

Pension reform in selected CEE countries. An overview

Ryszard Petru¹

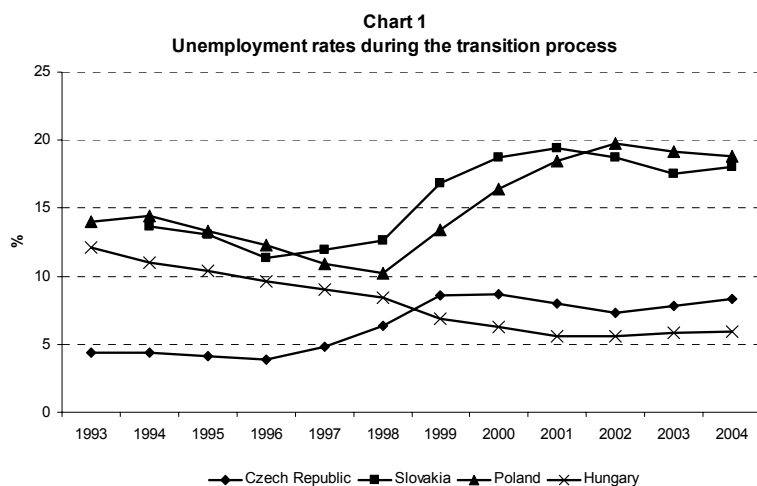
Abstract

This paper describes the principles of pension reforms in Hungary, Poland, Slovakia and Czech Republic. The objective is to present different approaches to pension reforms in these four transition economies. The paper reviews the main policies implemented since the collapse of communism, trying to assess whether measures introduced ensured long-term sustainability of pension schemes.

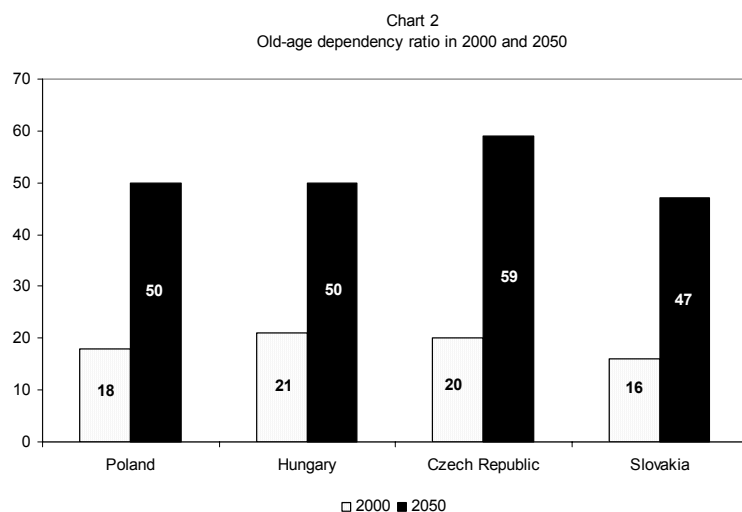
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Background

After the collapse of communism four Central European countries began the process of economic transition. Due to different initial conditions the depth and pace of implemented reforms differ. Still the pension schemes inherited from the previous system were quite similar. The common features of pension schemes in Czech Republic, Slovakia, Poland and Hungary include the following: (i) inherited after previous regime PAYG defined benefit schemes (ii) wide range of sector privileges (iii) low effective retirement age (iv) state monopoly – pension schemes in all countries were managed by state institutions financed from the state budget (v) relatively high payroll taxes.



Initial conditions of the transformation process were different in these countries², however the main economic transformation features lead to similar phenomenon as far as pension system are concerned. Firstly, due to a drop of employment associated with the transition into a market economy contribution base has been significantly lowered. Secondly, pensions were treated as a safety net, ie. the easiest tool allowing to escape from the labor market. Thirdly, evasion has become a widespread phenomenon. All these tendencies lead to a rising dependency ratio and growing pension expenditures. Additionally, pension systems posed a significant risk to future pension expenditures due to population aging, especially of the baby boom generation.

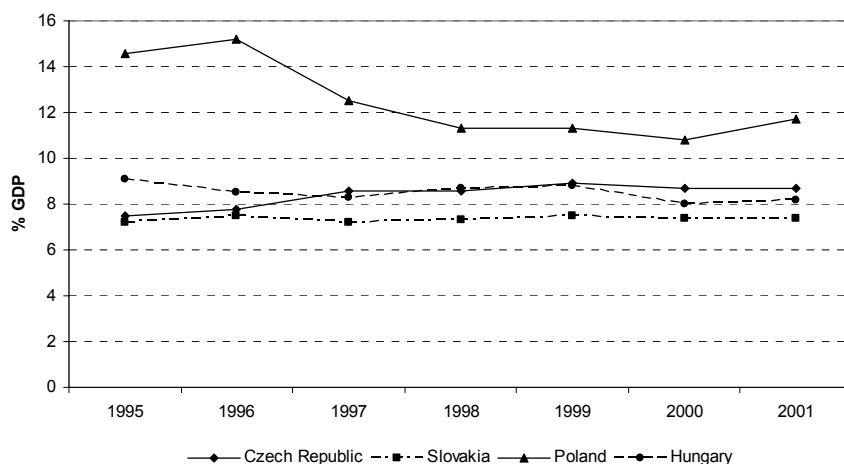


At the very beginning of the transformation process it became clear that deep structural pension reform are necessary. The pension reforms' main goal was to arrest the growth expenditures by rising the retirement age and changing the indexation formula. There was also an understanding that the privileges of the current sector are not sustainable in the longer term. Another goal of pension

² For further information about transition process see: L.Balcerowicz, *Socjalizm, kapitalizm, transformacja – szkice z przelomu epok*, wyd. PWN Warszawa 1997

reforms was to create incentives for contributions' payment through establishing a link between contributions and future benefits. In all of these countries the idea of involving private sector into the reform was an important part of the reform agenda.

Chart 3
Pension expenditures 1995-2001 (% GDP)



Source: Ministires of Finance

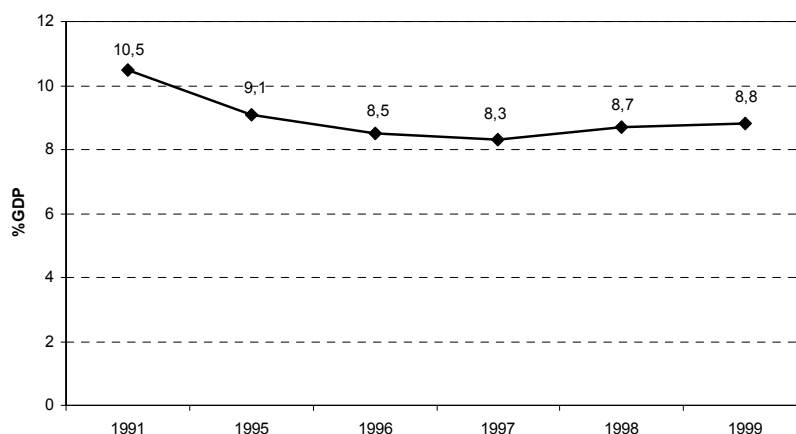
Though the aim of the reforms was quite similar, the approaches differ significantly between countries. Czech Republic undertook a gradual approach, and was the first pension reformer. The first deep multi-pillar reform was implemented in Hungary in 1997. However, the most comprehensive and coherent reforms were introduced in Poland (1999) and Slovakia (2003) and they are claimed to be the most successful in the region.

Pension reform in Hungary

Introduction

Until 1998 the pension system in Hungary was based on PAYG scheme. In summer 1997 the Hungarian Parliament passed the legislation reforming the existing scheme. The new system has been in place since January 1998. It comprises a PAYG public system (the first pillar) and the mandatory funded, privately-managed one (the second pillar). The voluntary funded system (the third pillar) existed already before the reform, introduced back in 1993. The Hungarian pension reform was the first implemented in Central and Eastern Europe.

Chart 4
Pension expenditures in Hungary before the reform



Source: Rocha, Vittas (2002), *The Hungarian Pension Reform: A preliminary assessment of the first years of implementation*, World Bank Group, Budapest 2002

Pension system before the reform.

In the post-war period the pension PAYG system in Hungary was characterized by an increasing dependency ratio (the ratio of pensioners to workers) and increasing average replacement ratio (ratio of average pension to average net wage). It was a result of very generous benefits and very permissive eligibility rules. The rise in both, the number of pensioners and the average benefit, led to a steady increase in pension expenditures – from less than 5 percent of GDP in 1970 to more than 10 percent in 1990. This level of pension expenditures was stable in the 1990-ies. In the early 1990s the Hungarian PAYG system faced difficulties to balance expenditures and revenues, on the back of a significant loss of revenues and sharp increase of the dependency ratio. The loss of revenues was a result of tax base erosion at the beginning of the 1990s, a consequence of exemptions and increasing evasion caused by very high payroll tax. Rapid rise in the dependency ratio was caused by a reduction of labor force participation, unemployment increase and maintenance of early and disability pension schemes, which were the buffers against unemployment.

