

1. WHAT DO WE KNOW ABOUT PUBLIC SECTOR EMPLOYMENT?

JÁNOS KÖLLŐ

There have been surprisingly few studies looking at the public sector both in Hungary and internationally. One of the reasons is the absence of strong exogenous shocks: the size and relative earnings in the public sector have changed little in most countries and over time and this makes it difficult to differentiate between real and spurious differences, as well as cause and effect. Another barrier is the lack of information: data often does not even allow us to distinguish between the public and private sectors. Another factor that quite possibly contributes to the lack of research interest is the fact that the objectives of decision makers in the public sector are more difficult to define than those in the private sector and therefore it is difficult to put forward and test behavioural models (that are not based on *ad hoc* assumptions), and this is a serious competitive disadvantage to getting published.

Economists in Hungary are in a favourable position: measures of consecutive governments – including the “Bokros package”, large pay rises before and after the 2002 general elections, pay cuts implemented after 2004 and recent austerity measures that also affect employment – created quasi experimental situations that allow the examination of a range of relationships which would be difficult to analyse under more stable circumstances. At the same time the availability of statistical data is relatively good. However, as will be argued below, even finding the key facts is a challenging task.

Size of the public sector

It is not easy to define who is part of the public sector. The law distinguishes between *those with a work contract* on the one hand, and *public servants, civil servants, judges and prosecutors*, or more recently *governmental employees* and *public workers* on the other. Those in employment are categorised according to the legal source of regulation (i.e. the Labour Code, Public Service Act etc.). A similar approach is adopted in the labour statistics of the Hungarian Central Statistical Office (CSO), and the Wage Tariff Survey of the National Labour Office. Other sources of economic data distinguish the *publicly-funded sector* and the *business sector*, the latter including publicly-owned companies. International comparison is made practically impossible by the fact that most datasets that would be potentially suitable for this only differentiate entire sectors that are predominantly public (education, health care, social care), however there is a large number of private companies operating in these sectors.¹ At the same time there are many companies in the private sector that are fully

¹ With the exception of public administration where there are some international comparative studies (for example *OECD*, 2011).

dependent *on public institutions*, either because they carry out outsourced activities or because they only supply central or local government organisations. In Hungary, the picture is further complicated by an unusually large number of workers involved in publicly useful work programs. Where possible, they are excluded from analysis, however in some datasets it is impossible to separate them from regular employees.

Table 1.1 shows that according to the CSO's labour statistics and the Wage Tariff Survey public sector employees made up approximately 30% of the total number of people working in companies with 5 or more employees and government-funded organisations in 2013. Other types of data are available from the CSO's Labour Force Survey. This makes no distinction between civil servants and public servants, however it does differentiate based on sector and ownership. According to this, employees of state-owned corporations and public institutions make up 27% of employment as defined by the ILO-OECD and 33% of employees in 2011. (See *Box 1.2* for an estimate of the workforce in public/local government-owned corporations). People employed in public administration, public education, health care and social care constituted 28% of employees and 22% of total employment. Although the figures vary with the definitions of "public sector" and "employment", and affected by the inclusion or exclusion of public workers, the differences are relatively small: *according to the latest available figures, approximately 30% of all employees and around one in four of those in employment worked in the public sector.*

Table 1.1: Percentage of public sector workers in total employment and employee jobs in 2013 based on various sources

	As % of total employment	As % of employees	Time period
Institutional labour statistics			
Public sector employees	-	29.1 ^a	2013
Wage Tariff Survey			
Civil servants, public servants, judges, prosecutors, public workers	-	31.4 ^b	May, 2013
Civil servants, public servants, judges, prosecutors	-	27.2 ^b	May, 2013
Labour Force Survey			
Employees of public corporations, public institutions, local governments ^c	27.2	32.5	1 st quarter, 2013
Employees of central or local government institutions in education, health care or social care	22.4	27.8	1 st quarter, 2013

^a CSO Stadat Table 2.1.33 (Data from June 23, 2014). The target population is public institutions, companies with five or more employees and some non-profit organisations.

