



PENSION NOTES

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Reconsidering the pension-adjusted budget balance. What have we learned from recent second pillar reversals in Central and Eastern Europe?

Introduction

In the individually funded system, people save for their own pensions, while in the PAYGO system current workers' contributions become immediate transfers to retirees. This has two key implications for public finances:

1. Demographic trends (increasing life expectancy and falling birth rates) mean that the PAYGO system will have consistently lower revenue and higher costs. In a defined benefit system, and in the absence of parametric reforms, this trend will generate increasing fiscal spending over time.
2. The transition from a PAYGO to an individually funded system, by diverting contributions to the latter and paying recognition bonds, will generate a decreasing short-term fiscal deficit, which will disappear in the midterm, once future benefits corresponding to the diverted contributions are extinguished.

From these two points, it follows that a central planner with a long-term outlook would be willing to make the necessary short term adjustments to incorporate an individually funded system that is sustainable over time, thus avoiding the uncontrolled growth of public spending associated with PAYGO systems. In practice, however, long-term

considerations are difficult to incorporate into policy formulation (Barr and Diamond 2006). Furthermore, policy makers are tied to much shorter electoral cycles (Price and Rudolph 2013), so they will have incentives to make short-term decisions. While this problem is not unique to pension systems, demographic factors play a unique role in exacerbating the issue for these types of systems.

Traditional debt and fiscal deficit indicators do not reflect these temporary inconsistencies, since they focus on the health of public finances today, but do not gauge the future impact of different public programs. Hence, Soto, Eich and Clements (2011) proposed the "pension-adjusted budget balance", an indicator that corrects the traditional fiscal health indicators by incorporating the pension system's cash flow with a long-term perspective.

An example of intertemporal conflicts in the regulation of pension systems can be found in the pension reform reversals carried out in the last two decades by Central and Eastern European countries (CEE: Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia). These reversals rescinded the previous reforms to the pension system, diverting contributions from the private pension funds back to the public PAYGO system. As will be seen further on, these decisions were based on a combination of

different factors, including short-term fiscal pressures. However, although they did reduce the fiscal deficit immediately, the reversals exacerbated the long-term fiscal outlook. Thus, the indicator proposed by Soto, Eich and Clements (2011) could be the tool required for analyzing the fiscal implications of these reforms.

Since almost a decade has passed since the publication of Soto Eich and Clements (2011),

there is new information available on these reversals. Furthermore, in addition to the eight countries analyzed, another one has implemented a reversal (Romania) and two have deepened their reversals (Slovakia and Poland). This study uses this new information to deepen our understanding of short and long-term sustainability issues.

The pension-adjusted budget balance

The pension-adjusted budget balance is an indicator that reflects the long-term sustainability of the pension system. To calculate it, the first step is to transform present and future contributions and obligations into a present value, which can be interpreted as the implicit pension debt. The

second step consists in calculating the intertemporal pension balance, equivalent to a constant annuity whose discounted value is equal to the implicit pension debt. The pension-adjusted budget balance is obtained by replacing the current pension balance with the intertemporal pension balance in the classic fiscal balance equation, which takes us from equation (1) to equation (2):

$$(1) \text{ overall fiscal balance}_t = \text{non} - \text{pension balance}_t + \text{pension balance}_t$$

$$(2) \text{ pension adjusted balance}_t = \text{non} - \text{pension balance}_t + \text{intertemporal pension balance}$$

Equation (2) shows that, unlike a fiscal indicator that only considers the current pension balance, the pension-adjusted budget balance depends on the level of implicit debt (the higher the implicit debt, the lower the intertemporal pension balance and the lower the pension-adjusted budget balance).

Graph 1 shows this relationship: the current pension balance, the intertemporal pension balance and the projected pension balance, measured as a percentage of GDP. The example on the left shows a country with a pension system with a deficit that grows over

time, a very common situation in countries with PAYGO systems and an aging population that have not carried out parametric reforms. In the example on the right, the same country carried out parametric reforms (for example, a reduction in the benefits paid by the system), reducing the projected pension deficit. This change flattens the projected pension balance (switches from blue to red), which improves the intertemporal balance (dotted line changes from blue to red). However, the current pensions balance does not change, since it is unable to visualize the whole picture.

