THE HUNGARIAN LABOUR MARKET 2019

EDITORS

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INSTITUTE OF ECONOMICS, CENTRE
FOR ECONOMIC AND REGIONAL STUDIES
BUDAPEST, 2020

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FOREWORD

The *Hungarian Labour Market Yearbook* series was launched in the year 2000 by the Institute of Economics of the Hungarian Academy of Sciences with the support of the National Employment Foundation. The yearbook presents the actual characteristics of the Hungarian labour market and employment policy, and provides an in-depth analysis of a topical issue each year. The intention of the editorial board was to deliver relevant and useful information on trends in the Hungarian labour market, the legislative and institutional background of employment policy, and up-to-date findings from Hungarian and international research studies to civil servants, staff of the public employment service, municipalities, NGOs, public administration offices, education and research institutions, the press and the electronic media.

It was an important focus for the analyses and data published in the yearbook series to serve as a good source of knowledge for higher education as well, on the various topics of labour economics and human resources management. The yearbook series presents the main characteristics and trends of the Hungarian labour market in an international comparison based on the available statistical information, conceptual research and empirical analyses in a clearly structured and easily accessible format.

Continuing our previous editorial practice, we selected an area that we considered especially important from the perspective of understanding Hungarian labour market trends and the effectiveness of evidence-based employment policy. Based on the decision of the editorial board, this year's 'In Focus' revolves around the labour market situation of youth. The yearbook is broken down into five main sections.

1. The Hungarian Labour market in 2018

The labour market in 2018 was essentially characterised by surplus demand; the mobilizable labour force potential has shrunk significantly compared to that of the previous year. In this context, public employment quotas have been further reduced by the government in order to encourage those formerly working in this manner to enter the primary labour market instead. The expansion of the number of those in employment continued in 2018, however, the rate of the expansion was slower than that of the previous two years. Based on the labour force survey of the HCSO, the annual average number of those in employment changed to 4,470,000, exceeding that of a year before by 1.1 percent, that is, by 47,000 (in contrast with the 1.6 percent growth in 2017 and the 3.4 growth in

2016). The number of students fulfilling the criterion of being employed has grown significantly, compared to the low base. The growth of the employment rate of students was driven mostly by an increase in wages caused by an excess demand for labour (and a trend of rising costs of living for those living in separate households – especially housing costs); however, working while studying is still less widespread in Hungary than in most Northern and Western European countries. The labour force potential (the supply) is comprised of the unemployed, and the inactive who want to work – in EU terms, the so-called underemployed, and within the particularities of the Hungarian labour market, public workers. (The latter can be considered labour force potential only from a primary labour market perspective, as they are included in the group of those registered as employed.) In 2018, all of the above categories shrank in number significantly, causing the labour supply to decline further. In 2018, the labour force potential still significantly exceeded the number of job vacancies despite the decrease, but the geographical (and possibly the structural) mismatch is still quite significant. An equalisation could be facilitated by the intensification of domestic migration, however, this is seriously hampered by the fact that housing costs are the highest in the places where employment opportunities are the best. The excess demand for labour and government measures related to wages have resulted in a significant increase of wages, with an increase rate that is marginally below that of the previous year.

As a result of the COVID-19 epidemic that appeared in Hungary in March 2020, the favourable labour market processes were spectacularly broken. The average monthly number of persons employed was already 56 thousand less in March than in the previous month and 22 thousand less than in March of the previous year. Although at the time of writing these sentences, it is not yet known for sure how much unemployment officially increased in April 2020, an estimate can be made using the relationship between the number of Google searches and the number of the registered unemployed.

2. Youth in focus

The chapters of *In Focus* review the main aspects of the labour market situation of youth from secondary education to the first job. Chapter 1 presents the main trends of educational attainment and employment of the past fifteen years. Chapter 2 analyses the competencies obtainable in school, the choice of school, and the development of early school leaving. Chapter 3 examines the channels through which youth leaving school are able to obtain their first work experiences. Chapter 4 analyses the negative effects of early difficulties on the rest of the career path, and the extent to which low local labour force demand and high commuting costs contribute to the unemployment of youth. Chapter 5 presents the extent to which employment policy tools and services available to youth are able to mitigate or prevent youth unemployment. Chapter 6 pro-

vides a short review of the educational and labour market disadvantages experienced by Roma youth. Chapter 7 examines the skills demanded by employers, how the labour market values the knowledge of fresh higher education graduates, and the extent to which workplace training or training conducted parallel to work may bridge skill gaps. Finally, chapter 8 reviews the occupational and geographical mobility of youth.

In past years, the employment rate of youth increased, while the rate of those not in education, employment, or training decreased. This could make the transition from school to work appear seamless, however, the details presented in In Focus will nuance the picture. This is because the primary explanation for improving indicators is not the smooth functioning of the institutions assisting the transition. Rather, it is that the majority of better educated youth can find jobs within a short time without state assistance, while a substantial part of the undereducated find short-term job opportunities with wage subsidies or as public workers. An element of youth who leave school early, after the completion of the eighth grade of elementary school, are "lost" either in public employment or without a job, and do not receive substantial assistance either to finish their studies or to enter the primary labour market. Parallel to the rise of the employment rate, the rate of those participating in full-time education or training started to decrease, and the attainment level of the fresh graduate age groups stopped increasing. Additionally, policy steps with regard to public education and higher education do not support the development of general skills either.

The further improvement of the labour market situation of youth may be hindered in the long run by two circumstances: On the one hand, as demand moves towards non-cognitive skills, even a part of fresh graduates considered educated will not be able to fulfill employers' requirements, while this may be even more marked in the case of those with lower educational attainment. On the other hand, youth who found jobs easily during the upswing period but whose basic skills are weak will be, in the future, less able to adapt to employers' demands changing due to technological development. Considering its existing capacities, it is difficult for the state employment service to provide them with adequate support to fill the gaps in their skills and find long-term employment. These issues may affect the generations who enter the labour market in a potentially unfavourable economic climate even more gravely.

3. Labour market policy tools (June 2018 – May 2019)

This chapter summarizes the main legislative changes in connection with labour market policies between June 2018 and May 2019.

The amendment to the vocational training act introduced the possibility of closed-system electronic long-distance training with effect from 1 January 2019. As of January 2019, a chancellery system has been introduced in vocational training centres within the competence of the Ministry for Innovation and Technol-

ogy – following the model already in place in higher education. The chancellor is a senior manager in charge of the institution, appointed by the minister in charge of the vocational training field. The Vocational Training and Education (VET) Innovation Council was established in September 2018, with the main objective of providing a regular platform for dialogue between the government and the main agents of the vocational training system. In March 2019 the government approved a document that contains the "Vocational training 4.0" strategy. According to this, from September 2020, the-four-plus-one-year training structure of vocational grammar schools (*szakgimnázium*) will be replaced by the five-year training model of technical grammar schools (*technikum*), while secondary vocational schools (*szakközépiskola*) will be transformed into three-year vocational training schools (*szakképző iskola*). In dual vocational education and training, apprenticeship contracts will be replaced by student employment contracts.

Due to the new regulations in effect as of 1 January 2019, the pensioners' cooperatives system lost its financial purpose, since pensioners in their own right who are in employment as defined by the Labour Code are not under insurance obligation, and thus are exempt from paying pension contributions and the health insurance contribution in kind, and are only obliged to pay personal income tax on their wages – in the same way as if they received remuneration as members of a pensioners' cooperative of public interest.

With the raising of the minimum wage, the amounts of the related benefits have respectively also grown. And with regard to labour market services, new applications may be submitted within the framework of the Széchenyi 2020 scheme, and this time, businesses may apply with plans related to the development of labour market adaptability, the strengthening of social responsibility, and the expansion of their role as service providers as well.

Throughout the past year, the aims of active employment policy were the reduction of public education, the encouragement of lawful employment, supporting entrepreneurship, supporting those raising small children to enter the labour market, the encouragement of the creation of jobs, supporting the establishment of workers' hotels, and the development of labour market adaptability.

The amounts of the minimum wage and the guaranteed minimum salaries continued to increase in 2019. Additionally, a new law on social contribution tax entered into force, discontinuing the former health contribution tax and prescribing a social contribution tax with a universal rate of 19.5 percent. The rate of the tax has been lowered by 2 percent as of July 2019. The range of social contribution tax relief options has shrunk by several factors, and a new tax relief option has been introduced, available for the employment of new entrants into the labour market.

The cafeteria system has also been renewed: as of 2019, the Szép card is the only type of benefit in kind available. The range of certain defined benefits has

also been reduced, and the tax exemption of several forms of benefits has been discontinued.

As of the 1 January 2019, the amendment of the Labour Code approved in December 2018 entered into force. The amendment raises the duration of the working time banking from 12 months to 36 months in the case of collective agreements, and also establishes that, based on a written agreement between the employee and the employer, a maximum of 150 hours of overtime (that is, "voluntary overtime") may be ordered each calendar year, on top of the overtime specified previously.

4. Statistical data

This chapter, in the same structure as in previous years, provides detailed information on the major economic trends, the characteristics of the population, labour market participation, employment, unemployment, inactivity, wages, education, labour demand, regional imbalances, migration, labour relations and welfare benefits of the period since the political transition, and presents an international comparison of certain labour market indicators.

The data presented in the chapter have two main sources: on the one hand, the regular labour-related institutional and population surveys of the Hungarian Central Statistical Office: the Labour Force Survey (LFS), institution-based labour statistics (ILS), and the labour force account (LFA). On the other hand, the register of the National Employment Services and its data collections: the unemployment register database (NES REG), short-term labour market forecast (PROG), wage tariff surveys (WT) and the Labour Relations Information System of the Ministry for National Economy (LRIS). More detailed information on these data sources is available at the end of the statistical section. In addition to the two main data providers, data on old age and disability pensions and benefits was provided by the Central Administration of National Pension Insurance. Finally, some tables and figures are based on information from the online databases of the Central Statistical Office, the National Tax and Customs Administration and the Eurostat.

The tables and figures of the chapter can be downloaded in Excel format following the links provided. All tables with labour market data published in the Hungarian Labour Market Yearbook since 2000 are available at the following link: http://adatbank.krtk.mta.hu/tukor_kereso.

5. The Hungarian labour market, pocket edition

Continuing the initiative we started last year, we have compiled a collection of figures related to the theme of In Focus, based on Hungarian data, which makes the development of the labour market situation of youth over time easily understandable, via long time series figures.

* * *

The editorial board would like to thank colleagues at the *Institute of Economics – Research Centre for Economic and Regional Studies, Central Statistical Office, Hungarian State Treasury,* colleagues at the *Budapest Institute for Policy Analysis,* members of the *Economics of Human Resources Committee of the Hungarian Academy of Sciences,* and the organisers and participants of the *Sziráki Labour Economics Research Conference 2019* for their help in collecting and reviewing the necessary information, editing and preparing parts of this publication as well as discussing it. We would like to thank the Hungarian Academy of Sciences for the financial support provided to this publication.

THE HUNGARIAN LABOUR MARKET IN 2018

TAMÁS BAKÓ & JUDIT LAKATOS

INTRODUCTION

Hungary's key economic indicators showed positive trends in 2018: the gross domestic product increased by 5.1, exports by 4.3 and fixed capital formation by 17.1 per cent. There was excess demand in the labour market in 2018 and labour reserves that may be mobilized significantly shrank from the previous year. Accordingly, the Government continued to reduce public works headcounts in order to encourage former public works participants to enter the primary labour market. Excess demand for labour and wage-related measures by the Government resulted in a significant wage growth only slightly weaker than in the previous year.

Despite growing labour supply problems, the Government continued to encourage job creation. In the period 2011–2017, 255.6 billion HUF non-refundable grants created 35.3 thousand new jobs and a further 27 billion HUF created 1,400 more in 2018. Because of the relationship between Hungarian wages and the quality of labour available, Hungary is an attractive location for foreign investors to establish business premises, and especially so because the Government supports their investment directly with non-refundable grants and indirectly with infrastructure improvements. However, the depletion of domestic labour reserves and the scarcity of cross-border supply put a limit to job creation investments.

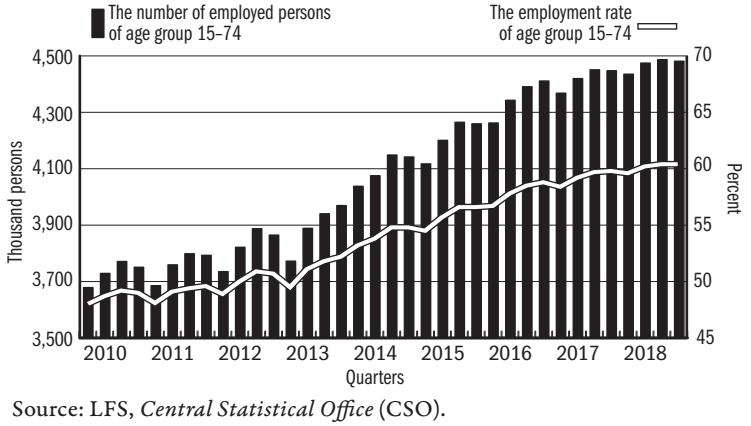
It remains to be seen what steps current and future investors are forced to take because of increasing labour costs (even though the government has been trying to counteract this increase by reducing contributions payable by employers) and worsening difficulties of obtaining labour. Alternatives include moving production capacities to another country as well as stepping up automation and robotization. Since the Hungarian economy is open, it is also vulnerable. Moreover, the automotive industry, which is sensitive to business cycles, has recently played a key role in industrial development, therefore external factors will continue to have a major influence on labour market changes. Recognising the economic processes from the end of 2018 to the first quarter of 2020, we can see that in addition to the classic business cycles, difficult-to-predict external shocks can also have a large impact on the labour market. As a result of the COVID-19 epidemic that appeared in Hungary in March 2020, the favourable labour market processes were spectacularly broken. The average monthly number of persons employed was already 56 thousand less

in March than in the previous month and 22 thousand less than in March of the previous year. Although at the time of writing these sentences, it is not yet known for sure how much unemployment officially increased in April 2020, an estimate can be made using the relationship between the number of Google searches and the number of the registered unemployed. This was also done by *Köllő–Kónya* (2020), who found that the number of registered unemployed could have exceeded 400,000 in April 2020, an increase of roughly 120,000 compared to February.

DRIVERS OF CHANGE IN EMPLOYMENT

The number of those in employment continued to expand in 2018 but the rate of the increase was lower than in the previous two years. Based on the Labour Force Survey, the average annual number of employees rose to 4 million 470 thousand, by 1.1 percent, which is 47 thousand higher than the year before, compared with a 1.6 per cent increase in 2017 and a 3.4 per cent one in 2016. The growth rate also slowed down during the year and, due to seasonal effects, in the last quarter it slightly lagged behind the peak of the third quarter of the previous year (4 million 487 thousand). The slowdown in the expansion in employment was due to the diminishing labour supply, indicated by the number of vacancies growing at the same rate as over the previous year. According to statistical reports, employers would have needed nearly 84 thousand more employees in 2018 on average.

Figure 1: The number of employees in the 15–74 age group and the employment rate among those aged 15–74, 2010–2018



Source: LFS, *Central Statistical Office* (CSO).

One of the reasons for the insufficient labour supply is the fact that the size of generations entering the labour market is significantly smaller than that of the generations exiting. While in 2010 the number of working-age persons (aged 15–64) living in private households was 6 million 736 thousand, it de-

clined to 6 million 415 thousand in 2017 and by a further 46 thousand to 6 million 369 thousand in 2018. This negative trend is possible to be offset by the gradual raising of the retirement age until 2020 but from 2021 onwards retirement will be uniformly linked to reaching the age of 65. The opportunity for women to retire after 40 qualifying years has been announced repeatedly not to be changed by the Government; however, an increasing proportion of women who were full-time students will be able to claim it, therefore the number of persons retiring prior to the date applicable to them may increase.[1] There is no precise data available as to what extent of the working-age population is indeed at the disposal of employers.[2] It is known that 105 thousand of the 4 million 470 thousand employees in 2018 reported working abroad, indicating a decrease within the margin of sampling error compared with one year prior.

Several measures have been adopted recently to increase labour supply. Access to employment was improved for Serbian and Ukrainian workers in 2017 and there is even organised recruitment in Serbia and Ukraine. Although Hungarian wages are higher than wages in Ukraine and employers also provide for accommodation and transport for workers, Hungary is less attractive than the Czech Republic or Poland, where both the wages offered are higher and where it is easier to overcome language barriers because of belonging to the same language family. Even though the number of work permits issued rose sharply in 2018,[3] the statistical reports of employers only included 40 thousand foreign employees, which implies a 17 percent increase from the previous year. This alleviated the problems of a few large employers adapted to employing large numbers of foreign workers but had little impact on the general lack of labour supply.[4]

Due to lower birth rates, women stayed away less from their jobs than for example in the 1980s; however, the length of their absence barely changed. According to a survey conducted four years ago, more than three-quarters of mothers wish to use up the entire maternity leave to stay at home with their children (*CSO,* 2015). Measures to expand nursery care and removing the suspension of work from the eligibility criteria of provision both aimed at encouraging women to return to the labour market sooner after giving birth.[5] The measures have not yet produced impressive results. In 2014, when the number of births was similar to that in 2018, 16.8 thousand women claiming parental leave benefits were employed (undertaking gainful work during the week of the survey), while this figure was 21.1 thousand in 2018.[6]

1 Graduates from 4-year programmes potentially had 40 qualifying years in 2018 and graduates from 5-year programmes in 2019.

2 The source of uncertainty is the population estimate used for multiplication, since at the time of its annual update the accurate number of persons staying abroad for work is not known. There is unambiguous information only about those who are documented as a member of a household in Hungary by the Labour Force Survey. According to CLFS (*Community Labour Force Survey*), 327.7 thousand Hungarian citizens, aged 20–64, were staying not only occasionally in 2017 in EU–EFTA countries, 80.6 per cent of which were employed. The share of women and men among the registered persons was similar and presumably a significant proportion of them were living in a household which had no member living in Hungary to provide information about them. Although both the absolute number of the Hungarians registered and their proportion relative to the appropriate population were lower than in most other post-communist countries, the labour migration of Hungarians between 2010 and 2015 grew above the average.

3 According to data from the Directorate-General for Aliens Policing (former Immigration and Asylum Office), 150 per cent more foreigners arrived in Hungary up to the end of the third quarter of 2018 to take up employment, compared with one year prior. While last year one-third of applicants for residence permits arrived for employment or gainful activities, in 2018 more than half of them arrived for such purposes.

4 The large-scale employment of Ukrainian citizens sometimes reduces the chances of commuters from regions with few jobs, as the latter are less likely to work overtime and their employment may be more expensive.

5 Incentives also include the family tax allowance because both members of a couple have to have a taxable income in order to be eligible for the total amount.

6 Due to proxy interviews (response from another member of the family) there is higher than above uncertainty about data analysed here.

Full time students and old-age pensioners are also potential labour force. In order to boost the interest of the latter, pensioner cooperatives were introduced, modelled on student cooperatives, and since January 2019 old-age pensioner employees and their employers have been exempt from taxes and contributions. According to the Labour Force Survey, 12.4 thousand full-time students and 128.2 thousand pensioners were in employment in 2014 on average, while in 2018 the figures were 22.8 thousand and 169.6 thousand respectively. Although the number of pensioners working is significant, it must be taken into account that due to the rising retirement age a growing proportion of them may not be able to work because of their health even if they wanted. Compared to a low base, the number of students meeting the eligibility criteria for employment increased sharply. The absolute figure is probably underestimated[7] but the surge is real (*Table 1*). The increasing employment of students was primarily the result of increasing wages driven by excess demand for labour (as well as the increasing cost of living, especially accommodation costs of those living in separate households); however, working during studies is still less common in Hungary than in most Northern and Western European countries.

Table 1: Employee groups according to their secondary status, 2018

Status	Number of employees (persons)	Number of employees		
		as a percentage of the 2014 figure	as a percentage of the previous year	as a percentage of the total headcount of this status
On parental leave	21,119	125.8	106.3	8.3
Full-time student	22,760	183.4	113.6	3.5
Pensioner	169,646	132.3	119.1	9.5

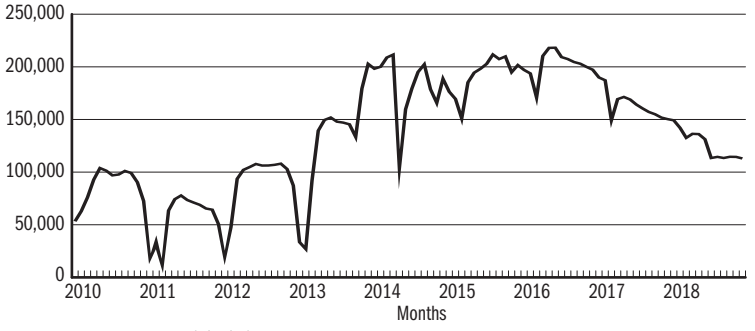
Source: LFS, *CSO*.

Public works participants are also a source of labour supply for the primary labour market. Increasing the headcounts of public works in 2012 principally aimed at tackling unemployment but probably also at satisfying public opinion, which resists the idea of an income without work (that is to say unemployment benefits). The annual headcount of public works participants is determined by the Government and not by the demand for such workplaces. Because of increasing demand in the primary labour market, the headcounts of public works participants were reduced already in 2017, followed by a similar step in 2018 (*Figure 2*). Employers are encouraged by, in addition to doubling the employment allowance in November, the fact that the public works wage did not change in 2018 after a slight raise in 2017.[8] The increased labour demand was mainly exploited by better qualified public works participants with fewer health and family problems and living in towns with better transport links: they were more likely to be able to enter the primary labour market.

7 Old-age pensioners, and especially students, often undertake casual employment, therefore the annual headcount may be substantially greater than the average headcount.

8 When introduced in 2012, the public works wage was 77.2 per cent of the "normal" minimum wage but this proportion had decreased to 59.1 per cent by 2018.

Figure 2: Changes in the headcount of public works participants, 2010–2018



Source: *CSO,* Monthly labour report.

An increase in headcount was only seen in the primary labour market in 2018, with 98.8 thousand new jobs (*Table 2*). In addition to the unemployed and inactives, some of the former public works participants also managed to find employment and the number of respondents reporting a job abroad declined in the labour force survey as well.[9]

Table 2: Changes in the number of employees broken down by major characteristics

	Number of employees (thousand persons)			Change 2018/2017	
	2016	2017	2018	thousand persons	percentage
Total	4,351.6	4,421.4	4,469.5	48.1	101.1
Gender					
Male	2,362.5	2,417.3	2,446.2	28.9	101.2
Female	1,989.1	2,004.1	2,023.3	19.2	101.0
Type					
Domestic primary labour market	4,014.3	4,117.8	4216.6	98.8	102.4
Public works	220.9	194.0	148.2	–45.8	76.4
Foreign site	116.4	109.6	104.7	–4.9	95.5
Region					
Budapest	840.3	845.3	833.8	–11.4	98.6
Pest	565.6	578.0	595.2	17.2	103.0
Central Transdanubia	487.9	498.7	499.1	0.4	100.1
Western Transdanubia	457.0	469.6	481.9	12.3	102.6
Southern Transdanubia	370.7	369.3	374.0	4.8	101.3
Northern Hungary	466.6	474.8	485.3	10.5	102.2
Northern Great Plain	613.9	631.1	639.7	8.6	101.4
Southern Great Plain	549.5	554.8	560.5	5.7	101.0
Status					
Employee	3,884.4	3,964.4	4,003.9	39.5	101.0
Member of partnership or cooperative	148.0	156.8	149.4	–7.4	95.3
Entrepreneur, self-employed and family helper	319.3	300.2	316.2	16.0	105.3

Source: LFS, *CSO*.

9 The Labour Force Survey includes persons working abroad who commute abroad daily or work abroad for extended periods but regularly come home and contribute to the subsistence of the household providing the data.

Since 2010 a total of 609 thousand unsupported new jobs have emerged in the Hungarian economy, which amounts to an annual average increase of nearly 70 thousand. In 2018 the number of employees rose in all regions (if Budapest and Pest county are considered jointly, in line with the earlier regional classification). Proportionately to the labour force, the largest increase was seen in Western Transdanubia, in spite of the depletion of internal labour reserves. Thus the main source of the increase was presumably internal migration, still modest because migration is restricted by the regionally considerably different accommodation costs.

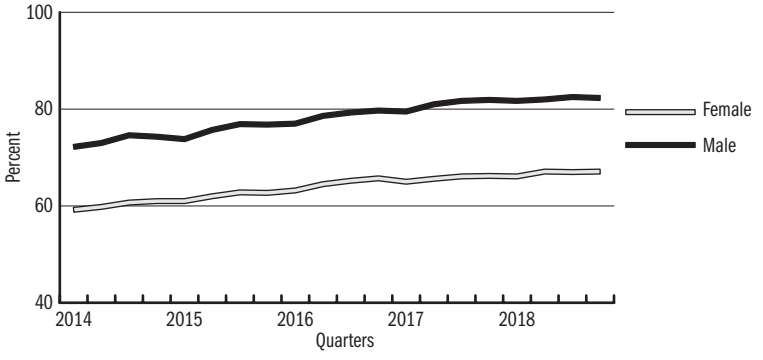
The employment rate of the population aged 15–64 was 69.2 per cent in 2018; however, half of the 1.1 percent year-on-year improvement was due to a decline in the population size used in the denominator of the rate. The employment rate of men slightly exceeded the EU-28 figure, while that of women was slightly lower. The Europe 2020 strategy sets 75 per cent as a target for the population aged 20–64, and the Hungarian rate of 74.4 per cent was only slightly below that in 2018. This target may even be reached with stagnating employee numbers owing to the continuous population decline.

While 82.1 per cent of men in the age group was in employment in 2018, the rate was only 66.8 per cent for women (*Figure 3*). One of the reasons for the significant difference in the employment rate of genders is the considerably long parental leave, compared to other European countries, and the recipients of parental leave benefits (unless they undertake gainful work during the week of the survey) are regarded by Hungarian statistics as economically inactive irrespective of their employment status. Another important reason is that although the rising retirement age applies equally to both genders, only women can retire after 40 qualifying years. Therefore whereas in the fourth quarter of 2018 56.4 per cent of men aged 60–64 were in employment, only 27.3 per cent of women worked. Furthermore, the gap between the employment rates of men and women has slightly widened in recent years. A further, less significant, factor for the difference is that a larger proportion of women in the younger age groups follow higher education studies and therefore enter the labour market at a later age. Caring for the family, another reason for inactivity, is also almost exclusively undertaken by women.

The employment chances of the low-qualified used to be below the EU average in Hungary but as a result of public works schemes, which increasingly became a type of employment typically for the low-qualified, the difference has disappeared. In the not very populous qualification group of those without a lower-secondary qualification, aged 20–64, nearly 15 percent were in employment in 2018 (*Table 3*),[10] which is an almost 5 percentage point improvement on 2014. The employment rate of the same age group with a lower-secondary qualification increased by 11 percentage points, with a substantially more marked increase among men.

10 The denominator also includes those who are unable to participate in formal education because of their health or disability.

Figure 3: Employment rates of men and women aged 20–64, 2014–2018



Source: LFS, *CSO*.

Table 3: Employment rate of the population aged 20–64, broken down by educational attainment and gender, excluding public works participants, 2014, 2017, 2018 (percentage)

	2014			2017			2018		
	male	female	total	male	female	total	male	female	total
Without a lower-secondary qualification	13.7	7.5	10.3	18.1	10.1	13.6	20.3	11.2	14.8
Lower-secondary	45.3	32.1	37.9	56.2	36.7	45.3	60.5	39.2	48.9
Upper-secondary, without a Matura	71.4	57.1	66.2	80.1	60.9	73.2	82.2	64.2	75.7
Upper-secondary, with a Matura	72.2	59.3	65.0	78.8	64.8	71.1	79.2	64.8	71.3
Higher education	86.8	75.8	80.4	91.2	78.4	83.9	91.8	79.7	84.8
Total	70.3	57.7	63.9	78.1	62.2	70.1	79.8	64.1	71.9

Source: LFS, *CSO*.

The employment rate of respondents identifying either as Roma or non-Roma in the Labour Force Survey, aged 20–64, improved but the ethnicity-based difference barely decreased (*Table 4*). In 2018, less than 34 per cent of the Roma aged 20–64 were in employment as opposed to the 73 per cent among the non-Roma.

The large difference stems from the joint impact of two factors: the employment rate of the Roma lags behind that of the non-Roma at all qualification levels, except for the few higher education graduates, and at the same time the low-qualified, whose share in employment is lower than the average, are strongly overrepresented in the Roma population. The difference between the rate of Roma and non-Roma men is substantial but still much lower than the gap in the case of women. Only one in five Roma women with a lower-secondary qualification at most was in employment in 2018. Proportionately this is about half of the participation rate of Roma men and non-Roma women with identical qualification levels.

Table 4: Employment rate of the Roma and non-Roma population, aged 20–64, broken down by educational attainment, 2017, 2018 (percentage)

	2017			2018		
	male	female	total	male	female	total
Non-Roma						
Without a lower-secondary qualification	17.2	10.8	13.6	18.6	13.9	15.8
Lower-secondary	59.2	38.9	47.8	63.6	41.6	51.5
Upper-secondary, without a Matura	80.5	61.5	73.7	82.5	64.5	76.0
Upper-secondary, with a Matura	78.8	64.9	71.1	79.2	64.9	71.3
Higher education	91.3	78.4	83.9	91.8	79.7	84.8
Total	79.1	63.5	71.2	80.8	65.3	73.0
Roma						
Without a lower-secondary qualification	19.9	9.1	13.4	23.3	7.0	13.3
Lower-secondary	36.9	21.2	28.5	40.0	20.2	29.9
Upper-secondary, without a Matura	62.0	37.5	53.4	63.9	47.2	57.6
Upper-secondary, with a Matura	75.7	42.4	54.6	63.1	49.7	56.4
Higher education	12.9	90.0	56.3	...	100.0	85.1
Total	42.4	22.7	32.2	44.2	23.3	33.7

Source: LFS, *CSO*.

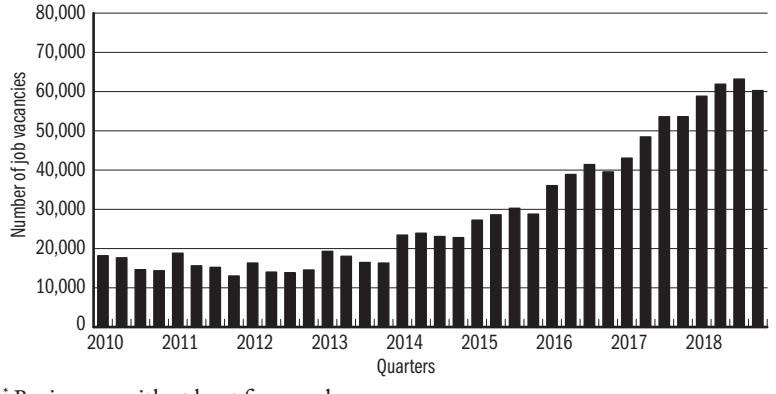
Partly because of being concentrated in regions or types of municipalities with adverse labour market conditions and partly because of lower than average educational attainment, a larger share of the Roma participate in public works schemes, compared with the non-Roma. In 2018 32 per cent of Roma employees, and more than 40 per cent of Roma women were employed in such schemes. Nevertheless, the growth of jobs in the primary labour market in comparison with public works was in line with the average in the case of Roma employees. The permanent poor labour market outcomes of the Roma is likely to be reinforced by the fact that 68.4 per cent of the 18–24 age group were early school leavers, that is they did not acquire an upper-secondary education until the age of 24, compared with the 9.3 per cent of the non-Roma, and 40.1 per cent of Roma youth aged 15–24 were not in education, employment or training (NEET) compared with the 9.1 per cent among the non-Roma.

LABOUR SUPPLY AND DEMAND

The labour market is increasingly facing limits to the expansion of employment, the gap between demand and supply widens, the available labour supply is not of the needed qualification structure and not where it is needed. The increase in labour demand is revealed by changes in the number of vacancies,

although the relevant statistics measure trends more precisely than the actual number of missing employees at a point in time.[11] In the first quarter of 2018, there were 79.4 thousand vacancies at businesses with at least 5 employees and state-funded institutions and this figure rose to 83.6 thousand in the second quarter, 87.7 thousand in the third quarter and then it fell to 83.3 thousand in the fourth quarter. The annual average of vacancies at present and in the near future was nearly 23 percent above the level one year prior. 60.3 thousand of the vacancies were in the business sector in the fourth quarter, which amounted to nearly 2.8 per cent of the total number of vacancies (*Figure 4*).

Figure 4: The number of vacancies in the business sector,* 2010–2018



* Businesses with at least five employees.
Source: *CSO,* vacancy statistics.

Compared to the overall vacancies, the highest figure was reported in the administrative and service support sector, where 5.6 per cent of jobs were vacant. More than half of the 10 thousand vacancies advertised were for jobs not requiring a qualification, typically posted by temporary agencies active in this sector. Another 21.8 thousand of the vacancies in the business sector were reported in the manufacturing industry and 6.2 thousand at trading companies. The proportion of vacancies in the public sector exceeded 3 per cent in the last three months of the year. There were 4.1 thousand openings in education including 2.7 thousand for higher education graduates (presumably teachers). The highest number of vacancies in the public sector were reported in healthcare and social services. 2.2 thousand of the 8.6 thousand vacancies were for higher education graduates capable of working independently, 4.6 thousand for higher education or upper-secondary graduates with a relevant diploma but nearly one thousand unskilled workers were also missing.

The Hungarian job vacancy rate was only slightly above the European average[12] but its growth was outstanding.

Potential labour reserve (supply) includes, in addition to the unemployed, the inactive wishing to work, the underemployed according to the EU defini-

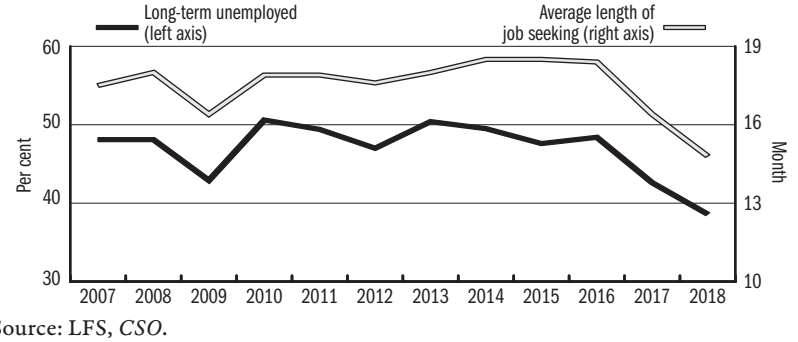
11 In some segments, professional advocacy organisations report many times higher shortage than the aggregated statistical reports of enterprises active in the segment.

12 As regards the share of vacancies, the situation is markedly different in member states. The highest figure was reported by the Czech Republic in the third quarter of the year, where 5.9 out of 100 jobs were vacant, whereas in Greece, not yet emerging from the economic crisis, the rate was only 0.6.

tion, and public works participants, specific to the Hungarian labour market. (The latter are regarded as reserve only for the primary labour market, since they are included in the category of employees.) All the above groups shrank in 2018, thus the labour supply continued to decrease. In 2018, the annual average number of the unemployed, as defined by the ILO, the specialised agency of the UN, fell to 172 thousand, and the unemployment rate was 3.7 per cent. This figure was 20 thousand lower year-on-year, while the unemployment rate decreased by 0.4 percentage points. In the last quarter of the year, the number of the unemployed was 167 thousand, and as a result of the high volume of labour demand, both the average duration of unemployment and the proportion of those searching for a job for at least one year decreased.

Although the potential labour reserve only includes the unemployed as defined by the ILO, there are two more unemployment data, based on a different definition, which are important for describing the labour market situation. The monthly average number of jobseekers registered at the National Employment Service was 255 thousand, nearly 10 per cent lower or 28 thousand fewer than a year earlier. The number of registered jobseekers declined in the first half of 2018, it then slightly increased in the third quarter due to fewer seasonal and public works job vacancies and then it fell again to 243 thousand in the last quarter. The number of the insurance-based jobseekers' allowance recipients (for six months at most) was essentially constant in recent years and thus their share within registered jobseekers grew. However, the proportion of those who receive some kind of unemployment-related cash benefit increased, although most of them still received employment substitution support belonging to social benefits, the amount of which has been unchanged since 2013 (HUF 22,800/month). The number of those who reported being unemployed in the Labour Force Survey of the Central Statistical Office also decreased. An average of 287 thousand classified themselves as such in 2018, which is approximately identical to the joint number of the ILO-definition unemployed and the inactive belonging to the potential labour reserve.

Figure 5: The average duration of job seeking (months, right-hand axis) and the share of the long-term unemployed (left-hand axis) , 2010–2018



Source: LFS, *CSO*.

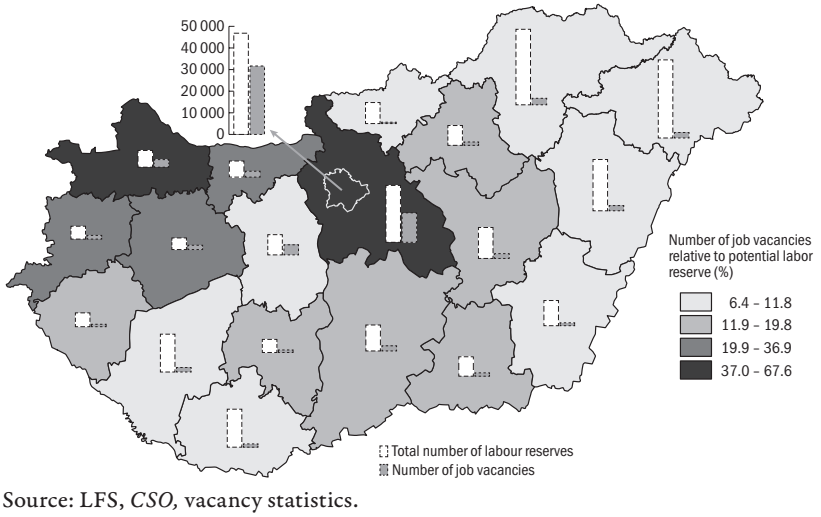
Table 5: The number of employees and the potential labour reserve (thousand persons)

	2010	2016	2017	2018	Change 2018/2017
	thousand persons				
Total employees	3732.4	4351.6	4421.4	4469.5	101.1
Including:					
– underemployed	59.2	50.6	40.4	33.1	81.9
– public works participants	72.5	220.9	194.0	148.2	76.4
Unemployed	469.4	234.6	191.7	172.1	89.8
Inactive:					
– seeking a job but unavailable	10.3	6.9	6.8	8.0	117.6
– wishes to work and is available	200.8	128.5	120.6	104.0	86.2

Source: LFS, *CSO*.

In spite of the decrease, the potential labour reserve still significantly exceeded the number of vacancies in 2018; however, the geographical (and probably also structural) mismatch between the two remains considerable (*Figure 6*). This may be remedied by a boost in domestic migration, which is hindered by the fact that accommodation costs are the highest at locations with the most employment opportunities.

Figure 6: Labour reserve and labour demand by county, 2018



Source: LFS, *CSO,* vacancy statistics.

WAGES, INCOME FROM WORK AND LABOUR COSTS

The insufficient labour supply in the economy enhances the bargaining power of employees, which had a strong impact on changes in wages over the past two years. After a 12.8 per cent increase in gross earnings in 2017, the wages

of people working at enterprises with at least 5 employees, state-funded institutions and non-profit organizations designated to provide data increased by another 11.3% in 2018. In addition to economic trends, Government measures also contributed to this high growth rate. As a result of wage convergence, the minimum wage is increasing continuously, although in 2018 less than the average wage increase, which resulted in low-paid workers falling behind. Not unrelated to the competition for labour, the wages of employees at 200 state-owned businesses continued to increase in 2018 (by 12–13 per cent on average, in line with the third phase of the three-year wage agreement concluded in 2016) and certain staff groups of state-funded institutions enjoyed wage correction measures also this year. 1.1 percentage point of the 11.3 percent increase was due to a decrease in the number of public works participants to two-thirds of the previous year's figure.

On 1 January 2018, the minimum wage rose by 8 per cent to HUF 138 thousand, which was lower than the 15 percent rise over the previous year. At the same time, the guaranteed minimum wage applicable to skilled workers increased by 12 per cent (following an outstanding 25 percent rise of the previous year) to HUF 180.5 thousand. The increase in the minimum wage has a direct impact on the wages of low-earners and therefore it is mostly felt in sectors where the share of minimum-wage earners is traditionally significant. Earlier studies showed that at enterprises with fewer than 10 employees the average wage is very near the minimum wage, accordingly its increase substantially contributes to cleaning up the economy. Recent minimum wage increases had a peculiar effect on wages in the public sector. Since the base salary has been the same for a decade in several segments of the sector, salaries in the lowest wage categories had to be adjusted to the (guaranteed) minimum wage. This partly uses up funds dedicated to wage development in the segment and also equalizes earnings. The indirect effect entails that the minimum wage increase also raises higher wages so that the wage ratio is preserved, at least in segments where results enable employers to do so and where they are forced by the competition for employees. State-funded institutions have far fewer means to avoid wage compression than enterprises and in this way wages may tend toward one another more easily.

