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Hungarian Pension System and its Reform

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Abstract

The goal of this study is to present an insider view on the pension reforms implemented in Hungary between 1996 and 2009. Both political economy as well as institutional economics will be used as the main approaches to analyse and explain the reform process and some of its effects. The following studies provide valuable insights: Palacios and Rocha (1998), Bokros and Dethier eds. (1998), Augusztinovics (1999), Augusztinovics et al. (2002), Simonovits (1999), (2000), (2008a), Czúcz and Pintér (2002), European Commission (2006), Gál (2006), Impavido and Rocha (2006), and Guardiancich (2008). The structure of the paper is as follows: Section 1 considers the legacy of the pension system. Section 2 summarises the debate on the pension reform and the basic decisions. Section 3 outlines the implementation of the pension reform, while Section 4 discusses the implementation problems. Section 5 describes the changes since the reform, while Section 6 analyses and Section 7 evaluates the reform. An Appendix discusses the issues of contribution rates.

Keywords: Hungary, pension reform, social security, private pension

JEL: H55, J14, J26, J32

A magyar nyugdíjrendszer és reformja

ANDRÁS SIMONOVITS

Összefoglaló

E tanulmány célja: az 1996 és 2009 közötti magyar nyugdíjreformok benfentes leírása. Mind a politikai gazdaságtani, mind az intézményes gazdaságtani megközelítést alkalmazzuk a reformfolyamat és hatásainak elemzéséhez és magyarázatához. A következő tanulmányok értékes magyarázatokat adnak: Palacios és Rocha (1998), Bokros és Dethier eds. (1998), Augusztinovics (1999), Augusztinovics et al. (2002), Simonovits (1999), (2000), (2008a), Czúcz és Pintér (2002), European Commission (2006), Gál (2006), Impavido and Rocha (2006), valamint Guardiancich (2008). A tanulmány szerkezete a következő: az 1. szakasz a nyugdíjrendszer örökségét elemzi. A 2. szakasz összegzi a nyugdíjreformmal kapcsolatos vitákat és az alapvető döntéseket. A 3. szakasz a nyugdíjreform végrehajtűsűt körvonalazza, ímg a 4. szakasz a végrehajtással kapcs9latos problémákat. Az 5. szakasz a reform óta bekövetkezett változásokat írja le, míg a 6. szakasz elemzi, és a 7. szakasz értékeli a reformot. Külön függelék taglalja a járulékkulccsal kapcsolatos kérdéseket.

Tárgyszavak: Magyarország, nyugdíjreform, tb-nyugdíj, magánnyugdíj

1. LEGACY OF THE PENSION SYSTEM

In Hungary the first *mandatory (funded) pension system* was started in 1928 and covered about half the adult population (namely every worker except for farmers and self employed). During the years of the Second World War and the ensuing hyperinflation, a large part of the assets of the pension funds was destroyed. In the emerging *socialist (communist) system*, the reason to replace the bankrupt funded system by a *pay-as-you-go system* was even stronger than in countries that remained market economies: in the latter system, every year the pensions are paid from the current contributions of the workers. Due to the abrupt elimination of small traders and artisans in the 1950s and the forced collectivisation of the agriculture by 1961, the whole economy became "socialised". As a logical consequence of this historical process, by 1975 practically every worker (employed in the state or the cooperative sector) became a full-right contributor to the unified pension system. In harmony with full employment, normal retirement ages were rather low: 60 for males and 55 for females. Due to many factors, life expectancy has been stagnating since 1960 (about 65 years for males and 74 for females) and lagged more and more behind those of the developed countries. This process somewhat alleviated the pension burden, because premature death was concentrated on older workers and pensioners rather than on infants.

In the years of maturation of the system, the *replacement rate* (i.e. the ratio of the average pension to average wage) increased spectacularly, especially when the real wages ceased to increase: from 37% in 1970 to 66% in 1990 (Table 1). Hungary being the most market oriented socialist economy since 1968, its government tolerated slow inflation and relied more on wage incentives than most socialist countries did. As a result, the link between earnings and pensions was stronger than in the other socialist countries, especially for the *entry pensions*, given just after retirement.

Table 1.

Pensions in the Hungarian economy, 1970–1996, in %

Year	Pension expendi-ture/GDP	Entitlement rate	Dependency Rate	Replace-ment rate	Participa-tion rate	Efficiency of net earnings
1970	3.5	66.7	38.7	37.5	91.2	305.1
1975	5.0	82.1	37.3	45.4	87.8	315.1
1980	6.9	93.0	38.2	54.7	87.3	320.1
1985	7.9	100.0	40.4	61.2	86.9	358.7
1990	8.8	109.9	41.8	66.2	86.4	398.4
1996	8.9	119.2	40.7	58.9	64.0	504.5

Source: Simonovits (2003, Table 8.2, p. 79) from Réti.

There was, however, a principal error in the indexation rule of *continued pensions*. Sticking to the optimistic assumption of annual inflation rate of 2% made in 1968, the minimum increases of pensions were also set that low. On the other hand, after 1975, inflation accelerated in Hungary as well, and nominal values of low pensions needed to be increased much faster than by 2% just to assure the social minimum. To restrain the growth of total pensions, higher entry pensions were slashed in real terms. This dynamic redistribution was achieved through imposing tight lower and upper bounds for pension raises, thus the structure of "old" pensions lost its connection with that of entry pensions.

Nevertheless, the situation of pensioners was acceptable during the mature socialism, especially if one takes into account that the prices of basic goods and services, including medical services were heavily subsidised.

The start of the *transition* from socialism to capitalism has totally changed the scenery. The whole economy was reorganised, privatised and adjusted to the demand of the world market rather than to that of the Soviet-type socialist system. The building down of older factories and (collective) farms preceded the creation of new ones, leading to a sharp drop in output, consumption and to the emergence of mass unemployment (Table 2). Logically, older workers preferred early or disability retirement to becoming unemployed and the governments tolerated or even encouraged this practice (cf. Lelkes and Scharle, 2004). As a result, about 30% of the previous labour force left formal employment, became in part unemployed, in part early pensioner and in part inactive (either really not working or working in the hidden economy). According to Table 1, the participation rate dropped from 86% in 1990 to 64% in 1996.

Table 2.

