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The Hungarian Pension Reform
A Preliminary Assessment of the First Years of Implementation

Roberto Rocha and Dimitri Vittas

12.1 Introduction

In the summer of 1997, the Hungarian Parliament passed a proposal for a systemic reform to the pension system, involving substantive changes to the existing public pay-as-you-go (PAYGO) system and the introduction of a new pension system. The new system comprises a smaller public PAYGO system (the first pillar), and a new, funded, and privately managed system (the second pillar). A voluntary, funded, and privately managed pillar (the third pillar) already existed before the reform and continues to operate and grow.

The new pension system began operating in January 1998, and became mandatory for all new workers entering the labor force after July of that year. Workers with accrued rights in the old PAYGO pension system could choose to stay in the reformed PAYGO system or switch to the new multipillar system. At the end of September 1999 (the deadline for switching to the new system), more than two million workers accounting for half of the labor force had decided to switch to the new pension system. Although some workers are expected to switch back to the reformed PAYGO system until December 2002 (the extended deadline for switching back to the PAYGO), the large number of switchers reveals the popularity of the reform among workers, particularly workers under the age of forty, who account for more than 80 percent of the total number of switchers.

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The Hungarian pension reform was the first systemic pension reform implemented in Central and Eastern Europe. Since then, a number of other countries have also implemented or are about to implement this type of reform, including Poland, Croatia, Latvia, Macedonia, and Kazakhstan. Multipillar systems are under preparation or consideration in several other countries of the region, as well. The facts that Hungary pioneered this type of reform in the region, and that three years of implementation have passed, raises a natural interest in the Hungarian reform experience, and in the lessons that may be identified for other countries.

The interest in the Hungarian reform experience may be enhanced by the fact that the center-right government that succeeded the reformist center-left government in mid-1998—after six months of reform implementation—demonstrated just a lukewarm support for the reform. The lack of initial support was revealed in numerous official statements, claiming that the reform had not been well prepared and that it had an adverse impact on the public finances. One clear evidence of the lukewarm support was the new Government's decision to maintain the contribution to the second pillar at 6 percent, instead of increasing it gradually to 8 percent, as originally planned and prescribed in the legislation. This measure may have important implications for some particular cohorts and for market participants, and raises a number of issues which are relevant for other reforming countries.

This paper reviews the main components and objectives of the Hungarian pension reform, and makes a preliminary assessment of the first years of its implementation. The paper is structured as follows. The second section provides some background material, examining briefly the performance of the pension system before the reform, and showing long-run projections of the system in the absence of reform. The third section describes the overall reform package, examines the switching results, and provides a number of long-run actuarial simulations of the new multipillar system. The fourth section examines the structure and performance of the private pillars in the early stages of implementation. Finally, the fifth section provides some conclusions and identifies possible lessons for other countries.

12.2 The Situation of the Pension System before the Reform

12.2.1 The Performance of the System in the Postwar Period

The Hungarian PAYGO system matured rapidly in the postwar period, as reflected in the rapid increase in the system dependency ratio (the ratio of pensioners to workers), and the increase in the average replacement ratio (the ratio of the average pension to the average net wage).[1] As shown

1. Section 12.2 draws on Palacios and Rocha (1998).

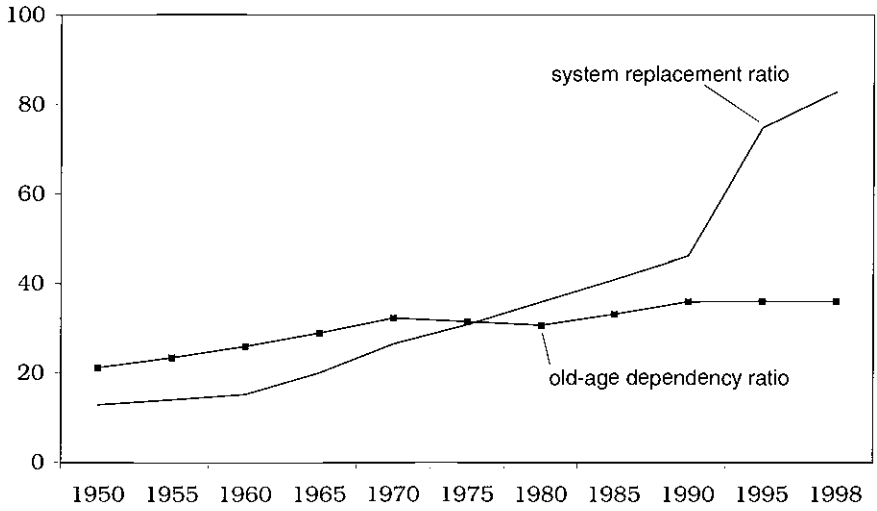

Fig. 12.1 Old age and system dependency ratios, 1950–98 (%)
Sources: Central Statistical Office; Pension Insurance Fund.

in figure 12.1, the system dependency ratio surpassed the old age dependency ratio in the mid-1970s, due primarily to the low retirement age for women, who comprised an increasing proportion of the pensioner population and whose life expectancy at retirement rose from twenty to thirty-three years in the last decades.

The average replacement ratio also increased steadily in the postwar period (figure 12.2), as a result not only of longer average contribution periods, but also of more generous benefits and more permissive eligibility rules. The increase in the number of pensioners and in the average benefit levels led to a steady increase in pension expenditures—from less than 5 percent in 1970s to more than 10 percent of gross domestic product (GDP) in 1990, requiring increasing contribution rates to balance the system. By the early 1990s, total contribution rates to the PAYGO system amounted to about 34.5 percent of gross wages, including 30.5 percent for old age and survivors and about 4.0 percent for underage disability pensions.

The Hungarian PAYGO scheme arrived in the 1990s with difficulty balancing expenditures and revenues, despite charging one of the highest contribution rates in the world (tables 12.1 and 12.2).[2] During the 1990s the PAYGO system was subject to further pressures, caused by a significant loss of revenues and a sharp increase in the system dependency ratio. As shown in tables 12.1 and 12.2, the loss of revenues amounted to almost 3

2. The PAYGO system is defined so as to include contribution revenues, the pension expenditures of the pension insurance fund, and the underage disability pensions of the health insurance fund. It is arbitrarily assumed that the underage disability expenditures are covered by equivalent revenue.

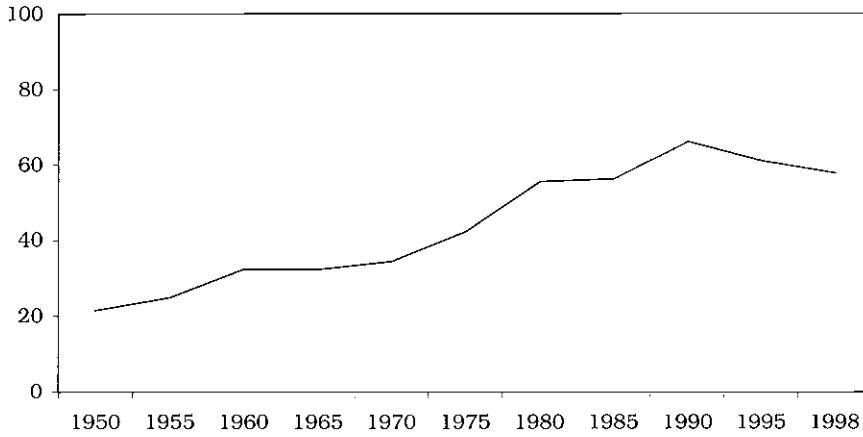

Fig. 12.2 Ratio of average pension to average net wage, 1950–98 (%)
Sources: Central Statistical Office; Pension Insurance Fund.

Table 12.1 Revenues, Expenditures, and Balance of the PAYGO System, 1991–99 (in % of GDP)

	1991	1995	1996	1997	1998	1999
Contribution revenues	11.0	8.9	8.4	8.3	8.2	7.8
Pension Fund	n.a.	7.5	7.1	7.0	7.0	6.8
Health Fund (disability)	n.a.	1.2	1.1	1.1	1.0	1.0
Pension expenditures	10.5	9.1	8.5	8.3	8.7	8.8
Old age	n.a.	6.8	6.3	6.2	6.4	6.4
Survivors'	n.a.	1.1	1.0	1.0	1.1	1.1
Disability	n.a.	1.2	1.1	1.1	1.2	1.3
PAYGO balance	0.5	−0.2	−0.1	0.0	−0.5	−1.0
Revenue loss to second pillar					0.3	0.6
Pure PAYGO balance	0.5	−0.2	−0.1	0.0	−0.2	−0.4

Sources: Central Statistical Office; Pension Insurance Fund.
Note: n.a. = not available.

Table 12.2 Base of Payroll Tax (% of GDP) and Contribution Rates, 1991–98

	1991	1995	1996	1997	1998	1999
Covered wage bill/GDP	30.9	23.6	22.2	22.4	22.1	22.3
Total contribution rates (%)	34.5	34.5	34.5	34.0	34.0	33.0
Pension Fund	30.5	30.5	30.5	30.0	31.0	30.0
Health Fund (notional)	4.0	4.0	4.0	4.0	3.0	3.0

Sources: Central Statistical Office; Pension Insurance Fund.

percent of GDP before the reform, due primarily to an erosion of the tax base (the covered wage bill). Such base erosion was due not only to problems of ceilings and exemptions, but also to increasing evasion of the heavy payroll tax. The increase in the system dependency ratio amounted to 66 percent during the 1990s, most of which occurred during the first half of the decade (figure 12.1). This dramatic increase in the dependency ratio was due to a reduction in labor force participation, increases in unemployment, and the maintenance of generous early retirement and disability schemes as a buffer against unemployment.

The sharp increase in the number of pensioners implied strong pressures on expenditures and, combined with the revenue loss, would have resulted in very large PAYGO deficits in the absence of other correcting measures. The main correction that took place involved the manipulation of indexation parameters in the benefit formula, which resulted in a significant drop of the average replacement ratio. A sharp real wage compression that took place in the mid-1990s (approximately 15 percent in 1995 and 1996) also contributed to the decline in real pensions, given the wage indexation of pensions. The final results of these measures were a drop in pension expenditures relative to GDP, and only modest PAYGO deficits in the early and mid-1990s.[3]

Although these corrections prevented the emergence of large deficits in the PAYGO system, they were perceived as arbitrary and unfair, diminishing the credibility of the PAYGO in the eyes of the population. Furthermore, the scope for additional ad hoc corrections narrowed severely, making the system even more vulnerable to the demographic shocks projected for the twenty-first century. As the consequences of a do-nothing scenario were more widely understood, it became increasingly apparent that the public pension system needed more fundamental reform. Before examining the long-run projections of the system, it must be noted that the PAYGO deficits have increased somewhat since 1997 (the year when the reform was passed); these deficits raise less concern, however, because they are partly due to the creation of a second pillar, and because the actuarial imbalances of the system were already being addressed by the reform.