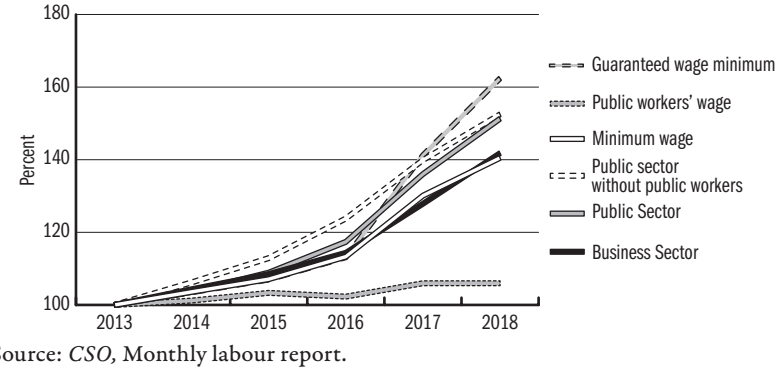
The average gross earnings at enterprises with at least 5 employees in the business sector (excluding the few thousand public workers employed here) were HUF 342.2 thousand, 10.8 per cent up on the previous year (*Figure 7*).

Among segments dominated by the business sector, earnings grew more than the average, by 15.7 per cent in real estate activities, followed by a 14 percent growth in administrative and support services where, among others, temporary agencies are classified, which play an increasingly important role in supplying the necessary workforce. The minimum wage increase in itself significantly boosted wages in construction.[13] In addition, the increasing lack of skilled

13 This is one of the segments where employing workers at the minimum wage and paying the rest cash-in-hand is rather common.

workers, coupled with excess demand for construction capacities, also influenced the level of earnings. These factors resulted in a 12.9 percent increase in earnings, but even so, construction was the second worst-paying segment in the business sector after accommodation and catering (according to earnings statistics), with an average gross earnings of HUF 254.7 thousand. Earnings in the transport and storage sector grew only by 11.2 per cent despite the fact that the employees of large state-owned employers (MÁV – the state railway, Hungarian Post and regional transport companies) received an average increase of 12–13 per cent under multi-annual wage agreements. In manufacturing, the segment with the highest number of employees, the growth rate of earnings has been similar to that of the entire business sector; within this, the earnings growth rate of individual industry branches ranged from 4.8 per cent (pharmaceutical)[14] to 12.5 per cent (other manufacturing and basic metals). A similarly average (11.8 percent) increase was reported in trade. Wages were boosted by the increasing minimum wage (primarily the guaranteed minimum wage) in small rural shops and by successful wage negotiations due to labour shortages in large retail chains. With a rate of increase (8.3 per cent) below the average in the business sector, the finance and insurance industry still had the highest gross earnings at HUF 608.2 thousand in 2018. It was followed by the ICT industry, with an average of HUF 561.4 thousand and a growth rate of 9.5 per cent. The lowest average wage of HUF 212 thousand, only exceeding the skilled workers' minimum wage by its one-fifth, was reported by enterprises employing at least five people in the accommodation and catering industry.

Figure 7: The rate of increase in gross earnings (2013 = 100 per cent)



Source: *CSO,* Monthly labour report.

The growth rate of wages in the public sector, excluding public works participants, was 9 per cent, therefore its modest advantage over the business sector, gained in recent years, slightly decreased in 2018. Wage adjustment measures were implemented in various areas of the sector recently but a comprehensive review of the earnings and promotion scheme did not take place and the effects of wage adjustments were quickly worn off.

14 The low rate is explained by a year-on-year decrease in the amount of non-regular earnings, which resulted in a lower than 100 wage index in some cases in the last month of the quarter (at the time of bonus payments). Regular earnings increased 1.8 percentage points faster than total earnings.

The earnings of workers in public administration, defence and compulsory social security are the highest within the three state budget areas, despite the fact that these segments had the highest proportion of workers in 2018 who were left out of the wage adjustment measures of recent years.[15] The average monthly gross earnings of the nearly 70 thousand (mostly uniformed) manual workers were HUF 352.3 thousand and of the 196 thousand non-manual workers it was HUF 425.7 thousand.

Average earnings of people working in state-funded education institutions increased by 7.9 per cent to HUF 321.4 thousand, mainly driven by the multi-annual salary adjustment of lecturers and researchers working in higher education, which started in the autumn of 2016. As a result, their guaranteed wages increased by another 5 per cent on average on 1 January 2018. In primary and secondary education, which received a significant increase in earnings in 2013, it causes tensions that annual growth is not adjusted to changes in the minimum wage and that the wage increase, which was indeed considered substantial five years ago but was linked to extra workload, has by now lost much of its value.[16]

The most significant wage correction measures of the past one and a half years were aimed at those working at state-funded institutions in human healthcare and social care. In November 2017, earnings of specialised doctors and specialised pharmacists in hospitals rose by HUF 100 thousand, those of their colleagues without specialist qualification by HUF 50 thousand, and also the earnings of skilled health workers increased by 12 per cent on average. This was followed by another increase of 8 per cent on average in January 2018. As a result, gross earnings increased by 16.6 per cent in human healthcare and 9.5 per cent in social care in 2018. Thus gross average wages in the former rose to HUF 338.4 thousand and in the latter to HUF 237.4 thousand.[17]

Since 2011, a non-wage compensation has been granted to staff at state-funded institutions whose net earnings decreased due to changes in income tax and social security contribution rules in 2011 and 2012. Due to staff changes and wage increases, the number of recipients of the monthly HUF 8,200 compensation had decreased from 400 thousand to 78 thousand by 2018.[18]

Since the personal income tax rate and the employees' contributions rates in 2018 were identical to those in the previous year, net earnings (excluding the family tax benefit) increased at the same rate as gross earnings. Excluding public works participants, average net earnings were HUF 227.6 thousand in businesses employing at least 5 persons and HUF 230 thousand in state-funded institutions. Consumer prices rose by 2.8 per cent on average in 2018, resulting in an 8.3 percent improvement in real earnings. The only significant tax change affecting a wide range of employees was the further increase in the family tax benefit for families with two children (*Table 6*). As a result, they were able to deduct HUF 116 670 per child from their person-

15 The wages of government officials are also expected to increase (by 30 per cent on average) in 2019, accompanied by a 15 percent downsizing in 2018 in order to cover the related costs and by increased daily work hours and reduced duration of paid holiday, that is by increased workload.

16 Teachers were promised another 30 percent pay rise to take place in 2020.

17 Excluding public works participants.

18 A few thousand workers at non-profit organisations with delegated public duties are also eligible to compensation, in their case HUF 7,300.

al income tax base in 2018, compared with HUF 100 thousand per child in 2017 (and HUF 62,500 at the launch of the scheme in 2011). Those with one child were able to reduce their tax base by HUF 66,670, similarly to the previous year, while parents with three or more children were able to claim a deduction of HUF 220 thousand a month. The tax benefit can be shared by parents and can also be deducted from social security contributions in the case of low-income workers.

Table 6: Net and real wages taking into account the family tax benefit, 2018

Number of dependent children	Estimated net earnings (HUF/person/month)	Net wages	Real wages	Share of employees belonging to the household type
		Compared with 2017		
		(percentage)		
0 child	214,739	11.2	8.1	54.4
1 child	224,294	11.3	8.2	22.3
2 children	258,288	12.1	9.0	17.1
3 or more children	273,751	10.1	7.1	6.2
National economy, total	227,975	11.2	8.2	100.0

Source: *CSO,* Monthly labour report and the microsimulation model relying on data from the EU statistics on income and living conditions (SILC).

Income from work, including the so-called "other income from work" (with cafeteria benefits as the largest item) was HUF 346.7 thousand in 2018. The amount received in addition to wages ("other income from work") amounted to HUF 16.8 thousand. The growth rate of income from work was 0.1 percentage point higher (11.4 per cent) than that of wage, thus the weight of other income from work within total income from work slightly increased but still did not reach 5 per cent thereof. The growth rate and share of other income from work in 2018 was particularly significant in public administration, defence and compulsory social security, where in the first half of the year a few employees received substantial extra remuneration in the form of *Erzsébet* vouchers, in addition to a bonus payment.

Increasing wages make labour more expensive, which may damage competitiveness and reduce (or even zero out) the profits of enterprises. In order to counteract negative trends in 2017, the rate of social contributions payable by employers was reduced by another 2.5 percentage points after a decrease of 5 percentage points last year (from 27 per cent to 22 per cent). Nevertheless, according to Eurostat data, the unit cost of labour, which is a generally accepted indicator of competitiveness of production, increased in Hungary the most among the Visegrad countries between 2010 and 2018. At the same time, Hungarian labour is still cheap compared with eurozone countries and was even cheaper in 2018 than the Czech or Slovakian labour in 2017, while it was approximately equal to the Polish one.

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IN FOCUS

YOUNG PEOPLE IN EDUCATION AND IN THE LABOUR MARKET

Edited by
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ÁGOTA SCHARLE

INTRODUCTION

MÁRTON CSILLAG, ZOLTÁN HERMANN & ÁGOTA SCHARLE

The chapters of *In Focus* review the main stages of young people's entry into the labour market, from acquiring their education to getting their first job. The level of detail in each chapter is inevitably varied: those that rely on previous research can obviously offer a more thorough analysis, while others are more descriptive. Some chapters present completely new results based on research funded by the Hungarian Ministry of Finance.

The first chapter presents the main trends of the past fifteen years in education and youth employment. The second chapter analyses school choice and dropping out as well as the development of competences that can be attained at school. The third chapter examines the channels through which school-leavers can gain their first experience at work. Chapter four examines the scarring effects of troubled labour market entry on future careers and examines whether low levels of local labour demand and high commuting costs may contribute to youth unemployment. Chapter five explores the impact of employment policies and services on youth unemployment. Chapter six provides a short review of the disadvantages Roma youth face in education and the labour market. Chapter seven explores employers' skills requirements, the returns on tertiary education and the role of on-the-job training in supplementing the missing skills. Finally, chapter eight focuses on the occupational and geographical mobility of youth.

Considering the recent increase in employment and the decrease in the number of NEET (Not in Education, Employment, or Training) young people, the school to work transition seems smooth. However, the details depicted by the chapters of *In Focus* suggest that, these favourable developments cannot be attributed to the well-oiled operation of the relevant labour market institutions (see chapters 3 and 5). Instead, the underlying reason is more likely that, due to the high demand for skilled labour, the majority of skilled youth can find employment without support from public services. At the same time a significant share of unskilled youth only find short-term employment with wage subsidies or in public works. Many of the young people who drop out after finishing primary school end up in public works or unemployment, and receive little support for continuing their studies or entering the labour market.

Whilst the demand for employees with at least secondary education has further increased,[1] the rise in the average level of education has stalled among

1 This is indicated by the growing rate of employment of those with a secondary education (ISCED 3A or 3B) and higher education (see *Tables 4.15* and *4.16*).

new labour market entrants (see sub-chapters 2.3 and 8.2). Furthermore the recent policy measures related to public education and higher education (for instance the lowering of the school-leaving age, see sub-chapters 2.5 and 6.2; the reform of vocational education, see sub-chapters 2.4 and 2.2; or the cut in the number of state subsidised places in higher education) do not support the accumulation of general skills.

Further improvement of the situation of young people in the labour market over the long term may be curbed by two obstacles. On the one hand, as demand is shifting towards non-cognitive skills, an increasing share of entrants with secondary or tertiary education, and most of those with primary education will lack the skills required by employers (*Nedeloska–Quintini*, 2018, see sub-chapter 7.2). On the other hand, the youth with weak basic skills who could easily find employment during the economic expansion, will face the risk of losing their jobs during the next crisis or due to the advancement of technology, and lack the ability to adapt to such changes.[2] With its current, limited capacities, the public employment service will not be able to offer appropriate support in gaining skills or finding stable jobs (chapter 5). These problems could arise even more severely for those generations which may enter the labour market in an unfavourable economic situation (sub-chapters 4.1 and 4.2).

2 Those with a vocational education have weaker basic skills than those who completed secondary education (ISCED 3A or 3B). As they get older, they are more likely to work in unskilled jobs (*Varga, 2018*), even though they had no such disadvantage just after leaving school with freshly gained vocational skills (sub-chapter 8.1).

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1 YOUNG PEOPLE IN THE LABOUR MARKET AND IN EDUCATION – CHANGES BETWEEN 2002 AND 2018

MÁRTON CSILLAG, ÁGOTA SCHARLE, TAMÁS MOLNÁR & ENDRE TÓTH

The educational attainment and labour opportunities of young people deserve significant attention for several reasons. First, the characteristics of the young generations predict future changes in the size, composition and quality of labour supply, which in turn affects economic growth. Their educational and career choices could support the adaptation of labour supply to the changing demands of employers. Second, school-leavers have less information and experience than older employees and require more support in finding a job. The EU's Youth Guarantee Programme requires (and finances) Member States to ensure this support (*EU Council*, 2013). The appropriate design of these services also requires thorough analysis. Finally, it is a well-established fact in the international literature that long-term unemployment experienced shortly after leaving school can lead to permanent losses in terms of employment opportunities and wages (e.g. *Bell–Blanchflower*, 2011, *Burgess et al*, 2003). In Hungary, in addition to the 2008 financial crisis and the subsequent increase in migration, public education and vocational training underwent a number of reforms after 2010: this makes the analysis of young people's labour market opportunities particularly important.

Labour market trends in international comparison

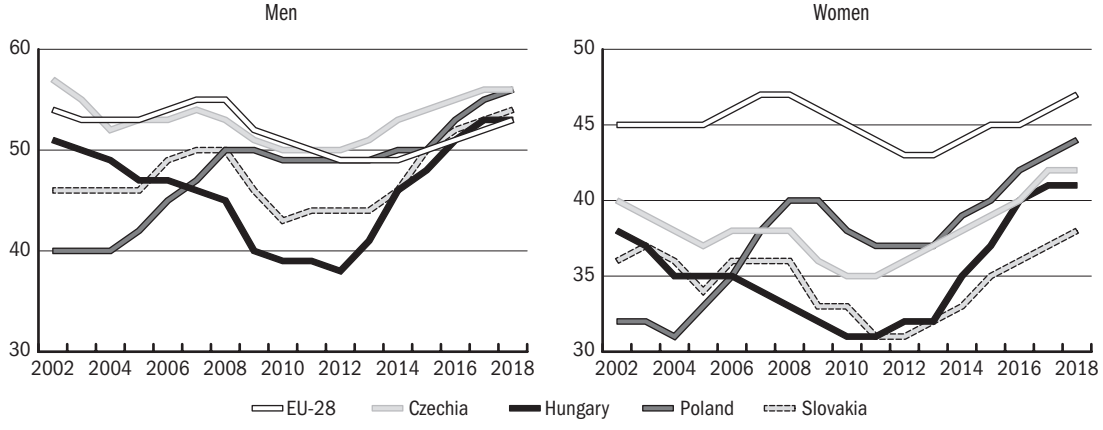
Recent trends in the employment and unemployment of young people have been more or less favourable, whilst indicators of educational attainment have somewhat worsened, particularly in comparison to the European Union.[1] The employment rate of 15–29 year-olds significantly decreased during the crisis of 2008–2011: way below the EU average, it was the lowest among the Visegrád Group countries (*Figure 1.1*). Due to the fast rate of growth observed in recent years, this gap essentially disappeared by 2016. These tendencies apply to both genders, but in the case of men, both the decrease during the crisis and the subsequent increase were more prominent. Some of this may be attributed to supply-side developments, as suggested by the fact that the increase after 2012 was faster for 15–29 year olds than among 30–34 year-olds.[2]

Unemployment followed the development of the economic cycle, i.e. it slowly increased before the crisis, soared during the crisis, and declined steadily during the subsequent recovery. There is little variation in this amongst the Visegrád Group (and the EU average), except for the Czech performance, which was of a somewhat more favourable nature than in other countries in the region.

1 We compared the Hungarian data to the Visegrád Group countries and the EU average: the international data is assumed to indicate improvement that can be attained in theory, and we can evaluate the developments in Hungary compared to these. The calculations described in the chapter are presented in more detail in *Csillag et al* (2019).

2 The employment rate of men aged 30–34 rose from 85 percent to 92 percent between 2012 and 2018, while the employment rate of those aged 15–29 rose from 38 percent to 53 percent.

Figure 1.1: Employment rate of men and women aged 15–29, 2002–2018



Note: The employed include public works participants.
Source: *Eurostat*.

The share of youth not in education, employment, or training (NEET) among men aged 15–29 years developed similarly to unemployment: during the crisis, it was above the averages of the European Union and the Visegrád Four, amounting to around 14 percent, while in more recent years it declined rapidly, even compared to other countries, reaching 7.5 percent by 2018. The effect of the economic cycle was visible in the case of women as well, it was albeit weaker, and the improvement in recent years was also smaller in their case, therefore the NEET-rate stayed high in regional comparison (*Mascherini et al*, 2017). In 2018, the female NEET rate was 18.6 percent in Hungary, whilst the EU28 average, as well as the Czech or the Polish indicators did not exceed 16.5 percent.

As for participation in full time education, recent trends vary both across the Visegrad countries and in the European Union. In Hungary and Slovakia, the share of youth in full time education followed the development of the economic cycle: during the recession it was high (around 67–68 percent), then throughout the economic boom it began to decrease. In Hungary it dropped to around 60–61 percent, and in Slovakia it began to increase again only in 2017. In Poland (where employment did not decline during the recession) the share of students was decreasing until 2018, whilst in Czechia and the European Union average, it increased continuously. The Hungarian indicator trailed behind the EU28 average (67 percent) by 7 percent, and also behind the Czech indicator (70 percent) by 10 percent. To summarise, whilst employment and unemployment developed favourably, the decrease in the share of students diverges from the EU trends in an unfavourable way.

Factors shaping young people's labour market outcomes

The employment rate can increase for various reasons. It is a positive development if the increase is due to new entrants and young unemployed people finding work faster, or if mothers with small children return to the labour market sooner, as this implies that the unemployed or inactive period, which erodes ability to work, has shortened. The role of services assisting in job search is discussed in Chapter 5 of this volume.

The role of demographic trends influencing labour supply cannot be neglected either. The decrease of birth rates can increase employment, or if the cohort of youth in their 20ies is more numerous than the cohort of youth in their teens, who are typically less likely to participate in the labour market.

It is less favourable if employment grows because young people drop out of school, and fewer of them study further in secondary and higher education (see sub-chapter 2.5), as this reduces the human capital of the affected cohorts (and consequently their average productivity), which is expensive to correct in adult education.

Lastly, one should also consider the forms of work that are favoured by the expansion. If employment is growing in stable jobs that support skills development, that is favourable both for young people's careers and economic growth. If the expansion is mainly in casual, temporary jobs, fixed-term contracts or public works, that may be less favourable. This is because if young people spend a long time in a job where there is no opportunity for either career advancement or learning, this can result in lower productivity and wages throughout their entire future career – this is discussed in sub-chapters 3.3 and 5.5.

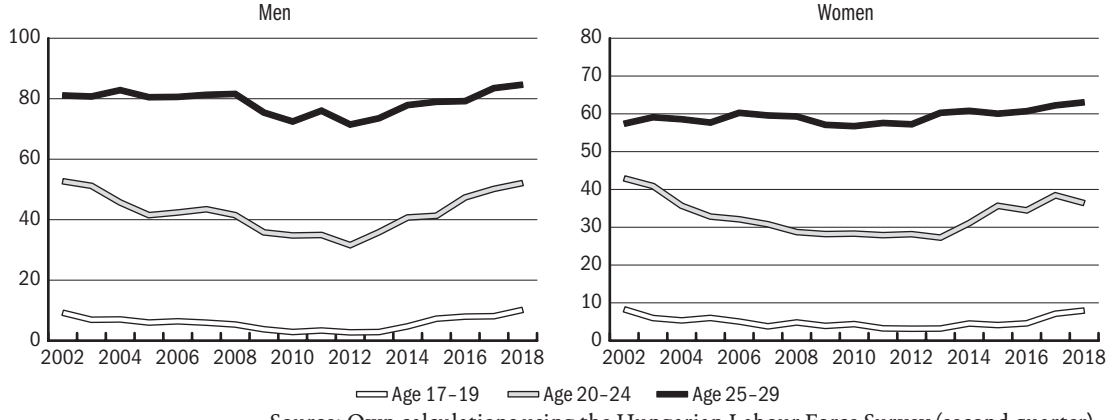
The drastic decrease of employment in the years of the recession deserves special attention, as that may have long lasting consequences for the generations that entered the labour market during the recession. Chapter 4 explores this scarring effect in more detail.

Labour market status by age group

To get one step closer to understanding the observed trends, we examine the development of employment and education by gender and age group (*Figures 1.2, 1.3* and *1.4*). In order to more accurately assess the improvement of the employment indicator, we calculated the employment rate for the past 15 years using the labour force survey of the Hungarian Central Statistical Office (HCSO), excluding public works participants (as they do not work on the primary labour market),[3] as well as those who were in full-time education, and those receiving childcare who did not work. Youth not in employment, education, or training (NEET) were defined as those who were not employed (except if in public works), and did not participate in any form of education or training (full-time or part-time, within or out of the school system).

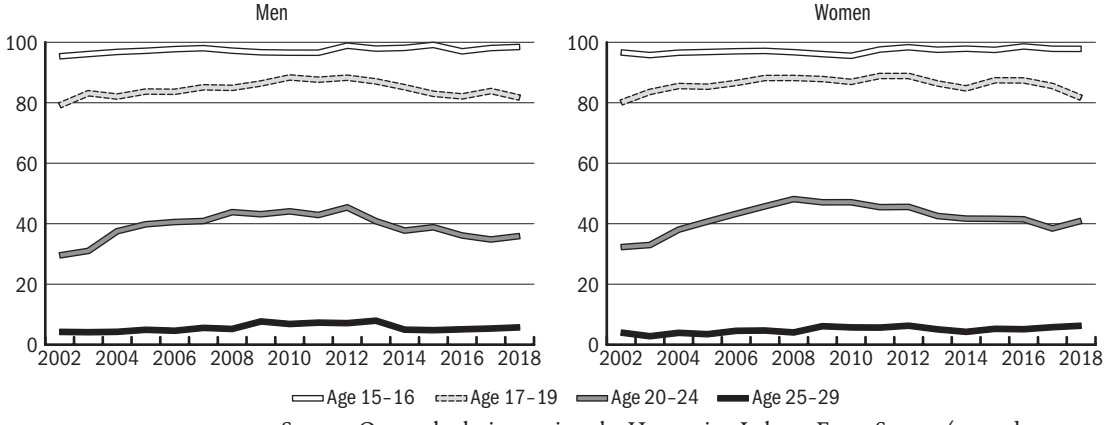
3 The proportion of youth in public employment is not significant. 1–1.5 percent of those aged 17–19 work in this form, it is the greatest among men aged 20–24, where the rate is around 3 percent.

Figure 1.2: Employment rate by age and gender, 2002–2018 (percent)



Source: Own calculations using the Hungarian Labour Force Survey (second quarter).

Figure 1.3: Share of full-time students, by age group, 2002–2018 (percent)



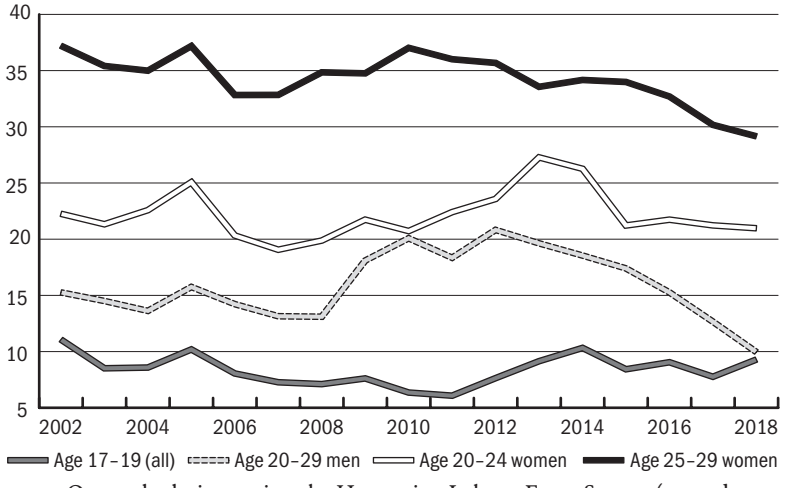
Source: Own calculations using the Hungarian Labour Force Survey (second quarter).

The time series shown by age group in *Figures 1.2, 1.3, and 1.4*, clearly depict the effect of the 2008 recession on the labour market, especially on the employment outcomes of men. During the recession, the employment rate of men aged 20–29 decreased, the share of full-time students stayed intact, while the NEET rate increased. In the following period of growth, the employment rate and the NEET-rate showed a rapid recovery. The indicators for women aged 20–29 developed similarly to those for men, except that during the recession their employment did not decrease as much. In the case of women aged 25–29 the effects of the recession are less significant on all indicators, which may be explained by the improvement of their educational attainment or delayed childbearing.

There is also a clear decline, and then a reversal of the prior, fast improvement in the level of schooling, which can be explained in part due to the booming

demand for labour, and in part due to policy measures (the centralization of education, the lowering of the compulsory school-leaving age, the reform of secondary education, the cut in publicly funded places in higher education). In recent years, the rate of full-time students decreased in the 17–19 and the 20–24 age groups, most significantly in the case of men aged 20–24, where the indicator dropped 10 percentage points between 2012 and 2017.

Figure 1.4: Share of youth not in employment, education or training (NEET) by age group and gender, 2002–2018 (percent)



Source: Own calculations using the Hungarian Labour Force Survey (second quarter).

The development in the composition of NEET youth also points to the effects of the recession: the share of those young people who have been searching for a job for some time as well as those young people who are discouraged[4] and inactive decreased by 25 percentage points between 2012 and 2017. In economically disadvantageous regions, however, the rate of long-term unemployed and (or) discouraged young people remained high. The reasons for this are discussed in sub-chapters 5.1 and 6.2.

The wage returns of educational attainment and experience

There were some changes in the wage returns of education between 2002 and 2016, but the observed slight decline in returns are not large enough to explain the observed drop in enrolment in tertiary education after 2012. The wage premium of higher education decreased – especially in the case of new entrants – but it remained significant (*Table 1.1*). The relative wages of graduates were influenced by numerous factors in this period, which all pointed towards the narrowing of the wage premium. First, the previous expansion in higher education and the Bologna Process increased the supply of graduates, and the share of those entering the labour market after achieving a Bach-

4 The categorization follows the method of Eurofound (see also, in greater detail in sub-chapter 5.1) (*Mascherini–Ledermaier,* 2016).

elor's degree. Second, the minimum wage and the guaranteed wage minimum which essentially affects for those with primary and secondary education continued to increase (cf. sub-chapter 5.4). Finally, the removal of the top income tax bracket could also slow down the increase in the average *gross* wages of graduates.[5] The wage returns to experience, however, increased in the case of graduates (especially for men). Chapter 2 and sub-chapter 7.3 examine these developments in detail.

Table 1.1: New entrants' monthly gross real wages in the business sector, by education, gender and work experience, 2012–2016

	Men		Women	
	0–1 years	5 years	0–1 years	5 years
	of work experience			
2012				
Primary	102,896	108,438 (105%)	98,238	103,161 (105%)
Vocational school	106,785	115,290 (108%)	100,451	105,162 (105%)
Secondary	120,963	135,520 (112%)	117,393	127,494 (109%)
Higher	246,253	283,602 (115%)	193,447	230,372 (119%)
2016				
Primary	151,854	157,430 (104%)	155,887	157,099 (101%)
Lower secondary	164,994	173,246 (105%)	155,771	159,826 (103%)
Upper secondary	179,216	194,712 (109%)	159,898	172,331 (108%)
Higher	244,920	323,837 (132%)	214,871	264,046 (123%)

Note: Percentages show the wage premia compared to new entrants (2016 = 1).
Source: *PES* Wage survey, own calculations.

Decomposing changes in employment and the NEET rate

The above discussed aggregated changes in the labour market and education indicators are shaped by long-term demographical trends, policy actions and the economic environment as well. The growth of the employment rate and the recently seen significant decrease of the NEET-rate may be explained not only by the economic boom for instance, but also by the (slowing) rise in school participation.

We show the relative importance of these main processes via factor decomposition. We compare the later years to the labour market outcomes of youth recorded in 2002. We examine three pivotal years: 1) 2007, the last year before the recession; 2) 2012, the lowest point of the recession in terms of youth employment; 3) 2017, the last year for which we have data available.

To decompose the main factors, we used the quarterly waves of the Hungarian Labour Force Survey and we considered five levels of educational attainment,[6] three age groups, and finally the seven (NUTS2) regions, and we performed the analysis by gender. When analysing employment, we considered those in public works as unemployed (as they do not work in the labour market), but did not count them among the NEET youth. We used the

5 Before 2011, personal income tax was a progressive tax (in the top bracket, 32 percent above an annual salary of 5 million HUF), this was replaced by the flat rate tax at 19 percent.

6 The five categories are: primary education, vocational education, general secondary, secondary with vocational education, higher education.

Oaxaca-Blinder decomposition method, which decomposes the changes (in percentage points) between the given pair of years into two parts. The composition-effect shows to what extent the difference (across two years) in the population's composition in terms of age, educational attainment and residence explains the change observed in the NEET- and the employment rate. The parameter effect captures the effect of all other changes.

Findings are summarised in *Tables 1.2* and *1.3*, where we present the changes in the NEET rate and the employment rate calculated in percentage points. We portray, again in percentage points, the contribution of changes in the composition of youth, particularly the changes in the composition of young people's educational attainment, as well as what can be attributed to other economic factors (this is shown by the parameter effect).

Tables 1.2: Decomposing the employment rate of the population aged 16–29, 2002–2017 (percentage points)

	Men			Women		
	2007	2012	2017	2007	2012	2017
Total difference	–3.91	–14.06	–0.42	–4.36	–7.52	–0.09
Composition effect	–2.93	–6.25	–4.55	–0.89	–1.69	–1.26
of which: education	–2.61	–4.54	–4.38	–0.69	–0.80	–1.20
Parameter effect	–0.98	–7.82	4.13	–3.47	–5.84	1.17

Source: Own calculations using the Hungarian Labour Force Survey (second quarter).

Table 1.3: Decomposing the NEET-rate of the population aged 15–29, 2002–2017 (percentage points)

	Men			Women		
	2007	2012	2017	2007	2012	2017
Total difference	–3.32	0.95	–5.78	–5.53	–4.09	–7.47
Composition effect	–0.61	–1.03	–1.06	–1.34	–2.88	–2.29
of which: education	–0.34	–0.61	–1.04	–1.13	–1.81	–2.22
Parameter effect	2.71	–1.99	–4.72	–4.19	–1.20	–5.18

Source: Own calculations using the Hungarian Labour Force Survey (second quarter).

Changes in employment between 2002 and 2017 were governed primarily by economic processes, while – especially for women – changes in the educational composition of youth also played a minor role.[7]

In the decrease of the NEET-rate, however, the increase in young women's average education-levels (which in itself would have decreased the NEET-rate by 2 percentage points) had an important role, which grew over time. At the same time, out of the 7 percentage point decrease in the NEET-rate by 2017, economic and social processes account for more than 5 percentage points, which contributed to improving the NEET rate within particular educational and age groups as well. In the case of young men, the improvement of the

7 Throughout the observed period, the composition based on education continued to improve, albeit slowly, which decreased the employment rate amongst the youth through increasing the rate of those in further education (whilst it increases it in the age group following the completion of higher education).

educational composition only reduced the NEET-rate by around 1 percentage point. The labour market prospects of the NEET youth are examined in more detail in sub-chapters 5.1. and 5.2.

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2 SCHOOL EDUCATION

2.1 THE IMPACT OF READING AND MATHEMATICS TEST RESULTS ON FUTURE EARNINGS AND EMPLOYMENT

ZOLTÁN HERMANN, DÁNIEL HORN, JÁNOS KÖLLŐ, ANNA SEBŐK, ANDRÁS SEMJÉN & JÚLIA VARGA

Introduction

Until the recent decades, *educational attainment* was measured by qualifications or completed years of schooling, when researchers tried to explore its impact on labour market prospects, because there were simply no other data comparable across time and space. This substantially distorted findings, since it was not possible to take into account differences in the quality of education, its efficacy and the knowledge gained outside school. Owing to the spreading of the standardised assessment of competences, enabling comparison across regions and over time, in recent decades it has become possible to measure the competence level of school leavers. As a result, later research has increasingly focused on the level of cognitive skills and their impact on labour market outcomes and earnings (cf. *Hanushek,* 2009).[1]

Studies typically find that higher test scores, implying better cognitive skills, are associated with an easily quantifiable wage advantage throughout working life. Research has also demonstrated that test results are strongly associated with future earnings, even after controlling for educational background, work experience and other typical explanatory variables. For example, the literature review by *Hanushek* compared several studies based on American data, and concluded that one standard deviation increase in test results at the end of upper-secondary school translates into 12 percent higher annual earnings in adulthood on average.[2]

One could say that although the association between test results and future earnings is undeniable, there is no causal relationship between them and the assumed positive impact of test results on earnings is in fact due to differences in innate abilities and intelligence. However, the findings of some studies (including *Lazear,* 2003) strongly suggest that general intelligence, that is the level of innate abilities, does not entirely determine subsequent labour market outcomes. Indeed, learning improves specific cognitive skills and in this way the results of intelligence tests, and even if it does not enhance general intelligence (cf. *Ritchie et al,* 2015), the improved specific cognitive skills are reflected in increasing earnings (*Finnie and Meng,* 2001; *Fazekas,* 2018).

Therefore it is crucial to investigate to what extent cognitive skills correlate with labour market success. This subchapter is the first in Hungary to ana-

1 Another major group of studies (inspired by *Bowles–Gintis,* 1976 and *Jencks,* 1979) explored the impacts of non-cognitive skills and abilities (also called personality traits) on labour market outcomes and wages, in addition to (or sometimes instead of) the impacts of cognitive skills. For more details see Subchapter 7.2.

2 Several other studies from developed and developing countries have come to similar conclusions: there is a statistically and economically significant association between skills and wages (and other labour market outcomes, such as employment). However, the size of the wage premium, attributed to a standard deviation increase in skills, varies a lot (from 5 per cent to 48 per cent), since the utilized model form and control variables affect the results considerably.

lyse how standardised test results of upper-secondary school students relate to subsequent wages in young adulthood and unemployment probabilities.

Data and methods

We used a panel of linked administrative data (Admin3) compiled in 2019 by the Databank of the Centre for Economic and Regional Studies (*Sebők,* 2019), which contains individual-level, anonymized data of 50 percent of the Hungarian population between 2003 and 2017, stored in administrative databases. The database contains data indispensable for this study such as the reading and mathematics skills of individuals assessed during their school years, as well as their qualifications, age, wages and labour market status in early adulthood.

The sample includes those who were tested either for mathematics or reading or both in grade 10 during the National Assessment of Basic Competences (NABC) in 2008, provided that there is information available concerning their labour market status in 2017. This is one cohort of upper-secondary school students, aged 25–26 in 2017.

Inactive persons and students (including the ones working and studying simultaneously) were excluded from the sample, in addition to those whose labour market status was unknown at the time of the survey.[3] Therefore labour market chances are analysed from a narrow perspective (employed *versus* registered unemployed or unemployed receiving benefits).

Our earnings estimations refer to those who were employed on 15 October 2017 and whose actual wage data are available from the database. Our unemployment estimations are based on the sample including registered unemployed, recipients of unemployment benefits, participants of labour market programmes or public works and the number of employees, respectively, as of October 2017.

Mincer earnings functions (*Mincer,* 1974) were estimated first, with earnings regressed on mathematics and reading test scores in grade 10, and educational attainment, gender, estimated labour market experience[4] as well as the latter squared in 2017. Certain subsequent regressions were controlled for sectors, occupations and place of residence (district level). The dependent variable for the earnings regressions was the logarithm of monthly wages, thus the results can be interpreted as percentages.[5]

In addition, estimations on unemployment probabilities are also provided, where the dependent variable is a dummy variable taking the value 1 for registered unemployed and public works participants and 0 for employees.

The mathematics and reading scores of grade 10 pupils at the NABC in 2008 were standardised (i.e. converted into variables with means of 0 and variances of 1), therefore the coefficients in the estimations below can be interpreted as changes in standard deviation.

3 The latter group may include the unemployed or inactives not receiving social benefits and may also include those working or studying abroad. Thus it is not possible to identify the inactive population not in education accurately.

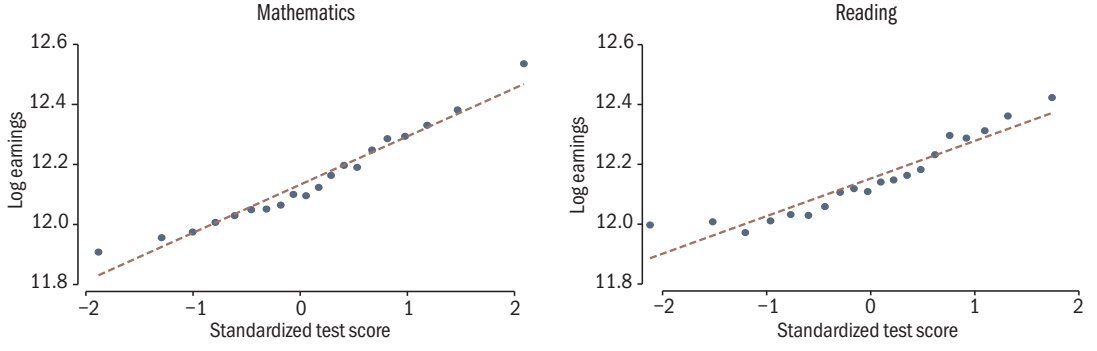
4 The estimated labour market experience is defined as the number of years between the time of obtaining the highest qualification (school attainment) and October 2017.

5 For those who did not work in their job throughout October 2017, a monthly wage was calculated from the wage observed, taking into account the number of days actually worked. Unfortunately, the database cannot at present differentiate between full-time and part-time workers.

Results – total sample

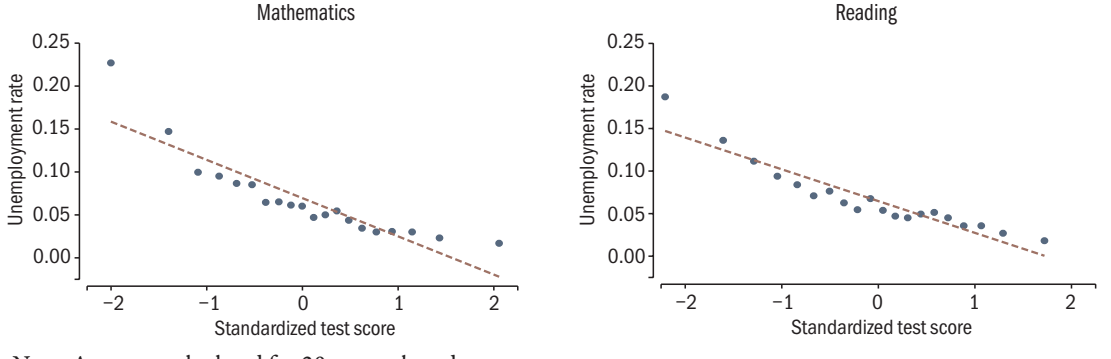
Figures 2.1.1 and *2.1.2* show the raw association between standardised test scores and the logarithm of earnings, or unemployment probability, respectively. The Figures reveal, on the one hand, that both mathematics and reading are strongly associated with labour market outcomes, and, on the other hand, that the connection is almost linear, just slightly diverging from the straight line at the ends of the distribution, thus a linear form is adequate to use in the employment and wage equations.

Figure 2.1.1: Association between test scores in grade 10 and the logarithm of earnings



Note: Averages calculated for 20 groups based on test scores.
Source: Authors' compilation.

Figure 2.1.2: Association between test scores in grade 10 and unemployment



Note: Averages calculated for 20 groups based on test scores.
Source: Authors' compilation.

Tables 2.1.1 and *2.1.2* show the Mincer regressions estimated for the entire sample described above. The impact of test scores in grade 10 on earnings is shown in *Table 2.1.1* and the impact of test scores on unemployment probability is presented in *Table 2.1.2*. The estimated coefficients are expected to be positive in the first case, and negative in the second.

Column (2) of *Table 2.1.1* relies on mathematics scores as the sole indicator of cognitive skills. It reveals that students achieving one standard deviation

higher scores in grade 10 are likely to have 8.5 per cent higher wages in the labour market. Estimates in Column (3) include both mathematics and reading test scores. The results indicate that mathematics scores are more strongly associated with wages than reading scores. For understanding the underlying reasons, a more thorough research is needed than the present descriptive study.[6]

Table 2.1.1: Impact of test scores in grade 10 on the logarithm of earnings in young adulthood

	(1)	(2)	(3)	(4)
Vocational school	0.122**	0.137***	0.138***	0.0966**
	(0.0532)	(0.0529)	(0.0529)	(0.0471)
Secondary school (Matura)	0.203***	0.144***	0.137***	0.0987**
	(0.0512)	(0.0510)	(0.0511)	(0.0454)
Higher education degree	0.591***	0.454***	0.440***	0.280***
	(0.0585)	(0.0588)	(0.0590)	(0.0528)
Mathematics scores		0.0850***	0.0752***	0.0448***
		(0.00499)	(0.00622)	(0.00561)
Reading scores			0.0166***	0.00685
			(0.00636)	(0.00571)
Constant	11.71***	11.81***	11.82***	11.70***
	(0.0628)	(0.0627)	(0.0628)	(0.0940)
Fixed effects				
Sector				Yes
Occupation				Yes
District				Yes
N	28,188	28,188	28,188	28,136
R^2	0.077	0.087	0.087	0.299

Note: OLS-estimations.
Dependent variable: logarithm of monthly wages. Control variables not shown in the table: gender, potential work experience and its square, dummy variables signifying missing values for experience and test scores.
The reference category for qualifications is lower secondary school (8-year general school).
Standard errors are indicated in brackets.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' compilation.

