

FIRST DRAFT

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Mandatory funded systems in Central and Eastern Europe: what is left after the crisis?

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Abstract:

The paper discusses the governance of the mandatory funded pension systems in Central and Eastern European countries. It focuses both on the aspects of public and private governance of pension systems and pension funds in the context of challenges brought about by the financial crisis, both on the public finance system and on the performance of pension funds.

Introduction

At the end of the 1990s and at the beginning of the new century many of the transition countries in the Central and Eastern Europe decided to reform their pension systems, among others through introduction of mixed financing of mandatory pension systems: partially pay-as-you-go (PAYG) and partially funded. Reform directions were influenced, among others, by the recommendations of the World Bank and its three-pillar model. There were many reasons that backed such decisions, including the demographic change and population ageing, the need to eliminate early retirement privileges but also the hope for development of local financial markets. (Mueller, 2003 and Chlon-Dominczak and Mora, 2003).

The path chosen by the CEE countries is different from the traditional development of pension systems in the EU-15 countries, which usually comprise of public PAYG components (first pillar) and occupational funded ones (second pillar). Different pathway in the CEE region is both due to the under-development of its financial markets and industrial relations before the transition, as well as because of unstable labour market situation, leaving little incentives for the employers to sponsor pension plans. This makes the EU-wide discussion on pension systems more varied and complex.

Shift towards a partial funding in the mandatory pension systems also meant changes in the approach to the governance of pension systems. First, public authorities face the need to introduce tools of governance of funded systems (such as for example the supervision of funded systems), but also the governance of the transition (understood as providing framework in which transition to funding is met with appropriate financing) and the pay-as-you-go components of the mandatory pension systems to maintain the integrity of the overall pension framework.

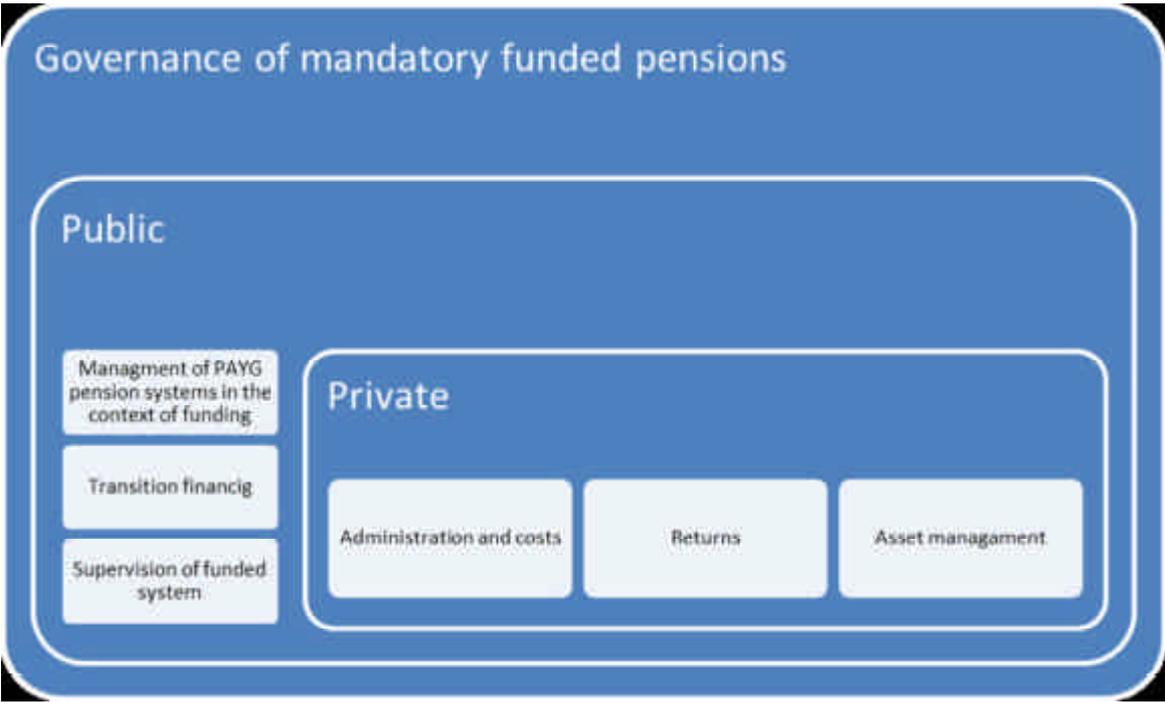
Second, as funded systems are usually managed by private institutions (which in the case of CEE countries is usually done by specialized asset management companies), another area of governance is the actual governance of pension fund managing institutions.

First years of implementation of the changes were accompanied by high economic growth in the region, partially fuelled by the accession to the EU. Pension funds recorded relatively good performance and public finance situation was relatively favourable. As a result, there was little attention to governance of mandatory funded pensions.

The recent financial crisis had both impact on the performance of the funded pension schemes. In particular, losses of pension funds during crisis generated debates on their efficiency (including costs, returns and lifecycle allocation of assets) of pension fund managing institutions, which led in turn to the development of proposals of improvements.

Our aim is to review recent developments and discussions in the CEE countries around these aspects of mandatory funded pension systems governance, which are illustrated in Figure 1.

Figure 1. Public and private aspects of governance of mandatory funded pensions



Our paper focuses on the development of funded pension systems of the eight CEE countries – EU member states in the time of the financial and economic slowdown, including: Poland, Slovak Republic, Hungary, Lithuania, Latvia, Estonia, Bulgaria and Romania.

In the first section of the paper we review the public governance of the CEE funded pension systems, with a focus on changes and decisions made after the crisis. This section looks close at the issue of transition costs and sources of its financing. We also look at recent changes in the funding of pension systems made to meet the challenge of deteriorating public finance situation. We also look at legal changes, including changes in the regulatory structure and supervision with a view to correct market outcomes resulting from pension funds’ operations.

In the second section we examine the private governance of the CEE funded pension systems.

The third section concludes.

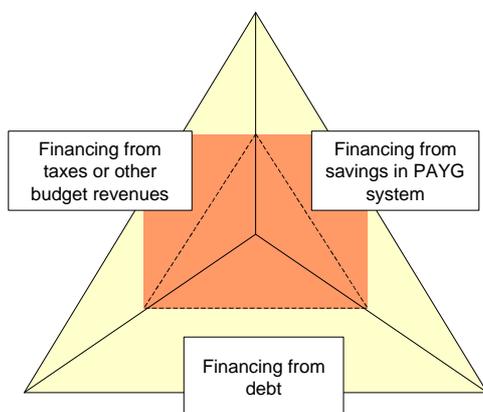
1. Public governance and fiscal outcomes of new pension systems

1.1. Pension reforms and transition costs

Introduction of the partial funding in the CEE countries was, as a rule, made by carving-out a part of pre-reform mandatory contribution and transferring it to the pension funds. Only in the case of Estonia, a part of funded contribution was financed through increase of contribution paid by employees.

Introduction of funding came at a price of the transition cost – i.e. the need to finance both the accumulation of assets in the mandatory funded part and the payment of old-age pensions paid fully on the pay-as-you-go basis. The possible ways of financing transition costs are presented on Figure 2.

Figure 2. Options for financing the transition to funded pillar



Source: The concept of Ardo Hansson.

The triangle represents the total costs of transition, which can be financed using three main sources burdening different generations:

1. Retired generation – through savings in the pay-as-you-go system;
2. Working generation – through financing from current taxes or other government revenues;
3. Future generations (children) – through an increase of the public debt needing repayment in the coming years¹.

In the case of financing the transition from current budgetary revenues, either taxes or other revenue (i.e. privatisation proceeds), there is no direct cost of such financing but the opportunity cost. Namely, the amounts spent cannot be used for other purposes.

¹ Cited after Ardo Hansson, who developed the concept of the triangle.

If transition is financed from savings in the PAYG system, changes can mean reductions in current pensions by lower indexation of benefits or by increasing the retirement age. As a result, pensioners receive less than they would otherwise, which may be observed in resulting reductions in average replacement rates. This policy may not be sustainable in the longer run, because potential reductions in living standards for some pensioners result in political pressures to increase the size of pensions.