Macro data for Hungary: 1989–2004

Year	Produced GDP[a]	Consumption[a]	Employment[b] (%) ratio	Unemployment[c] ratio LFS (%)
1989	100	100	–	0
1990	96.2	97.3	75.9	–
1991	84.9	92.3	71.0	–
1992	82.3	92.7	64.5	9.8
1993	81.7	97.7	60.8	11.9
1994	84.2	95.4	59.8	10.7
1995	85.4	89.2	58.7	10.2
1996	86.8	86.1	58.3	9.9
1997	90.9	88.0	58.4	8.7
1998	95.3	91.5	59.5	7.8
1999	99.4	96.4	61.3	7.0
2000	103.6	99.1	61.4	6.4
2001	107.7	105.0	60.4	5.7
2002	111.3	113.2	60.7	5.8
2003	118.2	117.5	60.8	5.9
2004	121.5	120.7	61.3	6.1
2005	126.4	125.4	-	7.2
2006	131.4	125.8		7.5
2007	132.8	-		7.7

Source: a) CSO (2007), Table 1.9, b) and c) Fazekas and Koltay, eds. (2006): Statistical Appendix. Because the size of population has been decreasing by 0.3-0.4% per year, the per capita values are correspondingly higher. No correction is made for the raised retirement ages.

To ease the transition from a rigid planned economy to a flexible market economy, price liberalisation was inevitable. Together with huge budget deficits, this implied two-digit inflation rates for a long time, peaking at 35% in 1991 but staying above 10% until 2001 (Table 3).

Table 3.

Price and real income series for Hungary: 1989–2007 (%)

Year	Consumer prices[a]	Real net earnings[a]	Real net income[a]	Real pensions[b]
1989	100	100	100	100
1990	129	94.3	98.0	94.6
1991	174	87.7	96.4	88.1
1992	214	86.5	92.8	85.9
1993	262	83.1	88.4	82.8
1994	311	89.0	91.2	86.9
1995	399	78.2	86.8	78.3
1996	493	74.3	86.8	71.3
1997	583	77.9	87.6	72.0
1998	667	80.7	90.8	76.6
1999	734	82.7	91.6	79.5
2000	806	83.9	95.3	80.6
2001	881	89.3	98.5	85.3
2002	928	101.4	104.4	93.7
2003	970	112.6	108.4	101.8
2004	1036	111.4	112.0	105.2
2005	1073	118.4	116.1	111.8
2006	1114	122.5	118.0	116.7
2007	1204	116.7		120.0

Sources a) CSO (2007), Table 1.2, b) Hungarian PI Statistics

In 1992, an independent *Pension Insurance Fund* (PIF) was established and hived off from the government budget, with its own administration, budget and elected Self-governing Body responsible to Parliament. A similar *Health Insurance Fund* (HIF) was created at the same time, to finance health-care institutions and distribute sick pay, among other duties. Responsibility for the disabled persons and their survivors was divided between the two funds. The HIF took responsibility for paying disability benefits for persons *below* the statutory retirement age, and in the case of their death, for their survivors. The same benefits were paid by the PIF for disabled people *above* the statutory age and their survivors. (As a disability pensioner reached statutory retirement age, the transfer of responsibility from the HIF to the PIF took place automatically.) Employers' and employees' social-security contributions were accordingly divided between the two new funds.

Concerning pensions, the introduction of indexation became unavoidable. Since real wages also went down, it was logical to index continued pensions according to wages rather than prices (Table 3). Turning to the *entry pensions*, in Hungary it is equal to the product of the *reference wage* and the *cumulated accrual rate*. The reference wage is a degressive (i.e. increasing but concave) function of the *average of the indexed annual earnings* during the *assessment period*. Until 1992 this period was the best three years of the last five. In 1992 the short assessment period was replaced by a longer period (starting from 1988 to the year of retirement). To limit the inequalities among entry pensions, strong *progression* was introduced and a quite low *ceiling* on employee's contribution was imposed (reaching its minimum at 1.6 times the average gross wage in 1996). As in most countries, the employer's contribution had no ceiling. To strengthen progressivity, the accrual rates were steeply decreasing with employment until 1996 (3.3% until 10 years and through 2 and 1% dropped to 0.5% after 36 years of employment), in 1996 the last rate was raised from 0.5 to 1.5%. (For details, see Augusztinovics, 1993 and Czúcz and Pintér, 2002).

While the fall in real pensions was inevitable, the poor design of the pension formula made this process particularly painful. Antal et al. (1995a) describe the loss of value and distortions in the Hungarian pension system. For example, those retired around 1993 received pensions 6% lower than the average pension, while those retired in 1990 received pensions 13% above the average (Table 4).

Table 4.

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: Simonovits (2003, Table 4.4, p. 46) from Réti.

The real values of individual pensions fell in parallel with that of wages, and having quite high pension (and health) contribution rates, the social security system has kept working. Reaching its lowest level in 1996, real wages were 20% lower than in 1989, while real pensions fell 25% during the same period. (In turn, real wages fell already 10% from the peak year 1978 till 1989, while real incomes still rose by 16%.)

Turning to the *long-run problems*, the total fertility rate kept sinking (reaching 1.3 by 2000), while a hope arose that older persons would live longer. The ensuing population ageing may make the public financing of the pension system particularly difficult (Table 5). Moreover, the officially registered employment rate dropped to a very low level.

Table 5.

Changes in the demographic structure for Hungary: 1970–2050

	Population shares of			
Year	Young (below 20)	Old (above 64)	Old-age Dependency Ratio	Total Dependency Ratio
	A	B	C=100B/ (100–A–B)	D=100(A+B)/ (100–A–B)
1970	28.3	13.1	22.4	70.6
1980	26.3	15.6	26.9	72.1
1990	26.2	15.8	27.2	72.4
2000	23.6	14.6	23.6	61.8
2010	21.1	15.6	24.6	58.0
2020	20.2	18.5	30.2	63.1
2030	20.2	20.1	33.7	67.5
2040	19.2	22.5	38.6	71.5
2050	18.9	26.2	47.7	82.1

Source: CSO (1996, Table 5, pp. 44–45) and Hablicsek (1999, p. 405).

