

# Funded Pension, Fiscal Strain and Stabilisation Policy in Central and Eastern Europe

---

*Karsten Staehr*<sup>1</sup>

*Tallinn University of Technology*

*Eesti Pank*

## **Abstract**

The EU Member States from Central and Eastern Europe have generally strong business cycles with substantial fluctuations in production and unemployment. Most of the countries have implemented funded pension systems. This paper discusses linkages between such systems and the ability of governments to stabilise business cycle fluctuations without jeopardising fiscal performance. It is argued that the funded pension schemes lead to maturity mismatches that may aggravate business cycle while making it harder to pursue active fiscal policies. This paper advocates measures to manage the pension systems more actively by making the contributions to the compulsory funded pension depend on the cyclical stance of the economy and by letting individuals withdraw accumulated funds during severe cyclical downturns. Such measures may help stabilise the business cycle and enhance fiscal resilience.

*JEL classification: E32, E64, G23, H55*

*Keywords: Business cycles, stabilisation policy, fiscal policy, funded pension, compulsory saving*

---

<sup>1</sup> The author would like to thank Rasmus Kattai for model simulations and participants of the 68<sup>th</sup> East Jour Fixe seminar for useful comments. The views expressed are those of the author and not necessarily those of Eesti Pank.

*“But we still have one more card to play”*

John Maynard Keynes (1940, p. 66)

## 1. Introduction

The EU Member States from Central and Eastern Europe (CEE) have been subject to pronounced booms and busts since adopting market-based economic systems at the beginning of the 1990s.<sup>2</sup> Strong trend growth has coincided with much stronger business cycle fluctuations than in Western Europe. Meanwhile the scope of using expansionary fiscal policies to dampen downturns has been confined by a rapid deterioration of the fiscal balance and in some cases severe financing problems. These observations suggest that there is a need to devise policies that can help stabilise the business cycle in the CEE countries while enhancing the crisis resistance of public finances. This paper suggests that the funded pensions that have been implemented in most CEE countries can be managed more actively and, hence, be used to address both policy objectives, i.e. stabilisation of business cycle fluctuations and enhancement of fiscal resilience.

Beginning from the end of the 1990s most CEE countries implemented pension reforms that replaced traditional pay-as-you-go (PAYG) systems with 3-pillar systems in which the second and third pillars are funded. The funding of the second and third pillars is implemented in the way that individuals save in individualised retirement accounts, which are in escrow until retirement. The second pillar is typically financed through compulsory contributions paid alongside the normal social security contribution, while the third pillar is voluntarily but subject to tax incentives.

This paper argues that the funded pension systems could be used actively to stabilise the business cycle and fiscal performance. The paper considers two different policy measures. One measure is to reduce the second-pillar pension contribution during downturns and increase it during booms. This measure entails active use of the *compulsory saving* inherent in the second pillar, depending on the business cycle situation. The other measure is to allow individuals to withdraw already accumulated saving from the individualised pension savings accounts of the second and third pillar during a recession or at times of personal economic hardship.

This paper has affiliation points to several strands of literature. It relates to the century-old discussion of the option of using active demand management to

---

<sup>2</sup> This paper focuses on the 10 countries from Central and Eastern Europe that joined the European Union in 2004 or 2007. The choice is based on the availability of data and on the fact that EU Member States share many institutional features. The discussion is generally applicable also to other countries from Central, Eastern and Southeastern Europe (CESEE).

smooth business cycle fluctuations. This discussion is still at the core of macroeconomics (Romer 2005, chapters 4–6). The efficacy of the policy measures above rests on changes in aggregate demand, having an effect on production level, unemployment etc. The second affliction point is the literature on budget policies, financing limits and fiscal crises (Reinhart, 2002; Manasse et al., 2003). Emerging market economies and high-income economies may have a very different ability to take on public debt without encountering financing problems.

The third affliction point is the extensive literature on pension economics, including the benefits and challenges of funded pension schemes (World Bank, 1994; Orszag and Stiglitz, 2001; Bovenberg et al., 2008). The main focus of this literature is, however, on the long-term effects of different pension systems, including how adequate pensions can be ensured along with long-term solvency of public finances. Only a small number of papers consider linkages between business cycle fluctuations and the pension system and the focus is then on the impact of business cycle fluctuations on different parts of the pension system. One area of concern is the solvency of defined benefit pension schemes under different economic and demographic scenarios (e.g. Impavido, 2011; Keeley and Love, 2010). Weller and Baker (2005) discuss the strains that privately defined benefits schemes may encounter during cyclical downturns, when interest rates are low, asset prices fall and contributions are reduced. Burtless (2010) discusses the challenges facing individuals who have accumulated substantial pension funds when the economy is subject to a large downturn, such as the global financial crisis in 2008/09. The present paper differs from most previous policy studies by focusing on the short-term linkages between the pension system and the business cycle.

The final affliction point is the use of compulsory saving for stabilisation purposes. John Maynard Keynes recommended the use of compulsory saving already in 1940 as a means to avoid overheating of the economy and to make resources available for the British war effort (Keynes 1940, pp. 69–70). The measure was subsequently adopted. Other European countries have later implemented different temporary schemes of compulsory saving in order to dampen excessive upswings. Based on these experiences, this paper suggests that the pre-existing economy-wide funded pension systems in the CEE countries are adapted in order to affect economic activity in the economy. Previously the proposals have been discussed in a short form in Staehr (2009).

The rest of the paper is organised as follows. Section 2 provides some details on the business cycles and budgetary challenges afflicting the CEE countries. Section 3 outlines the rationale for funded pension and the introduction of the 3-pillar system in the CEE countries. Section 4 considers the possible effects of funded pensions systems on the business cycle. Section 5 is the main section and discusses possible policies that use the funded pension system to dampen business cycle fluctuations. Finally, section 6 concludes.