If the transition is financed from debt by issuing government bonds (or similar instruments such as bonos de reconocimiento in Chile), the additional costs of interest has to be paid. However, creating a funded pillar means a reduction of the implicit pension debt for the future. From macroeconomic perspective, overall public liabilities do not change, if the reduction of pension rights in the pay-as-you-go system is equivalent to the level of pension rights accumulated in the funded tier. Rather, a part of implicit debt becomes explicit. To assess the actual costs incurred in such case, the additional cost of financing of explicit liabilities should be also compared with the cost of interest paid on the implicit liabilities.

The level of transition costs depends on the level of contribution transferred to funded tier as well as on the size of population covered by funded tier. Both of these parameters were important elements of decisions taken during introduction of pension reforms.

Initial decisions regarding the contribution size for the funded tier in the 8 countries are presented in the table below. As one can see, there were three strategies to set the level of contributions. Poland and Slovakia set it from the inception of the new system at the final level, similarly as Estonia, while other countries decided to progressively shift to higher contribution level, aiming at gradually generating sources of financing increased transition costs.

Table 1. Design of contributions to funded tiers

Contributions to funded tier	Contribution level by country	
Set at final level, fully deducted from previous mandatory contribution	Poland (1999)	7,3%
	Slovakia (2005)	9,0%
Gradually increasing, fully deducted from previous mandatory contribution	Hungary (1998)	6% ⇒ 8%
	Latvia (2001)	2% ⇒ 9%
	Bulgaria (2002)	2% ⇒ 5%
	Lithuania (2004)	2,5% ⇒ 5,5%
	Romania (2008)	2,5% ⇒ 6%
Set at final level, partially at a cost of increased contribution for workers	Estonia (2002)	4% + 2%

Source: Update of Chlon-Dominczak (2004)

Level of funded contribution rate can be perceived as a proxy of potential size of transition costs. These of course depend also on the total number of persons covered by the funded tier in relation to total working population and the size of covered wage bill, which differ between the countries.

What one can also observe is that in the countries that decided to introduce funded tier earlier (Hungary, Poland, Latvia), the level of contributions was higher than in most of those which implemented their reforms later. This may indicate that over the time, the awareness of the

transition costs in the region increased. It can also suggest that part of potential financing resources, such as privatisation proceeds, has already been spent on other purposes. In effect, the financial scope for pension reforms decreased.

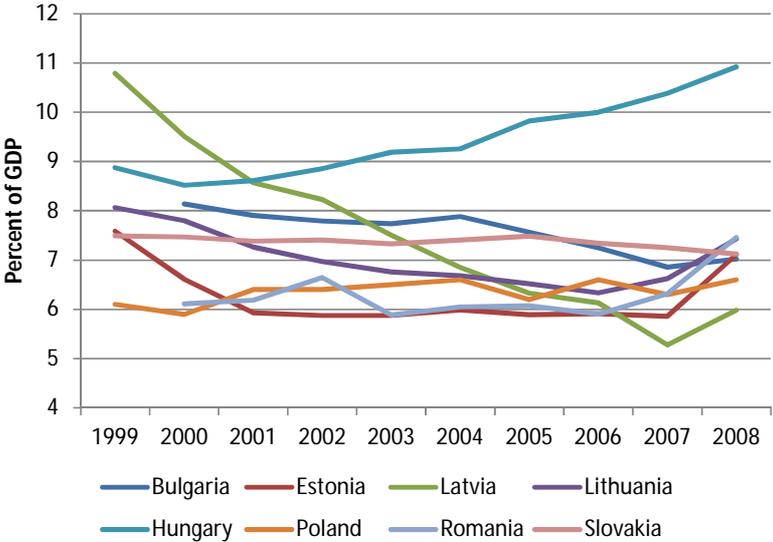
The overall level of transition financing is thus ranging from below 1 per cent of GDP to around 2 per cent of GDP.

1.2. PAYG pensions systems after the reform as a potential source of financing transition costs

In this section we look at the development of pension expenditure in the 8 countries after 2000, which can indicate, to which extent the transition costs could be financed from reductions of pay-as-you-go schemes outlays. The main ways to reduce expenditure were: (i) introduction of pension indexation based on prices rather than wages; (ii) increase of legal retirement age and/or withdrawal of early retirement options; (iii) changes in the PAYG systems, such as introduction of the notional (non-financial) defined contribution system (NDC) or changes in the level of defined benefit (DB) pensions leading to reduced level of new benefits and (iv) cuts in current benefits in payments.

Most of the countries decided to follow the mixture of the first three possibilities. One of the major ways to allow for reduction of expenditure was the increase of legal retirement age, envisaged in most of the countries. However, if one takes the retirement age of 65 for both men and women as a benchmark, neither of the countries envisaged such increases. In most of the cases, the retirement age is around 62-63. Additionally, Poland kept different retirement age for men and women, at 65 and 60 respectively.

Figure 3. Public old-age pension expenditure in the 8 countries



Source: Eurostat (ESSPROS), for Poland ZUS.

However, as depicted in Figure 3, the level of pension expenditure did not change significantly in most of the countries. High expenditure reduction was observed in Latvia (over 4 percentage points of GDP), while in Hungary, the level of expenditure increased by 2 percentage points of GDP. Increase of relative expenditure level noted in 2008 is due to the fall of GDP levels and thus reduced base for comparison. Poland and Romania did not observe any significant reduction of expenditure levels, while in Bulgaria, Estonia and Lithuania the expenditure between 2000 and 2007 fell by around 1 per cent of GDP. This may indicate that Latvia, Bulgaria, Estonia and Lithuania did manage to create some space for transition financing in their pay-as-you-go systems, while Hungary, Poland, Romania and Slovakia did not manage to actually use this source of reform financing.

This means that the initial reform plans were watered down during implementation by the political pressures and resistance to expenditure reductions. Frame 1 presents the development in Poland that lead to lack of initially expected outcomes.

Frame 1. Diverting from original plan in Poland

According to the reform plan of 1990s in Poland, the main source of financing the transition costs was a reduction of expenditure in the pay-as-you-go scheme. The major sources of these savings were an introduction of price-based indexation of pensions in payment as well as a withdrawal of early retirement options after 2006. However, already during the discussion of pension legislation, the Parliament decided to include a wage component in pension indexation. As a result, between 2000 and 2004 the relation between average pension and average wage increased. In 2005 price pension indexation were introduced, as a part of public expenditure reduction programme called “The Hausner plan”, which reduced indexation of pension benefits between 2005 and 2008. After 2008, following change of the law adopted prior to the Parliamentary elections, the indexation of pensions returned to mixed price-wage principle.

The initial plan was not followed also in the case of early retirement. The original deadline of early retirement withdrawal was postponed twice – in 2005 and 2007, and in both cases introduced just before the Parliamentary elections time. Also, in 2005, the miners were reversed back do the old DB early retirement scheme. These delays and reversals were caused by lack of political will to introduced socially difficult changes just before election times.

As a result, the planned savings were not observed and the total level of annual pension expenditure increased by around 0,5 per cent of GDP per year between 1999 and 2009.