Graph 1

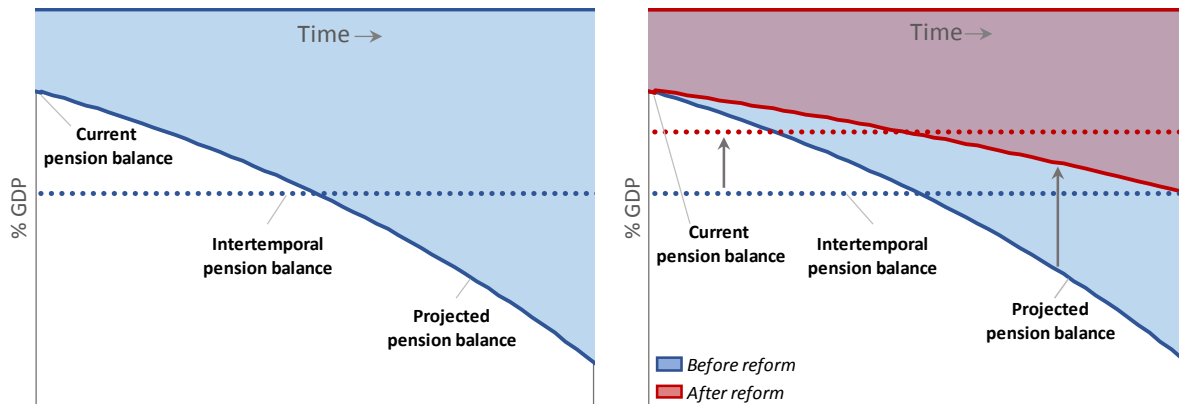


Figure 1 Example of the intertemporal pension balance after a parametric reform.

Second Pillar reforms and reversals

In the late 1990s and 2000s, a wave of pension system reforms occurred in several CEE countries. They introduced individually funded defined contribution schemes to complement public PAYGO pension systems. In the conceptual framework of the World Bank, these schemes are known as the second pillar, in which contributions are paid into individual private retirement accounts. The accumulated funds and the return on the investment of the contributions are used to finance a monthly pension during retirement, usually through the purchase of an annuity.

The expansion of the pension systems towards a multi-pillar design is supported by different international organizations, including the World Bank (The World Bank 2008), the ILO (International Labor Organization 2018) and the OECD (OECD 2005), since it is considered the best option to meet the multiple objectives of pension systems (the reduction of poverty, consumption smoothing, insurance, redistribution, adequacy of pensions, coverage and long-term fiscal sustainability) (Barr and Diamond 2011).

Defined contribution schemes, in turn, establish a clearer link between contributions, return on investments, ownership rights and the development of financial markets. Nonetheless, their implementation implies the diversion of the first public PAYGO pillar contributions towards the private, defined contribution, individually funded schemes, which generates a transition cost for the government until the future benefits corresponding to the diverted contributions are extinguished. This transition cost is higher in the stage in which contributions are diverted to the individual accounts, while savings from future benefits have not yet materialized. In general, older workers are not allowed to participate in the second pillar, so it takes longer to reach the period when savings are manifested, which extends the transition period.

This was in fact the case of the countries analyzed in this study. As can be seen in columns 3 and 4 of Table 1, in most countries, switching to a multi-pillar system was mandatory only for new entrants to the labor market and young workers, but voluntary for middle-aged workers and prohibited for older workers.

Table 1. Systemic reforms in selected Central and Eastern European countries

Country/ ^a	Year of reform	Conditions for participation		Change in contributions/ ^c	Change in benefits
		New entrants	Existing employees		
Estonia	2002	Mandatory	Mandatory < 20, voluntary 20-60	4%+2%	20%
Hungary	1998	Mandatory/voluntary	Voluntary	6->8%	26%
Poland	1998	Mandatory	Mandatory < 30, voluntary 30-50	7.30%	37%
Slovak Republic	2005	Mandatory/voluntary	Voluntary	9%	50%
Bulgaria	2002	Mandatory	Mandatory < 30, voluntary > 30	2%>5%	N.a.
Latvia	2001	Mandatory	Mandatory < 30, voluntary 30-49	2%>10%	44%
Lithuania	2004	Voluntary	Voluntary	3.5%>5.5%	62%
Romania	2007 ^b	Mandatory	Mandatory < 35, voluntary 35-45	2%>6%	n.a.