Moreover, an aging population created an additional pressure as far as future pension expenditures were concerned. Without the reform, the public pension system would have generated a deficit of about 6 percent of GDP by 2050.³ In order to balance the system the contribution rate should have been increased to more than 50 percent or the replacement rate should have been cut from 60 percent to 35 percent. To avoid the explosion of expenditures specific measures were implemented - at the beginning of 90-ties and then later, together with the whole reform package in 1998. The key savings measures introduced focused on changing the indexation formula and prolonging retirement age. The overall improvement in the PAYG balance is more than 4 percentage points by 2050.

In the mid 90-ties the correction of pensions' indexation (and a decline in real pensions) made it possible to avoid a very large deficit of PAYG scheme but diminished the credibility of the scheme itself. Furthermore, the scope for ad-hoc corrections narrowed, what made the system even more vulnerable to any kind of demographic changes.

The second stage of the schemes' reorganization comprised the multi pillar reform initiated in 1998. The new system was mandatory for all new entrants into the labor force as of July 1998. Employees, who have already acquired pension rights under the current system, and those who enter the labor market until July 1998, had the option to either stay in the reformed PAYG, or to switch to the new mixed system.

The main features of the reform included: (i) raising the statutory retirement age from 55 for women and 60 for men to 62 for both sexes (this will be reached the final state in 2009); (ii) an increase in the number of years of service to be eligible for early retirements without restrictions to 40 years (this change will also be fully implemented in 2009); (iii) increase of penalties for early retirements and rewards for late retirements; (iv) switching to the "Swiss" indexation formula – 50% net wages and 50% of CPI inflation - from previous backward indexation based on net wages; (v) broadening the payroll tax base; (vi) reducing redistribution in the system by changing the benefit formula in order to tighten the link between contributions and benefits. The new benefit formula will be effective in 2013. Table 1 summarizes the main elements of the reform package.

³ IMF Country Report 2002

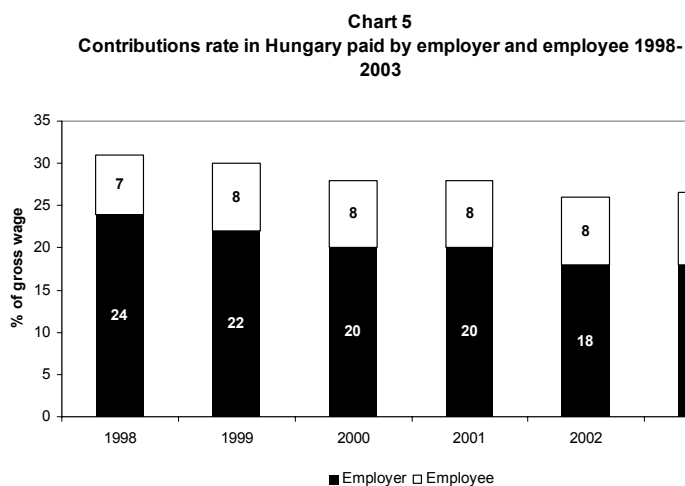
Table 1: Main Elements of the Reform Package

	"Old" PAYG	"Reformed" PAYG	New system	
			First pillar	Second pillar
Contribution rate	30%	30%	24-23-22%	6-7-8%
Annual accrual rates	Non-linear, equivalent to 2% of net wage.	Linear, 1,65% of gross wage.	Linear, 1,22% of gross wage	n.a.
Pension base	Gradual increase to lifetime earnings	Gradual increase to lifetime earnings	Gradual increase to lifetime earnings	-
Redistribution factor	Yes	No	No	-
Normal retirement age	60 (men);55(women)	62 (both)	62 (both)	62 (both)
Early retirements rules	Low penalty rates and minimum service years for early retirement	Higher penalty rates and minimum service years for early retirement	Higher penalty rates and minimum service years for early retirement	-
Indexation of pensions	Backward net wage indexation	Contemporaneous Swiss	Contemporaneous Swiss	-

Source: Drummand, Wagner (2002), *Hungary: Selected Issues and Statistical Appendix*, IMF Country Report no 02/109, June 2002

The PAYG scheme provides benefits for 2.8 million people: the average pension is 60% of the net average wage.

Due to political reasons the public pension scheme went through a few modifications. The main changes, as implemented by the Victor Orbans' government in 1998, were as follows: (i) the mandatory character of the second pillar was eliminated for new labor market entrants.



Source: Drummand, Wagner (2002), *Hungary: Selected Issues and Statistical Appendix*, IMF Country Report no 02/109, June 2002

employee pension insurance rate was raised from 8 to 8,5% and the employee reserve pension insurance rate for those who chose the second pillar went up from 6 to 7 %.

Creating incentives to pay contributions

Due to significant redistribution in the previous public pension system and unfair indexation changes in the mid-nineties the credibility of the system has diminished. Superfluously complex calculation of pensions virtually mean lack of connection between the amount of paid contributions and future pension. In the Hungarian system the pension level was poorly linked to years of employment. The uneven account of years of employment caused that after

10 years of employment the new pensioner received 33% of his estimated earnings, while after 40 years - only 74%. Thus, for example, four times longer employment led to an only 2,25 times higher benefit. Table 2 shows to what extent the pension level depended on the retirement date. The difference between the peak in 1990 and the low in 1994 amounted to 22,8 percentage points.

Table 2: Distribution of Hungarian pensions according to the date of retirement.

Date of retirement	Distribution of pensioners %	Pension in terms of average pension
-1970	2,2	95,7
1971-75	4,8	99,6
1976-80	11,4	98,6
1981-85	17,7	101,8
1986-89	18,1	105,8
1990	7,9	113,2
1991	8,3	98,1
1992	6,8	94,0
1993	6,7	93,3
1994	6,2	90,4
1995	6,8	93,9
1996	2,9	97,0

Source: Drummand, Wagner (2002), *Hungary: Selected Issues and Statistical Appendix*, IMF Country Report no 02/109, June 2002

Such a construction resulted in contributions being treated as taxes and thus highly subjected to tax evasion, which was one of the main reasons for a fall in revenues at the beginning of 90-ties. Therefore one of the main goals of the reform was to create incentives for participants to pay contributions. In the PAYG scheme it was accomplished by changing the benefit formula. Furthermore, the introduction of the second pillar, based on individual accounts, enabled to strengthen the connection between contributions paid and future pensions.

The basic change in the benefit formula concerned annual accrual rates. Annual accrual rate in the first pillar was reduced to 74% of the previous one, which corresponds to the ratio of contribution paid by workers who switch to the new system and contribution paid by workers who do not switch, namely 23/31. Workers who decided to stay in PAYG scheme would earn an accrual rate of 1,65%. Workers switching to the new system would earn an accrual rate of 1,22% for each year of employment and the same rate for each year before the switching date. These clear rules strengthened the link between contributions paid and the amount of pensions received. Comparing to the previous benefit calculation, this one is more immune to political handling.

Involving private sector

Mandatory funded pillar was introduced in January 1998 as a crucial part of the mixed pillar system. Since then employees were given a period of 20 months to choose whether to continue depending 100% on PAYG scheme or to switch to the new mixed system. Since 1998 the number of participants of the mixed system increased and finally reached 2.3 million by the end of 2003, which accounts for 58,2% of the total number of employees (3,9 million). The value of assets was 2,6% of GDP in 2003 and it is estimated that this ratio will exceed 30% in 2020.

Table 3: Characteristics of pension funds in Hungary

		2000	2001	2002	2003
Number of funds	PPF	25	22	19	18
	VPF	116	98	90	83
Membership (in thousands)	PPF	2193,4	2252,7	2225,4	2394,8
	VPF	1080,6	1153,1	1180,0	1218,4
Membership income	PPF	98,2	104,1	117,3	163,9
	VPF	58,6	64,0	70,9	76,7
Assets (at book value)	PPF	175,6	283,1	413,1	561,4
	VPF	224,3	291,5	358,0	434,4
Assets (in % GDP)	PPF+VPF	1,34	1,90	2,43	-

Legend PPF – Private pension fund

VPF – Voluntary Pension Fund

Source: Hungarian Financial Supervisory Authority

There is no direct guarantee as far as the amount of annuity provided by the pension fund. If a private pension fund is not able to provide its members with benefits the receivable account is frozen - due to opting in or out of the public pension scheme, or in case of death of the member - the missing amount has to be paid by the Guarantee Fund. However, there are a number of indirect guarantees within this system concerning supervising the Funds, legislative measures for the management, investments, minimum and maximum return, creating reserves etc. A new integrated financial and capital markets supervising authority (Hungarian Financial Supervisory Authority) has been introduced in April 2000 integrating bank, insurance, capital market and private pension supervision.