The estimation in column (4) of *Table 2.1.1* contains further control variables that may have an impact on wages regardless of test scores, for example the sector and type of occupation and the location of work. The estimation in Column (4), including all control variables, shows a lower value for the coefficient of the mathematics test score achieved in grade 10, as compared to the figure in Column (3), but the connection is still significant and strong. The results of equation (4) indicate that better cognitive skills not only enable people to get jobs in better paid occupations, but persons with higher mathematics scores also tend to have higher earnings within a given occupation. It may be concluded that in Hungary cognitive skills in upper secondary school are strongly associated with subsequent wages in early adulthood.

6 Considering the rather strong association between the two test scores, it is difficult to separate the effect sizes. The correlation between the two test scores ranges between 0.7–0.8 in Grade 10 in the various years.

Table 2.1.2 shows the association between cognitive skills and the probability of unemployment in the total sample. Similarly to wages, mathematics test scores achieved in grade 10 are strongly associated with the probability of becoming unemployed. Column (2) relies on mathematics test scores as the indicator of cognitive skills. Our results indicate that one standard deviation increase in results in grade 10 reduces the probability of unemployment by 2.7 percentage points in young adulthood. Column (3) includes both mathematics and reading scores. Similarly to wages, the explanatory power of mathematics test scores is stronger, but unemployment probabilities of individuals are also significantly explained by their reading skills. After taking local labour market control variables into account, coefficients in Column (4) are lower but still significant.

Table 2.1.2: Impact of test scores in grade 10 on the probability of unemployment in young adulthood, marginal effects

	(1)	(2)	(3)	(4)
Vocational school	-0.0395***	-0.0397***	-0.0395***	-0.0300***
	(0.00842)	(0.00765)	(0.00761)	(0.00682)
Secondary school (Matura)	-0.0928***	-0.0664***	-0.0604***	-0.0507***
	(0.0159)	(0.0147)	(0.0145)	(0.0129)
Higher education degree	-0.0977***	-0.0655***	-0.0585***	-0.0531***
	(0.00992)	(0.0106)	(0.0110)	(0.00918)
Mathematics scores		-0.0270***	-0.0202***	-0.0146***
		(0.00155)	(0.00195)	(0.00172)
Reading scores			-0.0112***	-0.00481***
			(0.00196)	(0.00173)
District fixed effect				Yes
N	31,855	31,855	31,843	31,326
Estimated average probability	0.0674	0.0674	0.0674	0.0683

Note: Probit estimates.
Dependent variable: Registered unemployed or public works participant (1) or employee (0). Control variables not shown in the table: gender, potential work experience and its square, dummy variables signifying missing values for experience and test scores.
The reference category for qualifications is lower secondary school.
Standard errors are indicated in brackets.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' compilation.

Results by school attainment

Tables 2.1.3 and *2.1.4* show the last specifications of the tables above, containing all control variables, estimated for subgroups by school attainment. *Table 2.1.3* indicates that the association between cognitive skills and wages is stronger among higher education graduates, compared to those with lower qualifications, but the situation completely different for labour market chanc-

es: *Table 2.1.4* shows that cognitive skills at upper-secondary school are far more strongly associated with subsequent labour market outcomes (employment status, or the chance of becoming unemployed) among the low-qualified than among higher education graduates.

Table 2.1.3: Impact of test scores in grade 10 on the logarithm of earnings in young adulthood by school attainment

	Low-education level (lower-secondary or vocational school)	Secondary level (Matura)	Higher education level (BA or above)
Mathematics scores	0.0192	0.0370***	0.0758***
	(0.0128)	(0.00808)	(0.00996)
Reading scores	0.00673	0.0102	0.00650
	(0.0123)	(0.00801)	(0.0112)
N	4,948	14,644	8,544
R^2	0.300	0.250	0.319

Note: OLS-estimation.
Dependent variable: logarithm of monthly wages. Control variables not shown in the table: gender, potential work experience and its square, dummy variables signifying missing values for experience and test scores as well as sector, occupation and district fixed effects.
Standard errors are indicated in brackets.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' compilation.

Table 2.1.4: Impact of test scores in grade 10 on the probability of unemployment in young adulthood by school attainment, marginal effects

	Low-education level (lower-secondary or vocational school)	Secondary level (Matura)	Higher education level (BA or above)
Mathematics scores	–0.0319***	–0.0136***	–0.0160***
	(0.00618)	(0.00274)	(0.00305)
Reading scores	–0.0194***	–0.00201	–0.00301
	(0.00609)	(0.00274)	(0.00337)
N	5,624	15,642	6,615
Estimated average probability	0.141	0.0699	0.0385

Note: Probit estimates.
Dependent variable: Registered unemployed or public works participant (1) or employee (0). Control variables not shown in the table: gender, potential work experience and its square, dummy variables signifying missing values for experience and test scores.
Standard errors are indicated in brackets.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' compilation.

The above findings reveal that in the case of the low-qualified better cognitive skills strongly contribute to avoiding unemployment; however, they do not substantially contribute to higher (observed) wages. By contrast, among

higher education graduates, better skills result in a smaller reduction in the probability of unemployment, but contribute more substantially to higher wages. Considering that the standard deviation of wages is smaller at the lower end of the qualification distribution than at the top, while the standard deviation of the probability of unemployment is much smaller at the top, the findings of this study are by no means surprising. Nevertheless, in order to better understand the mechanism behind the associations between cognitive skills assessed at upper-secondary school and labour market outcomes in early adulthood in Hungary, further research is warranted.

Conclusion

The impact of the quality of education on the level of cognitive skills has been well documented. Other factors also influencing their level include – among others – family environment, peer groups and health. The latter are not easily influenced by social policy instruments, while the quality of education, which may significantly improve the cognitive skills, and thus the labour market chances of the population, is much easier to raise.

This study is the first to show in Hungary that the cognitive skills of pupils assessed in grade 10 are strongly associated with labour market success in young adulthood. Our findings indicate that one standard deviation increment in mathematics test results may increase future earnings even by 8–9 per cent on the whole, but within a given occupation or sector, the increase is also about 5 per cent. Furthermore, better cognitive skills are likely to substantially reduce the risk of unemployment: overall, one standard deviation increase in mathematics test results decreases the probability of unemployment by approximately 2.7 percentage points. Accordingly, the likelihood of unemployment for adults with skills considerably (i.e. by about 2 standard deviation units) better than the average are negligible – between 1 and 2 per cent –, while those with substantially worse than average skills face a more than 10 per cent probability of becoming unemployed.

When analysing cognitive skills and labour market success by qualification level, it is seen that cognitive skills are more likely to have an impact on wages among the highly qualified, while they are more strongly associated with unemployment risks among the low-qualified. One of the reasons for this pattern is that better cognitive skills contribute to avoiding unemployment on the one hand (if this is an immediate threat, for example in the case of the low-qualified), and, on the other hand, they result in higher earnings through better occupations, higher positions and higher wages, which is mainly observed among the highly qualified.

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2.2 THE IMPACT OF SCHOOL TRACKS ON STUDENT PERFORMANCE IN UPPER-SECONDARY EDUCATION

ZOLTÁN HERMANN

The effects of school tracks on student performance and disparities between students have long been debated both in international and Hungarian literature alike. Some studies found the academic track to increase student performance (for example *Guyon et al,* 2010, *Pop-Eleches–Urquiola,* 2013, *Horn,* 2013), while others did not report a significant effect of tracks (for example *Malamud–Pop-Eleches,* 2010, *Dustmann et al,* 2012) or mainly attributed disparities between tracks to student selection on admission (*Manning–Pischke,* 2006).

This chapter explores the effects of the three upper-secondary educational tracks in Hungary: general secondary school which is a pure academic track, vocational secondary school which is a track with a mixed academic and vocational orientation and vocational school.

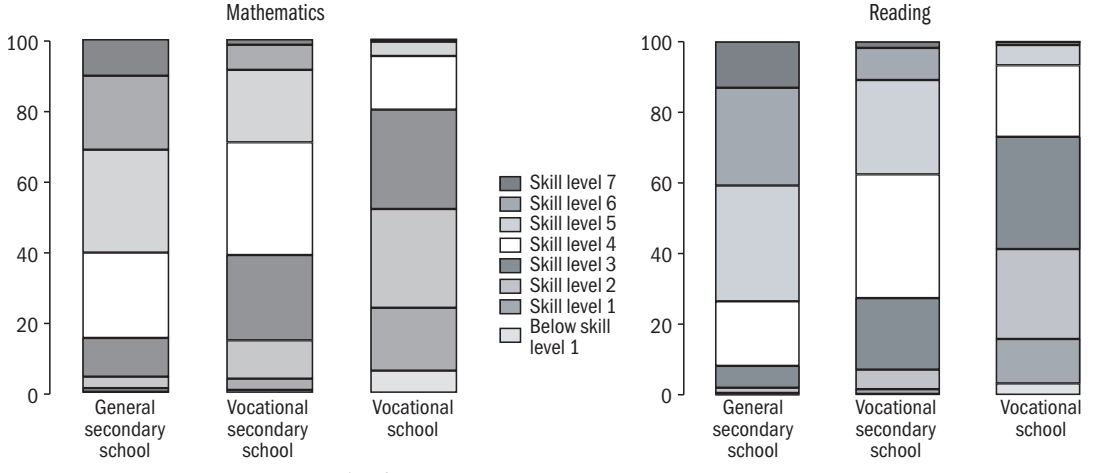
The analysis relies on data from the National Assessment of Basic Competences (NABC). NABC measures the mathematics and reading skills of all students in Grades 6, 8 and 10, except for students with special educational needs and those absent from school on the day of the assessment, using a scale that enables comparison across years and grades. Our analysis includes a single cohort (except for *Figure 2.2.1*): students in Grade 8 in 2014. The sample contains students progressing without grade repetition and those who repeated a grade only once between two assessments (Grades 8 and 10 or Grades 6 and 8), while those completing the two grades in more than three years were excluded from the analysis.

Figure 2.2.1 presents the differences in test results in Grade 10 across school tracks in 2017 (for skill levels see *Balázsi et al,* 2014). The differences are huge. A quarter of vocational school students possess exceptionally poor skills and have difficulties solving the easiest exercises (skill levels 1 and below 1 on a 7-point scale), half of them perform very poorly (skill level 2 at most) and four-fifths of them poorly (skill level 3 at most). By contrast, 60 per cent of general secondary school students demonstrate fairly good (skill level 5 at least), one-third of them very good (levels 6 and 7) skills at the assessment, while poor assessment results are very rare. The majority of vocational secondary school students achieve average results.

Figure 2.2.2 shows the test scores in Grade 10 of students achieving similar scores in Grade 8, broken down by track. It is obvious that students performing better in Grade 8 also achieved proportionately higher scores in Grade 10 in each of the three tracks. However, students achieving equal scores in Grade 8 performed better in secondary schools ending in a secondary school leaving examination (Matura) than in vocational schools. For example, students achiev-

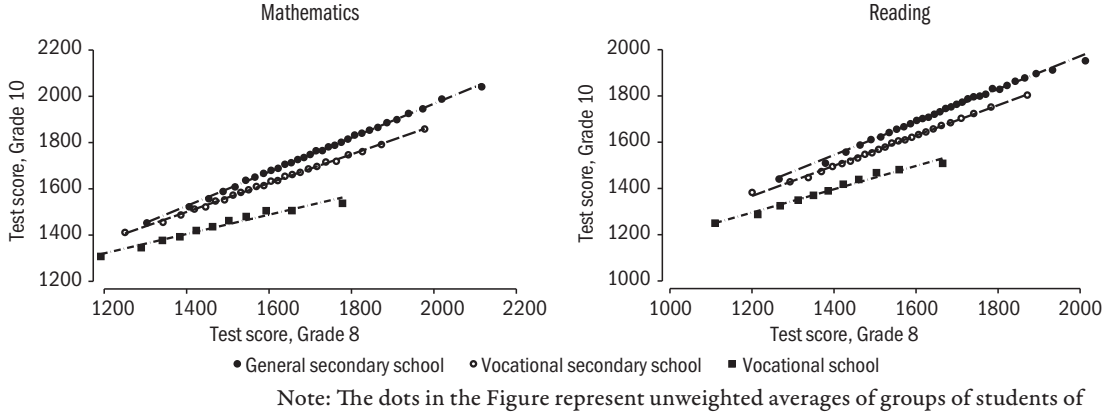
ing 1400 points in mathematics in Grade 8 also achieve about 1400 points in Grade 10 in vocational school on average, while those of them studying in general or vocational secondary schools obtain nearly 1500 points. This approximately 100-point difference amounts to half a standard deviation unit (the standard deviation of test scores in Grade 8 is 200 points). In another respect, the 100-point difference is somewhat smaller than the difference between the average students of two consecutive skill levels (skill levels cover ranges of about 140 points). The Figure reveals that there is also a slight difference in the performance of general and vocational secondary schools (to the advantage of the former) but this is much smaller than the lag of vocational schools.

Figure 2.2.1: Skill levels of Grade 10 students by school track,[a] 2017 (percentage)



[a] Unweighted proportions.
Source: Authors' calculations based on data from *NABC* 2017.

Figure 2.2.2: Test scores in Grade 10 as a function of Grade 8 scores, by school track; students in Grade 8 in 2014



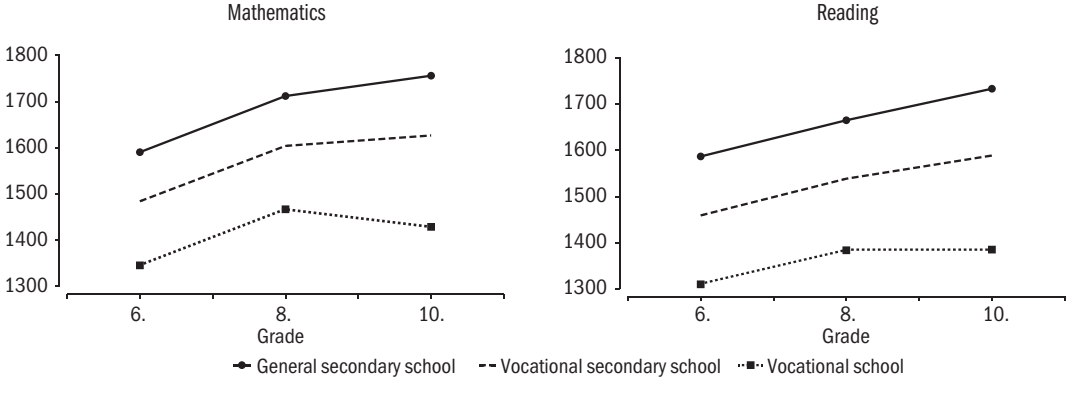
Note: The dots in the Figure represent unweighted averages of groups of students of about 1000.
Source: Authors' calculations based on data from *NABC* 2014–2017.

These disparities are of course not entirely attributable to upper-secondary education: they primarily emerge in primary and lower-secondary education and reflect the impact of selection on admission to upper-secondary school. The question is whether there is a significant difference in the performance of school tracks in addition to the effects of selection.

The differences revealed by *Figure 2.2.2* suggest that upper-secondary school tracks contribute to developing basic skills to varying degrees. However, these differences may be due to differences between students, since students studying in the various tracks may not only differ in earlier academic achievements. It is possible that vocational school students have more learning difficulties, develop more slowly or they are less motivated or diligent.

Based on *Figure 2.2.3*, indirect conclusions may be drawn about the effects of these factors. The Figure presents the average test scores of students attending one of the three tracks in Grade 10 and their scores in Grade 6 and 8. In the first two grades of upper-secondary school, between Grade 8 and Grade 10, the average test scores of students in general and vocational secondary schools increase, while vocational school students achieve equal reading score and lower mathematics score in Grade 10 than in Grade 8 on average. What is particularly interesting, is that the increase between Grades 6 and 8 is similar in the three groups. Although future vocational school students obtained lower scores in Grade 6 and 8 than students subsequently attending tracks concluding with a Matura, their average test score increased to the same extent over the two years. This suggests that it is not impossible to improve basic skills in this group.

Figure 2.2.3: Changes in average test scores between Grades 6 and 10, by school track; students in Grade 8 in 2014



Note: Unweighted averages.
Source: Authors' calculations based on data from *NABC* 2014–2017.

Estimates in *Table 2.2.1* quantify the effect of school tracks more accurately. These regression models include test scores in Grade 10 as dependent variables.

Estimates in Columns (1) and (3) include the following control variables: indicators of prior student performance (test scores in both competence areas in Grades 6 and 8 as well as grades at the end of Grades 8 and 6, the latter as dummy variables) and individual characteristics of students (gender, special education needs and severe disadvantage, educational attainment of mother and father and the number of books possessed, all as dummy variables). The missing values of control variables were substituted by average or typical values and missing values are denoted by independent dummy variables. Controlling for these factors, coefficients show how students are likely to perform in Grade 10 depending on the school track they attend.

Table 2.2.1: Regression estimates of the effect of school tracks on student performance in Grade 10; students in Grade 8 in 2014

	Mathematics		Reading	
	(1)	(2)	(3)	(4)
General secondary school	18.59***	14.20***	26.65***	15.00***
	(1.434)	(1.437)	(1.265)	(1.472)
Vocational school	-51.28***	-71.09***	-58.87***	-63.94***
	(2.138)	(2.581)	(1.803)	(2.730)
General secondary school × test score in Grade 8		0.0924***		0.0696***
		(0.00671)		(0.00730)
Vocational school × score score in Grade 8		-0.108***		-0.0524***
		(0.0107)		(0.0116)
Number of observations	67,115	67,115	67,171	67,135
Number of schools	2,518	2,518	2,518	2,518
R^2	0.702	0.706	0.729	0.703

Note: Unweighted *OLS* estimates.
Reference category for school track: vocational secondary school.
Control variables: test scores in both competence areas in Grades 6 and 8, the categories of grades at the end of Grades 8 and 6, gender, special education needs and severe disadvantage, the categories of educational attainment of mother and father, the categories of the number of books possessed as well as dummy variables denoting the missing values of control variables.
Standard errors clustered for upper-secondary schools are shown in parentheses.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' calculations based on data from *NABC* 2014–2017.

The findings show that a vocational school student achieves 50 points less in mathematics and 60 points less in reading on average than a vocational secondary school student with equal performance in lower secondary school. The advantage of a general secondary school student is 20–25 points. The standard deviation of test scores is about 200 points, thus the lag of vocational school students increases by a quarter, while the advantage of general secondary school students increases by one-tenth of a standard deviation unit.

Estimates in Columns (2) and (4) of *Table 2.2.1* also include the interaction terms of school tracks and the test score in Grade 8 in the given competence area. The coefficients of the interaction terms indicate that the effect of track

is associated with performance in lower-secondary school: the better the test result of a student in Grade 8, the more advantage studying in a general secondary school is likely to entail compared to a vocational secondary school, and the more disadvantage results from studying in a vocational school. These findings are consistent with the trend seen in *Figure 2.2.2*, which reveals the difference between school tracks increases with test scores in Grade 8.

Table 2.2.2 presents these correlations from another aspect. The models show how school track is associated with the probability of high or low performance in Grade 10, after controlling for individual factors. Since low performance levels are less frequent both in the total sample and among average students than high performance, the three lowest performance level together with below level 1 were defined as low performance, while levels 6 and 7 were regarded as high performance. Control variables are identical to those used in earlier estimates.

Table 2.2.2: Regression estimates of the effects of school tracks on the probability of high and low student performance; students in Grade 8 in 2014, marginal effects

	Mathematics		Reading	
	performance level			
	medium-low (level 0–3)	high (level 6–7)	medium-low (level 0–3)	high (level 6–7)
	(1)	(2)	(3)	(4)
General secondary school	-0.0451***	0.0130***	-0.0432***	0.0409***
	(0.00572)	(0.00143)	(0.00365)	(0.00278)
Vocational school	0.142***	-0.0159***	0.116***	-0.0512***
	(0.00901)	(0.00258)	(0.00620)	(0.00474)
Number of observations	67,115	67,115	67,171	67,171
Number of schools	2,518	2,518	2,518	2,518
Pseudo R^2	0.4497	0.5259	0.4851	0.5114
P average	0.3518	0.1797	0.2629	0.2447

Note: Unweighted *OLS* estimation.
Reference category for school track: vocational secondary school.
Control variables: test scores in both competence areas in Grades 6 and 8, the categories of grades at the end of Grades 8 and 6, gender, special education needs and severe disadvantage, the categories of educational attainment of mother and father, the categories of the number of books possessed as well as dummy variables denoting the missing values of control variables.
Standard errors clustered for upper-secondary schools are included in parentheses.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Authors' calculations based on data from *NABC* 2014–2017.

35 per cent of students achieved a low performance level in Grade 10 in mathematics, while 26 per cent of them did so in reading. Estimates in Column (1) and (3) indicate that if an average student goes on to study at vocational school instead of vocational secondary school, the probability of low performance increases significantly: by 14.2 percentage points in mathematics and

11.6 percentage points in reading. By contrast, if continuing their studies at general secondary school, this probability decreases by 4.5 and 4.3 percentage points respectively. The trend is just the opposite for high performance [Columns (2) and (4)]. The share of high performers is 18 per cent in mathematics and 24 per cent in reading. General secondary school, compared with vocational secondary school, increases the probability of high performance by 1.3 and 4.1 percentage points in Grade 10 respectively among average students, while vocational school decreases the probability by 1.6 and 5.1 percentage points respectively.

It is important to note that the above results are not exclusively attributable to the impact of school track, as it cannot be ruled out that for example students in vocational schools take the tests less seriously, which slightly increases the estimated effect of this track compared with its actual effect. Nevertheless, earlier estimates that compared the data of students "just admitted" and "just rejected" in order to control for unobserved characteristics such as students' motivation and aspirations found slightly weaker but very similar trends (*Hermann,* 2013).

In conclusion, the results indicate that the huge differences emerging by the end of lower-secondary education between students continuing their studies in one of the three school tracks increase further over the first two years of upper-secondary school. This increase is significant, especially between vocational school students and students studying in the other two tracks concluding with a Matura.

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2.3 APPLICATION TO AND ADMISSION INTO UPPER-SECONDARY EDUCATION

ZOLTÁN HERMANN & JÚLIA VARGA

The progression into secondary education has a fundamentally important effect on the future educational path of students, and consequently, their future career path in the labour market and their success (see for example *Kézdi et al,* 2008; *Horn,* 2014, *Makó–Bárdits,* 2014, *Hajdú et al,* 2015). In past years, significant changes have been made in the schedules and contents of vocational training schools,[1] which – combined with the changes in the labour market environment – may influence students' plans and opportunities regarding further education. In this subchapter, we present how the proportion of those applying to, and those admitted into, particular types of secondary schools changed between 2005 and 2017, and how the proportion of those applying to, and those admitted into, schools offering vocational training changed, by vocational groups.

The analysis is based on the data of the Information System – Secondary School Admission Database (KIFIR) on the period between 2005 and 2017. This database contains the application and admission data of students applying for secondary education having completed the eighth grade of elementary school (or the fourth or sixth grade, in the case of eight- and six-year secondary schools).

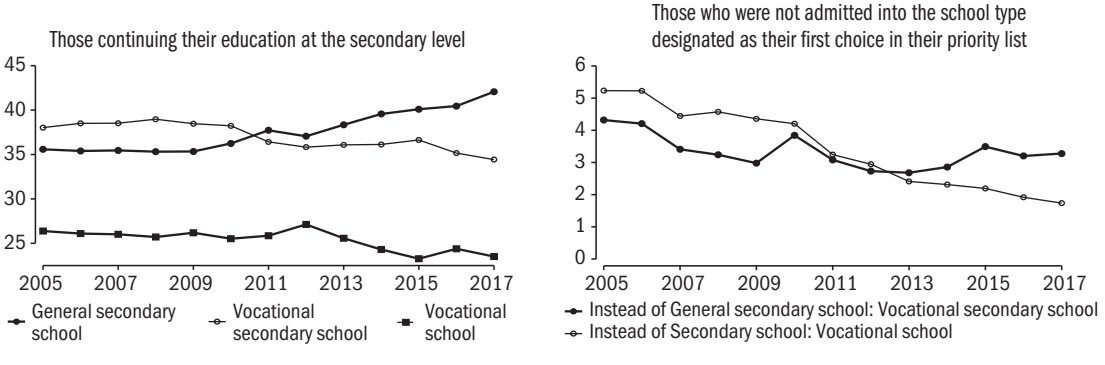
Secondary schools rank applicants based on their elementary school and entrance examination results. Taking these, and application priorities into consideration, a central admission algorithm determines which student gets admitted into which school. A small number of students do not get admitted into any of the schools via this application and admission process, because they applied only to schools that either rejected them outright or filled their numbers with applicants that ranked higher. These students will look for a school where they can continue their studies personally, but this database does not contain the results of that process. In the analysis, we presumed that these students would study in the school type with the lowest prestige in their application list, but at the same time, this group is not included in the analysis regarding the vocational groups. Their rate dropped from 8 percent in 2005 to 3 percent in 2017.

In the analysis, we present rates relative to the number of students studying in secondary education in the given school year. This is the sum of all applicants who had completed the eighth grade of secondary school (presuming that students who did not get admitted anywhere in the first round of the admission process would also continue to secondary education) and the number of students who gained admission to eight- or six-year secondary schools. We did not take into consideration students applying unsuccessfully to eight- or six-year secondary schools, as they will go into secondary education after completing the eighth grade of elementary school.

1 One change worth highlighting is that the length of training in vocational secondary schools (named vocational schools until 2016) has been reduced to three years in 2013, replacing the former 4- or 5-year training period. Since 2016, the proportion of vocational content in the training material and of professional practice/traineeship has increased significantly in vocational grammar schools (named vocational secondary schools until 2016), while the hours of general education subjects have seen a decrease. First, state-managed vocational training institutions were transferred to the Ministry of National Economy in 2015, which organised the various institutions into vocational training centres. Then in 2018, the Ministry of Innovation and Technology was appointed to be in charge of secondary vocational training institutions.

Figure 2.3.1 shows the changes in the shares of school types in secondary education (figure on the left); the proportion of students who were not admitted into the school type designated as their first choice in their priority list; and the type of school they were admitted into instead of the school type designated as their first choice in their priority list (figure on the right). After 2012, the rate of applications to vocational schools started decreasing following the stagnation observed between 2005 and 2011, and by 2017, less than a quarter of students wanted to get admitted into this school type. The rate of applications to general secondary schools grew between 2009 and 2011, and then continued to grow after 2012; this is the school type in which the highest number of students wish to continue their studies. Vocational secondary schools are considered decreasingly popular among students. The rate of students applying to this type of school decreased both in 2016 and 2017. The majority of students can continue their studies in the school type of their choice (right side of *Figure 2.3.1*). The rate of those who only managed to gain admission into a vocational school instead of a general or vocational secondary school that provides a secondary school diploma decreased from 5 percent in 2005 to 2 percent in 2017, and the rate of those who had no choice but to study in a vocational secondary school instead of a general secondary school decreased from 4 percent to 2 percent.

Figure 2.3.1: The proportion of those continuing their education at the secondary level and those who were not admitted into the school type designated as their first choice in their priority list, by school type, 2005–2017 (percentage)

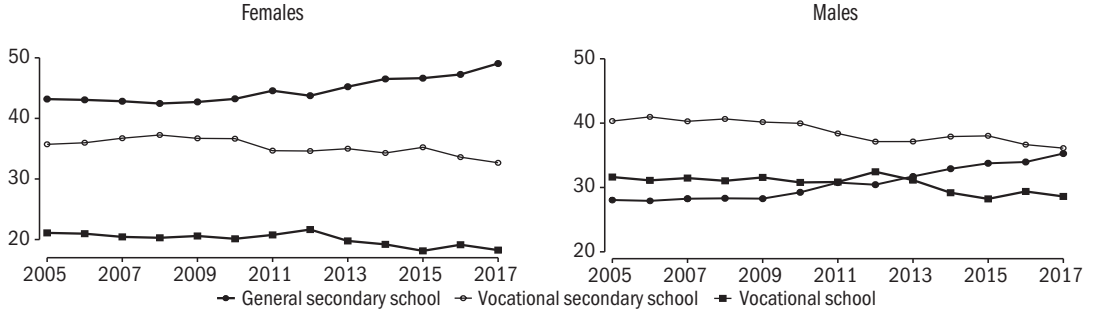


Source: Authors' compilation.

A significantly higher proportion of females study in general secondary schools than males, while a higher proportion of males continue their studies in vocational secondary schools and vocational schools. After 2012, the growth of the proportion of males continuing their studies in general secondary schools began to speed up, and the composition of the school types of males continuing their education after elementary school has been significantly rearranged. In 2017, the highest number of males continued their education in general

and vocational secondary schools, and the rate of those doing so in vocational schools dropped below 30 percent (*Figure 2.3.2*).

Figure 2.3.2: The proportion of those continuing their studies in secondary education, by school type and gender, 2005–2017 (percentage)



Source: Authors' compilation.

Secondary vocational applications (vocational secondary school, vocational school) were aggregated into 12 vocational groups. The changes in the proportions of these can be followed in *Table 2.3.1* both separately by school type and combined. In a few vocational groups, education or training is conducted *only* or *predominantly* in one of the school types (such as health care, IT, economics, administration).

Table 2.3.1: The percentage of those continuing their studies in vocational secondary schools or vocational schools, among those continuing their education at a secondary level, by vocational groups, 2007, 2017

	Vocational secondary school		Vocational school		Combined	
Vocational group	2007	2017	2007	2017	2007	2017
Not classified	1.0	0.0	0.3	0.0	1.3	0.0
Health care	1.7	2.0	0.2	0.0	1.9	2.0
Social, education	2.2	3.8	0.3	0.7	2.7	4.5
Mechanical engineering	5.3	3.4	4.4	4.8	9.6	8.1
IT	6.1	5.7	0.6	0.3	6.7	6.0
Construction	1.0	0.7	2.9	1.5	3.9	2.2
Chemical and light industries	2.3	1.2	3.0	1.8	5.4	3.0
Economics, administration	4.9	4.2	0.2	0.2	5.1	4.4
Trade and commerce	4.5	2.4	2.5	2.0	7.0	4.4
Agriculture, food industry	2.0	1.6	3.2	3.8	5.2	5.4
Other services, public services	1.1	4.2	1.2	0.3	2.3	4.5
Transport	1.8	1.6	0.5	0.8	2.3	2.3
Vocations not listed in the Hungarian National Qualifications Register (OKJ)	0.0	0.0	0.01	0.0	0.01	0.0
Hospitality and tourism	3.1	3.0	3.8	6.3	6.9	9.3

Source: Authors' compilation.

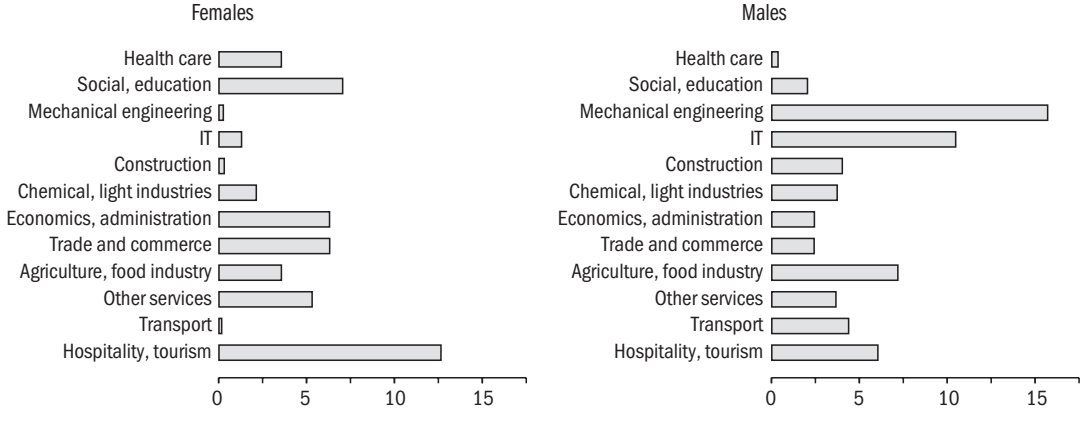
Participation rates decreased in the mechanical engineering-electrical engineering-electronics vocational group and the construction, chemical and light industries and trade and commerce vocational groups. Participation increased in the social and service industries, education, arts, hospitality, tourism and other services, and in public services vocational groups.

These changes occurred in certain vocational groups parallel to a rearrangement among school types. Thus, in the mechanical engineering, electrical engineering, electronics vocational group, the rate of training programmes offering a secondary school diploma shrank, just as in the trade and commerce vocational group. In other vocational groups, such as in the social services, education and arts vocational group, the rate of training programmes offering a secondary school diploma increased.

Overall, the rate of those continuing their studies in vocational secondary schools decreased within the technical vocational groups, while the rate of the trade and commerce and economic services vocational groups increased. The share of technical vocational groups decreased in vocational schools as well, while the rate of those continuing their studies in a human services field increased.

Significant differences can be found between vocational groups by gender as well, which is shown in *Figure 2.3.3*. While the majority of females continue their studies in the fields of trade and commerce and services, the majority of males choose a vocation within the fields of industry or IT (see more in *Csillag et al,* 2019).

Figure 2.3.3: The proportion of those continuing their studies after elementary school, by gender, 2017



Source: Authors' compilation.

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2.4 THE EFFECT OF THE 2013 VOCATIONAL EDUCATION REFORM ON STUDENT ACHIEVEMENT

ZOLTÁN HERMANN, DÁNIEL HORN & DÁNIEL TORDAI

Introduction

In the autumn of 2013 a reform of the Hungarian vocational education system took place, the main purpose of which was to make vocational education more practically oriented. The reform affected vocational schools, i.e. the upper-secondary track without the final maturity exam (*érettségi vizsga* in Hungarian). These changes came with the reduction in the number of theoretical classes, especially in the first two years. The higher tracks, general secondary education and vocational secondary education were only slightly or no affected by the reform.

The bill that established the reforms was passed in 2011 and started to have an effect from September 2013.[1] The earlier four or five years long vocational programmes which did not have the final maturity exam at the end of the programme were replaced by three year-long dual educational programmes, in which students had practical classes from the onset, and the opportunity of an apprenticeship contract with a firm from 9th grade was created.[2] Therefore, time spent in practical vocational training was increased. However, both vocational and general theoretical education has decreased, and especially the number of general education classes has lessened significantly (*Bükki et al*, 2014). Following the reform, the name of the vocationally oriented tracks was changed.

Before the 2013 reform, in the four year-long programme, general education subjects took place only in the first two years, but in those two years both 'Mathematics' and 'Hungarian Language and Literature' were taught in 3 classes of each per week, and foreign language and science were included in the curriculum as well. Following the 2013 reform in 9th grade both 'Mathematics' and 'Hungarian Language and Literature' had only 2 classes of each per week, 1 class of each per week in 10th grade, and in the final, 11th grade they were not included at all in the curriculum.[3] So, following the reform students had 1 less Maths and 1 less Literature class per week in 9th grade, and 2 less of each in 10th grade compared to the pre-2013 levels.

As communicated to the public, the primary goal of the reform was for the vocational students to gain more experience in real-life workplaces, so they can enter the labour market more easily after their education. During the planning of the reform the German vocational education system was taken as the example, where the number of general, academic classes is also minimal, and the emphasis is on practical training, which is mostly done by firms (*Dogossy*, 2016). It is important to note however, that while German students start their vocational education after attending 7155, but in certain regions even 7950

1 The CLXXXVII. Law of 2011 on vocational education.

2 The reform of 2013 was not unprecedented, in a share of vocational schools in 2010 the maintainer could have introduced so called "early vocational" programmes, which lasted also for 3 years and had a similar structure to the one that was introduced in the reform.

3 CXC law of 2011 on public education, 8th supplement of the 51/2012. (XII. 21.) EMMI regulation.

general education classes, this number in Hungary is only 5742 (*Hajdu et al*, 2015). So, a Hungarian student participating in vocational education spends about two or three years less with general education subjects, than his German counterparts. Another goal of the reform was to create an educational structure more in line with the demands of the economy, to have a more transparent and cost-effective operation, and to keep the unprivileged students in schools and to help them catch up. However, keeping the youth in schools was made harder by another reform, in which the government lowered the compulsory schooling age from 18 to 16 after 2012 for those who had completed 9th grade.[4]

According to the literature important differences might arise if they improve occupationally specific skills of students graduating from public education at the expense of their general skills. Although they may find a job that fits to their qualifications more easily when they enter the labour market (*Level et al,* 2014, *Ryan*, 2001, *van der Velden–Wolbers*, 2003), this advantage in the long run is overturned and those with a more general education find themselves in a better position (*Hanushek et al*, 2017). Due to the lack of general skills, graduates won't be able to adapt to the changing labour market environment, so they become unemployed more easily, or can obtain a job only for lower wages. However, the lengthening of the duration of secondary educational vocational programmes doesn't necessarily provide benefits even in a younger age group (*Oosterbeek–Webbink*, 2007, *Hall* 2016).

In this subsection we examine the effect of the 2013 reform on mathematics and reading by comparing the changes of test scores between the 8th and 10th grade of cohorts before and after the reform. Reading and mathematics competencies are important elements of general skills, so their decrease might mean – according to the literature – that in the long run the labour market position of the given students might worsen.

Analysis

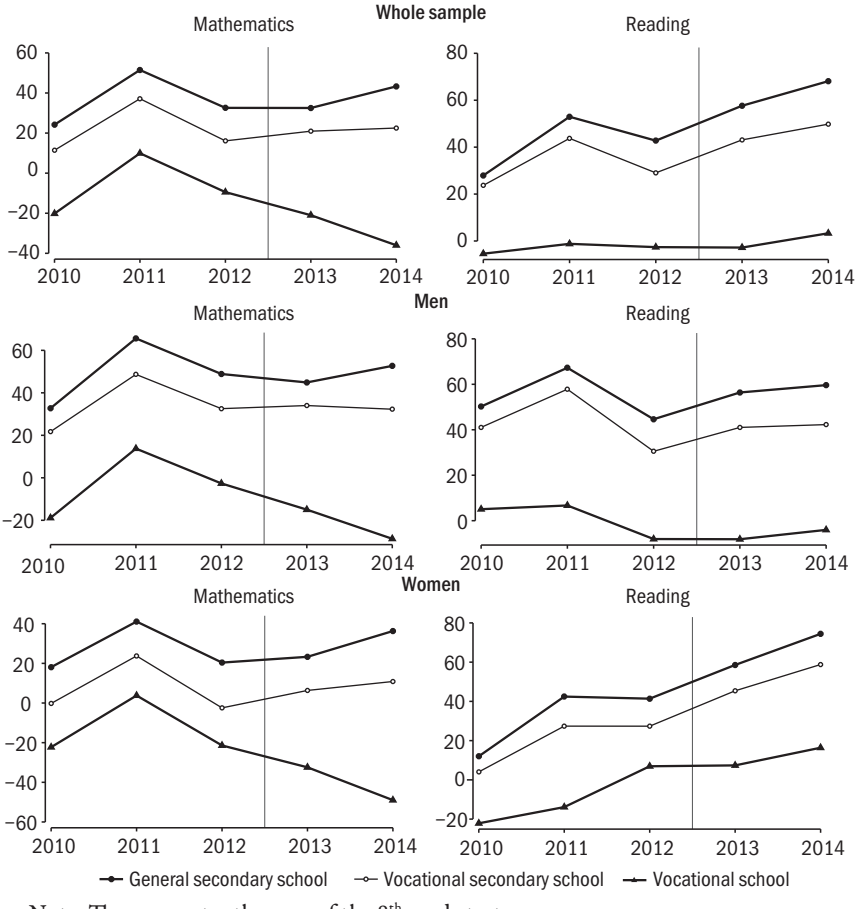
For our analysis we use 8th and 10th grade test scores from the National Assessment of Basic Competencies programme from 2010 until 2017. From 2010 the results were evaluated on the same scale, which makes the comparison of different years' results possible. The effect of the reform is examined on the cohorts which commenced their 8th grade between 2010 and 2014. The average score in the whole sample every year is around 1600, and the standard deviation is around 200.

Our independent variable is the change in mathematics and reading scores between 8th and 10th grade. Our sample also contains students who had to repeat a year on 9th or 10th grade and had to do it only once. In the case of students repeating a year in the 10th grade we considered their earlier test result. We excluded vocational education programmes for special education needs students from the sample.

4 CXC law of 2011 on public education.

Figure 2.4.1 shows the average score changes from 8th to 10th grade for both mathematics and reading for the whole sample, and then divided for men and women. After the introduction of the reform the difference between those, whose programme concludes with a maturity exam and those whose doesn't, grows already in the first year. The effect of the reform is more apparent with mathematics test scores, where the score change of those in a vocational school is not only smaller compared to students in the other two educational forms (vocational secondary and general secondary school), but it is becoming smaller even to previous values of this school type. It can be easily observed from the figure that reading and mathematics points of cohorts affected by the reform worsen compared to the students of the other two schools.

Figure 2.4.1: Average test score change between the 8th and 10th grade for different school types. 2010–2014



Note: The year notes the year of the 8th grade test.
Source: Authors' compilation.

We are going to estimate the effect of the reform by difference-in-differences method. In our analysis we are going to compare the vocational school students' (treated group) performance change between the pre and post-reform years with the performance change of the vocational secondary school students (control group) in the two periods. (We basically get the same results if we include general secondary school students in the sample.) Supposing that all other factors affecting the test scores – including all the other education policy changes – had a similar effect on the students in the two tracks, the estimates show the causal effect of the reform.

The dependent variable is the test score change, i.e. the difference of 10th and 8th grade points. The main explanatory variables are the dummy variables noting the vocational school, the after reform period, and the interaction of these two. As a control variable we use in our estimation the first, second, and third power of the 8th grade mathematics and reading test scores, the gender of the students, whether the students have special educational needs or have a disadvantageous status, schooling of mother and father, the number of books at home, and fixed effects concerning the cohorts and schools. Apart from the test scores every variable is a dummy variable in the model. Missing values were replaced by typical values and the missing values are noted by a separate dummy variable. The effect of the reform is shown by the interaction variable 'vocational school x reform' (Table 2.4.1).