^b Author's own calculation, observations weighted with coefficients provided by the National Labour Office. The target population is public institutions and businesses with five or more employees and non-profit organisations.

^c Labour Force Survey, author's own calculation. People in employment includes everyone who had done at least one hour of paid work in the previous week or who did not do any paid work but were away from work only temporarily.

Naturally, it is considerably more difficult to estimate the number of private companies that are closely linked to the public sector. Using data from the CSO's labour force survey *Elek and Szabó* (2013) concluded that 40% of shifts from the public to the private sector between 1998–2002 did not involve a job change, suggesting large-scale outsourcing (for a summary of their study see Chapter 2.4 of this *In Focus*). Later, between 2002–2008, this was a lot less common. The number of private companies dependent on government purchases cannot be estimated without specialised surveys.

Within the public sector, the share of public administration and education is 39 and 36 per cent respectively, while health and social care make up 25 per cent. Fifty-seven per cent of public sector workers were employed by local governments in 2011, however this share had shrunk to 45 per cent by 2013. Currently, central government constitutes the largest segment of the public sector (*Table 1.2*).

Table 1.2: Distribution of public sector employees by sector and level in the first quarter of 2013, in sectors dominated by public provision

	Central Government	Local Government	Total
Public administration	25.2	14.0	39.2
Education	16.3	19.6	35.9
Health care	12.2	8.3	20.5
Social care	1.4	2.9	4.3
Total	55.1	44.8	100.0

Note: The definition of public sector is based on the sector and the ownership status of the employer. Figures also include the number of public workers.

Source: *CSO Labour Force Survey*, 1st quarter, 2013. Author's calculation.

The probability of employment in the public sector largely depends on gender, education and age: in 2011 the share of public sector workers was 19% among men and 45% among women; 15% among those with completed primary education and a vocational qualification, 27% among those with completed secondary education, 54% among those with higher education and 82% among those who did not complete primary education. The latter figure is so high because it includes people in public works programmes. Data from the Wage Tariff Survey show that the share of public sector employment increases with age (it is 22% among people in their twenties, 26% for those in their thirties, 36% in their forties and it is 40% among those aged over 50).

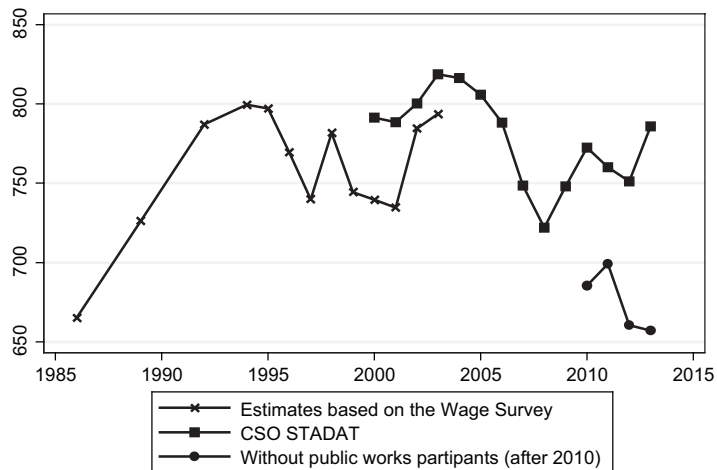
Trends in employment and pay over time

The size of the public sector increased from 650 thousand to 800 thousand during the years of political transition when a number of activities previously carried out by the Party apparatus or state-owned enterprises were transferred to publicly-funded institutions (inspection, planning, supervision, welfare and

children’s services) and when new types of services were also created. The expansion was halted by the “Bokros package” launched in March 1995 that also resulted in a 10-per cent decrease in the number of public sector employees.

After the turn of the millennium their number started to increase again until 2006 when a high budget deficit resulted in measures to reduce employment (*Figure 1.1*). However, the size of the public sector declined only up to 2008 and during the years of the crisis it stabilised – it even increased considerably if the number of public workers is taken into account. The number of employees was 3% higher in the public sector in January – March 2011 than in the same period three years earlier, while in the private sector there was a 4.8% fall. Nonetheless, the size of the public sector also later started to decline. Its current size is best compared to its 2000 level when the number of public workers was still negligible: data indicates a loss of 130 thousand people since that time. If the number of public works participants is included in the public sector workforce then an *increase* can be observed since 2008 and particularly since 2013 when public works programmes did not decline during the cold season in November and December.