Investment restrictions

Hungarian law imposes several restrictions on pension funds. Pension funds are not allowed to exceed certain thresholds for particular types of investments: (i) equity – 50% in case of mandatory pension fund (MPF), 60% in case of voluntary pension fund (VPF); (ii) bonds – no limits for investments in government bonds and securities issued by financial institutions, 30% in case of corporate and municipalities, 25% in case of mortgage backed bonds; (iii) bank securities and deposits – no limits; (iv) investment funds – 50%; (v) loans – disallowed for MPF, 30% of the projected fund income to the liquidity and operational reserves during the maturity of the loan (VPF), 5% to fund members (VPF); (vi) real estate – 5% directly, 10% together with real estate investment fund (MPF), 10% directly or through real estate investment fund (VPF)

According to Hungarian pension regulations, the minimum rate of return for pension funds should not be lower than long-term government bonds yields. If a pension fund fails to meet the required return on investment, it is obliged to make up for it by additional payments from reserve funds. A surplus of earnings over the set benchmark is transferred to the reserve funds.

Table 4: Average real rate of return of mandatory pension funds in Hungary 1999-2003

	1999	2000	2001	2002	2003
Average real rate of return	-1%	0%	1%	2%	3%
Number of funds	1	7	5	5	0

Source: Hungarian Financial Supervisory Authority

A majority of pension funds failed to reach the required minimum real rate of return, i.e. 2%.

Pension funds are allowed to place up to 30% of their total assets with foreign investments in OECD countries, and the ratio of investments made in non-OECD countries shall not exceed 20% of total foreign investments.

Phasing out privileges

The measures introduced during the 90-ties reform did not fully eliminate privileges inherited from the previous political system. Another issue is unreformed disability pensions scheme. The forthcoming decline in old-age pensions means an increasing income gap between those pensioners with and without disability pensions, and thus a strong incentive to be declared disabled before reaching retirement age.

Unfinished agenda

The Hungarian pension system has undergone permanent reform. Undoubtedly, the measures implemented had several positive effects. More than half of the labour force switched into the mixed system voluntarily. Most of the them are below 40 years of age. Their decision was driven by better risk diversification in the new system. Moreover, the credibility of PAYG scheme was damaged by a series of manipulations and it offers low return on contributions. Nevertheless, the first pillar accounts for more than two-third of the contributions and therefore the new system is still dominated by the PAYG scheme.

Despite the reform, the PAYG scheme is still estimated to produce deficits in the long-term, mainly due to (i) lowest employment rate in OECD (low employment rate is also the cause of low contribution base) (ii) the fact the system does not respond to demographic challenges. Current old-age dependency ratio at 35% will reach 50% in the mid-century. The system requires further reform, such as an increase in the retirement age or a shift to price indexation. Some other measures could also be implemented to improve sustainability of the scheme. For example, IMF proposals consist of bolstering partially funded multi-pillar scheme, or parametric reform of the current PAYG scheme, or introducing NDC (notional defined contribution) of PAYG scheme. Many projections show NDC PAYG would be the most effective solution for Hungary. Last but not least, the Hungarian public pension system is still subject to political manipulation. The changes in last five years proved that politicians introduce measures, which are often contradictory to the assumptions of the reform package from 1997.

Pension reform in Poland

Introduction

Poland is one of the few Central European countries, where pension reform is claimed to be successful. It was based on the Swedish three-pillar model with a shift from previous PAYG scheme to the NDC PAYG and implementation of private pension funds. The pension reform in Poland was the answer to the demographic challenges and effects of transition after 1989.

System before the reform- main shortcomings

The radical economic reforms adopted in Poland at the end of 1989 and at the beginning of 1990-ties did not involve the pension scheme. Until 1999 it was based on a highly redistributive state-managed PAYG DB (defined benefit) scheme. Social contributions were based on nominal wages and fully paid by the employer. Contributions were collected by the state and managed by Social Insurance Agency (ZUS). Since the pension formula was a defined benefit there was no link between contributions paid and future pension. The pension calculation formula was of the following form:

$$P_i = 0,24 w_* + 0,013 n_j w_j + 0,007 m_j w_j + P_i^*$$

where:

P_i – pension paid to an individual at the time of retirement

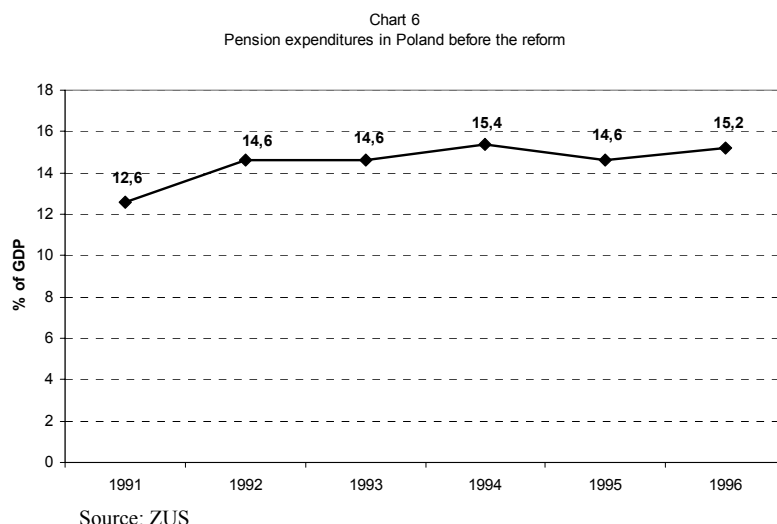
w_* - national average wage

n_j – number of working years

m_j – number of non-contribution years

w_j – average wage during last several years (from two to ten)

P_i^* –privileges for which the individual may be eligible to due to special pension rights connected with the type of work performed



Two most important factors that weakened the connection between current earnings and future pensions were (1) the large size of redistributive component - $0,24 w_*$ (2) privileges for some categories of workers.

Furthermore, deep economic reforms at the beginning of the 90-ties and rapid restructuring revealed a problem with financing the public pension scheme. Due to increasing unemployment and growing evasion the

number of contributors of the system declined. Additionally, a relatively easy access to early and disability pensions led to immense increase of beneficiaries escaping from the labor market. These caused rapid growth of pension expenditures in Poland in the 90-ties, coupled with a rise of the social security contribution. In effect, labor costs increased.

Table 5: Contributions rate in Poland before the reform

	1981	1982	1986	1987	1990	1992	1998
Contribution rate	15,5%	25,0%	33,0%	43,0%	37,0%	43,0%	45,0%

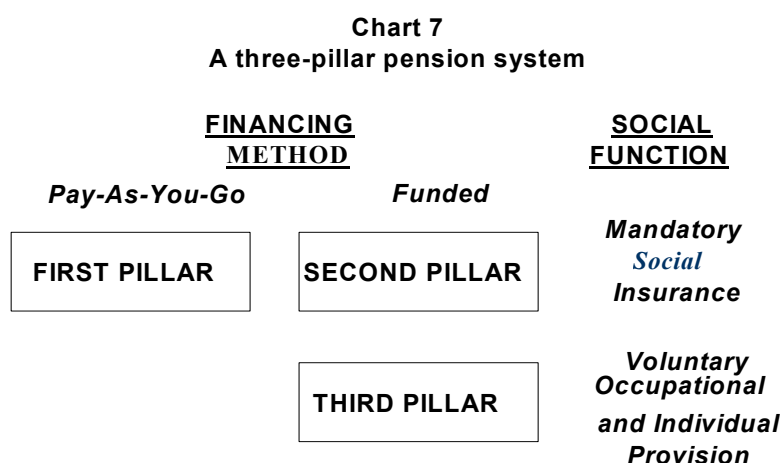
Source: ZUS

In the 90-ties demographic changes had no significant impact on the expenditure within the pension system, although projections indicate that the upcoming changes would bring significant deterioration of the system’s balance within the next 25 years.

Fiscal issue

Growing pension expenditure in the 90-ties, together with crucial demographic projections, posted a challenge for the Polish pension scheme. The main goal of the implemented reform was to ensure long-term sustainability of the system.

The reform measures came into force in 1999. The “Security Through Diversity” three-pillar reform bears a marked similarity to the Swedish reform.



Source: Góra and Rutkowski (1998)

The first pillar was transformed from PAYG DB scheme into PAYG notional defined contribution (NDC) system. At the same time a second mandatory pillar was established with individual accounts, which were to be managed by pension funds. In other words, the essence of the reform was a transformation from the defined benefit system into one based on defined contribution principle, without any sector privileges (the official retirement age was set at 60 for women and 65 for men).

The new 1st pillar is managed by Social Insurance Agency (ZUS). NDC scheme is characterized by following features: (i) contributions are based on the fixed percent of individual earnings registered on individual accounts; (ii) account balances from the close of the preceding period earn a rate of return based on the growth of the sum of paid contributions; (iii) accumulated account values are annuitised at the time of retirement; (iv) annuities are calculated on the basis of accumulated capital and life expectancy at the age of retirement; (v) technical (demographic) reserve is created.

The new NDC system was obligatory from January 1, 1999 for all insured below 50 years old see Table 6.