## 2. Business Cycles, Public Finances and Stabilisation Policies

The CEE countries have been subject to strong business cycle fluctuations since they cast off communism and central planning. All of the countries saw dramatic output declines and rising levels of unemployment at the beginning of the 1990s during the transition from planned to market economy. Since the mid-1990s the countries have seen strong trend growth, but also large fluctuations as frequently observed in emerging markets. Rapid capital inflows and bursts of optimism have led to booms, while financial crises, trade disruptions and shocks have caused recessions. The most noticeable example of the latter was the substantial downturn experienced during the global financial crisis. While Poland managed to rake up positive output growth in both 2008 and 2009, the Baltic States saw accumulated output losses amounting to about 20% during these two years (Gardo and Martin, 2010).

Statistics show that the CEE countries have had stronger trend growth and also more volatile growth than the EU-15 Member States from Western Europe. In the period 1996–2010 the average annual growth rate was 3.7% in the CEE countries and 2.4% in the EU-15 Member States, while the average standard deviation was 4.5% and 2.5%, respectively (Eurostat, author's calculations). Similarly, the unemployment rate has been higher but also more fluctuating in the CEE than in the EU-15 countries.<sup>3</sup>

The CEE countries have generally pursued prudent fiscal policies since the mid-1990s, helped by relative strong trend growth and various forms of foreign support. The average stock of public debt in the 10 CEE countries was 32% of GDP in 2001 and 25% in 2007 (Eurostat, author's calculations).<sup>4</sup> The budget situation deteriorated in most CEE countries during the global financial crisis, resulting in an average budget deficit of 6.6% of GDP and an average debt of 35% of GDP in 2009. In comparison with many EU-15 Member States, such deficit and debt figures appear moderate, but there is substantial heterogeneity across the CEE countries and debt stocks are forecast to increase rapidly in 2010 and beyond (European Commission, 2010).

Cyclical downturns have generally had an adverse effect on the budget balance in the CEE countries, while booms have had the opposite effect. The sensitivities of the budget balance to cyclical fluctuations in the CEE countries are somewhat

---

<sup>3</sup> In 1995–2010 the average unemployment rate was 10.1% in the CEE countries and 7.5% in the EU-15 Member States, while the standard deviation was 2.8% and 1.7%, respectively (Eurostat, author's calculations).

<sup>4</sup> Some countries stand out. Bulgaria managed to reduce its public debt from 108% of GDP in 1997 to 17% in 2007, while Estonia had budget surpluses in most years from 1995 to 2007 and a debt stock of 4% of GDP in 2007. Hungary, at the other extreme, pursued expansionary fiscal policies in the years prior to the global financial crisis, resulting in a government debt of 66% of GDP at the end of 2007.

disputed. The institutional features of the public sectors suggest relative low sensitivities: the public sectors are relatively small, tax systems exhibit modest progression and welfare provisions are limited (Staeher, 2010a). This view is supported by Eller (2009) who reports data from the European Commission on the size of the automatic stabilisers in the overall budget balance in individual CEE countries. The automatic stabilisers are, on average, smaller in the CEE (0.37) than in the EU-15 (0.49), but they are in all cases positive (from 0.27 to 0.47).

Staeher (2008) estimates budget balance reaction functions using panel data for the CEE and the EU-15 Member States separately. In this study the measured effect of GDP changes on the overall budget balance pertains to the effects from the automatic stabilisers and from discretionary changes correlated with GDP changes. Using this broad measure, Staeher (2008) finds, across a number of specifications, that the impact of GDP growth on the overall budget balance is larger in the CEE than in the EU-15.

It is reasonable to conclude that business cycle fluctuations have a substantial effect on the budget balance in the CEE countries. This helps to explain the substantial variations in budget balances and seems to be consistent with developments during the global financial crisis when most CEE countries experienced a considerable deterioration of their public finances. Negative output growth, increasing unemployment and, in the case of Latvia, the recapitalisation of a major bank exerted significant downward pressure on the budget balance in 2008–2010. Most of the budget deterioration can be attributed to automatic stabilisers, but the balance was also affected by expansionary discretionary measures in Poland and Bulgaria, and contractionary discretionary measures in Estonia and Hungary (Staeher, 2010b).

Government debt ratios in the CEE countries are relative low compared to the EU-15 average, but the fiscal policy space is still very restricted in the former. Empirical research has shown that sovereign debt crises appear at much lower debt ratios in emerging markets compared to advanced economies, although it is generally not possible to predict a sovereign debt crisis solely on the basis of the stock of debt (Reinhart et al., 2003; Manasse and Roubini, 2009). Events during the global financial crisis confirmed that CEE governments were easily subject to confidence crises and financing problems. Latvia and Romania sought international financial assistance as their financing dried up even though their government debt levels at the end of 2007 stood at 9% and 13% of GDP, respectively (Staeher, 2010b).

Regardless of the relatively benign public finance figures, the scope of using fiscal policies to stabilise the business cycle is limited in the CEE countries. The countries may easily face financing problems if they pursue expansionary fiscal policies to counteract cyclical downturns. Moreover, since the countries are members of the EU, the Stability and Growth Pact imposes – at least at the formal level – relatively tight constraints on the size of fiscal deficits.

The upshot is that the CEE countries face substantial policy challenges regarding their macroeconomic management. On the one hand, the countries are subject to considerable fluctuations in output and unemployment with expectedly adverse welfare consequences. On the other hand, fiscal policies have limited scope to stabilise business cycle fluctuations, at least as pertains to cyclical downturns.

### 3. The Introduction of Funded Pension

Most of the CEE countries have 3-pillar pension systems but their specific designs vary across countries and the systems are changed frequently. The first pillar comprises a PAYG component with defined benefits, the second pillar comprises a compulsory funded system component with defined contributions, and the third pillar is a voluntary funded system of defined contributions with tax incentives. The second and third pillars comprise the funded part of the 3-pillar system and the funds are typically held on individual saving accounts that are in escrow until retirement.