Figure 1.1: Employment in the public sector, 1986–2013 (thousand people)

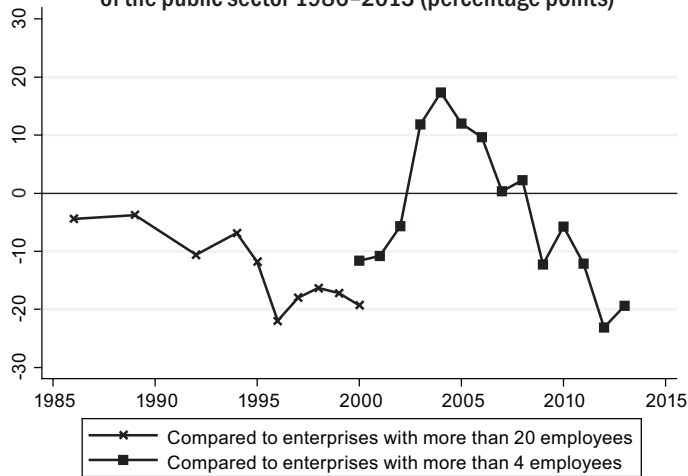


Note: No comparable data is available on the numbers of the workforce in public works programmes before 2010.

Source: CSO Stadat and Wage Tariff Survey 1986, 1989, 1992, 1994–2003.

The employment statistics suggest a high level of instability – a 130-thousand increase after transition, followed by a decline of 60 thousand, and then an increase of the same magnitude, followed by another decrease by nearly 150 thousand – but fluctuations in the level of *public sector pay* were even more marked. The public sector pay advantage or disadvantage compared to similar employees in terms of gender, age and education in the private sector fluctuated within the range of –22 and +17 percentage points (*Figure 1.2*).

Figure 1.2: Regression-adjusted pay advantage/disadvantage of the public sector 1986–2013 (percentage points)



Note: Regression estimates: on the left side of the equation it is the logarithm of pay and on the right side it is gender, number of years in education, labour market experience, its square and a public sector variable. The points measure the effect of the latter in percentage points.

Source: *Wage Tariff Survey*, 1986, 1989, 1992, 1994–2011. (Data is from May for each year. Prior to 1995 the Wage Tariff Survey only included companies with more than 20 employees, and until 2000 with more than 10 employees.)

The “Bokros package” worsened the pay position of the public sector by more than 10 percentage points relative to the private sector. The narrowing of the pay gap continued between 1997–2000 but was later followed by a sharp increase. The increase of the minimum wage by Mr. Orbán’s first Government had a strong impact on the public sector because in 2000, 60% of non-graduate public sector workers were earning less than 50 thousand forints per month, the minimum wage in 2002. (The same number was 40% in companies with more than four employees in the private sector.) Secondly, before the general election in May 2002, the Orbán Government significantly increased the pay of civil servants. As a result the average real pay increased by 17% in the public sector between May 2001 and 2002, compared to seven per cent in the private sector. Thirdly and most importantly, when the Medgyessy-led Government entered into office in May 2002 they increased the basic pay of public servants by 50% in line with their pre-election pledge (the increase was endorsed by all parliamentary parties). As a result the average pay of public servants increased by 29% in real terms between May 2002 and 2003, compared to an increase of “only” 11% in the private sector. The pay disadvantage of the public sector (–6 percentage points in 2002) turned into a substantial pay premium: 11-percentage points in 2003 and 17 per cent in 2004.

