

VALUATION OF THE HUNGARIAN PENSION SYSTEM

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This paper takes a look at certain results of the modelling side of the Hungarian pension reform. Preparations are underway to implement actuarial modelling of pension liabilities for the government. The objective is to understand how the state might face challenges of the present pay-as-you-go pension system. Flat-rate pension, point system and notional defined contribution (NDC) as possible suggestions are reviewed in order to stop increase of public debt in the course of this century. Based on the investigations done in the last two years the sharpest problems for Hungary are the low activity ratios and the short working period.

1 Introduction

The Hungarian pension system underwent a structural reform in 1997, at present according to the World Bank terminology it has three pillars:

- Pillar I is the mandatory public pension system,¹ which is financed from the contributions paid by the employer and the employee;
- Pillar II is mandatory consisting of mutual private pension funds; and
- Pillar III covers voluntary mutual benefit funds.

Pillar I is a publicly managed, pay-as-you-go financed, defined-benefit, social security pension scheme. It provides earnings-related old-age, disability and survivors benefits. Pillar II of the compulsory pension system is operated by fully-funded, defined contribution, private pension funds. The funds accumulate and invest contributions paid by their members onto their individual accounts. At retirement the accumulated sum increased by investment yield is converted into a life annuity,² which can be provided by either the fund itself or a life insurance company.

Persons entering the labour market for the first time are automatically enrolled into the two-pillar system. Those who had already acquired pension rights before 1998 could voluntarily opt for the new system at the time of its inception.

Pension and Old-age Round Table (POART) was set up in 2007 to analyse the future changes of the Hungarian pension system. Based on the projection results of POART's report several important questions will be analysed. Besides the transformation of the pension system, and quantitative presentation of future contributions and benefits, impacts on labour supply in planned to be examined.

2 Why don't we comply with the rules of the pension system

Qualifying conditions for a person to become eligible for the old-age pension in Hungary are as follows:

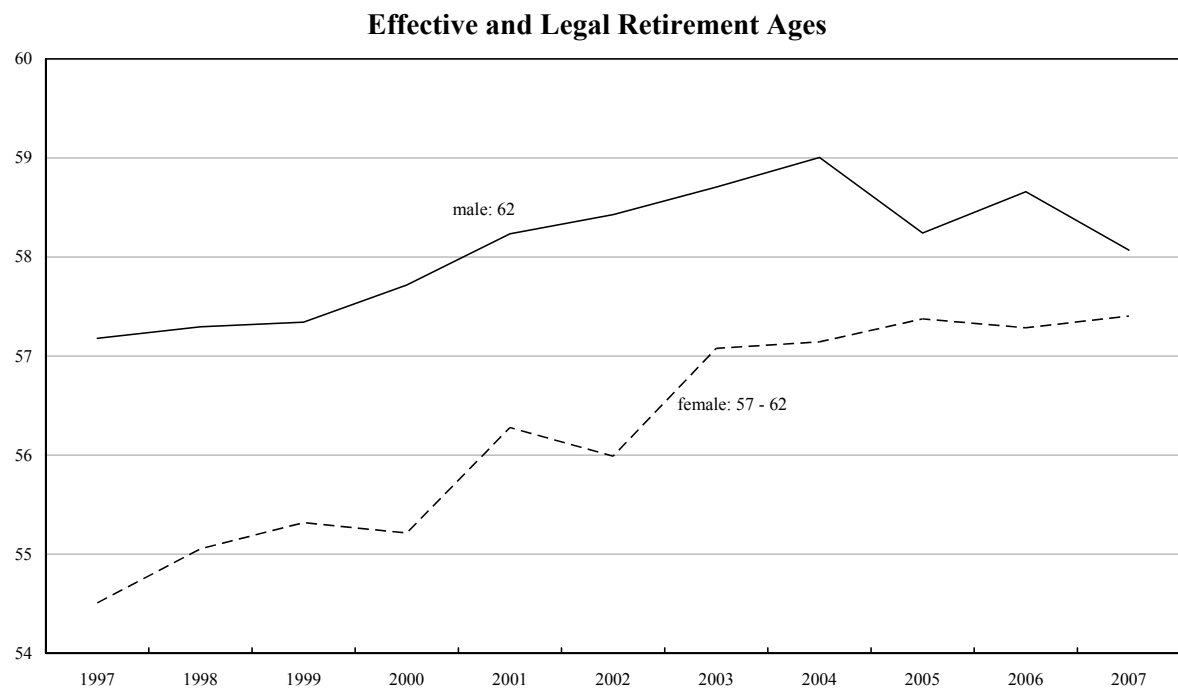
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The author is member of the Hungarian Pension and Old Age Round Table. The views expressed here are mine.