Transitions can also be smoothed out by gradually increasing contributions, as occurred in Hungary, Bulgaria, Latvia, Lithuania and Romania (fifth column of Table 1). For example, in Romania, the rate was initially set at 2%, and then increased by 0.5 percentage points per year, to reach 6% in 2016. Of all the countries in Table 1, Estonia was the only one that stipulated a new 2% contribution, which was added to a 4% contribution from the first pillar.

The sixth column of Table 1 shows the reduced first pillar benefits for the individuals who entered the multi-pillar system. The range was wide: from 20% in Estonia to 62% in Lithuania. This parameter plays an important role in determining the long-term fiscal sustainability of a multi-pillar system.

Almost all CEE countries that introduced pension reforms have now partially or totally reversed these measures. Although reversals have been attributed to a variety of factors, the tax factor was particularly relevant for most of these countries (Bielawska, Chłóń-Domińczak and Stańko 2015).

The way in which an increase in the transition cost, coupled with a reckless fiscal policy, the 2008 financial crisis and political pressure from the EU Stability and Growth Pact, explain the

accumulation of reversals that occurred between 2007 and 2012 in the CEE countries, is described below.

Despite the robust economic growth that occurred between the original pension reforms and 2008, many CEE countries experienced fiscal deficits during this period. This stage of economic success also facilitated a series of parametric reforms that increased the generosity of pensions, while exacerbating long-term sustainability issues (Price and Rudolph 2013). The 2008 global financial crisis and the subsequent Euro debt crisis had profound implications for economic activity and the fiscal outlook for all these countries. On average, in the eight countries analyzed, real GDP fell 7.7% between 2008 and 2009, while their fiscal balances deteriorated by 3.8% of GDP (European Commission 2020).

The crisis also affected the public pension systems by slowing growth and increasing early retirement rates in response to falling employment. Between 2008 and 2009, average pension spending in the EEC grew by 1.5% of GDP, which is worrying considering that average spending was 7.9% in 2008. At the same time, the fall in employment coupled with slower growth (or even decline) of wages, reduced earnings from the PAYGO pension schemes (Whitehouse 2009).

The high debt and public deficit figures constitute extraordinary political pressure for EU member states, since the Stability and Growth Pact requires them to maintain a budget deficit below 3% of GDP and public debt below 60 % of GDP. These criteria were defined by the Maastricht Treaty (and its subsequent updates) as a means for achieving price stability within the Eurozone (European Fiscal Board 2019).

In this context, the CEE countries started 2008 with an urgent need to improve their fiscal situation. Table 2 shows the short-term fiscal

context in the year prior to the reversal in each country. In that year, all the countries had deficits ranging from 0.4% of GDP in Bulgaria to 7.4% in Poland. The third column of Table 2 shows the flow of contributions deposited in private accounts instead of financing the first pillar, in the same year; i.e. the short-term incentive that these countries had to carry out a reversal of the second pillar, since these resources would be available immediately.

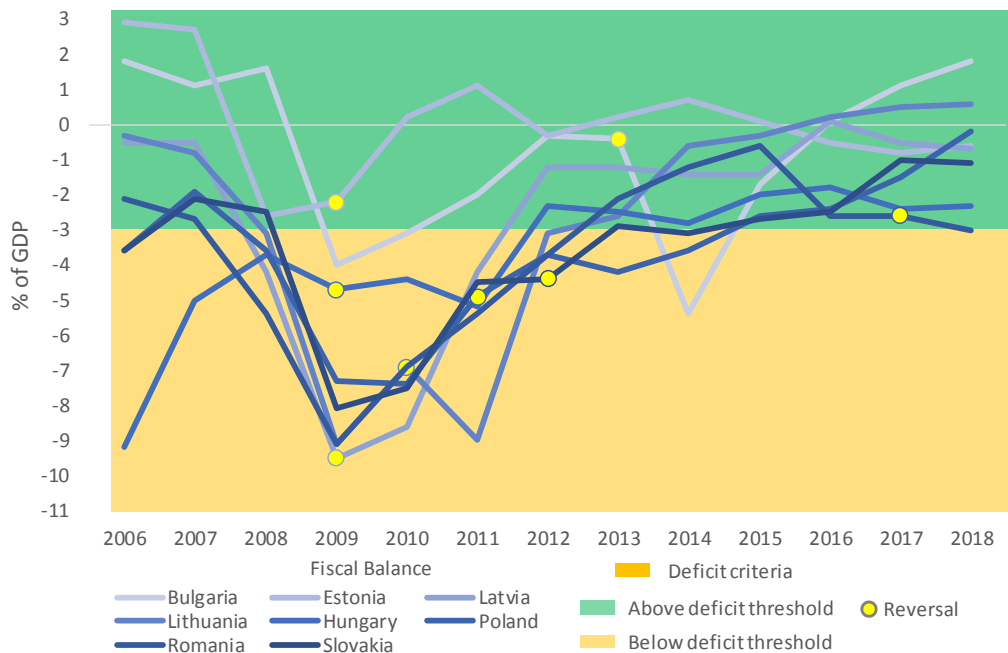
Table 2. Short-term fiscal impact of second pillar reversal (one year before reversal).