The pay advantage, however, disappeared within three years. On the one hand, as is shown by *Telegdy* (2013) – summarised in Chapter 2.2 of this *In*

Focus – pay in the private sector, particularly in jobs where workers can easily move between sectors, increased faster than average after 2003. On the other hand, the austerity measures introduced to reduce the large internal and external deficit in 2006 rapidly eroded the pay advantage of the public sector. Finally, the abolition of the additional 13th month pay of civil and public servants in 2009 meant an immediate drop of 12 percentage points in the relative pay level of the public sector. This was compounded by an informal but effective freeze of the basic pay of civil and public servants at the 2008-level. In 2012 the gradual pay increase of doctors and nurses was decided and in 2013 teachers’ pay also increased, but these had not reversed the worsening trend by May 2013: public sector employees were paid 20% less than their counterparts – based on gender, age and education – in the private sector; just as in 1996, the second year of the “Bokros package”.

On instability in the public sector

This section presents some of the characteristics of Hungarian regulation that are essential for understanding the public sector labour market. The first is the *extreme instability* of the public sector’s relative pay level.

As has been shown the relative pay level of the public sector compared to the private sector fluctuated between the extremes of a more than 20-percentage-point pay disadvantage and a nearly 20-percentage-point wage premium since 1986. Such fluctuation of the pay gap was unprecedented in the European Union before the 2008 financial and economic crisis. (Even since then, only Romania experienced a loss of advantage comparable to Hungary, see *Vasile, 2012.*)

Table 1.3: The range of pay gaps between the public and private sectors in selected countries between 1993 and 2000 (percentage points)

Country	Minimum	Maximum	Difference
Austria	1.5	4.3	2.8
Finland	-1.3	0.0	1.3
France	-3.2	7.7	10.9
Germany	7.9	10.4	2.6
Greece	9.6	21.8	12.2
Holland	3.6	7.5	3.9
Ireland	16.3	21.9	5.6
Italy	10.3	12.1	1.8
Portugal	16.7	23.0	6.3
Spain	13.8	20.3	6.5
Hungary 1993-2000 ^a	-22.0	-3.8	18.2
Hungary 2001-2008 ^b	-11.6	17.7	29.3

^a Compared to companies with more than 20 employees.

^b Compared to companies with more than four employees.

Note: Positive (negative) values indicate the pay advantage (disadvantage) of the public sector. Control variable in the *Campos and Centeno* (2012) study: gender, age, square age, education, marital status, years in service. Control variables for the Hungarian data: gender, age, square age, education.

Source: European Community Household Panel (ECHP) data from Table 5.1 in *Campos and Centeno* (2012). Values for Hungary are the author's calculation based on data from the Wage Tariff Survey.

As data in *Table 1.3* (based on *Campos and Centeno*, 2012 and our own calculations) indicate, the difference between the minimum and maximum value of the pay gap nowhere exceed 6.5 percentage points between 1993 and 2000, apart from in Greece and France. Meanwhile in Hungary the difference was 18.2 percentage points in the same period and 29.5 percentage points in the following eight years. It should also be highlighted that in Greece the pay gap reached the 12.2 percentage points range as a result of a steady increase, and in France the pay gap ranged between -3 and $+8$ percentage points. Fluctuations similar to the Hungarian ones – as well as the large pay disadvantage at the nadirs – are rather exceptional in developed market economies.²

The effect of pay rises and reductions on relative earnings

The second characteristic can be seen in the differences within the public sector: the highly paid benefitted more from the pay rises between 2000 and 2004; however the decrease during the “Bokros package” in 1994–1996, and particularly the decline since 2004 also affected them the most. This is illustrated in *Figure 1.3* with public servants who make up the largest group in the public sector. To create the figure, public servants were ranked into 100 groups based on their pay for each year. For each percentile the ratio of their average pay to the national average was calculated. The graphs of *Figure 1.3* illustrate the *changes* in these relative pay indicators. A value of 1.0 means that the rate of increase or decrease was the same as in the general economy.