As discussed in section 1, compulsory saving schemes were used during World War II. They have also been used occasionally in some advanced economies for the purpose of macroeconomic management. In some cases, funded pension schemes have also been part of employment contracts and collective agreements.

The use of compulsory saving as a means to provide economy-wide pensions was pioneered in Chile in 1981. The existing PAYG system was replaced by a fully funded system in which contributions were accumulated in private sector pension funds. This *substitutive system*, relying almost entirely on individual private funding, has later been adopted by a number of countries across the world (Orenstein 2008, chapter 1). From among the post-communist countries, only Kazakhstan had adopted the system by the beginning of 2011.

The funded pension system was seen as a means to ensure adequate pensions in societies where aging meant that the number of retirees increased relative to the number of working-age individuals. In a PAYG system the increased pension burden must be financed by higher taxes, which would lead to an increasing excess burden and possibly more tax evasion (Lindbeck and Persson, 2003).

The funded pension system was seen to provide a number of additional benefits, such as increased national saving, higher returns to pensioners than the implicit return in the PAYG system, and improved incentives for labour market participation. Many of these benefits have since been cast in doubt, based on both theoretical and empirical research (Orszag and Stiglitz, 2001, Mesa-Lago 2002).

The substitutive system in which the eventual pension depends entirely on the assets accumulated by the individual and the return of the pension fund implies that substantial risks rest on the individual. The pension received may be very low if the

individual faces hardship while in the labour market and/or invests in a fund with a low ex-post return.

From a macroeconomic viewpoint the fiscal consequences of a transition from a PAYG to a funded system are challenging (Feldstein, 1998; Lindbeck and Persson, 2003). During the transition the working-age population must accumulate funds for their own retirement while also paying taxes to pay for PAYG system that provides pensions to the current pensioners. The pressure on the working-age population may be reduced by lowering their tax burden, but the side effect of this may be that public finances are strained in the short term.<sup>5</sup> Broadly speaking, the long-term fiscal problem is turned into a short-term problem forcing policymakers to make difficult decisions. The consequences are, *ceteris paribus*, deterioration of the budget balance and accumulation of additional financial debt. In practice, the effect of this exercise in “starving the beast” is difficult to ascertain, since so many other factors affect the budget stance.

The two problems discussed above became evident already in the 1980s. The straightforward solution was to combine the PAYG and funded pensions. The result was the 3-pillar pension model, for which the World Bank became a strong proponent (World Bank, 1994; Orenstein, 2008).

The 3-pillar system had been adopted by more than 20 countries at the beginning of 2011. The first pillar is modelled along a traditional PAYG system, but with lower pay-out rates. The second pillar amounts to a compulsory saving scheme with the objective to provide additional resources for an individual’s retirement. The third pillar is voluntary but allows the individual to accumulate pension funds with a tax advantage. The accumulated fund of both the second and the third pillar are usually in escrow until the individual retires.

The 3-pillar system has the advantage that the risks of an individual participant are somewhat diversified as compared to systems fully based on PAYG or funded pension. At the same time the required accumulation for the second pillar is relatively modest and does not impose an excessive burden on the individual. A major drawback has turned out to be the substantial management fees charged by private pension funds that invest the second and third pillar funds (Orszag and Stiglitz, 2001, Mesa-Lago, 2002).

Most of the CEE countries adopted the 3-pillar system at the end of the 1990s and in the following years. The World Bank provided economic and technical advice in all cases, but each country adopted its own version, which led to substantial variation across the CEE countries (Orenstein, 2008). For instance, the

---

<sup>5</sup> The short-term fiscal problems may be easier to manage in economies with strong trend growth where tax revenues grow owing to the high rate of economic growth. This may be one of the explanations why the funded pension system has been adopted largely in emerging market economies.

rules for admissible investment objects exhibit substantial variance.<sup>6</sup> Table 1 provides a short overview of the second pillar systems in place at the beginning of 2011. All CEE countries have third pillar saving schemes with tax benefits.

*Table 1: Second Pillar Funded Pension in the CEE Countries at the Beginning of 2011*

	<b>Second pillar</b>	<b>Start year</b>	<b>Contribution rate, % of payroll</b>
<i>Bulgaria</i>	Yes	2002	5.0
<i>Czech Republic</i>	No <sup>a</sup>	..	..
<i>Estonia</i>	Yes	2001	6.0
<i>Latvia</i>	Yes	2001	4.0
<i>Lithuania</i>	Yes	2002	5.5
<i>Hungary</i>	Yes <sup>b</sup>	1998	8.0
<i>Poland</i>	Yes	1999	7.3
<i>Romania</i>	Yes	2008	3.0 <sup>d</sup>
<i>Slovenia</i>	No <sup>c</sup>	..	..
<i>Slovakia</i>	Yes	2003	9.0

<sup>a</sup> A second pillar funded pension is scheduled to be introduced in the Czech Republic.

<sup>b</sup> The second pillar funded pension is scheduled to be abolished in Hungary.

<sup>c</sup> Compulsory second pillar funded pension exists for public employees.

<sup>d</sup> The contribution rate in Romania is scheduled to increase gradually to 6% of payroll.

Note: The information applies as to the beginning of 2011 and does not include temporary reductions introduced during the global financial crisis.

Sources: Whiteford (2005, pp. 19–20) and Orenstein (2008, p. 27), updated using information from [www.ipe.com](http://www.ipe.com) and news media.

The pension systems in the CEE countries have changed repeatedly since the introduction of the first 3-pillar systems at the end of the 1990s. This picture appears to continue. As of the beginning of 2011, Hungary is set to “repatriate” the assets accumulated in the second pillar funds, essentially abandoning the 3-pillar system. Poland is planning to reduce the contributions to the second pillar and instead transfer the resources to the first pillar. The Czech Republic is slated to introduce a second pillar although it might not become compulsory. Repeated changes to the pension systems suggest that policymakers have shown great willingness to alter the systems in light of shifting priorities and changing economic conditions.