Table 6: Participation in the new system

New system (people born after 31 Dec. 1948)		Old system (people born before 1 Jan. 1949)
People born after 31 Dec. 1968	People born before 1 Jan. 1969	
Automatically covered by the new system; OA contribution automatically split between two accounts [NDC+FDC]	Automatically covered by the new system; OA contribution either split between two accounts or paid into one account [(NDC+FDC) or NDC]	Stay in the old system (no possibility to participate in the new one); no accounts

Source: M.Góra, *System emerytalny*, PWN, Warszawa 2003

Another feature of the reform was the division of social security contribution between the employer and employee. Due to wages gross-up social security contribution is paid partly by employee and employer in amounts to 19,52% of gross salary. The contribution of 12,22% is transferred to ZUS, which governs the first pillar, and the remaining 7,3% goes to Open Pension Fund (OPF), i.e. the second pillar.

Table 7 : Mandatory contributions in Poland before and after implementation of the new pension system

	Total	Individual account no. 1	Individual account no. 2	Other elements of the system
Before 1 January 1999				
	36,59*	-	-	36,59
After 1 January 1999				
Mandatory old-age contribution	19,52	12,22	7,3	-
Other mandatory contribution	17,07	-	-	17,07

*Equivalent of 45% (after grossing up).

Source: M.Góra, *System emerytalny*, PWN, Warszawa 2003

In 2004 the indexation rules were changed and price indexation was introduced.

The NDC scheme ensures the long-term financial sustainability and stability of the system. Polish system is the only system in Central Europe, which allows to lower pension expenditures in the future – see Table 8.

Table 8: Dependency ratios and public expenditure in OECD countries in 2000 and 2050

Country	Dependency ratio		Change in percentage points	Pension expenditure		Change in percentage points
	(inhabitants 65+)/(inhabitants 20-64) (%)			% of GDP		
	2000	2050	2000	2050		

Poland	20,4	55,2	34,8	10,8	8,3	-2,5
Hungary	23,7	47,2	23,5	6,0	7,2	1,2
Czech Republic	21,9	57,5	35,6	7,8	14,6	6,8
OECD (average)	23,8	49,9	26,1	7,4	10,6	3,2

Source: M.Góra, *System emerytalny*, PWN, Warszawa 2003

Creating incentives to pay contributions

Large size of redistribution component in the previous benefit formula and privileges for specific categories of workers weakened the incentives for participants to pay contributions. The basic advantage of the implemented reform is the fact that under NDC scheme retirement benefits are closely linked to the indexed capital accumulated by every participant during his working life. In the mixed pillar system based on individual accounts the pension formula is as follows:

$$\text{Annuity} = K_r / G_r$$

where:

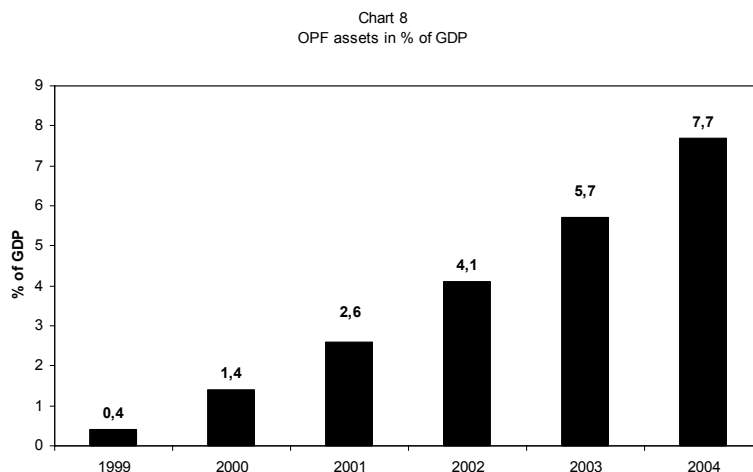
K_r – current value of accumulated contributions at the moment of retirement

G_r – the average life expectancy in retirement age

Such a construction allows to avoid the impact of politics on the level of future pensions, which is a strong incentive not to treat contributions as taxes but as savings. This difference is the basic factor which weaken the possibility of evasion.⁴

Involving private sector

Open Pension Funds started operating with one quarter lag, due to technical problems related to the implementation of the IT system. Until the end of 1999, those insured between 30-50 years old could chose whether to pay the whole contribution into the newly created NDC, or whether to switch part of its contribution into open pension funds. Among those who were given a choice between staying in the old system or moving to the new one, dominated those choosing the second option.



Source: Ministry of finance

OPF are managed by asset management companies (PTE) which follow rules set in the Pension Funds Law. The government's role is to guarantee everyone has a valid contract with OPF and supervise appropriate execution of the contract. The business activity of Pension Funds is controlled by

⁴ See: Góra M. (2003)

a special regulatory body (KNUiFE). Contributors are free to move their savings between funds.

The private funds are developing very fast (See: Table 9 and Chart 8). This is a consequence of the fact that a major part of those who could choose between the old and the new system, decided to switch to the new scheme.

Table 9: OPF members

Date	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003	31.12.2004
Members	9 665 816	10 419 254	10 637 409	10 989 816	11 463 285	11 979 483
Change		108%	102%	103%	104%	105%

Source: ZUS, KNUiFE

The replacement rate in the second pillar depends on accumulated contributions and return realised on invested capital.

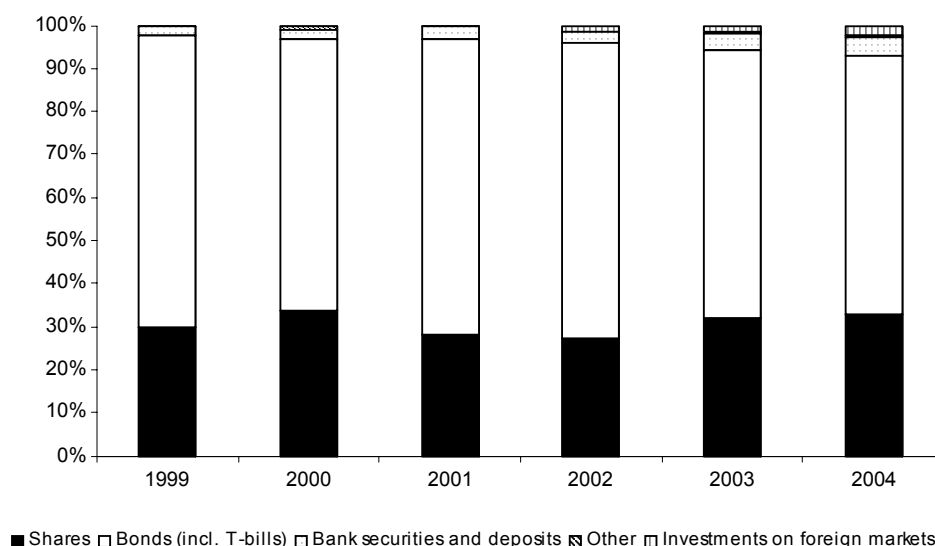
Investment restrictions

Open Pension Funds face limits as far as asset investing is concerned. Limitations concern: (i) diversity of investment portfolio, (ii) minimum return rate on investment and (iii) volume of foreign investment.

(i) The diversity of investment portfolio OPF is not allowed to exceed a given threshold for particular types of investment: (i) shares listed on the primary market -

40%; (ii) unlisted shares and shares listed on the secondary market – 10%; (iii) bank securities and deposits – 20%; (iv) NFI shares – 10%

**Chart 9
OPF investment portfolio**



	1999	2000	2001	2002	2003	2004
Shares	641 512 636	3 140 104 971	5 328 300 939	8 248 112 526	14 161 618 552	20 185 694 105
Bonds (incl. T-bills)	1 468 208 899	5 839 581 361	12 881 308 757	20 992 328 667	27 508 918 779	36 924 022 840
Bank securities and deposits	44 640 173	181 725 484	535 118 609	803 113 651	1 723 871 466	2 797 803 216
Other	3 979 143	105 615 099	1 990 993	6 662 500	170 779 061	317 943 516
Investments on foreign markets	0	0	68 648 391	437 293 565	667 643 287	1 334 659 577
Tot:		126 116	18 815 367 689	30 487 510 909	44 232 831 144	61 560 123 255

Source: Ministry of Finance

- municipal bonds – 15%; (v) corporate bonds – 10%; (vi) mortgaged backed securities – 30%, direct investments in real estate are not permitted; (vii) close-ended investment funds – 10%; (viii) open-ended investment funds – 15%

(ii) Minimum return rate on investment. Twice a year the regulatory authorities compare investment results of particular OPF to the benchmark calculated along rules set in the Pension Fund Law. In case the results of a given OPF fail to reach the minimum threshold, the asset management company (PTE) is required by law to increase reserve capital in order to compensate the negative difference.

(iii) Foreign investment limits. OPFs are allowed to place up to 5% of total assets with foreign investment such as treasury bonds, securities issued by Central Banks, listed equities and open-ended funds.

