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Stanisław Gomułka

**Comparative Notes on Pension Developments
and Reforms in the Czech Republic, Hungary,
Poland and Romania**

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CASE – Center for Social and Economic Research
ul. Sienkiewicza 12, 00-944 Warsaw, Poland
tel.: (4822) 622 66 27, 828 61 33, fax (4822) 828 60 69
e-mail: case@case.com.pl

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Stanisław Gomulka
Professor of Economics

Author is a member of the Economics Department of the London School of Economics. He is also a Recurring Visiting Professor at the Central European University in Budapest and the College of Europe in Natolin. His main areas of research are economic growth, comparative economic systems and transition economies.

Abstract

Pension systems and pension expenditures show large variations among countries worldwide. This variation appears to reflect mainly demographic factors and differences in the level of insurance protection, the latter tending to increase with the level of development. The focus of this paper is pension developments and reforms in the four transition countries: the Czech Republic, Hungary, Poland and Romania during the 1990s. Our major factual finding is that Poland and Romania are clear outliers among the FOUR in terms of key pensions statistics. The paper concludes that the greater pension expenditures in Hungary and Poland are in part inherited (especially in Poland) and in part caused by the more radical restructuring reforms, and that these greater expenditures have in turn prompted these two countries to start replacing gradually their PAYG-DB system with a three-pillar mixed system, with private pension funds constituting a large component of the reformed system.

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I. Introduction

All transition countries inherited pension systems based on the principles of pay-as-go and defined-benefit (PAYG-DB). In the early years of a first pension programme, such systems have recognised advantages over a fully-funded, defined-contribution (FF-DC) system. For, under a PAYG-DB arrangement, those who retire receive pension benefits immediately and contributions initially tend to exceed the payments. These advantages, however, disappear at an advanced level of development when population (and employment) growth rates decline and/or when people live longer after retirement. Under such circumstances, an FF-DC programme has the advantages of greater flexibility and transparency, and likewise financial viability. The changeover from PAYG-DB systems to FF-DC systems is therefore a worldwide trend. In transition economies, this trend was reinforced by a crisis of pension finances due to three additional factors: large transformational recession, extension of pension insurance to farmers and rapid expansion of the informal economy. These factors have made this changeover more urgent and, in some countries, more rapid.

This paper focusses on pension developments and reforms in four transition countries: the Czech Republic, Hungary, Poland and Romania, during the 1990s. Its main purpose is twofold, to explain the large differences in these developments among the FOUR and to relate them to corresponding developments in some of the key European Union (EU) and OECD countries.

2. Pension Developments During Transition

2.1. Stylized Facts

An earlier survey of pension systems at the beginning of transition was made by Kopits (1992). The topic was revisited recently by Cangiano, Cottarelli and Cubeddu (1998). These surveys identified a number of common features, or 'stylized facts', with respect to pension developments. These are as follows:

- (i) Early retirement reached massive proportions in most countries, as the pension system was used to cushion the effect of transition on open unemployment.
- (ii) This cushioning use of the pension system was more common in Central and Eastern Europe (CEE) than in the countries of the FSU. It was also more common in countries where restructuring was deeper and faster.

(iii) The system dependency ratio (the ratio between pensioners and contributors) has been rising rapidly, reflecting both a decline in the number of contributors and a growth of the number of pensioners. The latter likewise reflected the extension of pension protection to farmers.

(iv) The fall in the number of contributors reflected rapid growth of the informal economy and a large drop in total output.

2.2. Causes of Variation Amongst the Four

Despite these common features, developments in pension finances have been remarkably diverse. As can be seen from Table 1, this diversity also applies to the four countries which concern us here. The diversity is driven mainly by two factors: an exceptionally high number of non-retirement pensioners in Poland and an exceptionally low replacement rate in Romania. The first factor is making Poland an outlier not only in Central and Eastern Europe, but also world-wide. The second factor is making Romania similar to the countries both of the FSU and most of the OECD [Chend and Jaeger, 1996 Table 6], but different from the main EU countries: Germany, France and Italy, where replacement rates are close to those of Hungary and Poland.