<sup>6</sup> De Menit (2000) discusses the introduction of the 3-pillar system in the transition countries and emphasises the importance of prudential regulation and macroeconomic stability.



## 4. The Effect of Funded Pension on Economic Fluctuations

There is virtually no research on the role of pension systems in influencing the depth and severity of business cycles. This section discusses a number of possible channels, through which a funded pension system may amplify the effects of economic shocks. Beyond those mentioned, other channels and effects undoubtedly exist.

### *Pro-cyclical consumption*

Funded pension may have the potential to exacerbate tendencies for pro-cyclical consumption. First, if an individual engages in intertemporal smoothing of consumption, the accumulation of pension assets may entice the individual to borrow in order to increase consumption in the short term.<sup>7</sup> An economic boom, which increases the value of pension assets via higher stock and bond prices, may thus create incentives for additional consumption that are financed by borrowing. Second, individuals that are approaching the retirement age during a downturn face the prospect of lower payouts from their funded pension (Burtless, 2010; Bosworth and Burtless, 2010). Intertemporal smoothing of consumption implies that individuals reduce consumption prior to retirement with a possible effect on aggregate consumption and economic activity.

### *Maturity mismatches and susceptibility to shock*

In the CEE countries, the main tangible assets of a young or middle-aged individual are typically residential property and accumulated second and third pillar savings, while the main liability consists of short-term loans, often issued in foreign currencies such as the euro or the Swiss franc. The funded pension systems may aggravate the maturity mismatch of assets and liabilities if individuals take into account the accumulated pension assets and borrow in anticipation of future payouts.

The composition of assets and liabilities described above may be reasonable for individuals living in rapidly growing economies such as those in Central and Eastern Europe. The mismatch, however, leaves individuals very exposed to rapid changes in the economic environment, for instance the negative shocks resulting from unemployment, wage cuts or interest rate increases. In case of a negative shock, an individual typically does have access to his or her potentially substantial accumulated pension saving.<sup>8</sup> A negative shock may therefore lead to abrupt consumption retrenchment, forced sale of residential property or even personal

---

<sup>7</sup> Empirical research shows that this may indeed be the case, cf. Attanasio and DeLeire (2002) and Gale (1998).

<sup>8</sup> In principle, it may be possible to use accumulated pension assets as collateral, but it is unlikely that a lender would accept an asset that is so illiquid as collateral.

bankruptcy. Such developments would likely affect the macroeconomic situation if shared by many. In summary, if a funded pension system leads to more short-term borrowing, the effect may be more susceptibility to shocks and potentially amplified economic fluctuations in the economy.

#### *Counter-cyclical fiscal policy*

The transition from a PAYG pension system to a 3-pillar system may strain public finances as discussed in section 3. During the transition, working-age individuals must save for their own retirement through the funded system and also pay taxes to pay for the PAYG pensions to the present pensioners. The result may be accumulation of financial debt, if policymakers react by reducing taxes for the current working-age population. Moreover, as discussed in section 2, governments in emerging markets have typically narrow limits on their borrowing. In combination, these factors may undermine the ability of governments to pursue expansionary fiscal policies during a downturn. Consequently, business cycle fluctuations may be aggravated if the introduction of a funded pension system strains government finances and thereby impedes counter-cyclical policies.

## **5. Using Funded Pension Systems to Stabilise Business Cycles**

The CEE countries have strong business cycle fluctuations, potentially aggravated by the funded pension systems in many of the countries. Meanwhile, public finances are stretched and counter-cyclical fiscal policy is not always feasible during downturns. It is outside the scope of this paper to discuss the whole range of possible remedies. It suffices to state that a prudent fiscal policy, maintained during booms, will reduce vulnerabilities and leave more policy options open during downturns.<sup>9</sup>

### **5.1 Two Measures**

This paper proposes the implementation of policy measures, which use the funded pension systems in the CEE countries actively in order to stabilise fluctuations in the real economy and increase the resistance of public finances to financing problems during downturns. Two different measures are considered: measure A changes the contributions to the compulsory second pillar, measure B allows withdrawal of accumulated pension asset.

A) The contributions to the compulsory funded pension pillar depend on the state of the economy. Contributions are lowered during recessions and increased

---

<sup>9</sup> Governments may choose to accumulate reserves from privatisation revenues and budget surpluses during booms. This policy prescription has been practiced with some success in Estonia since the 1990s (Kaasik, 2009).

during booms.<sup>10</sup> This may be implemented in the form of a “normal” contribution rate during most parts of the economic cycle and a reduced rate, possibly equal to zero, during recessions. The measure essentially amounts to *compulsory saving* during upturns in the economy and *compulsory dissaving* during downturns.<sup>11</sup>

- B) Individuals are allowed to withdraw funds from their accumulated second and third pillar savings during economic downturns. The released funds are subjected to ordinary income taxation or may alternatively be taxed by a reduced rate, if the government seeks to give individuals additional incentives to withdraw their funds.

There are a number of specific details of the two measures to be considered. Three issues are discussed here. First, measures A and B are specified so that the overall macroeconomic stance determines whether, for instance, contributions to the second pillar are reduced or whether withdrawals from the second and third pillars are allowed. This choice of trigger mechanism entails that the measures seek to address imbalances in the overall macroeconomic situation. The trigger could alternatively be based on microeconomic or individual criteria, such as whether or not the individual is affected by a substantial income shortfall, unemployment or serious health problems. This trigger suggests that the measure has largely social or socio-economic objectives, although there may also be a macroeconomic effect.

Second, the lowering or elimination of contributions to the second pillar during a downturn (measure A) may be compulsory or voluntary. It is likely easier to administer a compulsory lowering or elimination of contributions, in which case individuals who want to maintain the previous contribution will have to find alternative pension saving instruments. In countries with a 3-pillar system, these individuals can save in the third pillar.