Table 2.4.1: The effect of the vocational school reform on test score change between the 8th and 10th grade

	Whole sample		Men		Women	
	mathematics	reading	mathematics	reading	mathematics	reading
	(1)	(2)	(3)	(4)	(5)	(6)
Vocational school × Reform	-19.48***	-9.823***	-15.40***	-4.094**	-23.81***	-13.28***
	(1.733)	(1.494)	(2.068)	(1.852)	(2.581)	(2.105)
Reform	14.17***	11.57***	8.638***	-4.333***	22.19***	31.78***
	(1.203)	(1.041)	(1.496)	(1.354)	(1.679)	(1.397)
Vocational school	-64.97***	-73.41***	-74.53***	-81.11***	-49.82***	-62.53***
	(1.160)	(1.012)	(1.372)	(1.258)	(1.643)	(1.343)
R^2	0.362	0.308	0.337	0.321	0.415	0.320
Number of observations	199,975	200,097	112,754	112,780	87,221	87,317
Number of schools	25,477	25,482	19,479	19,482	17,143	17,150

Note: Unweighted OLS estimates.
Control variables: first, second, and third power of the 8th grade test scores in both fields, gender, special educational need and disadvantageous status, categories of schooling of mother and father, categories of the number of books at home, categories of the 8th grade test's year, and the dummy variables noting the missing values of the control variables.
Standard errors clustered at the school level in parenthesis.
Significant at a ***1 per cent, **5 per cent, *10 per cent level.
Source: Authors' compilation based on *NABC* data for 2010–2017.

The results confirm our conclusion, drawn based on *Figure 2.4.1.* After the reform test scores decreased in both fields, but the reform had a bigger effect on maths score changes.

Test score change of vocational schoolers between 8th and 10th grade was 19.5 points smaller due to the 2013 reform. For men this change was slightly smaller (–15.4 points), for women it was bigger (–23.8). The reform had a smaller effect on the change of reading scores, –9.8 points on the entire sample, –4.1 for men, and –13.3 for women. The cause of this difference can be that students use their reading skills more outside the classroom than their mathematics skills, so supposedly school has a stronger effect on the latter.

According to the estimated effects we can say that before the reform the average difference between vocational schools and vocational secondary schools in mathematics was approximately 180, in reading 200 points. Our results suggest that due to the effect of the reform this difference grew by more than 10% in mathematics, and by 5% in reading.

The estimation of the reform's effect can be biased, since from 2012 the compulsory schooling age was decreased from 18 years to 16 years, and therefore the composition of students in 10th grade could have changed.[5] We can expect that mostly vocational school students older than 16 years old will fall out of school due to this change. Since students with worse skills have a higher chance of dropping out, we can expect the average scores of vocational schoolers to be better after 2012 than before. So, this change can distort the estimations.

However, data shows that this is not behind the results. The reduced compulsory schooling age was introduced first for those entering secondary education in 2012. So, the cohort that was in 8th grade in 2012 was affected by the lowered compulsory schooling age, but not by the vocational education reform. Recalculating the estimations for the sample including only 2012 and 2013 cohorts yields basically unchanged results, so the reform decreased students' performance even with the same age limit.

Conclusions

To sum up, we can say that the 2013 reform worsened the mathematics and reading skills of those studying in vocational education concluding without the maturing exam, especially in mathematics and to a greater extent in the case of women. Although our analysis cannot answer the question whether these students can find a job more easily after school, we see that after two years of vocational education the general skills of students are worse after the reform than before, and that this effect is significant. Our interpretation is that this deterioration happened due to the decrease in general education classes. Furthermore, it is likely that even if the more practice-oriented education helps students to find a job quickly following graduation, the decreasing general skills will worsen their position on the labour market in the long run.

5 The estimation might be biased due to a change in changing school choice decisions, and therefore the composition of students in vocational and mixed schools changed significantly However, this is not very likely since none of the average values of individual characteristics changed to a notable extent.

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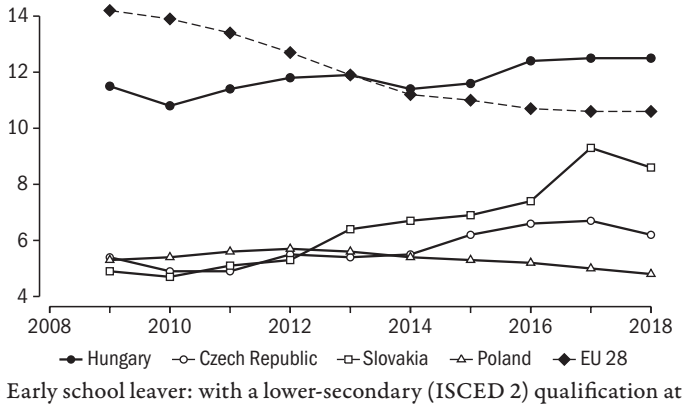
2.5 THE IMPACT OF DECREASING COMPULSORY SCHOOL-LEAVING AGE ON DROPPING OUT OF SCHOOL

ZOLTÁN HERMANN

Early school leaving has profound significance for both employment and equity since the lack of upper-secondary qualification (Matura and vocational training certificate in Hungary) results in immensely poor labour market prospects and often leads to persistent poverty. The proportion of early school leavers in Hungary is somewhat higher than the European average: in 2018 it was 12.5 per cent of the population aged 18–24, while the European average was 10.6 per cent (*EC,* 2019, p. 54). The 3.4 percentage point lag of girls is indeed significant, whereas for boys the difference is only 0.4 percentage points. Compared to the other Visegrad countries, Hungary has by far the highest proportion of early school leavers (*Figure 2.5.1*). Moreover, while the proportion of early school leavers decreased in most European countries between 2009 and 2018, in Hungary it started to grow after 2015, making it even more challenging to achieve the target of 10 per cent set by the European Union by 2020 and also adopted by the Hungarian government. This Subchapter explores what role the reduction of the school-leaving age from 18 to 16 in 2012 had in this increase.[1]

Figure 2.5.1: The share of early school leavers in the population aged 18–24 in Hungary, in the Visegrad countries and in the EU on average, 2009–2018



Note: Early school leaver: with a lower-secondary (ISCED 2) qualification at most and not in education.
Source: *Eurostat*.

This study analyses the process of dropping out but does not directly evaluate the dropout rate or early school leaving. This can only be reliably assessed when the majority of pupils have completed upper-secondary education and anyone who has not obtained an upper-secondary qualification is unlikely to obtain one. As in Hungary a significant proportion of pupils only complete

1 Act CXC of 2011 on School Education.

upper-secondary education at the age of 21–22 (*Varga,* ed., 2018), the impact of the 2012 reform cannot yet be assessed in this respect. This Subchapter examines changes in the proportion of those not in education and lacking an upper-secondary qualification at a specific point in time. Since some of the school leavers later return to continue their studies and some are not enrolled because of switching schools, this indicator cannot be regarded as a direct measure of the dropout rate. Thus the value of the indicator we use is not sufficiently informative in itself but changes to it reveal the impact of the school-leaving age reforms.

Earlier research suggests that it is advisable to examine the obtaining of qualifications and the process of dropping out together, because they may yield a different picture. After raising the compulsory school-leaving age to 18 in Hungary in the early 2000s, participation in education increased in the age group 17–18 (*Varga,* ed., 2018); however, the share of those acquiring an upper-secondary qualification did not increase as a result of the reform (*Adamecz-Völgyi,* 2018). There is no consensus in international literature regarding the impact of raising the school-leaving age. Several studies found that raising the school-leaving age increased participation rates but did not have an impact on obtaining an upper-secondary qualification (for example *Raimondi–Vergolini,* 2019, in Italy, *Mackey–Duncan,* 2013, in the United States), while others found a positive effect in both areas (for example *Wenger*, 2002, in the United States, *Cabus–De Witte,* 2011, in the Netherlands). Whereas these studies investigate the impact of raising the school-leaving age, the analysis below looks at the impact of lowering the school-leaving age.

Data and methods

The analysis is based on the Admin3 dataset of the Centre for Economic and Regional Studies containing linked administrative data, which contains individual-level data of 50 per cent of the Hungarian population in 2003 up to 2017 (*Sebők,* 2019). In the dataset school enrolment status is recorded on a monthly basis, the highest qualification of young people and the results of pupils in the National Assessment of Basic Competences (NABC). The sample includes participants of the assessment of Grade 8 pupils between 2010 and 2013. The descriptive analysis compares these four cohorts of pupils, while the econometric estimation only includes the 2011 and 2012 cohorts. The school-leaving age of 16 applied to those who did not attend upper-secondary school in the academic year of 2011/2012, that is they started upper-secondary studies in September 2012 or later. Consequently, the school-leaving age of 18 applied to 8th graders taking the test in 2010 or 2011 and the school-leaving age of 16 applied to those in Grade 8 in 2012 or 2013. At the same time, pupils in Grade 8 in 2013 were also affected by in the vocational education and training reform (see Subchapter 2.4). Moreover, they cannot be observed for

sufficiently long time in the database. Therefore the econometric estimation includes only two cohorts.

This study assesses how the proportion of young people not attending school (not enrolled at a school) and lacking an upper-secondary qualification changes in these cohorts of pupils one, two, ... and five years after the competence assessment in Grade 8. This essentially covers the educational trajectory of pupils after lower-secondary education, since the large majority of them complete their lower-secondary studies in the school year of the assessment in Grade 8: grade repetition rate at this point is below 1 per cent (*Varga,* ed., 2018). The sample comprises about 43–49 thousand pupils from each grade; the total number of cases at the time of the competence assessment in Grade 8 was 184,542.

In the following, a descriptive analysis of changes in the share of those not in education and without an upper-secondary qualification and the share of school leavers with an upper-secondary qualification is provided first. Then probit models are used to evaluate the probability of being not in education and without an upper-secondary qualification and that of acquiring an upper-secondary qualification before and after the changes to the school-leaving age, controlling for the observed characteristics of pupils. We performed an analysis on the total sample and on a subsample of pupils with a disadvantaged family background[2] because the latter are more likely to attend vocational education not ending in an upper-secondary school leaving examination (Matura) and to drop out of school (see for example *Fehérvári,* 2015).

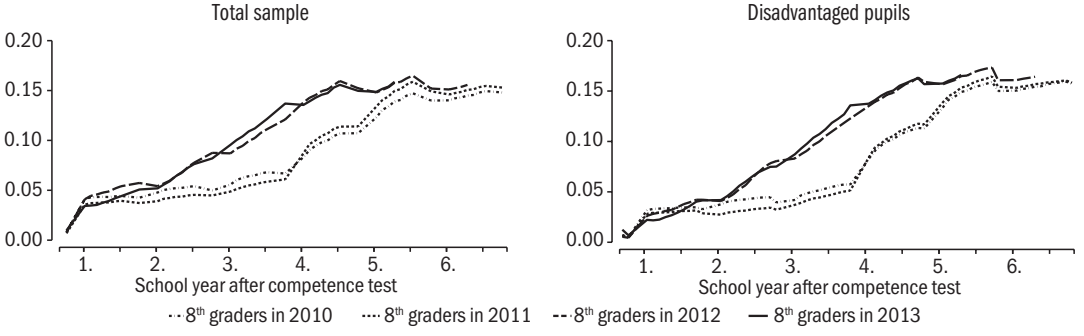
The proportion of young people not in education and without a qualification and the proportion of school leavers with a qualification

Figure 2.5.2 presents a monthly breakdown of the proportion of young people not in education and lacking a qualification, over the years after completing lower-secondary education, for two cohorts of lower-secondary pupils affected by the reforms of the school-leaving age and two cohorts not affected by the reforms. The starting date is the date of the competence test taken by 8th graders in May and the first months of subsequent school years are indicated on the horizontal axis. The left-hand Figure presents proportions in the total sample. It shows that approximately 4 per cent of pupils do not attend school in September following the competence assessment, and then the difference between the cohorts affected and not affected by the reform starts to grow. While before the reform the proportion of pupils not in education increases very slowly until the end of the third school year, a faster increase is observed from the beginning of the second school year after the school-leaving age is lowered to 16. At the end of the third school year, when the majority of pupils are aged 17–18, the share of those not enrolled in education is nearly twice as high after the reform than before it, the difference is 5–7 percentage points.

2 This sub-sample includes pupils whose mother or father has a lower-secondary qualification at most or they have fewer than 50 books in the household or they are officially classified as severely disadvantaged. Pupils defined as disadvantaged according to the above definition account for 30 per cent of the total sample.

However, the difference starts to decrease in the fourth and fifth school years and by 5–6 years after finishing lower-secondary education the proportion of young people not in education and lacking a qualification is equally about 15 per cent both in the cohorts before and after the reform.

Figure 2.5.2: The proportion of those not in education and lacking a qualification after finishing lower-secondary education



Note: The ordinal number of the school year signifies the month September.

The right-hand Figure shows the same pattern in the subsample of disadvantaged pupils. The trends observed are essentially identical to those in the total sample. The share of young people not attending school is much higher in this group: by the fifth school year it is over 30 per cent.

Figure 2.5.3: The proportion of those with an upper-secondary qualification 4 and 5 years after completing lower-secondary education

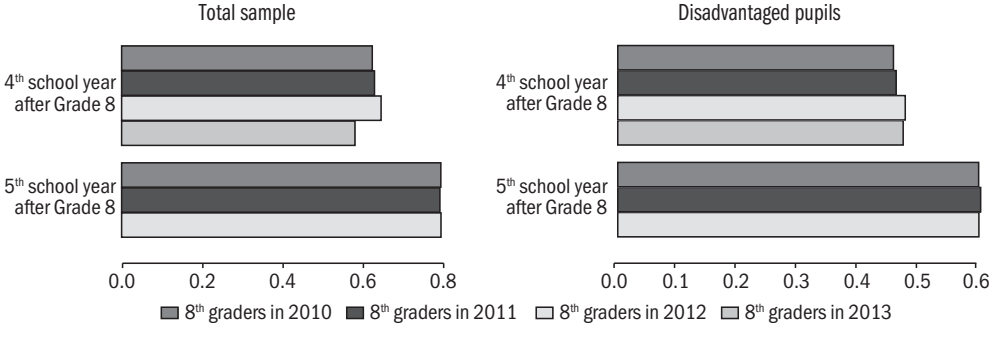


Figure 2.5.3 presents the share of pupils at the end of the fourth and fifth school year who have already obtained an upper-secondary qualification. In the first cohort affected by the school-leaving age of 16, the proportion of those who obtained a qualification is similar to that of the preceding years. In the cohort of 2013, there is a slight decrease at the end of the fourth year in the total sample; however, that cohort was also affected by the vocational education and training reform (see Subchapter 2.4) – in the case of this cohort data about the end of the fifth year is not observed in the dataset.

On the whole, this suggests that lowering the school-leaving age resulted in considerably lower participation rates but it possibly did not have a major impact on obtaining an upper-secondary qualification and on the "ultimate" early school leaving rate, which is only observed after the completion of school education. In other words, apparently, dropping out following the reform primarily increased because it occurred earlier than in the cohorts preceding the reforms.

Table 2.5.1 uses probit regression models to assess the differences seen in *Figures 2.5.2* and *2.5.3.* Each column of the table contains estimates, at a given date, for the difference between the last cohort before the reform and the first cohort after the reform in the probability of not attending school and lacking an upper-secondary qualification, controlling for the effect of observed individual characteristics such as gender, age at the end of Grade 8, family background (educational attainment of parents, severe disadvantage) and pupil performance in Grade 8 (NABC test results, mathematics grade). The "Reform" variable denotes the cohort in Grade 8 in 2012, while the reference category is the 2011 cohort. In the case of "not attending school", the third month of the school year is considered, because in the sixth school year this is the latest date the 2012 cohort can still be observed. As for obtaining a qualification, the last month of the school year is taken into account.

The estimates confirm the above description. The proportion of those not attending school increased in the third and fourth school year the most following the reform both in the total sample and among disadvantaged pupils, then the difference had disappeared by the sixth school year. The share of those acquiring a qualification did not decrease: the estimates even show an increase of 1–2 percentage points after controlling for individual factors.

The above analysis compared data from cohorts preceding and following the reform. The results may be interpreted as to show the impact of the reform but they are not conclusive. To what extent is this the impact of the school-leaving age? We can get closer to answering this question if taking into account that even in classes completing lower-secondary education in 2012 or later not all students were affected by the reform at each date. Pupils younger than 16 were not affected but those aged 16–17 were. Cohorts aged over 18 were indirectly affected, since some of them had already dropped out as a result of the reform. If the differences between the cohorts indicate the impact of the changes in the school-leaving age, it must be apparent in the 16–18 age group.

Figure 2.5.4 shows the proportions of young people not attending school and lacking a qualification broken down by age. It is evident that in the cohorts not affected by the reform the proportion of those not attending school starts to grow after age 18, while after the reform it increases in the 16-year-old age group and continues to grow until age 19. By that time, most of the difference between the cohorts disappear. As all cohorts of 8th graders consist of pupils of different age, the database containing data up to the end of 2017 does not

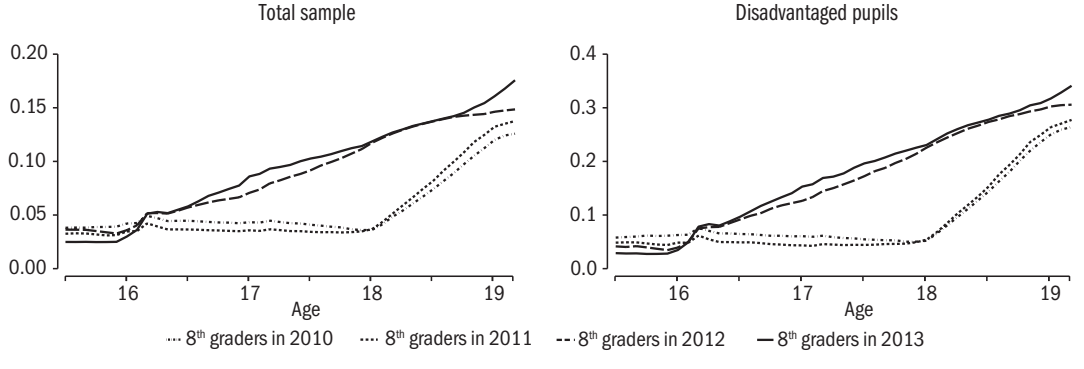
allow the cohorts affected by the reform to be followed beyond age 19. Nevertheless, *Figure 2.5.4* reveals a similar picture to *Figure 2.5.2* and *Table 2.5.1.*

Table 2.5.1: The effect of the school-leaving age reform on the status "not attending school and lacking a qualification" and on acquiring an upper-secondary qualification, marginal effects

	Not attending school and lacking a qualification					Having an upper-secondary qualification	
	2th school year	3th school year	4th school year	5th school year	6th school year	4th school year	5th school year
	at the end of November						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Total sample							
Reform	0.012q***	0.0313***	0.0385***	0.00466***	0.00105	0.0196***	0.00512**
	(0.00123)	(0.00138)	(0.00174)	(0.00181)	(0.00182)	(0.00333)	(0.00242)
N	91 310	91 295	91 280	91 262	91 240	91 268	91 251
p-average	0.0503	0.0728	0.121	0.147	0.150	0.641	0.790
Disadvantaged pupils							
Reform	0.0257***	0.0889***	0.0930***	0.0215***	0.0102	0.0236***	0.00320
	(0.00304)	(0.00391)	(0.00559)	(0.00635)	(0.00643)	(0.00699)	(0.00693)
N	22,114	22,109	22,110	22,103	22,096	22,106	22,101
p-average	0.0717	0.127	0.235	0.304	0.313	0.464	0.608

Note: Probit estimates.
Dependent variable: Not attending school and lacking a qualification at a given date (1–5) and having an upper-secondary qualification (6–7).
Control variables: Gender, age when taking the test in Grade 8, severe disadvantage, categories of parents' educational attainment, categories of numeracy and literacy performance levels in the competence test in Grade 8, categories of mathematics grades at the end of Grade 7 as well as the dummy variables for missing test results, parents' educational attainment and grades.
Standard errors are shown in parantheses.
Significant at a ***1 per cent, **5 per cent, *10 per cent level.

Figure 2.5.4: The proportion of those not attending school and lacking a qualification, by age



The tendency of a gradual increase after age 18 before the reform is easily explained by the fact that education was compulsory until the end of the school

year, that is somewhere between the age of 18 and 19, depending on the month of birth. After the reform, when the school-leaving age applies to the actual age of pupils, although there is a break at age 16, the proportion of those not attending school also increases gradually, suggesting that they do not drop out immediately after reaching the school-leaving age.

Table 5.2.2 uses regression models similar to those in *Table 5.2.1* to assess the differences in the probability of not attending school between cohorts preceding and following the reform in age groups below 16 and 16–18. Estimates cover the period until the middle of the second school year because this is when both age groups may be observed in significant numbers. The proportion of those not attending school did not, in fact, increase as a result of the reform among pupils below 16, while in the directly affected 16–18 age group the proportion of those not in education increased. This is consistent with the interpretation that the difference between the two cohorts is due to the impact of the raised school-leaving age.

Table 2.5.2: The impact of the school-leaving age reform on not attending school and lacking a qualification in two age groups, marginal effects

	Total sample			Disadvantaged pupils		
	1th school year	2th school year	2th school year	1th school year	2th school year	2th school year
	April	November	February	April	November	February
Reform × below age 16	0.00610***	0.00189	0.00371	–0.00542	–0.00889	0.000234
	(0.0150)	(0.00253)	(0.00408)	(0.00363)	(0.00586)	(0.00920)
Reform × 16–18 age group	0.0356***	0.0186***	0.0276***	0.0516***	0.0409***	0.0628***
	(0.00299)	(0.00160)	(0.00155)	(0.00635)	(0.00385)	(0.00389)

Note: Probit estimates.
Dependent variables: Not attending school and lacking a qualification at a given date.
Control variables: Gender, age group, severe disadvantage, categories of parents' educational attainment, categories of numeracy and literacy performance levels in the competence test in Grade 8, categories of mathematics grades at the end of Grade 7 as well as the dummy variables for missing test results, parents' educational attainment and grades.
Standard errors are shown in parantheses.
Significant at a ***1 per cent, **5 per cent, *10 per cent level.

Conclusion

The results suggest that lowering the school-leaving age increased the proportion of young people not attending school, particularly in the 16–18 age group. This, however, did not seem to coincide with a substantial decrease in the proportion of pupils acquiring an upper-secondary qualification, since most of the pupils who dropped out below the age of 18 as a result of the reform would have dropped out when reaching the age of 18 if compulsory schooling age had remained unchanged. This implies that a higher school-leaving age *in itself* is not sufficient to reduce early school leaving: this requires multiple education policy measures, with school-leaving age as one of the elements.

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K2.5 What do 17-year-olds who don't go to school do?

JÁNOS KÖLLŐ & ANNA SEBŐK

As we have seen in subchapter 2.5, the rising trend of the share of those in formal education was broken in 2012, and participation dropped to the level of ten years before by 2016.

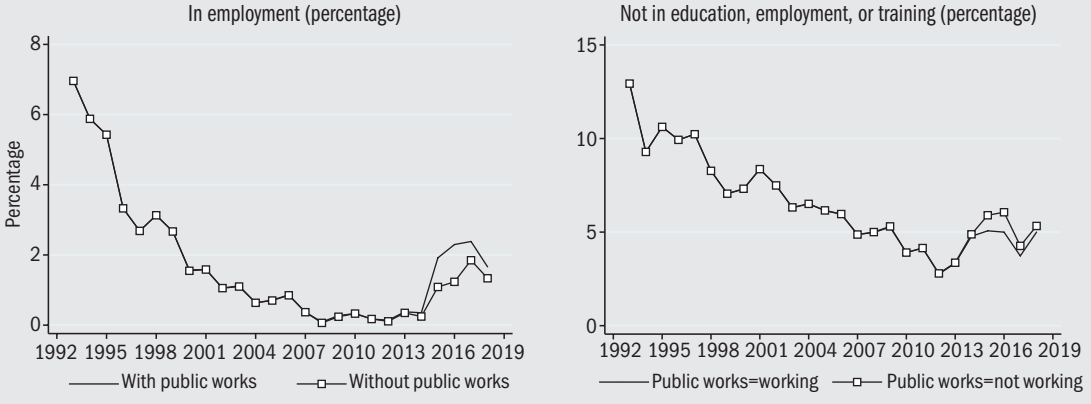
What do 17-year-olds who don't go to school do? It is shown in the two panels of *Figure K2.5.1.* The proportion of those in employment within the age group can be seen in the left panel, distinguishing (starting with May 2000) market-based employment from total employment that includes public works. It can be seen that employment rates do start to increase in parallel to the decrease of participation in education; it rose from a rate of just above zero to a rate of 1.5–2%, or 2–2.5%, including public works. However, this could not offset the decrease in educational participation: as it is shown in the right panel, the share of seventeen-year-olds not in education, employment, or training rose to a rate of 5–6 percent, from a rate of 3 percent observed before the lowering of the school leaving age.[1]

The rise in the share of passive 17-year-olds (NEETs) is a worrying development since the unemployment risk of this group is very high and stays so into adulthood, as early school leavers typically do not proceed with education at later ages either.[2] The average NEET rate of five percent cannot be deemed negligible, especially since it hides significant regional differences (see subchapter 6.2). The problem is not only that 17-year-olds who do not go to school do not acquire vocational or secondary school qualifications (significant numbers did not acquire them even when the school leaving age was 18 years), but the so-called "incapacitation effect" as well, that is, the fact that youth spend their time at school. See the works of *Machin et al* (2011) and *Adamecz–Scharle* (2018) on the preventive effects of this with regard to criminal activity and teenage pregnancy.

1 There is hardly any difference between the shares of the genders.

2 Also according to the data of the labour force survey, an average of less than six percent of seventeen-year-olds not in education, employment, or training participated in non-formal training between 2011–2018. (The rate was calculated for a longer period because of the low number of cases.) This is approximately 0.3 percent of the entire cohort, which does not influence the proportions shown in the figure significantly.

Figure K2.5.1: The share of 17-year-olds in employment, and not in education, employment, or training (NEET), 1992–2018



Note: The annual rate is calculated as the arithmetic mean of the rates of the first, second and fourth quarters. Because of the changes in the administration of the summer holidays, the data of the third quarter cannot be examined in a long time series model, and are a *priori* uncertain. The data are representative of those who reached the age of 17 by the date of the survey (but have not reached the age of 18), and have not attained a level of education higher than elementary.

In employment: employed as defined in the ILO-OECD convention.

Source: Authors' calculations, based on the version of the labour force survey of *KSH* handled in the Databank of *MTA KRTK*.

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3 GAINING WORK EXPERIENCE

3.1 STUDENT WORK

BORI GRESKOVICS & ÁGOTA SCHARLE

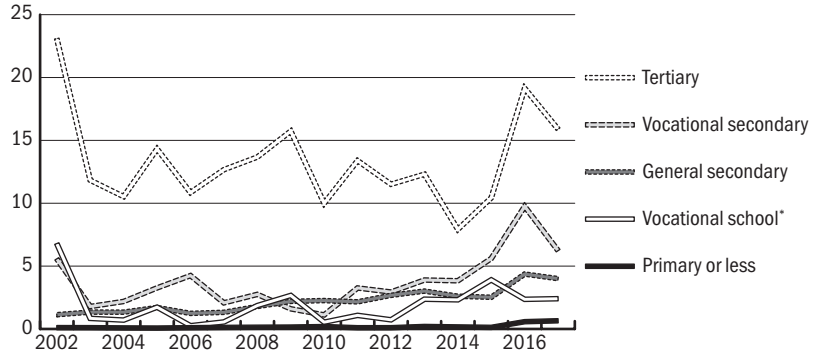
It usually takes some time for young people starting their careers to find their first job and sign their first employment contract (*Pastore-Zimmermann,* 2019). This can be explained by several factors. On the one hand, entrants tend to be less experienced in job search and have fewer acquaintances who can help them find the right job, than those who have been working for several years. On the other hand, they have little work experience, so their employment poses a greater risk to employers, especially if their expected productivity is around or below the (guaranteed) minimum wage. At the same time, not finding a job for a long time can also permanently worsen their future job opportunities. It is therefore particularly important to assess the forms of work where they can gain experience while studying or after leaving school. Full-time students can work while studying outside the framework provided by the school: in this subchapter, we examine its prevalence based on the data of the Hungarian Labour Force Survey.

Student work, as it can take time away from studying, does not necessarily improve future employment opportunities. However, according to international literature, working outside school hours, during breaks, or for a few hours, as well as working in a field related to their studies reduces students' school performance less, and according to certain estimates, it improves future employment opportunities (*Nevt et al,* 2018).

The share of those who work while studying is traditionally low in Hungary by European standards (*Bajnai et al*, 2009, p. 73). Between 2003 and 2010, 1 percent of full-time students aged 15–29 worked, in the following years 1.5 percent worked, and in recent years the proportion of those working while studying remained below 3 percent. Student work is more common only among those who have already obtained their first degree, but even in this special group (accounting for 2 percent of all full-time students), the proportion of employees is only 10–15 percent (*Figure 3.1.1*). Those directly entering into higher education after secondary school rarely start working before graduating: the share of employees in this group is barely 2–3 percent.

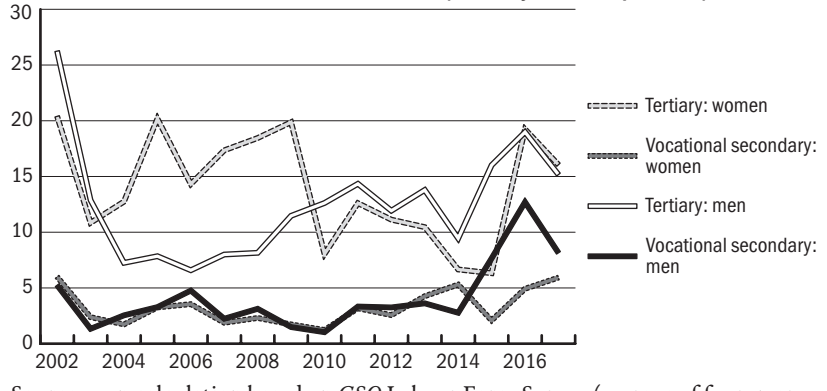
Working while studying shows a slow increase after 2011, especially among students staying in education after vocational secondary education (*Figure 3.1.1*). We do not find significant differences between the sexes in the prevalence of student work (*Figure 3.1.2*). Young women continuing their studies after their first degree worked at a higher rate than men before 2010, but between 2010 and 2016, the employment of female students declined, while that of men increased, so the difference between the sexes decreased to a minimum.

Figure 3.1.1: Share of those working while studying full-time by completed education, 2002–2017 (15–29 years old, per cent)



* ISCED3C.
Source: Own calculation based on *CSO* Labour Force Survey.

Figure 3.1.2: Share of those working while studying full-time by completed education and sex, 2002–2017 (15–29 years old, per cent)



Source: own calculation based on *CSO* Labour Force Survey (average of four quarters).

Among young people leaving school, while only a few have work experience, this experience is largely (81 per cent on average in the past 10 years) related to their intended profession which can make their transition to work easier.[1] In theory, the Labour Force Survey of the HCSO would allow a more detailed examination of this issue, if we compared the labour market outcomes after leaving school among the formerly employed and the non-employed. However, the low proportion of those working while studying also means that the sample of the Labour Force Survey includes very few student workers, only 150–200, per quarter. If we further narrow the group of working students to those who have just finished school (in 2017, this would be 18 percent of full-time students), the number of observations drops to a few dozen. Therefore, due to the low number of observations we are unable to examine how working while studying affects post-graduate employment.

1 *Geel–Backes-Gellner* (2012), for example, found in a Swiss survey on graduates' careers that only part-time work related to their field of studies has a positive effect on later employment and wages.

It is possible that student work is inaccurately measured by population surveys, especially in the case of those studying far from their homes, as in this case the student is usually absent when the survey is conducted, and the family member responding to the questionnaire may not be aware of the student working, especially if it is casual. This source of error can be checked by comparing the share of those in employment in cases where it was the student in full-time education herself who answered the questionnaire with those where another family member responded. Among those who answered the questionnaire about themselves, we found that one and a half to two percent were employed, but even these proportions are low (on average 3 percent of the total student population in the years examined), and the difference may be partially due to the fact that in this group the share of young people living separately from their parents is greater, and who therefore are presumably in greater need of labour income.

According to large-sample population surveys conducted between 2000 and 2016, specifically limited to 15–29 year-olds, the share of those working while studying is low as well, although the pre-2012 measurements among students in higher education showed a continuous increase (*Szőcs*, 2014).[2] According to the 2016 survey, 35 percent of students who stayed in education after their first degree worked, while 13.5 percent of students with a secondary education worked (*Szanyi-F.–Susánszky*, 2018). The former figure is much higher while the latter is similar to what we calculated based on the Labour Force Survey, but neither reaches the levels observed in other European countries.

2 According to the summary of *Szőcs* (2014), in the Youth 2000 survey, only 3–5 percent, in the 2008 survey 11 percent of university students worked regularly in addition to studying.

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3.2 THE SHORT-TERM LABOUR MARKET EFFECTS OF APPRENTICESHIP TRAINING IN VOCATIONAL SCHOOLS

DÁNIEL HORN

The main goal of apprenticeship training is the acquisition of vocation-specific knowledge, but it can also facilitate the employment of fresh graduates. According to the majority of studies examining primarily Western European education systems with a dual structure, apprenticeship training makes it easier for youth – especially youth with less favourable family backgrounds who do not apply for higher education – to enter the labour market (*Breen,* 2005, *Müller–Shavit,* 1998, *Wolter–Ryan,* 2011). These studies emphasise mostly the fact that in countries with dual education systems, that is, where school-based theoretical education is combined with practical education conducted at companies, the initial unemployment rate of students in vocational training is lower, and young employees do higher quality work than those in countries with non-dual vocational training. This is attributed to the fact that apprentices, essentially, step into the labour market sooner, and to the fact that it is easier to teach academically less successful youth the skills that are important for the labour market in real workplace conditions. From a public policy perspective, it would be important to know whether it is the early entry or the development of students' skills that leads to these initial differences.

This subchapter summarises the results of *Horn* (2014), which looked at the effects of Hungarian apprenticeship training using the Tárki–Educatio Life-course Survey on the 2006–2012 period (before the substantial rearrangements of the vocational training system that began in 2011).[1] After the years of initial training, students in vocational schools had to participate in compulsory, practical vocational training, which they could choose to undertake at the school, at training workshops outside of school, or at a company (organised individually or by the school). The primary focus of this study is to seek answers to the following question: do students of vocational schools who spent their practical vocational training at private companies (i.e. apprentices) have better labour market chances in the short term than their companions with similar characteristics who, instead of a company, spent their internship at school (i.e. those who did not take apprenticeships)?

Data and methodology

The analysis uses the database of the Life-course Survey of the Tárki Social Research Institute, which followed a sample of 10,022 taken from the population of eighth-grade students in 2006 for six years.[2] These students were surveyed in every year of their school career, plus for an additional two years

1 During the period examined, the period of general education in typical Hungarian general grammar schools and vocational secondary schools was four years, while vocational schools only provided two years of general education (foundation training) to students, with the next (typically) two years being dedicated to preparation for the chosen vocation. This structure was modified significantly via Act CLXXXVII of 2011, under which the length of training in vocational schools has been decreased to three years, and students receive vocational training already from the 9th grade. In September 2016, former vocational schools were renamed to vocational secondary schools, and former vocational secondary schools were renamed to vocational grammar schools. This paper uses the former names of the schools, effective at the time of data recording.

2 In the sample, low performing students are over-represented. Both this and panel sampling losses are corrected for by weighing so that the survey can be representative for the entire population.

– in the years of their labour market entry or their further education following the secondary level. The responses contain the monthly data of any regular work carried out during the last school year and in the two years following graduation, thus providing us with a more or less continuous picture of the labour market integration of students. The 2006 scores of the eighth-grade mathematics and reading comprehension tests of the national survey on competences are available for all students participating in the panel survey, as well as data on their school careers and family backgrounds. Making use of the variance between the distribution of company and school based training placements, this subchapter attempts to estimate the effect of an internship spent at a company on initial labour market outcomes. As there was a significant number of students at vocational schools who conducted their internship at the school or at the school's training workshops, comparing similar students provides an opportunity for analysing the labour market effect of an apprenticeship spent at a company instead.

The distribution of training placements at companies among the applicant students was probably not arbitrary: companies could select from among students, in hopes of better labour force (cf. *Bertschy et al,* 2009). The analysis of the Life-course Survey suggests that application to the apprenticeship training was indeed not arbitrary, but was much more related to the characteristics of the local labour market than to the individual characteristics of students.[3] Consequently, the estimates presented below probably provide a good estimate of the labour market effect of the apprenticeship training.

The relation of the apprenticeship to employment after graduation

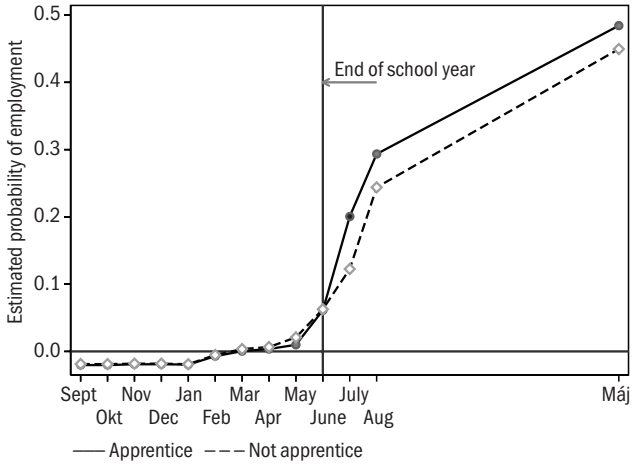
Even though in our analysis we applied various probability models in order to expose an association between the apprenticeship training and employment, there was no statistically significant difference in any of the cases between the employment probabilities of those who did and those who did not spend their internship at a company, one year after graduation. Although there was a minor difference between the students of the two groups, the estimated effect size was only 6 percentage points, and statistically was not significant. And as for students entering the labour market solely (in employment or unemployed), we not only got a statistically not significant result, but the result was less significant from a public policy perspective as well (~3 percentage points).

As can be seen in *Figure 3.2.1*, the probability of employment one year after the completion of school in June is approximately 6 percentage points higher in the case of apprentices compared to those who were not apprentices, but this is not significantly different from zero. Additionally, it has become clear that immediately after the end of the school year, the employment probability of both apprentices and those who did not apprentice increases significantly. Although directly after graduation the employment probability of appren-

3 The selection between training placements acquired individually versus those organised by the school can be examined in a similar way among apprentices. Results show that although a few individual characteristics do have an effect of minor significance, they disappear when the effect of the local labour market in considered (county × vocational group fixed effects).

tices is slightly higher, this significant difference disappears very quickly, one month after graduation, and the remaining difference continues to decrease.

Figure 3.2.1: The expected employment probability of students of vocational schools, 2011–2012



The form of apprenticeship training placement and the size of the company

Examining the differences between apprentices and those who did not take apprenticeship on the basis of how the training placement was arranged and the size of the company, we gain insight into the mechanisms behind the correlations as well. Apprentices trained on site at medium and large companies (over 50 employees) who arranged their placements individually were much more likely to find a regular job directly after graduation – in July and August – than their peers with similar individual characteristics, within the same county and vocational group. This strong significant difference, in the case of large companies, can be explained by several factors. From one perspective, it is possible that large companies are much more committed to the training of apprentices than small companies, since they typically take a longer term view and are aware of the fact that their productivity depends substantially on the productivity potential of the local labour force. What contradicts this hypothesis of differing training efficiency by company size is the fact that these differences are not visible in the case of training placements organised by schools. What is much more likely is that within a given industry, the difference is not between training structures, but in selection mechanisms. A plausible explanation is that it was the more motivated vocational school students who applied to large companies on an individual initiative,[4] and the effect of their motivation is also visible in their labour market outcomes later on.

4 This is also confirmed by the observation that students completing their traineeship at training placements acquired individually are more likely to find a job directly after graduation than apprentices completing their traineeship at placements organised by the school, regardless of company size.

Overall, what is more likely suggested by the data is that in Hungary, there was – even in the very short term – no difference between the labour market success of vocational school students who did and those who did not spend their internship at a company.

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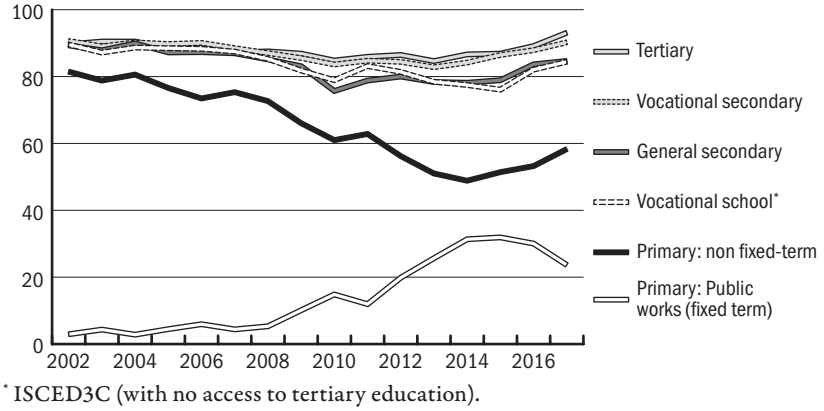
3.3 CASUAL AND OTHER FORMS OF WORK

BORI GRESKOVICS & ÁGOTA SCHARLE

In addition to the student work and apprenticeships examined in the previous two subchapters, forms of contracts that pose less of a risk to employers (casual work, temporary work, fixed-term contracts) and family businesses can also provide an opportunity to gain first experience on the labour market. Casual or fixed-term employment makes it easier for employers to obtain information on the performance of new entrants, but it can also be detrimental for employees if it makes it more difficult for them to move on to a more stable job. According to international literature, it depends on the institutional environment on the labour market whether flexible contracts act as a springboard or a trap (*Eichhorst*, 2014). In highly segmented, dual labour markets (where it is difficult to move from the secondary labour market which offers worse, less secure work, to the primary market which offers better paid, more secure jobs) the proliferation of fixed-term jobs is less favourable and may even lead to a decline in wages and employment opportunities (cf. *García-Pérez et al,* 2019).