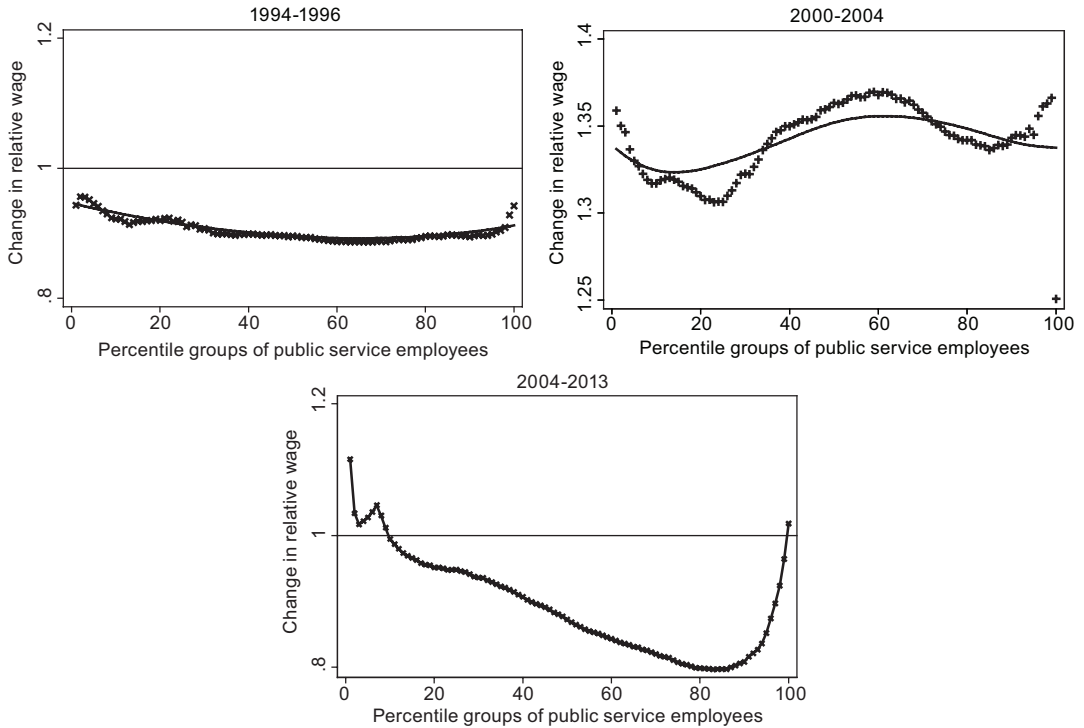
The austerity measures of the “Bokros package” had a somewhat stronger effect on the high earners except for the highest paid two per cent (99th and 100th percentiles). In the “years of plenty” between 2000 and 2004, when the pay of public servants increased well above the national average, the pattern was more complex. There is a relatively large gain at the bottom of the distribution. There is a rapid increase in pay between the 10th and 70th percentiles, especially towards the higher ranks. In the top third of the distribution – where basic pay constitutes a smaller part of pay and thus the effect of an increase is also smaller – the rate of pay increase is smaller; however it is still about a third higher than the national average.

Pay changes showed a *U-shaped* curve between 2004 and 2013. The pay of the lowest paid workers kept up with the national average thanks to the minimum wage; however higher in the pay hierarchy there are increasing relative pay losses with the exception of the highest paid 10%, where towards the top

² However, *Gimpelson and Lukiyanova* (2009) find a very substantial pay disadvantage (26–28 percentage points according to their regression estimates) in the Russian public sector in the early 2000s.

the data show smaller relative losses. The top two per cent avoided the (relative) pay decrease affecting the majority of public sector workers altogether and they even had a modest increase.

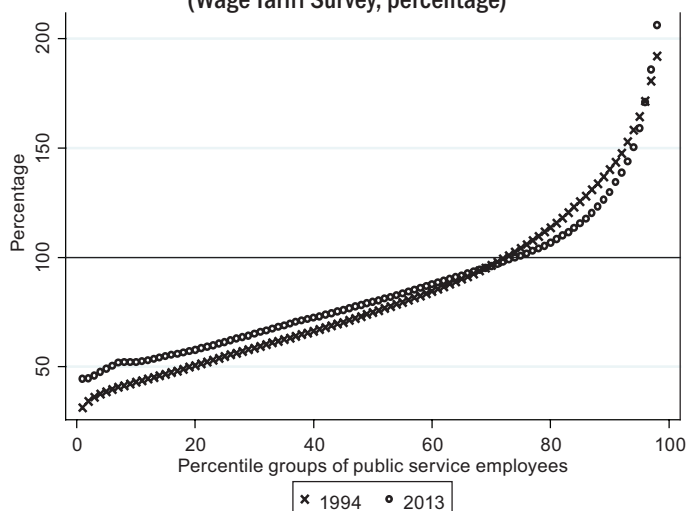
Figure 1.3: Changes in the pay of public servants in comparison to the national average by pay percentiles, between different time periods (ratio)