Third, it may be important to establish rules for the portfolios of the pension funds affected by measures A and B. In case the measures are put in place during a downturn, the ceasing or reduction of transfers to the pension funds (measure A) or the withdrawal of funds (measure B) may cause disruptions in domestic financial markets, if pension funds abruptly cease buying or start selling domestic securities. Such disruptions may be highly disadvantageous during a downturn. The risk of disruptions of domestic financial markets will be reduced if pension funds are initially heavily invested in foreign financial assets. It may alternatively be possible

---

<sup>10</sup> A variation of measure A is that all or part of the compulsory second pillar saving is diverted to the government budget (as ordinary social security contributions) during recessions, while the forgone contributions can be paid back into the second pillar by the government during booms.

<sup>11</sup> The measure shares, in this respect, the basic configuration of the compulsory saving scheme suggested in Keynes (1940, pp. 69–70).

to set out rules establishing, for instance, that the funds should primarily sell foreign financial assets.<sup>12</sup>

## 5.2 Examples of Changes in Funded Pension Rules

The measures proposed in subsection 5.1 are not merely theoretical thought experiments; versions of the measures have been implemented in a number of countries at various times.

Variations of measure A were implemented in the aftermath of the global financial crisis by many CEE countries, including Estonia, Latvia, Lithuania, Hungary and Romania. The rapid deterioration of public finances in the CEE starting in the fourth quarter of 2008 was partly addressed by diverting a part of the payments from the second pillar pension funds to the government budget. Details varied across countries, but in some countries governments decided that future pension payouts from the first pillar would be increased to compensate for the reduced accumulation of second-pillar funds. The diversion of funds from the second pillar improved, *ceteris paribus*, the fiscal stance and reduced public financing needs. This helped avert or reduce public financing problems in countries undertaking the measure and may also have allowed governments to pursue more expansionary fiscal policies.

A variant of measure B applies to 401(k)-pension accounts in the USA. The 401(k) is a defined-contribution pension paid by the employer. As a rule, the accumulated sum cannot be withdrawn until retirement, but the law allows withdrawals in case of “immediate heavy financial need” (IRS, 2011). Such “hardship distribution” can take place if, for instance, the individual must pay for medical expenses or risks losing his or her residence. The idea is that individuals can use accumulated pension funds to avert short-term economic and social deprivation.

In the wake of the global financial crisis, Denmark implemented a version of measure B in which accumulated pension funds were released. In 1998–2003, a compulsory saving scheme called Special Pension (SP) was in place that obliged working-age Danes to save 1% of their income in individualised accounts. The total sum of accumulated SP savings amounted to 3.1% of GDP in 2007, but only 2.5% of GDP in 2008 as the value of the financial assets in the investment portfolio had fallen (ATP, 2009).

Denmark experienced a deep recession already at the early stages of the global financial crisis. The government therefore decided that account holders could withdraw their SP funds during the second half of 2009 and the withdrawals would be subject to a relatively low (but progressive) taxation. The scheme proved very

---

<sup>12</sup> This might be possible via, for instance, prudential regulation rules.

popular and very few account holders decided to retain their SP pension. Later this led the government to close down the entire SP scheme.

### 5.3 Contemplating the Effects

It is outside the scope of this paper to provide a comprehensive assessment of the efficacy of the policy measures proposed in subsection 5.1, as this would entail complex empirical analyses for each country separately. Instead, this subsection provides a discussion of some of the issues that determine the effects of the two policy measures. To simplify the exposition, two concrete examples are considered.

#### *Ceasing of contributions (measure A)*

The economy experiences a *cyclical downturn* of substantial magnitude and the second-pillar contributions are temporarily stopped for everybody. Sums that previously were transferred to second-pillar pension funds are instead treated as income that is taxed and subsequently paid out to individuals. The immediate effect is that individuals have access to extra resources representing a (temporary) increase in disposable income. Individuals decide how the extra resources are allocated.

For one part of the population, the initial amount of second-pillar saving was in accordance with their intertemporal preferences, implying that they wanted to postpone their consumption and the “compulsory saving” essentially was voluntary. The ceasing of second-pillar contributions would have a very modest effect on the consumption of these individuals (Romer, 2005, chapter 7).

For another part of the population, the compulsory saving of the second-pillar was involuntary in the sense that they would have liked to save in other ways, for instance by paying down debt or other financial obligations. The ceasing of second-pillar contributions would allow these individuals to service debt or other obligations with the possible effect of avoiding high interest rates, delinquency fines or even personal bankruptcy. In other words, the ceasing of pension contribution may help individuals overcome the maturity mismatch discussed in section 4 and the financial disruptions of cyclical downturns may therefore be reduced.

Finally, for the rest of the population, the compulsory saving of the second pillar and the implied postponement of consumption was involuntary. These individuals would conceivably increase their consumption in response to the reduced pension contributions. The desire of individuals to advance consumption is likely higher if they have experienced an income decline and liquidity constraints make it difficult to borrow.

Combining the effects of the three groups, the net effect of the ceasing of second-pillar contributions would, in all likelihood, be an increase in consumption.

Increased demand would be expansionary if there are unutilised resources in the economy. There might be also fewer loans in delinquency and fewer cases of personal bankruptcies, which may contribute to a less pronounced downturn. Moreover, the government budget balance would be improved, directly because income that previously was transferred to second-pillar funds is now taxed, and indirectly because of the improved cyclical stance.

#### *Allowing withdrawals (measure B)*

The economy experiences a *cyclical downturn* of substantial magnitude and individuals are allowed to withdraw accumulated funds from their second and third pillar, subject to taxation. The extreme case is that nobody withdraws funds in which case the measure has no effect. However, to the extent that funds are withdrawn, the same effects as discussed above apply, i.e. consumption will increase, disruptions from delinquency of private financial obligations will decrease and the budget balance will be strengthened.