12.2.2 The Future of the PAYGO System in the Absence of Reform

Along with the rest of Europe, Hungary will experience rapid population aging in the next few decades, a development that will submit the pension system to great pressures. The impact of these adverse demographic trends in the absence of reforms was assessed through the use of an actuarial model developed during the reform.[4] The base year used for

3. Palacios and Rocha (1998) provide a more detailed analysis of the performance of pension revenues and expenditures during the 1990s.

4. The actuarial model was developed by Patrick Wiese.

Table 12.3 **Main Economic and Demographic Assumptions for Pension Simulations, 1997–2070**

	1998	1999	2000–2030	2000–2070
Economic assumptions				
Real GDP growth	5.0	4.1	3.0	2.7
Real wage growth	3.5	3.5	3.0	3.0
Inflation rate	14.3	10.0	3.4	3.0
Unemployment rate	9.0	8.0	7.0	7.0
Demographic assumptions				
Population growth	−0.3	−0.3	−0.2	−0.3
Employment growth	1.4	1.1	0.0	−0.3
Life expectancy (men)	65.1	65.0	71.8	76.4
Life expectancy (women)	74.6	74.8	79.3	84.5

Notes: Actual figures for 1998 and 1999. GDP growth is derived from wage growth. The labor share is assumed to remain constant. Life expectancy is years at birth, based on current mortality.

the actuarial projections is 1997—the year preceding the implementation of the reform. The main economic and demographic assumptions used in the actuarial projections are shown in table 12.3.

The economic assumptions include a decline in inflation rates to Western European levels, a constant labor share in GDP, and a moderate decline in the unemployment rate. The demographic assumptions are the same as the baseline scenario developed by Hablicsek (1995), and imply a declining population and a significant increase in the old age dependency ratio. The system dependency ratio also increases as a result, although this increase is somewhat moderated by the assumption that labor force participation rates converge gradually to the levels prevailing in Western Europe. This implies a moderate increase in labor force participation rates from the current levels, especially for women.[5]

Under these demographic and economic assumptions, and in the absence of reforms, the Hungarian PAYGO system would generate growing deficits, as shown in figure 12.3. The deficits would grow to about 2.0 percent of GDP at the end of the first decade of the century, and would converge to about 6.5 percent of GDP in 2070, the end of the projection period. The result is essentially due to the assumption of a declining rate of inflation and to adverse demographic trends. The decline in the rate of inflation implies increasing real average pensions and replacement ratios, because of the full backward wage indexation rule (prevailing before the reforms), and also because of smaller inflation-related losses in entry-level

5. Labor force participation for women in their thirties and forties are assumed to increase from about 70 percent to about 75–83 percent. This assumption was adopted because labor force participation rates declined significantly during the early stages of the transition in the 1990s, from Hungary's historical levels and from the levels prevailing in most European countries.

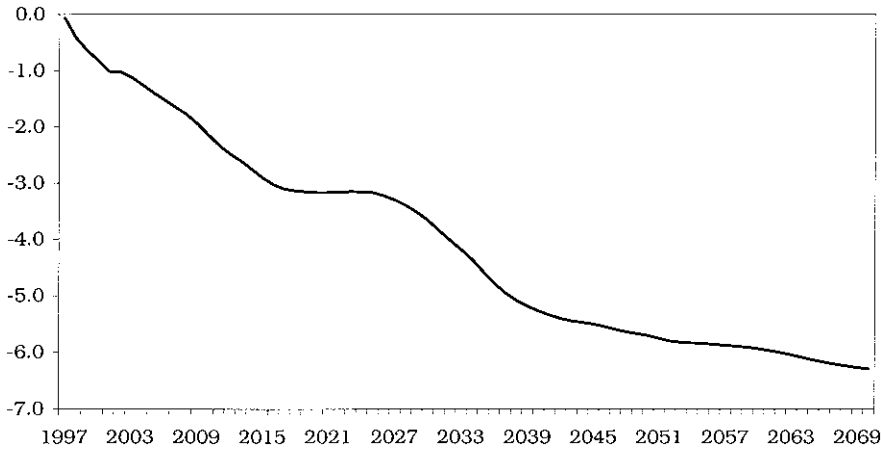

Fig. 12.3 Balances of the public pension scheme in the absence of reforms, 1997–2070 (% of GDP)

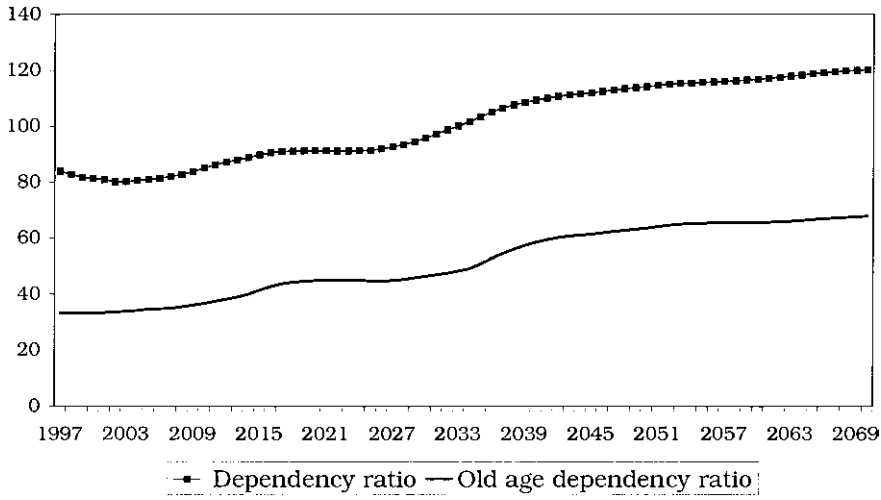

Fig. 12.4 Old age and system dependency ratios in the absence of reforms, 1997–2070 (%)

pensions (the former benefit formula contained several indexation parameters that made entry-level pensions very sensitive to inflation).

Whereas the decline in inflation is the major cause of the early deficits, demographic factors dominate the results after the first decade. The projected fluctuations in the deficit closely mirror the old age and system dependency ratios, as shown in figure 12.4. Both ratios increase between 1995 and 2017, followed by a ten-year period of stability and then by an-

other increase. The old age dependency ratio nearly doubles to 65 percent at the end of the projection period, while the system dependency ratio grows to 120 percent.

In the absence of reforms, balancing the pension system in 2070 would require increasing the contribution rate to more than 55 percent, or reducing the replacement ratio from about 60 percent to less than 35 percent. This would cause either greater distortions in the labor market or great dissatisfaction and unrest among future pensioners, or both. It is also clear that the absence of reforms would imply a massive burden on future generations, irrespective of whether the future imbalances were financed by higher contributions, lower replacement ratios, or general taxes. Recent calculations of generational accounts confirm that workers under thirty-eight years of age would be net contributors to the system, and that the net tax burden on future generations would be particularly heavy.[6]

12.3 The Hungarian Pension Reform

12.3.1 General Description of the Original Reform Package

The reform package gave workers the choice to stay in a reformed PAYGO system or to switch to a new, mixed pension system until the end of August 1999. Workers who initially opted for the new system will be able to return to the reformed PAYGO until December 2002. After that date, workers will be permanently affiliated with either the reformed PAYGO or the new system. New entrants in the labor force after July 1998 have been automatically enrolled in the new mixed system.

The reforms to the PAYGO system included the following main components: (1) a higher normal retirement age of sixty-two for both men and women (from sixty and fifty-five, respectively); (2) an increase in the number of years of service to be eligible for early retirement without penalties to forty years; (3) increases in the penalties for early retirement and in the rewards for late retirement; (4) changes in the benefit formula designed to eliminate its explicit redistributive elements (i.e., a correction factor that penalized higher-income workers); (5) a new tax regime; and (6) a shift from backward net wage indexation to a "Swiss" indexation formula consisting of a combination of contemporaneous price and wage indexation (50 percent net wages, 50 percent consumer prices).

The new legislation included detailed transition tables for the retirement age increase, the corresponding early retirement penalties, the minimum years of service for early retirement both without and with penalties, and

6. Auerbach, Kotlikoff, and Leibfritz (1999) provide a general methodology of generational accounts and empirical results for several countries. Gal, Simonovits, and Tarcali (2001) construct generational accounts for Hungary.

a new set of accrual rates that apply to gross rather than net wage history. The retirement age and the minimum years of service for early retirement began rising immediately, but do not reach their final state until the year 2009. The new legislation also included a transition period for the new indexation formula, specifying the maintenance of full backward wage indexation for 1998 and 1999, followed by a mixed 70–30 percent (wage-prices) contemporaneous indexation formula for 2000; and finally a contemporaneous Swiss formula for 2001 and subsequent years. The new benefit formula and tax regime will become effective by 2013.

Many of the changes reflected the government's position that redistribution should be removed from the pension scheme. This was based on the government's desire to tighten the link between contributions and benefits in order to improve compliance with and the insurance characteristics of the system. An element of intragenerational redistribution was maintained, but in the form of a minimum, top-up, means-tested pension benefit financed outside the pension system.

As summarized in table 12.4, workers deciding to remain in the reformed PAYGO system would pay a contribution rate of 30 percent of their gross wages, and would earn an accrual rate of 1.65 percent for each year of service.[7] Workers switching to the new system would have 22 percent of their gross wages channeled to the first (PAYGO) pillar, earning an annual accrual rate of 1.22 percent for each year of service. The switching workers would earn the same 1.22 percent accrual rate for every year of service before the switching date. The switching workers would also contribute 8 percent of their gross wages to their second-pillar accounts. This contribution rate structure would follow a two-year transitional period—the contribution to the second pillar would be 6 percent in 1998, 7 percent in 1999, and 8 percent from 2000 onward. The overall contribution rate would remain at 30 percent, and the contribution to the first pillar would be reduced accordingly.

The first pillar of the new multipillar system applies the same rules as the reformed PAYGO system, including higher retirement age, minimum years of service, and indexation arrangements. However, the benefit formula was scaled down in proportion to the size of the contribution rates. Therefore, the annual accrual rate in the new first pillar was reduced to 1.22 percent, or roughly 74 percent of the 1.65 percent accrual rate that applies to those workers who remain in the reformed PAYGO scheme. This corresponds to the ratio of the (1) the contribution rate to the PAYGO scheme paid by workers who pursue the multipillar scheme, to (2) the contribution rate paid by workers who do not switch; namely, 22–30. For

7. Workers remaining in the reformed PAYGO system may obtain additional coverage from the voluntary third pillar, which has been in existence since 1994. Vittas (1996) provides an early analysis of the Hungarian third pillar.

Table 12.4 **Main Elements of the Reform Package**

	PAYGO System		New System	
	Old	Reformed	First Pillar	Second Pillar
Contribution rate	30%	30%	24–23–22%	6–7–8%
Annual accrual rates	Nonlinear, equivalent to 2.00% of net wage	Linear, 1.65% of gross wage	Linear, 1.22% of gross wage	—
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 (men and women)	62 (men and women)	62 (men and women)
Early retirement 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	—

Note: Long dash indicates "not applicable."

those who switch to the new scheme, the 1.22 percent accrual rate applies for both past and future years of participation in the system, implying that anyone who switches is voluntarily forfeiting approximately one-fourth of his or her acquired rights in the process.

