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LAJOS TAMÁS SZABÓ

CHARACTERISTICS OF PUBLIC WORKERS

MNB OCCASIONAL PAPERS | 145

2022
MAY

'Spirit and zeal to work ensure eternal youth'

Mór Jókai



CHARACTERISTICS OF PUBLIC WORKERS

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M A Y

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MNB Occasional Papers 145

Characteristics of Public Workers*

(A közfoglalkoztatottak jellemzői)

Written by Lajos Tamás Szabó

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Abstract

In our study, we set out to present the characteristics of public workers between 2011 and 2019 based on the comprehensive and anonymous administrative database of the Hungarian State Treasury (MÁK). During the years under review, altogether 676 thousand people were involved in the programme. There are great differences in terms of the total time spent in the programme individually. While the national average is more than one and a half years, it is less than one year in the more developed districts of the country and more than three years in the most disadvantaged areas. The public work programme significantly facilitated the involvement of previously inactive people in the labour market, as roughly two thirds of public workers had been inactive prior to the public work. The ratio of public workers to the population is high in the districts where the ratio of those working in the primary labour market is low. Thus public work contributed to the reduction of employment disparities across the regions of the country. Chances of employment after public work increased with the passage of time, which may have been attributable to the dynamic economic growth of Hungary. While those who had been public workers in 2012 worked 15 per cent of their time in the primary labour market in the next year, in the case of those who were public workers in 2018 this ratio was close to 25 per cent. However, there are major differences between the developed and less developed areas of Hungary in terms of job finding rate as well. Public workers more often change jobs in the primary labour market, and work in a job for a shorter period of time than those who have not been public workers.

JEL codes: J08, J45, J48

Key words: public work programme, job finding rate, regional differences

Kivonat

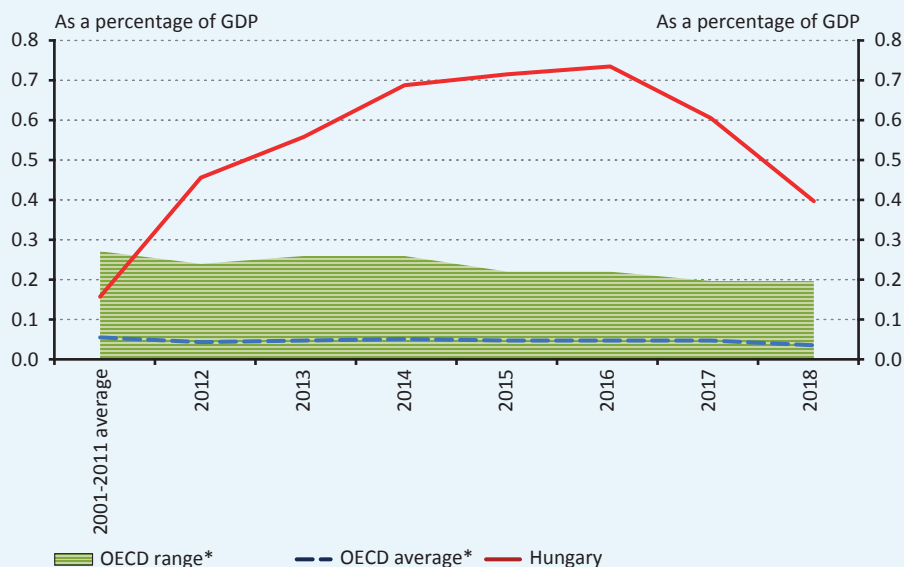
Tanulmányunkban a Magyar Államkincstár teljeskörű, anonim adminisztratív adatbázisa alapján bemutatjuk a közfoglalkoztatottak jellemzőit 2011 és 2019 között. A vizsgált évek során összesen 676 ezer főt vontak be a programba. A programban összesen eltöltött idő egyénenként nagy szórást mutat. Míg az országos átlag több mint másfél év, az ország legfejlettebb járásaiban kevesebb mint egy év, a leghátrányosabb helyzetű területeken több mint három év. A közmunka nagyban segített inaktívakat bevonni a munkapiacra, mivel a közmunkások nagyjából kétharmada a közmunkát megelőzően inaktív volt. A közfoglalkoztatottak népességhez viszonyított aránya azokban a járásokban magas, ahol az elsődleges munkapiacra dolgozók aránya alacsony. Ezáltal a közmunka segítette mérsékelni az ország térségei közötti foglalkoztatási különbségeket. A közmunka utáni elhelyezkedési esélyek növekedtek az idő előrehaladtával, amiben szerepet játszhat az ország dinamikus gazdasági bővülése. Míg a 2012-es közmunkások a következő évben idejük 15 százalékában dolgoztak az elsődleges munkapiacra, addig a 2018-as közmunkások esetében ez az arány megközelítette a 25 százalékot. Azonban az ország fejlett és fejletlenebb területei között jelentős különbségek vannak az elhelyezkedési esélyekben is. A közmunkások többször váltanak munkahelyet az elsődleges munkapiacra és egy állásban kevesebb ideig dolgoznak, mint azok, akik nem voltak közfoglalkoztatottak.

1 Introduction

In this study we provide an overview of the characteristics of people who participate in public work, including their demographic features, the length of time spent in public work, their job finding rate and the geographical distribution of the data. For the calculations we used the administrative database of the Hungarian State Treasury, in which it is possible to anonymously determine the work history of any person working legally in Hungary.

Within economic policy tools, public work is classified under the active labour market programmes, as are training, job seeking services or employment subsidies to the private sector (e.g. wage subsidy). Active labour market programmes are applied by governments to facilitate the reduction of unemployment through increasing the probability of employment. In the United States, the measure of success is the size of the wages of those who have found employment, whereas in Europe the focus is on increasing the probability of employment and on the length of time spent in the new job (Klueve, 2016).

Chart 1
Public spending on direct job creation in the OECD countries (as a percentage of GDP)



Note: * the OECD range and average do not include Hungary.

Source: OECD stats.

Of the developed countries, Hungary spent the most on direct job creation during recent years (Chart 1), which is attributable to the public work programmes. In the most intensive phase of the programme, the expenditures exceeded 0.7 per cent of GDP, whereas the OECD average was around 0.05 per cent at the same time. A similar magnitude of public work programme was observed in India, where the annual budget reached 0.6 per cent of GDP. In India, employment was mainly implemented in agriculture (for details see e.g. Imbert – Papp (2015)). Similarly high amount was spent on the programme in Argentina (Gehrke and Hartwig 2018).

Public work programmes mainly target low-skilled, disadvantaged people, and can be considered a social policy tool, with which it is possible to keep the participants close to the labour market (Klueve, 2016). In addition, the programme may facilitate the development of the local economy, as the participants may, for example, repair and maintain the local transport network, thus reducing regional disparities (Kálmán 2015). The programme may also aim at the reduction of poverty, which determines the organisation of public work in a number of countries (e.g. Escudero (2019), Koltai et. al. (2018), Molnár et. al. (2014)).

There may be many arguments for and against public work. It can provide work experience for those who have been away from the labour market for a long time, which helps in finding a new job in the primary labour market (Kálmán 2015). Participation in the public work programme may increase willingness to take risks. As it means predictable income, participants may start to attend training programmes that take time to finish but pay off in the long run (Gehrke and Hartwig 2018). Public work may provide employment opportunities for low-skilled people even in regions where there is no job in the labour market or it is costly to commute to bigger hubs. Public work contributes to the development of basic competences (such as punctuality, team work, conflict management), which are indispensable for finding a job in the primary labour market (Koltai et. al. 2018).

A counter-argument against public work is that if a programme is very inflexible it can hinder job seeking (Kálmán 2015). An example for this may be if a public worker is not allowed to attend a job interview during working hours. A substitution effect occurs if an existing position is filled with a public worker or someone in employment is reclassified as public worker. In this case it is not an inactive person who enters the labour market, but someone already employed starts to work in a different status. A crowding out effect is experienced if people do not apply for jobs in the primary labour market because of public work (Kálmán 2015). In order to prevent that, public workers' wages are lower than the market wage, therefore, if there are jobs available in the market, it is worth for job seekers to choose the latter.

On the whole, the effect of public work depends to a great extent on the precise regulation of the programme. The aforementioned counter-arguments may be defeated if as many aspects are considered when creating the programme as possible.

There are public work programmes both in developed (e.g. Latvia, Slovenia, USA) and developing countries (such Kenya, South Africa, India: Langa et. al (2019), Argentina). A mixed picture of the success and effectiveness of the public work programmes emerges from the literature. There are various ways to determine the effectiveness and objectives of public work. The main objective may be to provide jobs for the unemployed in times of economic downturn. Compared to the unemployment benefit it may help to maintain human capital, and thus the chances of employment may also be better later. In this case the success of the programme can simply be measured by the number of public workers, then by their job finding rates. An aim may also be to attract new people from the inactive group to the labour market, then to help them find employment; in this case the measure of success is the job finding rate or the increase in activity. Public work can be compared to other active labour market programmes (e.g. training, wage subsidy). In this case, the extent to which the funds spent on various programmes bring success may be measured.

Some authors measure clearly positive effects. A favourable effect like that is a rise in the probability of employment in the primary labour market (e.g. Vodopivec (2009) regarding Slovenia or Heinrich et al. (2012) concerning the United States). Another advantage of public work may be that it increases the participants' disposable income. Effects like that were found by Escudero (2019), Azam et al. (2012) and Tcherneva (2013) regarding public work in Peru, Latvia and Argentina, respectively. In addition, public work can reduce the chances of participants' becoming unemployed later. This effect was identified in Germany by Eichler (2002). The author found that for those who participated in public work the probability of becoming unemployed later was lower than for the control group.

Nevertheless, public work has well-documented negative effects as well. In some cases, other active labour market programmes are more efficient than public work. This conclusion was drawn by Escudero, who, as mentioned before, also found favourable effects of public work. When examining public work in Peru, Escudero et al. (2016) found that although participation in the programme increases the chances of employment, the quality of the new job filled is worse compared to the jobs of those who had not been public workers before finding employment. A greater percentage of public workers who found jobs in the market are employed in unregistered jobs or chances are higher that they will not be paid for working overtime. Card et al. (2018) summarised more than 200 articles that analyse active labour market programmes. Based on the articles about public work they found that its impact on the participants' later chances of employment can hardly be measured or it is negative. Compared to other active labour market programmes, public work is the least effective. Evaluations were also prepared about the Hungarian public work programmes that had existed before 2011: Csoba – Nagy (2011) found that public work is less efficient than wage subsidy or training programmes, while O'Leary (1997) measured a negative impact for the probability of employment.

In this study we do not intend to compare public work with other active labour market programmes or compare the chances of employment from public work to a control group. The objective of the study is to present public workers' demographic characteristics, work history and chances of employment through the available comprehensive database.

The main findings of the study are as follows. Between 2011 and 2019, the total number of participants in the public work programme was 676 thousand. This number includes those who spent at least one day in the programme. While the periods of time spent in the programme may vary for individual public workers: the national average is more than one and a half years, but in the most developed districts it is less than one year, while in the most disadvantaged areas it is more than three years.

The number of participants in the public work programme was significant in those regions of the country where the ratio of those employed in the primary labour market was low compared to the national average. Accordingly, the public work programme contributed to the reduction of employment disparities across districts.

Examining public workers according to occupational groups, compared to the whole economy, the share of simple occupations (FEOR 9 – Hungarian Standard Classification of Occupations¹) is significant, accounting for around 80 per cent of public workers. On the whole, public workers who previously worked in the primary labour market work in a lower occupation category as public workers. However, those who had worked as public workers before finding employment were typically able to do so in a higher occupation category than the one in which they were employed as public workers.

About two thirds of public workers were inactive in the years preceding the public work, and thus public work helped to involve new groups in the labour market. Public workers' chances of employment increase with the passage of time. While those who had been public workers in 2012 worked 15 per cent of their time not as public workers in the next year, in the case of those who were public workers in 2018 this ratio was close to 25 per cent. There are significant differences in terms of chances of employment across the districts of the country. Entering the labour market was motivated not only by the favourable macroeconomic environment characteristic of the decade, but also by the restraining and tightening of social expenditures. This latter reduced the transfers that were available instead of work, encouraging people to take a job. Public workers have typically more fragmented work histories than those who have not participated in the programme. They change jobs more often (either during public work or in the primary labour market), and work for a shorter time at the same workplace.

¹ For more information on the occupation classification see: https://www.ksh.hu/feor_eng_menu.

2 Description of the database

The database of the Hungarian State Treasury (previously the database of the Central Administration of National Pension Insurance) contains everybody for whom pension contribution was paid in Hungary. Since September 2011 it has been possible to distinguish public workers under the code of the type of employment. The database is complete, i.e. everybody who had a registered job is included in it. Obviously, it does not cover unregistered (black) employment. As contributions are paid for public workers, all of them are included in the database.

The following data have been used for our research:

- the person's year of birth, residence at district-level,
- date of joining and leaving a given workplace,
- the type of engagement (e.g. employment, public worker, entrepreneur etc.),
- four-digit FEOR code (e.g. shop assistant, elementary school teacher, etc.).

From this database it is possible to separate public workers, including their occupations prior to and following the public work. Therefore, it is possible to precisely determine their respective work histories, probability of finding employment, age and occupation categories.