The discussion above suggested that both measures, A and B, have the potential to help smooth a cyclical downturn. This also applies if the quantitative effects are considered. Transfers to the second pillar in the CEE countries with funded pension constitute 3–9% of the payroll, which translates to around 1.5% to 4.5% of GDP, given that labour income accounts for approximately half of GDP in these countries.<sup>13</sup> If payments are fully stopped, the immediate demand stimulus would amount to 1.5 to 4.5% of GDP, which would entail noticeable macroeconomic effects. Allowing individuals to withdraw their funds could potentially have much larger effects, depending on the amounts withdrawn.

## **5.4 A Simulation of the Effects of Releasing Pension Funds**

This subsection presents a numerical example to illustrate the possible effects on output, unemployment and fiscal variables of the release of accumulated pension funds (measure B). The example is based on simulations undertaken on EMMA, a model developed in Bank of Estonia (Kattai 2011, chapter 3). The simulations should not be interpreted as a realistic prediction but rather as an illustration of possible effects of a given pension policy experiment using a range of assumptions.

EMMA is a traditional quarterly macroeconomic model used for forecasting and policy analysis. The model is structural with typical Keynesian features. The main behavioural equations are based on reduced-form estimations that incorporate error-correction specifications. The explicit modelling of the equilibrium part helps

---

<sup>13</sup> The size of the accumulated third-pillar savings varies considerably across countries.

ensure long-term stability of the model.<sup>14</sup> The behavioural equations are derived from economic theory, but the model does not *explicitly* incorporate temporal or intertemporal optimisation. The economy is small and open, which implies that external conditions, such as the euro area interest rate and foreign prices, are taken as exogenously given.

The model features four main sectors, i.e. households, firms, banks and the government. The households consume out of disposable income while saving in or borrowing from the banking sector. Estonia has a flat income tax rate of 21% that applies to most sources of household income. (The pension system is not explicitly modelled in the model.) EMMA allows the imposition of different behavioural rules as regards government behaviour. In the simulation it is assumed that government revenue and spending react endogenously to key variables in the economy based on estimations using historical data.

The starting point is a baseline scenario, which is essentially a 12 quarters economic projection. The baseline scenario is structured so that there are vacant resources in the economy, e.g. in the form of unemployment, throughout the simulation horizon, and positive demand shocks can therefore affect output and other real variables.

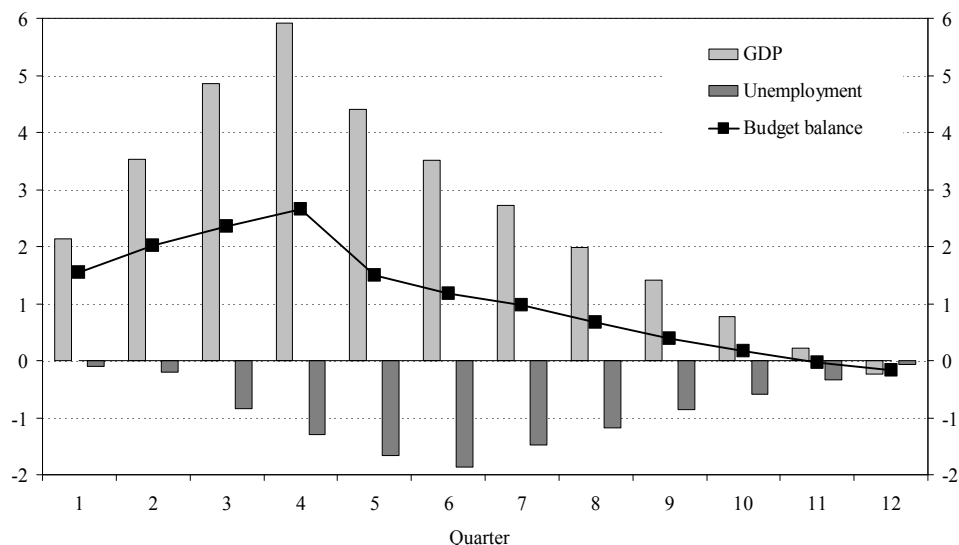
The simulated experiment is a one-off release, during one year, of accumulated pension saving that amount to 5% of GDP. This is meant to reflect a situation where *foreign-held* pension assets are liquidated and the revenue paid out as advance pension payouts, which is subsequently taxed. The experiment entails that pre-tax household income is increased by 5% of quarterly GDP in each of the first four quarters of the simulation horizon.

Chart 1 shows the simulated effects on GDP, unemployment and the budget balance, all measured as deviations in percentage points from the baseline scenario. The pension payout increases consumption demand and the extra demand in the economy increases income by around 4 percentage points in the first year, by 3 percentage points in the second year and slightly less than by 1 percentage point in the third year. These numbers illustrate the potential of a large pension payout to stimulate demand and output. The instantaneous (first year) multiplier is close to 1; the pension payout amounts to 5 percentage points of GDP and with a flat income tax rate of 21%, the household receives a net of 79% of the released pension savings or approximately 4 percentage points of GDP. The multiplier effect occurs mainly in the second year when income remains substantially higher and unemployment considerably lower than in the baseline scenario.

---

<sup>14</sup> Some of the behavioural equations are estimated so that their equilibrium conditions take into account that the income level in Estonia has been converging to the average level in the EU-15.

*Chart 1: Simulated Effects of Released Pension Funds in Quarters 1–4, percentage points*



*Source: Author's simulations based on EMMA.*

The budget balance improves by approximately 2 percentage points of GDP in the first year and by a bit over 1 percentage point of GDP in the second year, while the effect is unsubstantial in the third year. The significant improvement during the first four quarters is due to two concurrent effects: a direct effect from the taxation of the released pension funds and an indirect effect from improved macroeconomic performance. In the following years only the latter effect is present.