1.3. Financing transition costs from debt – implications for current policies.

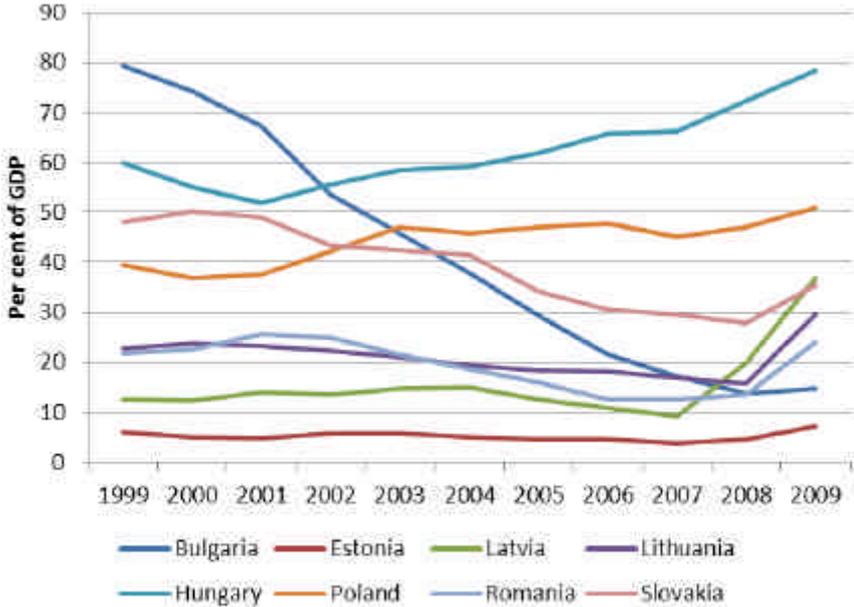
In most of these countries, the financing of transition costs came out of the state budgets. Unless flanked with additional savings or restructuring of costs, this led to the increased levels of public debt, which was to a smaller or larger extend observed in all CEE countries. This

meant that a shift towards the partial funding in the mandatory scheme also affected the levels of explicit public liabilities and public debt levels, particularly in the context of ESA 95 classification.

Consequently, the countries introducing such reforms face higher levels of explicit deficits and debt levels. Despite the fact that overall long-term public liabilities (including implicit ones) are reduced due to the reforms, approach to the classification affects the potential of the CEE countries to meet the Maastricht criteria as well as requirements of Stability and Growth Pact.

As depicted in Figure 3, the development of the public debt levels in the 8 countries differed significantly. Bulgaria managed to significantly reduce its overall debt level between 1999 and 2009. Also reforms in Slovakia led to overall decrease of public debts. Hungary and Poland, on the other hand, gradually increased their debt levels. The Baltic states (Estonia, Lithuania and Latvia) and Romania managed to keep their debt levels at low levels (below 20 per cent of GDP). The economic recession hit public finance systems leading to increases of public debt in most of the countries, with particularly high escalation in Latvia, Lithuania and Romania.

Figure 4. Public debt in the 8 countries



Source: Eurostat.

Given the aspirations of the 8 countries to join the Euro area, inclusion of transition cost in the public debt levels was (and is) a source of additional concern. Classification of mandatory pension funds’ assets as private means that in order to keep below the EU Stability and Growth Pact as well as ERM-2 requirement levels, the fiscal effort needs to be much higher compared to countries that do not have transition costs of changes in pension system financing.

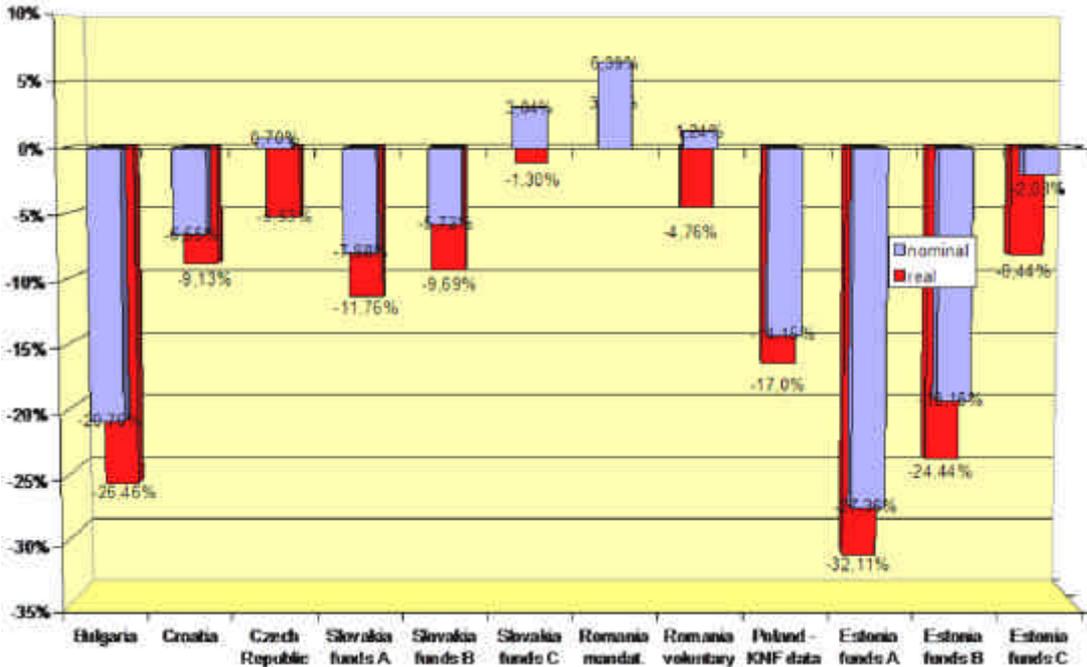
In August 2010, Ministers of Finance of nine EU member states², following the Polish initiative, issued a letter calling for changing the methodology of calculating public debt, so that costs of pension reforms are included, reducing the debt. The letter was addressed to Herman Van Rompuy heading the Task Force for Improvement of Economic Management in Europe and to the European Commission. However, in October 2010, the European Commission replied that current statistical classification of pension system does not require any changes, confirming the decision of Eurostat from 2004. This was the first time, when Poland asked to change the classification of mandatory pension funds' assets.

This still means that countries introducing reforms with mandatory funded provision have their public debts increased.

1.4. Reversing the reforms: reductions of funded pensions

As shown above, public finance situation suffered due to the economic crisis. With the increased deficits and public debt, the burden related to transition financing was perceived as higher. This increased the incentive to reduce this burden, which was additionally fuelled by criticism related to losses of pension funds caused by financial crisis (Figure 5). Though situation on financial markets improved, the reputation of funded schemes still suffers from the fall.

Figure 5. Performance of selected CEE pension funds in 2008, nominal returns p.a.



Note: Letters A, B, C represent life cycle portfolios with aggressive, balanced and conservative asset allocation strategies, respectively.

Source: Stanko (2009), Figure 3, p. 30.

² From the following countries: Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Sweden.

This encouraged governments to make decisions aiming at reducing transition cost, in other words: reducing explicit public debt while increasing implicit liabilities. Between 2008 and 2010 almost all of the 8 countries decided or announced decisions to change their pension schemes. These included two main directions. The former was the reduction of contribution level with the latter allowing individuals to switch-back to the pure pay-as-you-go scheme. Summary of changes made are shown in Table 2.

The changes made in the course of the past two years divert from initial plans of diversification of sources of financing of future pensions, as in most of the cases the reduced contribution level reaches around 2 per cent of wage. While solving the current problems of public finance, such changes have also negative impact for the longer run. In particular, future generations will still be providing income for the retired generations through the labour market mechanisms.