As discussed in greater detail in section 12.4, workers who switch to the new system and contribute for at least fifteen years to the new second pillar are guaranteed a minimum second-pillar benefit equal to 25 percent of the first-pillar pension. The guarantee is modest for new workers. However, the guarantee is equivalent to a minimum lifetime real return of more than 4 percent per annum for workers in their mid-forties, due to the shorter accumulation period. Therefore, the guarantee could be triggered for workers in their mid-forties who switched to the new scheme, although the amount required to meet this guarantee should not be significant.

12.3.2 Changes in the Reform by the New Government

The elections of May 1998 resulted in the departure of the government that designed and implemented the pension reform, and that consisted of a coalition of the Socialist Party (a center-Left party) and the Free Democrat Party (center-Right). Another coalition government, formed by the Young Democrats Party (center-Right) and the Small Shareholders Party (Right), won the elections by a narrow margin. The new government neither emphasized pension reform in its preelection program, nor mentioned its intention to modify the ongoing reform during the campaign period, but has expressed less than full support of the reform during its tenure.

One of the first measures announced by the new government was the decision to maintain the contribution rate to the second pillar at 6 percent in 1999, instead of increasing it to 7 and 8 percent, as originally planned. Another important measure involved changes in the transition indexation rules negotiated during the reform preparation. More specifically, instead of maintaining the backward wage indexation in 1999 (which would have resulted in nominal pension increases of 18 percent), the government announced an ad hoc increase of 14 percent. The announcement of these changes created uncertainty among workers and market participants, especially because they were not accompanied by an announcement of the policies that would be followed in 2000 and in future years. Some politicians in the new coalition raised the level of uncertainty further by announcing their intentions to introduce more fundamental changes and even to roll back the reform entirely.

Political factors may have motivated these initial sharp attacks on the reform. However, it also seems that some policy makers became concerned with the transitional deficits caused by the loss of revenues to the second pillar. Technical discussions both inside and outside the government showed that the size of the transitional deficit was moderate and that this deficit was, in any case, neutral from the point of view of macroeconomic

stability (as discussed below). During the second half of 1999, the general attitude toward the reform improved somewhat and the attacks subsided, but the government still indicated that it would maintain the contribution to the second pillar at 6 percent until the end of its tenure (mid-2002). The government also extended the option for workers to switch back to the PAYGO scheme from December 2000 to December 2002.

12.3.3 The Actual Switching of Outcomes

The government that passed the reform initially considered a switching strategy that involved forcing all workers below the age of forty to switch to the new system, and all workers above that age to remain in the reformed PAYGO system. However, it became increasingly apparent that a mandatory cut-off age could spark constitutional battles over accrued rights and prove too costly to implement. These problems led the government to make the reform mandatory for new entrants (after July 1998) and voluntary for anyone with a contribution history in the old system. Moreover, the government also decided to recognize accrued rights by making compensatory pension payments at the time of retirement, as practiced in Argentina, and not by recognition bonds, as practiced in Chile, Peru, and Colombia.

The rights earned under the old scheme are recognized by applying the accrual rates of the new first pillar. Because these accrual rates are lower than those implied by the old formula, workers who switch voluntarily forego part of their accrued rights. The new system is still attractive to most younger workers, because the higher expected returns in the second pillar result in higher pensions in the new system, under reasonable assumptions. Therefore, the valuation of past contributions in the context of a voluntary switch allowed the government a certain measure of control over the speed of the transition and the size of early transition deficits, as well as a reduction in the implicit pension debt.

As shown in figure 12.5, if the contribution rate to the second pillar were set at 8 percent, as in the original reform package, and under conservative assumptions on returns and costs (returns of 2 percent above wage growth, annuity rate equal to wage growth, and operating costs and charges amounting to 15 percent of contributions), workers below thirty-six years of age would tend to switch to the new system, whereas workers above that age would find it attractive to remained in the reformed PAYGO scheme. The higher replacement ratios of younger workers are essentially due to the effect of the compounding of interest over a longer number of years. This interest-accumulation effect outweighs the reduction in accrued rights for workers below thirty-six years of age, but is not sufficient for workers above that age.

Of course, these are rather conservative assumptions about pension fund returns. As shown in figure 12.6, the rate of return–wage growth differential in the 1980s and 1990s was higher than 2 percent in a sample of

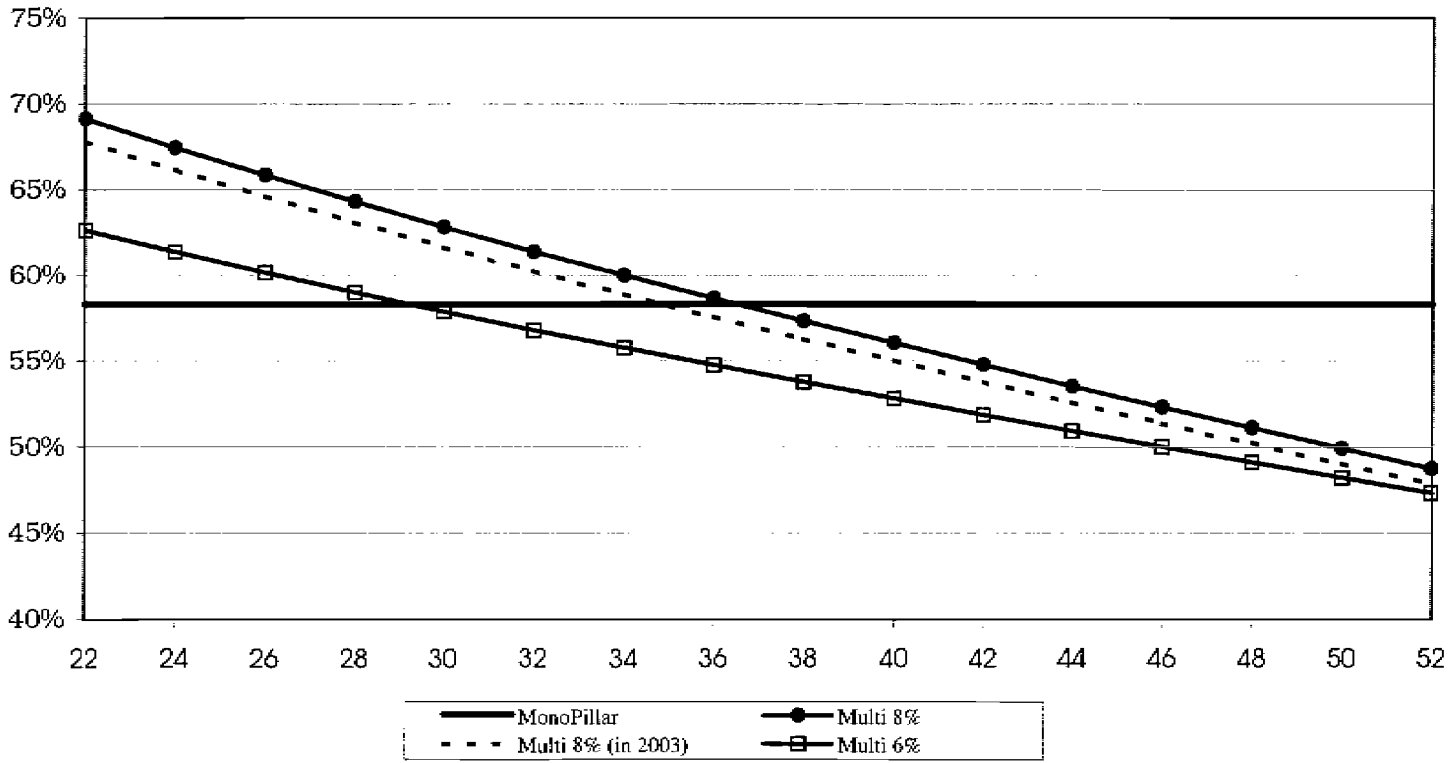

Fig. 12.5 Replacement ratios in the old and new systems for each cohort: Returns 2% above wage growth (gross pension/gross wage, in %)

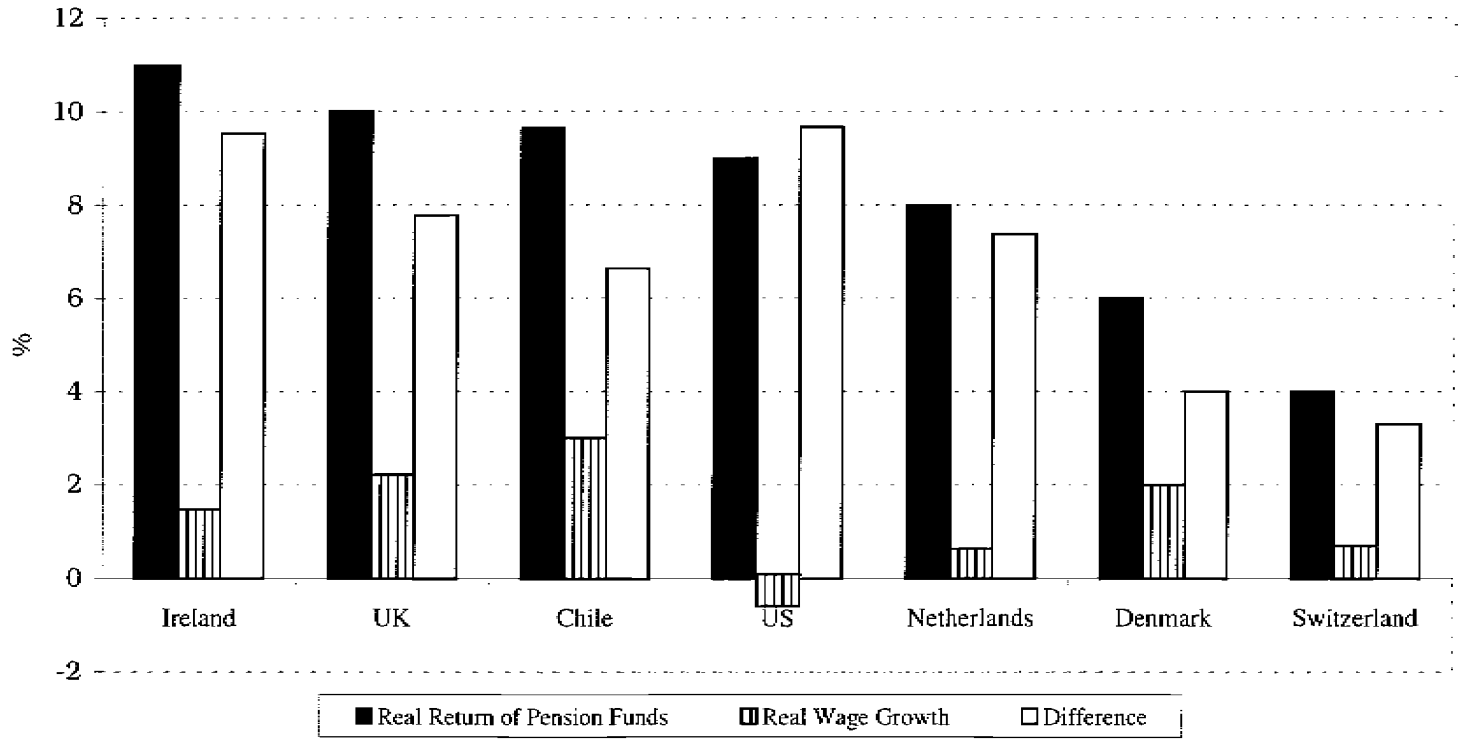

Fig. 12.6 Real wage growth and real returns on pension funds (1984–96)
Sources: European Federation of Retirement Provision (1996); Organization for Economic Cooperation and Development (OECD; 1998).