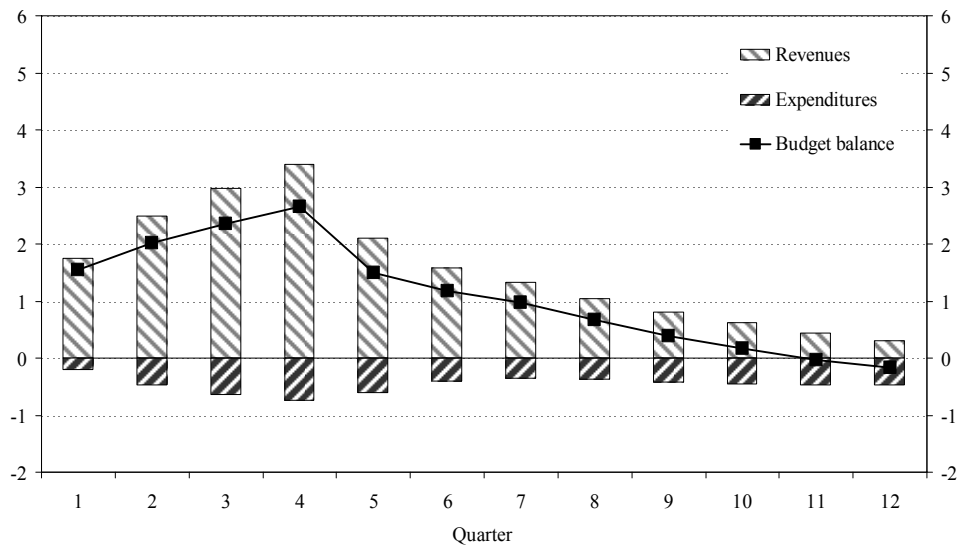
The effects of the release of accumulated pension funds will in large part depend on the derived reactions of individuals to additional resources becoming available in the short term. The simulations assume that the historical saving propensity out of income is maintained, but other outcomes may also transpire. Individuals may increase their savings to compensate for the payout of pension funds, in which case the output multipliers will be smaller than those depicted in chart 1. Alternatively, given that the economy is in recession and individual budgets are likely to be strained, individuals may have an unusually low savings rate, in which case the output multipliers will be larger than those depicted in chart 1. The precise behavioural reaction to the pension payout is virtually impossible to assess *ex ante*.

Chart 2 details the development of public finances after the release of pension funds. The effect on revenues is sizeable in the first year, almost 3 percentage points of GDP. The direct effect is close to 1 percentage point and the indirect effect to 2 percentage points. Revenues increase by approximately 1.5 percentage



points in the second year and 0.5 percentage point in the third year. The effect on the budget balance is dampened by higher expenditures amounting to roughly 0.5 percentage point of GDP in all three years. The higher expenditures are partly the result of higher GDP growth raising incomes and therefore also public expenditures such as pensions and public wages.

*Chart 2: Simulated Effects of Released Pension Funds in Quarters 1–4, percentage points*



*Source: Author's simulations based on EMMA.*

The simulation results suggest that the effects of releasing accumulated pension funds can be substantial and may help restore growth and reduce unemployment in an economy that undergoes a downturn. The exact magnitudes are, of course, the result of the features of the EMMA model, the behavioural assumptions and the way the policy is implemented. This suggests that the results are subject to significant uncertainty that is very difficult to quantify.

## 6. Final Comments

The countries in Central and Eastern Europe have experienced strong business cycle fluctuations in the last two decades. Periods of rapid economic growth have been followed by deep downturns in the wake of financial crisis, softening export markets or confidence shocks. Counter-cyclical fiscal policies have, at the same time, proven difficult to implement. The conclusion is that there is a need to devise

practical policy measures that can be used to dampen fluctuations in growth and unemployment in the CEE countries.

The focus point of this paper was the funded pension systems, which have been implemented in most CEE countries. It was argued that the linkages between these funded pension systems and the presence of business cycle fluctuations should be analysed in detail. This link has been largely ignored in the academic and policy-oriented literature, in spite of its likely conservable consequences as regards economic welfare.

The paper argued that the introduction of funded pension systems may have aggravated business cycle fluctuations, while weakening the crisis resistance and stabilisation capabilities of public finances in the CEE region.

The paper suggested that a more active use of the funded pension systems in the CEE countries might have the potential to stabilise business cycle fluctuations without straining government budgets. Two different measures were considered. Measure A entails that contributions to the compulsory second pillar are altered, depending on the cyclical stance of the economy or the economic situation of the individual. Measure B entails that individuals are allowed to withdraw pension funds in case of adverse economic developments.

The measures act in a counter-cyclical way by stimulating consumption and reducing financial strain during downturns. Some simulation exercises suggested that the measures have the ability to affect the business cycle and the budget balance in quantitatively meaningful ways. The measures and their effects should, however, be analysed in more detail, taking into account country-specific economic and social characteristics.

## References

- ATP (2009) The ATP Group Annual Report 2009, ATP Group, [www.atp.dk](http://www.atp.dk).
- Attanasio, Orzorio P. & Thomas DeLeire (2002) The Effect of Individual Retirement Accounts on Household Consumption and National Saving, *Economic Journal*, vol. 112, no. 481, pp. 504–538.
- Bosworth, Barry P. and Gary Burtless (2010) Recessions, Wealth Destruction, and the Timing of Retirement, CRR Working Paper, no. wp2010-21, Center for Retirement Research at Boston College.
- Bovenberg, A. Lans, Martin Ino Hansen and Peter Birch Sorensen (2008) Individual Saving Accounts for Social Insurance: Rational and Alternative Designs, *International Tax and Public Finance*, vol. 15, pp. 67–86.
- Burtless, Gary (2010) Lessons of the Financial Crisis for the Design of National Pension Systems, *CESifo Economic Studies*, vol. 56, no. 3, pp. 323–349.
- de Menil, Georges (2000) A Comment on the Place of Funded Pensions in Transition Economies, *International Tax and Public Finance*, vol. 7, nos. 4–5.