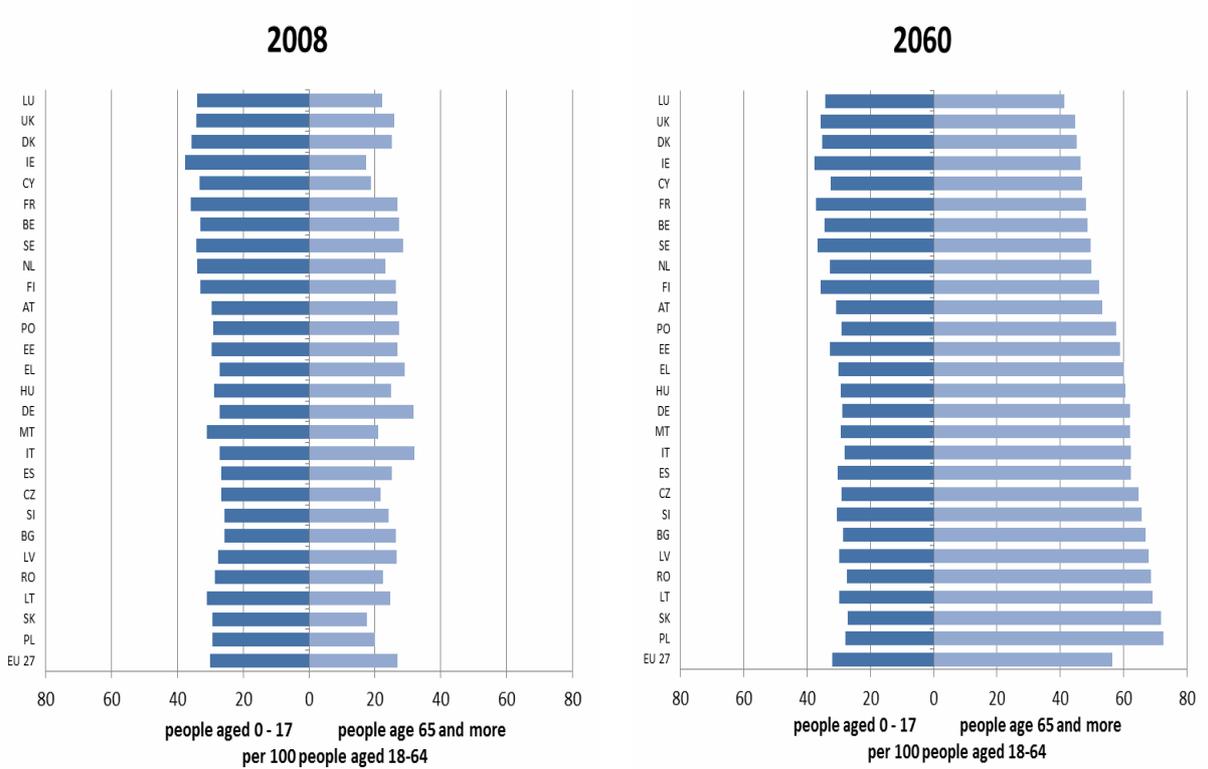
Table 2. Changes in the funded systems – contributions and membership

Country	Proposed and implemented changes
Bulgaria	Contributions: 5% (no change) Switching back: Early retirees brought back to the pay-as-you-go system
Estonia	Contributions: reduced contributions from 6% to 2% (paid only by individuals from their salaries); will rise to 3% in 2011 and back to the original 6% in 2012, recently the government abandoned the plan to increase contributions to total of 10% in 2010. Switching back: not allowed
Hungary	Contributions: 8% (no change) Switching back: Everybody is strongly incentivised to switch back by the end of January 2011, as the government does not provide any guarantees for those who stay in the funded tier
Latvia	Contributions: contributions of 8% suspended during 2009-2010, in 2011 were to be 2% and in 2012 to raise to 4%; is now proposing 0.5% and 6% from 2013.
Lithuania	Contributions: Contribution of 5,5% cut to 2% of wage, abandoned the schedule for returning to 6% of wage
Poland	Contributions: proposal to decrease from 7.3% to 2.3% from 2011, gradually rising to 3.5% by 2017 Switching back: allowed in 2006 for early retirees
Romania	Contributions: currently 2.5% of wage, expected to be raised to 3%
Slovakia	Contributions: 9% (no change) Switching back: no mandatory entry for new workers, allow switch-back to all pension fund members

Source: Mandatory Private Pension Systems in Central and Eastern Europe. Position paper (2010) and IPE(2010).

The question arises, whether such burden will be sustained by the future working-age generation and whether the changed inter-generational agreement will still hold. According to the Eurostat projections, the old-age demographic dependency rates will more than double in all of the analysed countries. Populations of the CEE countries will be the oldest in the EU, as a result of currently observed demographic change which is shown in Figure 6.

Figure 6. Demographic change in the EU Member States



Source: own calculations based on Eurostat 2008 projection.

Summing up, the crisis triggered a series of changes of reformed pension systems in the CEE countries. These changes are directed back towards more pay-as-you-go financing in pension systems, contradicting the needs arising from population ageing.

These changes are partially caused by the requirements on the levels of public debt and public finance deficit set in the Stability and Growth Pact and ERM-2 mechanism needed for Euro adoption. The current classification of mandatory funded pension assets indirectly encourages, if not even forces (in case of public finance dire straits) for such reversal of pension reforms in the eight countries.

The experience and reaction of the CEE countries calls for a serious debate on classification and presentation of public liabilities, both explicit and implicit in Europe. Currently, these countries are in fact indirectly penalized by the existing regulations.

1.5. Public governance of funded pensions: supervision and regulations

Another important aspect of public governance of funded pension systems is the regulatory framework. While looking at directions of legal changes of pension funds legislation in the CEE countries, we can identify two types of changes:

- (1) Expected changes leading to improvements or modifications of the pension funds, resulting from the experience of the functioning of the market;
- (2) Changes aimed at correcting “market imperfections” by regulatory rules and limits (though not always achieving expected goals) or introducing guarantees.

The first group of changes is a result of elimination of excessive limitations frequently imposed by the legislation at the beginning of new pension systems’ operations. The second group of changes is implemented as a reaction of the actual performance of the market, such as excessive fees or need for more explicit guarantees to improve the perception and public trust towards the pension system.

Summary of the legal changes in these two areas, proposed and legislated after the implementation of the funded system is shown in table 3.

Table 3. Changes in the funded systems – improvements and corrections

Country	Improvements	Corrections
Bulgaria	2006: Liberalisation of investment regime (in line with EU regulations) 2010: proposal of introduction of multi-funds 2010: proposal of payout phase legislation	2004: Introduction of the minimum guaranteed rate of return of pension funds, related to the market average 2010: proposal of gradual decrease of the asset management fee
Hungary	2008: optional introduction of multiportfolio and unit-based accounting; new investment limits on foreign exposure, mandatory in 2009	2007: centralised collection of contributions by Tax Authority 2008: limit on the upfront fee (max. 5,5%) 2009: restrictions on switching between funds, further restrictions on upfront fee (gradual decrease to 4,5%) 2010: introduction of inflation guarantee on returns; reduction of asset-management fee
Poland		2004: introduction of limits to up-front fee, modification of limits to asset management fee; changes in random allocation mechanism 2010: further limitation of up-front and

Country	Improvements	Corrections
		asset management fee
Romania	2007: new legal changes for investment in mutual funds	2009/2010: changes in random allocation mechanism
Slovakia		2009: introduction of limit to the asset management fee; new minimum guarantee rules leading to conservative investments

Source: Mandatory Private Pension Systems in Central and Eastern Europe. Position paper (2010)

As one can see, majority of the legislated changes focused on imposing additional limits on the charges applied to pension funds' members. This was a reaction to the critique of high costs of pension funds. However, this policy also led to the unification of fee structures, eliminating a potential source of competition between funds.

Relatively little changes can be attributed to the goal of efficiency improvement, which again shows that after the initial effort of legislating the new system, the impetus for improvements was slowed down, apart from changes that might be treated as corrections. Multiple portfolios, allowing for some lifecycle allocation of assets were only adopted in Slovakia and Estonia (from the beginning) and later in Bulgaria.

Neither of the countries uses external benchmarks that would enhance efficiency of operations. Asset management is based mainly on regulatory limits on asset classes, no movement towards more prudent-man regulation is observed. Most of the countries also lack regulations of the payout phase.

This again confirms that the initial plans of gradual modernisation of the public governance of the funded tier was not implemented.

3. Private governance of funded pension systems

The governance of funded pension markets in the CEE region relates to several areas such as costs, licensing and daily supervision, investment process and clients' protection, regulation of consumer choices, long-run asset allocation and finally – the way of using accumulated funds. Each of these areas has much in common with “ordinary” market regulation and financial education. However, due to the scope, these two issues have much heavier significance since with the compulsory system the state is explicitly (or at least implicitly) liable for the overall performance of the system both in terms of economic and political responsibility.

3.1 Fees

As it has been already stated, in most of the CEE countries, due to mandatory character of pension systems, the state regulates not only the types of fees that can be charged but also their maximum possible levels. The individual accounts pension systems tend to generate higher costs than in the case of collective pension plans. Part of this effect is related to regulatory costs, initial private investments of the administrators in market infrastructure (including in some countries the size of collateral required for running the business).