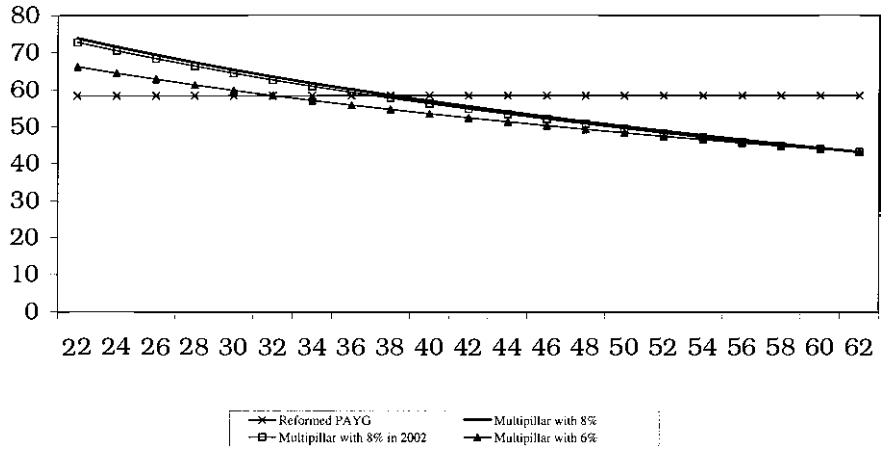

Fig. 12.7 Replacement ratios in the old and new systems for each cohort: Returns 3% above wage growth (gross pension/gross wage, in %)

countries with large funded systems, even in countries that imposed portfolio restrictions or followed very conservative portfolio strategies, such as Denmark and Switzerland. For the sake of illustration, assuming returns of 3 percent above wage growth, the equilibrium cut-off age would increase to thirty-eight years, as shown in figure 12.7. If returns were assumed to be as high as those shown in figure 12.6, the cut-off age would exceed forty years.[8]

The actual switching outcome was in line with other switching experiences and largely met initial expectations.[9] As shown in figures 12.8 and 12.9, the number of switchers was significant in the first few months of implementation, kept increasing throughout 1998 and 1999, and accelerated in the last two months before the final deadline for switching (September 1999), reaching approximately 2 million workers (nearly half of the labor force). At that point, more than 80 percent of switchers consisted of workers below forty years of age, and more than 80 percent of workers in their twenties and early thirties had switched to the new system. The increase in the number of switchers after that date reflects primarily the new

8. A positive difference between the return on capital and wage growth is also a condition of dynamic efficiency (see, e.g., Barro and Sala-i-Martin 1995). The returns on pension fund assets shown in figure 12.6 cannot be used as direct evidence of dynamic efficiency because they contain a risk premium on equity. However, see Feldstein (1995, 1997) for a discussion of the dynamic efficiency condition in the presence of risk for the U.S. case, and Kotcherlakota (1996) for a discussion of the equity risk premium.

9. See Disney and Whitehouse (1992) for an analysis of the opt-out experience in the case of the United Kingdom, Rofman (1995, 1996) for a description of the Argentine experience, and Palacios and Whitehouse (1998) for a comparison of switching outcomes in a sample of reforming countries.

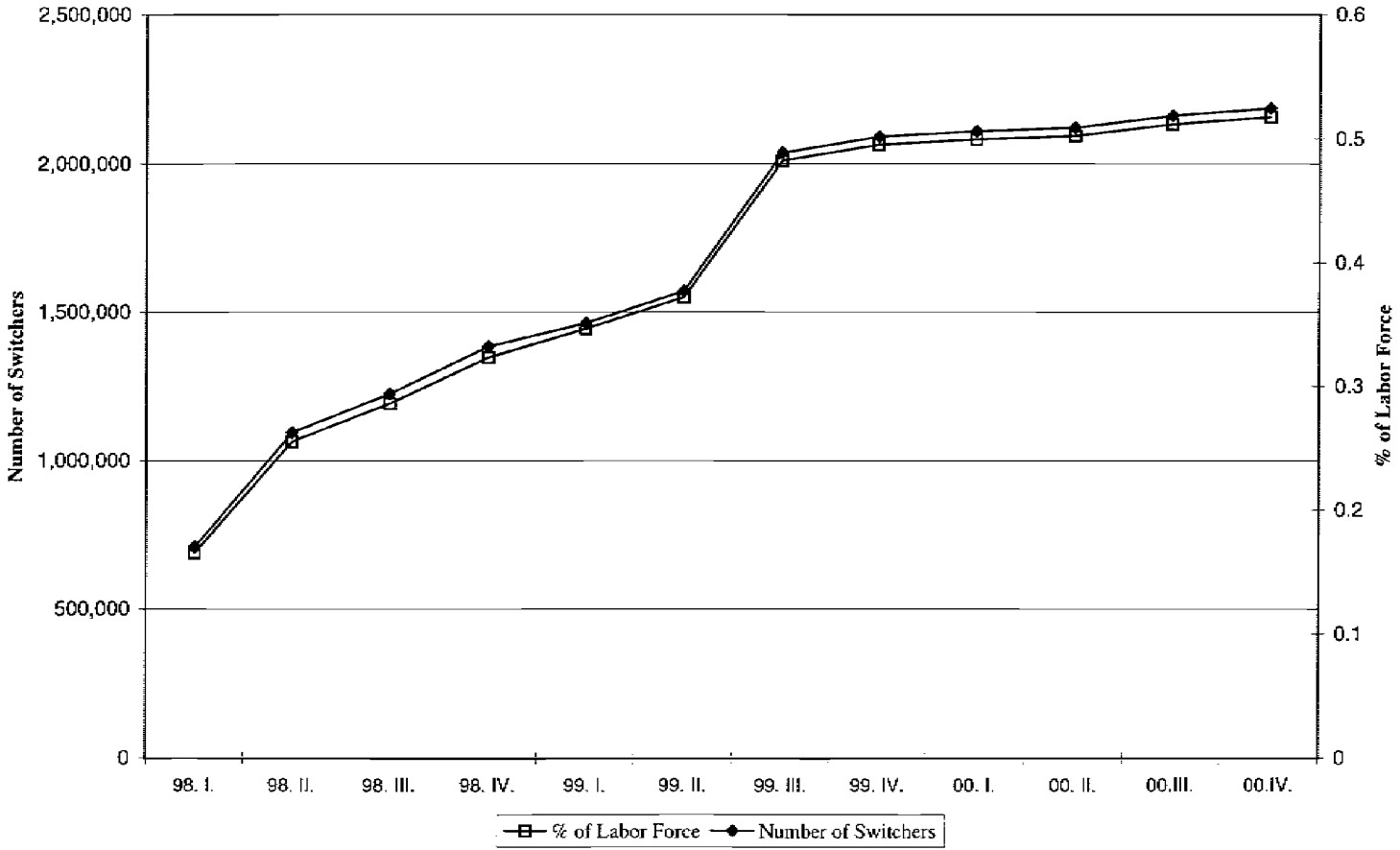

Fig. 12.8 Number of switchers to the new system (in absolute numbers and in % of labor force)

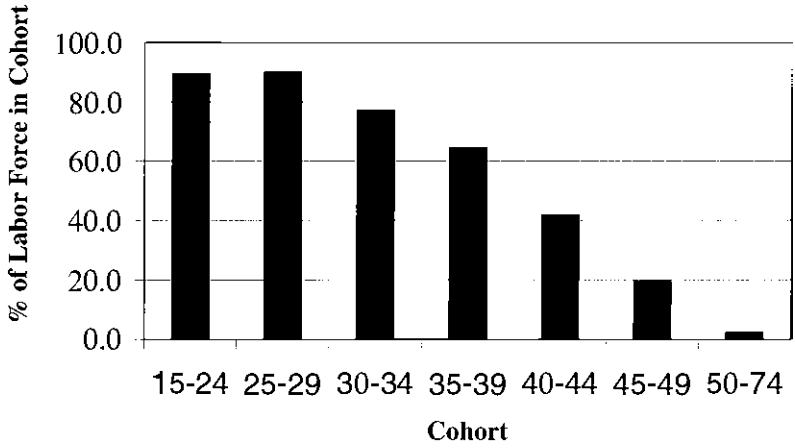

Fig. 12.9 Actual switching outcome, December 2000 (as % of the labor force in each cohort)

entrants to the labor force, which are mostly young workers. By December 2000, roughly 90 percent of workers in their twenties and early thirties were enrolled in the new system.

There may be a number of explanations of why workers continued switching despite the uncertainty caused by the absence of political support for the reform by the new government. One may be that the possibility to switch back to the reformed PAYGO scheme by the end of 2002 may have eliminated the perception of risk associated with early switching. In addition, some workers may have speculated that the originally envisaged contribution rate of 8 percent would sooner or later be restored. Indeed, if the contribution rate were increased to 8 percent in 2003 by either the same or a new government (after the 2002 elections), the equilibrium cut-off age would be only slightly reduced, as shown in figures 12.5 and 12.7.

Finally, workers switching to the new system may have assigned a great weight to the perceived political risk associated with the PAYGO scheme—a justified perception in view of the manipulation of the parameters of the Hungarian PAYGO benefit formula in the late 1980s and early 1990s (section 12.2). The decision of the new government to abandon the indexation formula that had been negotiated and agreed-upon for the period of transition (and established in the 1997 law), provides another example of how the parameters of a public PAYGO system may be easily changed by subsequent legal amendments.

It is noteworthy, however, that the failure to restore the original 8 percent contribution in the next few years could lead to a significant reduction in the equilibrium cut-off age. As shown in figures 12.5 and 12.7, main-

taining the second-pillar contribution at 6 percent indefinitely would reduce the cut-off age to about twenty-eight to thirty-three years, depending on the assumption for pension fund returns in the long run. It is difficult to assess whether and when the contribution rate to the second pillar will be increased to 8 percent. However, it is clear that a few cohorts may be made better off by switching back to the reformed PAYGO scheme if the original contribution rate is not restored.

12.3.4 Simulating the PAYGO Reforms

It is useful to present the simulations of the reform in two stages. First, the various measures designed to improve the balance of the PAYGO system are examined and contrasted with the no reform scenario. Second, the direct fiscal impact of the introduction of the second pillar is examined, in combination with the PAYGO reforms. The macroeconomic assumptions used are the same as those in table 12.3, with the exception of a slightly higher growth rate of the labor force in the scenarios that include an increase in the retirement age (which also implies slightly higher rates of GDP growth, given the assumption of a constant labor share).