For the geographical breakdown, we typically use districts. There are 175 districts in Hungary (Budapest is considered as one district in this analysis). The average population in a district is 55 thousand people (see Table 1). It is a good approximation to consider a district as the local labour market, because according to the data of the Census held in 2011, except for Budapest and its surroundings, 80 per cent of the population live and work in the same district. This ratio is 72 per cent in Budapest and its commuting area.

Table 1
Descriptive statistics of the population of districts in 2019 (persons)

| Median | Average | Standard deviation | Minimum | Maximum |
|--------|---------|--------------------|---------|-----------|
| 33,392 | 55,844 | 135,163 | 8,254 | 1,752,286 |

Source: HCSO.

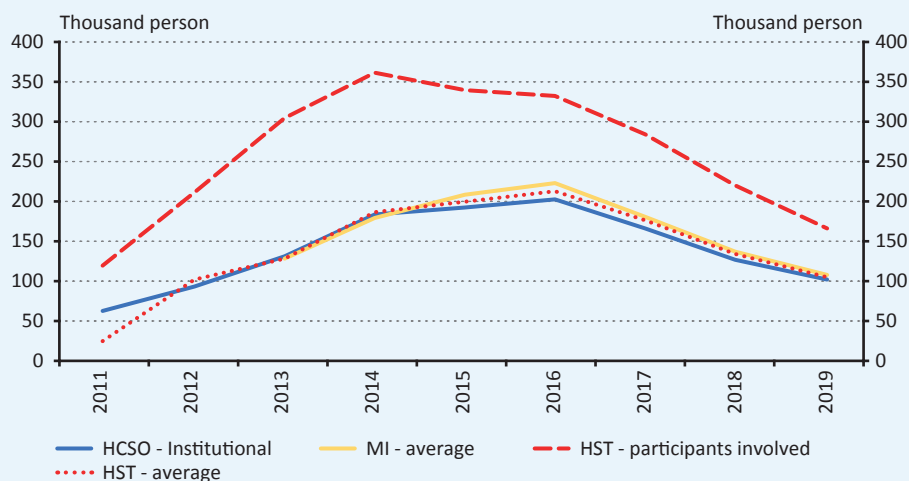
3 The number of public workers according to various statistics

There are several publicly available databases regarding the number of public workers. The institutional statistics of the Hungarian Central Statistical Office take into account the headcount of enterprise with at least 5 people and – irrespective of their headcount – the employees of organisations funded from the central budget, of social security institutions and designated non-profit organisations (for more details see: Bak – Szabó 2016). Another source is the monthly data release of the Ministry of Interior.

The total number of participants involved in the programme and the average number of participants can be established from the database of the Hungarian State Treasury. The total number of participants in public work is irrespective of the number of days spent in the programme. In this category, someone who was a public worker for one day during the whole year and someone who was a public worker for 365 days are equally considered as one person, i.e. it shows how many people were reached by the public work programme. By contrast, the average number of participants takes into account the days worked in the programme in a given year. Accordingly, someone who was a public worker for 365 days is considered as 1 person, while someone who was a public worker for 1 month is considered as 1/12.

In total, 676 thousand people were involved in the programme between 2011 and 2019 (including those who worked as public workers only for one day and those who were public workers for several years in total). Compared with the average headcounts in the institutional labour survey of the Hungarian Central Statistical Office (HCSO) and in the records of the Ministry of Interior, we may conclude that the average headcount in the database of the Hungarian State Treasury shows a very similar picture of the number of public workers both in terms of level and dynamics (Chart 2).

Chart 2
Statistics from various sources concerning public workers



Source: Ministry of Interior (MI), HCSO, Hungarian State Treasury (HST).

Compared to the HCSO’s institutional headcount data, the minor differences result from the fact that the institutional labour survey only examines businesses above 5 persons, and in the case of non-profit organisations it only takes into account ones that are significant in terms of employment.

4 Description of the public work programme

The funds spent on the programme had expanded dynamically since its launching until 2016, then a gradual decline took place, which was reflected in the number of public workers as well (Chart 2 and Table 2).

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | 52.8 | 133.0 | 170.6 | 224.5 | 252.7 | 267.6 | 237.5 | 172.8 | 145.8 |

Source: Ministry of Interior.

Before 2011, there were also public work programmes financed differently and operating in a different legislative environment (for details see Bördös (2015)), but their participants cannot be separated in the MÁK (Hungarian State Treasury) database.

The main objective of public work programmes is to help participants to find jobs in the primary labour market, but there are regions in the country where low-skilled people cannot find jobs close to their place of living, and thus they may remain in the programme permanently. In addition to the main objective, the public work programme plays a role in the development and daily running of the settlements as well (e.g. growing vegetables for the kitchen of the local school or road maintenance works). According to the survey of Koltai et al. (2018), public work contributed to the development of the participants' basic skills and attitude to work. Development was seen in conflict management skills and efficient time management, which may have helped the participants in the programme to find new jobs.

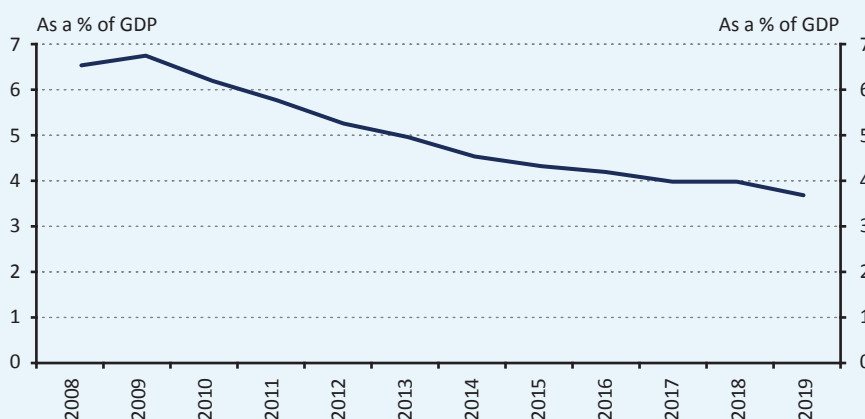
There have been changes of varying significance in the regulation of the public work programme during the years. First, the conditions of participation in the programme became stricter. A change like this as of 2013 was that those whose child's uncertified absence from school exceeds the maximum permitted time may not participate in the programme. Another change in 2013 means that those who do not accept the public work on offer are deleted from the labour records (Cseres-Gergely – Varadovics, 2014), and they also lose their right to jobseeker's allowance. Yet another significant change was that starting from 2015 those who do not accept a job offer from the primary labour market are excluded also from the programme. Market employers were also encouraged to employ former public workers in market jobs. As of 2016, public work is included in the time of long-term unemployment, and thus an employer is entitled to the same benefit when employing a former public worker as when employing a long-term unemployed, that is, they do not have to pay social security contribution for two years, and only 50 per cent in the third year (Hajdú et al., 2017). As of 2017, a jobseeker who has vocational qualification may become a public worker only if (s)he was offered jobs unsuccessfully three times in the market (i.e. not being hired was not the jobseeker's fault) or if the labour service could not offer a job to them within three months (Hajdú et al., 2017). On the whole, the purpose of the changes was to make the participants in the programme find jobs in the primary labour market as soon as possible, to incentivise this process in as many ways as possible.

A further motivation for labour market participation was that the opportunities to have recourse to various social benefits had become tighter. One of the main components of the changes was that as of 1 September 2011 the period of entitlement to unemployment benefit decreased from 180 days to 90 days. The amount of the benefit was down from 120% of the minimum wage to 100% (Cseres-Gergely – Molnár 2014).

Another major change was that as of 2012 the conditions of disability pensions also became stricter, which affected not only the new applications, but also meant a revision of the existing benefits. Between 2010 and 2020, the incapacity and

disability expenditures decreased by half as a percentage of GDP (down from 1.8% to 0.9%).² On the whole, in 10 years, social expenditures decreased from 6.1% of GDP to 3.7% (Chart 3).

Chart 3
Social expenditures as a percentage of GDP



Note: Disability, incapacity, family, unemployment, housing and social exclusion not elsewhere classified in total.

Source: HCSO.

An important feature of public work programmes is that public workers' wages are much lower than the minimum wage to motivate public workers to enter into market-based employment as soon as possible (Table 3). This is unique in international comparison, as those working in public work programmes typically receive the minimum wage.

Table 3
The ratio of public worker's wage to the minimum wage

| | Public worker's wages/minimum wage | |
|------|------------------------------------|---------|
| | Unskilled | Skilled |
| 2011 | 78% | 86% |
| 2012 | 77% | 85% |
| 2013 | 77% | 85% |
| 2014 | 76% | 84% |
| 2015 | 75% | 83% |
| 2016 | 71% | 79% |
| 2017 | 64% | 66% |
| 2018 | 59% | 59% |
| 2019 | 55% | 55% |

Source: Ministry of Interior.

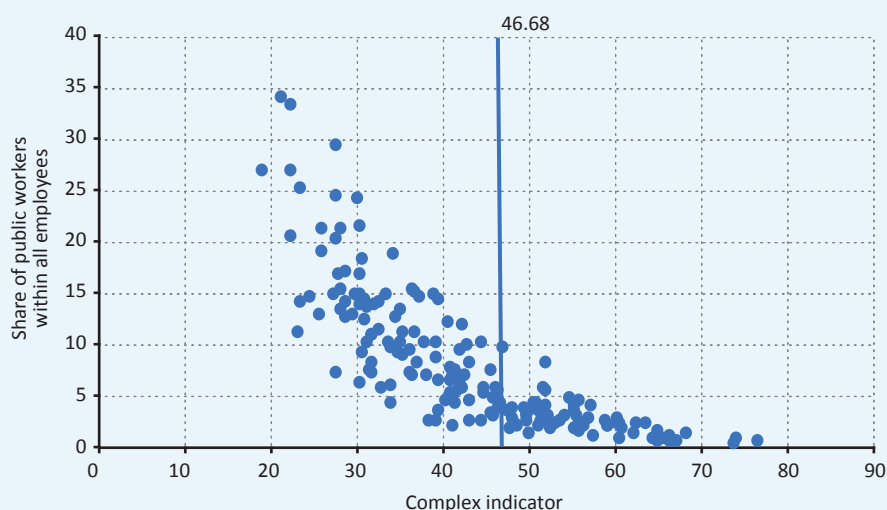
The main rule is that a public worker has to be at least 16 years old and registered as a jobseeker at the district office (for more details see: Section 1 of Act CVI of 2011). A public employment legal relationship may only be established for a definite period of time not exceeding 1 year. Another contract for a definite period may be concluded, but the public employment legal relationship may not exceed 10 years in total (Act CVI of 2011, Section 2).

² Source: 25.1.1.3. Social protection benefits by functions (KSH Stadat table, https://www.ksh.hu/stadat_files/szo/en/szo0003.html, Downloaded: 4 April 2022)

There have been three main types of public work programmes since 2011³. National public work programmes may be organised by state-owned companies (such as forestry companies, water management associations, national parks) for flood-control works, maintenance and construction of public roads and railways, attending to forestry tasks. In this programme, financing does not depend on the level of development of the given area. Roughly 20% of the subsidies paid were spent on this programme.

The second type of public work is the so-called micro-regional Start model programme, whose funds can be applied for by districts that are less developed than the national average; in the relevant legislation they are called special importance districts. The level of development of the districts is determined on the basis of more than twenty objective indicators (such as unemployment rate, average house price etc.; see Government Decree 290/2014 (XI. 26.)). The number of special importance districts is 109.⁴ Various municipal development and agricultural tasks characterise this programme which receive 40–50% of the funds. It is because of this sub-programme that the share of public workers within all employees is high in those districts where the level of economic development is low (Chart 4).

Chart 4
The share of public workers in 2014 and the complex indicator that captures the differences in the levels of development across districts



Note: 46.68 is the national average of the complex indicator; districts below that are qualified as special importance. The higher the complex indicator, the more developed the district. The share of public workers is the working day weighted annual average number of public workers divided by the annual average employment.

Source: Own calculations based on MÁK (Hungarian State Treasury).

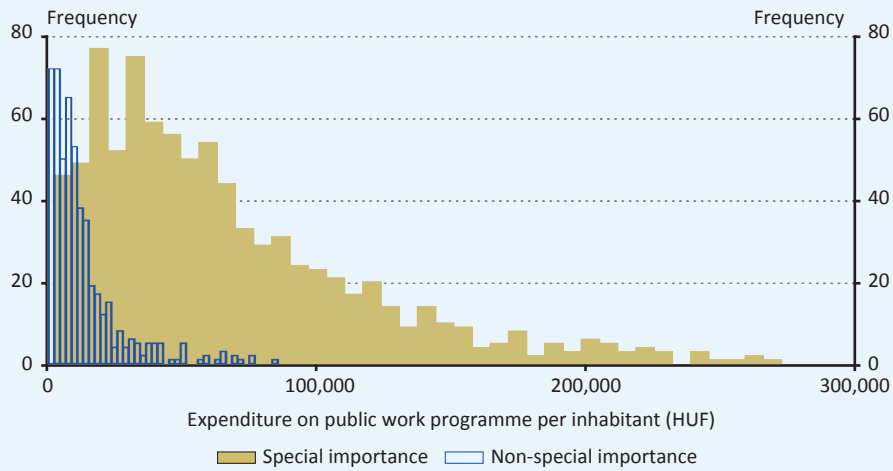
Long-term public work programmes are typically received by municipalities and districts that are not eligible to the Start work model programme. 30–40% of the funds are spent on this programme. For more details on the programme, see Bördős (2015), Mód (2013) or Kuliny (2013). It is not possible to distinguish in the MÁK database who participated in which type of programme.