Table 3. Fees in selected CEE countries as of Jan 2010

Country	Upfront fee	Management fee	Does the mgmt fee depend on the fund size (AuM)?
Bulgaria (mandatory)	5%	1% p.a.	NO
Czech Republic (voluntary)	No legal fee limits due to specific nature of voluntary pension funds in the Czech Republic Actual total costs are on average about 100-150 bp. p.a.	Investment returns minus total costs (administration, acquisition) = investment profits which are divided between: <ul style="list-style-type: none"> • reserve fund (5%) • shareholders (max. 10%) • participants (the rest) 	NO
Estonia (mandatory)	<ul style="list-style-type: none"> • issue price – level decided by a fund; from 2011 this fee will be abolished • redemption fee – max. 1% of savings; no fee for retirees or people approaching retirement age (5 years or less) 	1,2% p.a. (until 2014)	YES*
Poland (mandatory)	3,5% (from 2010)	<ul style="list-style-type: none"> • 0,54% pa. (from 2010) • success fee of max. 0,06% p.a. 	YES**
Romania (mandatory)	2,5%	0,6% p.a.	NO
Slovakia (mandatory)	1%	<ul style="list-style-type: none"> • 0,3% p.a. (decreased from 0,78% p.a. started in July 2009) • success fee of max. 5,6% of investment gains from last 6 months (started in July 2009) 	NO

*Notes:** Fee for excess over 100 m euro for every subsequent million euro should decrease at least by 10% until it reaches the value of 0,5% p.a.; ** Maximum fees for AuM are: up to 8 000 m PLN is 54 basis points (1 bp = 0,01%), in range 8 000 – 20 000 m PLN: 50,4 bp; in range 20 000 – 35 000 m PLN: 45,26 bp; in range 35 000 – 45 000 m PLN: 41,33 bp, over 45 000 m: 15,5 m PLN a month., i.e. lower 41,33 bp and less.

Source: own elaboration based on an internet enquiry.

Regarding Poland, the biggest mandatory pension market in the CEE, the cost of saving in the system for a member, expressed as a % of average yearly assets, was 1,26% in 2009 and was lower than in the case of voluntary savings with the balanced investment funds, representing similar risk investment. In the case of investment funds, the cost ratio was over two times higher and reached 2,95%. It is expected that in line with increasing mandatory pension assets the relative cost of saving will continue to decrease – in 2010 after 3 quarters it was 0,92% on annual basis (IGTE, 2010).

3.2 Regulatory framework

The systems in most of the region are based upon strict licensing procedure that requires from prospective managing companies proper amount of capital and high qualifications of the staff. With the exception for Hungary and the Czech Republic, pension assets are separated from the managing company assets both in legal and physical terms and are deposited in custodian banks. In the case of these two countries, pension fund institutions are created as a common property of all members and form something similar to a mutual insurance company.

The daily state governance boils down to the activity of supervisory offices which monitors compliance of pension funds with the investment, solvency and operations rules. Managing companies carry also quite substantial informational requirements both in terms of providing the supervisory office with the data and information disclosure (both to the public and members).

The legal and supervisory provisions are aimed at ensuring financial solvency of private entities and rational decision making by customers. However, the latter issue, due to commonly known problems with financial literacy of mass clients, represents a serious problem.

3.3 Investment limits

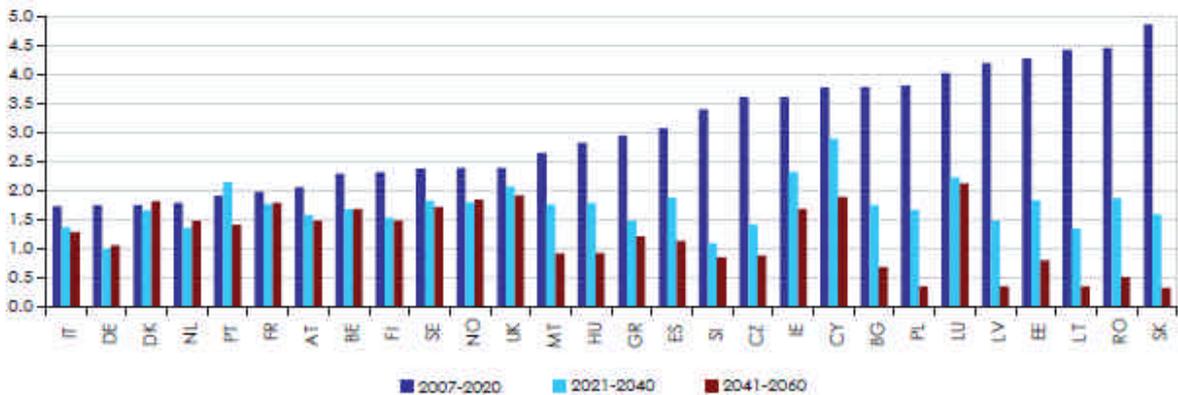
Investment limits in the CEE markets are of quantitative character and are far from the prudent person approach that can be found in developed pension markets of the Anglo-Saxon countries. It can be said that they tended to be overly restrictive at the beginning of these systems as the industry players and regulators would only start gaining the necessary experience. Reformers assumed that these limits will loosen as the market develops. However, the current development of investment limits indicate that the regulators have increasing

difficulties with proper risk control of pension funds investments. Because of development of financial engineering, it is nowadays much easier to go around the limits by purchasing a financial instrument that, although qualifies within a proper investment category (for instance as a bond issued by a banking institution), in fact has risk exposure to much riskier or even forbidden investment instruments (for instance, the bond’s return depend on the performance of a mortgage-backed security).

This, and also the finding that the prudent person investment regulators tend to deliver better risk-adjusted results (Davis, 2001), call for the change in the investment supervisory paradigm and for the use of sophisticated investment limits that address the overall pension fund risk level and true economic contents of the investment portfolio.

A serious issue here is also the problem of investment abroad. Politicians and some economic commentators voice their opinions that scarce domestic savings should not be used for financing economic growth of other countries but they should be invested domestically. Whatever the true benefits for such investments might be, this line of argumentation has little to do with the interests of future pensioners. Investing abroad improves the risk-return profile of pension portfolios due to geographical and sector diversification. It can also be seen as an important tool to alleviate negative consequences of demographic changes in the decades to come; by investing in younger economies, members of pension fund have the chance to benefit from quicker economic growth than it would be the case of their own countries. For example, the European Commissions (2009) forecasts that, unless serious labour market and economics reforms have been done, the GDP growth in the CEE countries during 2040-2060 will be below 1 percent, with Poland, Latvia, Lithuania, Romania and the Slovak Republic experiencing rates at the range of 0,3-0,5% (Table 7).

Figure 7. Projected potential growth rates (annual average) for EU member states



Source: European Commission, “2009 Aging Report”, European Economy 2/2009.

Conservativeness of investment limits has been partly solved by the introduction of life cycle portfolios in a few countries of the region (see point 3.6). However it is a still on the agenda, at least for two reasons. First, low investment in equity makes pension savings more

susceptible to extraordinary financial shocks as the one in 2008 due to relatively small historical “cushion” accumulated during the investment process (Stanko, 2009: 27-28). Of course, the length of saving is here the crucial factor, however, very important is also the degree of using the equity premium, i.e. the long-term asset allocation in equities. Second, conservative portfolios tilted towards safe instruments comprise mainly of Treasury bonds as the local markets do not offer much alternative debt instruments. This has recently become (the case of Poland) an ideal “accusation” for politicians who blame pension fund managers of charging members’ money for simple and risk-free investment in government papers.

3.4 Protection mechanisms: return guarantees, insurance institutions and multifunds

Governments of the CEE countries try to protect persons participating in funded pension systems by offering a number of protection mechanisms³ the most important of which are return guarantees, life cycle portfolios (so-called multifunds) and solvency funds.

Workers who are saving with funded pension institutions in the Slovak Republic, Poland and Bulgaria face investment and decision risks that have impact on relatively high portion of their pension benefits, as their contributions to funded pillar exceed 30% of total pension contribution, with Slovakia being even 50%. The biggest portion of salary in absolute terms is invested in Slovakia (9%), Hungary (8%) and Poland (7,3%; Kawinski et al., 2010: 12-13). Only the Baltic States do not offer any kind of return guarantees; the rest of CEE countries have either relative or absolute guarantees related to the performance of pension funds (Table 4).