This section highlights the impact of the two major reform measures, namely, the increase in the retirement age and the shift toward mixed indexation. The changes in the benefit formula and the tax treatment have impacts on particular workers but little or no impact on the aggregate balance of the PAYGO scheme (Palacios and Rocha 1998). As shown in figure 12.10, the new retirement-age rules reduce significantly the projected deficits. This is due not only to the increase in the statutory normal retirement age over time, but also to the increase in the penalties for early retirement and in the minimum years of service for early retirement. Although it is difficult to predict retirement behavior in the face of the new penalties or the average number of contribution years, reasonable assumptions suggest an increase in the effective retirement age for men and women of roughly two and five years, respectively. The longer working period raises pensions and replacement ratios, given the accrual rates, but the higher pension is received for fewer years and some individuals continue to contribute to the scheme. The net effect is an average annual reduction in future deficits of about 1.5–2.0 percent of GDP.

Although the increase in retirement age has an important impact, it is only when the new indexation method is added to the reform package that the PAYGO scheme moves into an extended period of surplus. Figure 12.10 shows how these surpluses peak in 2013, which is the year when the baby boom cohorts begin to retire. Later, deficits reemerge when a second demographic shock hits the PAYGO scheme around 2035. With an increase in life expectancy of two years per decade assumed, the increase in retirement age to sixty-two years is insufficient to offset the demographic developments and to maintain a constant retirement duration in the long run.

These two major parametric reforms generate an average annual im-

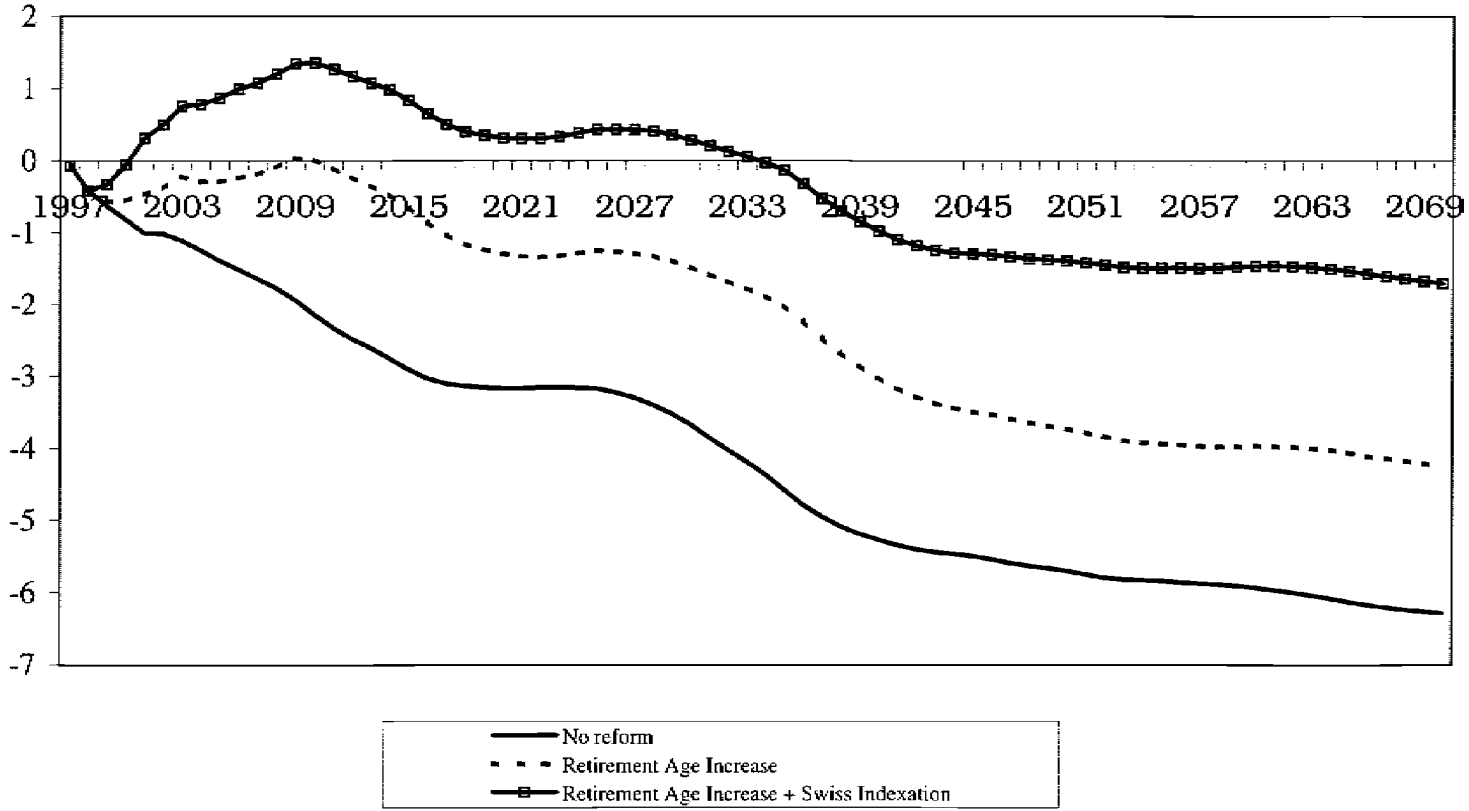

Fig. 12.10 Balances of the public pension scheme after PAYGO reforms, 1997–2070 (% of GDP)

provement in the PAYGO balance of more than 4 percent of GDP during the projection period. The implicit pension debt, measured according to an accrued benefit obligation (ABO) definition,[10] is reduced from 309 percent of GDP in the no reform scenario to 241 percent of GDP with the PAYGO reforms, a reduction of more than 20 percent.

The PAYGO reform measures shown in figure 12.10 provide the starting point for the analysis of the introduction of the second pillar. To this point, the package results in a significant improvement in the finances of the PAYGO scheme during the next decade, followed by a gradual erosion of the surpluses at the end of the following decade. The pension system would record deficits again at the end of the projection period, and the elimination of these deficits would require further PAYGO reforms, such as a further increase in retirement age (say, to sixty-five years, as in most Organization for Economic Cooperation and Development [OECD] countries) or the adoption of price indexation. Nevertheless, the reform measures achieve a significant reduction in future deficits and the implicit pension debt—in fact, the reforms produce some small surpluses.

Despite the presence of these surpluses, the government never gave serious consideration to a reform package limited to improving the PAYGO scheme because it saw four serious shortcomings in such a solution: First, the accumulation of surpluses in the PAYGO scheme would provide an easy opportunity to reverse the reforms through politically motivated benefit increases. Second, it would have created a new role for the public pension fund as an asset manager. There was little reason, from either historical Hungarian or international experience, to believe that such an arrangement would lead to efficient investment allocation or good corporate governance.[11] Third, this solution was unlikely to contribute to the type of capital market development that a multipillar package was capable of generating. Finally, the promise of higher returns in the private scheme, even after taking into account higher administrative costs, helped offset the benefit reductions in the PAYGO scheme and simultaneously diversified the workers' risk in the long run. This positive aspect of the overall package was instrumental in generating support, especially among younger voters. In view of these and other perceived advantages, the new system was designed to divert the saving generated by the reform to privately managed pension funds referred to as the second pillar.

12.3.5 Simulating the Multipillar Reform with a 6 Percent Contribution to the Second Pillar

The simulations of the full multipillar package were performed assuming initially that the number of switchers will stay roughly the same as of

10. The PAYGO scheme is assumed to be terminated in 1997 and the future pension obligations (accrued as of December 1997) are discounted at the rate of wage growth.

11. Iglesias and Palacios (2000) show that publicly managed pension funds have performed very poorly.

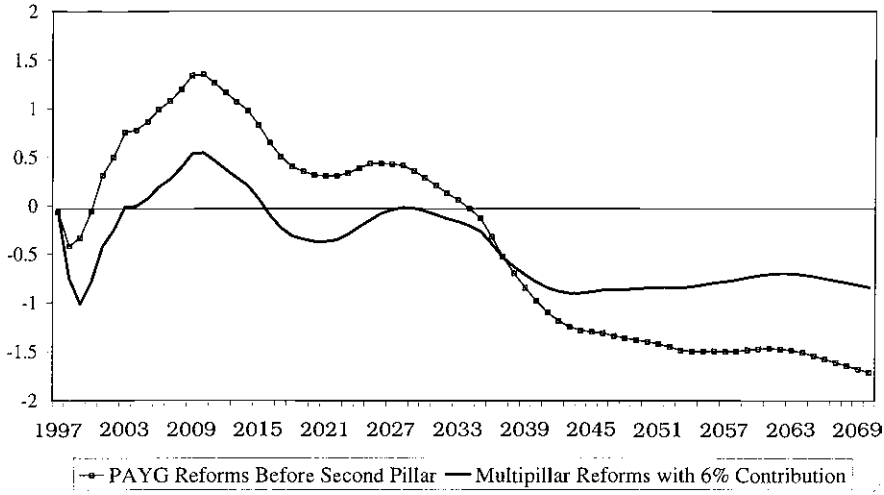

Fig. 12.11 PAYGO balances with 6% contribution to second pillar (% of GDP)

September 1999, and that the contribution rate to the second pillar will be maintained at 6 percent indefinitely. Figure 12.11 confirms the obvious fact that allowing workers who are switching to divert part of their contributions to the second pillar causes an immediate revenue loss to the PAYGO system. The revenue losses increase rapidly to about 0.8 percent of GDP in the first four to five years of the reform, then keep increasing at a more gradual pace to reach 1.4 percent of GDP in the third decade, when most of the active population will be enrolled in the new system. The PAYGO deficit would tend to increase at the same pace, but the PAYGO reforms described above more than offset the revenue loss, allowing a reduction in the deficit. The system is actually projected to generate small surpluses at the end of the decade, even considering the revenue losses, but returns to deficits again in the second decade, with the retirement of the baby boom generation.

The PAYGO deficit peaks around 2022 but then improves, as the first significant cohorts to receive first-pillar benefits in the new system (i.e., those in their mid-thirties in 1998) retire. The difference between the PAYGO balances with and without the chance to opt out to the second pillar increases until about that time, and narrows thereafter. By 2040, the deficit in the multipillar system is actually smaller than the PAYGO deficit had the second pillar not been introduced. These results are driven by two factors. First, the replacement ratio of the first pillar of the new system is about three-fourths of the replacement ratio in the reformed PAYGO scheme. Thus, the temporary imbalances between replacement ratios and contributions created by the opt-out begins to taper off after the cohorts in the mixed system begin to retire. Second, the reform involves a reduc-

tion of about one-fourth of the accrued rights of workers who opt for the new system. As a result, the valuation for the years of contribution under the old system are lower than would have been generated by the old benefit formula.