¹ Our present social security system was introduced after the Second World War. The original version of the public pension was introduced in 1928.

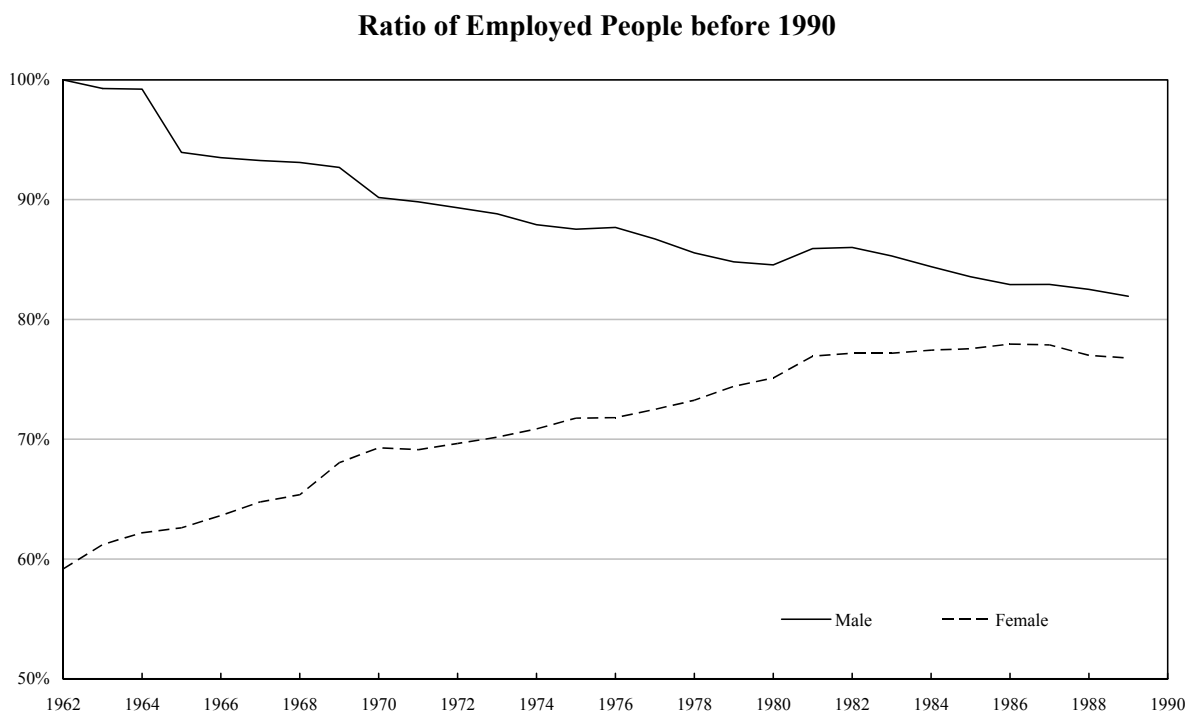
² Pillar I is intended to give $\frac{3}{4}$ and Pillar II is planned to cover $\frac{1}{4}$ of the old age pension.

Figure 1



Source: Author's calculations based on Pension Statistics.

Figure 2



Source: Deloitte Report based on data of the Hungarian Central Statistical Office.

- Reaching statutory retirement age 62 years for both males and females in 2009; and/or
- Completing the required number of years of service, 40 years for total pension amount;
- Completing at least 37 years of service until the age 60 to get reduced pension amount.