Source: *Wage Tariff Survey*.

As a result of austerity measures since 2004, public sector pay declined to the level of the last “peace year” before the Bokros package. *Figure 1.4* shows that the lowest paid public sector workers (percentiles 1–10, first decile) earned 30–40% of the national average in 1994, and 40–50% in 2013. In both years, approximately one in four public servants was paid more than the national average. At the same time, the distribution of earnings became more balanced: the gradient towards the lower end of the distribution was less steep in 2013 than in 1994.

Figure 1.4: Pay of public servants compared to the national average, 1994, 2013
(Wage Tariff Survey, percentage)



Note: To calculate the national averages only data from companies with more than 20 employees was taken into account. The 200–300 percentage values for the 99th and 100th percentiles were not included to ensure clarity of the figure.

Source: *Wage Tariff Survey*, 1994, 2013.

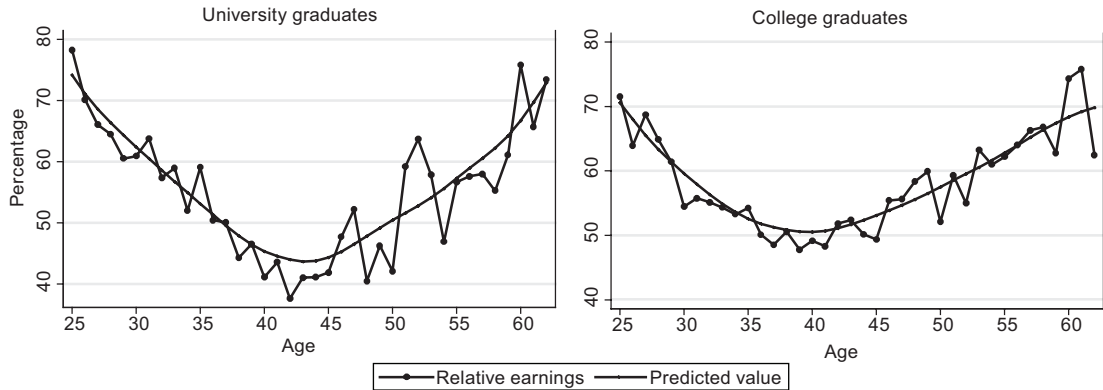
The age-earnings profile of college/university graduates

The third characteristic is the distinctive age-earnings profile of *graduate* public and civil servants. Earlier studies (see for example Varga's 2008 paper on the teacher labour market) have already highlighted the *U-shaped* relative pay profile of graduate public servants: the pay disadvantage of the youngest and the oldest is considerable smaller than in the middle cohorts. This is because the regulations set a linear wage path for public servants and civil servants while in the private sector graduate – particularly university graduate – pay follows a strongly non-linear pattern: starting from a low level it increases rapidly then starts to decline towards the end of the career path.

Figure 1.5 shows that graduate school leavers earn 20–30 per cent less than their counterparts with a similar education and age in the private sector. Their disadvantage increases to 50–60 per cent around the age of 40. The disadvantage is smaller in the older cohort, it returns to the 25–30 per cent range. The pay disadvantage of college graduates is somewhat smaller, but the relative age-earnings curve shows a similar pattern.

The *U-shaped* curve, which essentially resulted from a legislative error in the early 1990s that has not been corrected since, has important implications. Firstly, young graduates entering public service face a continuous decline in relative pay in the first 15 years of their career and thus staying in public service means an increasing relative pay loss each year.