In addition to the old-age demographic dependency rate (i.e. the ratio of the number of old-age to that of working aged), we should introduce the *system dependency ratio* (i.e. the ratio of the number of pensioners to that of workers). Table 1 displays the numerical strength of factors determining the ratio of total pensions to output for selected years (for details, see Antal et al., 1995b).

2. DEBATE ON PENSION REFORM AND BASIC DECISIONS

By 1996 the Hungarian economy was stabilised, the economy started to resemble more and more a developed market economy. The transformation of the economy was basically completed and judged to be successful. On the other hand, the social security, i.e. the pension and health system by and large remained as it was before the transition. (For an early critique, see Kornai, 1992.)

There was a wide-spread feeling among decision-makers that to solve the short- and long-run problems of the pension system, it should also be partially privatised and prefunded. As the title of the World Bank (1996) formulated it: *Structural reforms for sustainable growth.* Concerning the *short-run* problems: Real wages started to increase, and due to wage indexation, real pensions did likewise. Notwithstanding the high replacement rates (average pension to average net wage oscillated around 60%), workers, employers and decision-makers perceived the contribution rates as too high (8+23% in 1998). A widely shared though debatable opinion emerged: unless these rates are reduced significantly, the hidden economy will keep flourishing. Numerous economists also expressed their views that transforming a large part if not the whole sum of these staggering public pension contributions into private ones, the contribution burden can radically be reduced. According to World Bank experts (e.g. Palacios and Rocha, 1998), if there were no pension reform in Hungary, then the deficit of the pension system would rich 6% of the GDP by 2050.

To understand these plans, we should refer to the World Bank (1994) blueprint. This suggested a mandatory tax-financed, modest and flat public universal pension (Pillar 1), a mandatory funded, significant and earnings-related private pension (Pillar 2) and a funded voluntary pension (Pillar 3). The presumed basic advantages of such a system are as follows: Pillar 1 is so small, especially if it is means-tested that the taxes needed for its financing do not undermine the tax-paying propensity of the workers. Pillar 2 is so efficient that every worker will be pleased to contribute to it. Pillar 3 is voluntary and it only serves to satisfy the needs of very precautionary savers.

The World Bank, its experts and certain theoretical economists (e.g. Feldstein, 1996) painted a very rosy picture of the impact of privatisation on the pension system. Partly neglecting, partly eliminating the burden of already acquired pension rights (cost of transition) and assuming unrealistically high real yields, such a transition appeared not only possible but desirable. Not everybody shared this optimism. It is remarkable that another American proponent of pension privatisation, Kotlikoff (1997) modelled a much more complex situation, allowing for possible welfare losses if the means of the reform are not appropriately chosen. With a significant delay, well after the Hungarian reform started, Feldstein and Siebert eds.

(2002) discussed pension reforms in Western Europe. Other leading experts, namely Boldrin et al. (1999), Orszag and Stiglitz (2001), Diamond and Orszag (2005) and Bailey and Kirkegaard (2009) questioned the rationality of the structural reforms *ab ovo*.

Returning to the Hungarian pension system, there was a general agreement that serious reforms are needed. Every pension expert accepted that the public pension system should be made much more transparent, probably by introducing a point system like existing in Germany or a notional defined contribution system existing in Sweden (and introduced in Poland in 1999). There was also an agreement that the normal as well as the actual retirement ages should be increased, and *flexible retirement* should reward or punish those who retire later or earlier than "normal". Here, however, the agreement ended.

The experts of the Public Pension Authority (lead by Mária Augusztinovics) argued that a parametric reform of the public system is sufficient to solve the short- and long-run problems of the Hungarian pension system. In a detailed study, Augusztinovics and Martos (1996) showed the macro-consequences of such a reform.

The experts of the Ministry of Finance and influential politicians, however, had not accepted the sufficiency of a parametric reform. (In fact, there was an important shift in this direction in the working documents of the Ministries of Finance and of Welfare, 1996 and 1997.) Following the World Bank (1994) strategy, they have opted for a three-pillar pension system.

Luckily, the Hungarian (and other) radical reformers were sufficiently well informed to choose a plan rather different from the World Bank blueprint even if they did not much emphasise the differences. Pillar 1 remained the dominant component, moreover, it has become less rather than more redistributive than it was before the reform. Pillar 2 was designed to be quite small (about 1/4 of the total contribution flow there) and even the introduction of such a small pillar has caused many budgetary complications up to now. Pillar 3 is basically a tax holiday for well-to-do employees who pay large personal income taxes and who can save for the future, thus they can use the tax credits.

At this point, it is worth outlining the new pension system in more detail. As a starter, the *normal retirement age* was modified in 1996: for males, it was increased from 60 years to 61 in 1997 and to 62 in 1999. For females, it was increased from 55 to 56 in 1997, 57 in 1999, 58 in 2001, 59 in 2003, 60 in 2005, 61 in 2007 and 62 in 2009. To ease transition, however, even this protracted process was slowed down by elaborate transition rules. Even in 2006, every male above 60 and every female above 57 can retire with full benefit, if he or she has at least 38 years of employment. The practical results are mixed (cf. Cseres-Gergely, 2006): the average retirement ages were around the values mentioned above.

The parametric reform of the public pillar was quite cumbersome. In contrast to other similar reforms (e.g. in Poland, 1999), it has not introduced a simple formula for the entry pension, but maintained the nine brackets of progression and the four values of the accrual rates (3.3, 2, 1 and 1.5%) until 2013. True, by and large the progressivity has already been phased out by now (Table 6). The smooth reform had the advantage that it did not create gross injustices between close cohorts but had the disadvantage that the system remained unintelligible to the participants and hid the emerging close relation between contributions and benefits.

Table 6.

The elimination of progressivity for entry pensions, in percent

Progression	1997	2002	2007
100	57.3	78.9	89.8
90	13.8	5.6	4.0
80	9.5	5.3	2.6
70	6.5	4.5	1.1
60	7.7	2.4	1.4
50	3.4	1.6	0.3
40	1.1	1.1	0.9
30	0.4	1.2	
20	0.2	-	

Remark. The entry in the first column shows the marginal percent with which the individual's average earning in his highest bracket is taken into account. The entry in the second, third and fourth columns shows the percent of newly retired in the given category in year 1997, 2002 and 2007.
Oral communication by Rudolf Borlói.