To determine the first-order impact of the reform on national saving, the public and private pension savings need to be combined, as shown in figure 12.12. The PAYGO balances with the second-pillar opt-out are reproduced in figure 12.12, together with the net private contributions to the second pillar (gross contributions plus interests minus redemptions), and the sum of the two balances. Total pension saving peaks around the year 2011 and decline thereafter, following the decline in the PAYGO balances, but increase again after 2020, when the first significant numbers of workers begin to retire in the new system. The contribution of the pension system to saving declines in the third decade, due to demographic aging. The private scheme begins maturing, with increasing redemptions and smaller net positive contributions, while the public scheme shifts into deficits. The net result is a decline in total pension saving to approximately 1 percent of GDP. In order to eliminate the public deficit and increase total saving, the authorities would have to increase further the retirement age or shift to price indexation (or both).

The final impact of the pension reform on national saving will depend on the reaction of voluntary private saving to the individual measures of the reform, and on the reaction of the government to the path of the PAYGO deficits and surpluses. The reaction of voluntary private saving to the reform is difficult to estimate numerically, although it is possible to identify some of the major changes that might occur. The increase in the retirement age could induce some decline in private saving, whereas the change in indexation would imply a decrease in expected retirement income, inducing some increase in private saving.[12] The expectations of higher returns on the contribution to the second pillar (relative to the PAYGO system) could have a positive or negative effect on voluntary saving, depending on the relative sizes of the income and substitution effects. Therefore, the net impact of all these factors on voluntary private saving is, in principle, ambiguous, and would in any case be dampened by the existence of liquidity constraints.

The reaction of the government to the path of future PAYGO deficits will be influenced primarily by Hungary's objective of joining the European Union (EU) by the year 2005. Meeting the objective of EU membership will require an effort to reduce the general government deficit from about 4.0–4.5 percent of GDP (the levels that prevailed in the late 1990s) to levels below the Maastricht ceiling of 3 percent of GDP. The expected reduction of the general government deficit to levels below 3 percent of

12. These are the responses predicted by the overlapping generations model. See, for example, Kotlikoff (1989).

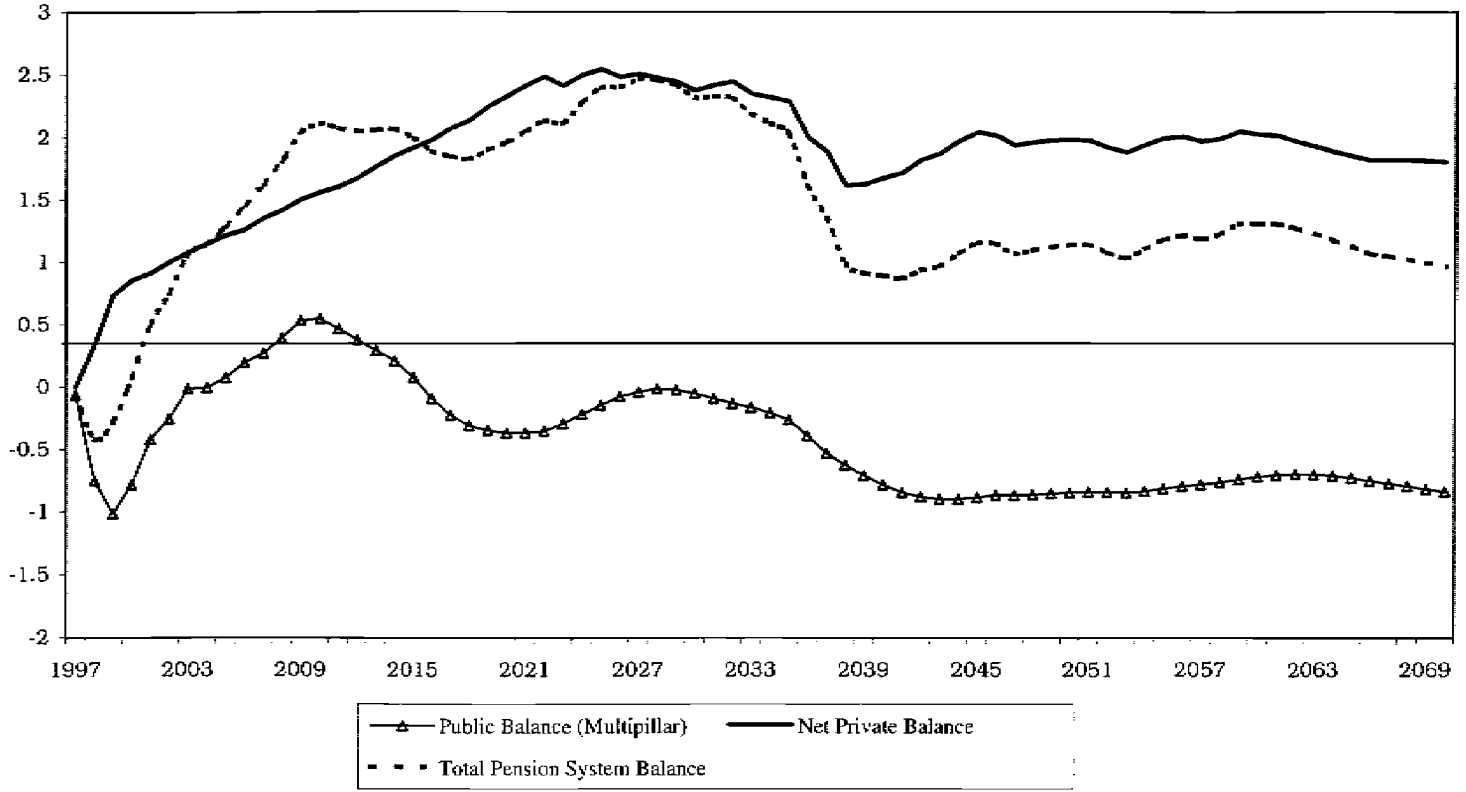

Fig. 12.12 Public, private, and total pension balances with 6% contribution to second pillar (% of GDP)

GDP suggests that the transition will be primarily tax financed and that saving effects might be stronger. However, additional increases in national saving arising from offsetting reductions in the government's deficit are likely to be moderate, because the general government deficit is already close to the Maastricht ceiling, the projected PAYGO deficits are moderate, and the actuarial projections even predict a period of PAYGO surpluses.

On the whole, there is no reason to believe that the direct impact of the reform on national saving would be substantially stronger than indicated in figure 12.12. Of course, to the extent that the reform has a positive impact on Hungary's growth performance, there could be additional indirect effects on saving as a result of endogenous interactions between saving and growth; these effects are not reflected in figure 12.12.[13]

The perception that the Hungarian transition would be primarily tax financed, due to the PAYGO reforms and the overall reduction in the general government deficit, led many observers to state that the reform would excessively benefit future generations to the detriment of current generations, who would be forced to "pay twice." However, although it is true that the reform package has significantly reduced the burden on future generations, it has not been sufficient to restore intergenerational balance entirely, given the severe initial bias against these generations. Calculations of generational accounts for Hungary indicate that the pension reform has reduced the net burden on future generation by roughly three fourths, but that future generations are expected to remain net contributors to the system (Gal, Simonovits, and Tarcali 2001). The reduction of the initial intergenerational imbalance has been achieved by slightly increasing the burden on current workers; older workers and pensioners have not been significantly affected by the reform and have remained net beneficiaries of the system. The calculations of generational accounts for Hungary also show that current workers would have incurred even greater losses if the second pillar had not been introduced. What the calculations do not capture, however, is the possible positive impact of the reform on Hungary's growth performance and on the welfare of current generations.

12.3.6 Simulating the Multipillar Reform with an 8 percent Contribution to the Second Pillar

The reluctance of the government to raise the contribution rate to 8 percent (allegedly because of the larger transitional deficit) raises the question of what would be the impact of this measure on the balances of the system and on the economy. This analysis is summarized in figures 12.13 and 12.14, where is it assumed that the contribution to the second pillar is

13. The interactions among pension reform, growth, and the welfare of different generations are examined in Kotlikoff (1995) and Corsetti and Schmidt-Hebel (1995). Loayza, Schmidt-Hebel, and Serven (2000) provide a recent survey of the empirical literature on savings.

raised to 8 percent in 2003. The number of switchers is assumed to be the same as in figures 12.11 and 12.12.

Figure 12.13 reveals the obvious fact that the increase in the second-pillar contribution from 6 to 8 percent would imply an additional loss of revenues to the PAYGO system and slightly larger PAYGO deficits. The difference between the two lines would be 0.3–0.4 percent of GDP in the

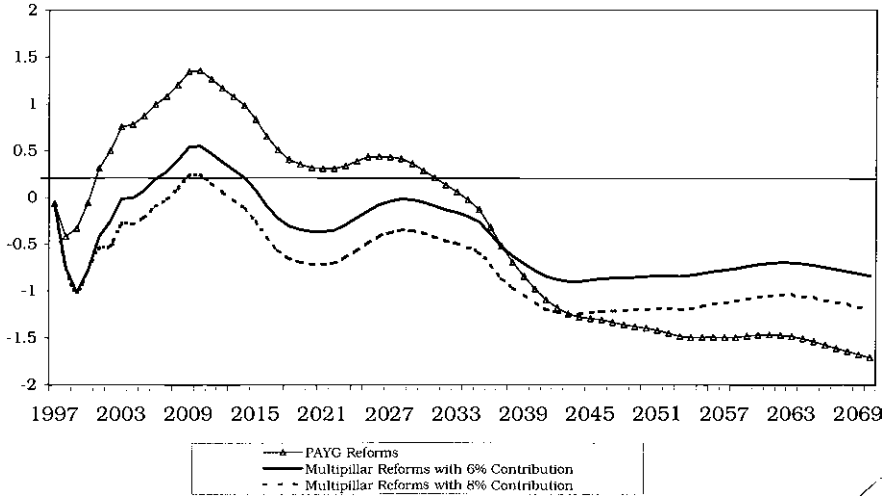

Fig. 12.13 PAYGO balances with 8% contribution to second pillar (% of GDP)

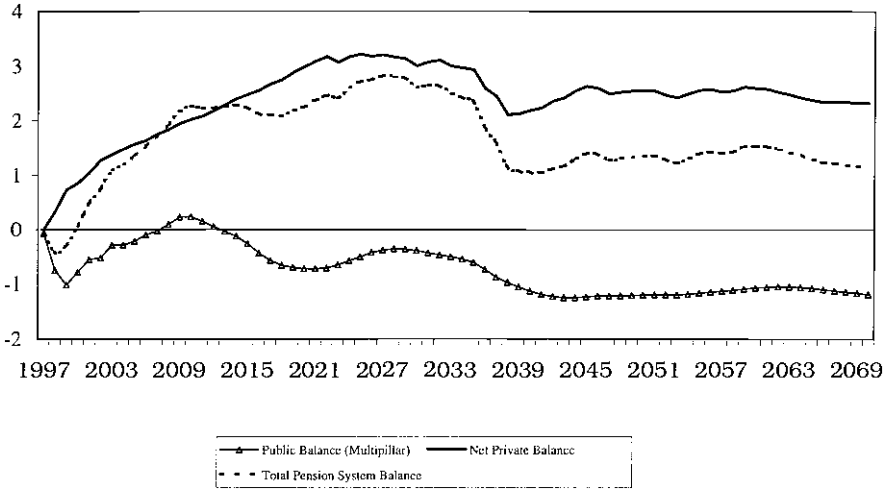

Fig. 12.14 Public, private, and total pension balances with 8% contribution of second pillar (% of GDP)

next decades. However, these larger deficits would be offset by larger private surpluses, leading essentially to the same overall pension balance as shown in figure 12.14 (by comparison with the overall balance in figure 12.12). Therefore, the increase in contribution rates to the second pillar would produce no adverse impact on key macroeconomic variables, such as inflation and the current account.