Table 4. Return guarantees in funded pillars of the CEE countries as of 2011

Country	Type of return guarantee	Formula	Details
Bulgaria	relative	$\min [0,6*AR; AR - 3pp]$	Calculated 4 times a year for 2 years horizon. Deficit paid from reserves of pension fund (1% AuM) and if not sufficient from reserve of managing company (between 1% and 3% AuM).
Croatia	relative	$AR - 6pp$	Calculated 1 time at the end of the year for 3 years horizon. Deficit paid from reserve fund set up by managing company and if not sufficient – from capital of managing company.
Czech Republic	absolute guarantee (for voluntary pensions)	Nominal principal guarantee. At least zero in nominal terms	Calculated once a year. Deficit covered by mandatory reserve fund, and if not sufficient – from capital of managing company.
Estonia	none	–	–
Hungary	absolute guarantee	Real principal guarantee. At least real value of accumulated assets.	Calculated at the moment of retirement over the whole contributing period. Deficit paid out of guarantee

³ For detailed description and discussion of these facilities see Kawinski, Owczarek and Stanko (2010).

			fund (up to 4% of AuM).
Latvia	none	–	–
Lithuania	none	–	–
Poland	relative	min [0,5*AR; AR – 4pp]	Calculated 2 times a year for 3 years horizon. Deficit paid from reserves of a pension fund managing company (0,5% AuM) and if not sufficient from its own assets. If still unmet, deficit is covered from reserves of other pension fund managing companies and finally – by the state.
Romania	relative	mandatory funds: min [0,4*AR; AR – 5pp]for high risk funds min [0,5*AR; AR – 4pp] for medium risk funds min [0,6*AR; AR – 3pp] for low risk funds	Calculated 4 times a year for 2 years horizon. Degree of risk depends on portfolio allocation: high risk funds have less than 65% of portfolio invested in low risk bonds; low risk funds – over 85%.
	absolute	Nominal principal guarantee. At least zero in nominal terms (minus fees paid)	Guarantee on exit from 2 nd pillar (annuity, early retirement, disability retirement) and on every transfer between pension fund managing companies.
Slovak Republic	absolute	Principal guarantee. At least zero in nominal terms.	Calculated over 6 months horizon (Jan-Jun, Jul-Dec). Paid by the pension fund managing company.

Source: Kawinski et al. (2010: Table 4: 14 based upon the authors' questionnaire and World Bank, 2008: 8).

Pension fund members in Bulgaria, Croatia, Poland and Romania are offered some minimal required rate of return. It is calculated in relation to the industry average (computed as a weighted average of individual pension funds' results) and is based upon the idea, with some local modifications, taken from the Chilean pension system. The absolute rate of return offers some protection either in the form of preserving nominal value of principal (the Czech Republic, Romania, the Slovak Republic) or of preserving real value of principal (Hungary).

Relative rates of return do not guard pension fund members against losses. It is possible to have the scenario where the market notices negative performance and the minimum required rate of return is also negative. What is more, short calculation periods (1-3 years, in the case of Slovakia even half a year) and frequency of assessment (1-4 times a year) create undesirable incentives for herding and conservative investments⁴. The asymmetry between a potential “carrot” (performance fee and increase of management assets due to bigger assets and wider clientele) and a penalty (money transfer faced by pension administrators to cover the deficit in case of underperformance) bring about these negative effects that in the long run seriously increase opportunity costs for future retirees.

In the case of nominal principal guarantees there are serious flaws in these facilities, too. The Romanian system provides such a guarantee on the exit from the second pillar; however the

⁴ The case of herding amongst investment funds that are assessed on the peer benchmark is widely documented in the literature. The same effect for pension funds in Poland is described in Stanko 2003: 25-26; Bohl, Voronkova 2005; and Kominek 2006).

definition of “exit” covers also the moment of transfer to another company. The Slovak Republic mechanism of nominal providing guarantee on principal caused severe reduction in rates of return achieved by administrators. The short assessment horizon (6 months) forced pension fund administrators to get rid not only of equities but also of Treasury bonds with longer maturities (due to their increased duration and thus higher interest rate risk). The performance of the funds in the first half of 2010 was a meagre 0,6% (or 1,35% on the yearly basis) with the inflation at the level of 1%. In effect, the protection of members has come at huge cost.

While creating return guarantee facilities, the regulator must therefore cautiously assess its potential benefits and costs, as well as its informational value for ordinary citizens. The market-weighted rates of return calculated over 2 or 3 years horizon has little economic meaning and almost no educational appear to most of the members⁵.

In several countries of the region there are some insurance funds set up with the aim to offset at least partially losses caused by underperformance or potential bankruptcy of a managing institution. Such facilities operate in Bulgaria, Croatia, the Czech Republic and Poland where each managing company is obliged to create its own reserve fund out of own assets (Kawinski et al, 2010: 16). There are no guarantee funds in Latvia, Lithuania or Romania. In Estonia there is a Guarantee Fund that covers the losses resulting from events beyond prudential responsibility of a pension managing company. As argued in Kawinski et al. (2010: 16), setting up the proper level of such reserve funds is a difficult task, because in the presence of relative investment guarantees, the potential underperformance penalty is getting catastrophic in its size due to constantly increasing value of assets under management.

Another institution aimed at increasing safety of the members, but also at increasing expected pensions, are life cycle portfolios. By introduction of portfolios with risk level depending on savers’ age, one can substantially decrease potential losses during financial crises incurred by savers who approach the retirement age and who has no potential to recover from this losses. On the other hand, young savers can take advantage of long-term investment in equities that historically brought higher results than the investment in safer debt instruments (Siegel 2008; Cornell 1999: 77). The value of this equity premium varies depending on the country and time horizon, however.

The idea of life cycle portfolios in mandatory funded pension systems is not new. So-called lifecycle funds or target-date funds (with portfolios constructed for a particular year of retirement) has been in operation in voluntary pension markets of Western Europe and Anglo-Saxon countries for quite a long. They function in group pension schemes in USA, UK, Australia or the Netherlands. The theoretical foundations for lowering equity risk exposure over the life of a saver relate to the concept of human capital, i.e. the income that can be

⁵ One of the arguments for this hypothesis can be found in Stanko (2010 b) where he finds no statistical relationship between members decisions to change a pension fund and 3-years rate of return published by the Polish supervisory authority.

achieved by a worker from his or her salaried work in the capital market. To some extent, such a stream of lifetime income resembles coupon income from a bond; however since the labour market and a person’s health conditions are not certain, such a stream becomes more variable than in the case of an ordinary bond. Nonetheless, its risk profile is still lower than of equities. The closer the retirement date, the shorter the working career which results in decreasing human capital. That is why a worker should decrease its equity risk exposure and increase the amount of ordinary bonds and money market deposits to lock in the value of her retirement portfolio.

From the point of view of regulator’s pension governance, the most crucial element here boils down to defining the following issues (Stanko, 2010 a):

- asset allocation for each age groups and the rules how to assign them to each portfolio;
- asset allocation for a default fund.

The first set of decisions influences the degree of aggressiveness of a member’s investment policy and therefore its expected rate of return, volatility, length of each investment horizon as well as the length of career period left for potential “catching up” with losses at the capital market. Thus, the way members of such a system are allocated and their strategic asset allocation are crucial for expected value and volatility of future pension.

The second issue concerns the problem of peoples’ ability to take sensible choices. As it has been shown by Simon (1955) and Kahneman and Tversky (1979), individuals’ rationality is bound, especially under uncertainty. Some of the problems faced by pension fund members might go beyond their cognitive abilities or self-control. Behavioural finance shows many cases when peoples; decisions about investment and saving are not in line with the classical economic theory (c.f. Blake, 2006). Also, people tend to be passive when faced with complicated decisions. In terms of life cycle portfolios it means that majority of pension fund members might not be able to choose their “proper” life cycle portfolio. Thus, the regulator must intervene by providing them with some default option that will be used in case a person does not take active decision about joining a fund.

Most of countries with mandatory individual pension funds introduced them quite recently (Table 5). The life cycle portfolios in the CEE region are operating only in the Baltic States, Slovakia, and Hungary. In Hungary the default option is related to the age of an insured, in Slovakia – the unfunded pillar, whereas in the Baltic States – it is the conservative fund (Stanko, 2010 a).