To reduce earlier pension promises, the wage indexation of pensions was planned to be replaced by *wage-price (i.e. Swiss) indexation* from 2001, the greatest source of saving. From 2013, the public entry pension will be a linear function of lifetime contributions but personal income tax should be paid after the pension benefit.

All the workers except for the beginners were allowed to stay in the reformed monopillar system. But they were also allowed to enter the new, mixed system. Rather than paying the equivalent of 31%=8+23% of the gross wage into the monopillar public system, the members of the mixed system contribute 8% to their own, funded accounts and only the remaining 23% flow to the public pillar. (The employee's contribution is deducted from his gross wage, but the employer's contribution is added to it!) Starters had to enter the mixed system. The pension benefit in the mixed system will be the sum of 75% of the monopillar pension and the life

annuity coming from the capital accumulated on his own private pension account. Although it is not obvious, this Hungaricum hides a twist: those who already contributed to the public system before 1998, will lose 1/4 of those contributions! (This idea of self-sacrifice is modelled in Simonovits (2003) and Smetters and Waliser (2004) but it is questionable if the participants were able to understand such a tricky choice.)

Every member, who participated in the mixed system for at least 15 years, must choose one of four forms of life annuity at retirement, all indexed like the public pillar. The life annuity will be unisex. Other participants are not entitled to life annuity, rather they will obtain their private savings as lump sum payments. For those hypothetical fund members, whose private benefits would be greater than twice the lost component, i.e. 2/3 of the remaining P1 benefit, can withdraw the excess part. (Presumably, there will not be any person like this!)

To make the transition apparently more attractive, private benefits were made inheritable in the following sense: if a member dies before retirement, his whole pension capital will be given to his pre-assigned heir (not necessarily a relative). Other privileges were promised to the members: (i) if somebody becomes disabled before retirement, he may return to the monopillar public system without suffering any loss; (ii) if the pension investment will be so bad as to yield less than 3/4 of the corresponding 1/4 of the monopillar pension, then the government will top up his private benefit to 3/16=19% of the monopillar benefit, i.e. his mixed benefit will be 94% of the monopillar one.

Who were the *proponents and the opponents* of such a pension reform in Hungary? It is not easy to answer this question (see the opposing views by Holzmann, Börsch-Supan, Diamond and Valdés-Prieto, 2001 in general). Being an opponent of the *structural reform*, I discern the following types among the proponents. Some supporters, including politicians were simply materially interested in the establishment of private pension funds. Others sincerely believed in the superiority of private funds over the pay-as-you-go system (see the ten myths criticised by Orszag and Stiglitz (2001)). Individuals of a third type knew exactly the problems of such a transition but they were convinced that without obfuscating, the parametric reforms in the dominant public pillar could not be achieved. (Due to the much more serious problems– the pension expenditure amounted to 17 rather than 10% of the GDP–, this last group was much larger in Poland than in Hungary.) Moreover, to obtain the much needed foreign loans, the Hungarian (and the Polish) government(s) needed the support of the World Bank (Müller, 1999).

I presume that the proponents of the reforms saw us, the opponents in a different light. According to them (i.e. Nelson, 2001, p. 248), some of the opponents of the privatisation might have been interested in maintaining the power of the frozen pension bureaucracy. Other opponents were simply considered as the mental prisoners of the collectivist past who did not want to trade in the last bastion of socialism for a new stronghold of capitalism.

3. THE WAY TOWARDS THE IMPLEMENTATION OF THE PENSION REFORM

Before turning to the discussion of the implementation of the pension reform, we should mention that since 1996 the Hungarian economy started to develop as a normal market economy. Inflation went down to normal levels, GDP, consumption and wages started to grow. Since then real wages and pensions have increased rather fast, surpassing the 1989 base values by 13 and 2% by 2003 (Table 3) and after a temporary stagnation or slowdown in 2004, further increased in 2005 and 2006. At the same time, the registered employment rate has remained quite low, unable to approach the OECD levels. Even in 2003, the corresponding Hungarian and OECD employment rates were 73.7 vs. 76.5% for aged 25-54 and 28.9 vs. 40.2% for aged 55-64 (European Commission, 2006, Table 3.2).

In contrast to other reformer countries, the whole reform package was accepted at the same time, Summer 1997 in the Parliament and implemented in January 1, 1998. At that time the reform government had a 72% majority in the Parliament, therefore the passing of the law was almost automatic.

There were some changes in the final law with respect to the original plan. We shall look at them one by one. (i) Originally, the share of the private contribution to the total was planned as 1/2, then 1/3 and finally slightly above 1/4: 8 out 31%. Moreover, to reduce the *transition costs* (see below), for 1998 and 1999 the private contribution rate was set at 6 and 7%, respectively, and was going to reach the final 8% only in 2000.
(ii) Originally, the law would have limited the age at 47 for the entrants to the mixed system (needed to obtain life annuity having at least 15 years of membership, until retirement at 62). But the participation in the mixed system was considered so advantageous that finally it was left open for everybody. (To prove the popularity of the mixed system, a leading politician boasted: four workers above 70 (seventy) joined the mixed system! Characteristically, she did not mention the extreme stupidity of such a decision!) (iii) Originally, different life annuities were considered for male and female members (like in Chile, see Cox Edwards, 2002) but this type of sex discrimination was eventually considered untenable and renounced.

The mixed system was successfully *promoted*. The government did its best to convince the public that this combination is the best of all the possible worlds. There were a lot of ads promoting the mixed system and the newspapers gave detailed calculations whether a worker with a given profile should join the system or not, assuming that the rules had been fixed forever.

The new system was introduced in January 1, 1998 and the possibility to join it remained open until August 31, 1999. More than half of the workers voluntary joined it (much more than expected) and in conformity to the design, the younger a cohort was, the higher the ratio of joiners was (Table 7). (Remember that every joiner lost 1/4 of his pre-reform contributions.)

Table 7.

Age and share of joiners in 1999

Age group	Share in population %	Share of joiners %
20-24	13.2	81.2
25-29	13.1	83.8
30-34	12.3	75.9
35-39	12.1	60.0
40-44	15.6	35.7
45-49	14.9	15.1
50-56	10.7	2.6

The process of setting up the private pension funds was not that difficult. On the one hand, voluntary funds had been operating since 1993 and they could just open a mandatory branch. On the other hand, large financial insurance companies and banks formed their own pension funds, whose technical and financial possibilities were unlimited.

