly or fully funded. Such deficit reductions can come from: (1) tax increases, (2) reductions in other expenditures, (3) a parametric PAYG reform that creates a surplus offsetting the revenue losses from the transition to funding. In each case, the reduction in public savings would be smaller than the increase in private savings, leading to an increase in national savings, similar to that created by other types of fiscal adjustments.

### *Changes in personal saving*

Personal savings may react to the reform itself, but these changes are empirical and uncertain. Changes in personal savings brought about by pension reform are determined in large part by the importance of borrowing constraints that exist in most countries.

Most reforms include an increase in the retirement age. According to the overlapping-generations model, an increase in the retirement

age should lead to a decline in private savings, because when employees work for a longer period, they do not need to save as much to achieve their optimal retirement income goals and reach the savings level that would smooth their consumption levels over their retirement. Therefore, private savings should decline.

However, most reforms also include reductions in benefits through changes in indexation (from wages to prices) or direct changes in the benefit formula. According to the same overlapping-generations model, this should lead to an increase in private savings, for analogous reasons—the

changes reduce retirement income and disturb optimal savings plans to smooth consumption over the life cycle. Therefore, workers need to save more to restore optimal consumption smoothing. But consider a worker who is partly contributing to a second pillar in which the expected returns are higher than those of the PAYG system. This may reduce voluntary savings through the income effect, or increase them through a substitution effect. Most economists conclude that the income effect would dominate, but the net impact is likely to be very small.