Figure 1.5: Graduate pay in the public sector compared to private sector employees of similar age and education, 2013 (percentage)



Source: *Wage Tariff Survey*, 2013.

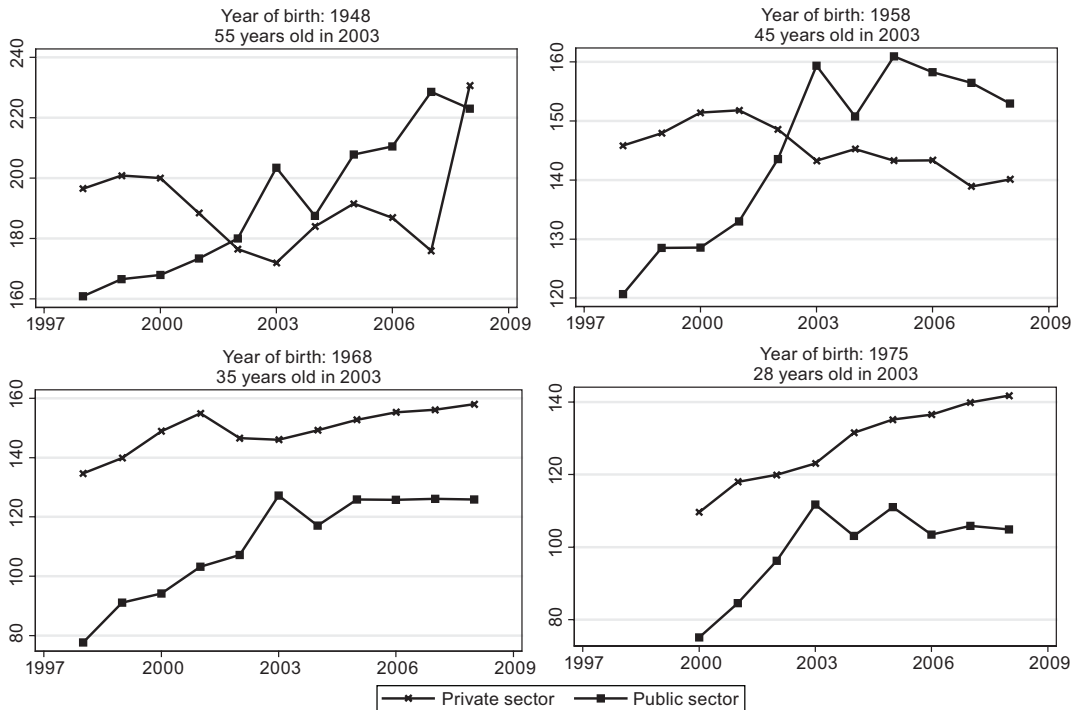
Secondly, in austere years, such as 2013, the disadvantage of middle cohorts can become extreme. Even if there are a number of non-pay rewards to set against the pay disadvantage (such as greater job security, longer holiday entitlement, feeling of usefulness, power in some areas, privileges, gratuities and income from corruption in others), according to international experience, a pay disadvantage of this extent – 50–60 per cent – is generally not permitted by legislation in developed market economies.

Thirdly, the *U-shaped* curve is so marked that it can influence the development of the relative pay of some *birth cohorts* in *calendar time*. If pay goes up in the public sector, its effect can be partly or fully offset by the fact that young people lose relative to their counterparts in the private sector each year until the age of 30–35 years. However, in older groups the effect of age adds to the effect of pay increase along the age-earnings profile: after the age of 35 years graduates in the public sector move closer to private sector employees even without a sectoral pay increase.

This is illustrated by *Figure 1.6* which follows the development of pay of four birth cohorts whose members were 55, 45, 35, or 28 years old in 2003. (People who were 25 in 2003, were still secondary school students at the beginning of the observations, therefore a slightly older cohort was selected.) The figures are based on information from the Electronic Register of the Central Administration of National Pension Insurance (in Hungarian: Országos Nyugdíjbiztosítási Főigazgatóság Központi Elektronikus Nyugdíj-nyilvántartási Rendszere; “Kelen” for short) that has enough observations to enable an analysis by birth cohorts. The curves show the effect of pay rises before and after the 2002 general election. The substantial disadvantage of the two older cohorts turned into a significant advantage, while in the case of the younger cohorts, the pay increases were enough only to stabilise their position – they

were still at a substantial disadvantage compared to their counterparts in the private sector even in the best years. This also implies that in years when pay is decreasing, younger cohorts are especially worse off.