Country	Budget balance	Diverted contributions	Budget assuming full reversal	Year of reversal
Bulgaria	-0.40	1.30	0.90	2014
Estonia	-2.60	0.50	-2.10	2009
Hungary	-4.70	1.40	-3.30	2010
Latvia	-4.20	1.10	-3.10	2009
Lithuania	-3.10	1.10	-2.00	2009
Poland	-7.40	1.60	-5.80	2011
Romania	-2.60	1.20	-1.40	2017
Slovakia ^a	-4.50	1.20	-3.30	2012

The EU tax rules aim to ensure seamless inclusion of new members in the Eurozone. Therefore, tax monitoring is especially strict for EU members who intend to incorporate that currency. This was the case in many CEE countries. Estonia, Latvia, Lithuania and Slovakia joined the EU in 2004 and soon entered the Exchange Rate Mechanism (ERM II), a stage prior to the inclusion of an applicant country in the Eurozone, which includes additional monetary and fiscal conditions. The incumbent governments of Hungary and Poland have stated that they do not intend to apply for entry to the Eurozone in the immediate future; however, this was an explicit objective that prompted the adoption of austerity policies in the mid-2000s.

In 2005, the EU reviewed its criteria for accommodating new CEE member states that had carried out systemic pension reforms, which entailed significant transition costs. Countries with partially funded pension plans were allowed to temporarily treat the part of the contribution diverted to an individually funded component as general government revenue during the first five years of reform. However, in an unfortunate coincidence, the measure was scheduled to be phased out between 2005 and 2009 (i.e., one year after the financial crisis occurred), pushing most CEE countries to a level well below the minimum deficit threshold (see Chart 2).

Graph 2. Fiscal balance, Maastricht criterion (deficits), and reversals of the second pillar in Central and Eastern European countries



The blue lines represent the 2006-07 fiscal balance of CEE countries. The yellow dot indicates the year in which the systemic reversal occurred. The orange and green areas represent the ranges above or below the deficit thresholds established in the Maastricht Treaty.

Source: Fiscal balance, Eurostat; year of reversals, Ortiz et al. (2018); and, deficit criteria, https://ec.europa.eu/info/sites/info/files/2019-09-10-assessment-of-eu-fiscal-rules_en.pdf

The original European Union Stability and Growth Pact also failed to include permission to issue implicit pension debt. Thus, the benefits of joining the EU generated a perverse incentive for CEE countries: reversing contributions to the second pillars would help (at least in the short term) to meet the deficit criterion (3% of GDP) without affecting the explicit pension debt. Since then, the European Commission has approved new agreements and guidelines that address this inconsistency. However, all of these measures came into effect after most of the reversals analyzed in this study took place (Price and Rudolph 2013).









The financial crisis and the political pressure from EU agreements were critical factors that led to a reversal in pension systems in CEE countries. Reversing the second pillar contributions provided significant immediate resources to navigate those difficult times; however, traditional debt and deficit indicators did not foresee the long-term fiscal effects of this policy. In the following section, the pension-adjusted budget balance is used to address this problem.