The only problem with the transition was that in June 1998, a new government came to power, which opposed the pension reform. It was too late to reverse the reform but the new, "conservative" government made its best to discredit the reform.

4. IMPLEMENTATION PROBLEMS

The earlier social insurance institutions (namely, the Hungarian Pension Fund) had no new tasks with the reform. Indeed, the individual public pension accounts have not yet been introduced until now and the transfer of the private contributions to the chosen funds has been done directly by the employers, without central clearing. (To diminish operating costs, in the near future the State Tax Authority also will collect the private pension contributions and distribute to assigned funds.) However, this transfer method has allowed the employers to influence their employees in their choices of the funds. Anyway, the unhealthy American practice of employers giving their own stocks to their employees has luckily been excluded.

In the description of the key institutions of the mixed system, we follow Augusztinovics et al. (2002), Impavido and Rocha (2006) and Iwasaki and Sato (2008). As mentioned above, mandatory pension funds of the mixed system grew out of the voluntary mutual pension funds, established since 1993. The final form was a compromise among pressure groups with different interests and the result is far from optimal.

A mandatory private pension fund is a non-profit organisation for collecting contributions from its members on individual accounts and investing these contributions. In a strange way, however, these funds are not required to provide life annuities for their members after retirement. Since the provision of indexed unisex life annuities by private funds is even theoretically unsolved (see Mitchell et al., 1999), it is an open issue who will provide these life annuities (see above). In my opinion the only solution is to centralise the pension capital at retirement and charge a central institution to pay life annuities. (Other solutions are mentioned in Impavido and Rocha (2006), relaxing indexation and neglecting the issue of unisex annuities.)

Pension funds may be established by employers, chambers of commerce, trade unions and voluntary pension funds. The owners of a fund are its members, who exercise their rights through elected directors and supervisors. Since there are many members, this control is more formal than substantive.

The fund is operated by appointed persons, under the control of a managing director, an auditor, an actuary, an investment manager, a legal officer and an internal auditor. The fund is required to operate "openly", publish a simplified version of its audited annual report. The fund can manage its assets by itself or external institutions.

A public institution called *State Financial Supervisory Authority,* has been established, which supervises the functioning of the pension funds as well as the other parts of the financial sphere. Its president is chosen by the Parliament for six years. The private pension funds must submit quarterly and annual reports to the Authority.

As a rule, about 4–5% of the member's contribution cover the fund's operational cost and another 1% goes into reserves. The remaining 94–95% are invested in the member's personal account. The investments are regulated carefully: for example, a fund cannot invest a significant part of its assets in a single firm, including its own. Costs of investments are deducted from the fund's gross returns. The funds must create various reserves.

In theory, the competition among pension funds ensures that the operational costs are low. In reality, this is not the case (Impavido and Rocha, 2006). As in other countries with a similar system, in Hungary 80% of the members and the capital are concentrated in few, namely five big funds. In oligopolistic competition, oligopoly dominates competition. Therefore the operational costs are high (5% of annual contributions plus 1-2% of the current assets per

year), the net returns are low. (For pessimistic and optimistic long-run views, see Murthi et al. (2001) vs. James et al. (2001), respectively).

Every member can change its pension fund after paying only a modest fee and the administrative burden of such a move is slight. Nevertheless, members do not change pension funds frequently. There is more than one reason for this lack of voting with feet. First, the funds' reports are often murky, thus it is not easy to see which pension fund is good and which is bad. (For example, the yields are given in gross rather than net form, in nominal rather than real terms.) Second, there may be a tacit collusion among the Big Five not to compete. Third, having lived for fifty years in socialism, citizens have still insufficient financial education, although serious problems exist in mature market economies as well.

Having discussed the development of the private pension funds, we turn now to the political risks and the problems with stable development of the implemented pension reform.

Concerning the public pillar, public pensions increased spectacularly (by 55% between 1997 and 2005 in real terms) and the pension contribution rates were drastically diminished: from 31% (1998) to 26.5% (in 2003) and further reductions to 24.5 (2009) were planned (Table 8). The actual and promised reduction in the related health sector was even more spectacular and at the same time, more irresponsible. After the centre-left coalition won the elections in April 2006, the old-new government admitted these grave problems and suspended further reductions and increased the employee's health contribution rate.

Table 8.

Pension contribution rates in Hungary: 1998–2007, %

Years	Employer	Employee	Total
1998	24	7	31
1999	22	8	30
2000	20	8	28
2001	20	8	28
2002	18	8	26
2007	21	8.5	29.5
2008	24	9.5	31.5

Notes: 1. From 2006 to 2007, the employee's health contribution rate was increased by 3%, while the employer's health contribution was reduced by 3%. In 2008, the employer's health contribution rate was reduced by 3%., while the corresponding pension contribution was increased by 3%. At the same time, the financing of certain disability pensions was shifted from the Health Fund to the Pension Fund.

How have the two or three pillars functioned together? The twin problems of the partial privatisation is as follows: (i) The privatisation required so much attention from the government that it had no energy to make the dominant public pillar simpler, i.e. to introduce NDC like Poland or the German point system. (ii) Because of excessive operational costs, the average real yield of the private pension funds was zero between 1998 and 2005, although with significant variances (Matits, 2008). (In a strange way, most of the publications distort this fact by neglecting the losses due to the membership fees, a 'modest' 5% of the annual contribution.) If these trends continue in the future, then a large part of the joiners will heavily lose with respect to those who stayed in the monopillar system (cf. Orbán and Palotai, 2005). Concerning (ii), a hypothetical calculation will be helpful (Table 9). It shows the *expected* relative gains and losses for persons joining the mixed system, compared to the original benefits obtained in the monopillar system.

Table 9.

Relative gain/loss due to entering the mixed system

	Years of service in the old system			
Relative interest rate	0	10	20	30
0	0	–6.3	–12.5*	–18.8
2	12.8	4.0	–9.8*	–18.2
4	34.4	10.1	–6.4	–17.5

Source: Simonovits (2003, Table A.1, p. 53).