Table 5 – History of introduction of life cycle portfolios in the Latin America and the CEE region

Country	Year of introduction	Number of funds
Sweden	Aug 2000 – 2003	currently about 800
Chile	27 Sep 2002	5

Estonia	2002 / Sept 2009 r.	3 /now 4
Latvia	2003	3
Lithuania	no info available	4
Slovakia	2005	3
Hungary	2008, from 2010 creating of funds was mandatory	3
Peru	2005	3
Mexico	2005 / Mar 2008	2 / now 3
Costa Rica	Mar 2011	3

Source: own elaboration.

There were some works for introduction of mutlifunds in Poland in 2006 and 2010; however so far unsuccessful. In the CEE countries that run already the system of life cycle portfolios, they are based upon the Chilean idea, with 3, 4 or 5 subfunds assigned to each age group. The Polish concept for life cycle portfolios differs substantially and does not resolve to several, but only to two funds (Góra et al., 2010, see Frame 2).

Frame 2. Mutlifunds proposals for Poland

According to the 2010 reform proposal, an insured would be saving for a long time in aggressive portfolio (up to 85% in shares) until the age of 55. This period is aimed at maximizing the expected value of savings. Then at age 55 (or up to five years earlier or later, depending the decision of an insured), a person would gradually move towards conservative fund. This feature also differs from current regulations in other CEE countries where the switch to the next portfolio is done at one time. Spreading this operation over the time bring lowers the risk of incurring losses due to unfavourable market conditions prevailing at the moment of savings conversion. Only in Chile the process of assets conversion is done on instalments. The second period of saving is aimed at lowering the volatility of the value of expected pension savings. Due to this fact, the conservative fund in Poland is going to invest up to 7,5% of its assets in equities.

3.5 Client acquisition

Substantial area for pension governance lies in improving rules for customer acquisition. Emerging of privately managed pension funds in statutory pension systems of the Latin America and the CEE brought about the need of taking the decision which fund to join. The pension “products” (or services to be more exact) offered by each of pension managing company are quite homogeneous. What is more, the decision of choosing a fund is from the client’s point of view fairly complicated, because it is difficult to verify the “quality” of such a service at the moment of its “purchase”, that is the moment of choosing the fund (Stanko,

2010 b). That is why the client encounters some information barrier. A search for the information is costly and it increases in line with client's financial illiteracy. Potentially, the sales agents can therefore perform beneficial role to facilitate peoples' choices and to increase their financial literacy.

Unfortunately, the practice of the funded pension markets shows that sales agents very often resort to dishonest practices and misinformation whereas the costs of market acquisition and transfers generated by agents become much too high in relation to potential social welfare benefits. Pension markets resemble telephone company markets where it is customary and beneficial for operators to invest heavily in sales forces and to "steal" clients from the other operators (Knittel 1997 cited after Bernstein and Micco, 2002). Analysis of the Polish market (Stanko, 2010c) shows that 1/3-1/4 of people who enter the labour market does not choose a pension fund whereas those members of pension funds who decide to transfer to another one do that due to the influence of a sales agent and not because of cost-return analysis. The strongest statistical variable explaining the number of transfers in the Polish market is the client acquisition expenditure of pension managing companies (Stanko, 2010c).

One of the possibilities to curb too huge number of turnovers is to introduce various regulations imposing either explicit (such as a number of possible transfers per year; a fee for too frequent switchovers) or implicit (complication of procedures, requirement for signing documents in the premises of a pension fund or at public notary's office) obstacles to prevent people from too frequent changes of membership. Another idea, recently considered in Poland, is to administratively ban market acquisition activities, at least partly (for instance, in the so-called secondary market, i.e. switchovers between the funds). It is to be seen whether such administrative interventions can contribute to improvement of the market. However, one of the best (yet expensive) ways to counteract dishonest practices of sale forces is financial education to the public. Most of the countries do not do it, though (c.f. Stanko, 2010c).

3.7 Payout markets

Pension reforms in the CEE countries naturally focused on the accumulation period. At the time of the implementation of funded pillars, the payout stage seemed to be in the long horizon. Also, usually the political window of opportunity for introducing new pension systems tended to be too short to focus on all technical aspects of the reforms.

The payout markets in the countries researched either does not yet exist due to short life span of pension fund system or are of very limited size. Currently, the Polish mandatory pension system offers pension withdrawals for women aged 60-65 who retire from open pension funds. It is expected that in 2014 they will be offered mandatory life annuities, however due to lack of legislation in force such a scenario becomes more and more dubious. That is why perhaps the role of annuity provider in Poland will be handed to the State's Social Insurance Institution (ZUS).

The most important challenge for pension regulator here is to design life annuity market with properly functioning institutions and to educate the public about the nature of possible retirement products. However, the cost of such solutions seems to be relatively high whereas the public comprehension low. Life annuity is a product that provides coverage against longevity risk (understood as a risk that a person will outlive his or her resources due to over-the-average life span) and investment risk (i.e. the possibility of substantial decreasing of pension assets on retirement). Even though this product is desired from the point of view of social planner, the annuity literature (see for example McKenzie, 2006) shows that clients are highly reluctant to convert their pension savings into life annuity. This unwillingness has been coined the term of “annuity puzzle” and is attributed to various factors such as inheritance motives, psychological reasons, competition from state mandatory pension system, perception of too high prices, liquidity motive or simply – lack of knowledge.

Mandatory life annuity markets in Europe are additionally complicated by the use of unisex tables that contribute to the risk of clients’ antiselection and financial losses of private operators. Even though such problems can be mitigated by creating special compensation systems, it still does not prevent individuals from taking advantage of this (for example unmarried males might want to postpone their pensions as long as possible while married males might try to enter into joint life annuities, etc.). From the viewpoint of a social planner, mandatory annuity markets should therefore be as simple as possible.

Another problem to be solved is the way to handle the risks of transitory shock and the risk of losing purchasing power of an annuity. The former problem relates to the situation where an annuitant dies shortly after entering into annuity contract. The latter occurs when the annuity is of flat character and does not keep up with inflation or when the indexation mechanism offered by the state or private operator is not sufficient. There can be various solutions to these dilemmas (Stanko, 2008).

The transitory shock can be handled with a traditional payment guarantee – for instance a family of an annuitant might be given the guarantee that the benefit will be paid out for the next 10 years no matter whether an insured lives or not. However, such a guarantee comes at a cost (in the UK voluntary market for a person aged 65 it can be between 2-4% of an initial benefit, with higher cost for women, Stanko 2008). Another solution, enclosed in a draft of bill on annuity pensions in Poland was an insurance mechanism with decreasing sum insured – in the case of death immediately after converting pension assets, a family of such a person would receive 100% of pension money. Over the time, the protection would decrease linearly until the third year after purchase with no redemption value at all. This facility would be much cheaper since it would focus only at elimination of the most extreme cases of premature death.

The inflation protection might be achieved via offering products with proper indexation mechanisms. Such products however can be very costly (in the UK voluntary market it could

reach even 20-30% of an initial benefit, Stanko 2008) even if there are proper instruments to hedge this risk in financial market (such as for example the American Treasury Inflation Protection Securities). Such instruments are yet rather scarce and not tightly addressed to the needs of pension markets. It is worth noting that in the case of issuing by State debt instruments indexed by inflation, there is a redistribution effect between incomes of pensioners (indirect buyers of such instruments) and taxpayers (who bear burden of servicing these instruments). It seems, though, that from a social point of view, such a solution would be considered not only quite fair (if one does not get into the demographic disequilibrium problem) but also efficient (as it would not interfere with incentive mechanisms of a pension system and would be much more resilient to political risk).

Finally, private annuity providers face an increasing risk of estimating longevity projections. Since a life annuity contract is irrevocable, the exercise of forecasting future demographic tendencies in light of extending life span and changing socio-economic conditions becomes more and more risky. Whereas the estimation of expected value is still feasible, the estimation of its volatility becomes more and more problematic (Habermann, 2005) which results in increased actuarial reserves and also annuity prices.