In spite of the clear rules the effective retirement ages of both genders are significantly lower than the official retirement age. Figure 1 presents the age of newly retired old-age pensioners according to the calendar years. The discrepancy of numbers between legal and effective retirement ages is mainly the consequence of the political and economic transition after 1989.

The best-known rule of our socialist system ended in 1989 was the full employment, which was associated with the so called in-door unemployment in the early 1960s. Figure 2 presents these artificially high rates of employment.

As a result of these high ratios the average service period was higher than 40 years for men, and 36 years for women. Based on the long contribution period, the pay-as-you-go scheme worked smoothly until the late 1980s.

After the political transition, the labour market shrank as a consequence of the privatisation of the Hungarian economy. Several companies were closed down or reorganised, and the agricultural cooperatives fell into individuals. The low demand for unskilled blue-collar workers caused serious difficulties. From 1990 to 1997 the unemployment rate increased suddenly. Early retirement and disability pension were the sidetracks for them because of their missing skills and low flexibility/mobility.

To sum up the changes, by the late 1990s participation rate of active population decreased by 20 per cent. The current level of employment is lower than it has been earlier.³ Role of the informal sector is not analysed here because of the unpaid pension contribution. The maximum density of women's employment (83 per cent) was measured in 2005 for those who were born in 1974. The parallel maximum numbers of men's employment (71 per cent) was measured in 2005 for those who were born in 1974 and 1975. For more details see Figure 3 and Figure 4.

In order to exit from the labour market around the age of 50, persons applied for disability pension. This process was supported by policymakers to avoid the further increase of the unemployment rate. As a result of this process total number of disability pensioners reaches 22 per cent of pensioners in 2009. Number of disability pensioners below retirement age limit is around 10 per cent of the active population. These numbers are extremely high compared to the EU ratios, and are not underpinned by the health conditions of Hungarian people.

3 What does the future hold for us?

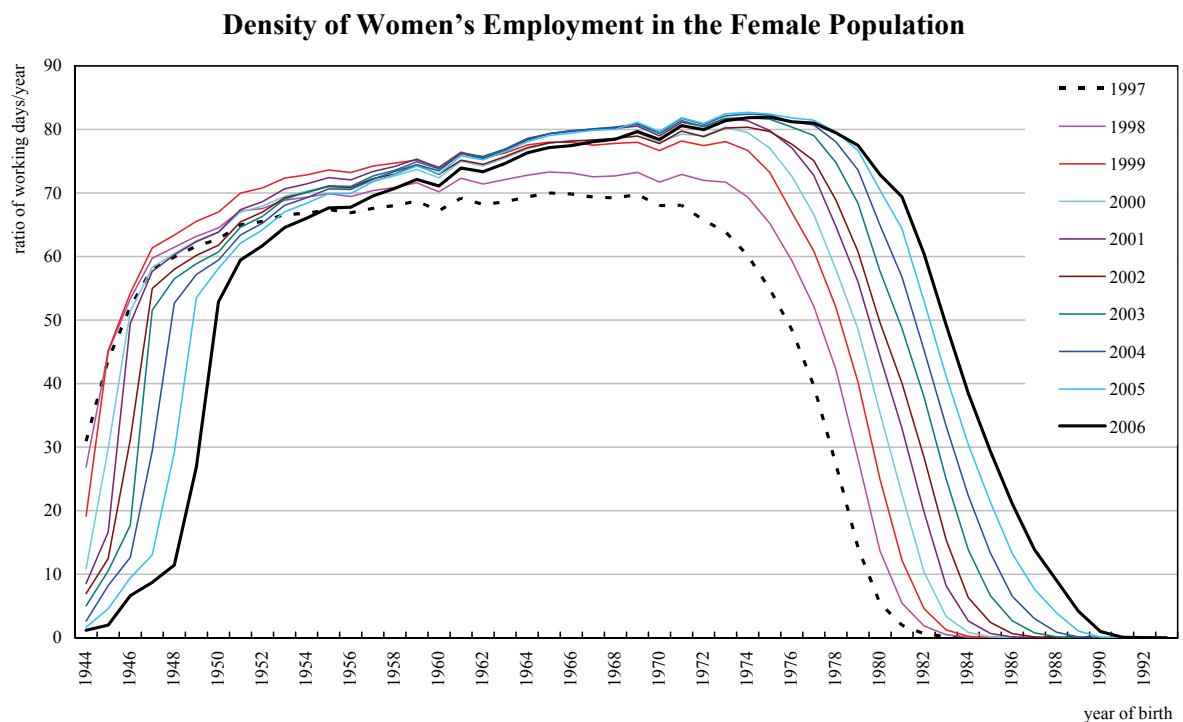
Theoretical arguments for strict retirement rules are reinforced by concerns about the implicit debt of the pension system.