It is assumed that the individual will work 40 years, and we are changing the number of years in the monopillar system and the relative interest factor (roughly speaking, the difference between yield and wage growth rate). In order to underline the significance of government guaranty, we deliberately omit the –6% lower bound for persons serving at least 15 years in the mixed system but these cases are denoted by *. In the last column, there are no stars, however, because in these cases our individual will serve only 10=40–30 years in the mixed system, excluding the guaranty. Was this the reason that the original upper bound on the age of entrance (47 years) was eliminated? Or had the socialist-liberal government such a menacing forecast on the benefits in the unfunded system that any transition was considered as advantageous? Anyway, sticking to the original laws, it can be seen that even after 20 years of past service, even in the case of the fabulous relative interest rate 4% (rather than the actual –3%), the transition loss almost equals the guaranty. Since the actual yields have been lagging behind those appearing in the calculation, this actual loss of joiner is even larger.

What are the economic risk and the investment instruments of the pension funds? The Hungarian economy has been growing quite fast since the start of the pension reform (Table 2) until 2006 but the stock market behaved very wildly. Beginning our discussion with the start of the reform, from a relatively high level in 1998, the index of the Hungarian stock market was falling for years. Since 2003, it has not only regained its former strength but has been increasing spectacularly, though wildly fluctuating. (For comparison, the US stock prices have been stagnating since 2001!) Due to the overheating of the economy, the consolidated government budget deficit is very high (6–8%), resulting in excessive interest rates. In such circumstances, the pension funds concentrated their assets in government bonds (Table 10), but because of the high operating costs, this has not assured positive real yields on average. But even if the pension funds had bought much more stocks, somebody would have to buy the government bonds, just to make up the revenues missing from the public pension system.

Table 10.

The structure of portfolio of pension funds, percentage (September 30, 2007)

Type	Mandatory pension fund	Voluntary pension fund
Cash and bank...	2.0	1.4
Bonds	65.2	70.1
Stocks	12.1	10.5
Investment notes	17.8	12.3
Other	3.0	5.6

The membership fees are maximised to 6 and 4.5 percents since 2007 and 2008, respectively, and the asset proportional cost is also be limited to 0.9 and 0.8 percents, respectively. The minimal share of stock will be raised to 40 percent from 2009.

Almost eleven years have elapsed since the reform started and only four years remain until the funds must start to pay life annuities. Nevertheless, the basic issue of indexed unisex life annuities is not solved.

5. CHANGES SINCE THE REFORM

The actual development of the mixed pension system was far from being as stable as it was planned in the pension law of 1997. As was already said, the conservative government of 1998–2002 opposed the pension privatisation and tried to make it less attractive by all means. Recapitulating our discussion: first of all, leaving aside the pension law of 1997, it did not increase the private contribution rate from 6 to 7 and 8% in 1999 and 2000, respectively and

did not compensate the joiners with appropriate modifications in the public benefit rules, either. Furthermore, the conservative government did not close the gate of return to the monopillar system by 1999 but left it open until 2002. Then, just before losing the elections, it made the monopillar system *the* default option and the mixed system as the optional one even for starters. It was only the returning reform government, which raised the private contribution rate from 6 to 7 and 8% in 2003 and 2004, respectively and closed the door of return. This *detour* serves now as an excuse for the unanticipated weakness of the incentives to the proponents.

There was a similar change in the guaranty. As mentioned before, according to the original law, the total benefit in the mixed system cannot be lower than 94% of the corresponding benefit in the monopillar system. But the conservative government eliminated this guaranty when it opened the return way to the monopillar system. And the returning social-liberal government has "forgotten" to reintroduce the guaranty when it reestablished the original, mandatory mixed system. A new twist arose when some members of the mixed system retired before contributing to the mixed system for the necessary minimal 15 years. These persons realised that they had made an error by joining the mixed system in 1998–1999, because they lost 1/4 of their pension rights accumulated until 1998 and they were unable to accumulate enough pension capital until retirement. In a strange way, the government gave in to the losers' demands and allowed them to return to the mixed system if their losses were larger than 6%. However, if persons had existed, who had lost less than 6%, they would not have got any compensation. (There are no such "lucky" persons yet!) This lack of monotonicity between loss and compensation shows the government's poor understanding of the principle of risk taking and compensation.

The fate of the public pillar was not luckier, either. Despite the steady growth of the economy, the conservative government delayed the proper indexation of pensions. In 1999, rather than raising the pensions by the growth rate of average net wage of the previous year (18%) as the law prescribed, it (re)introduced the theoretically superior forward-looking indexation, and raised pensions only by 14%, incidentally coinciding with the actual rate of inflation. (To be fair, we should mention that such a trick was already used by the socialist–liberal government in 1995/96, when – during accelerating inflation – it replaced the forward-looking indexation by a backward-looking indexation, to save 5% on the pension budget.) To minimise the fallout, the conservatives returned to the communist past and raised the benefits by the maximum of a modest lump sum and 11%. The parametric change punished 84% of the pensioners. Only just before the elections in 2002, did the conservative government try to make up the deficits and raised benefits faster than the indexation rule dictated.

The socialist–liberal opposition, however, skilfully exposed that government's trick and by whatever reason, won the election. Returning to power, the coalition paid a compensation for the loss suffered in 1999 to every pensioner (also illogically a lump sum and even to those few pensioners who gained in 1999 or those who were net yet pensioners in 1999). Furthermore, the new socialist-liberal government of 2002 introduced a 13th month pension, weakening its own saving plan as of 1997. (Since this extra pension was introduced as a one-week additional pension every year, this measure raised the benefits about 2% per year, about the difference between the old and the new indexation in a normal real wage growth. It is another question that the real wages also grew without restraint, by 30% during the four year. Thus the introduction of the 13th pension and the Swiss indexation saved the difference between the actual and the normal annual wage increase (7 vs. 4 percent) for the government's pension budget.)

In order to solve a pressing social issue, the same government increased the *widow's pensions* by 50%, from 20 to 30% of the deceased spouse's benefit. Returning to the unwanted sensitivity of the benefits on the year of retirement displayed in Table 4, the government elaborated a law of correction in 2005, which will eliminate the most unjust features of the past pension policy between 2006 and 2010.