Phasing out privileges

The main shortcoming of the Polish pension system is the fact it does not include the farmers' pensions. Their benefits are paid directly from the state budget and there is no link between the amount of contributions paid to KRUS and the level of benefits. Moreover, the disability scheme is still unreformed and the eligibility criteria were not tightened enough, which gives a strong incentive to switch to this system before reaching retirement age and continue to receive disability pension after reaching retirement age instead of regular pension.

Unfinished agenda

Implemented reform ensured financial sustainability and stability of the system although it was comprehensive and radical only with respect to retirement pension outside the agricultural sector. This asymmetry poses a risk to the finances of the public part of the pension system. Moreover, there is still the lack of payout legislation for the second-pillar funds.

Pension reforms in Slovak Republic and Czech Republic

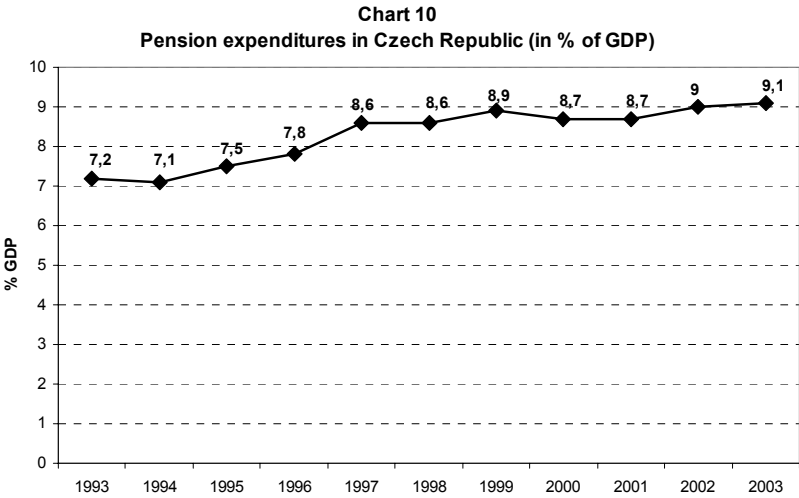
Introduction

After the collapse of communism in 1989 Slovakia and Czech Republic existed as a federation until 1993. The Czechoslovak pension system was financed through general taxation and governed by the State Pension Administration. The scheme was very generous to some employment groups and discriminated others, e.g. the self-employed. The Czechoslovak pension system would not have been able to deal with future demographic problems, especially the ageing of the Czech population. Therefore reforms called “the federal concept” were implemented before the collapse of federation in 1993. There was an inclination towards the PAYG system with earnings-related elements, administrated and financed in accordance with the classical social insurance system. After the break-up of Czechoslovakia both countries, faced the challenge to improve their pension schemes. Initial conditions were similar in both countries, but the reform process proceeded totally differently. Chart 1 and 2 present the pension expenditure in both countries. Slovakia had stable expenditure since the beginning of 90-ties. In the Czech Republic expenditure increase seen after 1997 forced the authorities to set the contribution rate at 28 percent in 2004. Czech Republic began reforming its’ pension system almost immediately after the break-up, gradually introducing chosen solutions. The whole process lasted almost a decade. Slovakia decided to change its’ pension scheme radically in 2004 not only by introducing improvements into the PAYG scheme, but also by creating a mandatory fully funded (FF) pillar.

Table 10: Changes in contribution rates in Czech Republic

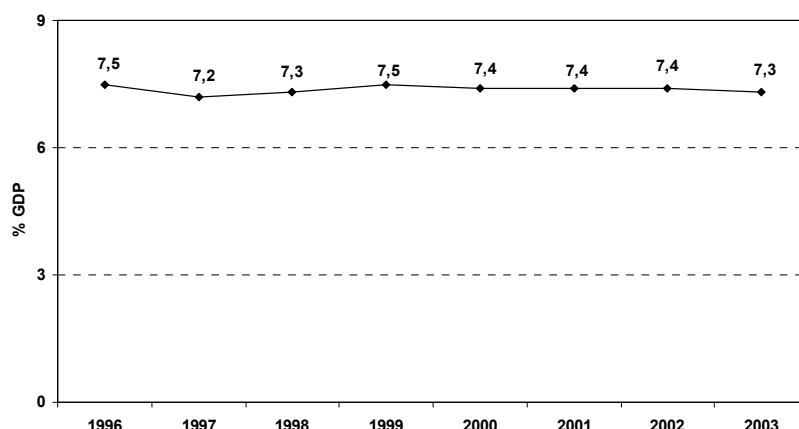
Year of introduction	Rate
1993	27,2 %
1996	26 %
2004	28 %

Source: Ministry of Labor and Social Affairs



Source: Bezdek (2005), The public pension system in the Czech Republic from the point of view of Public Finance, Institute of Economic Research, Hitotubashi University.

Chart 11
Pension expenditures in Slovakia Republic 1996-2003



Source: International Monetary Fund

Pension reform in Slovak Republic

System before the reform-main shortcomings

Until the end of 2003 the pension scheme in Slovakia was based on the Defined Benefit PAYG scheme. The system was administered by the Social Insurance Agency (SIA). SIA was a state-owned institution, separated from the state budget. Each person after 25 years of employment and upon attaining the minimum age (60 for men and 53-57 for woman, depending on the number of children raised) was entitled to a pension. The pension level was determined by (1) the duration of employment (2) average income, calculated as the average monthly income from the “best” five years during the last ten years before attaining the pension age. The average income was calculated using complicated formulas, and as a result only 50-67% share of average income was taken into account. Additionally, the newly granted pensions were multiplied by a given percentage and added a fixed amount in order to balance them with the several-times indexed pensions. Table 11 shows these calculations were highly re-distributive (e.g. the average income above SKK 10000 was not taken into consideration while the average gross wage in 2002 was SKK 13 511):

Table 11 : Pensions before the reform of PAYG (before 1.1.2004 in SKK).

AMI*	Duration of employment**							
	35	36	37	38	39	40	41	42
7245	6642	6547	6633	6719	6805	6891	6976	7062
8280	6602	6690	6778	6867	6955	7043	7131	7219
9315	6743	6833	6924	7014	7105	7195	7286	7376
10350	6836	6928	7020	7112	7204	7296	7388	7480
11385	6836	6928	7020	7112	7204	7296	7388	7480

* Average monthly income earned in the “best” five years of the last ten years of employment

**Including school years, compulsory military service and maternity leave

Source: INEKO

Such redistribution deterred the link between the monthly average income and the amount of pension, and thus negatively impacted workers motivation to pay contributions.

The pensions were indexed if the cost-of-living index (as given by the household budget surveys) increased by more than 10% or if the average wage grew by more than 5%. However the way and timing of indexation was not clearly defined by the law.

The major problem of the “Defined Benefit” PAYG systems is the inability to finance promises given to the former contributors. No matter what happens with demography or in a broader sense - with employment, the system promises a fixed replacement rate⁵ (defined benefit). In Slovakia the PAYG system has been generating a deficit since 1997. And it is not due to demographic crisis since the population of Slovakia is rather young and will remain so for the next decade. The deficit is a consequence of high unemployment rate and low incentives to pay contributions. Since the unemployment rate in Slovakia has a structural background and is related to the transition process it can only be solved in the long-term.

Fiscal issue

The fiscal consequences of a high unemployment rate for the public pension system made the authorities introduce a reform package, which main goal was to assure the long-term sustainability of the system.

The new pension system in Slovakia is a compilation of the reformed un-funded mandatory PAYG scheme “first pillar”, the fully funded mandatory “second” pillar and voluntary and fully funded “third” pillar.

The reform of PAYG scheme was approved by the Parliament on September 23, 2003. It came into force on January 1, 2004. It brings two key changes:

1. Prolonging of the statutory pension age from average 60 for men and 55 for women, to 62 for both sexes (it will be in force for men from 2006 and for women from 2015).
2. Change of the pension formula.

The law assumes automatic annual indexation of “ADH” variable⁶ using average nominal wage growth, while the formerly awarded pensions are indexed with the so-called “Swiss method”. Pensions are indexed using the weighted average of consumer price index and average nominal wage growth. The weights will be 0,5 each. This kind of indexation will weaken the political influence on pension system and allow linking pensions’ calculations to real economic indicators.

On the contrary to the previous system, the reformed PAYG allows early and late retirement. Each month of earlier retirement reduces the pension by 0,5% and each month of late retirement raises it by 0,5%.

Contribution rate

The transition of the Slovakian pension system caused only a minimal change in the rate of mandatory contributions.

Table 12: The rate of mandatory contributions (% of gross wage, paid by employee and employer)

	Before reform	After reform (since 1.1.2004)

⁵ The replacement rate means the ratio worker’s first benefit received upon retirement and last pre-retirement gross wage

⁶

	Together	Old age	Disability	Reserve
PAYG	28%	9%	6%	4,75%
Funded	-	9%	-	-
Together	28%	28,75%		

Source: INEKO

Creating incentives to pay contributions

Large redistribution in the public pension scheme, which deterred the link between paid contributions and future pensions and weakened the incentives to pay contributions was a result of specific calculations formula (see Table 11). One of the basic aim of the reform was to strengthen these incentives. It was accomplished by introducing the pension formula with no redistribution included:

$$R = POMB * S_i * ADH$$

S_i – number of years of paying contributions to SIA

ADH -number given directly by the law (its aim is to give 50% replacement rate in the first year after reform). In 2004 it has been set at 183.58 points.