The difference between the two scenarios depicted in figures 12.11 and 12.14 is clearly artificial, because it assumes that the number of switchers is the same. If a large number of workers switches back to the PAYGO scheme, the scenario with a 6 percent contribution could actually prove worse, at the end of the projection period, than the scenario with an 8 percent contribution because it would imply a smaller reduction of accrued rights, a larger implicit pension debt, and possibly larger PAYGO deficits in the long run.

The failure to restore the original contribution rates could also imply some efficiency losses. A smaller second pillar implies a weaker link between contributions and benefits, with possible adverse effects in the labor market. A smaller second pillar also implies more limited capital market effects, due to the slower growth and smaller size of pension funds. It is very difficult to determine the long-term quantitative impacts of these two effects on economic performance with any degree of accuracy, but those impacts are bound to be negative.[14]

12.3.7 Simulations of Alternative (counterfactual) Reform Scenarios

As mentioned above, during the first stages of the reform the new system was criticized for various reasons, including the generation of a transitional deficit. Some of the critics in Hungary claimed that a system of notional defined contribution (NDC) accounts would have generated the same positive results without generating the deficits. To examine whether this criticism is valid, this section provides counterfactual simulations of an NDC-type reform, and compares them with the pure defined benefit (DB) reform and the multipillar reform examined above.

Figure 12.15 shows projections of the Hungarian pension system under all the major parametric reforms that have effectively been adopted (e.g., retirement-age increase and Swiss indexation), and the counterfactual adoption of an NDC scheme as of January 1998. Therefore, workers retiring after that date would receive a DB benefit based on their accrued rights under the old DB formula, and an NDC benefit based on their notional balances accumulated after that date. Two counterfactual NDC schemes are simulated, the first with a notional interest rate equal to GDP growth, and the second with an interest equal to GDP growth plus one percent. The schemes convert their notional balances into annuities, assuming the

14. See Levine and Zervos (1996) for an empirical analysis of capital market development and economic growth, and Holzman (1996) for an analysis of this effect in the Chilean case.

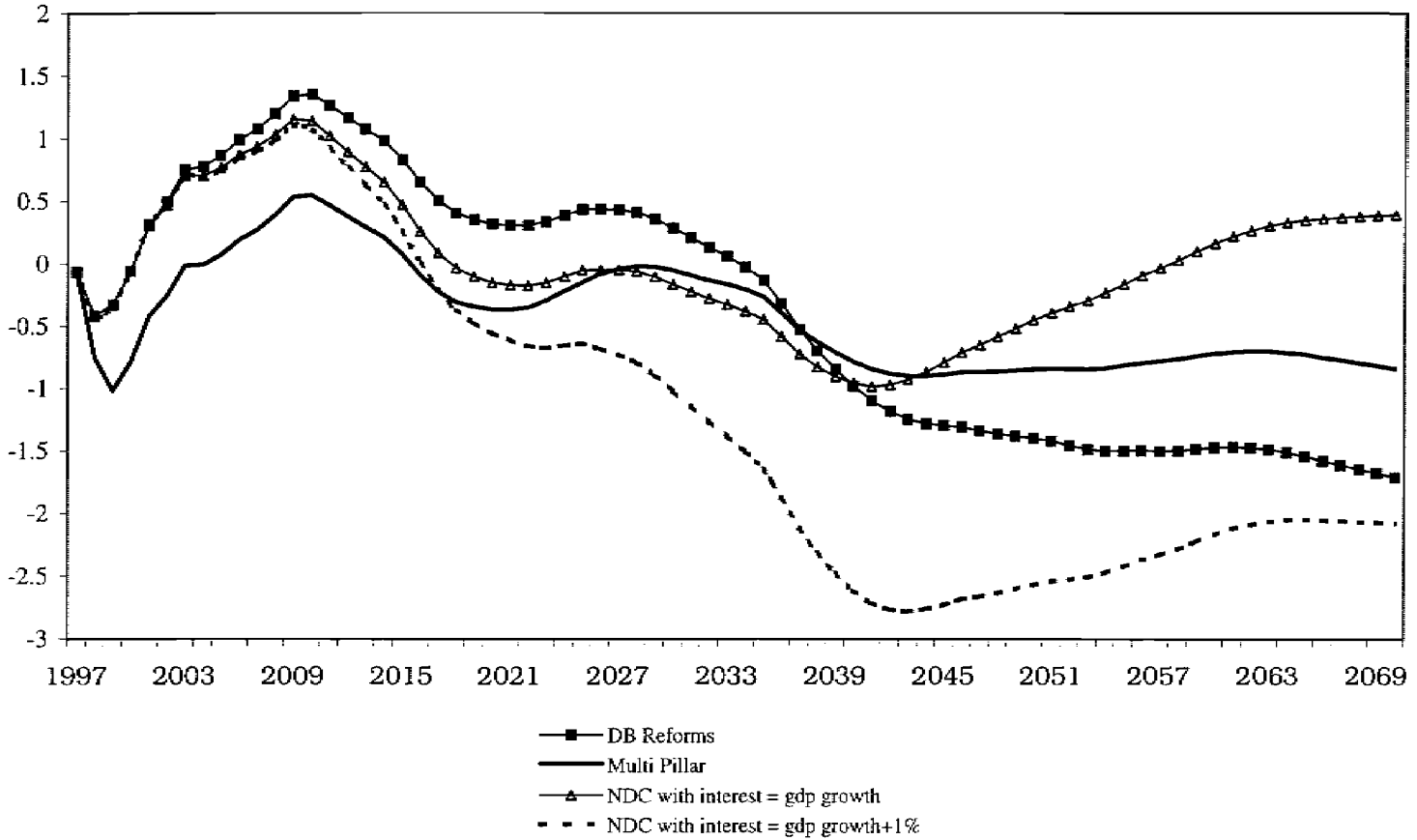

Fig. 12.15 NDC reforms × DB and multipillar reforms

Table 12.5 Implicit Pension Debt under Different Reform Scenarios (in % of GDP)

	Base Year			
Scenario	1997	2010	2020	2030
No reform	309	340	363	378
Pure DB reform	241	226	246	254
Multipillar reform	232	208	216	214
NDC with i = gdp growth	248	233	245	232
NDC with i = gdp growth + 1%	257	255	281	288

Notes: DB = defined benefit. NDC = notional defined contribution.

same respective notional interest rates in the payment period. The two lines are compared with the pure DB reform and the multipillar reform shown in figure 12.11.

As shown in figure 12.15, the NDC scheme paying an interest rate equal to GDP growth would produce smaller deficits than either the multipillar or the reformed DB systems at the end of the projection period, while the NDC scheme paying GDP growth plus one percent ends up with larger deficits. However, the NDC system paying only GDP growth would still fare worse than a pure DB reform for the first forty years. This is because the NDC scheme would "transform" the employment growth that happens in the early and middle stages of the transition into higher pension benefits, something that the DB scheme would not do. In the very long run, the NDC scheme paying GDP growth would generate a better balance because it would pay an interest rate lower than wage growth (GDP grows at a lower rate due to decline in employment). The multipillar reform would produce a higher deficit than an NDC paying GDP growth, but again, this is due to the partial diversion of contributions to the second pillar. The overall pension balances produced by the multipillar reform are better than those produced by the NDC schemes.

The computation of the implicit pension debt under these alternative reform scenarios provides another interesting tool for comparisons across scenarios. As shown in table 12.5, the implicit pension debt (IPD) falls in all the reform scenarios, but is lowest in the multipillar scenario, due to the voluntary reduction of accrued rights by switchers. The IPD of a pure DB reform is initially lower than that generated by an NDC paying GDP growth, because of initially lower replacement ratios. In the long run, the NDC paying a modest interest rate would produce a lower IPD, but again this is because the replacement ratios would drop under an NDC scheme paying GDP growth rates. A pure DB reform would also be capable of producing lower IPDs if accrual rates and replacement ratios were reduced.

The reforming government decided not to adopt a pure NDC reform for the same reasons it decided not to adopt a pure DB reform (e.g., the

exclusion of a second pillar). The initial surpluses produced by a pure NDC reform could be depleted by politically motivated increases in pension benefits, by increases in the central budget deficit, or by political interference in the management of the assets that would lead to negative returns. Moreover, an NDC scheme would still be operated by the public sector on a PAYGO basis and would not have the risk-diversification properties of a mixed system. Finally, an NDC scheme would not contribute to the development of capital markets that Hungary and other transitional countries need in the current stage of their transformation.[15]

12.4 The Structure and Performance of the Funded Pillars

12.4.1 Evolution and Structure

Before the 1997 reform, Hungary already had a voluntary private pension scheme (the third pillar), which had begun operating in 1994. The concession of generous tax incentives led membership to increase to 1 million affiliates by 1999, the equivalent of 25 percent of the labor force. The average contribution has been about 5.0 percent of the average wage, and total assets reached 1.5 percent of GDP in 1999. Affiliates in the voluntary system tend to be middle- to high-income workers above thirty-five years of age and employed in larger enterprises. The industry was initially very fragmented, with a large number of very small and poorly managed funds, but a process of mergers and liquidations reduced the number of active voluntary funds from 270 in 1994 to 160 in 1999.

The pension funds in the mandatory (second) pillar were constructed as mutual associations, as in the third pillar. The system began operating in January 1998 with only thirty-eight licensed funds, as a result of stricter licensing criteria; the number of funds had already fallen to twenty-five by the end of 1999, as a result of mergers. Concentration in the second pillar is much higher than in the voluntary pillar—by mid-1999, the five largest funds accounted for 78 percent of all members and 73 percent of total assets, and only eight funds had fewer than 5,000 members.

Participation in the mandatory pillar increased rapidly to 2 million workers in September 1999, or the equivalent of 50 percent of the labor force, and will continue expanding in the future due to new entrants into the labor force. The total assets of second—pillar institutions rose at a rapid pace, reaching 0.9 percent of GDP in 1999, and are expected to

15. See Disney (1999) for a critical assessment of NDC schemes. However, most of the objections to NDC schemes (raised above) would not apply in the cases in which the NDC scheme is smaller and is only one part of a broader and truly mixed pension system, as in the cases of Latvia, Poland, and Sweden. See, for example, Lindeman, Rutkowski, and Sluchynsky (2000) for an updated account of recent reforms that include a first pillar built on NDC basis.

exceed the assets of the third pillar in less than three years' time due to the much larger membership (already twice as large as in the voluntary pillar) and the higher contribution rate.