A major part of all central expenditures spent on the public work programme went to the special importance districts (Chart 5). Although the total expenditure grew year on year (Table 2), there was no major change in the distribution across districts. While in non special importance districts the average expenditure per inhabitant was around HUF 12,000, the average amounted to HUF 65,000 in the special importance districts. At the same time, in the most disadvantaged districts it exceeded HUF 150,000 (Chart 5).

³ For further information on public work programme see the yearbooks of The Hungarian Labour Market (listed in the Reference).

⁴ In terms of their population, special importance districts are smaller than the non special importance ones. In total, less than 3.5 million people live in the special importance districts, and more than 6.4 million in the non- special importance ones. The government decree treats the municipal districts of Budapest as separate district, therefore the ratio of special importance and non- special importance districts is 109:89; in the study we have found it expedient to combine the districts of Budapest as the capital may be considered as a single local labour market.

Chart 5
Central budget expenditure on public work programme per inhabitant by district



Note: The chart does not include the Koml6 and Gyula districts. Based on their level of development, these districts are considered non special importance ones, but in a special government decree they were classified as special importance until 2017 (Government Decree No. 105/2015 (IV. 23.) Korm.). The chart shows the data for the years between 2011 and 2017.

Source: own calculations based on the data of Ministry of Interior.

5 Composition of public workers

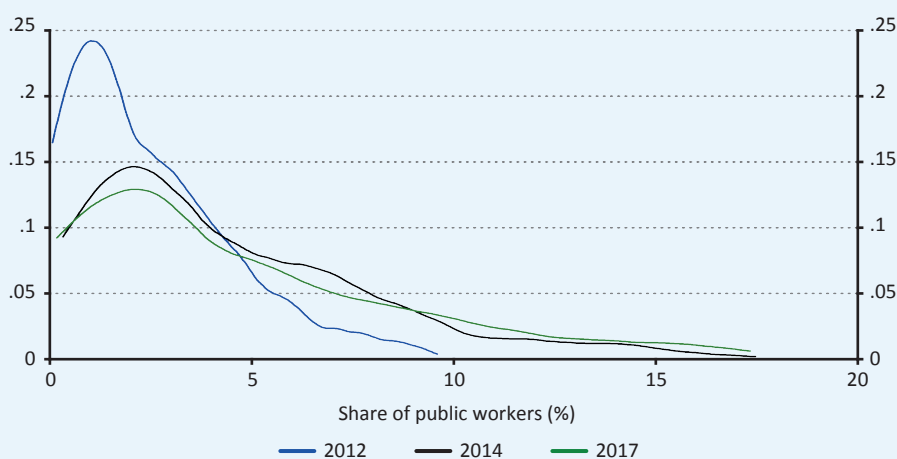
5.1 EMPLOYMENT RATES AT DISTRICT LEVEL

In 2012, the ratio of public workers to the population aged 18–64 years was typically between 2–3% in every district, and it was not above 10% anywhere. However, with the upswing in public work programmes, the average value is between 4–5%, and there are districts where the ratio of public workers exceeds 15% (Chart 6). The ratio of public workers started to decline in 2017.

It is known from the HCSO LFS (Hungarian Central Statistical Office, Labour Force Survey) statistics that the number and ratio of non-public worker employees have been growing steadily since 2010. From the distribution across districts it can be concluded that the number of non-public worker employees has increased in every district over the recent years (Chart 7). This means that the distribution of the primary labour market employment rate has shifted continuously to the right.

The total employment rate also increased in every district. Within that, the range (standard deviation) of the distribution narrowed, i.e. the districts with the lowest and highest employment rates came closer to one another (Chart 8). Accordingly, public employment considerably reduced the employment disparities across districts, as the width of distribution did not change significantly in the case of non-public worker employees. This fact is corroborated by the rise in the number of public workers in the districts where the ratio of primary labour market employees was lower (Chart 9).⁵ The correlation coefficient between the ratios of public workers and non-public worker employees was between -0.69 and -0.79 in the years examined, i.e. there is a strong negative correlation.

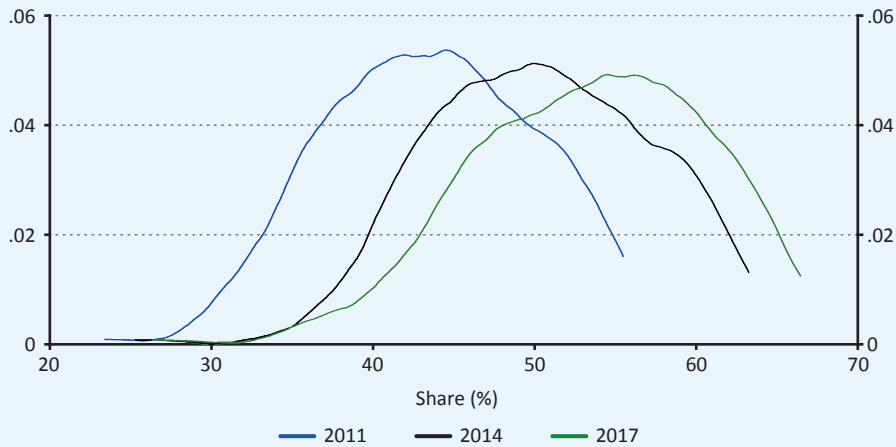
Chart 6
Ratio of public workers to the population aged 18–64 years, kernel histogram by district



Source: Own calculation based on Hungarian State Treasury.

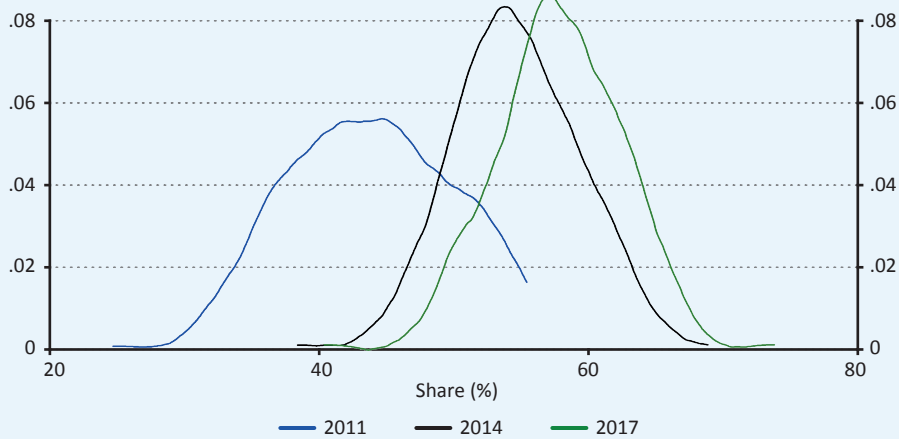
⁵ In Charts 6–9, if the total employment rates are simply averaged at national level, this will not provide the national employment rate published in the Labour Force Survey. There are two reasons for this. The first is that the average should be calculated weighted by the population, the second is that black employment is missing from the Hungarian State Treasury data, while it is included in the LFS.

Chart 7
Ratio of primary labour market employees to the population aged 18–64 years, kernel histogram by district



Source: Own calculation based on Hungarian State Treasury.

Chart 8
The total employment rate (to the population aged 18–64 years), kernel histogram by district



Source: Own calculation based on Hungarian State Treasury.

Chart 9
Ratio of public workers and primary labour market employees by district in 2012 and 2015



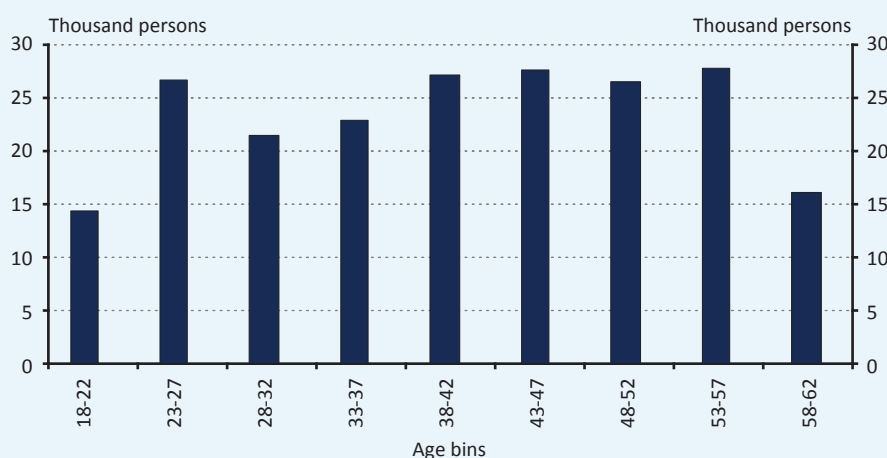
Source: Own calculation based on Hungarian State Treasury.

5.2 AGE DISTRIBUTION OF PUBLIC WORKERS

The share of public workers of the population aged 23–57 years is roughly equal in each cohort. In 2014, around 5000 people belonged to each year of birth. Compared to other age groups, the number of people in the 28–37 age group is somewhat lower; probably they have the best chances to find jobs in the primary labour market (Chart 10). Many in the 18–22 age group are studying, while retirement may be the cause behind the lower number among those older than 57.

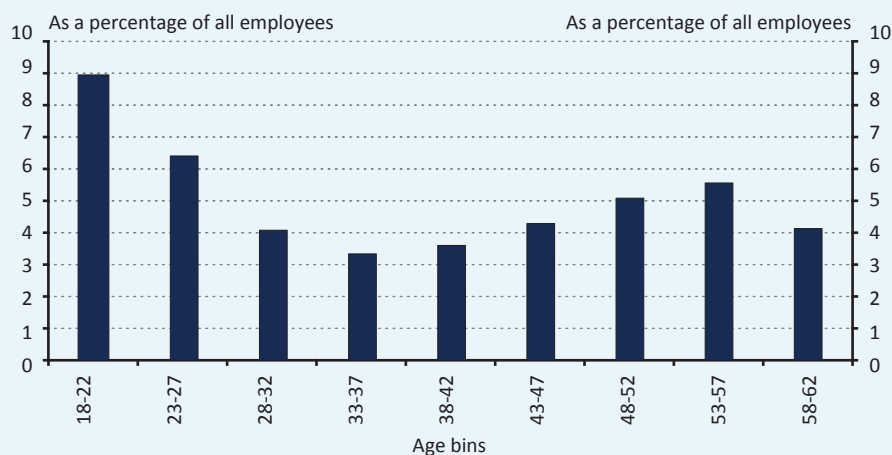
An analysis by years of age results in a different picture as a proportion of those in employment. The ratios of young people (19–23 years) and those around 55 are the highest. This may be attributable to the fact that those who have good chances of employment still pursue studies, and thus in absolute terms fewer people in the younger age groups are in employment (Chart 11).

Chart 10
Number of public workers by years of age in 2014



Source: Own calculation based on Hungarian State Treasury.

Chart 11
Ratio of public workers to all employees by years of age in 2014



Source: Own calculation based on Hungarian State Treasury.

5.3 TIME SPENT IN THE PUBLIC WORK PROGRAMME

The vast majority of public workers work full-time. This changes annually, but every year at least 85 per cent of the workers have 40-hour contracts. If the time spent in the public work programme is added up for each public worker, we will find that the majority of participants spent more than one year in the programme between 2011 and 2019 (Chart 12), while the average time was more than one and a half years. In total, 676 thousand people were involved in the programme

(including those who worked as public workers only for one day and also those who were public workers for several years in total).

There are significant differences across the regions of the country in terms of the time spent in public work. Based on the time spent in public work, we selected two districts where, on the basis of the median, people spend the shortest (Budakeszi district) and longest periods of time (Sellye district) in public work. In the Budakeszi district, half of the participants spent less than half a year in the programme. By contrast, in the Sellye district half of the public workers were in the programme for more than 2.5 years (Chart 13). These figures are added up for individuals, i.e. may consist of several distinct periods spent in public work. There are unmistakable differences in the two distributions as well. The distribution of the Budakeszi district is left-skewed, and the ratio of those who spent more than 4 years in public work is very low. By contrast, distribution in the Sellye district is nearly even (slightly left-skewed), the number of public workers is nearly the same in every category. We find that the ratio of even those who spend more than 4 years in public work is considerable.