$POMB$ (Average Personal Wage Point) – the ratio of individual gross wage to the average gross wage in economy (1.00 for wage equal to average).

After a three-year transition period there will be no distribution within the system. It will strengthen the connection between the level of contributions paid and the level of pensions received, which is shown in the table below.

Table 13 :Pensions after the reform of PAYG (after 1.1.2004 in SKK).

AMI*	Duration of employment							
	35	36	37	38	39	40	41	42
7245 (0,7)	4498/5052	4636/5052	4755/5052	4883/5052	5012/5052	5140	5269	5397
8280 (0,8)	5140	5287	5434	5581	5728	5875	6021	6168
9315 (0,9)	5783	5948	6113	6278	6444	6609	6774	6939
10350 (1,0)	6425	6609	6792	6976	7160	7343	7527	7710
11385 (1,1)	7068	7270	7472	7674	7876	8078	8279	8481
12420 (1,2)	7710	7931	8151	8371	8592	8812	9032	9252
13455(1,3)	8128	8360	8592	8825	9057	9289	9521	9754
14490 (1,4)	8321	8558	8796	9034	9272	9509	9747	9985

*Average monthly income earned since 1994 till 2003

** Including compulsory military service and maternity leave (in a new system, state refrains from paying contributions for students and unemployed).

***Blue numbers shows the minimum pension to be guaranteed

****The gap between the lowest and the highest pension will increase after 2007 when there will be zero redistribution.

Source: INEKO

It is supposed to increase incentives to pay contributions and avoid evasion. To protect pensioners with low income paid low contributions, the lowest pension was set at 120% of the social minimum (SKK 5052 in 2004). Their pensions will be co-financed from the state budget.

Involving the private sector

The new mandatory FF “second pillar”, introduced by the Law on Old-Age Pension Savings, came into the force on January 1, 2005. The “second pillar” is obligatory for young people entering the labor market and new self-employed. Others, up to the defined age (approximately 52 years), are allowed to switch to the system although there is no opting out. The assets are managed by private pension companies (pension administrative companies – DDS) supervised by the Financial Supervision Authority. Each DDS administers 3 funds – a growth fund, balance fund, and a conservative fund. They differ as far as investment limits, risk and return relationships are concerned.

Table 14 : Pension funds managed by private companies

	Equities	Bonds&Money Market Instruments	Risk&Return
Growth Fund	Up to 80%	No limit	High
Balanced Fund	Up to 50%	At least 50%	Medium
Conservative Fund	No stocks	100%	Low

Source: INEKO

The amount of money managed by private pensions companies depends on the number of people who decide to move into the new system. Table 15 shows the possible scenarios.

Table 15 : The contributions paid to the fully funded pillar (in % of GDP)

Transition age	2005	2006	2007	2008	2009	2010	2011	2012	2013
30	0,14	0,49	0,53	0,57	0,61	0,66	0,69	0,72	0,76
35	0,21	0,72	0,77	0,82	0,86	0,92	0,95	1	1,04
40	0,28	0,97	1,03	1,07	1,13	1,18	1,22	1,28	1,33
45	0,36	1,26	1,31	1,37	1,42	1,48	1,53	1,58	1,63

Note: transition age - most people younger than transition age will use the new system and most people older than transition age will remain in the PAYG scheme.

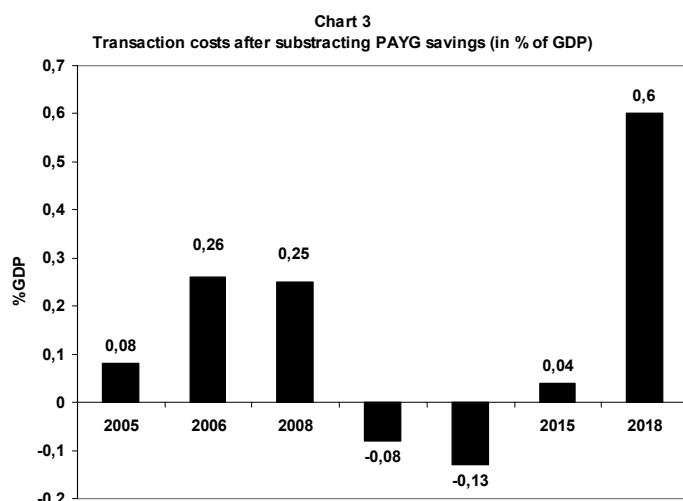
Source: INEKO

The main reason for creating three types of funds was to allow contributors to diversify their portfolios. Pension funds’ clients may create their own investment strategy under the following conditions: they can hold their assets only in one fund at a time and are not allowed to hold assets in a growth fund up to 15 years before retirement, and in the balanced fund - up to 7 years. The savings are private ownership of participators and are excluded from the public finance. The interest earned are tax exempted.

Investment restrictions

The basic restriction introduced in the Law on Old-Age Pension Savings is that at least 30% of funds’ portfolio must be invested in securities issued domestically. Such a restriction may have following consequences: (i) lowering the rate of return and expected amounts of pension in the “second pillar”; (ii) since Slovak stock market is limited probably most of the assets will be invested in fixed-income market, mostly in government bonds and state deposits; (iii) the price of securities in the domestic market may rise and cause a “bubble” that may be dangerous for future pensioners; (iv) restriction is inconsistent with the EU-rules for free flow of capital; (v) it limits the ability to face demographic crises.

Transition costs.



Source: INEKO

generate higher revenue in PAYG scheme (4,75% of gross wage is allocated in SIA reserve fund); (ii) privatization revenues; (iii) state budget; (iv) loans

Transition costs of creating the “second pillar” are due to transferring contributions from PAYG to the FF scheme. As a result Social Insurance Agency administers over less amount of money but still has to pay out the same or similar amount of pensions. In case of Slovakia the transition costs are estimated at 1% of Slovakian GDP annually. In order to keep state deficit below 3% of GDP (Maastricht criteria) the transition costs may be covered in following ways: (i) prolong retirement age in order to

Replacement rates

The following table presents replacement rates under the implemented PAYG and FF pension systems with respect to different real rates of return and real wage growth. The projections were calculated for an average-wage-employee under the assumption of 40 years of working life, 20 year retirement period and retirement age of 65.

Table 16 : Replacement rates in the PAYG and FF pillar

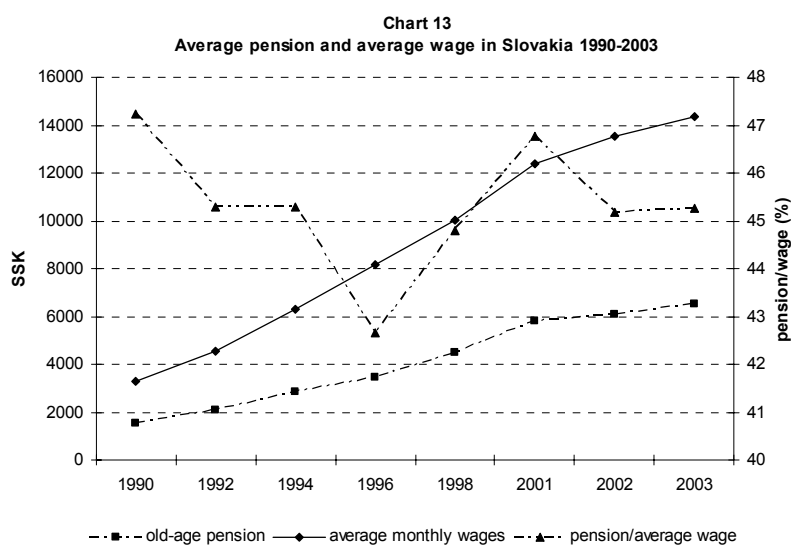
Funded		Real wage growth						
Real Rate of Return	%	-3	-2	-1	0	1	2	3
	-3	14,30	11,67	9,68	8,14	6,95	6,01	5,26
	-2	19,97	16,07	13,14	10,91	9,19	7,86	6,80
	-1	28,06	22,28	17,97	14,72	12,24	10,33	8,84
	0	39,69	31,09	24,74	20,00	16,42	13,68	11,56
	1	56,46	43,67	34,30	27,36	22,17	18,23	15,21
	2	80,68	61,66	47,84	37,68	30,13	24,46	20,16
	3	115,8	87,49	67,09	52,20	41,23	33,05	26,89
	PAYG							
No change scenario		26,67	29,14	31,92	35,07	38,60	43,60	47,11

Source: INEKO

These days the ration of average pension to average wage is lower than at the beginning of transformation so is the level of redistribution in the system – see Chart 13.