Given the weight of non-retirement pensions in Poland, it is instructive to look in greater detail at the composition of these pensions. This is done in Table 2 for all categories of pensioners in several years and in Table 3 for several types of pensioners outside agriculture in a single year, 1996.

These data also show that non-retirement pensions outside agriculture were already unusually numerous in 1989, probably reflecting the exceptionally strong bargaining power of Polish workers for many years before the start of transition. The observed rapid convergence of the incidence of non-retirement pensions in agriculture to that outside agriculture after 1989 also reflects the implementation of pension privileges granted to farmers before 1989. However, Poland is the only country of the Four among all transition countries (except Slovenia), where the replacement rate increased significantly during transition since 1989. This increase took place at the start of transition, mainly in the year 1991. The sharp rise of the replacement rate was unintended by the authorities, since the indexation rule used was based on wages. The simultaneous increases of this rate and of the ratio of pensioners to contributors at the start of transition undermined public finances during the entire transition period. As early as 1993 an attempt was made to reverse this upward trend of pension expenditures as a proportion of GDP, by the introduction of the "0.91" rule, which reduced pensions by 9%. However, by 1993

Table 1. Major Trends in Pension Finances of the FOUR, 1990–1998

Category	Czech Republic	Hungary
Size of pension of expenditures, % of GDP	Broadly constant at about 8% net of tax and about 10% if taxable	Broadly constant at about 10.5% broadly stable
Number of pensioners: (a) % of population of pensionable age (b) % of contributors	Increasing: (a) from ⁴⁾ 116% in 1990 to 117% in 1998 (b) from 44.4% in 1990 to 52.7% in 1998	Increasing: (a) from ⁴⁾ 105% in 1990 to 130 in 1995 (b) from 46.1% in 1990 to 74.8% in 1995
Average pension, % of wages	Declining from 62% in 1990 to 44% in 1995, then broadly stable	Declining from 64.4% in 1991 to 55–58% in 1996–98
Contribution rate in 1996, % of wages	26	30.5
Retirement age	62 for men since 1996 and 57–61 for women (depending on number of children) in 2007	To be raised progressively and unified to 62 for men (2001) and women (2009)
Size of contribution revenues, % of GDP	Broadly constant at about 8–9%	Declining from 11% in 1991 to 8–9% in 1995–98
National PAYG financial balance, % of GDP	small surplus	Deteriorating from balance to a deficit of 1–2%
Size of implicit ¹⁾ pension debt, % of GDP (a) already retired (b) working (c) retirement (d) disability	284 (Schneider) 81 203 53 ²⁾ 19 ²⁾	407 (Vajda) 231 (World Bank) ⁵⁾ 100 (W.B.) 131 (W.B.) 147 (W.B.) 64 (W.B.)

Notes: 1) Assumes 2% rate of growth of real pensions and 3% discount rate 2) Current beneficiaries only 3) Outside agriculture 4) Pension age population refers to: in the Czech Republic and Hungary, women over the age of 55 and men over the age of 60; in Poland and Romania, all over 60 5) The World Bank estimates relate to the start of 1994. They exclude agricultural pensions and any other benefits financed from the central government budget

Table I. Major Trends in Pension Finances of the FOUR, 1990–1998

Category	Poland	Romania
Size of pension of expenditures, % of GDP	Increased from 6.5% in 1989 to nearly 15% in 1995, then 5.5%	Declined in 1990–1, then broadly stable at about
Number of pensioners: (a) % of population of pensionable age (b) % of contributors	Increasing: (a) from ¹⁾ 128% in 1989 to 148% in 1995 (b) from about 40% in 1990 to about 60% in 1995	Increasing: (a) from ⁴⁾ 73% in 1989 to 80% in 1995 (b) from 34% in 1989 to 60% in 1995
Average pension, % of wages	Increasing from 43% in 1989 to 65% in 1995, then declining somewhat	Declined from about 47% in 1990 to 36% in 1998
Contribution rate in 1996, % of wages	45.5	25.5(32.5 as of 1999)
Retirement age	To be raised progressively to 65 for men and 60 for women until 2010 from effective ages of 59 and 55 respectively	62 for men and 57 for women, to be raised to 65 and 62 respectively
Size of contribution revenues, % of GDP	Increasing from 7.8% in 1989 to 11.8% in 1995, then stable	Declining from 6–7% in 1990–93 to below 5% in 1996
National PAYG financial balance, % of GDP	Deteriorating from a surplus of 1.4% in 1989 to a deficit of 3.2% in 1995, then broadly stable	Deteriorating from a surplus close to 1% to a deficit close to 1%
Size of implicit ¹⁾ pension debt, % of GDP (a) already retired (b) working (c) retirement (d) disability	302 (Gomułka & Jaworski) 197 (165) ³⁾ 105 (87) ³⁾ 108 ³⁾ (81) ²⁾ 104 ³⁾ (63) ²⁾	211 (deMenil, Hamayon & Seitan) 100 111 68 17