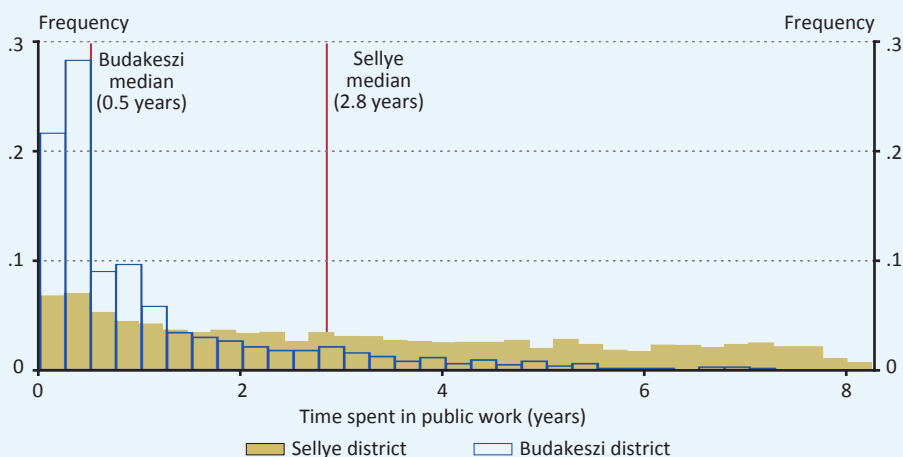
These two examples illustrate that the chance of leaving the public work programme depends heavily on the general economic condition of the given district. The Budakeszi district is among the most developed in the country, thus public work here is temporary employment for those who lost their job and could not find another in the short run. By strong contrast, the Sellye is one of the most disadvantaged districts of the country. There are people here for whom the public work programme is the only possibility of employment for a long time.

Chart 12
Distribution of the time spent in the public work programme by individuals (2011–2019)



Source: Own calculation based on Hungarian State Treasury.

Chart 13
Distribution of the time spent in the public work programme by individuals in the Budakeszi and Sellye districts (2011–2019)

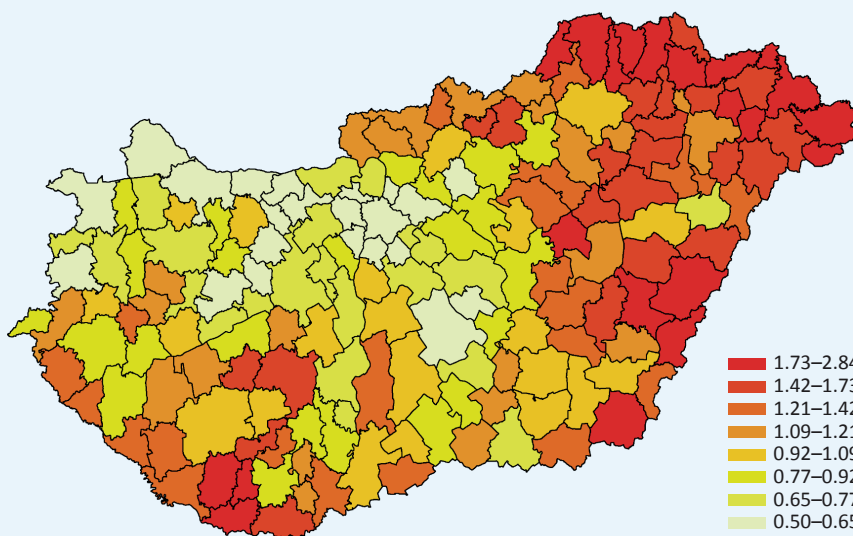


Source: Own calculation based on Hungarian State Treasury.

The median of the time spent in public work is the greatest at the northeastern and eastern borderlands as well as in Southern Transdanubia. In these places it was not unusual to find half of the participants in the public work programme staying for more than 2 years in the scheme between 2011 and 2019 (Chart 14). At the same time, in North-West Transdanubia and around Budapest half of those participating remained public workers for less than half a year.

The ratio of public workers is typically high in those districts where the ratio of non-public worker employees is low. Accordingly, the ratio of participants in the public employment programme is high in the northeastern, eastern districts and southern Baranya. There was no major change in this spatial structure between 2011 and 2019. The ratio of public workers and the time spent in public work indicate a strong, positive correlation (cf. Charts 14 and 15). In terms of absolute figures, the number of public workers is the highest in Budapest as well as the eastern, northeastern and south Transdanubian districts (Chart 16).

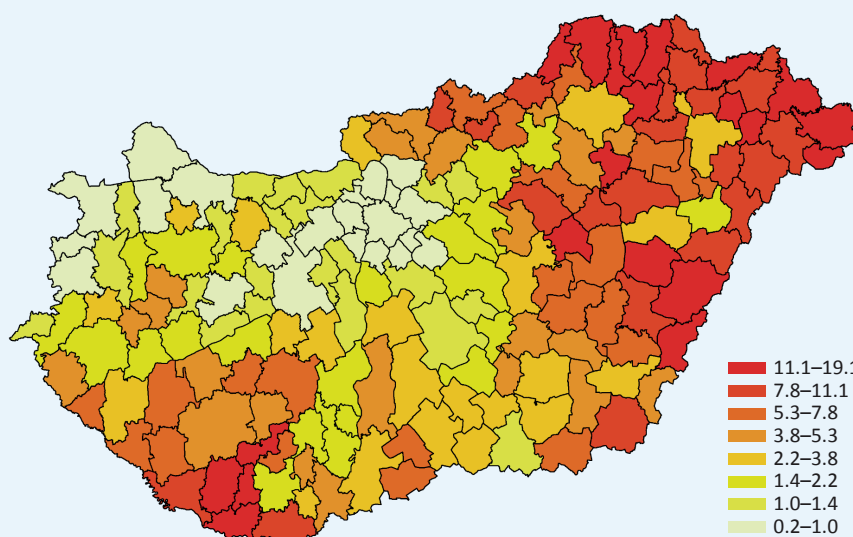
Chart 14
Median of the time spent in the public work programme by district (2011–2019, public work year)



Note: For each district we calculated how much time in total was spent by individuals in public work between 2011 and 2019, then we took its median by district.

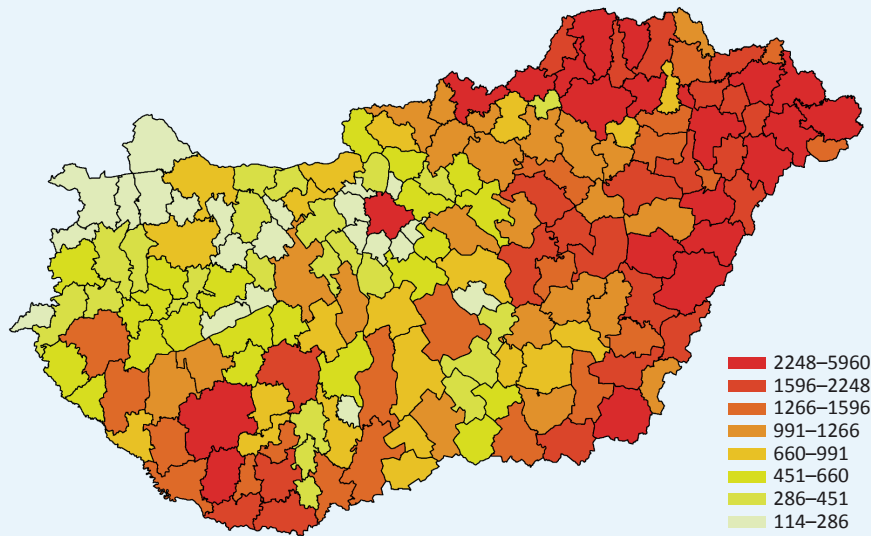
Source: Own calculation based on Hungarian State Treasury.

Chart 15
Ratio of public workers in 2017 (within the 18–64 age group)



Source: Own calculation based on Hungarian State Treasury.

Chart 16
Number of public workers in 2016 (full-time equivalent headcount)

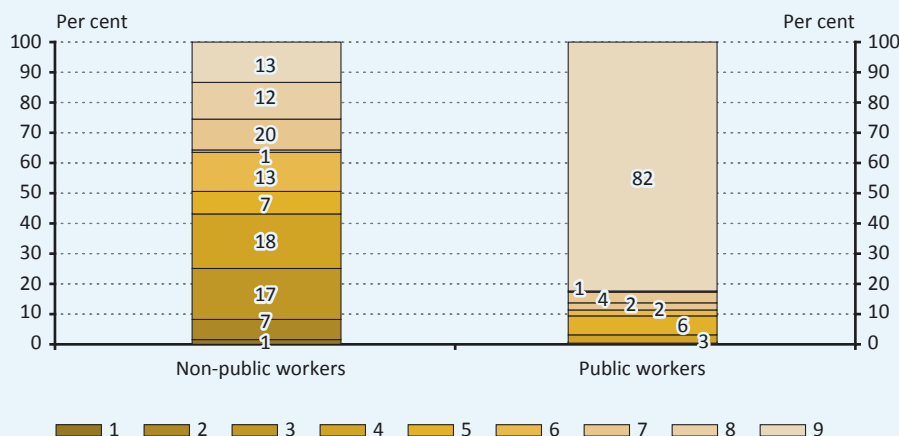


Source: Own calculation based on Hungarian State Treasury.

5.4 DISTRIBUTION OF PUBLIC WORKERS ACCORDING TO OCCUPATIONAL GROUPS

In the Hungarian State Treasury database, not only the district-level place of residence of public workers is known in detail, but also their respective occupational groups. This way, we can review the types of jobs carried out by public workers. Compared to the whole economy, the share of simple occupations (FEOR 9 – Hungarian Standard Classification of Occupations) is significant, accounting for around 80 per cent of public workers. They include, for example, simple agricultural workers, cleaners and related simple occupations as well (Chart 17). Office and management occupations (FEOR 4) account for around 6 per cent; the most frequent job in this category is general office administrator. The structure of public workers’ occupational classification did not change significantly during the years under review.

Chart 17
Distribution of public workers and non-public workers according to their occupational groups (FEOR) in 2014



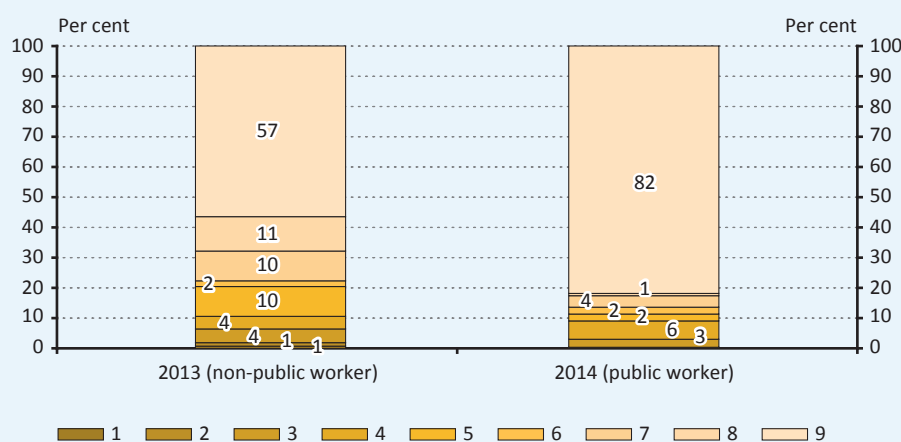
Note: Meanings of the FEOR codes: 1 chief executives, senior officials and legislators, 2 professionals, 3 technicians and associate professionals, 4 office and management (customer services) occupations, 5 commercial and services occupations, 6 agricultural and forestry occupations, 7 industry and construction industry, 8 machine operators, assembly workers, drivers of vehicles, 9 (elementary) occupations not requiring qualifications. Distribution is for the whole year, and is weighted by days spent in (public) work.

Source: Own calculation based on Hungarian State Treasury.

It is also worth examining the FEOR classification in terms of what jobs the public workers worked in prior to and following the programme. On the whole, those who previously worked, work in a lower occupation category as public workers. In addition, those who had been public workers and later found a job in the primary labour market succeeded in attaining to a higher occupational category. The ratio of agricultural workers is also higher in the public work programme (Chart 18) than before or after. For a complete evaluation it would be useful to know the employees' educational qualifications, but that is not available in this database.

Examining the occupational groups in the private sector (Table 4) in detail it may be established that those who were employed in public work in a lower FEOR category (with the exception of office and management occupations (FEOR 4)) are in the majority in almost each category. We come to a similar conclusion by examining the reemployment patterns of public workers. We will find that among the reemployed those who work in at least the same or higher FEOR category than as public workers are generally in the majority in each occupational category. (Table 5).

Chart 18
Distribution of public workers in 2014 according to FEOR who worked in the primary labour market in 2013



Note: Meanings of the FEOR codes: 1 chief executives, senior officials and legislators, 2 professionals, 3 technicians and associate professionals, 4 office and management (customer services) occupations, 5 commercial and services occupations, 6 agricultural and forestry occupations, 7 industry and construction industry, 8 machine operators, assembly workers, drivers of vehicles, 9 (elementary) occupations not requiring qualifications. Distribution is for the whole year, and is weighted by days spent in (public) work.