Phasing out privileges

Common pension scheme in Czech Republic and Slovakia, inherited after the previous political system, included such forms of preferential treatment as different benefit rates or conditions of entitlement. Self-employed were also discriminated. These forms of preferential treatment were abolished at the beginning of 90-ties although there still exists a wide range of privileges.



Unfinished agenda

Designed PAYG scheme is still unable to react to employment changes. These changes have crucial impact on the money inflow to the Social Insurance Agency (collected contributions) and as a result on the amount of pensions. In the designed PAYG scheme the amount of pensions depends on four following factors: (i) fixed replacement rate represented by ADH variable; (ii) nominal wage growth used in the indexation of newly awarded pensions (“indexation“ of ADH) and previously awarded pensions; (iii) inflation used for the indexation of the previously awarded pensions; (iv) contributions - indirectly through individual wage and employment period.

None of these factors reflects the employment changes. Demographic crises after 2015 will reveal the system promises benefits which cannot be guaranteed and it will run into deficit even if the statutory retirement age will be prolonged – see Table 17. The goal of further reform should be to create a system that would guarantee the ability to meet its promises and be sustainable in long-term. Such a goal can be achieved for example by shifting from DC PAYG scheme to the NDC PAYG scheme⁷.

Table 17 : Average Balance of the PAYG scheme in selected periods (in % of GDP)

Years	2003-2019	2020-2050
Scenario A	-0,17%	-1,79%
Scenario B	0,48%	-0,71%

Note: Scenario A: current retirement age 62
Scenario B: retirement age 65

Source: INEKO

⁷ Notional Defined Contribution PAYG scheme.

Pension reform in the Czech Republic

System before the reform – main shortcomings

The reform of the pension system in the Czech Republic was initiated just after the “Velvet Revolution” in 1989. The important steps of the reforms’ process were implemented in last 10 years. Until 1990 the pension system in Czech Republic was PAYG system, very generous especially for certain groups of society. Forms of preferential treatment, similarly to other post communist countries, were connected basically to various benefit rates and conditions of entitlement. On the other hand system discriminated some groups of individuals for instance self-employed. Pensions were financed directly from state budget and the contributions were an integral, undefined tax component. Such a construction had a lot of serious shortcomings that could have the negative impact on the sustainability of the whole scheme during the process of transition to a market economy. The main disadvantages were: (i) the static nature of pension scheme based on restrictive provisions, that could not be flexibly changed. Such a solution made it impossible to react to changes in wages or costs of living; (ii) the lack of connection between the amount of pension and the level of contributions paid during the active life; (iii) inability of facing demographic changes (increasing number of pensioners per 100 of economically active individuals); (iv) limited possibility of applying individual, voluntary forms of pension insurance. These shortcomings forced the authorities to start reforms that unlike other countries of the region (Poland, Slovakia), were implemented gradually.

Fiscal issue

The crucial factor, which will affect the fiscal stability of the Czech pension scheme is demography. The expected speed of population ageing in the Czech Republic is striking in the international context, which is documented in Table 18. In the next five decades the Czech Republic ranks as the third-fastest ageing country among OECD economies, with the rise in the old-age dependency ratio of more than 36 percentage points in 2050. The demographic factor together with rapid growth of early awarded pensions was the main reason of permanent deficit of the public pension scheme since 1996. To prevent fiscal instability of the system, the introduced reform focused on prolonging the statutory retirement, tightening the indexation conditions and implementation of penalties for early retirements.

The reforms of the public pension scheme in Czech Republic were implemented gradually. The shift towards DB PAYG scheme started at the beginning of 90-ties. Between 1990 and 1992 discrimination of self-employed was removed and preferential treatment abolished. Sickness insurance was moved from the administration by trade unions and connected with the pension insurance system managed by the Czech Social Security Administration.

The second stage of the reform began in 1993 when contributions were introduced as a special payment outside the taxation system (contribution rate was set at 27,2%). In 1995 New Law on Basic Pension Insurance was passed by the Parliament. It started the process of gradually increasing statutory retirement age. The new law has increased the number of years that are relevant for calculating individual pension benefits. Previously the pension amount depended on the income during “the best” five years chosen from ten last years before retirement. By 2016 the decisive period is expected to cover the last thirty years.

The third stage began in 1997 by tightening the indexation conditions. Since then the public pensions may increase by inflation plus at least one-third of the real wage increase. There is

no upper limit for pensions' indexation. Between 2000 and 2004 financial penalties for early retirement were increased and the so-called "temporary penalized" early retirements were abolished. As a result of the changes, the percentage part of pension⁸ is decreased by 0,9% for every three months missing from the statutory retirement age. Contribution rate increased to 28%. In spring 2004 public pension reform process received a new impulse. A tripartite coalition was created together with the special body called "Team of Experts". Its task is to analyze and quantify further variants of the pension scheme reform.

Today the Czech public pension scheme is a typical PAYG scheme financed from the state budget which offers defined-benefit (DB) characteristics. It is of a universal character and is obligatory for employees and self-employed. The system provides four types of benefits: old-age pensions (70% of schemes' expenditure), disability pensions (20%), survivors' and children's benefits. In 2003 the total number of pensioners were 2.56 million. There is a linear contribution at the level of 28% of gross wage. One-quarter of this rate is paid by the employee and three-quarters by the employer.

The statutory retirement age depends on sex. It has been gradually rising since 1996. At the beginning it was 60 years for men and 53-57 (depending on the number of raised children) for women. Target retirement age, 63 for men and 60-63 for women, will be reached in 2013. Still, the real retirement age is much lower than the statutory one because of existence retirement benefits that allow people to enter the pension scheme up to three years before reaching the statutory age.

Public pensions in Czech Republic not taxed. The average public pension is around 40% of an average gross wage, and around 55% in relation to the average net wage.

Creating incentives to pay contributions

The calculation base which determines the amount of pension is calculated in the following way. The personal assessment base (earlier non-reduced average monthly earnings) is fully incorporated to the amount of CZK 7100. From CZK 7100 to CZK 16000 30% are incorporated and above CZK 16000 10% are incorporated. These limitations are fixed by law and will be adjusted regularly so the relation between paid out and newly awarded pensions and between pensions and earnings is kept.

The public pension consist of the following two tiers:

- flat-rate basic pension. It is the same for all pensioners, independent from their pre-retirement incomes. In 2004 basic pension amounted to 1310 CZK per month, which corresponds to 7% of average gross wage and 18% of average old-age pension.
- percentage part (amount). It depends on pre-retirement income in the decisive period. It is calculated from the calculation base and the number of years of insurance. It is different according to the types of pension.

Such a formula determines the redistribution of income in pension scheme. The public pension scheme is very generous for people with below-average pre-retirement income and does not provide sufficient replacement ratio to pensioners with above-average income.

Replacement rates

⁸ The part which depend on pre-retirement incomes in decisive period

The table below illustrates the high degree of redistribution implied by the current benefit formula. Workers with 40 years of contribution payment who earn 50% of average wage obtain a pension equal to 77% of their personal wage while workers who earn 200% of average wage receive a pension equal to 27% of their personal wage.

Table 18: Old-age replacement rate and redistributive pattern

Personal Wage /Average Wage	Pension/Personal Wage	Pension/ Average Wage
50	77	38
100	48	48
150	34	51
200	27	54

Source: Vylitova (2002), *Old-age pension system and its role in the Czech Welfare State*, Hitotsubashi University, Tokyo 2002

Involving private sector

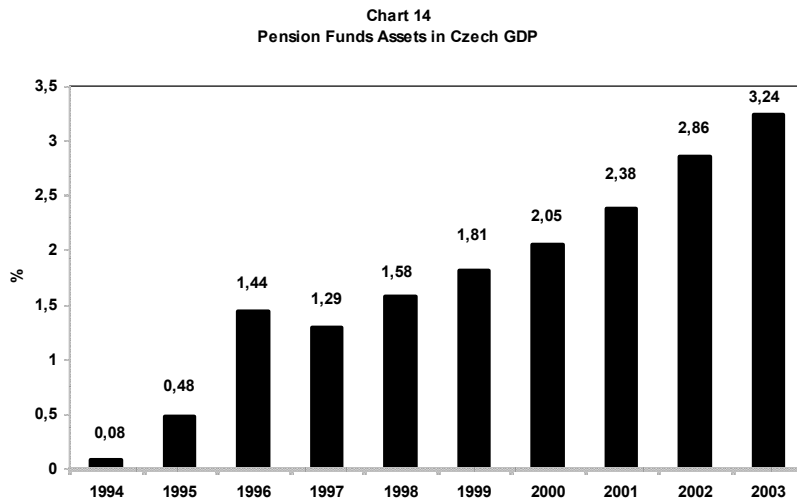
Involving private sector came through introduction of supplementary pension insurance with the state contribution. There is no mandatory private pension scheme in Czech Republic similar to the one in Slovakia or Poland. In 1994 the Czech government implemented legislation enabling the establishment of open pension funds. Participation in this system is based on voluntary decisions of individuals and competitive offers by pension funds. It offers generous incentive:

- the state contribution - the state provides a contribution to add to the participant's contribution. The minimum monthly amount of state contribution is 50 CZK if the participant paid the contribution of 100 CZK. Maximum amount represents 150CZK if the participant paid 500 CZK or more. Yearly the participant can obtain no more than 1800 CZK as a state contribution.
- tax allowances introduced in 2000 – pension funds have tax allowances on returns from their economic activities, as a result most of them pay insignificant amounts of income tax.. In addition each participant who annually paid more than 6000 CZK in contributions per year can deduct the amount above 6000CZK from the participant's base of taxation (maximal deduction is 12000 CZK yearly).
- involvement of employers in the form of contributions paid by employer – the contribution can be included in the employer's costs up to the amount of 3% of assessment base of the participant – employee for social insurance and for the state employment policy contribution. Employee is also free from income tax coming from the contributions paid by employer up to amount of 5% of employee's assessment base.
- transferability of entitlements from one fund to another
- possibility of disposal of deposited money during the period when contributions are paid.

