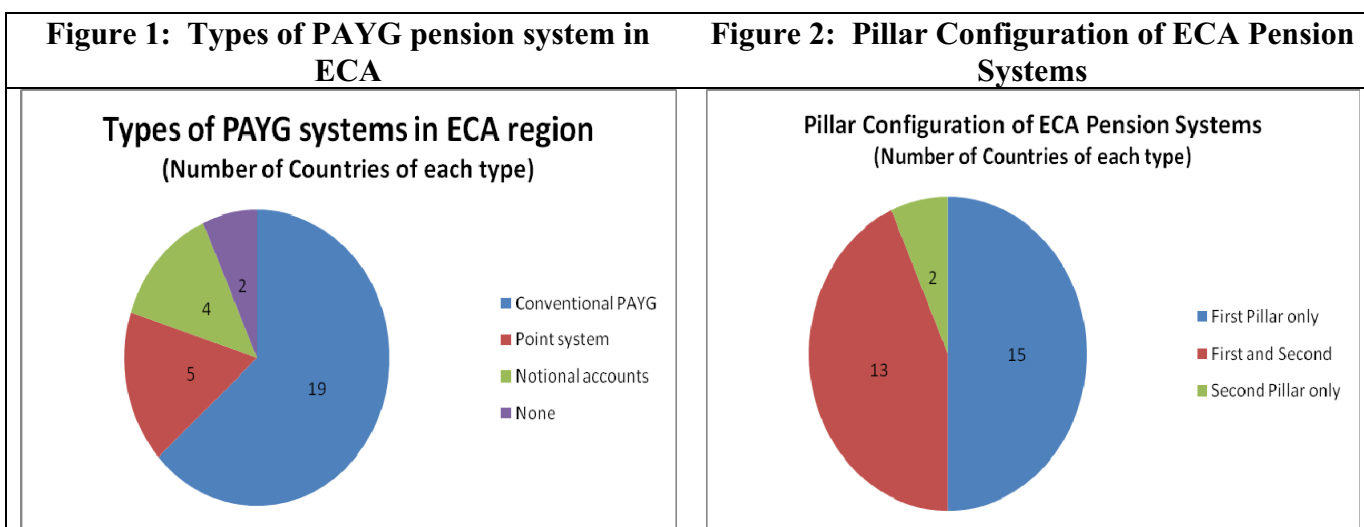


SECTION 1: IMPACT OF THE FINANCIAL CRISIS ON PENSION SYSTEMS

A. NO PENSION SYSTEM IS IMMUNE FROM CRISIS

Pension systems in the ECA region come in all shapes and sizes, and one of the key lessons from the crisis is that no pension system is immune from the global financial and economic crisis. Most countries in the region have three pillars in their pension system, a zero pillar, typically a first pillar, but sometimes a second and a third pillar. Eleven of the thirty countries have all four pillars. The pillars and the variations are described in Box 1.

Box 1: Pension Systems Come in All Shapes and Sizes



Most countries in this region have a “**first pillar**” or “**unfunded pension system**,” where contributions paid by current workers finance pensions for current retirees, and pensions for today’s workers will be paid by contributions from future workers. This system is typically called a Pay As You Go (PAYG) system. The majority of ECA countries, 28 out of 30, provide retirees with some percentage of their former salaries, however defined, per year of contribution. In some cases such as in Lithuania this benefit is in addition to a flat benefit provided to contributors. In others, such as Bosnia-Herzegovina, the entire contributory benefit is based on the individual’s wage history. In still others, like Georgia, the system has such little revenue that benefits are mostly the same for all contributors, with little differentiation based on past salaries. A few, including Croatia, Montenegro, Romania, Serbia, and the Slovak Republic, have adopted a variant of the PAYG called a “**point system**” where individuals are awarded points per year of contribution, with the number of points awarded each year depending on the ratio of the individual’s wage to the average wage. These points are then converted to monetary amounts at retirement with the pension again depending partially or completely on the individual’s wage history. Yet another group of countries, the Kyrgyz Republic, Latvia, Poland, and the Russian Federation adopted another variant of PAYG systems called “**notional accounts**” in which each contribution made by individual workers is tracked in an individual account together with hypothetical interest credited to the contributions. Upon retirement, the balance in this hypothetical or notional account is converted into a pension. Only two countries in the region do not have a contribution-based publicly managed PAYG system, Kazakhstan and Kosovo, but in both cases, flat pensions are provided to all elderly from the budget. These arrangements are summarized in Figure 1.