Sources: For the Czech Republic, official data as reported by O.Schneider (1999) and IMF (1998). For Hungary, Cangiano et.al. (1998), Augustinovic (1997), Palacios and Rocha (1997), and Nestor and Vajda (1999). For Poland, Polish Government (1999), Gomułka and Jaworski (1998) and Gomułka and Styczeń (1999). For Romania, Cangiano et.al. 1998) and deMenil et.al., 1999

Table 2. Poland: Non-retirement Pensions and Pensioners, 1989–99

Category	1989	1995	1998
I. Pensioners			
1. Non-retirement, as % of retirement			
<i>Outside agriculture</i>	139	117	114
<i>In agriculture</i>	30	63	73
<i>Total</i>	98	100	104
2. Non-retirement, as % of population			
<i>Outside agriculture</i>	10.4	12.2	12.8
<i>In agriculture</i>	5.3	10.3	10.6
<i>Total</i>	9.4	11.8	12.4
II. Pensions expenditures			
1. Non-retirement, as ratio of retirement			
<i>Outside agriculture</i>	1.2	0.8	0.9
<i>In agriculture</i>	0.4	0.6	0.7
<i>Total</i>	1.0	0.8	0.8
2. Non-retirement, as % of GDP			
<i>Outside agriculture</i>	2.9	5.7	5.5
<i>In agriculture</i>	0.3	0.9	0.9

Note: With respect to agriculture, the population is taken to be 20% of the total and GDP to be 5% of the total

Source: Government of Poland "Strategy for public finances and economic development, Poland 2000–2010", June 1999, Table 1

Table 3. Poland: Non-retirement Pensions, Pensioners and Public Implicit Debt in 1996, Outside Agriculture

Type of benefit	Number of pensioners	Average pension	Implicit debt
	Percent, 100 = retirement pensions		
I. Men, invalidity of category			
I	12	85	12
II	43	70.41	
III	51	62	47
2. Women, invalidity of category			
I	9	89	8
II	28	74	26
III	30	62	26
3. Survivors, all	84	70	58

Source: S. Gomułka and P. Jaworski (1991)

Data in Tables 2 and 3 imply that the problem of large non-retirement pension expenditures has in terms of the number of pensioners been inherited from pre-transition period, but its weight, in terms of expenditures in relation to GDP, has increased during transition. Moreover, the model of pension payments established outside agriculture has during the 1990s been extended to the agriculture population, aggravating further the pressure on public finances

pensioners constituted one third of the entire electorate. Under their pressure, after 1994 the 0.91 rule was gradually phased out. The threat of a fiscal crisis in the pension system persuaded the authorities, in 1996, to replace the wage indexation rule by a price indexation rule. This change proved effective in halting the upward trend of the ratio of pension expenditures to GDP. Indeed, since 1996, this ratio started to decline somewhat.

The number of pensioners as a proportion of the population of pensionable age is an indicator of the extent of early retirement privileges and the treatment of farmers. This proportion increased in all the four countries, but especially sharply in Poland and Hungary. Again, Poland and Romania are clear outliers.