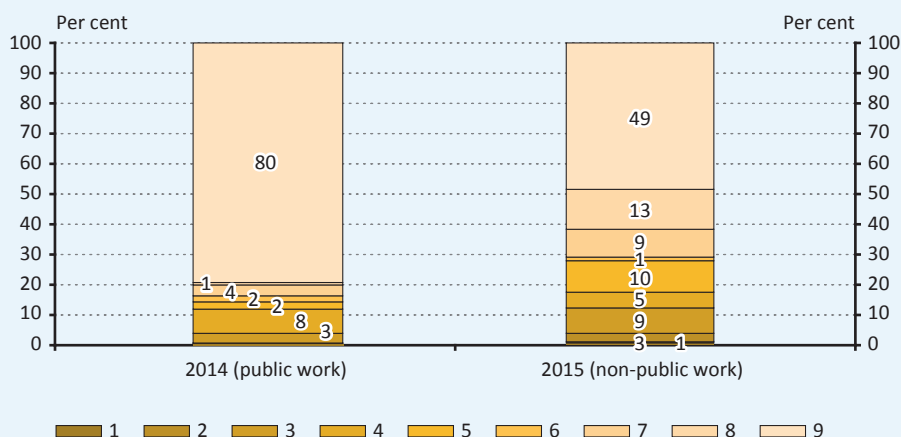
Source: Own calculation based on Hungarian State Treasury.

Table 4
Category changes of public workers in 2014 who worked in the primary labour market in 2013 (%)

| | FEOR category in public employment in 2014 | | | | | | | | |
|--|--|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| FEOR category in 2013 prior to public employment | 14 | 3 | 14 | 10 | 8 | 2 | 6 | 3 | 38 |
| 2 | 1 | 38 | 15 | 20 | 5 | 1 | 2 | 2 | 17 |
| 3 | 1 | 4 | 28 | 24 | 6 | 1 | 3 | 2 | 32 |
| 4 | 1 | 3 | 16 | 41 | 6 | 1 | 2 | 3 | 28 |
| 5 | 0 | 1 | 7 | 12 | 27 | 1 | 4 | 3 | 46 |
| 6 | 0 | 0 | 2 | 2 | 2 | 28 | 5 | 4 | 58 |
| 7 | 0 | 0 | 3 | 2 | 3 | 1 | 31 | 5 | 54 |
| 8 | 0 | 0 | 3 | 4 | 3 | 2 | 6 | 22 | 60 |
| 9 | 0 | 0 | 2 | 2 | 3 | 2 | 4 | 3 | 83 |

Note: The table shows from which FEOR category those working in the primary labour market in 2013 got into public work. The sum totals of the lines add up to 100%. This table is a more detailed version of Chart 18, also showing the transitions between the individual FEOR codes.

Source: Own calculation based on Hungarian State Treasury.

Chart 19**Distribution of public workers in 2014 according to FEOR who worked in the primary labour market in 2015**

Note: Meanings of the FEOR codes: 1 chief executives, senior officials and legislators, 2 professionals, 3 technicians and associate professionals, 4 office and management (customer services) occupations, 5 commercial and services occupations, 6 agricultural and forestry occupations, 7 industry and construction industry, 8 machine operators, assembly workers, drivers of vehicles, 9 (elementary) occupations not requiring qualifications. Distribution is for the whole year, and is weighted by days spent in (public) work.

Source: Own calculation based on Hungarian State Treasury.

Table 5**Category changes of public workers in 2014 who worked in the primary labour market in 2015 (%)**

| | FEOR category in the primary labour market in 2015 | | | | | | | | | |
|--|--|----|----|----|----|----|----|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| FEOR category in public employment in 2014 | 1 | 51 | 5 | 9 | 5 | 7 | 1 | 3 | 4 | 14 |
| | 2 | 1 | 80 | 8 | 4 | 3 | 0 | 1 | 1 | 3 |
| | 3 | 1 | 5 | 65 | 7 | 6 | 0 | 3 | 3 | 9 |
| | 4 | 1 | 8 | 21 | 45 | 10 | 0 | 2 | 4 | 10 |
| | 5 | 1 | 1 | 6 | 4 | 61 | 0 | 3 | 5 | 18 |
| | 6 | 1 | 1 | 4 | 2 | 6 | 33 | 7 | 8 | 39 |
| | 7 | 0 | 0 | 2 | 1 | 4 | 1 | 56 | 10 | 25 |
| | 8 | 0 | 0 | 2 | 1 | 3 | 1 | 5 | 66 | 22 |
| | 9 | 0 | 1 | 3 | 2 | 6 | 1 | 7 | 11 | 68 |

Note: The table shows the FEOR category from which those who were public workers in 2014 got into the primary labour market in 2015. The sum totals of the lines add up to 100%. This table is a more detailed version of Chart 19, also showing the transitions between the individual FEOR codes.

Source: Own calculation based on Hungarian State Treasury.

6 Public workers' work history and job finding rate

There are various ways to measure public workers' job finding rate on the basis of the database. One of the options is to observe individuals' labour market status on the same day (e.g. 30 April) every year and to use it to create individual work histories. The advantage of this method is that it excludes seasonality and has a lower calculation requirement, as there is only one observation a year for each individual. International literature typically uses this method for labour market analyses on large, complete administrative databases.

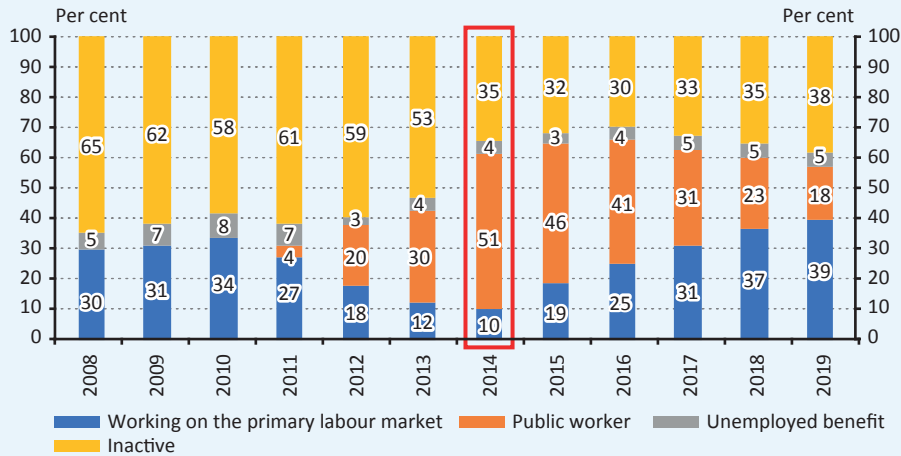
Another option is when all working days are taken into account for each individual. In the case of public workers this seems to be expedient, because their work histories are typically fragmented, i.e. they often change labour market status or jobs. At the same time, in this case information compression is needed, as it is difficult to compare many individuals who have different work histories. One option is to include those in one group who started to work in the public work programme on the same day (or in the same month). This method is used by Cseres-Gergely – Molnár (2015).

However, in view of the size of the available database, another method can also be used. In that system, those who were public workers in the same year, irrespective of how long they worked in the programme, are placed in one group. We can thereby add up how much time the given individual spent in the public work programme, how long (s)he was employed in the primary labour market and how long (s)he was inactive or received unemployment benefit. Reemployment can thus be demonstrated by selecting the public workers in the given year and examining what they did 1–2 years before and after the public work. However, in the given year even public workers were doing not only public work. There may be various reasons for that. First, public work programmes typically do not last for 12 months. Second, they may have found a job during the year, thus also reducing the time spent in public work.

Upon the analysis of work history it is better to examine not the total population, but only those between 24–57 years of age. This restriction is needed because in the case of people who are older than 60 we may find that inactivity increases after public work due to retirement as well. In the case of very young people, however, the ratio of the inactive may be higher in the previous years, because they then had not entered the labour market. With age restriction, it is possible to eliminate the distortions stemming from the age pyramid across districts.

Public workers' labour market histories prior to and following public work can be prepared for each year. The pattern over the years is similar, therefore only one selected year, 2014, is presented in detail. See the Appendix for similar charts for the other years. Chart 20 shows that those who were public workers in 2014 worked as public workers only half a year. In addition, they also had 10% employment in the primary labour market, and were inactive in about one third of their time. Those who were public workers in 2014 had been mostly inactive in the previous years (around two thirds), and before the public work programmes they worked in 30% of their time. This coincides with earlier findings (Köllő, 2015), which suggest that public workers' work history is more fragmented than that of non-public workers, i.e. they change jobs more often and spend less time in the same job. In addition, between the periods spent in employment they are inactive or receive some kind of unemployment benefit, if they are entitled to it. Looking ahead, we find that the time spent by public workers in the primary labour market is increasing year on year. By 2019 it was already close to 40%. In addition, the time spent in inactivity also declined considerably compared to the period prior to the public work. The time spent in public work also decreased year on year.

Chart 20
Work history of 24–57-year-old public workers in 2014

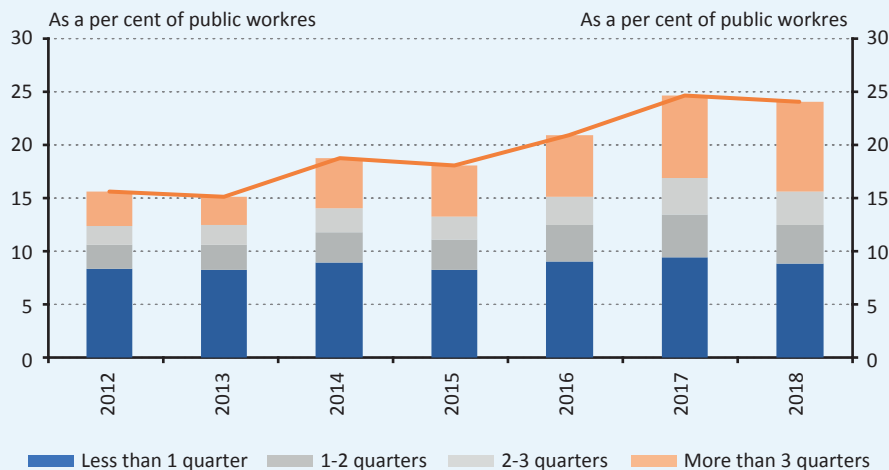


Note: The chart shows the labour market status of the 167,069 people who were aged between 24 and 57 years and worked at least 1 day as a public worker in 2014. As not everybody worked 365 days in 2014 as a public worker, it is possible that in 2014 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

The job finding rate of the public workers of various years under review also increase with the passage of time. While those who were public workers in 2012 worked 15% of their time as non-public workers in the next year, by 2018 this ratio came close to 25% (Chart 21). In addition to the job finding rate, the time spent in work by those who found jobs as non-public workers is also an important factor. In parallel with the increase in the chance of employment, those who find jobs work for longer as non-public workers. More than half of those who were public workers in 2012 worked less than one quarter as non-public workers, and less than 30 per cent of them worked more than half a year. As time went by, the time spent working by those who found jobs increased (Chart 21). By 2018, less than 40 per cent worked less than a quarter, and nearly half of them had a job for at least half a year.

Chart 21
Public workers' one-year chance of employment and the length of time spent on the primary labour market

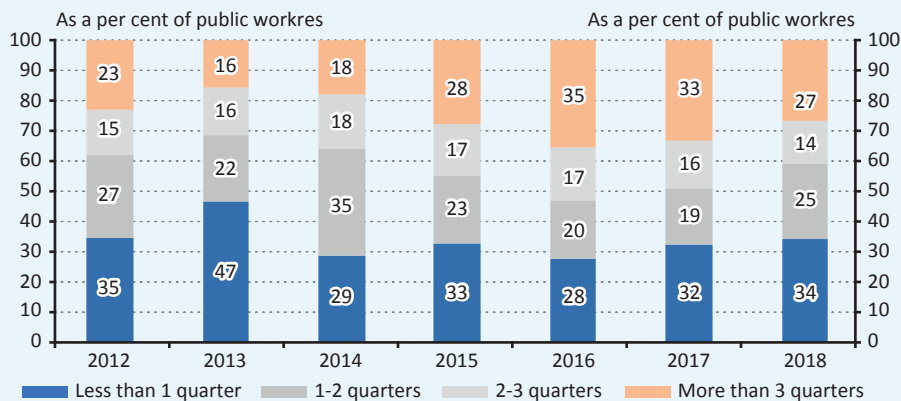


Note: chances of employment as a percentage of public workers in the given year weighted by working days. The column diagrams show how much time the public workers who found employment worked as non-public workers in the next year.

Source: Own calculation based on Hungarian State Treasury.

It is also worth examining the public workers who found jobs according to the time spent in the public work programme in the year before finding employment. Examining employment from this aspect, there is no clear time pattern analogous to the time spent working after finding a job, where those who found a job spent longer periods in their new jobs with the passage of time. In the period under review, nearly 60% of the public workers who found jobs spent less than half a year in the programme in the year preceding their finding a job (Chart 22).

Chart 22
Time spent in the public work programme before finding a job by public workers who found jobs in the following year



Note: The chart shows how much time was spent in the public work programme in the given year by those public workers who found jobs one year later.