12.4.2 The Regulatory Framework

The regulatory framework is generally sound and similar for both pillars, although it is more strict for the mandatory pension funds.[16] For example, voluntary pension funds can be established without any minimum capital or membership, even when they intend to offer annuities. In the mandatory pillar, there is a minimum size requirement of 2,000 members for a pension fund and 25,000 members for funds that offer annuities. In addition, an annuity-providing fund must create a capital reserve of 100 million, Hungarian forints (Ft).

The law stipulates that pension funds are separate legal entities and that their assets must be segregated from those of sponsoring employers or other founders. The funds are, in principle, governed by their members through their boards of directors, and the law contains detailed rules on fund governance that aim to preserve the independence of boards and management. In practice, however, most fund members do not exercise their voting rights or participate in general assemblies, making the pension funds more similar to mutual funds, which are effectively controlled by their sponsors. Switching across funds is allowed with few restrictions, and the possibility for fund members to leave poorly performing funds is expected to exert more discipline on fund managers than formal voting rights and board rules do.

Pension funds are required to employ the services of certified asset managers, accountants, auditors, actuaries, and custodians. A minimum capital requirement on external asset managers is imposed, amounting to Ft 100 million for small pension funds and Ft 500 million for pension funds with more than Ft 2 billion in assets. A pension fund must use a single-custodian institution, which is responsible for the safekeeping of assets and for ensuring compliance with asset allocation policies and prescribed investment limits.

To ensure asset diversification and limit the risk exposure of pension funds, investments are subject to quantitative limits both by asset class and by individual investments. No individual investment may exceed 10 percent of the assets of the fund (fund limit) or 10 percent of the equity of the issuer (issuer limit). The ceiling on equity holdings is 60 percent of the total asset portfolio; the ceiling on foreign assets was initially set at zero, but is scheduled to increase to 30 percent of the total portfolio by 2003. Quantitative investment limits on Hungarian pension funds appear rea-

16. Policy issues in pension fund regulation and supervision are discussed in Davis (1995), Demarco, Rofman, and Whitehouse (1998), Queisser (1998), Rocha, Gutierrez, and Hinz (1999) and Vittas (1997, 1998).

sonable and are unlikely to be binding and to affect marginal investment decisions, at least in their early years of operation. Investment restrictions are expected to be relaxed gradually, as the capital market develops and the country approaches the date of membership in the EU.

Although the regulatory framework is generally sound, some important weaknesses in both regulation and enforcement have yet to be corrected. Market valuation of assets is required only once per quarter, whereas declared interest is credited only once per year. This allows significant room for the creation of hidden reserves and the manipulation of reported investment returns. Pension funds are required to disclose their terms and conditions to new members and to send annual statements to all their members. They must also indicate clearly their returns and fees. However, the lack of more precise rules and guidelines for computing and disclosing costs and returns still creates room for different practices across funds and problems for comparing fund performance.

Two types of guarantees are offered in the second pillar. First, the second pillar-pension benefit may not be lower than 25 percent of the pension benefit from the first public pillar. This guarantee is backed by a central guarantee fund to which all pension funds contribute. Second, pension funds must make up any shortfalls in individual returns if investment performance falls below the return of a portfolio of long-term government bonds by more than 15 percent. The minimum return is backed by a minimum reserve equal to 0.5 percent of total member assets. Returns exceeding 40 percent of the benchmark are placed in reserve.

Although these guarantees have built support for the reform, they also present some complications. The first guarantee implies a lifetime real return guarantee of only 0 percent per annum for young workers, but a lifetime guarantee of about 4 percent per annum for workers in their forties. The probability that this guarantee will be called for these older workers is not negligible, especially if the contribution is kept at 6 percent indefinitely. The second guarantee was expected to complement the first and to improve capital protection, but contains some flaws in design: Using a bond index as a benchmark for the second guarantee seems to have distorted pension fund investments in favor of bonds. More important, the excess reserves are imposed at the level of the pension fund, not of the asset manager.[17] The two guarantees together imply access to a central guarantee fund without first putting the capital of the asset manager at risk, raising the issue of moral hazard in the behavior of asset managers.

12.4.3 Performance

Unfortunately, good data on the operating fees and costs and on the investment returns of the private pension funds are not readily available.

17. Rocha, Gutierrez, and Hinz (1999) and Vittas (1998) examine in more detail the problems in designing pension guarantees.

Operating fees have absorbed between 5.5 and 7.5 percent of contributions in voluntary funds and between 7.5 and 11.0 percent in mandatory funds. These rates are lower than those reported for Latin American pension funds, the operating fees for which frequently amounted to more than 25 percent of contributions in the first years of operation. Three reasons may account for this difference. First, in Hungary, asset management and external administration involve additional changes, which seem to add 50–100 basis points for most funds. Second, sponsors of pension funds in Hungary may have absorbed a higher proportion of operating costs. It is reported that employer-sponsored funds, in particular, subsidize the operations of pension funds by providing rent-free premises and by not charging for the time of staff who are involved in the administration of pension funds. Third, Hungarian pension funds seem to spend less on marketing and on sales commissions than their Latin American counterparts.

Data on investment returns are even less satisfactory. Although most pension funds publish some data, the numbers seem to include neither unrealized capital gains or losses, nor accrued but not-yet-received dividends and interest. To shed some light on the performance of pension funds, investment returns were simulated by using average quarterly asset allocations of pension funds for 1998 and 1999, and the total market returns on bank deposits, bonds, and equities. Assuming a quarterly investment horizon, gross investment returns in 1998 amounted to 17 percent for the mandatory funds and to 14 percent for the voluntary funds against a 14 percent annual inflation rate. For the first three quarters of 1999, annualized investment returns were 13.4 and 12.8 percent, respectively, for the mandatory and voluntary funds, against an inflation rate of 10 percent. Allowing for asset management and custodial fees, it is likely that real returns on individual accounts have been positive in real terms, although not much above zero.

The returns of pension funds in 1998 and 1999 were low in real terms, primarily as a result of the financial crises of recent years—particularly the collapse of Russian markets, which led to a sharp increase in short-term interest rates and capital outflows, and a sharp decline in the return on equity and bonds during 1998. Equity prices recovered in 1999, but in view of the overall volatility of world capital markets, pension fund managers decided to maintain low shares of equity in their portfolios (less than 10 percent in the case of mandatory funds), and did not benefit from the recovery in equity prices. Real returns are expected to increase to higher levels in future years, in line with the expected increase in the share of domestic and foreign equities in portfolios.

13.5 Conclusions and Possible Lessons to Other Countries

Despite the initial lukewarm support from the government succeeding the reforming government and the poor initial performance of capital mar-

kets due to the Russia crisis of 1998, Hungary's multipillar pension reform has entered its fourth year of implementation and has proved popular among workers. Approximately half of the labor force has joined the new system voluntarily. Most of the switchers are workers below forty years of age, and the young workers who switched account for more than 80 percent of the labor force in their age group.

The decision to switch was motivated by a number of factors, the most important being the better risk-diversification properties of the new system. The credibility of the PAYGO system had been severely damaged by repeated manipulation of its parameters, and the PAYGO system clearly offered a low return on contributions. The new system is still predominantly a PAYGO system, because the first pillar accounts for more than two-thirds of the total contribution, but the new system also contains a new second pillar that offers the prospects of higher average returns on contributions. Most workers probably understood intuitively the risk and return characteristics of both a pure PAYGO system and a mixed system, including the capital market risk in the second pillar and the political risk in the PAYGO scheme. The new system offers better prospects of long-term, risk-adjusted returns for young workers, and most young workers effectively opted for the new system. However, some overselling of the new system probably occurred as well, making older workers switch even though they would ultimately have fared better by staying in the reformed PAYGO system.

The government has decided thus far not to increase the contribution to the second pillar from 6 to 8 percent as it had originally planned, alleging that such an increase would increase the size of the transitional deficit and possibly produce macroeconomic imbalances. However, the increase in the contribution to the second pillar would have no adverse impact on the economy, because the increase in the PAYGO deficit would amount to only 0.3–0.4 percent of GDP and would, in any case, be offset by larger private saving levels. This decision has also violated the objectives and the internal consistency of the original reform package, in which contribution rates and accrual rates were jointly calculated to produce an equilibrium cut-off age around thirty-five to forty years. Clearly, many workers who have switched are counting on a higher contribution rate; if the 8 percent original contribution is not restored in the next few years, some of these workers will be in worse positions than before the switch. The failure to restore the original contribution rates may also produce smaller efficiency gains in labor and capital markets than originally anticipated.

The PAYGO system is still projected to produce deficits in the long run, despite the PAYGO reforms. Addressing these projected deficits will require additional future adjustments, such as further increases in the retirement age and a shift to price indexation. Such adjustments are bound to result in some reduction in net benefits for future generations. Independent calculations of generational accounts for Hungary suggest a similar out-

come—the reform package has reduced sharply the severe initial bias against future generations, but has not eliminated the bias entirely. Future generations remain net contributors to the pension system, even after the reform. Therefore, the criticism frequently voiced in Hungary—that the reform had excessively benefited future generations to the detriment of current generations—seems unjustified.

A more ambitious reform package would have involved larger initial surpluses (and smaller deficits in the steady state) and a significant reduction in the high contribution rates, with stronger positive effects on saving and on the labor market. However, the erosion in the tax base that occurred in the 1990s ruled out any ambitious plan to reduce contribution rates, and the additional PAYGO reforms that could have allowed larger initial surpluses or reductions in contribution rates (e.g., a direct move toward price indexation) were ruled out for political reasons.

Despite these shortcomings, any preliminary assessment of the Hungarian pension reform would be likely to conclude that the reform has been successful, especially considering the severe constraints imposed by initial conditions (e.g., large fiscal deficits, high contribution rates, high tax rates, very adverse demographic trends). The reform has reduced significantly the imbalances of the PAYGO system and the implicit pension debt, while also introducing a mandatory, funded, and privately managed pillar that seems to be operating fairly well, despite the initial problems in the payment and registration system and some weaknesses in the regulatory framework. Moreover, the current shortcomings can be corrected during the next few years by the restoration of the original 8 percent contribution rate to the second pillar and the strengthening of the regulatory framework.

The Hungarian reform also suggests that a voluntary switching strategy achieves essentially the same outcome as a forced switch based on an arbitrary cutoff age, while avoiding legal problems and contributing to the reduction of the implicit pension debt. The disadvantage of this strategy is that it leaves a few individuals worse off relative to their best options. A well-designed public information campaign may minimize the occurrence of these cases. The implementation of the new second pillar met difficulties at first because its information, registration, and payments systems had not been yet fully developed. These difficulties caused some initial discomfort and, although the technical problems were eventually solved, they show that more attention to practical and technical aspects of implementation is required from policy makers. Finally, the Hungarian reform would benefit from a stronger regulatory and supervisory framework, including several aspects of asset valuation and disclosure. Although no major problems have been reported, and these areas of the regulatory framework are expected to be improved in the near future, a stronger regulatory framework could have been introduced at the beginning of the program without major technical difficulties.

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