At the end of this section, we should also make some remarks on the *voluntary pension pillar,* numbered as 3 or even 4 (for more details, see Simonovits, 2009). As was already mentioned, voluntary pension funds appeared in Hungary at the end of 1993, providing huge tax relief for the employer's and the employee's contributions. About a third of the employees are members of a voluntary fund and on average, they contribute 3.6% of the average gross wage to their funds (1.2% by themselves, 2.4% by their employers).

In a country, where there were no private pension funds until 1993, where the financial sector was very underdeveloped and the public pension system was very redistributive, such a reform can be defended. It is another question whether the tax credit (the rate as well as the size) was not excessive. (I think both were excessive, especially at the start, authorising a well-to-do member to put almost one-year average net wage into his account and receiving half of it back immediately.) Later reforms only changed the form but not the size of this perverse redistribution, by opening up tax exemptions for employer's contributions. Since 2000, the rate of tax exemption on employee's contribution was diminished but it is still significant. (Rather than authorising the direct withdrawal of 30% of the annual saving as before, the government adds the same amount to these accounts and they can only be used after retirement.) Note also that a second (!) Pillar 3, called Pillar 4 was introduced in 2006. The reason for introducing the new pillar was correct: here the annual fee cannot be higher than 1% of the assets, but at least 70% of the contributions should be invested into stocks. Meanwhile, mandatory pension funds are part of the system and the public pillar ceased to be

redistributive. Taking into account these changes, in my opinion, nothing justifies the preservation of so large tax credits. But only a dramatic deterioration of public finances compelled the government to diminish the maximum of the employer's contribution from the minimum wage to its half from 2007.

6. EFFECTS OF THE REFORM

The original idea of the Hungarian pension reform can be summarised as follows: introducing a mandatory private pillar will provide such a good private pension for the joiners that the burden of the public system will significantly be diminished. The public pillar – with all its alleged pitfalls (defined benefit, lack of funding, etc.) – is only needed as a safety net. Different semiofficial projects outlined different scenarios but even the most cautious projections (e.g. Palacios and Rocha, 1998) forecast the creation of a long-run equilibrium. (If somebody wants to see the "flexibility" of such reform plans, it is sufficient to compare the "development" of Martin Feldstein's reform ideas from full privatisation to partial privatization, etc. in the US.)

The issue of *transaction costs* was somewhat neglected during the Hungarian reform. It is well-known from the theoretical as well as the practical literature that during any transition from a fully unfunded system to a (partly or fully) funded system, the contributions to the private funds will be missing from the public revenues. Either the government puts the "double" burden on the shoulders of the workers of transition, or finances the whole transition from debt or reduces the benefits drastically, or combining these paths. "There is no free lunch!"

The Hungarian governments planned a combined strategy of debt financing and relative benefit reduction (both for the joiners and the pensioners). Nevertheless, the political competition prevented the political leadership from following this strategy in a consistent way: various governments increased the benefits and reduced contribution rates much more than was originally planned. As an afterthought, in 2004, six years after the reform started, the socialist-liberal government tried to change the budgetary rules and reduce the official budged deficit with the contributions flowing to the private pillar (cc. 1.4% of the GDP in 2004). The EU was not pleased with this procedure and only authorised the Hungarian and other governments to do this trick until 2009 and in a linearly decreasing measure.

As if everything were all right, at the end of 2005 the socialist-liberal government made into law a significant (5% points) reduction in the total health and pension contribution rate between 2007–2009, and the unified deficit of the health and pension fund already reached 4% of the GDP, without having an offsetting budget surplus in other sectors. The dominant conservative party in opposition, just before elections to be held in April 2006, announced an utterly irresponsible plan: if it wins, it will reduce the employer's (health and pension)

contribution rates from 29 to 19% from July 2006, and introduce a 14th month pension later on. The alleged source of this operation is the expected jump in employment and whitening of the economy: simple nonsense. After the electoral victory, the old-new government immediately withdrew its promises concerning reduction. It admitted that without imposing austerity measures, the budget deficit with pension corrections would reach 11% of the GDP this year, and to "impress" the public, renounced pension corrections, reducing the budget deficit to 9.2% in 2006. As part of the restrictions, the employer's pension contribution rate was immediately raised from 18 to 21% (Table 8). Concerning health contributions, the government increased the employee's health contribution rate from 4 to 6 and 7% from September 2006 and January 2007, respectively, reducing the net wages. It also preserved the much reduced lump-sum health contribution, about 1% of the average wage. For the newly retired, the employee's pension contribution was excluded from the assessed wage in the pension formula, reducing new pension with respect to the previous rule about 8 percent since January 2008. (The reduction would be greater if the insufficient valorisation had not been also eliminated.) These and other related measures improved the budget by about 2% of the GDP. Since 2008, a new set of contribution rates was introduced, shifting part of the disability contribution from the health care budget into the pension budget. The government presumably hoped that having succeeded with the austerity measures, growth will return and solve the problems of the pension system as well. The loss of the minor coalition partner transformed the Socialist government into a minority one.

The arrival of the world economic crisis has buried these hopes. The growth forecast for 2009 dropped from 3% to –3% from September to next January. The government has presented several plans to make ends meet. To start with, it limited the 13th month benefit at the average monthly benefit and withdrew it from early retiree, saving about 1/3 of the monthly benefit. It also limited the annual earning of early retirees at the annual minimum wage.

The latest reform package would eliminate the 13th month pension benefit for those retiring after June 30, 2009, while preserving it for those already retired. To alleviate future tensions, the government will pass a law, raising the normal retirement age from 62 to 65, four month a year from 2016. By rearranging the tax and contribution system, the contribution rate would be reduced by 5 percent points within two years, possibly helping employment.

At the same time, a non-partisan Reform Alliance called for much deeper reforms. Within the radical transformation of the tax and transfer system, it would eliminate the 13th benefit immediately; raise the normal retirement age from 62 to 65 between 2010 and 2012, and replacing Swiss indexation by pure price indexation. At the same time, the plan would reduce the contribution rate by 10 percent points in three years, while raising the fixed health care contribution.

It is possible that the government's measures are still to shy; but I think that the Reform Alliance's plans are too brave. The elimination of the 13t benefit would reduce the pension expenditure by 8%, but it would put a too heavy burden to the poorest pensioners. The immediate raise in the retirement age would mostly increase the number of unemployed, which is already on the rise.