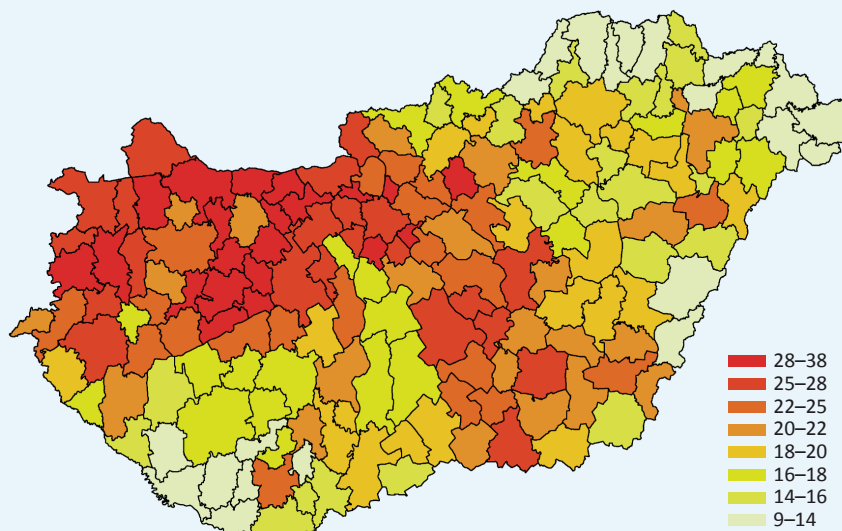
Source: Own calculation based on Hungarian State Treasury.

6.1 TERRITORIAL DIFFERENCES IN THE JOB FINDING RATES

There are significant differences in job finding rates across the various areas of the country. The ratio of finding employment by public workers is the highest in North-West Transdanubia, where they spend 28–38 per cent of their time in a job already in the primary labour market in the year after the public work (Chart 23). The lowest chance of finding employment is in Southern Transdanubia as well as at the northern and northeastern borderlands of the country. In these places the probability of employment is 9–14 per cent. The spatial distribution of public workers’ chances of finding employment does not change in the various years, only its degree alters. It typically increases everywhere with the passage of time.

Geographical differences similar to those concerning job finding rate can also be found in the locking-in effect of public work (Chart 24). Those who were public workers in 2014 had the lowest chance of being public workers in the next year in North-west Transdanubia (25–36 per cent). The chance of locking-in public work is the highest in the districts along the northern, northeastern border districts and in Southern Transdanubia.

Chart 23
Time spent on the primary labour market in 2015 by those who were public workers in 2014 (per cent)

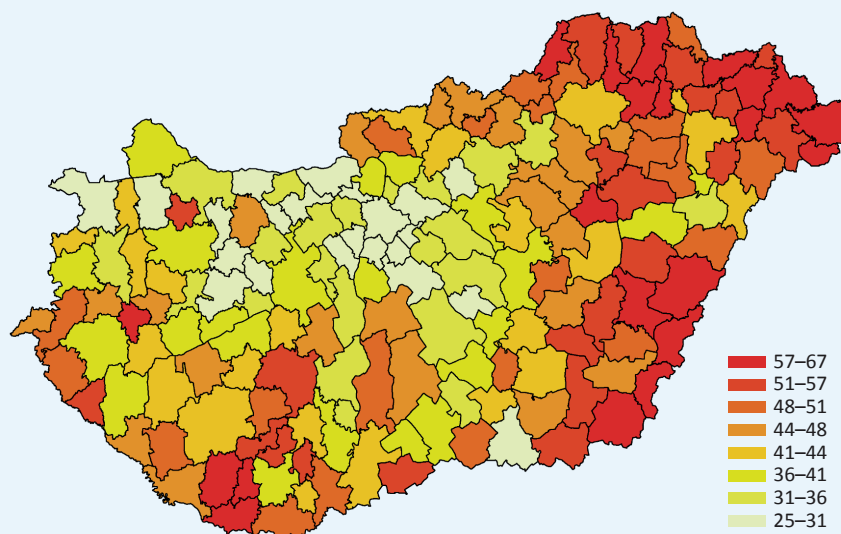


Note: The map shows how much of their time was spent working as non-public workers in 2015 by those aged 24–57 who worked at least one day as public workers in 2014.

Source: Own calculation based on Hungarian State Treasury.

Chart 24

Time spent as public workers in 2015 by those who were also public workers in 2014 (per cent)



Note: The map shows how much of their time was spent working as public workers in 2015 by those aged 24–57 who worked at least one day as public workers in 2014.

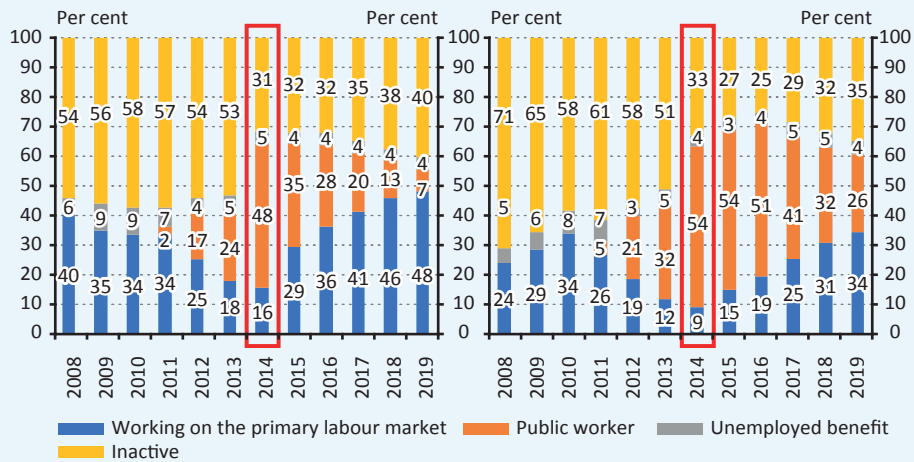
Source: Own calculation based on Hungarian State Treasury.

Regional differences are found in work histories as well; two counties were selected to illustrate this. The number of public workers is low in Győr-Moson-Sopron County, and the economic upswing following the financial crisis was also faster than the national average. The level of development of Szabolcs-Szatmár-Bereg County is below the national average, while the ratio of public workers is among the highest here.

1–2 years after the public work, a much greater ratio of the participants in the programme work as non-public workers in Győr-Moson-Sopron than in Szabolcs-Szatmár-Bereg (Chart 25). Prior to the public work, in the western county under review (Győr-Moson-Sopron) slightly more than half of the public workers were inactive, whereas this ratio may even exceed 60% in our easternmost county (Szabolcs-Szatmár-Bereg). Here a much greater ratio of public workers participate in the programme in subsequent years than in the other county under review.

Between 2011 and 2019, Győr-Moson-Sopron County was the most developed county of Hungary (not counting Budapest) in terms of per capita GDP. Public work here is mostly considered temporary employment between two jobs. By contrast, it is more likely in Szabolcs-Szatmár-Bereg County that public work becomes a means of permanent employment. There are many more vacant jobs in Győr-Moson-Sopron County than in Szabolcs-Szatmár-Bereg. Labour market tightness, which shows the ratio of vacant jobs to the number of unemployed, was similar in the two counties in 2009, but a more than tenfold difference developed during the 2010s (Chart 26).

Chart 25
Work history of 24–57-year-old public workers in 2014 in Győr-Moson-Sopron County (left panel) and Szabolcs-Szatmár-Bereg County (right panel)

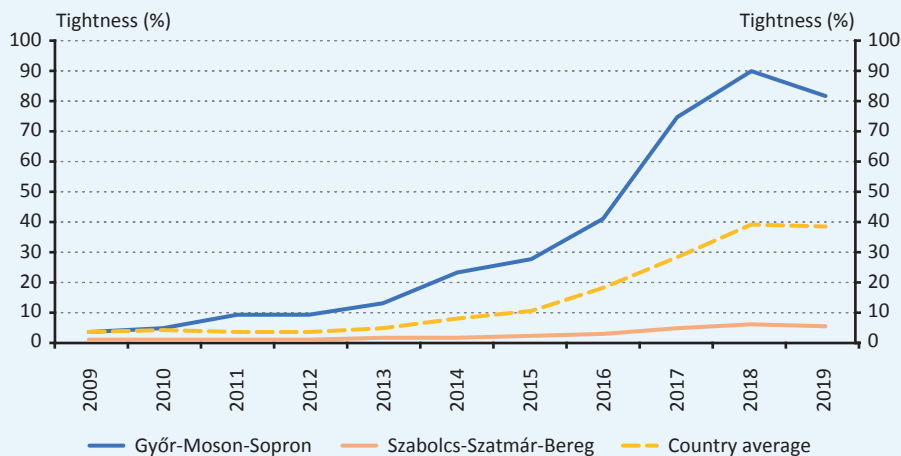


Note: The chart shows the labour market status of people aged between 24 and 57 who worked at least 1 day as public workers in 2014 and were permanent residents in Győr-Moson-Sopron or in Szabolcs-Szatmár-Bereg County, respectively. As not everybody worked 365 days in 2014 as a public worker, it is possible that in 2014 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

The tightness shows the ratio of labour market demand to supply. Where tightness is high, jobseekers are in a bargaining position, while in the case of low tightness companies are (for more details on this subject see Szabó (2019)). As tightness is much greater in Győr-Moson-Sopron, it is easier for public workers (and others) to find employment in the primary labour market.

Chart 26
Labour market tightness in Győr-Moson-Sopron and Szabolcs-Szatmár-Bereg Counties



Note: Labour market tightness is the ratio of vacancies as a percentage of the unemployed.

Source: vacant job: HCSO institutional statistics, unemployed: HCSO LFS.

6.2 PUBLIC WORKERS' CAREER PATHS

With the summarised work histories presented above it is possible to calculate the most frequent public worker careers on the basis of the MÁK (Hungarian State Treasury) database. For this, we will distinguish the four aforementioned statuses:

- works in the primary labour market as a non-public worker (W),
- works as a public worker (PW),
- receives unemployment benefit (UE),
- inactive (In).

As we use a complete database, it is worth to compress the information. The following method is used. We disregard the lengths of the various episodes and take into account only the order. In this case, for example, In-In-In-PW-W-W can be considered the same series as In-PW-PW-PW-PW-W (where one letter code shows one month of time).

Table 6
The 15 most frequent public worker careers between 2012 and 2019

| Order | Frequency | Frequency (%) | | | | | | | | |
|-------|-----------|---------------|----|----|----|----|----|----|----|--|
| 1 | 7170 | 2.6 | In | PW | In | | | | | |
| 2 | 2921 | 1.1 | In | PW | In | W | | | | |
| 3 | 2839 | 1.0 | In | PW | | | | | | |
| 4 | 2837 | 1.0 | In | PW | In | PW | In | | | |
| 5 | 1766 | 0.6 | In | PW | W | | | | | |
| 6 | 1667 | 0.6 | In | PW | In | W | In | | | |
| 7 | 1384 | 0.5 | In | PW | In | W | In | W | | |
| 8 | 1337 | 0.5 | In | PW | In | PW | | | | |
| 9 | 1322 | 0.5 | In | PW | In | PW | In | PW | In | |
| 10 | 955 | 0.3 | In | PW | In | PW | In | W | | |
| 11 | 930 | 0.3 | In | PW | In | W | In | W | In | |
| 12 | 871 | 0.3 | In | PW | In | PW | W | | | |
| 13 | 806 | 0.3 | In | PW | In | PW | In | PW | | |
| 14 | 746 | 0.3 | In | PW | In | W | In | W | In | |
| 15 | 675 | 0.2 | In | W | In | PW | In | W | | |

Note: In the table, the length of individual periods is immaterial, only their order matters. The table was prepared on the basis of the careers of those who were public workers for at least one day between 2012 and 2019, and were between 20 and 50 years of age in 2012 (275,996 persons). Legend: In – inactive, PW – public worker, W – works in the primary labour market, UE – receives unemployment benefit.

Source: Own calculation based on Hungarian State Treasury.

Even of the career series condensed this way there may be many types (Table 6). The occurrence of even the most frequent pattern is only 2.6 per cent, and only the first two most frequent patterns occur more often than 1 per cent. The 15 most frequent careers start with inactive status, followed by public work in most cases. It is found that fragmented work history is typical of public workers not only when they switch between public work and the inactive status (e.g. careers 9 and 13), but also when they already work in the primary labour market (careers 7 and 11). There are careers based on which public workers succeed in rejoining the primary labour market (e.g. careers 2 and 5), yet there are also those that indicate getting locked in public work (such as careers 9 and 13).

It is worth comparing the recurrent career patterns of those who successfully found employment in the primary labour market with patterns where they remained inactive. For this, we selected two groups of public workers in 2014. Those who worked at least half a year in the primary labour market by 2018 were classified as successful; they accounted for 36% of public workers in 2014. The other group included those who were inactive for at least three quarters in 2018.⁶ This group accounted for 27% of public workers in 2014.

The most frequent career of the successful public workers in 2014 is also typically fragmented (Table 7). Even among the most frequent cases we find that they switch between the public worker and inactive statuses many times before finding employment in the primary labour market (careers 6, 7, 11, 12 and 15). In addition, fragmentation also appears when they already work in the primary labour market but still change jobs often (careers 8 and 13). It is typical of the most frequent careers that for each of them the last phase is in the primary labour market, making it likely that they will be able to work later as well.

⁶ Upon selecting the two categories we strived to choose individuals with significantly different characteristics. Nevertheless, this classification is arbitrary, serving illustration purposes only.