This issue can be addressed by regulators by issuing longevity bonds as proposed by Blake and Burrows (2001). Such instruments would have their coupon values indexed by mortality indicator and would pay coupons only. Thus it would be an equivalent of perpetual bond (annuity bond) and longevity swaps. In case of mortality being lower than assumed, the bond would pay higher coupons which would help annuity providers to meet increased cost of life annuities. Since the government does not seem to be a natural issuer of such bonds (due to already huge exposition to longevity bonds assumed via traditional pension system), these should be issues either by the government with a proper risk premium or by private institutions, such as life insurance (what posses exposition to mortality risks via traditional life insurance contracts). It seems that a creation of such bonds would again result in some kind of income redistribution from taxpayers to pensioners. It would however be socially acceptable due to the fact, that such a market would lower transactional costs at annuity markets and would perhaps contribute over the time to developing higher participation of private entities.

3.8 Summary and conclusions

Implementation of pension reforms with funded component in the eight CEE countries shows that initial reform effort was not fully followed with necessary changes in managing the further change by the governments. In particular, the governments failed to create needed fiscal space to create room for absorbing transition costs in their public finance, in particular, in the old-age pension system.

This, combined with the financial and economic crisis, observed in recent years, as well as statistical classification of mandatory funded tier assets led to the decisions to scale down the initial size of funded pensions in all of the countries, that occurred between 2008 and 2010. At the end of 2010, the government of Poland that resisted such change longest, also announced reduction of its funded pension tier size.

This means that initial consensus on pension reforms was not fully respected by the subsequent governments – this process started relatively early in some countries, such as Hungary. Regional developments also encouraged governments to follow this path.

Current developments of borrowing money from reserve funds (case of Poland) or forcing reserve funds to purchase Treasury bonds (case of Ireland) are good examples to show that governments in Europe are more and more tempted to use pension assets to solve financial problems with the use of pension reserves. The financial crises (showing “vagaries of financial markets”), has been enhanced by the Eurostat’s method of classification of the CEE funded pension assets, and more and more strongly contributes to downscaling funded systems in the region (case of the Baltic States and Poland) or even to complete reversing of pension reforms (case of Hungary).

The biggest challenge to be faced by the governments and members of pension funds is to protect achievements of pension reforms. One of the weakest points of the second pillar in the region is higher individualisation of the system that results in higher costs and lower efficiency of customers’ decisions. With this aspect, regulators should create default solutions and increase the range of financial education for all citizens.

References

Blake D. (2006). *Pension Economics*, Wiley & Sons.

Blake D., Burrows W. (2001). *Survivor bonds: Helping to hedge mortality risk*, "Journal of Risk and Insurance", Vol. 68: 339-48.

Berstein S., Micco A. (2002). *Turnover and Regulation: The Chilean Pension Fund Industry*, Documento de Trabajo, 2002, N° 180, Banco Central de Chile, 2-17.

Bohl M., Voronkova S. (2005). *Institutional Traders' Behaviour in an Emerging Stock Market: Empirical Evidence on Polish Pension Funds*, "Journal of Business Finance and Accounting" 32(7/8): 1537-1560.

Chlon-Dominczak, A. „Evaluation of Reform Experiences in Eastern Europe” in: Pension Reforms: Results and Challenges, FIAP, 2004

Chlon-Dominczak, A., M. Mora, “Commitment and Consensus on Pension Reforms”, in: R.Holzmann, M.Orenstein and M.Rutkowski (ed.) Pension Reform in Europe: Process and Progress, World Bank, 2003

Cornell B. (1999). *Equity Risk Premium. The Long-Run Future of the Stock Market*, Wiley & Sons.

Davis E. P. (2001). *Portfolio Regulation of Life Insurance and Pension Funds*, The Pensions Institute, Discussion Paper PI-0101, Brunel University: London.

Góra M., Chlon-Dominczak M., Otto W., Stanko D., Szymanski M. (2010). *Bezpieczeństwo dzięki różnorodności. Poprawa efektywności funkcjonowania otwartych funduszy emerytalnych. Propozycje zmian* [Safety due to diversity. Improving of operational effectiveness of open pension funds. Reform proposals], expert paper for the Chancellery of the Prime Minister of the Republic of Poland, August, Warsaw..

Haberman S. (2005). *Annuities – is there a problem?*, Cass Business School, City University, conference “8th Annual World Cup of Investment Management”, Barcelona 2005, http://www.cass.city.ac.uk/faculty/s.haberman/files/Haberman-Annuities_IMN_Barcelona_Feb_05.pdf.

IPE (2010). *Baltic roundup: Lithuania, Latvia, Estonia*, 2 December 2010.

IGTE (2010). *Komunikat Izby Gospodarczej Towarzystw Emerytalnych z dnia 30 grudnia 2010 r.* [Announcement of the Polish Chamber of Pension Funds of 30 Dec 2010], Polish Chamber of Pension Funds (IGTE), <http://www.igte.com.pl/news/30122010.htm>.

Kahneman, D. and Tversky A. (1979). *Prospect Theory: An Analysis of Decision Under Risk*, „Econometrica”, Vol. 47(1): 263-291.

Kawinski M., Owczarek J., Stanko D. (2010). *Protection mechanisms in the pension systems of the CEE countries*, ISSA International Policy and Research Conference on Social Security, "Emerging trends in times of instability: New challenges and opportunities for social security", Luxemburg 29 September-1 October 2010.

Knittel Ch.R. (1997). *Interstate Long Distance Rates: Search Costs, Switching Costs, and Market Power*, “Review of Industrial Organization”, Vol. 12(4): 519-536.

Kominek Z. (2006). *Regulatory induced herding? Evidence from Polish pension funds*, Working Paper No. 96, European Bank for Reconstruction and Development, April 2006, <http://www.ebrd.com/pubs/econo/wp0096.pdf>.

Mackenzie G. (2006). *Annuity Markets and Pension Reform*, Cambridge University Press, New York.

Mandatory Private Pension Systems in Central and Eastern Europe. Position paper (2010)

Mueller, K (2005), *Privatising Old-Age Security. Latin America and Eastern Europe Compared*, Edward Elgar, USA

Siegel J. (2008). *Stocks for the Long Run. The Definitive Guide to Financial Market Returns & Long Term Financial Strategies*, 4th ed., The McGraw Hill.

Simon, H. (1955). *A Behavioral Model of Rational Choice*, “Quarterly Journal of Economics”, Vol. 69: 99-118.

Stanko, D. (2010 a). *Doswiadczenia z wprowadzania wielofunduszowosci w innych krajach* [Experience of introduction of the life cycle portfolios in other countries], pages 24-44 in: Wiktorow A., Wyznikiewicz B. (eds.) „Wielofunduszowosc w systemie emerytalnym” [Multifunds in pension system], Instytut Badan nad Gospodarka Rynkowa, Warszawa, January, [link to the document](#).

Stanko, D. (2010 b). *Transfery członków kapitalowych funduszy emerytalnych na swiecie i w Polsce. Analiza racjonalnosci decyzji członków OFE* [Transfers of funded pension funds' members in the world and Poland. An analysis of rationality of choices of OFEs' members], “Rozprawy Ubezpieczeniowe”, Nr 8 (1/2010): 7-36.

Stanko, D. (2010c). *Cases of information campaigns implemented by the industry*, a chapter in "Developing the Potential of the Individually Funded Pension Systems", pages 195-204, International Federation for Pension Fund Administrators (FIAP), Santiago, Chile, [link to the book](#).

Stanko, D. (2009). *Pension funds returns. The case of Central and Eastern Europe (2009)*, pages 26-45 in: "Investments and Payouts in Funded Pension Systems", International Federation for Pension Fund Administrators (FIAP), Santiago, Chile, [link to the book](#).

Stanko, D. (2008). *Rynek rent dożywotnich [Annuity market]*, „Studia i Prace Kolegium Ekonomiczno-Społecznego”, Zeszyt 15, pages 819-862, Warsaw School of Economics: Warsaw.

Stanko D. (2003). *Polish Pension Funds - Does The System Work? Cost, Efficiency and Performance Measurement Issues*, The Pensions Institute, Cass Business School, London, Discussion Paper PI-0302, January, www.pensions-institute.org/workingpapers/wp0302.pdf.