The implicit debt is defined as a difference between present value of benefits disbursed to pensioners and active members (*i.e.* future pensioners) and contributions paid by active members. It shows obligations of the state pension system at a given point of time towards the current members⁴ (those who have already entered the system).

³ According to the OECD Statistics change of the total labour force in 2004 compared to 1994 was -1.2 per cent for Hungary. The OECD average for this period equals to +9.6 per cent. Source: OECD in Figures, 2005.

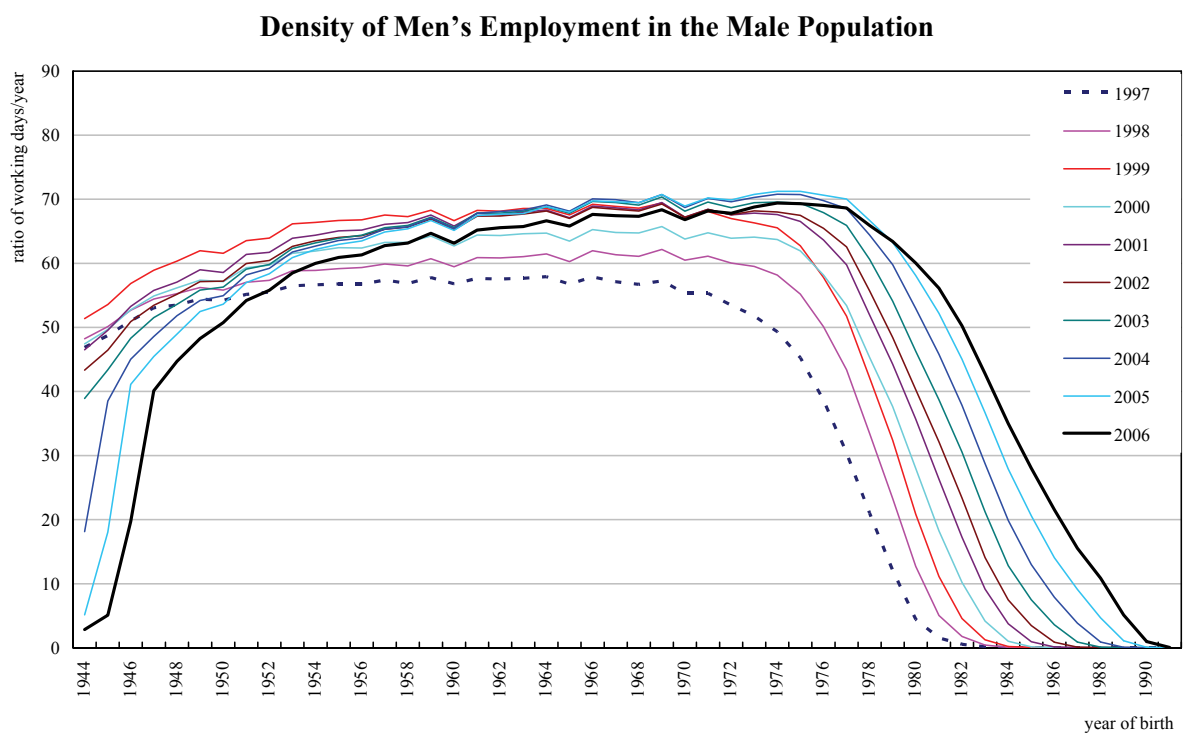
⁴ Benefits from the second pillar will be paid from 2013.