The share of fixed-term contracts is low in Hungary in international comparison: according to the Labour Force Survey, 7–9 percent of employers had fixed-term contracts during the years of the crisis, their share decreased to 6.5 percent between 2014–2018 (*HCSO*, 2019).[1] Among young people, the share of those working with such contracts was much higher than average (17 percent) in 2018, while 83 percent worked with a non fixed-term contract (*Figure 3.3.1*).

Figure 3.3.1: The share of non fixed-term contracts among 15–29 years old employees, by education, 2002–2017 (percent)



* ISCED3C (with no access to tertiary education).

Source: Own calculation based on *CSO* Labour Force Survey (average of four quarters).

Before and during the Great Recession, the share of non fixed-term contracts in all education groups declined somewhat, but this trend has stopped or reversed in the past few years.[2] Among uneducated young people, the growing

1 *Eichhorst* (2014) mentions four European countries (Poland, Spain, Portugal, the Netherlands), where in 2012 the share of fixed-term contracts was around 20 percent or more among all employees; the Hungarian indicator of around 10 percent was in the lower third of the countries.

2 Public works is a non-negligible part of fixed-term contracts. In the waves of the Labour Force Survey before 2011, public workers can be identified less accurately, therefore we show the share of non fixed-term contracts in the long time series.

share of fixed-term contracts is clearly related to the expansion of public works: in this group, an increasing amount of fixed-term contracts were signed in the framework of public works (*Figure 3.3.1*).

However, the role of fixed-term contracts and other forms of contract with less risk for employers is not negligible: in the year of leaving school, a higher share of young workers enter into such a contract (*Table 3.3.1*). The share of young people in their first job entering a non fixed-term contract was 20–30 percentage points lower than average.[3] The difference is also related to the level of education: it seems that during the crisis (before 2013), employers concluded more fixed-term contracts with less educated entrants (at most with vocational training or with a general secondary education), while during the growth period they had more fixed-term contracts than those with vocational secondary education. Among women entrants, the share of those with fixed-term contracts is higher in both periods (and significant in almost all education groups).

Table 3.3.1: Share of fixed-term contracts in the year of graduation among entrants (without public works, percentage)

	2008–2012		2013–2017	
	men	women	men	women
Vocational school or less	33	35	37	43
General secondary	44	42	24	44
Vocational secondary	29	37	44	42
Tertiary	20	32	18	29

Note: Public works participants were excluded from both fixed term contracts and total employment (this may induce a small upward bias in the share of fixed term contracts between 2008 and 2012).
Source: Own calculations based on the *CSO* Labour Force Survey.

Casual work occurred in 1–2 percent of first jobs during the period examined; the share of new entrants to work as entrepreneurs or in the family business was only around 2–4 percent as well (slightly higher for men and lower for women).

Based on the above, descriptive data, it seems that among flexible forms of work, primarily fixed-term contracts can play a significant role in facilitating the school-work transition. Even if there is segmentation, the share of secondary jobs that do not offer progression does not yet reach the critical level experienced in Spain or Portugal.[4] Although it is true that the share of fixed-term contracts increased among the less educated after the crisis, this is not necessarily the sign of increasing segmentation, even as the share of fixed-term contracts in the total working population has been declining since the recession. It is also possible that as labour shortages worsen, and possibly with an increase in the range of wage subsidies offered to encourage the employment of young people, employers become more open to giving a chance to jobseek-

3 The lower rate may also apply to newcomers to a given firm (but not as entrants), this was not examined.

4 *Huszár–Sik* (2019) find that the there is indeed a secondary labour market in Hungary, however, based on their calculations, it cannot be ascertained if it equals or expands beyond public works.

ers thought of as more risky (such as long-term unemployed or Roma) with whom they typically enter into fixed-term contracts.

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4 EARLY UNEMPLOYMENT AND LATER LABOUR MARKET OUTCOMES

4.1 DOES THE ECONOMIC RECESSION HAVE PERMANENT EFFECTS?

MÁRTON CSILLAG

What happens if a young person enters a particularly bad labour market after completing their studies? Can we trust that, once an economic recession has passed, these young people will benefit as much of the fruits of the economic recovery as their older counterparts? Or will they be in a permanently weaker position due to the erosion of their human capital – as they are out of work or in "bad jobs," or in positions that do not match their knowledge? This is the issue we are exploring here based on Hungarian data.

Throughout our analysis, we examined the trajectory of school graduation cohorts.[1] We included young men who entered the labour market between 2001 and 2015, and since we used data from 2002–2017, we followed their lives for up to 15 years. Our basic question is the following: if someone graduated in a year and/or county which has a high unemployment rate,[2] then how much more likely is it that they will be non-employed or have lower wages, than a similar young person, who graduated in a better year (or in a county with more favourable labour market conditions), even years after a negative labour market shock? We used the data of the 2002–2017 CSO Labour Force Survey for our analysis. Our sample included those men born between 1970 and 1999 who completed their studies between 2001 and 2015.[3] Although we know in which year the responder graduated, but we do not know where they lived at the time, therefore we assume that this corresponds with their current residence.[4]

On *Figure 4.1.1* we present the probability of the members of the cohorts[5] who finished their studies in different years – to be employed[6] – depending on labour market experience. Based on the figure it is clear that even though in the years of the recession the employment rate of young entrants was quite low, the current conditions of the labour market more strongly influence the labour market status than the unemployment rate characterizing market entry. Therefore, for instance the employment of the cohort finishing in 2003–2004 dropped significantly around 2008–2010 (after 4–7 years of work experience).

We present the results of our first, basic regression analysis on *Figure 4.1.2*. We used simple linear regression, where the key independent variable was the county unemployment rate in the year of graduating, as well as its interaction with (potential) labour market experience.[7] The figure illustrates, that if the young person left school in a year (or country) in which the unemployment

1 Although follow-up data exist at an individual level in the Admin3 database of the CERS Databank, however education level in that dataset can only be determined after 2009, and thus the time series available would have been too short.

2 Here, we used the registered unemployment rate of the National Employment Service in annual and county breakdown.

3 We did not include those in the analysis who did not finish primary school.

4 This has the consequence that if young people move to places with better labour market conditions after graduation, the estimate of the effect of unemployment on entry will be biased towards 0.

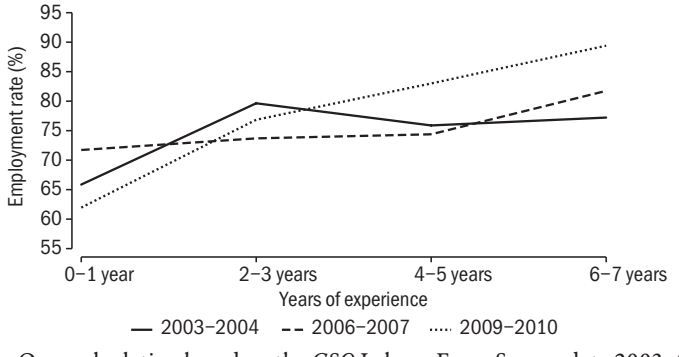
5 The average unemployment rate varied in three groups: 9.5 percent in 2002–2003, 10.6 percent in 2005–2006, 14.6 percent in 2009–2010.

6 In the following, we do not consider those in public works jobs to be employed, as we focus on primary labour market employment. Naturally, full-time students are not included in the sample either.

7 In addition, potential labour market experience, educational attainment, and micro-region of residence, as well as the calendar year and the month of the survey conducted were included as control variables.

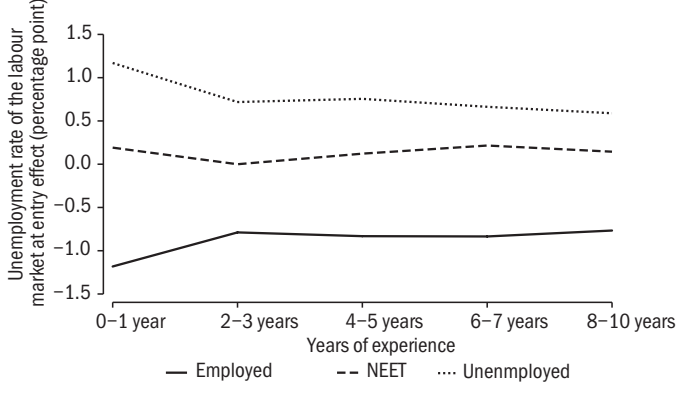
rate was 1 percentage point higher,[8] then how much do the labour outcomes of the youth change throughout the years spent on the labour market. Our results show that the unfavourable labour market situation quite significantly decreases the employment probability of new entrants, and although this unfavourable effect later subsides, it does not disappear. This means that if a young person entered the labour market during the recent recession, when unemployment was around 5 percentage points higher (than in previous years), then the probability of them being employment 6–7 years later was 4 percentage points lower. Similarly, the labour market shock increased the risk of unemployment as well[9] by roughly 3 percentage points even 8–10 years afterwards.

Figure 4.1.1: Youth employment in terms of labour market experience, in three graduation cohorts (between 2003–2017)



Source: Own calculation based on the *CSO* Labour Force Survey data 2003–2017.

Figure 4.1.2: The effects of the unemployment rate in the year of graduation on youth labour market status in terms of labour market experience, 2002–2017 (percentage points)



Source: Own calculation based on the *CSO* Labour Force Survey data 2003–2017.

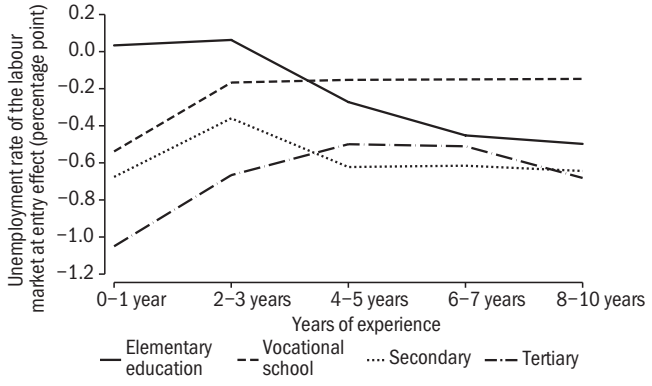
As the labour market is segmented by education level (amongst other things), we also examined the extent to which the lasting negative effects of the labour

8 It should be noted, that there is significant variance in our key variable (the county unemployment rate) both in terms of time and territory. That is, during the years of the crisis (between 2009–2012), the unemployment rate was on average 5.5 percent higher than in 2002. At the same time, the rate in Borsod-Abaúj-Zemplén or Jász-Nagykun-Szolnok countries was on average 16 percentage points higher than in Budapest.

9 We only included those active in the labour market.

market shock varies amongst young people with different levels of education. According to *Figure 4.2.3,* the so-called scarring effect which impacts subsequent employment, or even the whole career, appears mainly in the case of those with secondary or higher education, whilst the negative effects are less significant in the case of those with lower educational attainment.[10]

Figure 4.1.3: The effects of the unemployment rate in the year graduation on youth employment, by educational attainment groups, 2002–2017 (percentage points)



Source: Own calculation based on the *CSO* Labour Force Survey data 2003–2017.

Next, we examined another measure of labour market success, earnings, and we tried to draw conclusions regarding position and the quality of the company.[11] Our results demonstrate that in general, the lasting effects of a poor labour market start are negligible, as seen in the first column of *Table 4.1.1.* At the same time, those with higher education were paid around 5 percentage points less even 4–6 years after the recession, than those entering a favourable labour market (assuming that they entered the market in a year with a 5 percentage point higher unemployment rate).[12] Surprisingly, this is not due to lower position or that the young person "got stuck" at a low-wage company.[13] We also tried to find out whether those entering the labour market during the recession are "overqualified", i.e. if they are in an occupation which is characterized by lower education-levels than theirs. Similar to the above results, we did not find any indication that those youth leaving education in the years of the recession would get stuck at a low quality jobs.

Our results suggest that the scarring effects of entering the labour market in a recession in Hungary appeared mainly in permanently lower employment. Wage disadvantages emerged only for those with tertiary education.[14] It should also be noted that it is possible that the negatives effects on those with higher education could have been greater if the cohorts entering the labour market during the recession would not have been significantly smaller than the generations in the early 2000s.[15] Our results echo other European analyses which found the effects on wages to be smaller, but they showed that

10 In the case of unemployment probability, there is no such difference for those with different educational qualifications, only the negative effect on those with vocational education is exceptionally high.

11 We did this with the help of the 2001–2016 Wage Tariff Survey of NES. Sample selection was done similar to the above analysis. Our dependent variable was the logarithm of gross monthly real earnings (including 1/12 of non-regular income). The basic equation included educational attainment (7 categories), categories of experience, the country, the calendar year. In addition to the basic equation, we first included the occupation (three-digit FEOR code), and then indicator variables for the identity of the company.

12 At the same time, it is possible that because employment declined, selection intensified and therefore we can only give a lower estimate of the wage effect.

13 That is, in the models in which we included occupation and corporate fixed effects, the results did not change.

14 That is, it is possible that the short-term effects of the negative labour market shock will not become permanent for those with lower education, as in their case there is no serious depreciation of human capital.

15 These preliminary results further justify a closer examination of the careers of young people with higher education (see Chapter 8 of *In Focus*).

employment permanently decreases as a result of a poor labour market entry situation. (See Box 4.1 for more information.)

Table 4.1.1: The effects of early-stage unemployment on wages

	Total Sample	Vocational school	Secondary	Tertiary educated
Unemployment rate (year or entry)	–0.007576**	–0.01099*	–0.006326	–0.01395***
	(0.003562)	(0.006086)	(0.004918)	(0.004507)
Unemployment rate× 2–3 experience	0.004923*	0.007763	0.007343*	0.004012
	(0.002521)	(0.005978)	(0.004131)	(0.003403)
Unemployment rate × 4–5 experience	0.002816	0.006745	0.006205	0.003514
	(0.002554)	(0.005959)	(0.004015)	(0.003353)
Unemployment rate × 6–7 experience	0.001162	0.009388	0.002933	0.001706
	(0.002616)	(0.005953)	(0.004070)	(0.003462)
Unemployment rate × 8–10 experience	6.973e–04	0.009268	0.005014	0.001634
	(0.002711)	(0.005974)	(0.004160)	(0.003595)
R^2	0.469	0.295	0.228	0.252
N	204,057	46,132	65,462	76,668

Note: The basic equation included educational attainment (7 categories), categories of experience, the country, the calendar year. Clustered (at the level of the firm) standard errors are displayed in brackets.
Significant at the ***1 percent level, **5 percent level, *10 percent level.
Source: Own calculation based on the *NES* Wage Survey data 2002–2016.

K4.1 What are the consequences of young people entering the labour market during an economic crisis? International outlook

ENDRE TÓTH

The *scarring effect* refers to those negative consequences which affect young people who begin their careers with a potential period of unemployment. In labour economics, two different issues are examined under this term. First: whether young people who leave school during a recession and start their career therefore face higher risks of early-stage unemployment are permanently "scarred" by these circumstances. Second: for those young people who experience lasting unemployment when starting their career, does this episode have long-term negative effects on their later career? This topic re-emerged in the literature due to the severe economic and financial recession in 2008, and in order to eliminate these negative consequences, the European Union introduced their Youth Guarantee Programme in 2013.[1]

The majority of research on the scarring effect examines this phenomenon via regression model building, analysing young people belonging to different cohorts, where the key independent variable is the labour market situation of the youth's place of residence at the time of leaving school. In

1 For the implementation of this Hungary, see Subchapter 5.2.

their analysis, the researchers do not only have to properly filter out differences of other origins between the individuals, but they also have to deal with potentially distorting effects such as the endogenous relationship between unemployment and the place and year of graduation, and migration. In order to remedy the potentially distorting effects, researchers are including new control variables (for example: place of birth, unemployment measured at the start of the training). Every research paper[2] we examined drew the conclusion that young people entering a labour market in a recession with high unemployment must face lasting negative consequences. In their case, lower wages, fewer hours worked, lower quality job and higher risk of unemployment can be detected even 7–15 years after starting their career, compared to their counterparts who started working at a more fortunate time (*Kahn,* 2010). When the initial unemployment rate that is one percentage point higher, the rate of loss of income is estimated at 6–10 percent in the year of graduation by studies examining higher education degree-holders, which then slowly decreases, but stays around 2–3 percent even ten years later. (*Kahn,* 2010, *Altonji et al, 2014*). Several studies have pointed out that the negative effects may be more significant in the case of less educated young people, who experience a more significant decrease of employment (*Schwandt–von Wachter,* 2018, *Cockx*, 2016), and amongst graduates, those with lower abilities (*Oreopoulos et al,* 2012). It seems that stricter labour market regulation increases the persistence of the scarring effect, with young people getting "stuck" in low-paying jobs that do not match their qualifications in a more rigid labour market structure (*Kawaguchi–Murao*, 2014). Research based on individual-level data not only analysed the effect of early-stage unemployment,[3] but also the consequences of a young person accepting a job for which they are overqualified. Studies examining data from European countries with a relatively inflexible labour market show that accepting a job not compatible with their qualifications presents a trap for young people, because it has a long-term negative impact on most the careers of most young people (similar to unemployment).[4] Young people from vulnerable backgrounds experience lower upward mobility and slower wage growth that those who began their careers in jobs which match their qualifications.[5] There can be two main explanations for the lasting negative effects of early-stage unemployment or overqualification. The first is the negative signalling function of early unemployment, i.e., employers view it as a signal of lower productivity, which seriously affects the perception of job-seekers (*Cockx–Pichio*, 2011). Another possible explanation is the decline of professional knowledge and skills due to cognitive decline, or that the acquisition of new skills is rare in low-skilled jobs.

2 On the topic of the scarring effect, most of the research is based on North American data (*Schwandt–von Wachter,* 2018, *Kahn,* 2010, *Altonji et al,* 2014, *Speer,* 2016, *Oreopoulos et al,* 2012). But several excellent studies used data from European countries (*Cutler et al,* 2014, *Liu et al,* 2016, *Cockx–Ghirelli,* 2016), and there are also studies examining multiple continents and larger groups of countries (*Cutler et al,* 2014, *Liu et al,* 2016, *Cockx–Ghirelli,* 2016). Most research based on North American data analyses exclusively newly graduated young people (*Kahn*, 2010, *Altonji et al,* 2014, *Oreopoulos et al,* 2012), but there are also studies which exclusively include those with lower education (*Speer*, 2015), or those that examine all young people, regardless of their education.

3 This can have very significant negative consequences, for example, *Gregg–Tominey* (2005) found that young people who experienced long-term unemployment early in their career, had earnings around 12 percent lower than their luckier counterparts, even twenty years later.

4 See for example, *Büchel–Mertens,* 2004, *Mendes de Oliveira et al,* 2000, *Baert et al,* 2012, *Liu et al,* 2012.

5 This is in contrast to previous North American results, where accepting positions that did not match qualifications might have been a good choice in terms of subsequent higher than average mobility opportunities (i.e., it provided a kind of "springboard function"). See for example: *Sicherman* (1991) and *Rubb* (2003).

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4.2 UNEMPLOYMENT AMONG LABOUR MARKET ENTRANTS

MÁRTON CSILLAG

If a young person does not find a (suitable) job for a lengthy period of time at the beginning of their labour market career, it can significantly impact their further progress. This is due to the fact that a) their human capital is not developing – precisely at the time when their peers are learning the basics of the profession in practice, or that b) in the eyes of the employers their unemployment (or the fact that they began working in a job for which they were overqualified) is a negative sign. This issue has not been studied by many researchers in Hungary – mainly because individual-level longitudinal data was not available –, except in the case of young graduates (see, for example *Galasi–Varga*, 2001, *Varga,* 2013, and sub-chapter 7.3 in this *In Focus*). In this sub-chapter, we briefly present evidence on what is the labour market position five years after graduation of a young person spending a significant amount of time as a registered jobseeker (or public worker) in the two years after graduation, compared to their peers who had begun their careers "smoothly".

During the course of our analysis, we build on the linked public administration panel database of the CERS Databank (for more details, see *Sebők*, 2019). We are examining a specific group: those young men[1] who finished secondary education (ISCED 3A or 3B) in 2011–2012 and did not go on to higher education.[2] The database not only has the advantage that we are able to observe the labour market trajectory of the youth relatively accurately, but we also have data measuring their cognitive skills,[3] therefore we hope that the bias stemming from unobservable characteristics is relatively small. The key information upon which we build our analysis is how many months the young persons were registered jobseekers (or public workers) in the two calendar years after finishing secondary school.

We present some background characteristics on *Table 4.2.1:* reading comprehension and mathematics test scores as well as the district unemployment rate. Based on the length of registered job-seeking or public work, we placed the young people into six groups, distinguishing those who were (also) in public works.

Table 4.2.1 shows first and foremost that roughly 85 percent of the young people in the cohort examined were unemployed for a short period of time, while 5 percent of them were in public works in the two years after entering the labour market. Additionally, it is evident that those who were long-term unemployed had significantly lower cognitive skills.[4] It is also clear that the length of unemployment is strongly influenced by the local labour market: young people who experienced long-term unemployment lived in a district

1 The labour market situation of young women is not addressed in this short piece because it would require the modelling of childbearing.

2 More specifically, the sample includes those who were born between 1990 and 1994 and who had their tenth grade competency test results; and those who attended full-time education for less than one year in the two calendar years after completing secondary school.

3 Tenth grade reading and mathematics test scores were used.

4 This is particularly evident at the bottom of the skills distribution, among those young people who were long-term unemployed and in public works the rate of those with weak or very weak skills is nearly three times more than among those who were not unemployed. (Reading comprehension: 14.3 percent compared to 5.5 percent; Maths: 21 percent compared to 7.6 percent.)

where unemployment was more than one and a half times higher than among those who did not experience unemployment. Another important lesson from the table is that those who were in public works (on top of unemployment), came from a particularly disadvantaged background in every respect.[5]

Table 4.2.1: Characteristics of young men by categories based on time spent as registered jobseekers or in public works in the two calendar years after graduation

Length of time spent in registered unemployment or public works	Proportion (percent)	Reading comprehension	Mathematics	Unemployment rate
		average score		(percent)
None	59.4	1608	1664	6.69
1–6 months	25.2	1582	1639	8.24
7–12 months, no PW	5.9	1578	1632	9.03
7–12 months and PW	3.2	1561	1605	10.34
13–24 months, no PW	3.7	1556	1603	10.35
13–24 months and PW	2.6	1529	1568	11.95

Sample: those young men who finished secondary school (ISCED 3A or 3B) in 2011–2012 and did not go on to higher education.
Note: Data from the two calendar years after completing upper-secondary education, the length of registered unemployment or public works participation is summed up (and PW participation is noted separately).
Source: Own calculation based on linked public administration panel database of the *CERS* Databank.

In *Table 4.2.2*, we summarised the results of multiple regression analyses in which we measured the labour market situation of the young person in the fifth calendar year after finishing secondary school, depending on the number of months spent as a registered jobseeker (or in public works).[6] First, we were curious about how many more months those who experienced difficulty entering the labour market spent as registered unemployed or in public works (or less time employed in the primary labour market). Second, we examined whether, if a young person was employed in the primary labour market, they received lower (daily) wages, and whether it was more likely that they were overqualified[7] for their job if they had been previously unemployed/in public works. The key variables were divided into the six categories in *Table 4.2.1*.[8]

Estimation results show that shorter unemployment (not exceeding six months) does not significantly worsen the labour market outcomes of youth. Those who had been unemployed for a longer period of time and were (also) in public works were particularly unfortunate, while the labour market outcome of those who spent the 7–12 months as registered jobseekers (but not in public works) deteriorated only slightly.

First, an individual's participation in public works clearly predicts getting "stuck" in subsequent unemployment (or further public works): the long-term unemployed who were also in public works, spent nearly three months more

5 We note that those who continue their studies two years after finishing secondary school (although they did not complete higher education until 2019) have higher cognitive skills. In this short paper we do not deal with the fact that the current state of the labour market may also affect the continuation of studies.

6 In the analysis we use the entire calendar year, therefore we consider the average daily wages as well as the proportion of time spent as overqualified within employment. It is important to emphasise that when we talk about employment, we are looking at employment (and the earnings or occupational status) on the primary labour market.

7 Here we use the same approach as Júlia Varga in subchapter 7.3. Those who worked in occupations belonging to HSCO major group 8 or 9 were classified as overqualified.

8 Regressions included tenth grade test scores (and their squares), year of birth, region of residence, and how many months the young person studied as a full-time student in the two years after graduation.

in a similar status even in the fifth year after graduation. Similarly, members of this group spent about 1.3 months less on the primary labour market than those who had not been unemployed. All this suggests that in terms of employment status, those who are long-term unemployed *and* who were in public works are the worst off. If a young person was long-term unemployed but was *not* in public works or was a registered jobseeker and in public works but was able to get out of this situation *within a year* also had negative, but not so unfavourable, consequences.

Table 4.2.2: The relationship between unemployment in the first two years of the career and the labour market outcomes in the fifth year after finishing secondary school, finished secondary school in 2011–2012

Length of time spent in registered unemployment or public works	Registered jobseeker or public works (months)	Employed on the primary labour market (month)	Daily earnings (logarithm)	Occupation overeducated (percent)
1–6 months	0.3534***	0.4214***	0.003006	7.0275***
	(0.05196)	(0.1125)	(0.01434)	(1.1160)
7–12 months, no PW	0.5386***	0.2794	–0.02838	12.992***
	(0.1081)	(0.2016)	(0.02500)	(2.0245)
7–12 months and PW	2.0151***	–0.5261*	–0.09400**	8.1912***
	(0.2311)	(0.2802)	(0.03794)	(2.6704)
13–24 months, no PW	1.3562***	–0.6197**	–0.1067***	9.2666***
	(0.2010)	(0.2686)	(0.03308)	(2.7348)
13–24 months and PW	2.9125***	–1.3137***	–0.1134***	16.300***
	(0.2893)	(0.3183)	(0.03754)	(3.2424)
R^2	0.145	0.051	0.064	0.063
N	11,147	11,147	8,904	8,904
Average of the outcome variable	0.818	7.962	8.526	30.391

Key independent variable: number of months spent as registered jobseeker or public works participant in the two calendar years following secondary school graduation. Regressions included tenth grade test scores (and their squares), year of birth, region of residence, and how many months the young person studied as a full-time student in the two years after graduation.

Source: Own calculation based on linked public administration panel database of the *CERS* Databank.

Second, in terms of wages and the quality of work five years after labour market entry, the ranking based on the status immediately following entering the labour market is not so clear. Members of those three groups whose employment was negatively affected by the experiences of the first two years also received around 10 percent lower daily wages. In terms of jobs, all young people who had been unemployed for a significant period of time were about 10 percentage points more likely to be forced to accept a job for which they were overqualified. Those who were both long-term unemployed and in public works were particularly disadvantaged as they were about one and a half times more likely to be overqualified than young people who were not unemployed.

Based on our research, it cannot be ruled out that long-term unemployment after entering the labour market permanently worsens the labour market opportunities of young people, especially if it is associated with public works. Further research is required in two directions. On the one hand, it is appropriate to examine which of the differences identified here may be related to weakness in terms of unobservable skills. On the other hand, it should be examined as to what factors cause the lasting negative consequences: employer preferences, erosion of knowledge, or being stuck in a particularly disadvantaged place of residence.

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5 THE IMPACT OF EMPLOYMENT POLICIES

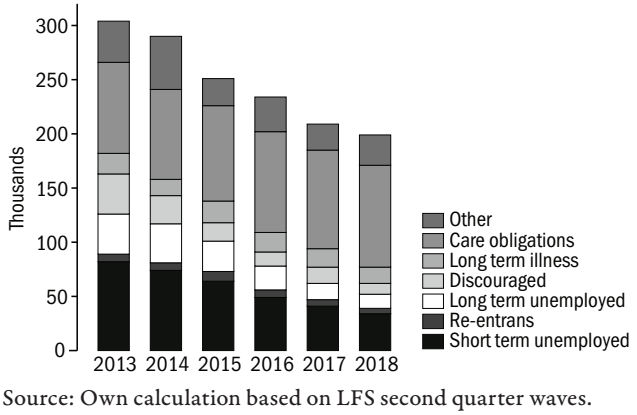
5.1 JOB SEARCH BEHAVIOUR OF YOUNG PEOPLE NOT IN EDUCATION, TRAINING OR EMPLOYMENT

TAMÁS MOLNÁR

Young people's unemployment at the start of their careers can cause long-term problems (see Chapter 4), thus, it is particularly important to see how quickly they find a job after leaving school and whether the public employment services can offer them effective help. In this subchapter, we look at how youth unemployment has changed over recent years and what factors affect the speed of finding employment, with particular emphasis on the role of public employment services.

In recent years, the number of young people not in education, employment or training (NEET) has decreased, and their composition has also changed significantly (*Figure 5.1.1*).[1] It can be clearly seen that the recovery from the crisis and the increasing demand for labor have absorbed those unemployed youth who were relatively close to the labor market: while in the second half of 2013 nearly 30% of NEET young people aged 16–29 were short-term unemployed, by the second quarter of 2018, only 17 percent of NEET youth were in this group. Similarly, the share of long-term unemployed and discouraged job-seekers (those who no longer actively look for a job) in the NEET youth group has decreased, indicating a particularly strong demand effect, as even those who had been looking for a job for more than a year previously can now find employment.

Figure 5.1.1: Changes in the number of NEET groups in the 16–29 age group, 2013–2018 (thousands)



Source: Own calculation based on LFS second quarter waves.

Parallel to this, the number of those who are unavailable due to family responsibilities has increased slightly and the number of people who are unavailable

1 Young people not in education, training or employment were divided into seven groups following the Eurofound method (*Mascherini–Ledermaier*, 2016). Re-entrants who will soon start to study or work at a particular job, short-term unemployed looking for a job for less than 1 year and long-term unemployed looking for a job for over a year. Discouraged workers who want to work but are not actively looking for work because they think they will not find a relevant job. Those unavailable due to illness or disability who are not able to go to work because of their illness, while those unavailable due to family responsibilities who cannot work because they are typically caring for children or other family members. The other category includes everyone who could not be classified in the above groups due to lack of data or for other reasons.

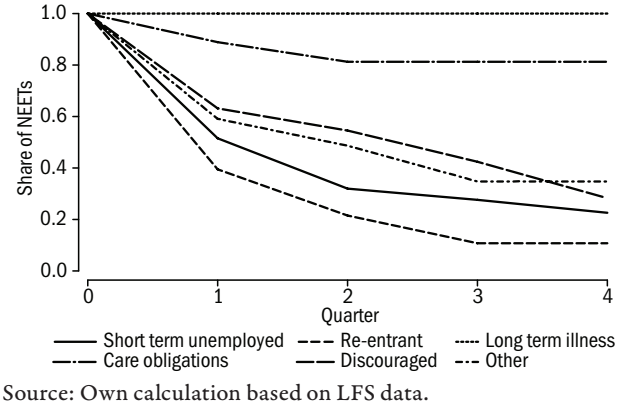
due to illness or disability has stagnated, resulting in a significant increase of their combined share in the overall NEET youth population, reaching over 60 percent by 2018. In other words, in 2018 more than half of the unemployed young people were unavailable for family or health reasons.

Job search duration

Although the favorable economic situation in recent years has made it easier for young people to find employment, many people may still need help. And if growth rates decrease, it can become a critical issue – influencing the entire career path – for even more people, how effectively job centers can help them find their first jobs. We perform an analysis similar to the work of *Micklewright–Nagy* (1999), we used Labor Force Survey individual data from 2015 to 2018 to investigate the factors that influence the employment prospects of 15–29-year-old NEETs.[2]

The data on those who have recently become NEET also shows that almost everyone who wanted and was able to work could get a job relatively quickly in recent years. With the exception of unavailable NEETs (either due to family or health reasons), the proportion of those still in NEET status has fallen below 40 percent in each group within four quarters. Furthermore, most re-entrants (those waiting for a call-back) and job seekers (ILO unemployed) have found employment within six months (*Figure 5.1.2*).

Figure 5.1.2: Number of year quarters until exit from NEET status to employment by type of unemployment, 2015–2018



Source: Own calculation based on LFS data.

In addition to labor demand and individual motivation, help from the public employment services can also shorten the duration of job search through providing jobseekers with specific job offers, training or advice to improve the effectiveness of individual job search (see also section 5.2). Identifying the causal effect is difficult because there is a two-way relationship: registration can improve the efficiency of job search, but registration itself can be a step

2 We used a survival analysis, merging the waves of the Labor Force Survey 2015–2018. The sample included those who did not have NEET status in the first wave and then became NEET in one of the six quarters. As output variable we used the time until exiting the NEET status, and we controlled for – among others – level of education, age, gender, region, and quarter. Leaving NEET status to study has not been taken into account here.

in job search.[3] Therefore, our analysis is descriptive: in survival models, we estimated how motivation and job search affect the length of time to return to work or return to school.[4] The results are shown in *Table 5.1.1.*

Table 5.1.1: Correlation of various factors with the time until exit from NEET status to employment and to education, 2015–2018

	Exit to employment	Exit to further education	Male, exit to employment	Female, exit to employment
Wants to work, not seeking a job actively, not available	0.6480	1.0878	0.8562	0.5512
	(0.2348)	(0.2157)	(0.4406)	(0.2831)
Wants to work, not seeking a job actively, available	2.4735***	0.6922	2.3153***	2.7977***
	(0.3800)	(0.1800)	(0.4520)	(0.7244)
Wants to work and actively seeks a job	2.8805***	0.9875	2.6407***	3.5212***
	(0.3943)	(0.2084)	(0.4864)	(0.7440)
Re-entrant	3.6825***	1.0715	5.1245***	2.6285**
	(0.8888)	(0.5595)	(1.5977)	(1.0694)
Age	1.0687***	0.8356***	1.0678***	1.0805***
	(0.01386)	(0.01597)	(0.01871)	(0.02219)
Registered jobseeker in the previous period	1.0970	0.4887***	1.1075	1.1237
	(0.1432)	(0.1236)	(0.1890)	(0.2403)
Vocational school	1.4640***	0.5450***	1.5463***	1.2131
	(0.1763)	(0.1169)	(0.2235)	(0.2777)
Secondary or tertiary education	1.1800	1.4030***	0.9851	1.4680**
	(0.1289)	(0.1742)	(0.1468)	(0.2535)
Female	0.8537*	1.1870*		
	(0.08042)	(0.1227)		
Constant	0.002385***	0.4294	0.002882***	0.001040***
	(0.001253)	(0.2977)	(0.001873)	(9.778e-04)
Number of observations	2,578	2,452	1,429	1,149

Note: Coefficients express the effect on the logarithm of the odds ratio. Coefficients greater than 1 mean that this factor speeds up the placement process, while factors with a coefficient less than 1 impede it.
***Significant at a 1 per cent, **5 per cent, *10 per cent level.
Source: Own calculation from LFS data.

When looking at those who entered employment, not only the life situation, but also the self-reported willingness to work has a significant explanatory effect. Those who are available to work within two weeks will find a job significantly faster, even if they did not actively seek job opportunities in the previous year quarter.[5] However, contacting the employment office does not significantly reduce the duration of job search.

The role of the public employment services may be different for certain groups of young people not in education or training. Examining separately the groups created based on motivation, we find that registration with PES significantly reduces the duration of the NEET status for those who want to work but are not actively searching for a job themselves (*Table 5.1.2*). This implies that the support of the employment services is not significantly help-

3 In addition, registrants may be filtered by other features (that are not documented in population surveys): those who expect little from the job center because they have good connections, or are better informed, may have a lower registration rate; while those who already know which employer will provide them with an internship opportunity or (for different reasons) those who did not succeed in finding a job on their own might have a higher registration rate.

4 Time spent until leaving the NEET status to further education or training increases significantly with age, it is also slowed down by vocational education, but it is accelerated by secondary education or higher compared to having only primary education.

5 At the same time, re-entrants are the ones who start employment in the shortest time, in line with the results of *Micklewright–Nagy* (1999). Our results differ from this earlier research in that active jobseekers do not find a job faster than those who just want a job.

ful for those who are able to look for a job on their own (see Box K5.1), while those who themselves are not seeking employment for some reason may be activated by the help of PES.

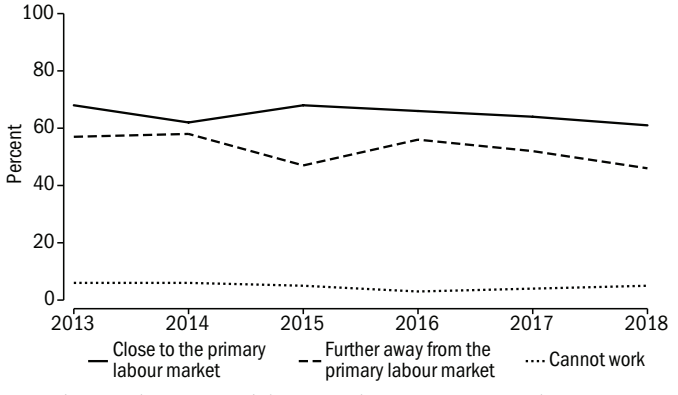
Table 5.1.2: Relationship between motivational factors and registration with time until exit from NEET status to employment, 2015–2018

	Wants to work	Does not want to work	Wants to work and actively seeks a job	Wants to work but does not actively seek a job
Registered jobseeker in the previous period	1.3582**	1.2549	0.9139	1.9937***
	(0.1812)	(0.6490)	(0.1654)	(0.4319)
Number of observations	934	1,644	529	405

Note: Coefficients express the effect on the logarithm of the odds ratio. Coefficients greater than 1 mean that this factor speeds up the placement process, while factors with a coefficient less than 1 impede it.
***Significant at 1 percent, **5 percent, *10 percent level.
Source: Own calculation from LFS data.

Within the group of NEET young people, those who are the closest to the primary labor market (short-term unemployed and re-entrants) register with the employment services at the highest rate. The somewhat more problematic groups (long-term unemployed, discouraged jobseekers and other NEETs who want to work), for whom the services of the PES would likely be more helpful, register at a lower and, in recent years, declining rate. Not surprisingly, people who, for whatever reason, are unable to work are registered at a very low rate at PES offices.

Figure 5.1.3: Registration rate by distance from the primary labor market, 2013–2018



Note: Close to the primary labour market: re-entrant or short term unemployed. Further away from the primary labour market: long term unemployed or discouraged worker.
Source: Own calculation based on LFS second quarter waves.

Overall, we have found that young people not in education, training or employment face different opportunities in the labor market: a smaller and de-

clining portion finds work quickly, others remain unemployed for a more protracted period, while an increasing portion remain stuck in NEET status due to their care responsibilities or health issues. The employment service reaches no more than half of the second group and less than one in twenty young persons from the third group. From our descriptive analysis, it seems that registration at the job center can accelerate the employment of young people who are further away from the labor market and want to work. Therefore, in order to further reduce the number and proportion of young people not in education, employment or work, the access of vulnerable young people to employment services needs to be increased, and the efficiency of services for job-seekers (see section 5.2) and social services that can reduce (or compensate for) barriers related to illness or care should be improved.

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K5.1 Job search channels

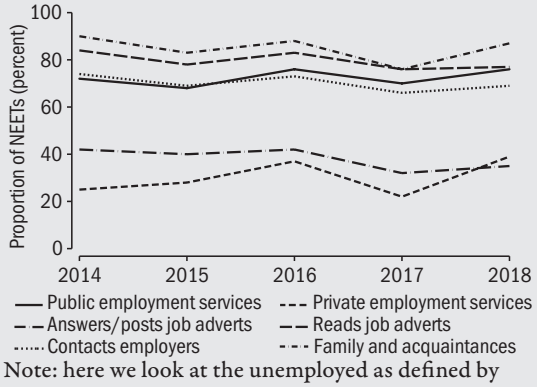
TAMÁS MOLNÁR

We examined the job search channels used by economically active, job-seeking young people aged 18–29 besides registering at the public employment services, and we also looked at the differences between job search channels used by young people with and without secondary education.

According to Labor Force Survey data, those who finished vocational school use the help of public employment services to find a job in a slightly higher proportion than those who completed secondary education (ISCED 3 A or B), while most people look for work with the help of acquaintances or read advertisements.

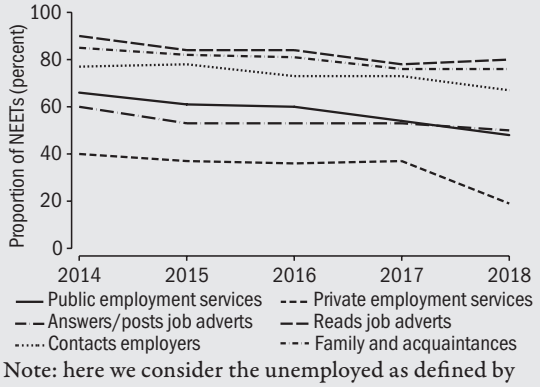
Roughly half of those who completed secondary education also use the help of public employment services, but this proportion has shown a declining trend in recent years, with most people reading advertisements and looking for jobs through acquaintances. In addition to this, graduates are more likely to actively post or respond to an ad than non-graduates.