In addition, 13 of the 30 countries have adopted **second pillars or funded systems**, Bulgaria, Croatia, Estonia, FYR Macedonia, Hungary, Kazakhstan, Kosovo, Latvia, Lithuania, Poland, Romania, the Russian Federation, and Slovak Republic. These differ from the first pillar in that worker's contributions are kept in individual savings accounts and actually invested in a variety of financial assets, rather than being used to finance current pensions. The contributions plus interest earned on each account is used to provide a pension for that particular individual when the individual reaches retirement age. In most of the ECA countries, these second pillar contributions are carved out of the overall pension contribution so that less revenue now goes to the PAYG system to finance the already existing pensioners. Given that most of these countries are running deficits even with their full pension contributions, carving out a portion results in even bigger deficits for the first pillar, to be financed by general revenue. The range of pillar configurations are shown in Figure 2 with 2 countries with only funded pillars, 13 with first and second pillars, and 15 with only first pillars. In addition to first and second pillars, the two countries without first pillars, Kazakhstan and Kosovo, have general revenue-financed flat benefits to all elderly, typically known as **zero pillars**. Zero pillars refer to noncontributory benefits which in most of the countries are provided to some portion of the elderly, usually on a means-tested basis. Finally, almost all countries have **third pillars**, mechanisms for individuals to save additional money toward a better pension on a voluntary basis. The third pillars vary extensively in terms of level of regulation and supervision.

The financial crisis affects each component of a pension system differently, and while magnitude and timing may be different, each component is adversely affected. *Zero pillars* are financed by general revenues, and as output fell and the overall tax base shrank, financing for zero pillars shrank. *First pillars* are financed by worker and employer contributions, and as unemployment rose and wages fell, the revenue available to finance first pillars fell. *Second and third pillars* are financed by employer and employee contributions and by interest earnings on these contributions. The drop in the valuation of financial assets added to the negative impact of unemployment and shrinking wages to reduce potential payouts from these pillars.

B. IMPACT OF GLOBAL CRISIS ON FIRST PILLAR SYSTEMS

Since first pillar pension systems are financed by contributions paid by employers and workers as a percentage of wages, revenues are tied to formal sector employment and wages. As both have fallen due to the crisis, pension system revenues have taken a sizable hit.

On the expenditure side, the number of beneficiaries typically increase during a crisis, as people look to early retirement and disability as a means to cope with unemployment. Benefit levels typically stay the same or rise slightly as countries are reluctant to reduce pension levels even when wage levels are falling. A sizable loss in revenue coupled with a smaller increase in expenditures opens up a gap in the pension financing or extends the already existing gap in most of these countries.

To get a sense of the magnitude of the potential gap, the Bank team constructed a hypothetical country that looks like a "typical" ECA country with the "average" characteristics of the region, with respect to demographics and pension system. These characteristics were then fed into the Bank's Pension Reform Options Simulation Toolkit

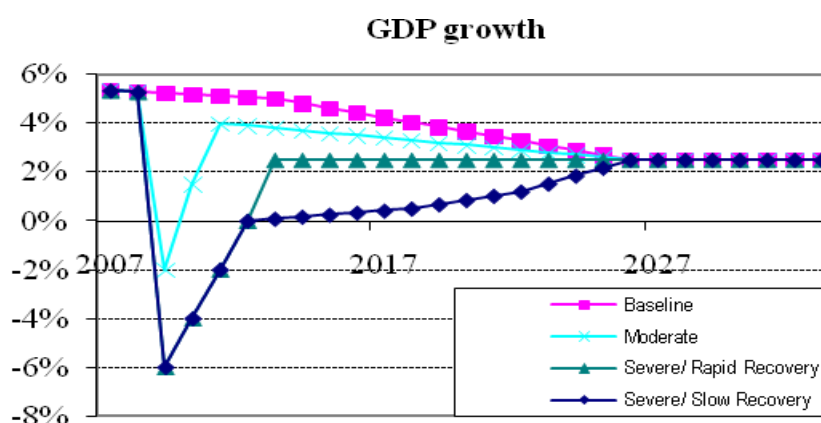
(PROST) model to determine the potential impact of the financial crisis on the pension system. Table 1 summarizes the pension system characteristics.²

Table 1: Pension System Characteristics in 2009

	Pure PAYG	Multipillar System
Contribution Rate	28%	21% to PAYG; 7% to funded
Contribution Revenue, as % of GDP	6.0%	
PAYG Expenditures, as % of GDP	7.2%	
Average pension as % of average wage	47%	
Indexation rule	wage	

Figure 3 shows the different macroeconomic scenarios considered. In the absence of reform real GDP growth would have fallen from the pre-crisis levels of 5.2% to just over 2.5% in the next 20 years. A moderate crisis scenario would show a 2% decline in 2009, followed by growth of 2% and 4% in 2010 and 2011, respectively, converging to 2.5% within a decade. A severe shock followed by rapid recovery would show a 6% decline in 2009, followed by a return to the long run path within 4 years, while a slower recovery would result a return to the long run path over 10 years.