Results

In this section we show the results of a theoretical exercise in which the tax effects of a complete reversal of the individually funded systems in CEE countries are calculated. The methodological details are available in (Wachs 2020). Table 3 shows all the steps used to calculate the pension-adjusted budget balance; basically, the short-term pension component is replaced within the balance sheet with an indicator that represents the long-term pension fiscal outlook. The second column of the table contains the general balance of CEE countries in 2007. By subtracting the pension balance for said year included in the third column, we obtain the non-pension general

balance. The fifth and sixth columns show the net present value (NPV) before and after reversals. It should be noted that while this indicator somehow manages to quantify the long-term effects of a reversal of the reform, the NPV is more sensitive to variations in the discount rate than the pension-adjusted budget balance. The seventh and eighth columns contain the intertemporal pension balance generated by multiplying the NPV by a conversion factor. Finally, the last two columns contain the pension-adjusted budget balance before the reversals (sum of columns 4 and 7) and after the reversals (sum of columns 4 and 8). The colored arrows indicate the positive or negative change in the pension-adjusted budget balance due to the reversal.

Table 3. Current budget balance and pension adjusted balance, before and after reversal (percent of GDP and discounted to 2007).

Country	Overall balance	Pension balance	Non-pension Budget balance	NPV before reversal (2007-2080)	NPV after reversal (2007-2080)	Intertemp. pension balance before reversal	Intertemp. pension balance after reversal	Pension adjusted balance before reversal	Pension adjusted balance after reversal
Bulgaria	1.10	-3.30	4.40	-116.45	-106.05	-2.21	-2.01	2.19	2.39 
Estonia	2.70	0.50	2.20	16.33	49.87	0.31	0.95	2.51	3.15 
Hungary	-5.00	-2.30	-2.70	-182.95	-121.61	-3.48	-2.31	-6.18	-5.01 
Latvia	-0.50	1.40	-1.90	31.13	125.69	0.59	2.39	-1.31	0.49 
Lithuania	-0.80	-0.20	-0.60	-118.70	-172.05	-2.26	-3.27	-2.86	-3.87 
Poland	-1.90	-4.70	2.80	-216.16	-243.37	-4.11	-4.62	-1.31	-1.82 
Romania	-2.70	0.10	-2.80	-279.75	-301.13	-5.31	-5.72	-8.11	-8.52 
Slovakia	-2.10	-2.20	0.10	-191.96	-194.82	-3.65	-3.70	-3.55	-3.60 

Sources: European Commission 2020; European Commission and Committee for Economic Policy 2009; Whitehouse 2011; Altiparmakov 2011; United Nations, Department of Economic and Social Affairs 2019, and author's own calculations. All calculations are available in the online appendix.

The government's short-term incentives are included in Table 2. The reversal improves the current fiscal balance in all countries by diverting contributions to the public system. Table 3 shows that these immediate gains do not necessarily coincide with the long-term outcome. The reversal deteriorated the pension-adjusted budget balance in half of the

countries (columns 9 and 10). In Lithuania, for example, the pension-adjusted budget balance decreases by 1 percent of GDP after the reversal. The deterioration is less acute (but not slight) in Poland and Romania (0.51 and 0.41 percent of GDP, respectively) and weaker in Slovakia (0.05 percent of GDP).

Conclusion

This study addresses the issue of intertemporal decisions, which are fundamental for the pension systems. Such decisions are complex because it is difficult for participants and policymakers to incorporate long-term future considerations into current decisions. Political cycles are also much shorter than the period required for a proper evaluation of pension systems. These conditions lead to inconsistencies between the objectives of the regulators and participants. The pension-adjusted budget balance is an indicator that addresses this inconsistency by replacing the pension balance (within the overall balance sheet) with an annualized indicator of discounted net pension liabilities. Therefore, changes in the pension-adjusted budget balance indicator incorporate effects that occur throughout the relevant time horizon.

A good example of these intertemporal inconsistencies in the regulation of pension systems, as well as in the application of the intertemporal pension balance, is the series of

systemic reforms and subsequent reversals that occurred in CEE countries in the last two decades. Systemic reforms expanded the pension systems by creating private defined contribution schemes. The implementation of these measures can generate fiscal challenges in the short term, since they transfer the future implicit debt to the present. The opposite occurs when a second pillar reversal is implemented (i.e., explicit debt becomes implicit debt).

During the same two decades, the CEE countries were conditioned by the fiscal rules established in the EU Stabilization Pact. However, these standards did not adequately consider the transitional cost of the second pillar reforms, nor did they appropriately address the implicit pension debt. Thus, this pact created perverse incentives for those countries to transform explicit pension debt into implicit debt. The European Commission has approved a series of amendments and guidelines designed to correct this problem. However, these efforts were deployed after most of the reversals covered in this study had occurred.

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