Figure K5.1.1: Search tools used by unemployed young people who completed vocational school, 2014–2018



Note: here we look at the unemployed as defined by the ILO (not just registered jobseekers).
Source: LFS second quarter data.

Figure K5.1.2: Search tools used by ILO unemployed young people who completed secondary education, 2014–2018



Note: here we consider the unemployed as defined by the ILO (not just registered jobseekers).
Source: LFS second quarter data.

5.2 ACTIVE LABOUR MARKET INSTRUMENTS TARGETING YOUNG PEOPLE AND THE YOUTH GUARANTEE PROGRAMME

JUDIT KREKÓ, TAMÁS MOLNÁR & ÁGOTA SCHARLE

Recognising the long-term risks of youth unemployment, European Union countries established the Youth Guarantee (YG) scheme in 2014. Under the YG scheme, Member States have committed themselves to providing young people under the age of 25 with a specific, good quality offer from the organisation implementing the scheme (this is usually the public employment service) shortly after completing their studies or losing their job, starting in 2015.[1] The meaningful opportunity offered could be, for instance, a job supported by wage subsidies, training, participation in programmes promoting traineeship or entrepreneurship (*Tóth–Temesszentandrási*, 2019).

Most of the above mentioned labour market measures were on offer by the Hungarian labour offices before the YG scheme. The novelty of the YG primarily lies in the fact that the state guarantees that it will provide early, meaningful and personalised assistance to all young people not in employment, education or training (NEET), for the implementation of which EU funds will provide significant financial instruments. Most of the programme elements of the YG system are operated by employment services for registered jobseekers. In this subchapter, we evaluate these programme elements, we do not analyse traineeship and entrepreneurship programmes offered by other organisations.[2]

The results of the YG scheme can be evaluated on three levels. The first question is whether the employment services succeed in reaching and bringing the NEET youth into contact with employment services. The next question is in what proportion and within what timeframe young people already registered as jobseekers at the employment services[3] are given an offer, and whether their inclusion in the most appropriate active labour market programme will be successful. The final question of the effectiveness of the YG scheme is the extent to which the programme's tools improve the longer-term labour market prospects of young people.

For the time being, we do not have sufficient data available to examine the employment effects of the YG programme elements, therefore we do not deal with the impact assessment of the individual measures here either.[4]

In terms of the first level, reaching the NEET youth, the programme did not show significant results. The Council recommendations preparing the introduction of the YG prioritise addressing vulnerable, inactive young people facing multiple barriers by developing effective information strategies and strengthening cooperation with relevant partners (*EU*, 2013).

1 At the start of the programme in 2015, the commitment in Hungary was for an offer within six months after registration, currently an offer must be made to young jobseekers within four months.

2 The employment service operates the GINOP 5.2.1. and the VEKOP 8.2.1. programmes. The internship programme (GINOP 5.2.4.) is implemented by vocational training centres, and the programmes supporting entrepreneurship (GINOP 5.2.3., 5.1.9., 5.2.7.) are implemented by consortia of professional organisations.

3 The employment service has been part of government offices since 2015, and its branches operate as the employment department of the district offices.

4 The Youth Guarantee Programme is being evaluated at an early stage in a study by *Hétfa* Research Institute (*Ágnes Szabó-Morvai et al*, 2015).

Prior to the introduction of the Youth Guarantee Programme, the employment service reached nearly 60 percent of those NEET youth who would like to work, but certain barriers (such as weak motivation or lack of qualification) make it difficult for them to get a job, so they would be particularly in need of the assistance the programme could provide.[5] The rate of registrants in this group increased from 48 percent observed before the introduction of the programme to 58 percent in the first year, however in the following two years, it fell below the previous levels (see *Figure 5.1.5* in the previous subchapter). In the group of young people who are not hindered in their job hunt, the rate of registrants is 10–15 percent higher and has decreased less since the introduction of the programme. This indicates that the programme did not, or it only temporarily strengthened the partnerships or the inclusion tools which made it possible to reach inactive young people. A similar conclusion was reached by *Szabó-Morvai et al* (2015) based on data from the first months following the introduction of the programme, and this is supported by the interviews conducted in the labour organisation in the spring of 2019 (Budapest Institute, 2019).

On the second level, we analyse the timing and the types of programmes that the registered unemployed youth entered and evaluate the targeting and the relevance of the programmes. Based on the data of young people under the age of 25 entering active labour market programmes, the distribution of labour market programmes has significantly changed in recent years.

Based on individual level data of registered jobseekers, we examined where young people entering the labour register between January 2015 and June 2017 end up in the first six months after entry (*Figure 5.2.1*). According to this, since 2015, the chances of a young person entering the register to get into an active measure within half a year increased, and at the same time the probability of a young person entering public works or not to participate in any programme while remaining in the register decreased. More than half of all entrants are removed from the register within six months without entering either public works or an active programme. They either found work without help or became inactive.

The distribution of the active programmes by type is shown on *Figure 5.2.2*. Based on this, in addition to the dynamic increase of wage subsidies[6] of almost 70 percent, the number of entrants to training programmes stagnated between 2015 and 2018, so the weight of training within active programmes decreased overall.

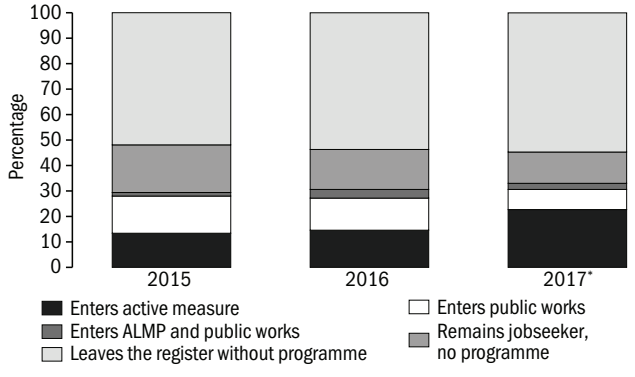
The fact that the labour market environment in Hungary has changed significantly in recent years also plays an important role in the transformation of the distribution of labour market instruments: besides the dynamic expansion of employment, unemployment, including youth unemployment, has also decreased. In any case, the reduction of the public works programme and the increase in the rate of wage subsidies are positive developments, as

5 Based on LFS data, see subchapter 5.1 for more details. We classified in separate groups those who could not work due to illness or family ties: the rate of registrants in this group is barely 5 percent.

6 Wage subsidies do not include subsidies provided by the Job Protection Act, the latter is discussed in subchapter 5.4.

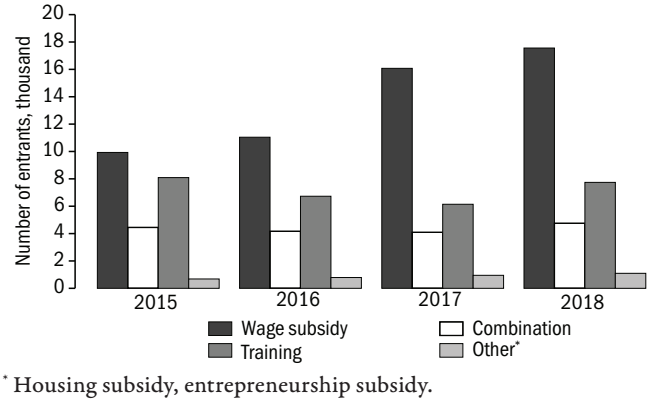
the recipients of wage subsidies work in the open labour market at a higher wage level than in public works. International analyses show that wage subsidy schemes providing employment in the private sector could improve post-programme employment opportunities to a greater extent than public employment schemes[7] (*Card et al,* 2018). The results of early analyses of the Hungarian public works scheme also demonstrate that public employment does not aid long-term employment (*Cseres-Gergely–Molnár*, 2015, *Köllő–Scharle*, 2012). At the same time, based on the significant increase in employment and the increase in labour shortages, it is likely that the wage subsidy instruments supported, in part, the employment of young people who could have found employment without support.

Figure 5.2.1: What happens to young people under the age of 25 registered as jobseekers in the first six months after registration?



* Until 30 June 2017. The horizontal axis shows the year of registration.
Source: Own calculation based on the Admin3 database of *Institute of Economics* Data bank. We would like to thank *István Boza* for his help in processing the database.

Figure 5.2.2: The number of entrants into the Youth Guarantee Programme by active instruments



* Housing subsidy, entrepreneurship subsidy.
Source: *Ministry of Finance.*

7 In fact, the employment impacts of the latter are typically negligible or negative.

Regarding the targeting of the programmes, we examine the extent to which vulnerable and low-educated groups in the labour market benefited from the expansion of active labour market programmes. In order to answer this question, we used a linear probability model to examine what factors influence whether the young people who registered as jobseekers between 30 June 2015 and 30 June 2017 are enrolled in the Youth Guarantee Programme within half a year. The results are shown in *Table 5.2.1.*

Table 5.2.1: Regression estimate of the factors determining the entry of registered jobseekers under the age of 25 into the Youth Guarantee Programme

	Year of entry to unemployment registry			
	2015–2017[a]	2015	2016	2017[a]
Male	–0.003	–0.010***	0.004	0.000
	(0.002)	(0.003)	(0.004)	(0.007)
Max. primary education	–0.102***	–0.092***	–0.109***	–0.122***
	(0.003)	(0.004)	(0.004)	(0.008)
Below the age of 20	–0.003	0.004	–0.007	–0.018**
	(0.003)	(0.004)	(0.005)	(0.009)
Number of unemployment spells	–0.018***	–0.012***	–0.013***	–0.038***
	(0.002)	(0.003)	(0.004)	(0.009)
With no work experience	0.095***	0.092***	0.086***	0.126***
	(0.003)	(0.004)	(0.005)	(0.009)
Constant	0.252***	0.248***	0.211***	0.348***
	(0.006)	(0.008)	(0.011)	(0.020)
Number of observations	104,582	51,866	38,126	14,590
R^2	0.039	0.049	0.032	0.052
Average probability of entry	0.21	0.20	0.21	0.28

[a] Until 30 June 2017.
Standard errors in parenthesis.
Dependent variable: binary variable with a value of 1 if the registered jobseeker below the age of 25 enters an active measure of the programme within half a year after registration.
Significant on ***1 percent, **5 percent, *10 percent level.
Source: Own calculation based on the Admin3 dataset of *KTI KRTK*.

The regression results show that those with no more than primary education and those re-entering the register are less likely to be included in an instrument of the Youth Guarantee Programme, and this disproportion did not decrease between 2015 and 2017. As a consequence, the labour market instruments are less likely to reach those young people who inherently have worse employment opportunities. This is probably mainly due to the fact that the low-skilled are more difficult to place in the labour market, even with wage subsidies.

In light of the results, the currently low and stagnant rate of training can be considered unfavourable, and more intensive involvement of young people with low educational attainment in training could presumably improve the situation. However, under the Young Guarantee Programme, young jobseekers can participate primarily in vocational training courses that directly pro-

mote employment, and training focusing on the development of basic competences is not included in the elements of the Programme in a significant portion of the districts. In the case of unskilled young people, in addition to the lack of vocational training, in many cases the lack of basic skills hinders employment. Furthermore, based on international experience (e.g. *Kluve et al*, 2019), the involvement of low-skilled, disadvantaged young people can be improved by more intensive use of personal counsellors and mentors, who can help young people choose an appropriate programme after registration based on personal abilities and needs.[8]

Therefore, overall the data show that active instruments, including wage subsidies, reach an increasingly high proportion of young people registered as jobseekers within an increasingly short period, in which, however, in addition to the Youth Guarantee Programme, the growth of demand for labour and the decrease in unemployment played a role as well. NEET youth further away from the labour market are less likely to be included in the register, while low-skilled people are less likely to be included in the scheme's active instruments than their better-off peers. Thus, in order to improve the Youth Guarantee Programme, greater efforts should be made to reach young people in need, and training programmes that improve general competencies and mentors should be used in greater proportion.

8 Although significant financial resources are available in the Youth Guarantee Programme, the regulation of the programme does not allow employment offices to account for internal mentors (PES-employees) within the programmes, so it can only be done through public procurement with the help of external suppliers, which is lengthy and usually involves a significant administrative burden.

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5.3 THE EFFECT OF THE JOB PROTECTION ACTION PLAN

ANDRÁS SVRAKA

From 2013, the employment of several labour market groups with a low employment rate was supported by reliefs on the social contribution tax, offered by the job protection action plan. The main relief types were given for the employment of individuals under the age of 25 and above the age of 55, and unskilled labourers (ISCO-08 category 9). The amount of the reliefs was half of the social contribution tax of 27 percent, but capped at HUF 100,000 per month (which was more or less equal to the amount of the minimum wage at the time of the introduction). A new feature of the reliefs was that they could be applied not only to new employees, but without a time limit and also to staff already in employment. Additionally, no authentications were needed for the reliefs, they could be deducted from tax liabilities via the monthly employers' contribution declaration.[1]

A generally available tax relief that is independent of income level and that targets groups in disadvantaged labour market positions has never before been available in Hungary. The reliefs were applied to approximately 600,000 individuals in 2013, which grew to 900,000 in 2018. Youth-specific reliefs were applied to 110,000 individuals in 2013, and 170,000 in 2018. The range of reliefs was slightly expanded during this time frame, but the increase could be connected primarily to a rise in employment. Thus, the extent to which the expansion can be attributed to the employment incentive effect of the reliefs, and how cost effective such a targeted relief system is, are important questions of economic policy.

The employment-related effect of the tax reliefs was examined by *Svraka* (2019a). The study estimated the employment-related effects for the main target groups using econometric tools, on the basis of individual level, anonymised tax authority micro data from the 2009–2015 period. It can be seen from the nature of the reliefs that entitlement was established along a criterion that draws a sharp cut-off: everyone under the age of 25 was entitled, but no one was entitled above the age of 25.[2] Thus, from among individuals who were similar based on other features and their labour market chances, some could be employed with lower costs, while others could not. Taking advantage of this quasi-experimental setup, we can compare the labour market output of those on the two sides of the cut-off – those that the reliefs applied to and the control group. Also controlling for the effects of the differing economic environments before and after the introduction of the reliefs, via a difference in differences type econometric method, the employment-related effect of the reliefs can be established and separated from any other factors.

The results show that the effect of the tax reliefs has proven to be significant: the rate of employment increased in the three main target groups already in

1 Additionally, the action plan also included reliefs related to new employment. Up to HUF 100,000 per month, social contribution tax was not payable in the first two years of employment for those returning after long-term unemployment or childcare leave, and for youth with a work experience of up to 180 days.

2 There were no data available for an in-depth analysis of the relief for youth with work experience of up to 180 days, thus the effect of this is also visible in the general relief for youth.

the year of introduction, and these effects rose continuously until 2015. By 2015, the employment probability of those under the age of 25 rose by 2.6 percent compared to a control group of similar individuals to whom the relief did not apply.[3] Making an estimate for those above the age of 55 using a similar method, this change was 0.8 percent, and among unskilled labourers – using occupations requiring low educational attainment and offering similar wages, to which the relief did not apply, as the control group – it was 2.7 percent. Among youth and the unskilled, there was no significant difference between the changes in the employment chances of males and females, but among older age groups, the whole effect can be attributed to the higher employment rate of females.

As a result of the reliefs, due to the change in relative labour costs, employers might have employed individuals that the relief applies to, instead of individuals who do not belong to any of the target groups. Among youth and older age groups, *Svraka* (2019a) did not find any signs indicating such potential substitution, but the employment rate of individuals with low educational attainment to whom the relief was not applicable did decrease slightly. Considering this, by 2015, the reliefs generated an expansion in employment by 53,000 individuals, 16,000 of which were under the age of 25.

The effect of the excess budgetary income generated by a higher employment rate manifesting through taxes and contributions, calculated based on the abovementioned partial equilibrium results, without broader macroeconomic consequences, was HUF 55 billion in 2015 – which is 40 percent of the cost of the reliefs that year. This cost efficiency indicator was, however, different for different target groups: 42 percent for youth, 70 percent for the undereducated, and only 14 percent for the older generations, in 2015.[4]

3 The Youth Guarantee Programme, which also targets youth aged under 25, was introduced in 2015: the effects estimated for the subsequent years may partly capture the impact of that Programme.

4 This indicator does not account for potential deadweight loss and measures short term returns. In the long run, as costs increase (as the subsidy is also available to those already in employment), cost efficiency is likely to deteriorate.

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5.4 THE ROLE OF THE MINIMUM WAGE IN THE EVOLUTION OF YOUNG PEOPLE'S EARNINGS

MÁRTON CSILLAG

Since the large-scale increase of the minimum wage in 2001–2002, the minimum wage has remained consistently high compared to the average wage, while additional minima for skilled workers and graduates[1] have also been introduced. According to the international literature, uneducated young people work at the minimum wage at the highest rate, and their employment is most sensitive to changes in the minimum wage (*Dolado et al,* 1996, *Neumark–Wascher*, 2004).[2] We did not have the opportunity to assess the impact of the development of the minimum wage. In this subchapter, we use data of the Wage and Earnings Survey to examine the proportion of young people working full-time in the private sector who worked near the minimum wage (or the guaranteed minimum wage), that is, 95–105 percent of the minimum wage.[3] We do this to show how effective the different wage minimums were and whether they became the cornerstones of wage formation. If a minimum wage is so low that it directly affects only a negligible proportion of workers, there is little chance that it could have an effect on employment.

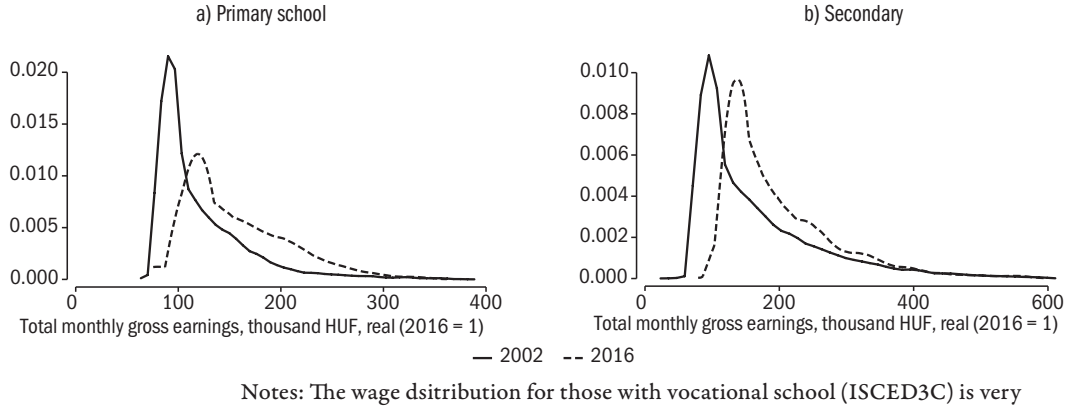
According to our data, those under 30 employed in the private sector indeed work at a higher proportion for the minimum wage (or guaranteed minimum wage) than workers over 30, the difference being 4–5 percentage points. *Figure 5.4.1* also shows that after the increase in the minimum wage in 2002, the share of young people employed for the minimum wage decreased. Although the guaranteed wage minimum has significantly changed the wage setting practices for young people, it has hardly changed the rate at which they are affected by one or another mandatory minimum wage.

1 The 'guaranteed minimum wage' was introduced from the 1st of July 2006. This minimum applies to all jobs which require (at least) a vocational degree. It means that in principle it applies to all workers with a level of education ISCED 3 (and above).

2 After a significant increase in the minimum wage in 2001–2002, the employment opportunities of certain groups – uneducated workers in small companies – have deteriorated (*Kertesi–Köllő,* 2004). At the same time, the authors point out that – in contrast to the situation in the United States or Western Europe – the minimum wage has had a significant effect on the wages of not only young people.

3 We did not examine whether the employee works in a job to which the guaranteed minimum wage applies or in a job where the minimum wage applies. (The guaranteed minimum wage applies to a worker employed in a job that requires at least a secondary education or a secondary vocational education.)

Figure 5.4.1: The distribution of wages of young people aged 16–25, by education, 2002, 2006 (thousand HUF)



Notes: The wage dsitribution for those with vocational school (ISCED3C) is very similar to that of those with secondary education (see: *Csillag et al*, 2019).
Source: Wage Survey (NES), private sector; own calculations.

The minimum wage (or the guaranteed wage minimum) can affect not only the low-educated, but also those who completed vocational school or secondary school (*Table 5.4.1*). It is also noteworthy that the guaranteed minimum wage has become the norm among young people who completed vocational school or secondary school (in the spirit of the law).

Table 5.4.1: The percentage of 16–29 and 30–64 year-olds employed in the private sector who earn around the minimum wage or the guaranteed minimum wage

	2002	2009		2016	
Level of Education	minimum wage	minimum wage	guaranteed minimum wage	minimum wage	guaranteed minimum wage
Below age 30					
Primary school	25	17	13	17	10
Vocational school	30	10	20	8	23
Secondary	23	5	14	4	18
Tertiary	9	1	4	1	9
Total	24	7	13	6	16
Above age 30					
Primary school	21	15	12	15	13
Vocational school	22	6	16	6	19
Secondary	14	3	10	3	14
Tertiary	8	1	3	1	4
Total	17	5	11	5	14

Source: Wage Survey (NES), private sector; own calculations.

Examining the wage distribution of young people, several developments become apparent. On the one hand, the role of the minimum wage has somewhat decreased for unskilled workers and vocational school graduates, and wage differentiation has increased. On the other hand, the wage distribution of vocational school graduates and secondary school graduates is "truncated" from the bottom to a significant extent by compliance with the guaranteed wage minimum. That is, in the case of vocational school and secondary school graduates, the guaranteed wage minimum has become effective (i.e., a substantial portion of employees would have lower wages if paying the minimum wage were not mandatory). This may have contributed to the increase in real wages in the lower half of the wage distribution, but may have held back employment growth for some groups. For this reason, it may be justified to examine active instruments that provide tax incentives and wage subsidies for companies employing young people (see subchapter 5.3 for more details); and to conduct more detailed studies on the employment impact of the introduction of the guaranteed minimum wage.

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5.5 YOUTH IN PUBLIC EMPLOYMENT, WITH PARTICULAR EMPHASIS ON EARLY SECONDARY SCHOOL LEAVERS*

GYÖRGY MOLNÁR

Since the introduction of the Youth Guarantee scheme in 2015, youth registering as unemployed must be given, in principle, a substantial offer, which can be a training opportunity or an open labour market job (see subchapter 5.2). In previous years, especially since the school leaving age was lowered, there were no significant barriers to school-leaving youth gaining their first work experience in public employment. In this subchapter we examine the influence of the lowering of the school-leaving age[1] on the entry of youth between the ages of 16–19 into public employment, and how this changed upon the introduction of the Youth Guarantee scheme.

The data

The analysis is based on the so-called Admin3 administrative database of the Centre for Economic and Regional Studies, which contains the data of 50 percent of the Hungarian population of 2003 at an individual level up to 2017. Our data on public employment starts with 2011. Our analysis focuses on those who were registered as unemployed and taken into public employment before the age of 20, between 2011 and 2017. At the beginning of each public employment episode, the educational attainment of the individual at the date of the registration is recorded. Wherever there were gaps in the educational attainment data received from the Hungarian Educational Authority, we remedied those with data from the public employment database to the extent possible.

In the presentation of the results, for the sake of better clarity, we provided absolute figures multiplied by two, and we did not wish to burden the reader with elaborating on the minor statistical errors resulting from a sample of 50 percent.

Youth registered as unemployed or in public employment

While in 2011 and 2012 hardly any 16-year-olds and only a small number of 17-year-olds registered as unemployed, 2013 and 2014 saw a significant rise in these figures. The total number of registrants under the age of 20 rose dynamically both in 2012 and 2013, but it stagnated in 2014, while people registered at an increasingly young age – which is presumably in connection with the lowering of the school leaving age. The number of the youngest new entrants peaked in 2016 (*Table 5.5.1*).

The increase can be explained neither by the developments in unemployment (see *Table 5.7* of the chapter on Statistical data), nor demographic data.

* I would like to thank *Zsuzsanna Sinka-Grósz* for her invaluable help in the processing of the data.

1 As of 1 September 2012, the school-leaving age has been lowered from 18 to 16 years of age. The first group to whom this was relevant was those who had not yet commenced the 9th grade in the 2011/2012 school year.

These are relatively low figures: exactly 2 percent of 16-year-olds and 4 percent of 17-year-olds in 2016.

Table 5.5.1: The number of youth between the ages of 16–19 registering as unemployed for the first time, 2011–2017

Age at the time of first registration	2011	2012	2013	2014	2015	2016	2017
16	44	106	738	1,980	1,716	1,948	1,670
17	284	472	1,412	2,660	3,676	3,924	3,718
18	6,796	9,360	10,196	9,714	8,562	7,742	6,754
19	10,660	12,902	12,728	10,482	9,344	8,240	7,306
Total	17,784	22,840	25,074	24,836	23,298	21,854	19,448
The total number of the age group of 16–19	477,855	479,224	465,768	447,224	427,252	407,023	395,715

Note: The results obtained from the sample of 50 percent were multiplied by 2 in the table.

Source: Author's calculations, based on the Admin3 database; source of the demographic data: the demographic database of the *Hungarian Central Statistical Office*.

The increase can be explained neither by the developments in unemployment (see *Table 5.7* of the chapter on Statistical data), nor demographic data. These are relatively low figures: exactly 2 percent of 16-year-olds and 4 percent of 17-year-olds in 2016.

In the case of 18- and 19-year-olds, a more marked rise can only be seen between 2011 and 2012, which continued slightly in 2013 as well, in the case of 18-year-olds. In this year, the share within the age group of 18-year-olds who registered as unemployed for the first time during that year was 8.6 percent, while that of 19-year-olds was 10.5 percent; and it continuously decreases from then on.

Table 5.5.2 shows the number of those entering public employment for the first time, broken down by age. In 2011 and 2012, there were essentially no 16- and 17-year-olds in public employment, and even the number of 18- and 19-year-olds was relatively low. The number of youth entering public employment suddenly increased in 2013, and peaked the next year at a figure of 8400. Even though the Youth Guarantee scheme was launched in 2015, eligible youth could still enter public employment if they initiated it themselves. Thus in the case of the two younger groups, the number of those entering public employment continued to grow after 2014, peaking in 2016. Their share also grew continuously within the group of those entering public employment for the first time, and reached 13.6 percent in 2016.

The entry of youth into public employment received substantial media coverage; numerous news articles reported on cases where children of poor families left school due to the lure of public workers' wages (see *Fülöp*, 2016).

In response to the phenomenon, the regulation was amended: Government Decree 1139/2017 (20th March) provided that those under the age of 25 "may

enter public employment schemes only if the Youth Guarantee labour market scheme does not offer them any other realistic opportunities". This resulted in a significant drop in the numbers of all age groups in 2017, and the share of those under the age of 20 within the number of new entrants also decreased somewhat (to 10.3 percent). In the course of the seven years reviewed, a total of nearly 40 thousand youth entered the public employment system.

Table 5.5.2: The number of youth between the ages of 16–19 entering public employment for the first time, and their share within the group of all first entrants, 2011–2017

Age at the time of first entry into public employment	2011	2012	2013	2014	2015	2016	2017	Total
16	2	6	190	630	500	744	352	2,424
17	8	60	398	1016	1132	1434	692	4,740
18	372	1,180	2,390	3,148	2,366	2,430	1,052	12,938
19	1,850	2,266	3,928	3,610	2,400	2,372	1,044	17,470
Total	2,232	3,512	6,906	8,404	6,398	6,980	3,140	37,572
Share (percentage)	1.0	3.6	6.1	10.0	10.8	13.6	10.3	5.7

Note: The public employment of a small section of those entering for the first time in 2011 already commenced in 2010. The results obtained from the sample of 50 percent were multiplied by 2 in the table.
Source: Author's calculations, based on the Admin3 database.

Nearly 30 percent of newly registered 16-year-olds became a public employee within 90 days (*Table 5.5.3*). The highest figure can be seen in 2016. The younger someone was, the more likely it was that they would become a public worker within 90 days. In 2013, the proportion of youth becoming public workers within three months rose significantly, and this trend kept growing in 2014, when it peaked at 21 percent. It may be an effect of the Youth Guarantee scheme that in 2015 the rate of those starting public work early decreased somewhat among the age group of 17–19-year-olds, but it stagnated among 16-year-olds, and then kept growing steadily in 2016. A marked decrease only occurred in 2017.

Table 5.5.3: The share of those among the 16–19-year-olds registering ias unemployed for the first time who entered public employment within 90 days, 2011–2017 (percent)

Age at the time of first registration	2011	2012	2013	2014	2015	2016	2017	Average
16	5	6	28	28	28	36	19	28
17	1	11	24	27	20	24	11	20
18	3	9	18	23	17	17	8	14
19	2	6	11	15	12	13	6	9
Total	2	8	15	21	16	19	9	13

Source: Author's calculations, based on the Admin3 database.

A similar trend emerges when we examine entering public works within 30 or 180 days. In 2016, 26 percent of those registering at the age of 16 became public workers within only 30 days, while 42 percent within 180 days.

It is worth reviewing this inversely as well – how much time youth entering public works spent in the registry before they become public workers. According to the figures, on average, nearly 60 percent of those becoming public workers at the age of 16 spent 30 days or less in the registry before entering the scheme: thus, presumably, they registered with the explicit aim of becoming public workers (*Table 5.5.4*). A similar situation is found in the case of 44 percent of 17-year-olds. With the increase of age, this value keeps decreasing somewhat. As we progress in time, a significant increase in the number of those becoming public workers within a very short period of time occurs in 2014, and their share essentially stagnates after that.

Table 5.5.4: The share of those among youth entering public employment for the first time who, before doing so, spent not more than 30 days in the unemployment registry, 2012–2017 (percentage)

Age at the time of first entry into public employment	2012	2013	2014	2015	2016	2017	Average
16	67	63	53	56	63	59	58
17	40	46	41	45	45	43	44
18	41	35	44	41	37	37	39
19	20	18	28	33	34	31	26
Total	27	27	38	40	40	39	35

Note: In the case of those already in public employment on 1 January 2011, start date is known only for those who had previously done public works managed by the Public Employment System, thus we omitted that year.
Source: Author's calculations, based on the Admin3 database.

Early school leaving

Approximately one tenth of the under 20 age group entering public employment have not even completed elementary education. Their share among 16-year-olds is more than 20 percent. The share of those entering public employment having completed vocational school or secondary school is also approximately 10–10 percent (*Table 5.5.5*).

Nearly 60 percent of those who had not completed elementary school at the time of entry into public employment did not complete the eighth grade of elementary school at a later time either, and whether they have completed it or not is unknown for a further 20 percent.

At least 80 percent of those under the age of 20 who entered public employment having completed the eighth grade of elementary school had also attended some type of secondary school (it is unclear for some of them). Progressing in time, the proportion of those who attended secondary school continuously increases (*Table 5.5.6*). Thus the proportion of those who become

public employees after leaving secondary school increases. A sharp increase occurred between 2013 and 2014, among 16-year-olds. While in 2013 "only" 52 percent of those entering public employment with the eighth grade of elementary school completed left secondary school, in 2014 this figure was 78 percent. Therefore the increase in numbers showed in *Table 5.5.2* was to a great extent due to those leaving secondary school.

Table 5.5.5: The total distribution of educational attainment at the time of entry into public employment in the period between 2011 and 2016 (percentage)

	Educational attainment				
Age at the time of first entry into public employment	lower than the eighth grade of elementary school	the eighth grade of elementary school	vocational school	secondary school	total
16	23	77	0	0	100
17	18	78	4	0	100
18	11	70	11	8	100
19	6	60	15	18	100
Total	11	67	11	11	100

Source: Author's calculations, based on the Admin3 database.

Table 5.5.6: The share of those among youth entering public employment with an educational attainment of the eighth grade of elementary school who also attended secondary school, broken down by the year of entry, 2011–2017

	2011	2012	2013	2014	2015	2016	2017	Total
Total no. of group	766	1,834	3,626	4,482	3,638	4,128	1,780	20,254
Share (percentage)	49	71	75	84	89	90	91	81

Note: The number of the total group obtained from the sample of 50 percent was multiplied by 2.
Source: Author's calculations, based on the Admin3 database.

In 2011, 11 percent of those entering public employment with an educational attainment of the eighth grade of elementary school and having attempted attending secondary school became public employees within three months of leaving school. This rate rose to approximately 30 percent from 2012. These are those who became public employees essentially immediately after leaving school, or following a short "technical break".

Among those who entered public employment before 2016 having an educational attainment of the eighth grade of elementary school and having attended secondary school, the share of those who obtained secondary level qualification two years later[2] is only 3 percent (*Table 5.5.7*). Only 10 percent of this 3 percent obtained a secondary school diploma, while the rest attended vocational training. In 2011, the proportion of those completing secondary school within two years was somewhat higher than in the other years, and

2 The two years were calculated as calendar years, since the exact time of the completion of school is not known.

this proportion does rise to a minimal extent broken down by age at entry into public employment, but these differences are statistically not significant.

Table 5.5.7: The share of those among youth entering public employment with an educational attainment of the eighth grade of elementary school and having started secondary school who obtained secondary-level qualification within two years, 2011–2015 (percentage)

Age at the time of first entry	2011	2012	2013	2014	2015	Average
16	0	0	0	0	2	1
17	0	0	2	1	3	2
18	4	2	2	3	3	2
19	7	4	3	4	5	4
Total	6	3	3	3	4	3

Note: The data regarding educational attainment levels two years after entry into public employment are only known from the data of the Hungarian Educational Authority, thus the number of cases in this table is only 14,346.
Source: Author's calculations, based on the Admin3 database.

Main conclusions

Overall, it can be concluded that the number of 16- and 17-year-olds entering public employment rose significantly after the lowering of the school leaving age: in the period under review, a total of approximately 7 thousand people under the age of 18, and 38 thousand people under the age of 20 became public employees. The rate of new labour market entrants entering public works did not decrease upon the launch of the Youth Guarantee scheme, only after the relevant government decree was issued in 2017. The educational attainment of nearly 80 percent of youth entering public works was not higher than the eighth grade of elementary school, and having entered public employment, their chance of completing secondary school within a few years is insignificant, even if they had started it before their entry into public employment.

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6 THE SITUATION OF ROMA YOUTH

6.1 SCHOOLING AND EMPLOYMENT OF ROMA YOUTH: CHANGES BETWEEN 2011 AND 2016

ÁGOTA SCHARLE

Roma youth complete fewer grades in school – and, closely connected to that, are less likely to get a job – than non-Roma youth (*Kemény–Janky,* 2005, *Kertesi*, 2005). The disadvantages that accumulate over generations (and are difficult to overcome), the discriminatory, segregating attitudes of mainstream society and policy measures (or the lack of intervention) all contribute to the disadvantages of the Roma. While the role of institutional factors in explaining the schooling gap has been examined in several recent studies (e.g. *Hajdu et al,* 2014, *Kertesi–Kézdi*, 2014, 2016, *Kiss,* 2018), there is very limited information and analysis available on the Roma non-Roma employment gap. This sub-chapter provides a descriptive overview of recent trends, based on the HCSO's population surveys, which measure Roma ethnicity more accurately than before.

Education

For the sake of brevity, trends in schooling are portrayed by using two indicators, the share of those completing matriculation[1] and the share of full-time students. The share of matriculated youth by age (*Figure 6.1.1*)[2] is shaped mainly by developments in the period before 2011: those who were 29 years old in 2016 completed secondary school around 2005–2006, and those who were 19 years old at that time also acquired their basic skills in public education before the reform of 2011. In the non-Roma population, there is a significant change only in the case of men: in all cohorts over the age of 18 the share of matriculated boys is significantly higher (5–6 percentage points) in 2016 as compared to 2011 (*Figure 6.1.1*). In the Roma population, there is a significant improvement both among boys and girls. For Roma girls, the share of matriculated students starts to increase only in the younger cohorts, but the improvement is large – almost twice as large as for boys.

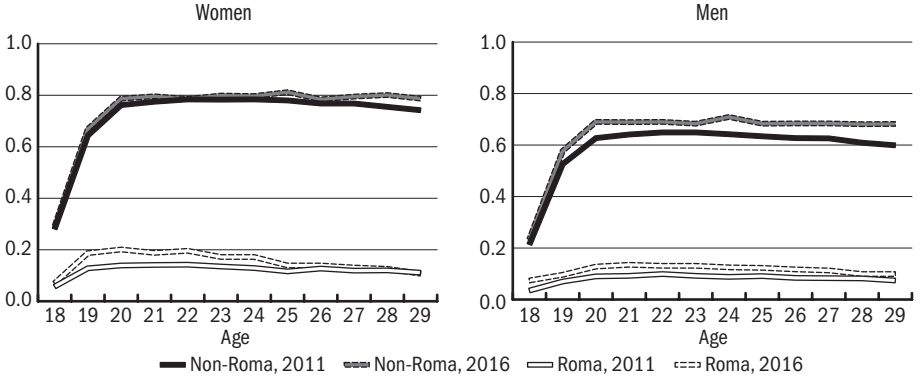
The importance of the improvement observed in the case of Roma youth is underlined by the fact that their schooling is hindered by several factors, according to previous research. Hajdu et al. (2014) estimate[3] that more than half of the Roma – non-Roma differences observed in the chances of dropping out of secondary education is explained by the level of knowledge acquired by the end of primary school, the quality of the secondary school, and the material and human resources available during secondary studies. A significant part of the remaining difference can be traced back to social isolation: the fact that Roma youth are much less likely to have close links with those who do well in school than non-Roma youth.

1 This is an exam (comparable to A levels in the United Kingdom) that closes the academic track of secondary education (ISCED 3A or 3B) and passing it is one of the conditions of entering tertiary education.

2 The employment opportunities and expected wages of matriculated students are significantly better than those of non-graduates (*Hajdu et al,* 2015).

3 The study examined the school performance and entry to tertiary education of a full higher secondary school cohort of Roma and non-Roma students based on data from the Career Tracking Survey between 2006–2012.

Figure 6.1.1: Share of matriculated youth by age, 2011, 2016 (percentage)



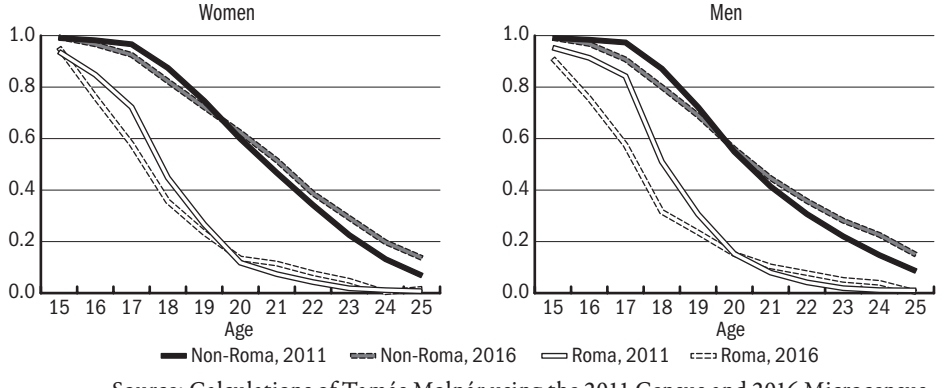
Source: Calculations of Tamás Molnár using the 2011 Census and 2016 Microcensus of the *Hungarian Statistical Office*.

Most recent developments are captured by the other indicator: the share of full-time students by cohort shows the share of young people who continue their education in secondary and higher education after primary school. The reduction of the compulsory school age introduced in 2011[4] increased the share of early school leavers among both Roma and non-Roma youth, but this effect was significantly higher for Roma, particularly Roma men (*Figure 6.2*). As discussed in subchapter 6.2, this effect was above the average in disadvantaged small regions. Comparing the data of the 2011 Census conducted before the reform and the 2016 Microcensus five years later,[5] the share of full-time students decreased by 4–7 percentage points for non-Roma, and by 14 (women) and 27 (men) percentage points for Roma youth in the 17 year-old cohort. The decrease is already significant among 16 year-olds in the case of Roma youth.

4 Act CXC of 2011 on National Public Education lowered the compulsory schooling age from 18 to 16. The age limit of 16 first applied to those who started eighth grade in the 2011/2012 school year.

5 The measurement of Roma identity was very similar in two surveys, but the census may include a higher rate of those who claim to be Roma for two reasons: on the one hand, the sample is comprehensive, while in the sample of the microcensus, Roma settlements are underrepresented, and on the other hand a special campaign encouraged the assumption of Roma identity at the time of the 2011 census.

Figure 6.1.2: The share of full-time students among Roma and non-Roma youth, 2011, 2016 (percentage)



Source: Calculations of Tamás Molnár using the 2011 Census and 2016 Microcensus of the *Hungarian Statistical Office*.

The comparison of the data for 2011 and 2016 also shows that Roma youth are less involved in the expansion of higher education: in the 21–23 cohort, the share of full-time students among non-Roma increased by an average 5 percentage points, while among Roma it increased by only 3 percentage points in five years. This also means that the disadvantage of Roma people has further increased in participation in higher education.

Employment

According to the CSO Labour Force Survey, in 2017, 55 percent of men and 36 percent of women were employed in the Roma population aged 15–64, while within the non-Roma population, the proportion of the employed was 76 and 62 percent, respectively. The employment of Roma people increased more than that of non-Roma between 2014 (the first year when ethnicity was included in the Labour Force Survey) and 2017, so that the Roma employment gap has somewhat narrowed. At the same time, the already huge disadvantage of the Roma further increased regarding the rate of early school leavers and youth not in employment, education or training (NEET). These two indicators slightly improved in the non-Roma population between 2014 and 2017, while they worsened or remained unchanged in the case of Roma youth.[6] In the five years between the 2011 Census and the 2016 Microcensus (roughly corresponding to a period of steady economic growth), the employment rate increased from 16 to 25 percent for Roma men, and from 7 to 12 percent for Roma women aged 16–25 (excluding public works).