- European Commission (2010) Public Finances in EMU 2010, *European Economy*, no. 4/2010, Directorate General for Economic and Financial Affairs, European Commission.
- Eller, Markus (2009) Fiscal Position and Size of Automatic Stabilizers in the CESEE EU Member States – Implications for Discretionary Measures, *Focus on European Economic Integration*, vol. 2009, no. 2, pp. 78–84.
- Feldstein, Martin (1998) Transition to a Fully Funded Pension System: Five Economic Issues, in: Siebert, Horst (ed.): *Redesigning Social Security*, Institut für Weltwirtschaft an der Universität, Kiel.
- Gale, William G. (1998) The Effects of Pensions on Household Wealth: A Reevaluation of Theory and Evidence, *Journal of Political Economy*, vol. 106, no. 4, pp. 706–723.
- Gardo, Sandor and Reiner Martin (2010) *The Impact of the Global Economic and Financial Crisis on Central, Eastern and South-Eastern Europe: A Stock-Taking Exercise*, ECB Occasional paper, no. 114, European Central Bank.
- Impavido, Gregorio (2011) Stress Tests for Defined Pension Plans – A Primer, IMF Working Paper, no. WP/11/29, International Monetary Fund.
- IRS (2011) 401(k) Resource Guide – Plan Participants – General Distribution Rules, Internal Revenue Service,  
<http://www.irs.gov/retirement/participant/article/0,,id=151787,00.html>.
- Kaasik, Ulo (2009) Reserves Can Help – the Case of Estonia, pp. 82–91, *Recent Developments in the Baltic Countries – What Are the Lessons for Southeastern Europe?*, Proceedings of OeNB Workshops, no. 15, Oesterreichische Nationalbank.
- Kattai, Rasmus (2011) *The Links between Private Sector Indebtedness and Banking Sector Vulnerability: An Estonian Case Study*, Dissertationes Rerum Oeconomicarum Universitatis Tartuensis, vol. 34, Tartu University Press, Tartu,  
[http://dspace.utlib.ee/dspace/bitstream/10062/16435/1/kattai\\_rasmus.pdf](http://dspace.utlib.ee/dspace/bitstream/10062/16435/1/kattai_rasmus.pdf).
- Keeley, Brian and Patrick Love (2010) *From Crisis to Recovery. The Causes, Course and Consequences of the Great Recession*, OECD Insights, Organisation for Co-operation and Development.
- Keynes, John Maynard (1940) *How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer*, Harcourt, Brace and Company.
- Lindbeck, Assar and Mats Persson (2003) The Gains from Pension Reform, *Journal of Economic Literature*, vol. 41, no. 1, pp. 74–112.
- Manasse, Paolo and Nouriel Roubin (2009) Rules of Thumb’ for Sovereign Debt Crises, *Journal of International Economics*, vol. 78, no. 2, pp. 192–205.
- Manasse, Paolo, Nouriel Roubini and Schimmelpfennig (2003) Predicting Sovereign Debt Crises, IMF Working Paper, no. 03/221, International Monetary Fund.

- Mesa-Lago, Carmelo (2002) Myth and Reality of Pension Reform: The Latin American Experience, *World Development*, vol. 30, no. 8, pp. 1309–1321.
- Orenstein, Mitchell A. (2008) *Privatizing Pensions. The Transnational Campaign for Social Security Reform*, Princeton University Press.
- Orszag, Peter R. and Joseph E. Stiglitz (2001) Rethinking Pension Reform: Ten Myths about Social Security Systems, in: Holzmann, Robert and Joseph E. Stiglitz (eds.): *New Ideas about Social Security: Toward Sustainable Pension Systems in the 21<sup>st</sup> Century*, The World Bank, pp. 17–56.
- Reinhart, Carmen M. (2002) Default, Currency Crises and Sovereign Credit Ratings, *World Bank Economic Review*, vol. 16, no. 2, pp. 151–170.
- Reinhart, Carmen M., Kenneth S. Rogoff and Miguel A. Savastano (2003) Debt Intolerance, *Brookings Papers on Economic Activity*, vol. 1, pp. 1–74.
- Romer, David (2005) *Advanced Macroeconomics*, 3<sup>rd</sup> ed., McGraw-Hill.
- Staehr, Karsten (2008) Fiscal Policies and Business Cycles in an Enlarged Euro Area, *Economic Systems*, vol. 32, no. 1, pp. 46–69.
- Staehr, Karsten (2009) Economic Crisis in the Baltics: It Is Time to Break the Piggy Bank, *Europe EconoMonitor*, Roubini Global Economics, 1 April, [http://www.roubini.com/euro-monitor/256241/economic\\_crisis\\_in\\_the\\_baltics\\_\\_it\\_is\\_time\\_to\\_break\\_the\\_piggy\\_bank](http://www.roubini.com/euro-monitor/256241/economic_crisis_in_the_baltics__it_is_time_to_break_the_piggy_bank)
- Staehr, Karsten (2010a) The Global Financial Crisis and Public Finances in the New EU Countries from Central and Eastern Europe, *Working Papers of Eesti Pank*, no. 2/2010.
- Staehr, Karsten (2010b) The Global Financial Crisis and Public Finances in the New EU Countries in Central and Eastern Europe: Developments and Challenges, *Public Finance and Management*, vol. 10, no. 4, pp. 671–712.
- Weller, Christian and Dean Baker (2005) Smoothing the Waves of Pension Funding: Could Changes in Funding Rules Help Avoid Cyclical Underfunding?, *Journal of Policy Reform*, vol. 8, no. 2, pp. 131–151.
- Whiteford, Peter (2005) Introduction: Learning from Pension Reform Experiences, in: *Reforming Public Pensions. Sharing the Experiences of Transition and OECD Countries*, OECD, Organisation for Economic Co-operation and Development, pp. 7–22.
- World Bank (1994) *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth*, Oxford University Press.