Figure 3



Source: Author's calculation based on Pension Statistics.

Figure 4



Source: Author's calculation based on Pension Statistics.

The implicit debt is measured in percent of GDP. Projected amounts of implicit debt per active members in the given calendar years were discounted to 2007 values in order to be comparable and expressed in currency units of the same year. 5 per cent discount rate was applied per annum, which corresponds to the risk free rate.

The government's possible decisions on changing the pension parameters (such as contribution rate, age limit and indexation) are expected to reduce the implicit debt in the next 15-20 years. The best scenario can be seen in Figure 5. The estimated minimum (2.45 per cent) will be reached in 2026.

This wave in Figure 5 is a consequence of the special shape of the Hungarian demographic tree⁵ (see in Figure 6). The baby boom generation will retire around 2016, but the second boom, children of this generation are expected to be active on the labour market until 2040. The Hungarian pension system is strongly influenced by the special shape of the demographic tree.

Aging itself is not the most serious burden for the Hungarian pension system as it is for other highly developed countries. Life expectancy is expected to increase by 2 months per year.

The old version is projected by lower (1.3) fertility ratio, the young version is assumed with higher (1.8) fertility ratio. Both fertility values are below the reproduction level, so we do not calculate with a stationary population. Based on this projection, there are political intentions to increase the pension age to 65 year gradually in the next decade.

4 Increasing the contribution period

Our focus is on a small open economy in which the pay-as-you-go pension system is characterized by:

- the size of the labour market (L), and wages per worker (w),
- the number of retired persons (P),
- the average pension (p), and
- the contribution rate (r).

The balanced budget for this system can easily be calculated by multiplying the above quantities for a given year (t):

$$L(t) r(t) w(t) = P(t) p(t)$$

While these factors (wage, pension and contribution rate) can be influenced by the government relatively easily, the labour force adapts to the changes rather slowly.

One obvious way of increasing the contribution seems to be raising the legal retirement age. However there are objections to this strategy: as significant number of people chose the early retirement, the actual mean retirement age is lower by several years than the legal retirement age (As it was seen in Figure 1).

PORT is analysing chances of paying contribution according to age and sex. Dividing the active population into six categories, we can calculate the pension contribution density for a given year.

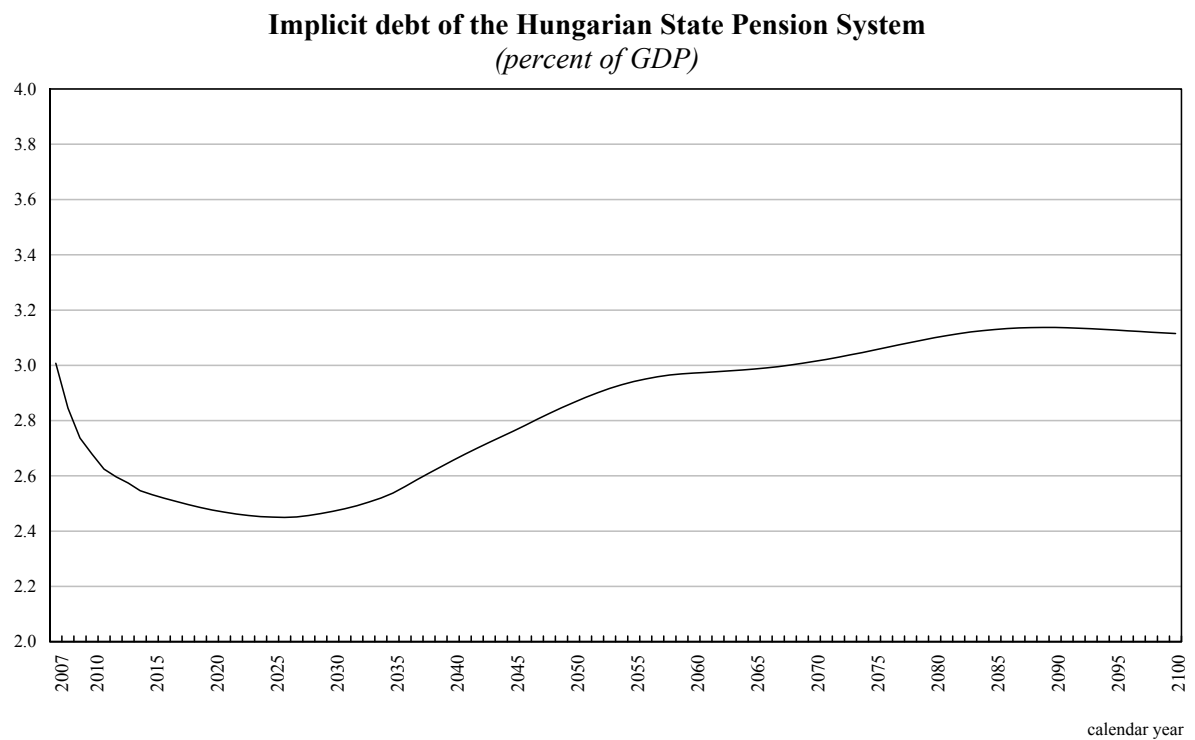
Employment statuses are mentioned⁶ as follows:

- Person A works during the whole year,

⁵ Data are for 2001. Projections were made by Laszlo Hablicsek in 2007.

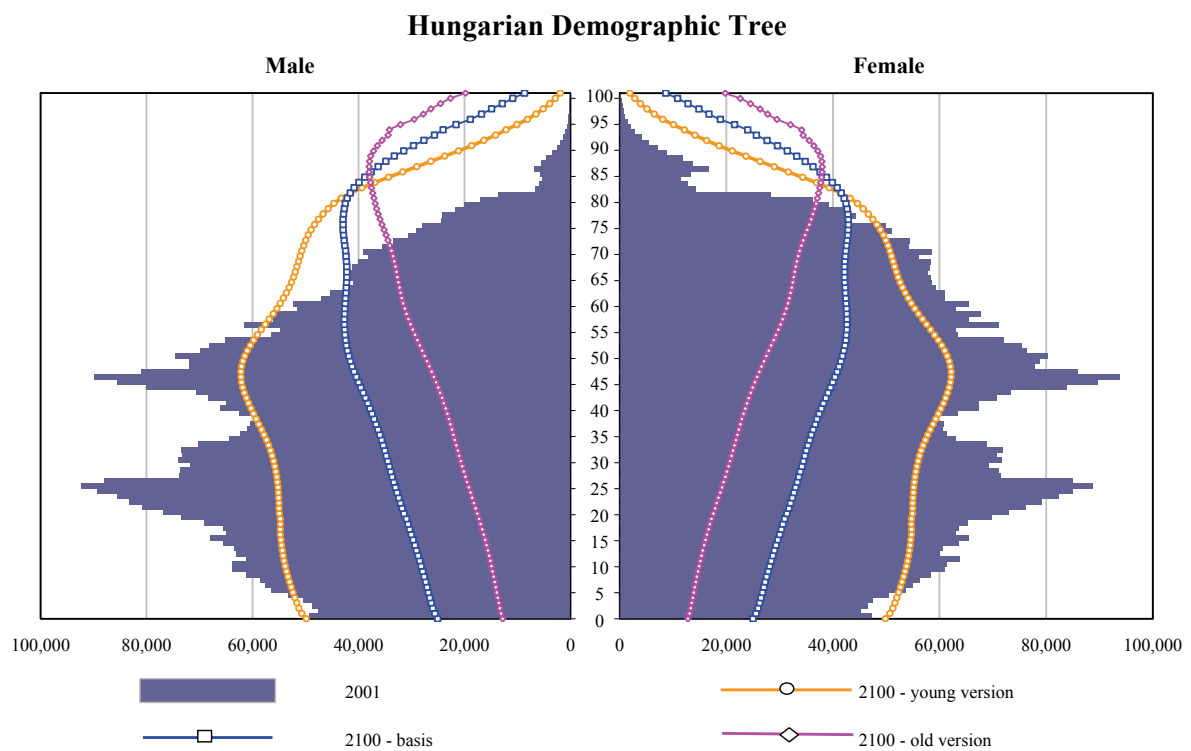
⁶ M. Augusztinovic introduced these names for the statuses in her paper.