As a compromise, perhaps the 13th benefits should be phased out the same way as it was phase in, i.e. during four years. The raise in the normal retirement age can be started in 2011 rather than 2016 and it can be 6 month in every year. But the incentives for late retirement and fines for earlier retirements should be planned much more carefully than now: they should be string enough to have any effect but they should be fair enough to be accepted by the society.

At this point it is worth mentioning the worldwide collapse of stock prices and the temporary (?) loss of 20% of the pension funds' stocks. Hungary was among the maximal losers, along with Ireland and the US. Small wonder that the proponents of privatization now consider the eventual government bail out of the losers, who joined the mixed system voluntary.

7. GENERAL (PRELIMINARY) ASSESSMENT

Has the reform been a success? If one counts the share of participants in the mixed system, then the reform was a success: 50% of workers joined voluntary and another 20% of the working force were born into it. If one calculates the capital accumulated in private pension funds, then he can boast that during eleven years such a monumental sum was accumulated (cc. 7% of the GDP). However, if one asks whether the pension system is functioning better now than before the reform, then he might have serious doubts. Gál et al. (2001) and Gál and Tarcali (2003) provide detailed studies of the partial impacts of the various reform measures, using the methodology of Generational Accounts developed by Auerbach et al. (1994). Their punch-line is as follows: it is the introduction of Swiss indexation rather than partial privatizasion that improves the balance in the planned reform.

It is noteworthy that more recent evaluations of the reform by World Bank experts, Rocha and Vittas (2002) and Impavido and Rocha (2006) admitted that the Hungarian reform has not been as successful as they hoped for. Agreeing with a very thorough analysis of Orbán and Palotai (2005), I think that the pension reform was not really successful. Concerning the design of public pillar, the macrodeficits are much bigger now than they were before the reform. And only a part of the budgetary problems is connected to the inevitable transition cost (the contributions flowing to the private funds are missing from public revenue). A really good pension system should attract workers to contribute fully and delay retirement. (For example,

the covered wage-output ratio dropped from 40 to 34% between 1992 and 2000.) The solution of this task remains for the future.

Since the mandatory private (second) pillar was already introduced in Hungary eleven years ago, there is no point to discuss its alternative. Now every expert must try to make its functioning as good as possible. The key issue is to minimise its operational costs. Following the Swedish example, a clearing house should be set up, in order to increase the real yields. But the mandatory public (first) pillar should not be neglected, either. Individual accounts should be introduced as soon as possible. The awkward pension formula should be replaced by a simpler one. The long-run harmony between contributions, taxes and benefits should be achieved.

The detailed plans to be followed are simply missing. For example, it is very difficult to conceive how the members of the mixed system will react to the new situation when they experience that the fellow workers remaining in the monopillar system obtain much better pensions than those "who chose freedom". Until the first members of the mixed system will receive benefits in 2013, these issues should be solved.

What can be expected for the average income and the income distribution in old age in the future, for example, if the new scheme is maturing, and because of economic and demographic changes? Some experts (e.g. Augusztinovics and Köllő, 2008) paint a very dark picture, fearing of a huge mass of new pensioners having no pension rights. As a way out, she suggests an introduction of a significant basic pension for every pensioner, a hidden return to the already fading progressive public pensions. Others, including the present author, are more optimistic, furthermore, we are afraid of a further change in the relation of Pillars 1 and 2 can undermine the credibility of the whole system (Simonovits, 2008b). A third group of experts, (EU Commission Report, 2006) is also very sceptical about the long-term solvency of the Hungarian pension system, claiming that by 2050, the public pension expenditures will rise to 17.1% of the GDP from 10.4% in 2004. Of course, these projections are not forecasts, they simply serve to warn the government on the dangers ahead in 2004.

The structural reforms have created mixed systems, first in Hungary, then in Poland and other ex-socialist countries. Only Slovenia and the Czech Republic have been resisting the temptation to partially privatise and prefund their pension systems. It is interesting to note that these two countries are the most developed in the area and they followed special routes in the other fields of privatisation as well. (For international comparisons of the pension reforms among the developed transition countries, see Fultz, ed. (2002) and Schmähl and Horstmann, eds. (2002).) It will take much more time to arrive to reliable judgement on the pension reforms in Hungary and its neighbours. What is already clear, however, is that the introduction of a mixed system may create more problems than it solves.

APPENDIX: CONTRIBUTION RATES

In this Appendix we discuss several issues of contribution rates. In contrast to the tradition of some market economies (Germany and the US), in the Hungarian and other ex-socialist countries the employee's contribution rate was and is much lower than the employer's. This practice artificially reduces the gross wage and inflates the total contribution rate with respect to indices of countries with balanced employee and employer's contributions. Indeed, if the Hungarian government had repartitioned the contribution rates as 8+23=15.5+15.5% in 1998, then – fixing the net earnings and the total wage cost – the gross wage would have also increased by 15.5–8=7.5% to 107.5, and on this new base, a contribution rate 14.4+14.4=28.8% would have delivered the same results. Making a similar operation on the health care contribution rates 4+11=15%=7.5+7.5, the gross wage could have been farther increased to 111, making room for the reduction of the pension contribution rates to 14+14=28% and the health care contribution rates 6.8+6.8=13.6%. Summing up, such an operation would have reduced the total contribution rate from 46% to 41.4%. Moreover, it would have made a larger part of the social security contributions visible to the workers: 21 rather than 12% of the gross wage.

A second issue is a lump sum health contribution that every employer had to pay after every employee since 1996. This sum was especially high during the conservative government, reaching 9% of the minimal wage and 3.7% of the average gross wage in 2002. As already mentioned, a modest amount of a little above 1% of the average gross wage will be retained rather than abolished at the end of 2006.

A third issue is the interaction between personal income tax and social security contributions. In Hungary the base of social security contributions is the same as that of the personal income tax, namely the gross wage. Therefore – fixing the two genuine economic categories, the net wage and the total labour costs – any rise in the personal income tax rate increases the gross wage and a fortiori the volume of social security contributions. And the effective personal income tax rate significantly increased between 1998 and 2002 and similarly diminished between 2002 and 2006. These complications should be considered at evaluating Table 8. For example, in 2007, just the nominal net wages diminished by 3% to make room to the increase in the employee's health contribution.

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