Table 7
The 15 most frequent careers among public workers in 2014 who worked at least half a year in the primary labour market in 2018

| Order | Frequency | Frequency (%) | |
|-------|-----------|---------------|---------------------------------------|
| 1 | 584 | 1.1 | In PW In W |
| 2 | 327 | 0.6 | In PW In W In W |
| 3 | 312 | 0.6 | In PW In PW In W |
| 4 | 285 | 0.5 | In PW W |
| 5 | 283 | 0.5 | In PW In PW W |
| 6 | 247 | 0.4 | In PW In PW In PW W |
| 7 | 195 | 0.4 | In PW In PW In PW In W |
| 8 | 185 | 0.3 | In PW In W In W In W |
| 9 | 151 | 0.3 | In PW In PW In W In W |
| 10 | 135 | 0.2 | In W In PW In W |
| 11 | 131 | 0.2 | In PW In PW In PW In PW W |
| 12 | 113 | 0.2 | In PW In PW In PW In PW In W |
| 13 | 104 | 0.2 | In PW In W In W In W In W |
| 14 | 93 | 0.2 | In PW W In W |
| 15 | 89 | 0.2 | In PW In PW In PW In PW In PW In PW W |

Note: In the table, the length of individual periods is immaterial, only their order matters. The table was prepared on the basis of the careers between 2012 and 2019 of those aged between 20 and 50 years in 2012, who were public workers for at least one day in 2014, and worked at least half a year in the primary labour market in 2018 (54,909 people). Legend: In – inactive, PW – public worker, W – works in the primary labour market, UE – receives unemployment benefit.

Source: Own calculation based on Hungarian State Treasury.

In the case of the other group, the shifts observed are typically between the inactive and public worker statuses (Table 8), which indicates locking-in effect. There are careers, however, where working in the primary labour market appears too. On the whole, fragmented work histories are seen here as well, with frequent changes.

Table 8
The 15 most frequent careers among public workers in 2014 who were inactive for at least three quarters in 2018

| Order | Frequency | Frequency (%) | |
|-------|-----------|---------------|----------------------------------|
| 1 | 1455 | 3.6 | In PW In |
| 2 | 1050 | 2.6 | In PW In PW In |
| 3 | 700 | 1.7 | In PW In PW In PW In |
| 4 | 384 | 1.0 | In PW In PW In PW In PW In |
| 5 | 354 | 0.9 | In PW In W In |
| 6 | 197 | 0.5 | In PW In PW In PW In PW In PW In |
| 7 | 190 | 0.5 | In PW In PW In PW In UE In |
| 8 | 181 | 0.4 | In PW In PW In W In |
| 9 | 165 | 0.4 | In PW In W In W In |
| 10 | 145 | 0.4 | In W In PW In |
| 11 | 138 | 0.3 | In PW In PW In UE In |
| 12 | 121 | 0.3 | In PW In W In W In W In |
| 13 | 118 | 0.3 | In PW In PW In PW In PW In UE In |
| 14 | 102 | 0.3 | In PW In PW In PW UE In |
| 15 | 99 | 0.2 | In PW In PW In PW In PW In W In |

Note: In the table, the length of individual periods is immaterial, only their order matters. The table was prepared on the basis of the careers between 2012 and 2019 of those aged between 20 and 50 years in 2012, who were public workers for at least one day in 2014, and were inactive for at least three quarters in 2018 (40,263 people). Legend: In – inactive, PW – public worker, W – works in the primary labour market, UE – receives unemployment benefit.

Source: Own calculation based on Hungarian State Treasury.

In geographical terms, successful careers were most frequent in the more developed counties. In Budapest, 51% of public workers in 2014 worked at least half a year in the primary labour market in 2018, whereas the corresponding ratio for Veszprém and Győr-Moson-Sopron is 46%. At the bottom of the ranking, falling short of the national average, 33% in Hajdú-Bihar and 29% in Szabolcs-Szatmár-Bereg and Borsod-Abaúj-Zemplén Counties found permanent employment in 2018.

In relation to the above calculations the number of times public workers and non-public workers changed jobs in a given year may be examined. For illustration, we selected 2014, because this was the year when the public work programme reached the most people (see Chart 2). According to previous research, those who became involved in the public work programme had changed jobs much more often before the programme than those who were not public workers. Moreover, public workers also spent less time in a job prior to the public work (Köllő, 2015). In general, more fragmented work histories characterise this group both in terms of the frequency of changing jobs and the time spent in the same job.

According to the MÁK (Hungarian State Treasury) database, 35 per cent of those working in the primary labour market and 26 per cent of public workers changed jobs in 2014.⁷ The difference between the two figures is explained by the fact that three quarters of the public workers did not change jobs since they only had a public worker job in 2014. The ratio of job changers among public workers is the highest in Budapest and Komárom-Esztergom County (38%) as well as in Veszprém and Győr-Moson-Sopron Counties (32%), while it is the lowest in Borsod-Abaúj-Zemplén County (23%). This geographical distribution correlates with the job finding rate, although it is not exactly the same, because job changes between two public work employers are not excluded.

According to the number of job changes there is a major difference between those who were public workers and those who were not. The vast majority (nearly 80 per cent) of job changers who work only in the primary labour market changed jobs only once during 2014. At the same time, nearly three quarters of those who also worked as public workers changed jobs at least twice during the year (Table 9).

| Table 9 | | |
|---|--|-----------------------------|
| Number of job changes as a ratio of job changers during 2014 | | |
| How many times did they change jobs? | As a percentage of job changers | |
| | Among non-public workers | Among public workers |
| Once | 79 | 27 |
| Between 2 and 10 | 15 | 59 |
| More than 10 times | 6 | 14 |

Note: public worker: worked at least one day as a public worker in 2014. Non-public worker: worked only in the primary labour market in 2014. Job changes do not include secondary jobs, i.e. on a given day for each individual only their job that paid the highest wage was taken into account. The number of job changes means the number of times the employer changed in 2014.

Source: Own calculation based on Hungarian State Treasury.

In general, those who participated in the public work programme in 2014 worked for a much shorter time in one job (either in the primary labour market or in public work) than those who did not participate in it. Half of the non-public worker employees worked more than 300 days in one job in 2014, while half of the public workers spent less than 83 days at one employer. This short period of time may indicate working in various seasonal jobs (e.g. construction, restaurant and catering, agriculture). The average time spent in one job is nearly twice as long among those working in the primary labour market than in the case of those who worked as public workers (Table 10).

⁷ The figures only include those who had at least two employers in 2014. Accordingly, a person whose employment was terminated in 2014 but did not find a new job is not considered a job changer.

Table 10**Time spent in one job during 2014 (day)**

| | 25th percentile | Median | 75th percentile | Average | Standard deviation |
|--------------------------|-----------------|--------|-----------------|---------|--------------------|
| Non-public worker | 67 | 304 | 365 | 229 | 147 |
| Public worker | 30 | 83 | 182 | 117 | 110 |

Note: public worker: worked at least one day as a public worker in 2014. Not public worker: worked only in the primary labour market in 2014. The time spent in one job is added up for each job for 2014, i.e. if someone left a firm during the year then started to work there again, that is considered one job.

Source: Own calculation based on Hungarian State Treasury.

According to the above, it is more difficult for public workers to find a job in the market than for those who work in the primary labour market. In addition, even if they succeed in finding a job, they spend less time there and change jobs more often than those who were not public workers before.

7 Summary

In our study we presented the characteristics, regional distribution and chances of employment of the participants in public work on the basis of the database of the Hungarian State Treasury. Hungary spent by far the largest amount of money on direct job creation among the OECD countries. At the peak of the public work programme it reached 0.7 per cent of GDP. Most of those who became involved in public work had been inactive before, and thus they entered the labour market through the public work.

Public workers typically work in low occupational categories, but if they find a job in the primary labour market, they succeed in getting into a higher category. The ratio of public workers to the population is higher in the northern, northeastern and south Transdanubian districts of the country. Between 2011 and 2019, they spent the most time in the programme in these areas – more than 2 years in total. Public workers' job finding rate was 15 per cent at the beginning of the programme, and this ratio was close to 25 per cent by 2018. The spatial pattern observed in the job finding rate is similar to that of the time spent in public work. Compared to those working in the primary labour market, for public workers it is more difficult to find employment on the primary labour market, public workers spend less time in one job and they change jobs more often than those who work as non-public workers.

A further direction of research may be a complete evaluation of the programme, i.e. a comparison of the job finding rates, following the selection of an appropriate control group. This can be done by using domestic data or perhaps the data of neighbouring EU countries in the regions along the border, where there was not any public work. Another interesting research subject may be the comparison of public work with other active labour market programmes, such as wage subsidy or contribution allowance.

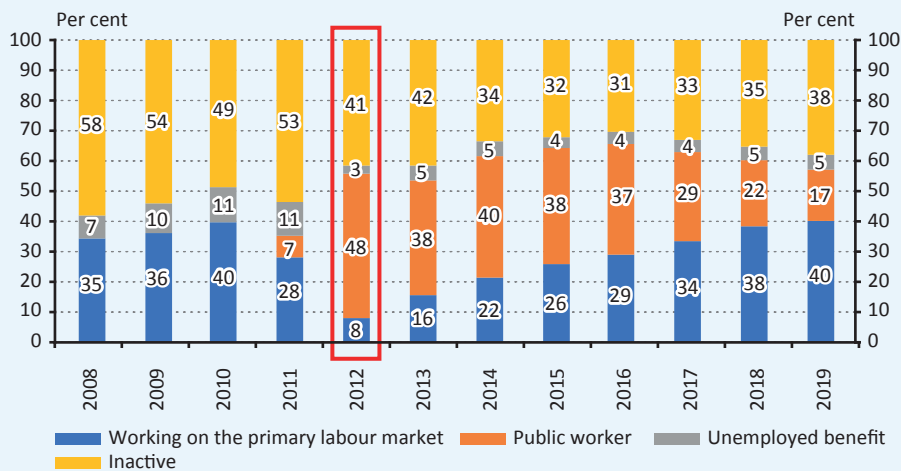
References

- Azam, Mehtabul, Céline Ferré, and Mohamed Ihsan Ajwad. (2012). Did Latvia's Public Works Program Mitigate the Impact of the 2008-2010 Crisis? IZA Discussion Papers 6772. Institute of Labor Economics (IZA).
- Bak, Dóra and Szabó, Lajos Tamás. (October 2016). *Labour Market*, MNB Handbooks No 6.
- Bördös, Katalin. (2015). A közfoglalkoztatás intézményi környezete – történeti áttekintés (The institutional environment of public employment – a historical overview). In: Károly Fazekas and Júlia Varga, eds. *Munkaerőpiaci tükör* (The Hungarian Labour Market) 2014
- Card, David, Jochen Kluge, and Andrea Weber. (2017). What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations, *Journal of the European Economic Association* 16, pp. 894-931.
- Cseres-Gergely, Zsombor and György Molnár. (2014). Közmunka, segélyezés, elsődleges és másodlagos munkaerőpiac (Public work, transfers, primary and secondary labour market). In: Tamás Kolosi and István György Tóth, eds. *Társadalmi Riport* (Hungarian Social Report).
- Cseres-Gergely, Zsombor and György Molnár. (2015). Munkapiaci helyzet a közfoglalkoztatásból való kilépés után (Labour market situation after leaving public employment). In: Károly Fazekas and Júlia Varga eds. *Munkaerőpiaci tükör* (The Hungarian Labour Market) 2014.
- Cseres-Gergely, Zsombor and Varadovics, Kitti. (2014). A munkapiaci szakpolitika eszközei (Labour Market Policy Tools) (September 2012 – January 2014). In: Károly Fazekas and Júlia Varga eds. *Munkaerőpiaci Tükör* (The Hungarian Labour Market) 2014.
- Csoba, Judit and Nagy, Zita Éva. (2011). A magyarországi képzési, bértámogatási és közfoglalkoztatási programok hatásvizsgálata (The Evaluation of Training, Wage Subsidy and Public Works Programs in Hungary), Károly Fazekas and Gábor Kézdi, eds. *Munkaerőpiaci tükör* (The Hungarian Labour Market) 2011.
- Eichler, Martin and Michael Lechner. (2002). An evaluation of public employment programmes in the East German State of Sachsen-Anhalt. In: *Labour Economics* 9.2, pp. 143–186.
- Escudero, Verónica. (2016). Workfare programmes and their impact on the labour market effectiveness of Construyendo Perú, Research Department Working Paper No. 12 International Labour Office.
- Escudero, Verónica et al. (2019). Active Labour Market Programmes in Latin America and the Caribbean: Evidence from a Meta-Analysis. In: *Journal of Development Studies* 55.12, pp. 2644–2661.
- Gehrke, Esther and Renate Hartwig. (2018). Productive effects of public works programs: What do we know? What should we know? In: *World Development* 107, pp. 111 –124.
- Miklós Hajdu, Ágnes Makó, Fruzsina Nábelek and Zsanna Nyírő. (2017). A munkapiaci szakpolitika eszközei (Labour Market Policy Tools) (May 2015 – March 2016). In: Károly Fazekas, János Köllő, eds. *Munkaerőpiaci tükör* (The Hungarian Labour Market) 2016.
- Carolyn J Heinrich, Peter R Mueser, Kenneth R Troske, Kyung-Seong Jeon and Daver C Kahvecioglu. (2012). Do Public Employment and Training Programs Work? In: *IZA Journal of Labor Economics* 2.1, pp. 1–23.
- Imbert, Clément and John Papp. (2015). Labor Market Effects of Social Programs: Evidence from India's Employment Guarantee. In: *American Economic Journal: Applied Economics* 7.2, pp. 233–263.
- Kálmán, Judit. (2015). A közfoglalkoztatási programok háttere és nemzetközi tapasztalatai (The background and international experiences of public works programmes). In: *Munkaerőpiaci Tükör* (The Hungarian Labour Market) 2014.