Also, we now have comparable estimates of the size of the implicit pension debt in the four countries (Table 1). This debt for the category of the already retired turns out to be close to 100% of GDP in the Czech Republic, Hungary and Romania, but close to 200% of GDP in Poland. Again, the key reason for this difference is the unusually large number and size of non-retirement (invalidity, survivors and family) pensions in Poland. These pensions cost about 6.5% of GDP in Poland, which is about twice the cost in Hungary, about 3 times the cost in the Czech Republic and about 5 times the cost in Romania.

3. The FOUR Compared with Selected OECD Countries

The key data on pension expenditures and pension liabilities for major industrial countries are given in Table 4. Both the magnitude and the inter-country variation of these data are similar just as in our four transition countries. Comparisons with the four countries which represented the 2nd wave of EU entrants may also be of interest. These data are given in Table 5.

These data are similar to those for the Czech Republic and Hungary. Poland's spending on survivors' and family pensions (1.9% of GDP in 1998) is also in line with the four OECD countries. The aspect which makes Poland an outlier is mainly the size of invalidity pensions (4.5% of GDP in 1998). Compared to the unweighted average for the four OECD countries (6.6% of GDP in 1994), Poland spends more on retirement pensions (8.0% in 1995 and 7.7% in 1998), but the difference is relatively small and declining. Romania, on the other hand, is a clear case of under-protection. In 1998, only 46% of the active population were covered by the social insurance system (deMenil et al., 1999). Moreover, the replacement rate has become unusually low during transition (Table 1). Consequently, Romania's pension expenditure, at about 5.5% of GDP, is a major factor in keeping the country's public finances under control.

Table 4. Public pension schemes: expenditures and liabilities (in percent of GDP)

Country	Expenditure in 1990	Implicit pension debt ²⁾	
		Present Retirees	Present workforce
Germany ¹⁾	12.3	106	115
France ¹⁾	13.3	128	136
Italy	14.2	171	187
Japan	5.7	68	98
USA	6.9	32	77

Notes: 1) 1992, 2) Assumes a sudden transition to a fully funded system, making the estimates comparable to those for our four countries
 Source: S.K. Chand and A. Jaeger, 1996

Table 5. Social Pension Expenditures by Type of Benefit (1994, in percent of GDP)

Country	Retirement	Invalidity	Survivors & family	TOTAL
Greece	8.5	1.4	1.7	11.6
Ireland	4.3	1.4	3.4	9.1
Portugal	6.1	2.1	3.2	11.4
Spain	7.4	1.8	2.5	11.7

Source: Eurostat, Social Protection Entrepreneurs and Receipts, 1980-1994, after M.V. Rostaguo and F.Uttili (1998, Table 1)

4. Reform Developments and Pension Projections

In this section I shall first briefly review and then compare the pension reforms which have been implemented or approved for implementation. The purpose of this comparative review is to seek the reasons for any differences in the reform programmes. As benchmark for comparison I take the Polish pension reform and its motivations as described in Gomułka and Styczeń (1999).

4.1. The Czech Republic

The Czech authorities have prepared long-term scenarios of the financial condition of the public pension system for 1997-2020, taking into account demographic

developments. The key finding was that "if the current replacement rate is maintained and the retirement age increases in accordance with the pension law, the premium tariff would need to increase from the current 26 percent to 36 percent in 2020", [IMF, 1998, p.43].

Pensions are not subject to any tax in the Czech Republic, and this distorts comparisons with other countries. If taxes were applied, pension expenditures would be some 1.5% of GDP higher than officially reported. Compared to Poland, the Czech Republic has two disadvantages. One is that the unemployment rate, which was very low during most of the 1990s, started to increase sharply under the weight of the 1997–1999 recession and is likely to continue increasing in response to subsequent restructuring. The other disadvantage is the absence of any significant pool of labour in agriculture that would swell the number of contributors to the pension system in the future.

Nevertheless, the Czech authorities decided against a wholesale pension reform on the Hungarian or Polish model. Such a reform would make explicit a substantial part of the implicit pension debt accumulated under the present system. According to Schneider (1999), "This debt is often cited as the insurmountable barrier for any (substantial) reform proposal". The Czech response to the threat of a substantial increase of the premium tariff has been to adopt changes to the present PAYG-DB system and to implement them gradually. These changes involve above all a gradual increase in the retirement age, linking benefits more directly to contributions, and adopting a price indexation formula for pensions which is intended to lower the ratio of pensions to wages.