Table 6.1.1: The 16–25 year-old population by ethnicity and labour market status, 2011 and 2016 (thousand people)

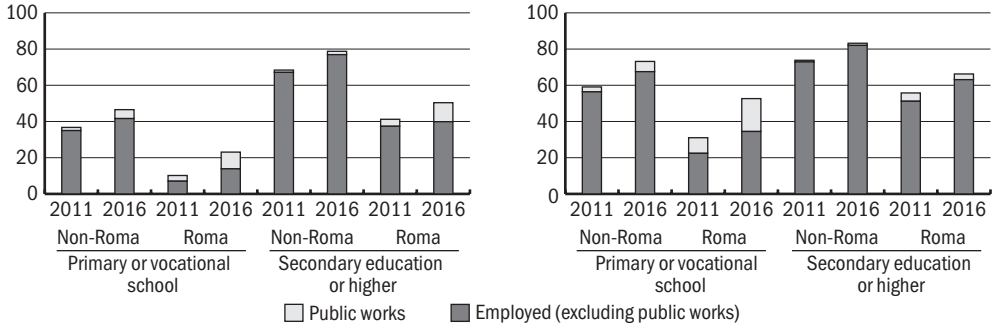
	Roma		Non-Roma	
	2011	2016	2011	2016
Men				
Full time education	9.8	7.9	311.1	261.6
Employment	5.0	9.2	184.2	213.8
Public works	1.7	4.3	5.1	9.1
Parental leave	0.3	0.1	0.3	0.3
Other	15.4	15.7	99.9	69.5
Total	32.2	37.2	600.6	554.3
Women				
Full time education	8.3	6.9	303.8	258.8
Employment	2.1	3.6	149.0	171.6
Public works	0.7	2.0	3.7	7.4
Parental leave	9.2	7.6	29.7	30.6
Other	9.8	10.1	84.6	59.5
Total	30.1	30.2	570.8	527.9

Source: Own calculations using the 2011 Census and 2016 Microcensus of the *Hungarian Statistical Office*.

6 The rate of early school leavers increased from 57 to 65 percent (decreased from 10 to 9 percent among non-Roma), the NEET-rate was 38 percent in both years (decreased from 13 to 9 percent among non-Roma). The former indicator is published by the CSO on the 18–24 year-old age group, and the latter on the 15–24 year-old cohort (2018).

The large sample of the 2011 Census and the 2016 Microcensus also provides an opportunity to examine employment trends independently of education. Comparing the data of these two surveys, the disadvantage of the Roma is still large in employment, though it is significantly smaller for those completing at least secondary school (with matriculation, i.e. ISCED 3A or 3B) than for the unskilled (*Figure 6.1.3*). The disadvantage of young Roma women did not decrease between 2011 and 2016, despite an increase in the employment rate of both education categories. In the case of young Roma men, there is a significant decrease in the disadvantage of the unskilled, but this is largely due to public works. In 2016, 34 percent of low educated Roma men in employment participated in public works, while among the non-Roma, the corresponding ratio was only 8 percent. For working Roma women, the share of public workers is even higher: 40 percent of the unskilled and 21 percent even of those with at least secondary education were employed in public works in 2016.

Figure 6.1.3: Employment rate of the 16–25 year-old, not in education population, 2011 and 2016 (percent)



Source: Own calculations using the 2011 Census and 2016 Microcensus of the *Hungarian Statistical Office*.

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6.2 NEIGHBOURHOOD-RELATED DIFFERENCES IN THE SHARE OF YOUTH NOT IN EDUCATION, EMPLOYMENT OR TRAINING BEFORE AND AFTER LOWERING THE SCHOOL-LEAVING AGE

JÁNOS KÖLLŐ & ANNA SEBŐK

Unemployment among working-age minors (aged 15–18) continuously decreased after the first years of the political changeover and then fell to less than three percent as a result of raising the school-leaving age to 18.[1] This situation changed when Act CXC of 2011 took effect, which set the school-leaving age at 16 years again, enabling pupils older than that to exit to the labour market and (according to the plans of the decision makers) take up employment.

Using elementary methods, this short Subchapter aims at describing how the activity composition of the affected age group changed in disadvantaged and better off neighbourhoods of the country as a result of the measure. We focus on youth who have passed the age of 17 but have not yet reached 18, who, with a few exceptions, were subject to compulsory education before 2011 but not thereafter. We point out that participation in education decreased the most in the most disadvantaged neighbourhoods, while expansion in employment was unable to prevent, even in the most effective labour markets, an increase in the number of youth not in education, employment or training (NEET).

Our analysis is based on the total census population of ten million of the 2011 census and the random sample of one-million of the 2016 micro-census.[2] Data on the 17-year-olds are not possible to examine in a detailed geographical breakdown in this way: in order to reach an adequate sample size and grasp the characteristics of the micro-environment, the 45,500 Hungarian census tracts with an average population of 250 were divided into quartiles according to various dimensions, based on their data as observed in 2011. The dimensions considered are the employment and unemployment rate of the local population with a lower-secondary qualification; an indicator describing the size and quality of the labour market accessible for those with a lower-secondary qualification, and the proportion of the Roma within the population.[3]

The changing role of regional differences over time is measured using probabilistic regression. The outcome variable indicates whether the i^{th} 17-year old living in the j^{th} census district was in education or was NEET in 2011 and 2016. The estimated coefficients in the first three columns of figures in *Table 6.2.1* show how likely the individual belonging to a given group (Roma boy, Roma girl, non-Roma girl) was employed in the given year compared with *non-Roma boys*. In the 4–6th columns of figures, the coefficients indicate how the probability of the outcome is influenced by the immediate neigh-

1 For the impact of the School Education Act of 1996, see Subchapter 2.5.

2 The calculations were carried out in the research lab operated jointly by the Central Statistical Office and CERS HAS.

3 For the detailed calculation method of indicators see the *Appendix* at the end of the Subchapter.

bourhood belonging to the second, third or fourth worst census tract quartile (Q_2 –Q_4) instead of the best quartile (Q_1) determined by the 2011 indicator (employment rate, unemployment rate, etc.).

Table 6.2.1: The impact of gender, ethnic group and neighbourhood characteristics on participation in education, 2011, 2016 (probabilistic regression)

Census tract indicator	Roma boy	Non-Roma girl	Roma girl	Census tract quartiles			Constant	R^2	N
				2.	3.	4.			
Employment rate									
2011	–10.8	–0.4	–29.2	–0.0	–0.4	–4.0	99.2	0.11	9358
	(4.5)	(1.5)	(9.3)	(0.1)	(1.5)	(5.8)			
2016	–25.4	0.0	–26.0	0.1	–3.0	–12.7	97.6	0.14	7464
	(9.6)	(1.2)	(8.9)	(0.2)	(4.5)	(12.5)			
Unemployment rate									
2011	–12.1	–0.4	–30.3	–0.5	–1.0	–3.0	99.5	0.10	9358
	(5.1)	(1.5)	(9.6)	(1.5)	(2.6)	(4.5)			
2016	–29.3	0.1	–30.3	–2.3	–4.3	–10.1	98.3	0.12	7464
	(11.3)	(0.3)	(10.5)	(3.7)	(6.1)	(10.4)			
Quality of the labour market[a]									
2011	–12.8	–0.4	–30.8	–0.5	–0.9	–1.9	99.6	0.10	9358
	(5.4)	(1.8)	(9.8)	(1.4)	(2.5)	(4.4)			
2016	–30.7	0.1	–31.4	–1.7	–3.9	–7.1	98.2	0.11	7464
	(11.9)	(0.2)	(10.9)	(2.2)	(5.1)	(8.8)			
Proportion of the Roma									
2011	–10.3	–0.4	–28.5	–3.6	–3.6	–4.1	95.2	0.11	9358
	(4.3)	(1.5)	(9.0)	(4.9)	(5.1)	(6.5)			
2016	–25.6	0.2	–26.3	–7.2	–10.1	–10.8	86.1	0.13	7464
	(9.6)	(0.4)	(8.9)	(6.0)	(9.2)	(10.8)			

[a] See the *Appendix* at the end of the Subchapter.

Sample: 17-year-old residents of the census tracts observed in both the 2011 census and the 2016 micro-census. A Roma is defined as someone who identifies themselves as Roma first or secondly when asked about ethnicity or speaks Roma, Boyash or Romani as a first or second language.

N = the number of individuals observed. Coefficients were multiplied by one-hundred, *t*-values are provided in brackets.

Roma and non-Roma youngsters are differentiated between because the former attend much worse basic and secondary schools on average compared with the non-Roma, their immediate neighbourhood is less likely to encourage them to complete their education, or their families are less likely to afford the additional costs of learning and thus they are more inclined or forced to drop out of education. In the strongly segregated and typically bad quality "Roma schools" these effects are further magnified.

Please note that, for 2011 the equations are estimated only for the subset of census tracts also observed in the micro-census. Q_1 – Q_4 groups contain *the same* census tracts in 2011 as in 2016. (Results concerning the total sample of the census are similar.)

Apparently, there is no significant difference in the participation of non-Roma boys and non-Roma girls either in 2011 or in 2016. A much (about thirty percentage points) smaller proportion of Roma girls attended school in 2011 but their situation did not change until 2016 and even slightly improved compared with non-Roma girls. However, there is an enormous decline among Roma boys, who were 10–13 percentage points less likely to attend school in 2011 and their disadvantage had increased to 25–31 percentage points by 2016.[4]

Considering neighbourhood characteristics, a similar pattern is seen in the first three blocks of the Table: participation in education was already (2–4 percentage points) lower in 2011 in the quartile the most disadvantaged, based on the given indicator, than in the best quartile. However, this lag had become much more dramatic (7–13 percentage points, depending on the neighbourhood indicator considered) by 2016, when comparing individuals of the same gender and ethnicity.

The constants of the equations measure the participation in education of non-Roma boys living in the best neighbourhood: even this indicator deteriorated by one to one and a half percentage points.

In the lowest block of the Table, census tracts were divided into quartiles according to the proportion of the Roma in the population in 2011. This does not have an impact on the coefficients obtained with individual variables. Participation in education was increasingly low towards the fourth quartile in 2011 and also – to a far greater extent – in 2016. Controlled for ethnicity, these results suggest participation of non-Roma youth also decreased significantly in census tracts with a high proportion of the Roma.

The values of constants in the equations are also different from those in the first three blocks. The low share (practically zero in the first quartile) of the Roma does not, in itself, guarantee high participation in education and the share of boys attending school also declined in these (primarily rural) quartiles.

The dependent variable of the similarly structured *Table 6.2.2* is NEET (not in education, employment or training) status. The estimations using the four indicators, yielding similar results are not described, only the calculation relying on quartiles based on the 2011 employment rate is presented, this time focusing more on NEET levels in 2016.

The probability of a 17-year-old Roma boy living in the worst census tract quartile not being in education, employment or training is estimated at 14.8 per cent (11.3 + 3.0 + 0.5) in 2011. Calculated similarly, the probability is at 38.7 per cent in 2016, which is essentially the same as the actually observed figure in the given population (38.5 per cent).[5] Although our estimations are not pinpoint accurate (as revealed by the relatively low explanatory power of the equations), they are sufficiently reliable to show that the proportion of the 17-year-olds attending school decreased significantly between 2011 and

4 The estimated value depends on which census tract indicators were controlled for when assessing individual effects.

5 Please note that estimations using weighted and unweighted population figures hardly differ, which is explained by the fact that the census tracts were defined by taking into account the workload of census takers and thus their size is fairly similar.

2016, which was hardly offset by the increase in employment. As regards the social consequences, it is especially worrying that by 2016 the proportion of Roma boys living in a disadvantaged neighbourhood, not in education, employment or training had increased to an alarmingly high level (at least double the 2011 level). In 2016, four out of ten such youth were not in education, employment or training.

Table 6.2.2: The effect of gender, ethnicity and certain neighbourhood characteristics on NEET status (not in education, employment or training), 2011, 2016 (probabilistic regression)

Census tract indicator	Roma boy	Non-Roma girl	Roma girl	Census tract quartiles			Constant	R^2	N
				2.	3.	4.			
Employment rate									
2011	11.3	0.5	30.4	0.4	0.9	3.0	0.5	0.10	9358
	(4.9)	(1.8)	(9.7)	(1.5)	(2.3)	(4.4)			
2016	28.5	0.5	31.3	2.1	3.7	9.3	0.9	0.13	7464
	(11.2)	(0.9)	(10.9)	(3.8)	(5.7)	(10.2)			

Sample: 17-year-old residents of the census tracts observed in both the 2011 census and the 2016 micro-census. A Roma is defined as someone who identifies themselves as Roma first or secondly when asked about ethnicity or speaks Roma, Boyash or Romani as a first or second language.
N = the number of individuals observed. Coefficients were multiplied by one-hundred, *t*-values are provided in brackets.

Appendix

Definition of the census tract indicators

Employment rate. The proportion of those engaged in a gainful activity during the week preceding the interview within the working age population. Those who were not working that week but were temporarily away from work are also regarded as employed.
Unemployment rate. Unemployed is defined as someone who does not work, were actively seeking employment during the month preceding the interview and would be able to take up a job if found. Their number is compared with the active age population.
The proportion of the Roma. A Roma is defined as someone who identifies themselves as Roma first or secondly when asked about ethnicity or speaks Roma, Boyash or Romani as a first or second language. Their number is compared with the active age population.
Indicator for the quality of the labour market. The labour market for a census tract population with certain educational attainment is described with an indicator ($Q = V/A$), where V is the number of jobs profitably accessible for an individual from their census tract and A is the number of competitors for whom these jobs are also accessible. A job is considered accessible if

the net wages less travel-related monetary and time costs are higher than the expected amount of available benefits and public works wages. The related estimation was undertaken by *Melinda Tir* and *János Köllő,* using the GEO-database of the Hungarian Academy of Sciences (http://adatbank.krtk.mta.hu/adatbazisok___geo).

7 ADULT EDUCATION AND TRAINING AND OVER-QUALIFICATION

7.1 WORKPLACE AND NON-FORMAL EDUCATION AND TRAINING OF YOUTH

JÚLIA VARGA

Participation in non-formal education and training may play an important role in the adaptation of individuals to changing labour market demands. In this subchapter, we will examine a subject that is under-researched in Hungary: changes in the rates of participation of youth in non-formal education and training, and the differences in the probability of participation observable based on various characteristics.

Information on the participation in non-formal education and training is available from three statistical data collections. The first one is the Adult Education Survey of Eurostat (AES), which collects data in the countries of the European Union on the 12 months before surveying, about the participation of adults in formal and non-formal education and training and the characteristics of these.[1] The second is also a Eurostat survey.[2] The third data source is the labour force surveys of the HCSO, the regular quarterly surveys of which include the question whether the respondent had participated in non-formal education and training during the four weeks preceding the survey.

In the various waves of the labour force surveys, the extent of the detailedness of the questions regarding participation in non-formal education and training changed several times; until 2014, questions about participation were asked in more aggregated groups, while since then, 12–13 different groups of non-formal education and training have been distinguished for data collection about the participation in these. The data collection process increasingly intends to map all non-formal forms of education and training.[3]

The three types of data sources show substantially different participation rates. We have not been able to establish a reason for this based on the information available to us. According to the AES surveys, the participation rate of youth between the ages of 25–34 in non-formal education and training in Hungary has grown from 9.7 per cent in 2007 to 44.3 per cent in 2011, and then to 56.6 per cent in 2016.[4] The value recorded in 2016 was higher than the average of the EU-28 or the eurozone (*Figure 7.1.1*).

The labour force survey has documented significantly lower participation rates. In 2018, 10.1 per cent of 25–34-year-olds participated in training, while this is 17.8 per cent on average in EU-28 countries, and 19.5 percent[5] in eurozone countries.

1 There have been three surveys so far (in 2007, 2011/2012 and 2016/2017). The first pilot survey was conducted in Hungary in 2007 as a complementary survey to the labour force survey of the HCSO, and then the subsequent surveys were independent ones. The sample size was 5800–6500 people.

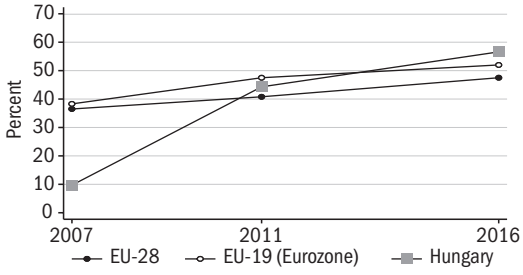
2 The survey, named Continuing Vocational Training of Enterprises (CVTS), collects data on vocational trainings supported in some form by enterprises/companies in organisations that employ at least 10 people. The CVTS survey has also been conducted three times so far, in 2005, 2010 and 2015.

3 The surveys collect data on participation in the following non-formal forms of education and training: vocational courses that do not provide qualification, non-formal trainings within the National Qualification Register (OKJ) system, participation in various seminars and conferences, work-related and team-building trainings at the workplace, language courses, computer courses, IT trainings, courses organised within distance learning. All forms of e-learning, webinars, private lessons, health-related courses, trainings held by authorities, driver training, lectures and courses related to sports, music, and other hobbies.

4 The Eurostat explicitly notes that due to changes in methodologies, the AES-results of 2007, 2011, and 2016 are not comparable directly, and thus "the results cannot be used for interpreting the changes in lifelong learning participation rates between 2007 and 2016". [Eurostat Eurostat Adult Education Survey. Reference Metadata in Euro SDMX Metadata Structure (ESMS) 15.2. Comparability – over time].

5 Eurostat.

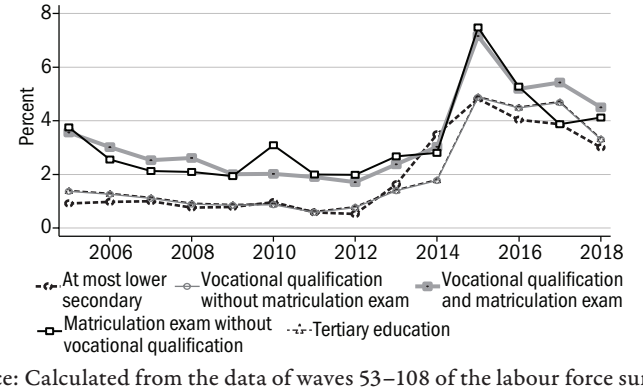
Figure 7.1.1: The participation rates of 25–34-year-olds in non-formal education and training, according to the data of the AES surveys



Source: Author's compilation based on the *Eurostat* AES surveys.

Figure 7.1.2 shows the changes in the participation of 25–34-year-olds by educational attainment groups between 2005 and 2018.[6] Between 2005 and 2012, the already very low participation rates of 25–34-year-olds decreased continuously in all educational attainment groups, and then between 2013 and 2015, a higher rate of youth reported participation in training. A part of the increase may be due to the rearrangement of the classification system (see footnote 3). Participation rates started declining again after 2015. Throughout the entire period, participation rates were the highest in the "secondary school diploma with vocational qualification" and "secondary school diploma without vocational qualification" groups. After 2014, the lowest rates of participation in education and training were found in "the eighth grade of elementary school or less as educational attainment" category.

Figure 7.1.2: The participation rates of 25–34-year-olds in non-formal education and training, according to the data of the labour force survey, broken down by educational attainment



Source: Calculated from the data of waves 53–108 of the labour force survey.

Aggregating the data of the four waves of the labour force survey of 2018, we examined the probability of the participation of 16–34-year-olds in non-formal education and training with a simple probability model as well.[7] The results – the significant marginal effects – are summarised in *Table 7.1.1*.

6 The annual data are the average of the quarterly data.

7 Binary outcome probit model, whether they participated in education or training (yes/no).

Table 7.1.1: The determinants of the probability of non-formal training among 16–34-year-olds, 2018

Variable	Marginal effect dy/dx
Educational attainment level	
Vocational school (vocational qualification without a secondary school diploma)	0.031**
	(0.01529)
Secondary school diploma without vocational qualification	0.042***
	(0.01304)
Higher education	0.057***
	(0.01548)
Labour market status	
Employed	0.049***
	(0.00948)
Sector	
Agriculture	–0.042***
	(0.00733)
Industry	–0.032***
	(0.00867)
Machinery	–0.036***
	(0.01006)
Construction	–0.048***
	(0.00534)
Other	–0.037***
	(0.01022)

The other control variables used in the model were: Gender, Educational attainment: vocational qualification with a secondary school diploma, Labour market status: unemployed, Region binary variables, Place of residence: village, Budapest.
Reference category: Female, the eighth grade of elementary school or less as educational attainment; inactive, city or town, Southern Transdanubia, vehicle industry.
Standard errors in brackets.
Significant at the ***1 per cent, **5 per cent, *10 per cent levels.
Source: Author's compilation.

Youth with a vocational qualification were 3.1 per cent more likely, youth who obtained a secondary school diploma in a grammar school (secondary school diploma without vocational qualification) was 4.2 per cent more likely, and youth with a higher education diploma was 5.7 per cent more likely to participate in training in 2018 than the reference category of youth with the eighth grade of elementary school or less as educational attainment. Youth in employment were 5 per cent more likely to participate in non-formal education and training than inactive youth. Those working in certain sectors (industry, construction, agriculture) were less likely to participate in non-formal education and training than the reference category of those working in the vehicle industry. We did not find significant variabilities in the probability of participation in education and training based on the rest of the characteristics recorded (gender, the region of residence, type of municipality, other sectors).

7.2 THE GROWING IMPORTANCE OF NON-COGNITIVE SKILLS IN JOB SEARCH AND AT WORK

KÁROLY FAZEKAS

It is not only the sectoral and occupational structure of the economy that changes during technological development and transformation of the international, regional and social division of labour. There is a substantial shift in the task content within an occupation, in terms of what skills are required to accomplish them. Over the past decades the share of jobs requiring mathematical and social skills has seen the fastest increase, while the share of jobs requiring neither mathematical nor social skills has declined the most (*Deming,* 2017).

Social (non-cognitive) skills are primarily needed for effective cooperation with others at work. They include the elements of the skill group termed *Big Five* in personality psychology: extraversion, agreeableness, conscientiousness, emotional stability, openness. They also include the theory of mind, which is the ability to place oneself in another's position when observing others, to understand the reasons for other people's actions and judge their state of mind from the viewpoint of our goals and actions. The theory of mind capacity is highly important for the success of cooperation with another person and within a group in both education and the labour market (*DeAngelo–McCannon,* 2015).[1]

The increasing importance of non-cognitive skills observed in the past decades are due to closely related technological, social and demographic reasons. As a result of technological development (robotization, the spread of production and service systems consisting of continuously communicating elements and the expanding use of artificial intelligence) an increasing proportion of tasks requiring high-level cognitive skills can be performed by intelligent, computer-controlled equipment. By contrast, the expansion of robotisation has so far not taken place in occupations requiring non-cognitive skills (*Deming–Kahn,* 2018). At the same time, the proportion of these occupations in the labour market has been steadily increasing partly due to an increase in the share of employees in the service sector and partly due to the increasing share of nursing and healthcare jobs, and also because tasks requiring group work, trust, intuition and social skills play an increasingly important role in modern business management (*Schanzenbach et al,* 2016).

Some traditional occupations and jobs will likely disappear, even within a few years, but new jobs and occupations may emerge in the meantime and demand for labour in certain occupations, primarily those requiring non-cognitive skills, is continuously growing. For a long time it seemed that artificial intelligence is not capable of acquiring or learning non-cognitive skills. However, there has also been significant progress in this field recently. According

1 Previous volumes of The Hungarian Labour Market have covered the definition and measuring of cognitive and non-cognitive skills in more detail (*Fazekas,* 2018a, 2018b).

to forecasts based on results of the most recent developments, robots with non-cognitive skills will increasingly be able to undertake the necessary tasks in a wide range of personal services, nursing, elderly care, healthcare, trade and the creative industries (*Morgan et al,* 2019).

Considering the expansion of robotization, it is essential that young people possess the motivation and abilities necessary for learning the latest skills. Furthermore, it will be necessary to undertake continuous analysis to reveal changes in the content of occupations in a labour market and support teachers and educational policy makers in adapting to changes by developing curricula and methodology (*Alabdulkareem et al,* 2018).

Although the majority of non-cognitive skills are linked to hereditary traits, several empirical studies report that parents, the environment and school are able to develop or modify them to a large extent (*Zhou,* 2016). Methods aimed at developing non-cognitive skills (such as project-based groupwork) are increasingly utilised in educational systems all over the world.[2] Several non-cognitive skills may also be developed in later life, in adult education or on-the-job training (*Hoeschler et al,* 2018*, Hoeschler–Backes-Gellner,* 2018).[3]

Analysis of job advertisements and recruitment practices shows that the level of non-cognitive skills is a significant predictor of successful job search (*Hoeschler–Backes-Gellner,* 2018). This is supported by impact assessments reporting that programmes for the integration of inactive youth are more successful if they also include the development of non-cognitive skills (*Guerra et al,* 2014).[4] Numerous examples show that at companies which included the development of non-cognitive skills in their in-company training, investment into training yielded significant productivity gains (*Adhvaryu et al,* 2017*, Groh et al,* 2012).

In addition to skills development, it is important that employees and employers possess relevant information about their skill levels and the yield of these skills. This information both strengthens the motivation of employees to improve their skills and increases the willingness of employers to reward high-level non-cognitive skills (*Bassi–Nansamba,* 2019).

2 The PISA assessment by the OECD and STEP by the World Bank have contained items assessing the non-cognitive skills of pupils since 2012 (*Kautz et al,* 2017, *Gaelle et al,* 2014).

3 *Guerra et al* (2014), based on the PRACTICE model developed by the World Bank specifically for improving non-cognitive skills needed by the labour market, describe what methods are best suited for developing these skills in different age groups.

4 For example: *Job Corps, Youth Build* and *Big Brothers Big Sisters* in the United States or EPIDE (Etablissments pour l'Insertion dans l'Emploi) in France (*Quintini,* 2015).

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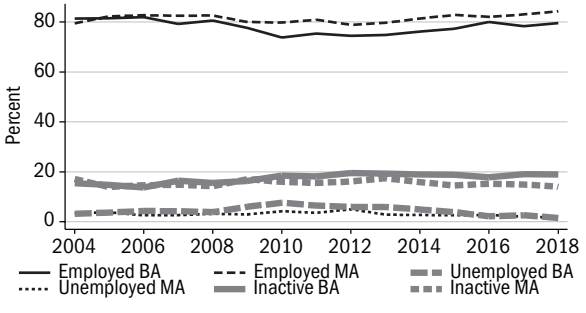
7.3 THE LABOUR MARKET SITUATION OF YOUNG GRADUATES, OVERQUALIFICATION AND THE VALUE OF HIGHER EDUCATION DEGREES

JÚLIA VARGA

This Chapter overviews how the labour market situation of young graduates (aged 35 at most) has been changing recently. The expansion of higher education, which was typical of the 1990s and the early 2000s, came to a halt after 2012. From 2012 onwards, fewer students entered higher education than earlier[1] and from 2015 the share of graduates has been decreasing in the young population.[2] Nevertheless, their share in the total adult population aged 25–64 continued to grow until 2018[3] because the more populous working-age generations had a lower share of graduates. Despite the increase in the number and proportion of higher education graduates, young graduates continued to be very successful in the labour market overall.

Figure 7.3.1 shows how the proportion of young graduates from bachelor's (BA) and master's (MA) programmes have changed in the three labour market status groups (employees, unemployed and inactive). More than 80 per cent of MA degree holders were employed over the entire period. BA degree holders were employed at the start of the period in the same proportion as MA degree holders, then (probably as a result of the economic crisis) their employment rate decreased between 2006 and 2010 by 7 percentage points but this indicator started to increase again after 2010 and by 2016 it had reached 80 per cent. The share of the unemployed grew temporarily around the economic crisis but since then has steadily diminished to a very low level of about 1–2 per cent. Changes in the distribution of young graduates by labour market status indicate that their chances of employment did not deteriorate but even improved after the effects of the crisis had worn off.

Figure 7.3.1: The distribution of young (younger than 36) graduates by labour market status and the level of qualification (MA/BA), 2004–2018 (percentage)



Source: Calculated from the Labour Force Survey of the *Central Statistical Office*.

1 The indicators of school education, Indicator D1.10. (*Varga,* ed., 2018).

2 See: Eurostat.

3 See: Eurostat.

Another key indicator of labour market success is wage return. Young graduates realized very high wage returns on average. The average wage return of BA/college degree holders younger than 36, *compared with those with a lower-secondary qualification* was 130–140 per cent at the beginning of the period.[4] It decreased between 2010 and 2012 then started to increase and returned to the earlier high level, suggesting that the temporary decline was probably due to the economic crisis. The average wage return of MA degree holders only slightly changed between 2003 and 2016: it ranged between 200–220 per cent.[5]

The average change in the wage return is driven by various trends: it may be a result of returns at all points of the wage distribution changing similarly or also because primarily the well-paid and badly paid graduates experience changes in their wage returns.

Figure 7.3.2 presents changes, over time, in the wage returns (the estimated parameters of the quantile regressions)[6] of young BA and MA degree holders *compared with those with an upper-secondary qualification* (*Matura*). Quantile regressions were run for various points of the wage distribution for each year between 2006 and 2016. Wage returns were estimated for each point of the wage distribution by quantile regression method.[7] The Figure shows changes in the wage returns estimated at the 10th, 25th, 50th, 75th and the 90th percentiles between 2006 and 2016.

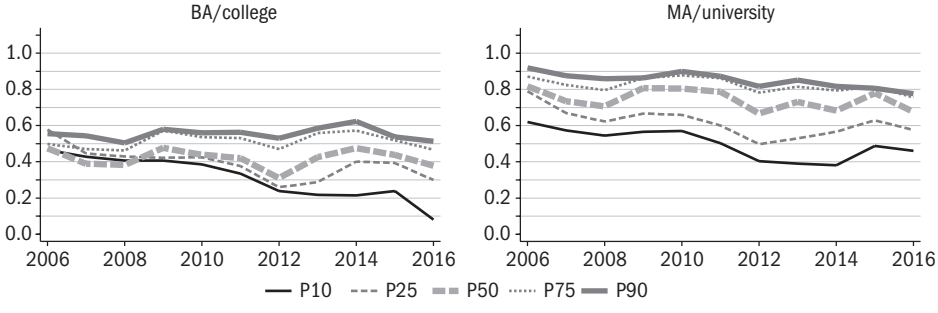
4 The indicators of school education, Indicator D2.2., D2.8. (*Varga,* ed., 2018).

5 The indicators of school education, Indicator D2.8., Table D2.8.2. (*Varga,* ed., 2018).

6 Quantile regression estimates were based on a subsample of the Wage Survey containing those with at least an upper-secondary qualification (Matura). The dependent variable was the logarithm of earnings, while the explanatory variables were qualification categories as well as potential labour market experience and its square and a binary variable for gender.

7 See for example *Chamberlain* (1994), *Martins–Pereira* (2004).

Figure 7.3.2: Wage return to BA/college and MA/university degrees compared with a Matura, by quantiles, 2006–2016



Source: Calculated from data from the Wage Survey.

Differences within the educational attainment groups increased between 2008 and 2012 and returns in the various percentiles diverged during this period. The return realized by the best-paid graduates belonging to the 90th and 75th percentile did not change; however, it declined at other points of the distribution: the decrease was increasingly conspicuous towards the bottom. The previously lagging percentiles started to catch up with returns measured at the top of the distribution after 2012, except for the lowest, the 10th percentile. The wage return of the bottom ten percentage diminished steadily

and to a large extent after 2012: from about 50 per cent in 2006 to below 10 per cent in 2016. The wage return of MA degree holders slightly dropped as a result of the crisis at the bottom of the distribution, at the 10th and 25th percentile, although it started to improve again at the 25th percentile after 2012 and at the 10th percentile after 2014.

The wage return of youth with either a BA or MA qualification at the top of the distribution, belonging to the 75th and 90th percentile, was high throughout the period, whereas the return of those belonging to the 50th and 25th percentile temporarily declined for a few years, probably as a result of the crisis, then started to grow again and returned to earlier levels. The bottom ten per cent of BA degree holders, however, permanently fell behind the other groups. This may be due to skills, differences in the quality of higher education institutions and departments or mismatch problems. It is possible that some young graduates can only find a job which does not require a higher education qualification.

However, it is not easy to determine which jobs are for higher education graduates. There are three methods in use. The first create categories based on the subjective judgement of graduates, relying on interviews. Since there is no long time series of this available, we did not apply this method.

The second method classifies occupations into categories of graduate and other occupations according to their task content. Occupational classification systems, such as the international ISCO system[8] or the Hungarian Standard Classification of Occupations (HSCO), are also based on this; they consider the content of the actual activity undertaken in an occupation and the key criterion for grouping is the level of expertise, knowledge and skills necessary to follow an occupation.

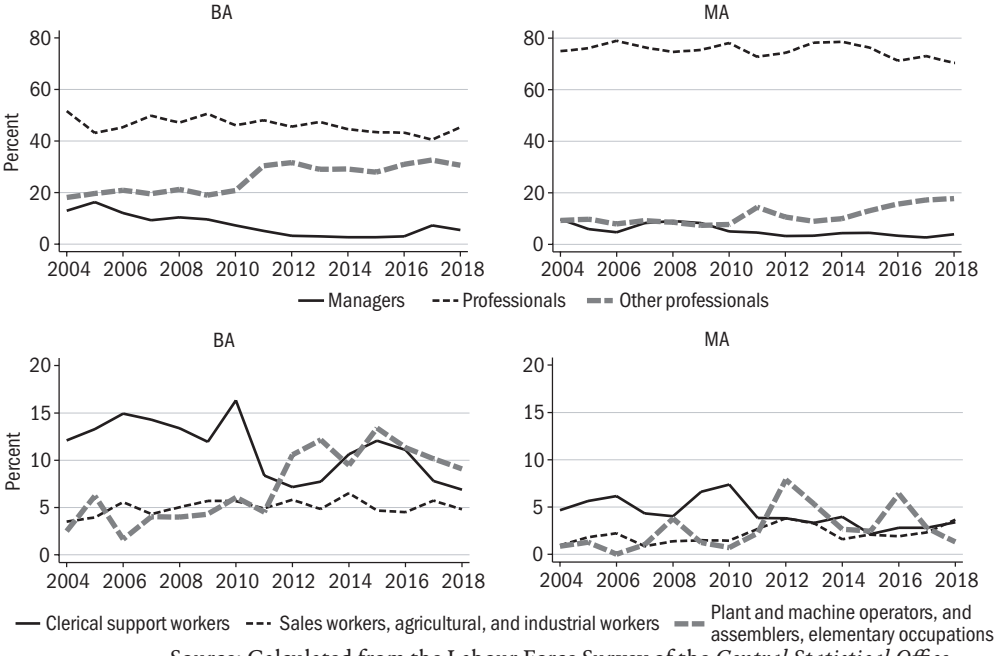
Figure 7.3.3 shows how the proportion of young graduates changed in the groups formed using HSCO categories.[9] Those working in the groups of trade, agriculture, industry, semi-skilled and unskilled work of the Figure are very likely to work in occupations not requiring a degree. Those belonging to the first three groups (managers; professionals; other professionals) obviously work in occupations requiring a higher education degree. It is difficult to judge what qualification the group "office and management (customer services)" requires since it contains heterogeneous occupations in terms of qualification requirements and therefore they are possible to hold with various qualifications.

Changes in the proportions of workers within the occupational groups do not indicate that MA degree holders cannot find a job in occupations requiring a higher education qualification. Among BA degree holders, however, the share of those working in semi-skilled or unskilled jobs increased to 10 per cent after 2011, which suggests that 10–15 per cent of these young graduates do not find a job suitable to their qualifications.

8 See: ILO.

9 Occupations were classified into six groups on the basis of the main categories of the Hungarian Standard Classification of Occupations (HSCO): 1) occupations in HSCO category 1 containing managers, senior officials of public administration and interest organisations, legislators; 2) HSCO category 2: professionals – occupations requiring the autonomous use of higher education qualifications; 3) HSCO category 3: occupations with other higher education or upper-secondary qualifications, 4) HSCO category 4: office and management (customer service) occupations; 5) HSCO categories 5, 6 and 7: occupations mostly with upper-secondary qualifications – commercial, services, agricultural, forestry, industry and construction industry; 6) HSCO categories 7 and 8: semi-skilled and unskilled occupations.

Figure 7.3.3: The proportions of those employed in occupational groups among young graduates, by qualification level, 2004–2018 (percentage)



Source: Calculated from the Labour Force Survey of the *Central Statistical Office*.

It is often misleading to examine changes in the proportions of employees in graduate and "non-graduate" jobs based on occupational classification systems, on the one hand, because there may be diverse requirements even within occupations, and on the other hand because they are rarely updated, as that is an extremely time-consuming process. At the same time, the task content of occupations changes constantly, for example as a result of technological changes or changes in the labour supply, therefore the "required" qualification level also changes regularly.

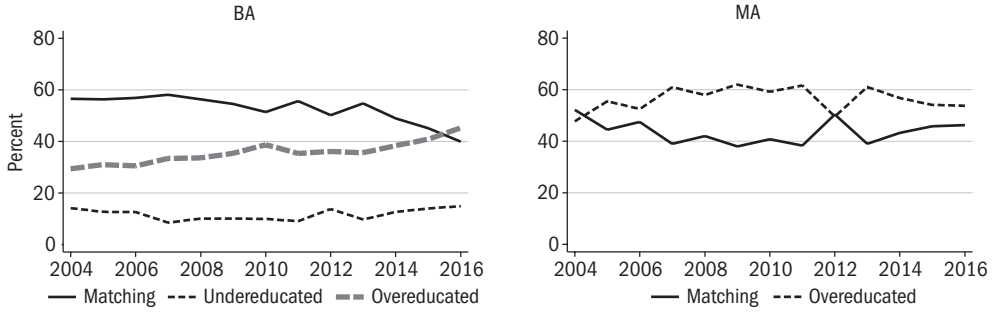
The third method used for defining the qualification level required for an occupation addresses the above problem by assessing the qualification distribution of actual jobholders in occupation and its certain value or its mean (*Verdugo–Verdugo,* 1988) or mode (*Duncan–Hoffman,* 1981, *Mendes de Oliveira et al,* 2000, *Galasi*, 2004, 2008) is regarded as the qualification necessary for the occupation. Nevertheless, the fit measured by this method may also be distorted because the actual occupation–qualification matches observed are partly due to supply and demand and do not only reflect qualification requirements and changes thereof.

Based on calculations relying on actual occupation–qualification matches,[10] *Figure 7.3.4* presents changes in the proportions of well-matched, underqualified and, in the case of BA/college degree holders, overqualified graduates of

10 The estimates regarded modal educational attainment as required qualification. Required qualification was defined by differentiating between BA/college and MA/university degrees for four-digit occupational groups for each year. In the case of multimodal distributions the higher qualification was regarded as required qualification. We assessed whether young people with a higher education degree have the required, higher or lower qualification and based on this we determined if someone has adequate qualification (works in a well-matched occupation), is overqualified or underqualified. (MA graduates cannot be regarded as underqualified, since this is the highest qualification category.)

the two qualification levels. The required qualification level is re-defined for each year, which makes it possible to take into account potential changes in qualification requirements.

Figure 7.3.4: The proportion of well-matched, overqualified and underqualified graduates, by qualification level, 2004–2016 (percentage)



Source: Calculated from data from the Wage Survey.

The proportion of those in a well-matched job dropped slightly first between 2007 and 2010 among BA degree holders, then declined more rapidly between 2013 and 2016, while the proportion of the overqualified increased. In 2016, about 40 per cent of BA degree holders aged younger than 36 were working in a well-matched job, 42 per cent of them were overqualified in their job and 18 per cent of them were underqualified. At the beginning of the period, 57 per cent of young MA graduates were working in a well-matched job, while 43 per cent of them were overqualified. By the end of the period, these proportions were roughly the opposite: in 2016, 54 per cent of the graduates were overqualified and 46 per cent of them were working in a well-matched job, which may indicate that during the transition from education to work, an increasing share of young graduates starts their career in a job requiring a lower level qualification.

Overqualification, underqualification and working in a well-matched job may have an impact on the wage return of young graduates. Relying on Hungarian data, *Galasi* (2004, 2008) assessed the influence of over- and underqualification on wage return. His analysis included all qualification levels and covered the entire working-age population. In the following we present changes in the impact of overqualification, underqualification and adequate qualification level on wage returns,[11] using the model of *Duncan–Hoffman* (1981).[12] Similarly to findings of other studies using this method [see the summary of *Leuven et al* (2011)], the results show that the return on "required" and "surplus" years in higher education is positive, while the return on "missing" years is negative. The return on required years is higher than that of surplus years. The

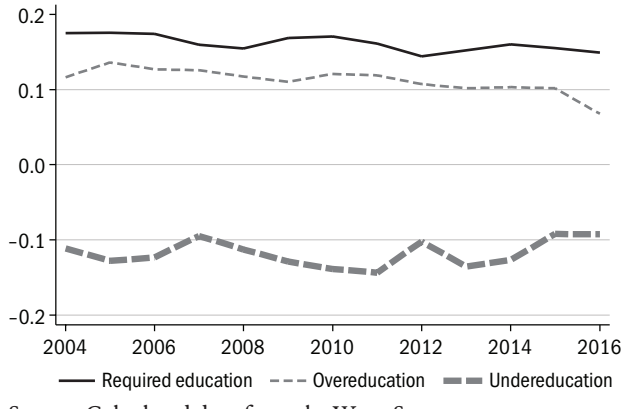
11 The results are not to be compared directly with the results of *Galasi* (2004, 2008), on the one hand because our sample only includes young people below 36 with at least an upper-secondary qualification (Matura) and Galasi carried out the estimation for the entire adult population and all qualification categories, and on the hand because those studies also contained variables for the interaction between labour market experience and overqualification, underqualification and well-matched qualification. As our sample only includes those aged below 36 and we have no information on how many years of labour market experience these individuals have spent as overqualified, underqualified or well-matched employees, our study does not use such interaction variables.