The popularity of supplementary pension insurance is permanently increasing since its implementation in 1994 as shown in Chart 14

Investment restrictions

Pension funds must manage its assets according to the law and not to threaten the interests of participants. Investing of assets is regulated by law and limited as follows:



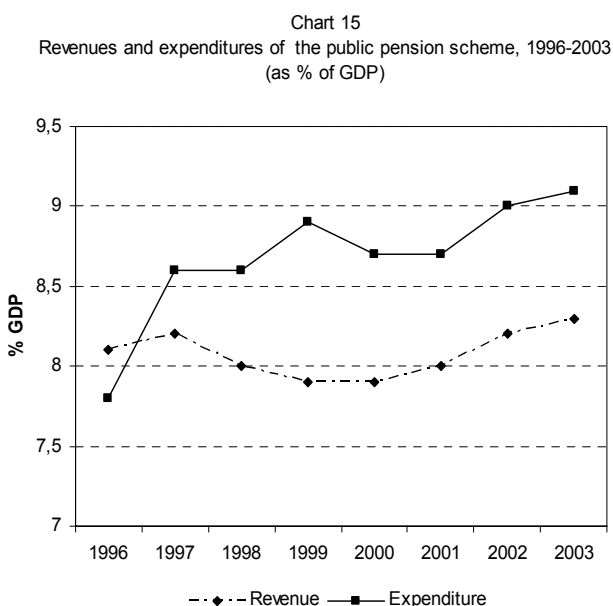
Source: Ministry of Finance

- bank issued municipal bonds
- bonds issued by OECD members
- real estate which consistently produce revenue

- state bonds and state guaranteed bonds
 - mortgage certificates
- Czech National Bank Bonds
- corporate bonds traded on the stock exchange
- shares and certificates of unit trust accepted for trading on the stock
- bank guaranteed or

A pension fund cannot purchase securities at a higher price, or sell at a price lower, than the price at which securities were traded on the stock exchange on the day of transaction. The law specifies more rules as far as funds' assets are concerned – mainly accounting rules for valuation of assets.

Results of implemented reforms



Source: Ministry of finance

The effects of a whole decade of reforms could be summarized as follows:

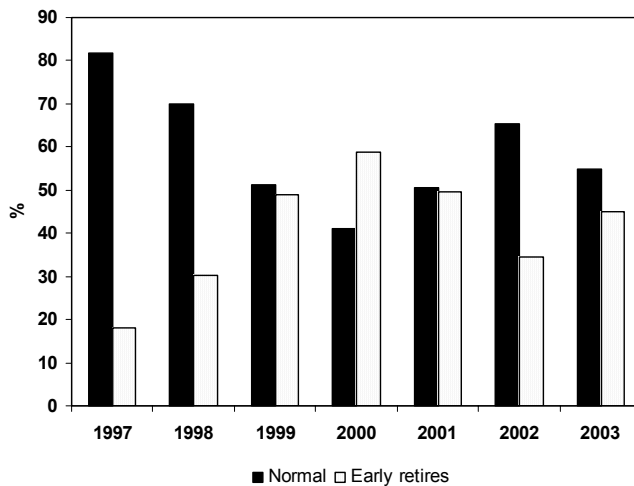
- large participation in the system and its integrity. Basically, obligatory pension system applies to all employers although there exist some exceptions for self-employed, who are allowed by law to minimize their contribution to the system. Supplementary pension system meets the requirements on this field.

• increasing personal responsibility of citizens for their future income. It was achieved partly in the pension system by the introduction of the supplementary pension scheme although it is

required to strengthen responsibility also in the PAYG scheme for example through the implementation of Notional Defined Benefit PAYG scheme.

- pension system has been repeatedly in deficit in recent years as shown in Chart 15. The major reason is an undue advantage of self-employed persons in the payment of contributions and the broad scope of alternative periods. Another reason is an increasing rate of unemployment reflected by rapid growth of early awarded

Chart 16
Share of standard and early retirees in new retirees 1997-2003



Source: Czech Social Security Administration

Around 2020 the system will run into a permanent deficit at the level of 5% GDP and will start accumulating debt. In the case of the “no change“ scenario the end of the century will see pension scheme debt rise to 230% GDP.

- the link between paid contributions and benefit rates has been weakened in current public pension scheme. It is the consequence of redistribution of incomes and “group” redistribution connected with undue advantage of self-employed persons.

Phasing out privileges

Until 1990 the pension system in Czech Republic was PAYG system, very generous especially for certain groups of society. Forms of preferential treatment, similarly to other post communist countries, were connected basically to various benefit rates and conditions of entitlement. At the other hand the system discriminated some groups of individuals, the self-employed for instance. Between 1990 and 1992 discrimination of self-employed was removed and preferential treatment abolished, which has been the deeper phase out of sector privileges in CEE countries.

Unfinished agenda

Although the pension system in Czech Republic has undergone serious reform since 1990 it is unsustainable in the long-term and requires further changes. The working group created in 2004 must find an optimal solution which allow to ensure the stability of the

⁹ Previous contribution rate was stated at 26%

¹⁰ “No change” scenario means that no further changes of the scheme will be implemented

system. The changes should include not only the transition of DB PAYG scheme into DC or NDC PAYG scheme but also a further rise in the statutory retirement age and tightening OF the indexation of pensions. Czech Republic might at some point face a demographic crisis due to having one of the worst demographic structures in Europe. To avoid a collapse of the pension scheme further reforms are required.

Conclusions

Despite significant differences in the pace and depth of reforms' implementation some similar features of the pension reforms efforts can be pointed out. Firstly this was an involvement of private sector which enabled not only to raise the replacement rate but also to diversify the schemes' risk. Secondly abolishment of redistribution factor in benefit formulas and changes in indexation formulas which lowered the political risk of the systems and strengthened their fiscal long-term stability. Thirdly prolonging of statutory retirement age, which was an answer to demographic challenges each of the countries faced. Table 19 summarizes the main features of the reformed pension schemes.

Table 19: Main characteristics of multi-pillar systems in Poland, Hungary, Slovakia and Czech Republic

	Hungary	Poland	Slovakia	Czech Republic
PAYG	Defined Benefit	Notional Defined Contribution	Defined Contribution	Defined Benefit
Mandatory second pillar	Yes	yes	yes	no
Voluntary third pillar	Yes	yes	yes	yes
Redistribution factor	No	no	no	yes
Indexation formula	“Swiss” formula	price indexation	“Swiss” formula	inflation plus at least one-third of the real wage increase
Statutory retirement age:				
men	62	65	62	63
women	62	60	62	60-63
Contribution rate	26,5	19,52	28,75	28
1 pillar	19,5	12,22	19,75	28
2 pillar	7	7,3	9	-
Old-age dependency ratio in 2000 (%)	21	18	16	20
Long-term fiscal sustainability	no	yes	no	no
Phased-out privileges	no	no	no	yes
Weight of pension funds in the economy and financial markets in 2002				
- share of GDP (%)	5,2	4,4	-	3,3
- share of market capitalisation (%)	26,4	28,0	-	22,3
Pension expenditures in 2001 (% GDP)	8,2	11,7	7,4	8,7

Table 20: Structure of assets of pension funds in 2002

	Cash and deposits	Bills and bonds issued by public administration	Corporate bonds	Loans	Shares	Land and buildings	Mutual funds (CIS)	Other investments
Poland	4,2	66,8	1,2	0,0	27,8	0,0	0,0	0,0
Czech Republic	14,8	49,9	-	-	6,2	0,9	-	23,6
Hungary	4,4	68,1	5,2	0,0	8,7	0,0	5,8	7,8

Source: OECD

Despite deep structural reforms in Central European countries pension reform is still on the agenda. On the one hand Czech Republic and Hungary face the need to further reforms their PAYG system in order to arrest growing pension expenditures in the near future due to rising dependency ratio. In Poland there is a still unreformed farmers system which require a deep and structural reform approach. In case of Slovakia it seems that some modification of PAYG scheme would be required.

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