4.2. Hungary and Poland

In the post-WWII period, demographic trends in Hungary were similar to those in the Czech Republic. However, during the 1990s, restructuring went far deeper in Hungary, leading to a much sharper increase in the ratio of pensioners to contributors [Table I]. The replacement rate declined in both countries, but the decline was sharp in the Czech Republic and quite moderate in Hungary. It would thus appear that the countries which undertook more significant restructuring, such as Hungary and Poland, were also under greater social pressure to keep the replacement ratio high. In these countries the pension system became an extension of the social protection safety-net to ease opposition to restructuring reforms. The macroeconomic implications of this combination of deeper restructuring and larger pension transfers were larger budget deficits and higher payroll taxes in Hungary and Poland than in the Czech Republic.

The further implication was that the financial pressure to reform the pension system was also greater in Hungary and Poland. The threat of an imminent currency attack and major macroeconomic instability forced Hungary to adopt a stabilization programme in 1995. In 1996, a government led by social democrats initiated also liberal reforms of the pension system. The relevant legislation was adopted in July 1997 and, in January 1998, Hungary became the first transition country to began implementing a 3-pillar pension system.

The motivations, aims and specific principles of the Hungarian reform [Palacios and Rocha, 1997] are the same as, or similar to, those which Poland adopted one year later [Gomułka and Styczeń, 1999]. In both countries, the reform applies only to retirement pensions. However, in Hungary these pensions account, in late 1990s, for some 80% of all pensions expenditures, as against only some 55% in Poland.

4.3. Romania

As noted earlier, so far, during transition pension expenditures in Romania have been kept low in relation to GDP. However, simulations indicate that the contribution rate must increase from 25.5% in 1996 (and 32.5% in 1999) to 41.5% in 2040 in order to maintain the 1998 ratio of pensions to wages [deMenil et.al, 1999]. In 1998, this ratio, at 36.2%, was much lower than in Hungary and Poland [Table 1]. Romania is therefore expected to experience social pressure to increase that ratio in the future. This pressure and the expected increase of the coverage of the population by pension insurance are two major factors which are likely to induce a reform of the state pension system along the Hungarian-Polish model.

5. Conclusions

Demographic trends during the years 2000–2050 (for which projections are typically made), are expected to be similar in the FOUR to the major EU countries. Populations will be either stable (Poland, Romania, France, UK) or declining (Hungary, the Czech Republic, Germany, Italy). Dependency ratios (65+ to 15–64 year olds) are projected to increase in most countries, including our FOUR, at a historically unusual pace. These ratios in the four EU countries listed above are expected to increase from about 24% in 2000 to about 40–45% in France and Italy and 50–60% in Germany and Italy [Chand and Jaeger, 1996]. In Poland this ratio is projected to increase from 17.7% in 2000 to 40.9%

in 2050 [Styczeń, 1999], and in Hungary from about 25% in 2000 to about 40% in 2050 [Palacios and Rocha, 1997]. The elderly population itself is projected to age considerably in most countries. This is indicated by the 'very elderly' ratio (75+ to 65+), which is expected to increase, in the four EU countries, from about 40–45% in 2000 to about 60% in 2050. This ratio in Poland is projected to increase from about 40% in 2000 to about 51% in 2035 and then to decline to 42% in 2050 [Styczeń, 1999].

Pension systems and pension expenditures show large variations among countries worldwide. This variation appears to reflect mainly demographic factors and differences in the level of insurance protection, the latter tending to increase with the level of development. The focus of this paper is pension developments and reforms in the four transition countries: the Czech Republic, Hungary, Poland and Romania during the 1990s. Our major factual finding is that Poland and Romania are clear outliers among the FOUR in terms of key pensions statistics. The paper concludes that the greater pension expenditures in Hungary and Poland are in part inherited (especially in Poland) and in part caused by the more radical restructuring reforms, and that these greater expenditures have in turn prompted these two countries to start replacing gradually their PAYG-DB system with a three-pillar mixed system, with private pension funds constituting a large component of the reformed system.

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