Figure 5



Source: Deloitte projection (2008).

Figure 6



Source: Habcsek's demographic projection (2007).

Table 1

Transition Matrix, Male 30-43

	A	B1	B2	B3	B4	G	Disabled	Old-age	Dead
A	86.8%	8.6%	1.4%	0.9%	0.6%	1.3%	0.2%	0.2%	0.1%
B1	44.5%	31.3%	8.7%	6.1%	4.6%	4.2%	0.3%	0.2%	0.2%
B2	27.2%	20.2%	14.2%	11.5%	10.8%	15.6%	0.4%	0.0%	0.2%
B3	19.1%	14.1%	13.3%	13.7%	14.3%	24.8%	0.4%	0.0%	0.3%
B4	9.8%	9.1%	9.9%	12.0%	21.0%	37.3%	0.5%	0.1%	0.4%
G	2.4%	3.4%	4.3%	5.2%	8.6%	74.9%	0.4%	0.4%	0.5%
Disabled	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.5%	0.0%	4.5%
Old-age	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.6%	0.4%
Total	55.0%	10.5%	4.0%	3.6%	4.3%	19.1%	2.8%	0.4%	0.3%
Density	100.0%	87.5%	62.5%	37.5%	12.5%	0.0%			

Source: Author's calculations based on Pension Statistics.

- Person B1 works at least $\frac{3}{4}$ year,
- Person B2 works at least $\frac{1}{2}$ year,
- Person B3 works only $\frac{1}{4}$ - $\frac{1}{2}$ part of the year,
- Person B4 works less than $\frac{1}{4}$ part of the year,
- Person G does not work in the given year at all.

Looking at the transition matrix of men (aged 30-43, the most active members of the society) from 2004 to 2005 a straightforward conclusion is that further reduction of participation density should be prevented. Table 1 covers 960 thousand people 77 per cent of whom contributed to the PAYG system. 55 per cent of them were full workers, 22.4 per cent contributed in a certain part of the year, 19 per cent did not pay contribution in 2005. Based on the special early retirement conditions for certain professions 0.4 per cent of this young cohort retired.

Weighing the total ratios by the contribution densities,⁷ the overall contribution density (OCD) equals to 68.6 per cent. A bit less than 1/3 of the year remains uncovered by pension contribution. Analysing different age groups the ODC ratios remain lower. The females' overall contribution ratios are a bit higher than the appropriate males' results.

Further research is needed to analyse the following possibilities:

- a) How can we increase overall contribution density within a given service period for different age groups and for both genders?
- b) What kinds of incentives are encouraging people to extend service period without increasing legal retirement age?
- c) How can we effectively increase statutory retirement age with or without increasing employment rates.

⁷ Overall contribution density: $55 \cdot 1 + 10.5 \cdot 0.875 + 4 \cdot 0.625 + 3.6 \cdot 0.375 + 4.3 \cdot 0.125 = 68.6$.

5 Conclusions

Finding practical solutions and implementing them should be the first step on the path towards the pension reform in Hungary. We now live in a society where significantly more emphasis is being placed on personal provision for retirement. People are encouraged to save individually in Pillar II by taxation. On the other hand state provision is not out of favour. The aim of social insurance is twofold: to alleviate poverty in old age, and provide a big pooling of risk not only for old age pensioners, who contributed to the pension system during their working period, but for disabled persons and survivors as well.

Attitude of people to pension system and savings for retirement period should be changed before introducing new pension reform. Neither the NDC nor the point system can solve our problems originated in short contribution period and early retirement.

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