- MTA Közgazdaság- és Regionális Tudományi Kutatóközpont, Közgazdaság-tudományi Intézet (Institute of Economics, Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences), pp. 42–59.
- Köllő, János. (2015). Közmunkások a legális munkaerőpiacon (Public workers in the legal labour market), In: Károly Fazekas and Júlia Varga, eds. *Munkaerőpiaci tükrök* (The Hungarian Labour Market) 2014.
- Koltai, Luca, Katalin Bördős, Judit Csoba, Bálint Herczeg, Eszter Hamza, Boldizsár Megyesi, Nándor Németh, Katalin Rácz, Dorottya Szabó, Mónika Váradi, Eszter Varga and Tünde Virág. (2018). A közfoglalkoztatás hatása a helyi gazdaságra, helyi társadalomra (Impact of public work on local society and economy), HÉTFA Research Institute.
- Cluette, Jochen. (2016). A review of the effectiveness of Active Labour Market Programmes with a focus on Latin America and the Caribbean. Research Department Working Paper 9. International Labour Office.
- Kulinyi, Márton. (2013). Közfoglalkoztatási ismeretek: Módszertani kézikönyv gyakorlati és elméleti alkalmazóknak (Public employment guide: Methodological handbook for practical and theoretical users). Esély Labor Egyesület, Budapest.
- Malose Langa, Juliana Tappe Ortiz, Palesa Mataboge, Vicky Talbot, and Buyisile Mncina. (2019). Global Comparative Analysis of Public Employment Programmes: Strengths and limitations. Centre for the Study of Violence and Reconciliation.
- Mód, Péter. (2013). Az aktív foglalkoztatáspolitikai eszközök legfontosabb létszámadatai 2013-ban (The most important headcount data of active employment policy tools in 2013), National Labour Office, Research and Analysis Department, Budapest.
- Molnár, György, Tamás Bakó, Zsombor Cseres-Gergely, Judit Kálmán and Tibor Szabó. (2014). A munkapiac peremén lévők és a költségvetés (People on the margins of the labour market and the budget), MTA KRTK KTI.
- Munkaerőpiaci Tükrök* (The Hungarian Labour Market) 2013. Károly Fazekas and László Neumann, eds. MTA Közgazdaság- és Regionális Tudományi Kutatóközpont (Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences).
- Munkaerőpiaci Tükrök* (Labour Market Mirror) 2014. Károly Fazekas and Júlia Varga, eds. MTA Közgazdaság- és Regionális Tudományi Kutatóközpont (Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences).
- Munkaerőpiaci Tükrök* (The Hungarian Labour Market) 2015. Zsuzsa Blaskó and Károly Fazekas, eds. MTA Közgazdaság- és Regionális Tudományi Kutatóközpont (Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences).
- Munkaerőpiaci Tükrök* (The Hungarian Labour Market) 2016. Károly Fazekas and János Köllő, eds. MTA Közgazdaság- és Regionális Tudományi Kutatóközpont (Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences).
- Munkaerőpiaci Tükrök* (The Hungarian Labour Market) 2017. Károly Fazekas and Ágnes Szabó-Morvai, eds. MTA Közgazdaság- és Regionális Tudományi Kutatóközpont (Research Centre for Economic and Regional Studies of the Hungarian Academy of Sciences).
- O’Leary, Christopher J. (1997). A net impact analysis of active labour programmes in Hungary. In: *Economics of Transition and Institutional Change* 5.2, pp. 453–484.
- Szabó, Lajos Tamás. (2019). The Effect of Tightness on Wages at the Regional Level in Three Central European Countries, *MNB Working Papers* 2019/4.
- Tcherneva, Pavlina R. (2013). Beyond Full Employment: What Argentina’s Plan Jefes Can Teach Us about the Employer of Last Resort. In: M.J. Murray and M. Forstater, eds. *Employment Guarantee Schemes*. Palgrave Macmillan, New York, pp. 79–102.
- Vodopivec, Milan. (1999). Does the Slovenian Public Work Program Increase Participants’ Chances to Find a Job? In: *Journal of Comparative Economics* 27.1, pp. 113–130.

Appendix

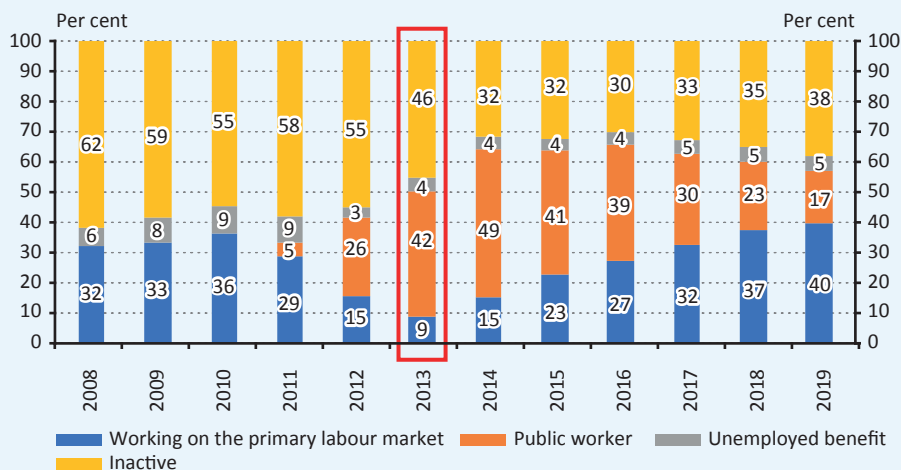
Chart 27
Work history of public workers aged 24-57 in 2012



Note: The chart shows the labour market status of the 99,009 people aged between 24 and 57 years who worked at least 1 day as public workers in 2012. As not everybody worked 365 days in 2012 as a public worker, it is possible that in 2012 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

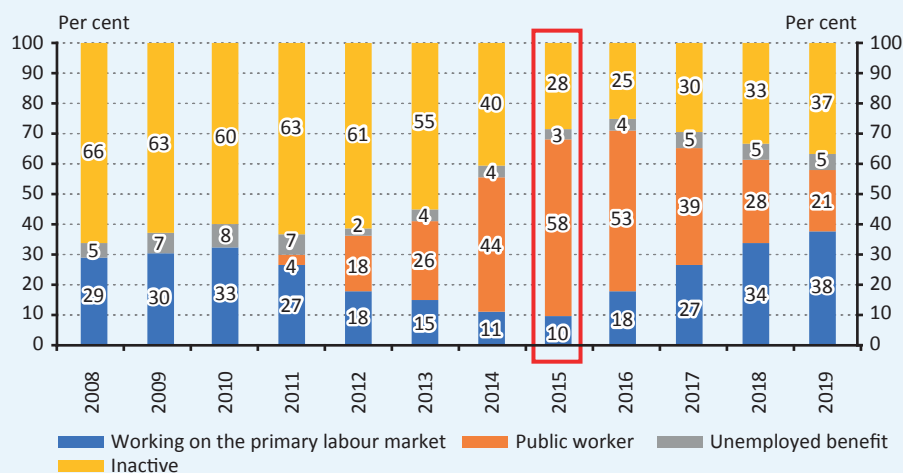
Chart 28
Work history of public workers aged 24-57 in 2013



Note: The chart shows the labour market status of the 143,396 people aged between 24 and 57 years who worked at least 1 day as public workers in 2013. As not everybody worked 365 days in 2013 as a public worker, it is possible that in 2013 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

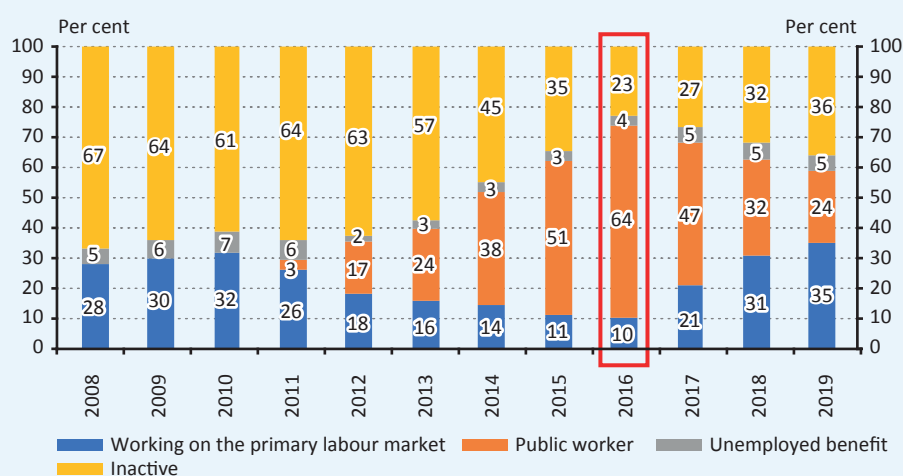
Chart 29
Work history of public workers aged 24-57 in 2015



Note: The chart shows the labour market status of the 155,890 people aged between 24 and 57 years who worked at least 1 day as public workers in 2015. As not everybody worked 365 days in 2015 as a public worker, it is possible that in 2015 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

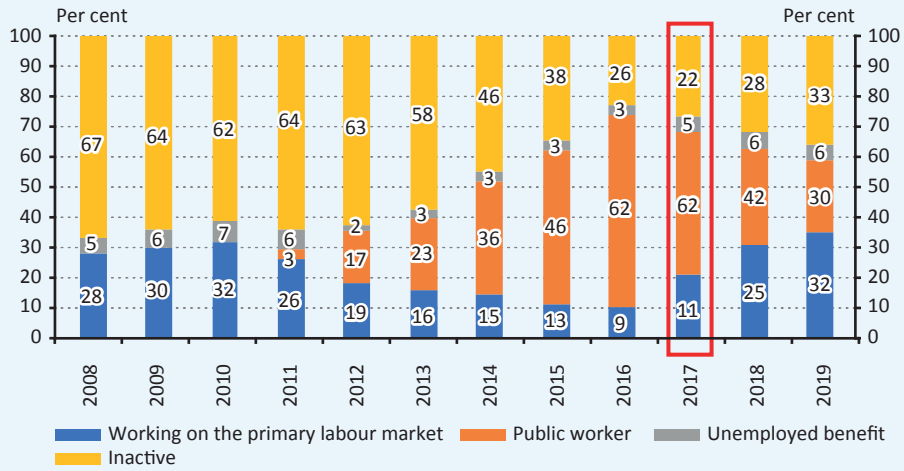
Chart 30
Work history of public workers aged 24-57 in 2016



Note: The chart shows the labour market status of the 152,236 people aged between 24 and 57 years who worked at least 1 day as public workers in 2016. As not everybody worked 365 days in 2016 as a public worker, it is possible that in 2016 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

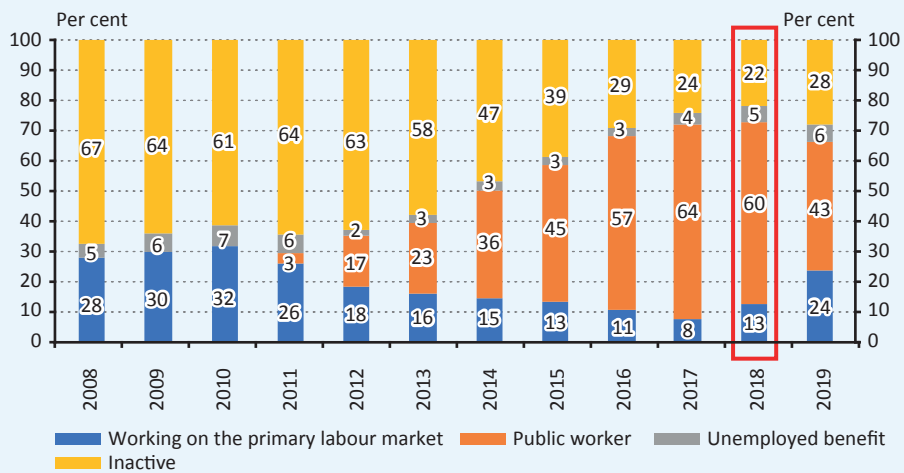
Chart 31
Work history of public workers aged 24-57 in 2017



Note: The chart shows the labour market status of 129,681 people aged between the 24 and 57 years who worked at least 1 day as public workers in 2017. As not everybody worked 365 days in 2017 as a public worker, it is possible that in 2017 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

Chart 32
Work history of public workers aged 24-57 in 2018



Note: The chart shows the labour market status of the 99,696 people aged between 24 and 57 years who worked at least 1 day as public workers in 2018. As not everybody worked 365 days in 2018 as a public worker, it is possible that in 2018 there are also types of observations other than the public worker status.

Source: Own calculation based on Hungarian State Treasury.

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