Figure 1.6: Pay in graduate jobs in selected cohorts, 1998–2008 (percentage)



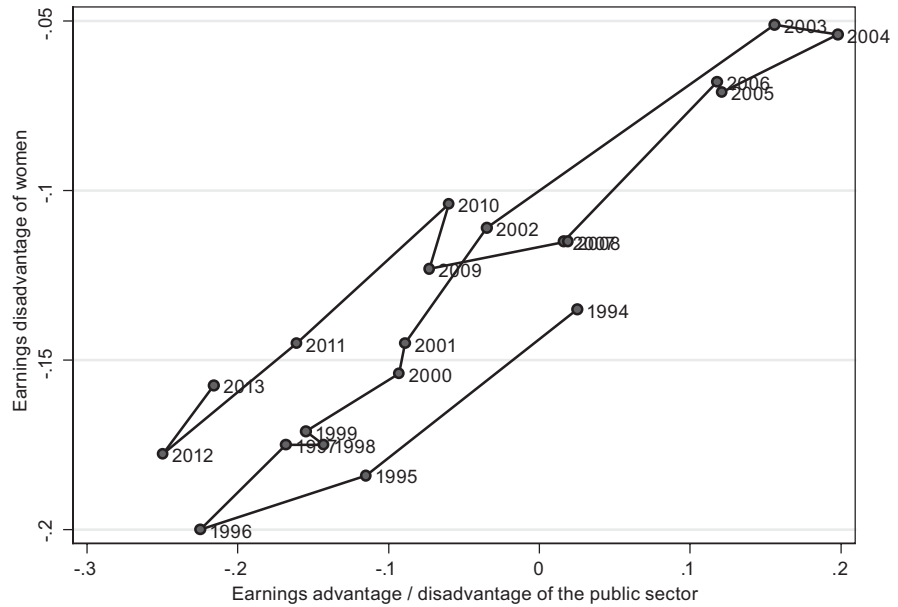
Indicator: employment status and daily pay calculated from the annual income of public servants/civil servants who had been in continuous employment during the year, expressed as a percentage of the average of the total sample.

Source: *Kelen*, 20 per cent sample.

Public sector pay and the gender wage gap

The fourth characteristic that should be highlighted is the impact of pay fluctuations in the public sector on the situation of *women*. If the size of the two sectors, the proportion of women within the sectors and their pay disadvantages remains stable (the latter stabilised after 1993 in Hungary), then there will be a linear relationship between public sector pay and the gender pay gap. This is a rather trivial relationship, however its *strength* is noteworthy – this is highlighted by *Figure 1.7*. The horizontal axis of the graph indicates the regression-adjusted pay disadvantage (controlled for age and education) of the public sector. The vertical axis represents the gender pay gap in the *overall economy* using similar controls. The curve and the years indicate how the labour market moved within these coordinates in Hungary between 1994 and 2011.

Figure 1.7: Public sector and the gender pay gap, 1994–2013 (points on the logarithm)



Source: *Wage Tariff Survey*.

3 It emerges that the disadvantage of women is about five percentage points lower now – despite the fact that the overall wage disadvantage of the public sector is back at its mid-1990s level. This might be related to the narrowing of wage differentials in the public sector as depicted in Figure 1.4.

The points are essentially aligned on a straight line that has a gradient of 0.32. In other words, a 10-per-cent decline in the pay level of the public sector, increases the pay disadvantage of women by 3.2 per cent.³ Considering the wide fluctuations of relative pay in the public sector, it seems justified to argue that the budgetary and political cycles of the past 20 years had the strongest effect on the labour market disadvantage of women.

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