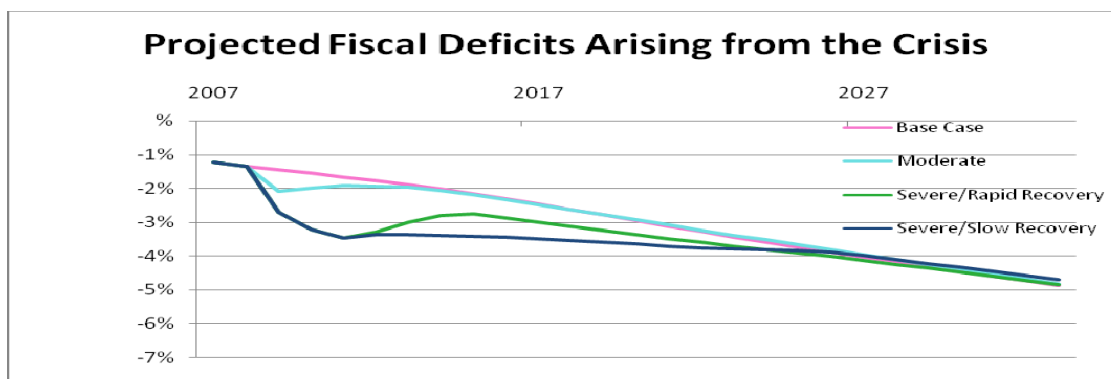
Figure 3: Macroeconomic Scenarios Modeled



² Richard Hinz, Asta Zviniene, Sergiy Biletsky, and Tatyana Bogomolova, “The Impact of the Financial Crisis on Public Pension Systems: Stress Testing Models of Mandatory Pension Systems in Middle Income and Developing Countries,” Social Protection Discussion Paper, World Bank, September 2009.

Experience from previous crises suggests that the reduction in the wage bill and contribution revenues is roughly twice the magnitude of the reduction in GDP. Given that forecasts for 2009 range from a mild reduction of 2% of GDP to much higher shocks of negative 6% growth, the modeling suggests that this hypothetical country will experience a decline in revenue ranging from 4% to 12%, which would translate into revenue declines of 0.1% to 0.8% of GDP in the cases outlined above. If pension expenditures stay roughly constant in the face of falling GDP, expenditures as a share of GDP will rise between 0.5% and 1%, opening up an additional deficit of 0.6% to 1.8% of GDP in the pension system. The impact of the crisis is shown in Figure 4 below. In the mildest case, the pension system will return to its pre-crisis position as early as 2013, while in the more severe case, it may take 20 years.

Figure 4: Projected Pension System Deficits Arising from the Crisis



C. IMPACT ON COUNTRIES WITH SECOND PILLAR PENSION SYSTEMS

For funded pension systems (second and third pillars), the crisis potentially impacts benefits due to decreasing asset values for the financial instruments in which the pension funds are invested. The decline in asset values has a direct impact on those just reaching retirement age. If the government chooses to provide some public compensation to affected individuals, the overall fiscal budget may be affected. Fortunately, in the ECA region, very few individuals are currently retiring with benefits in the funded system because the schemes are relatively new and often exempted older workers. The oldest of the ECA second pillars are Hungary and Kazakhstan which began in 1998, soon followed by Poland in 1999. In Hungary only new entrants had to join the second pillar while it was voluntary for all current workers. Those older than 52 who did join the second pillar were encouraged to switch back, resulting in few current retirees. Similarly, in Poland workers older than 50 at the time of the reform were not allowed to join the second pillar and it was voluntary for workers between the ages of 30 and 50. Again, as a result, few are retiring from the second pillar. In the case of Kazakhstan, all workers joined the second pillar, but current retirees receive benefits from the old first pillar based on the number of years they contributed to it, and only receive benefits from the second pillar for the relatively small percentage of their working career during which they contributed

to the second pillar. The other ten countries³ adopted the second pillar even more recently and had similar restrictions on who could join and provided first pillar benefits to current retirees based on their years of contribution to the previous pension system, also resulting in few current retirees. Nevertheless, the drop in asset prices will be reflected in the future pensions of workers now contributing to the second and third pillars.

Even prior to the financial crisis, rates of return earned by second pillars in the region have been modest relative to income growth, as shown in Table 2 for a limited number of countries for which comparable data were available. Since there is always volatility in asset prices, it is incorrect to judge investments expected to take place over an earnings lifetime on the basis of the rate of return over a short period of time, but in this case only a short period of time is available. And during the initial years of the pension funds, income growth and wage growth have been extraordinarily high as these countries recover from the collapses of the 1990's. Nevertheless, the underperformance signals issues regarding industry structure, regulation, and financial market development that have yet to be addressed. The drastic fall in asset values arising from the crisis accentuates the already low replacement rates being generated by these second pillar funds, but at the same time creates the opportunity to undertake reforms that will improve performance of the pension funds both in the short and long term.

**Table 2: Rate of Return of Pension Funds since Inception till end 2007
(in real terms and as differential over GDP growth)**

	Year of Inception	Real Rate of Return	RoR over GDP growth
Bulgaria	2002	3.2	0.5
Estonia	2002	4.9	0.6
Hungary	1998	2.6	0.6
Latvia	2001	-3.5	-0.3
Lithuania	2004	5.7	0.7
Poland	1999	8.9	2.2
Slovakia	2005	0.9	0.1

Sources: World Bank staff using data from national sources

³ Countries adopting a second pillar include Bulgaria, Croatia, Estonia, FYR Macedonia, Hungary, Kazakhstan, Kosovo, Latvia, Lithuania, Poland, Romania, the Russian Federation, and the Slovak Republic.