12 Based on *Duncan–Hoffman* (1981), we investigated the effects of overqualification and underqualification using Mincer earnings functions by breaking down the number of years in education (S) into three elements: number of required years (R), overqualification years (O) and underqualification years (U) ($S = R + O - U$). We estimated the following extended Mincer earnings function: $\log(W_i) = \beta_0 + \beta_1 R_i + \beta_2 O_i + \beta_3 U_i + \beta_4 EXP_i + \beta_5 EXP_i^2 + \beta_6 GEN_i + \mu_i$, where W_i is earnings, EXP is potential labour market experience and GEN is binary variable for gender. The Figures show coefficients β_1, β_1 and β_2 obtained from the cross-sectional regressions estimated for each year.

wage return on required higher education years was excessively high, 15–17 per cent, over the entire period. Each surplus year in addition to the required qualification yielded 10–12 per cent, that is less than the required years but still a substantial positive return. The return on the surplus years started to decrease after 2012 and had declined to 7 per cent by 2016. Those who were underqualified for their jobs (in this case BA graduates who undertook tasks typically performed by MA graduates), realized 10–12 per cent lower wage returns with each missing higher education year.

However, this model does not take into account the varying skills and competences of young graduates. Firstly, it is not accidental as to which young graduate has a BA or MA level qualification: it may be related to their unobserved skills, which may also change over time due to changes in the proportions of applicants and entrants to higher education. Secondly, they do not randomly take well-matched or mismatched jobs: this may also be related to unobserved skills. Thus the estimated return on overqualification and underqualification may be associated with other unobserved characteristics of the human capital stock of young graduates.

Figure 7.3.5: Wage return on required, surplus and missing years, 2004–2016



Source: Calculated data from the Wage Survey.

As presented in Subchapter 8.1 on youth employment mobility, the over- or underqualification of young graduates may be temporary. It may be reasonable for the talented and highly qualified to start working in jobs inferior to their skills if it is compensated by faster promotion prospects (*Sicherman–Galor*, 1990). Subchapter 8.1 presents how the frequency of occupational change among young graduates increased after 2010 and that in the case of occupational change, they are less likely to move downwards or switch to another occupation of the same level than members of other qualification groups. It

warrants further analysis of why young graduates are more likely to choose this way of entering the labour market.

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8 GEOGRAPHIC AND OCCUPATIONAL MOBILITY

8.1 OCCUPATIONAL MOBILITY AMONG YOUTH WITH DIFFERENT EDUCATIONAL ATTAINMENT LEVELS

JÚLIA VARGA

During the period that follows the entry into the labour market, at the beginning of the career path, job changes and occupational changes are usually more common than in the later stages of the career path. This is a natural feature of the transition from study to work, since – as the so-called *job shopping* models describing occupational change pinpoint, at the time of the entry into the labour market – at the beginning of the career path, individuals are not yet aware either of their own competencies or their preferences regarding a job or occupation, which one can only discover through a certain amount of experience in the labour market. During this job shopping period, young workers experiment with different occupations and jobs. They learn about their own competencies and the requirements and characteristics of occupations and jobs during this period of experimentation and "shopping around", and this is how eventually they find the occupation that suits or 'fits' them (*Johnson,* 1978, *Topel–Ward,* 1992, *Longhi–Taylor,* 2013). The higher frequency of occupational changes at the beginning of the career path may also be in connection with the fact that many young people[1] who enter the labour market accept positions and occupations whose requirements do not match their qualifications (their educational attainment or specialisation), in the hope of getting promoted into a different position or occupation at a later point in time (*Sicherman–Galor,* 1990). Some of the studies examining the occupational changes that occur at the beginning of the career path indeed found that the more frequent changes in occupation characteristic of this period do serve one's progression on the career ladder (*Sichermann,* 1990), while other studies highlighted the fact that some of the less favourable occupations accepted at the beginning of one's career path, intended as only temporary, do not necessarily serve as a stepping stone for the further progression, but can entrap young workers (*Scherer,* 2004, *Buchs–Helbing*, 2016).

In this subchapter, the changes in the frequency of the occupational changes[2] of youth and the determinants of the probability of occupational mobility are analysed[3] using an individual-level panel data set extracted from the 1998–2018 waves of the Labour Force Survey conducted by the HCSO. Occupational mobility is measured through the changes in HSCO classifications[4] occurring in two consecutive quarters. Mobility is examined based on movements between the detailed, four-digit HSCO categories; the aggregated occupational groups – the two-digit HSCO categories; as well as the main occupational groups – the one-digit HSCO groups. Quarterly occupation-

1 Throughout this paper 'youth' is defined as individuals between the ages of 16 and 35. It is appreciated that this may not correspond with the general English understanding of 'youth'.

2 An occupational change may mean that an individual switches to a different workplace and a different occupation, but can also mean that they stay at the same workplace, while their position or occupation changes. This analysis encompasses both cases, it does not differentiate between occupational changes that do and do not involve a change in workplace as well.

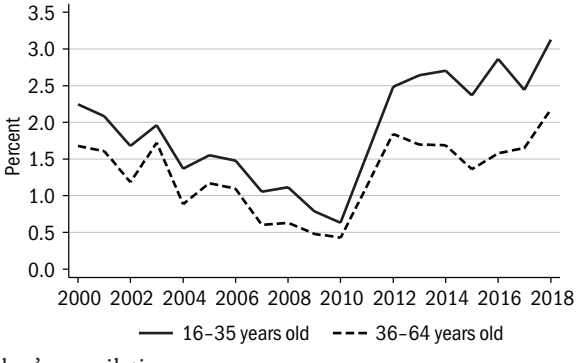
3 The labour survey of the HCSO is a representative quarterly survey, with the individual observations of approximately 70,000 people in each quarter. The sample is replaced through a rotation procedure. The individuals that belong to the households included in the sample are observed through six successive quarters, thus the data of individuals observed through successive quarters can be connected into a panel, and the occupational changes of individuals can be observed.

4 Hungarian Standard Classification of Occupations – the occupational classification system used by the HCSO.

al changes have been aggregated on an annual level, and the development of mobility is presented on an annual basis.

International comparisons indicate that the frequency of occupational changes is low in Hungary (*Boeri–Flinn,* 1997, *Berde–Scharle,* 2004, *Varga,* 2018a, 2018b). The mobility of youth (not older than 35 years) is higher in the job shopping period and much lower in the later stages of the career path, but even the mobility occurring at the beginning of the career path is low by international standards. *Figure 8.1.1* shows that between 2004 and 2010, the frequency of occupational changes decreased continuously, and the mobility of youth hardly surpassed that of older groups. For a part of the period, the continuous decrease was probably related to the economic recession, as occupational mobility is pro-cyclical – as demonstrated by numerous studies (*Murphy–Topel,* 1987, *Carrillo-Tudela–Visschers* (2016). After 2010, occupational changes became more frequent both among youth and among older groups, but the mobility of youth increased at a higher rate, increasing the difference between age categories. In 2018, somewhat more than 3 per cent of 16–35-olds changed occupations, which is still extremely low in international comparison (*Varga,* 2018b).

Figure 8.1.1: The share of those changing occupations among youth in employment (between the ages of 16–35) and among older groups in employment (36–64), 2000–2004, (four-digit HSCO groups, percentage)



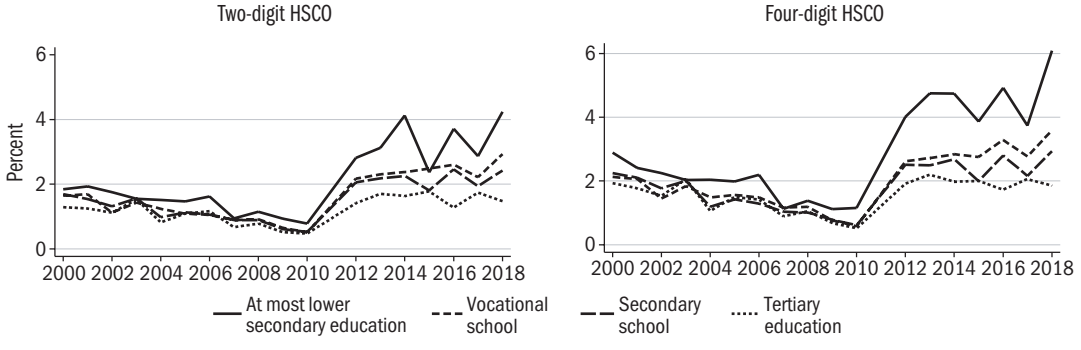
Source: Author's compilation.

The low level of occupational mobility is partly explained by the labour market institutions, the high proportion – in international comparison – of occupations that require specific qualifications (*Varga*, 2018b), and the particularities of the education system as well. The intensity of occupational mobility is also related to the extent to which the education system provides specialised knowledge or general knowledge (*Lindberg,* 2009). This is because one of the preconditions of occupational mobility is the transferability of (at least a part of) workers' competencies and knowledge from one occupation to the other. In countries where the education policy emphasises the acquisition of general

knowledge and encourages participation in lifelong learning, occupational mobility is typically higher, and adaptation to the changing demands of the labour market is easier; while in countries where the intended primary function of the education system is the transference of vocation-specific knowledge, mobility is typically lower.

Comparing the changes in youth's occupational mobility by educational attainment categories (*Figure 8.1.2*), what emerges is that after 2010, with the strengthening of mobility, the differences established based on educational attainment categories increased. Both on the level of occupational groups (two-digit HSCO group) and detailed occupational categories (four-digit HSCO group), those with the eighth grade of elementary school or less as their attainment level changed occupations the most frequently, while those with a higher education diploma changed occupations the least frequently. There are no significant differences between those with a secondary school diploma and those with a vocational qualification but no secondary school diploma (skilled worker or vocational school graduate).

Figure 8.1.2: The share of youth (between the ages of 16–35) changing occupations among youth in employment, by educational attainment categories, 2000–2018



Source: Author's compilation.

We examined the probability of the occupational changes of youth via simple probability models as well. On the one hand, via binary outcome models, which examine the probability of an occupational change on the levels of two-digit and four-digit HSCOs (yes/no), whose results are shown in *Table 8.1.1.* On the other hand, via multiple outcome models, which distinguished between the individual moving upwards or downwards within the occupational hierarchy,[5] or remaining at the same level, as a result of the occupational change. The results of this are presented in *Table 8.1.2.*

5 The direction of the occupational change was defined based on switches between one-digit HSCO-groups, omitting the "Occupations of the armed authorities" occupational group from the analysis, and creating a separate group for those working as public workers, regardless of the occupation they work in. I considered the position of the public workers' group to be at the bottom of the hierarchy. The HSCO classification system is established on the basis of a hierarchy: proceeding through the levels by the main groups, the level of formal qualifications and other skills needed for the occupations keeps increasing. I considered an occupational change as upward mobility if the classification of the new occupation by one-digit HSCO-group had a lower value; I considered it downward mobility if the value become higher; and if its value remained unchanged, I considered its position unchanged within the occupational hierarchy.

Table 8.1.1: Factors influencing the probability of occupational change, binary outcome probit estimates (changes occupation: yes/ no)

	Two-digit HSCO	Four digit HSCO
Variable	marginal effect dy/dx	
Male	0.0009**	0.0013***
	(0.0003)	(0.0034)
Eighth grade of elementary school	–0.0000	0.0015
	(0.00049)	(0.0006)
Vocational qualification but no secondary school diploma (skilled worker or vocational school graduate)	–0.00003	–0.0002
	(0.00036)	(0.00042)
Higher education diploma	–0.0019***	–0.0015**
	(0.0004)	(0.00048)
Number of years of experience	0.0004**	0.0006***
	(0.00013)	(0.00015)
Number of years of experience squared	–9.81E-06	–0.0000
	(0.00001)	(0.00001)
Number of years spent at a particular employer	–0.0026***	–0.0031***
	(0.00007)	0.00008
Public worker	0.0044***	0.0098***
	(0.00092)	(0.00119)
Working abroad	0.0051***	0.0068***
	(0.00122)	(0.00143)
Year	Yes	Yes

Reference category: Females, with a secondary school diploma, year: 1998.
Standard errors in brackets.
Significant at the ***1 per cent, **5 per cent, *10 per cent levels.
Source: Author's compilation.

Males are more likely to change occupations both by two-digit and four digit categories than females, and are also more likely to move downwards within the occupational hierarchy. Those with a higher education diploma are significantly less likely to change occupations, but if they do, they are less likely to move downwards or stay within the same occupational level than the reference category of those with a secondary school diploma. Between the other educational attainment categories, there are no differences in the probability of an occupational change.

Those with the eighth grade of elementary school as their educational attainment are more likely to move upwards, which could be explained by the fact that a great proportion of these has public worker status, which is considered the lowest in the hierarchy. Youth with a vocational qualification but no secondary school diploma are more likely to stay within the same main occupational category. The longer time someone has spent at a certain employer, the less likely they are to switch to a different occupation. Those working as public workers or working abroad are more likely to switch.

Table 8.1.2: Factors influencing the direction of occupational change, multinomial logit estimates[a]

Variable	Switches within the same main occupational category	Moves upwards	Moves downwards
	marginal effect dy/dx		
Male	–0.0003	0.0010***	0.0003
	(0.00022)	(0.00014)	(0.00011)
Eighth grade of elementary school	–0.0000	0.0009***	0.0001
	(0.00035)	(0.00027)	(0.00019)
Vocational qualification but no secondary school diploma (skilled worker or vocational school graduate)	–0.0007**	0.0007	–0.0001
	(0.00025)	(0.00019)	(0.00013)
Higher education diploma	–0.0010***	0.0005	–0.0005***
	(0.00029)	(0.00026)	(0.00015)
Number of years of experience	0.000**	0.0003***	0.0005
	(0.0001)	(0.00006)	(0.00005)
Number of years of experience squared	–9.81e-06	–0.0000***	–9.36e-07
	(0.00000)	(0.00000)	(0.00000)
Number of years spent at a particular employer	–0.0017***	–0.0010***	–0.0004***
	(0.00005)	(0.00003)	(0.00003)
Public worker	–0.0067***	0.0099***	0.0008
	(0.0002)	0.00096	(0.00031)
Working abroad	0.0015	0.0020***	0.0014*
	(0.00075)	(0.0006)	(0.00053)
Year	Yes	Yes	Yes

[a] Switches to occupation within the same level = 1, moves upwards = 2, moves downwards = 3, reference outcome (does not change occupations) = 0.
Reference category: Females, with a secondary school diploma, year: 1998.
Standard errors in brackets.
Significant at the ***1 per cent, **5 per cent, *10 per cent levels.
Source: Author's compilation.

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8.2 OUTWARD MIGRATION OF YOUTH – YOUNG PEOPLE WORKING ABROAD

ÁGNES HÁRS & DÁVID SIMON

The young and entrepreneurial are assumed to be more mobile and more likely to migrate. This seems to be evident, and, based on human capital theory, outward migration during a long career is a better investment for younger people (*Becker,* 1975). At the same time, their entrance to the labour market, their initial insecure and marginal situation and their exploration within the labour market may also encourage them to take up employment abroad (*Osterman,* 1979). If the prospects of young people finding a good job in Hungary are poor, an alternative may be to work abroad for some time. However, in the case of job search abroad, often only secondary workplaces are accessible for new arrivals (*Piore,* 1979). Finding employment abroad may also be a response to social-political dissatisfaction and despair at home. The nature of finding employment abroad varies over time according to the combination of these factors.

This subchapter investigates who among young people look for employment abroad and how this has changed in the past more than ten years since Hungary's EU accession, when working abroad became easier and more frequent, and then accelerated and became part of everyday life after 2011 (*Hárs,* 2018). The analysis includes young people aged 18–29 who work in Hungary vs. those who have worked in Hungary and work abroad in the next quarter, according to the Labour Force Survey (LFS) and it covers the time period 2006–2017.[1] The sample shows that nearly half of the active age workers (aged 18–64) taking up employment abroad are below age 30 (48.5 per cent), while more than one-third of them (35 per cent) are of prime working age (aged 30–44).[2] This study does not look into their return but according to the relevant literature we assume that migration is not unidirectional. The proportion of returnees and repeated leavers is also considerable (*Horváth,* 2016, *Hárs–Simon,* 2018).

The empirical study of young people finding employment abroad

Based on LFS data, we measured factors that influence outward migration using demographic, family status, labour market activity and regional explanatory variables. In addition to the usual impact of gender and age on working abroad, the family situation is also expected to reveal motivations: in the case of youth living together with their parents it may indicate difficulties in entering the labour market, while in the case of those living independently or with a partner (or especially those raising children) it may indicate a lack of subsistence and prospects. The impact of educational attainment depends on the domestic and host country labour market, where educational attainment

1 Data from the LFS are weighted based on mirror statistics, using the characteristics of the main host countries, assuming that the characteristics of leavers closely match those of the sub-population defined by the variable "place of work abroad". Estimation concerning outward migration is made using the weighted database. Weighting was based on the annual population data of the mirror statistics of major host countries, broken down by gender, which enabled us to estimate changes in the number of Hungarians working abroad (relying on Eurostat EU LFS employment data on Hungarians living abroad) during the periods 2006–2010 and 2011–2017 in the major host countries (Germany, Austria, United Kingdom and other countries). Data on outward migration were fit to the above estimated change, using the flow data from the LFS.

2 Recent estimates of migration intentions reveal similar proportions. The probability of young people aged 18–28 taking up employment abroad is especially high: it is nearly two and a half times higher for short-term intentions, compared with the age group of 29–38, and nearly the same for long-term intentions (*Sik–Szeitl,* 2016).

does not necessarily yield the expected status and income. The labour market activity prior to migration may reveal motivations: it may suggest exploration in the case of students and young graduates, unfavourable prospects at home in the case of the unemployed, while the migration of those permanently in employment may point to labour market causes. The region of residence and type of municipality primarily reveal the impact of labour market opportunities in the Hungarian labour market.

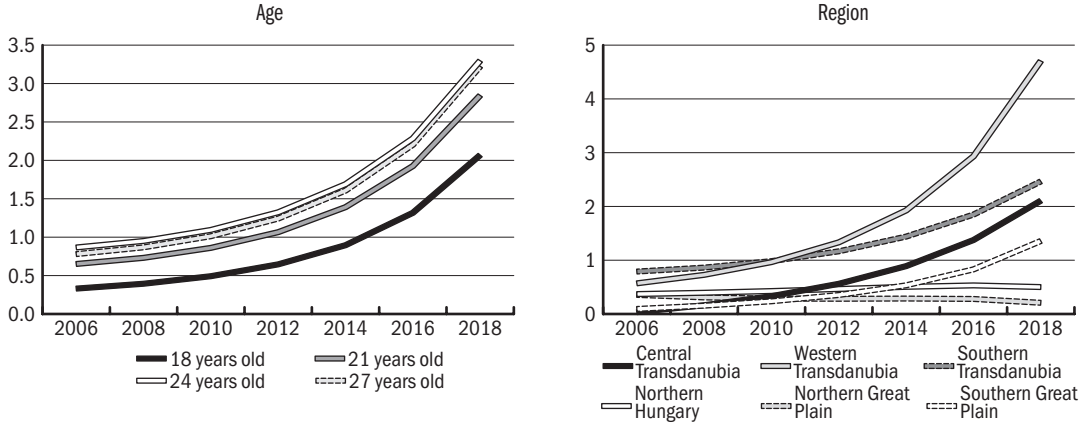
Logistic regression was used to explain employment abroad, with the output variable of entering the labour market abroad (a young person not living abroad in one quarter and working abroad in the next quarter as opposed to those who did not enter the labour market abroad). The model tested quarterly effects, which were expressed as annual effects for better interpretability. Based on the applied fit test, the model proved satisfactory.[3]

Independent effects were evaluated and the marginal effect of each variable (or estimated marginal probability for continuous variables), and their change over time, on the employment of youth aged 18–29 abroad is presented.[4] Results are shown in *Figure 8.2.1* (the effects of gender and municipality type are included in the analysis but not in the Figure).

3 The analysis included C-statistic and link test instead of the usual Hosmer–Lemeshow test because with a large number of items a small difference from the expected distribution would have been significant, while it would not have influenced the readability of the model. The value of C-statistic was 0.8, which is satisfactory; the linear term of the link was significant ($p = 0.001$), while the squared term was not ($p = 0.751$).

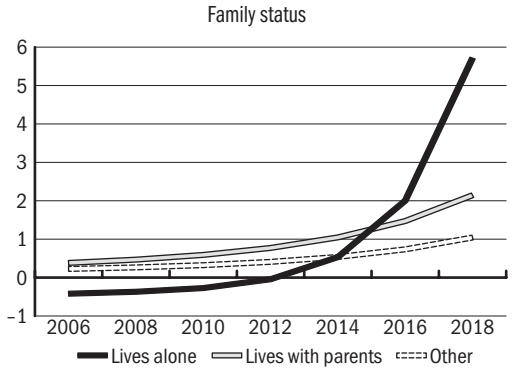
4 Change over time was measured by including an interaction using a variable in quarterly breakdown and it is presented by marginal estimates given for the first quarters of 7 selected years at evenly spaced intervals. The significance of the marginal effect was estimated at certain selected dates.

Figure 8.2.1: The effect of factors influencing the employment of youth abroad

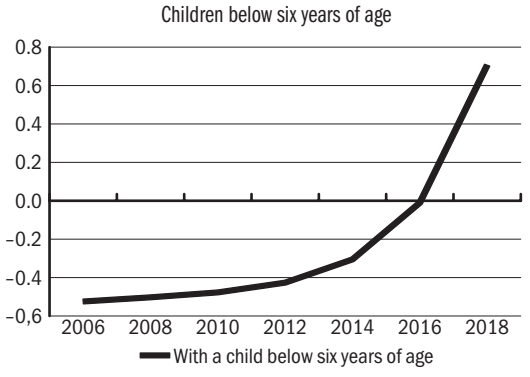


Note: A variable estimated for single-year of age. It is not significant at the measurement point for the 18-year-olds in the first quarter of 2006. The effect of the variable does not change significantly over time.

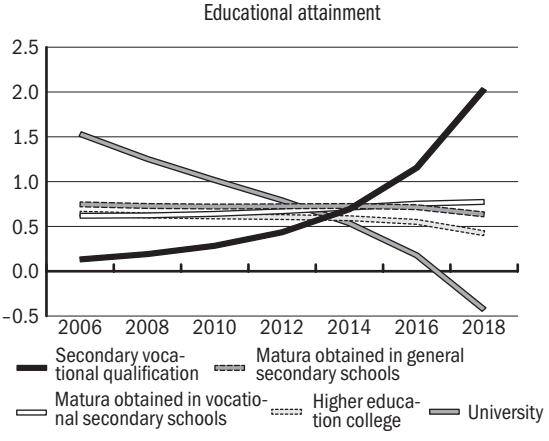
Note: Reference category: *Central Hungary*. The Region variable is not significant at the measurement points of the first quarters of 2006–2010 in Central Transdanubia, the first quarter of 2006 in Western Transdanubia, the first quarters of 2006–2008 in Northern Hungary, the first quarters of 2014–2018, at any of the measurement points of the Northern Great Plain and the first quarters of 2006–2012 and 2016–2018 of the Southern Great Plain. The effect of the variable does not change significantly over time.



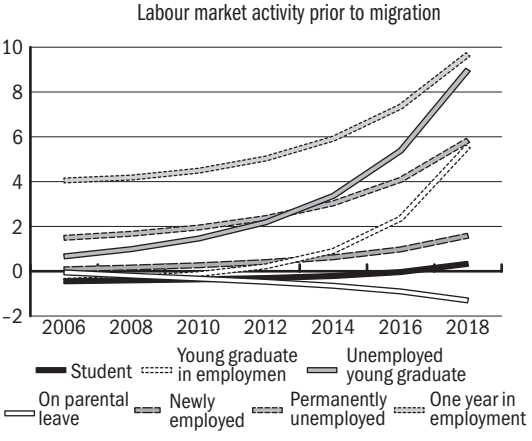
Note: Reference category: *lives with a partner.* The Family status variable is not significant in the first quarters of 2010–2014 of the *Lives alone* category, in the first quarter of 2006 of the *Lives with parents* category and at any of the measurement points of the *Other* category.



Note: Reference category: *no children.* The variable Having a child below six years of age is not significant at the measurement points of the first quarters of 2014–2018 in the category *With a child below six years of age*. The effect of the variable does not change significantly over time.



Note: Reference category: *lower-secondary qualification at most.* The Educational attainment variable is not significant at the measurement points in the first quarters of 2006–2008 in the category *Secondary vocational qualification*, in the first quarters of 2016–2018 in the category *Matura obtained in general or vocational secondary schools* and in the first quarters of 2006 and 2014–2018 in the category *University or higher education college.*



Note: Reference category: *uninterrupted employment.* The Labour market activity prior to migration variable is not significant at the measurement points in the first quarters of 2014–2018 in the category *Student*, in the first quarters of 2006–2014 and 2018 in the category *Young graduate in employment*, in the first quarter of 2006 in the category *Unemployed young graduate*, in the first quarters of 2006–2010 in the category *On parental leave* and at any of the measurement points in the category *Newly employed*.

The acceleration of outward migration after 2010 was due to several factors, including the prolonged impact of the economic crisis and the measures

adopted after the change of government in 2010, gradually modifying the probability of youth taking up employment abroad. The effect of age did not change over time: this variable increases the impact of migration below 24 but above this age there is no difference between the age groups and this is significant throughout the period. The effect of gender is not relevant among youth. Overall, the significance of socio-demographic factors decreases with the acceleration of migration, that is the population of outward migrants is wider and more diverse. At the same time, the effect of labour market activity has increased.

Before the acceleration of outward migration, the effect of the region of residence was relatively strong: compared with a residence in Central Hungary, living in Western or Southern Transdanubia significantly and to a large extent increased the probability of taking up employment abroad, while living in a county town or Budapest slightly decreased it relative to living in a village (during 2006–2012), whereas the effect of a residence in other towns was not significant. The effect of family status was also of relevance: compared with those living with a partner, those living with parents were slightly but significantly more likely to find employment abroad, which may be due to young people wishing to gain experience, while those living alone were significantly less likely to work abroad during 2006–2008. A child below six living in the family also significantly reduced the probability of working abroad (until 2012), which suggests a more stable family background. The labour market influences the probability of working abroad through educational attainment and labour market activity. Compared with lower-secondary education (ISCED2), the effect of university qualification in this period was significant and strong, while the effect of college and upper-secondary qualifications was less marked but still significant. However, vocational school qualification (ISCED3C) had no significant effect prior to 2010. Compared to those permanently in employment, those who recently lost or quit their jobs were more likely to work abroad,[5] followed by unemployed fresh graduates probably motivated by gaining experience and looking for the right career. The probability of finding employment abroad was similar in the case of the long-term unemployed, presumably because of looking for a labour market alternative. The effect of being in education was significantly negative, whereas being on parental leave and having found a job after graduation had no significant effect.

Following the acceleration of migration the significance of the region of one's residence barely changed. After 2010, compared with Central Hungary, a residence in Central Transdanubia or in Western Hungary significantly increased the probability of working abroad. During the increasing intensity of migration in the period 2010–2012, living in Northern Hungary, the most disadvantaged region, also significantly increased the probability but living in the other regions did not and the type of municipality also lost its significance.

5 Persons who were not in employment in Hungary in the quarter prior to starting a job abroad but had been in employment a year prior.

The effect of family status changed markedly: compared with those living with a partner, those living with their parents have been significantly and increasingly more likely to take up employment abroad possibly due to labour market pressure in addition to wishing to gain experience, while there has been a significant increase among those living alone (since 2016).[6] Having a child below six years of age does not significantly hold back employment abroad any more, probably due to labour market reasons and unfavourable prospects as well as social and political dissatisfaction. The impact of educational attainment on labour market significance has also altered considerably: compared with primary education, the effect of tertiary education (after 2012) and secondary education (after 2014) has not been significant, while having vocational school qualifications has significantly and steeply increased the probability of working abroad since 2010. At the end of the period only vocational school qualifications have a significant effect, indicating that educational attainment hardly influences employment abroad.

Overall, labour market activity prior to migration had the strongest effect: those unemployed in Hungary are increasingly more likely to go abroad and fresh graduates also leave at an increasing rate. Compared with those permanently in employment, the strongest significant effect was seen among those who had been working a year prior but had become unemployed or inactive, followed by those permanently unemployed. After 2012 young graduates unable or unwilling to find a job in Hungary found employment abroad at a rapidly increasing rate and at the end of the period this effect was nearly as strong as that of quitting a job. We suspect that the motivation of young people has changed: the effect of deteriorating labour market prospects and expectations has grown. Since 2012, being on parental leave has significantly reduced the probability of working abroad but being in education has not and neither has taking up employment in Hungary after graduation.

6 Results concerning people living alone need to be interpreted with caution, since reaching this group is uncertain due to the nature of the survey. Nevertheless, looking at those dropping out of the Labour Force Survey due to panel attrition, we found that although the survey underestimates this group, the association found is relevant.

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LABOUR MARKET POLICY TOOLS (JUNE 2018 – MAY 2019)

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This Chapter overviews major changes in the regulation of labour market policy tools between June 2018 and May 2019.

1 INSTITUTIONAL CHANGES

1.1 The system of vocational education and training

The amendment of Act CLXXXVII on Vocational Education and Training in December 2018[1] introduced the possibility to provide distance e-learning in a closed system in vocational education and training from 1 January 2019, which imparts theoretical knowledge as a digital curriculum through an IT network.

In January 2019, modelled on the system introduced at universities, chancellors were appointed at vocational education and training centres of the Ministry for Innovation and Technology. The director general continues to be the chief manager responsible for a vocational training centre, whose primary task is to manage the educational activities of the institution and supervise the quality of education. The chancellor is a senior manager of the institution, in charge of economic, financial, employment, legal and administrative activities as well as the asset management of the institution. Chancellors are appointed by the Minister responsible for vocational education and training. The director general will be the employer of teachers and staff directly supporting education but their wages will have to be approved by the chancellor. All other staff will be appointed and employed by the chancellor. Measures of the director general affecting the management, organisation or operation of the institution with financial implications will have to be approved by the chancellor: his consent is a prerequisite of these decisions to take effect or be effective.

The Vocational Education and Training Innovation Council was established in September 2018 on the initiative of the Ministry for Innovation and Technology.[2] The most important goal of the council is to provide a regular forum for dialogue between key stakeholders of the vocational sector and the government. The task of the council is to determine future developmental trends and to formulate recommendations for infrastructural developments and for the revision of vocational and adult training curricula. In addition to the government, the members of the Council include chambers, enterprises, trade unions, advocacy organisations, educational organisations, maintainers of institutions and delegates of student councils.

1 Act CIV of 2018 on the amendment of certain Acts on research and development and vocational education and training.

2 See kormany.hu for more about the Council.

The Government discussed and adopted the strategic document "Vocational Education and Training 4.0" in March 2019.[3] According to this, four-plus-one-grade vocational secondary schools will be replaced by five-grade polytechnics in September 2020. After graduating from a polytechnic, pupils get preferential treatment at entrance examinations to related programmes of higher education institutions. Vocational schools will have three grades, with practical dual training in the last two grades. So-called workshop schools offering partial qualifications are established for pupils who are unable to complete lower-secondary education or cannot perform well in a traditional education setting.[4] In the dual training offered by polytechnics and vocational schools, pupils' contracts will be replaced by a pupils' work contract. The National Qualification Register will be completely dropped and a new qualification register will be published in 2020 in order to better differentiate between initial vocational training programmes offering comprehensive vocational skills and course-like, short programmes.

1.2 Pensioner cooperatives

In order to promote the employment of pensioners, the public interest pensioner cooperative was introduced as a new type of cooperative on 1 July 2017. Those employed by such cooperatives were exempt from paying social security contributions.[5] However, the pensioner cooperative became pointless from a financial point of view because of a new regulation taking effect on 1 January 2019 (*Wiedemann,* 2018): Act CXV of 2018[6] amended the rules for the social security status of employees who are pensioners in their own right. Accordingly, pensioners in their own right employed under the Labour Code have been exempt from insurance obligations since 1 January 2019, that is, they are exempt from paying pension contribution (10 per cent) and in-kind health insurance contribution (4 per cent). They only have to pay a personal income tax (15 per cent) on their wages – in the same way as if they were remunerated as members of a public interest pensioner cooperative. Pursuant to the new law, pensioners with employment contracts are not entitled to social security benefits as per their employment contract, including any increase in pension otherwise applicable to pensioners engaged in other forms of employment. Under the new law, employers become exempt from paying social contribution tax (19.5 per cent) and vocational training contribution (1.5 per cent) on their employees who are pensioners in their own right.[7]

2 BENEFITS

2.1 Unemployment benefits

As a result of raising the minimum wage in 2019[8] (see section 5.1), the maximum amount of the unemployment benefit (so-called job-seekers' allow-

3 Government Resolution 1168/2019. (III. 28.) on adopting the strategy "Vocational education and training 4.0 – The mid-term policy strategy for renewing vocational education and training and adult training: the response of the VET system to the challenges of the fourth industrial revolution" and on measures required for its implementation.

4 National Institute of Vocational and Adult Education: First day of school in vocational education in Nyíregyháza.

5 Act LXXXIX of 2017 on the amendment of certain Acts with regard to establishing public interest pensioner cooperatives.

6 Act CXV of 2018 on the amendment of Act XLII of 2015 on the Service Status of Professional Members of Law Enforcement Agencies and other related Acts.

7 Publication about this contribution.

8 Government Decree 324/2018. (XII. 30.) on the minimum wage and the guaranteed minimum wage in 2019.

ance) also increased. The maximum of the job-seekers' monthly allowance has been HUF 149,000 since 1 January 2019, while the unemployment assistance granted before retirement has been HUF 59,600 a month. The so-called activity compensation of job seekers participating in intensive training acknowledged by job centres ranges between HUF 48,918–81,530 a month.

2.2 Rehabilitation and disability benefits

The amount of rehabilitation and disability benefits increased by 2.7 per cent in January 2019: the base allowance is now at HUF 101,560.[9]

The Constitutional Court found an omission concerning Act CXCI of 2011 on disability provisions[10] during the autumn of 2018. According to the Court, the law, which took effect in 2012, adversely affected those already receiving provisions, whose benefits decreased or terminated, even though their health did not improve – this violates an international treaty on the protection of human rights. The law should have been amended prior to 31 March 2019 with a modification that links the granting of provision not to the legal status of recipients but to aspects of their health affecting their living conditions. However, the Government disputed the decision of the Constitutional Court and did not amend the law until the deadline set by the Constitutional Court.

2.3 Child benefits

As a result of raising the minimum wage in 2019[11] (see section 5.1), the maximum amount of the insured parental leave benefit (which equals 70 per cent of double the amount of the minimum wage) increased to HUF 208,600 a month in 2019. The parental leave benefit for graduates otherwise not entitled to one increased to HUF 104,300 for Bachelor degree holders and HUF 136,500 for Master degree holders. The maximum net amount of the insured parental leave benefit is also linked to the minimum wage: it increased to HUF 156,450.

3 SERVICES

3.1 Improving adaptability to labour market changes

The call for proposals of the programme "Thematic projects aiming at improving adaptability to labour market changes EDIOP-5.3.5-18" was published in September 2018: enterprises can apply for a non-refundable grant of HUF 10–50 million. The projects improve labour market adaptability, strengthen corporate social responsibility, promote service provider roles, reinforce the engagement of social partners in society and the labour market, develop their capacities and improve their representative power. The total budget to be granted to applicants amounts to HUF 4 billion.

9 About provisions available for disabled employees.

10 Resolution 21/2018. (XI. 14.) AB of the Constitutional Court.

11 Government Decree 324/2018. (XII. 30.) on the minimum wage and the guaranteed minimum wage in 2019.

4 ACTIVE LABOUR MARKET POLICIES AND COMPREHENSIVE PROGRAMMES

4.1 Defining the goals of public works schemes and preparations for modifying the law on cooperatives

Government resolution 1497/2018. (X. 12.)[12] sets out the objectives of public works schemes for 2019 and provides for preparations for the amendment of Act X of 2006 on cooperatives.

According to the government resolution, the primary aim of public works schemes in 2019 is to encourage job seekers to exit public works, meet the demands for seasonal labour in agriculture and improve the employment rate and employability of those excluded from the primary labour market. Further objectives include promoting the housing and social integration of the Roma, supporting the social inclusion of ex-convicts, remedying labour market disparities as well as improving the quality of life of participants of public works schemes. Additionally, enhancing rural population retention capacity and assisting self-sufficient and self-sustainable municipalities and social cooperatives are also included among the aims.

4.2 Increasing the amount of the employment allowance

The amount of employment allowance provided as part of the "From public works to the business sector" programme increased to HUF 45,600 in November 2018. It is payable to public works participants who successfully take up employment in the business sector.

4.3 Supporting services that promote legal employment

The call for proposals for EDIOP-5.3.3-18 (Supporting services that support promote legal employment) was published in October 2018, which aims at providing services that promote legal employment; supporting the legal assistance, mediation, conciliation, intermediary, consultation and arbitration services of advocacy organisations and using alternative dispute resolution tools. The total amount of grants is HUF 2.4 billion.

4.4 Supporting job-seekers and youth in becoming entrepreneurs

The programmes EDIOP-5.2.7-18 (Supporting youth in becoming entrepreneurs) and EDIOP-5.1.10-18 (Supporting job-seekers in becoming entrepreneurs) were launched in November 2018 as the continuation of EDIOP-5.1.9-17. (Supporting job-seekers and youth in becoming entrepreneurs – training and mentoring). The Hungarian State Treasury, applying simplified cost options, provides grants for young people aged 18–30 and for job-seekers above 30, who participated in training in business creation and development in EDIOP-5.1.9-17 and have an approved business plan, to set up a business.

12 Government Resolution 1497/2018. (X. 12.) on certain aspects of public works.

The total amount of grants available in EDIOP-5.2.7-18 is HUF 26.7 billion and that of grants in EDIOP-5.1.10-18 is HUF 13.4 billion.

4.5 Supporting the return of parents with young children to the labour market

The programme EDIOP-5.3.11-18 (Supporting the return of parents with young children to the labour market) was launched in November 2018, which promotes the labour market return of parents with young children by offering targeted support to cover family day-care or workplace nursery fees. The total amount of grants is HUF 9.8 billion.

4.6 Supporting the investment of micro-, small and medium-sized enterprises in job creation

The call for proposal "NFA-2018-KKV Supporting the investment of micro-, small and medium-sized enterprises in job creation" was published in July 2018, while "NFA-2019-KKV Supporting the investment of micro-, small and medium-sized enterprises in job creation" was published in March 2019. In order to improve the development, significance and market position of small and medium-sized enterprises, these programmes aim at supporting investment in job creation, reducing regional disparities, supporting regional cohesion, reinforcing local economies and expanding employment by promoting the employment of persons disadvantaged in the labour market. The total amount of grants in NFA-2018-KKV is HUF 6 billion, while in NFA-2019-KKV it is HUF 5 billion.

4.7 Central labour market programme "Providing workers' accommodation"

The central labour market programme titled "Providing workers' accommodation" was published for the third time in October 2018: applicants can apply for grants for building workers' accommodation for at least 80 employees or renovating buildings which may be converted into workers' accommodation. The aim of the programme is to facilitate the mobility of the labour force and improving housing conditions in regions affected by labour shortage. The total amount of grants is HUF 5 billion.

4.8 Improving adaptability to labour market changes

The call for proposals of the programme EDIOP-5.3.5-18 (Thematic projects aiming at improving adaptability to labour market changes) was published in October 2018, which aims at reinforcing the engagement of social partners in society and the labour market, improving their representative power and supporting activities that efficiently contribute to improving the adaptability of employees, employers and enterprises to labour market changes and rein-

forcing their corporate social responsibility. The total budget to be granted to applicants amounts to HUF 4 billion.

5 POLICY TOOLS AFFECTING THE LABOUR MARKET

5.1 Changes in the minimum- and the guaranteed minimum wage

The minimum amount of the base salary of full-time employees increased from HUF 138 thousand to HUF 149 thousand gross on 1 January 2019, while the guaranteed minimum wage of full-time employees in jobs requiring at least an upper-secondary qualification and/or mid-level vocational qualification increased from HUF 180,500 to HUF 195 thousand.[13]

5.2 Changes in the system of taxes and contributions

5.2.1 Act on the new social contribution tax

On 1 January 2019 an act on the new social contribution tax took effect, which eliminated the healthcare contribution tax and introduced a uniform social contribution tax (SCT) of 19.5 per cent. Instead of the earlier HUF 100 thousand, the new act specifies the amount of SCT reductions in terms of the minimum wage. In the case of part-time employment, the reductions do not have to be proportionate to the working time.[14]

Reductions for employees below 25 or over 55 and for the so-called Career Bridge programme have been eliminated, while reductions for employing young graduates, long-term unemployed persons or those on maternal leave will be phased out, similarly to the reduction for enterprises located in free enterprise zones.

A new reduction is introduced for employing new entrants to the labour market (that is employees who had a maximum of 92 days in insurance during the 275 days prior to their employment): employers are exempt from paying SCT and vocational training contribution payable on the minimum wage in the first two years of employment and entitled to a 50 percent reduction in the third year (*Kiss,* 2018).

The reduction for employees with a rehabilitation card was eliminated and replaced by another one with a wider range of beneficiaries, which may be claimed by entrepreneurs with disabilities. Since 26 July 2018, and also under the new SCT Act, persons with a lower than 60 percent health status score based on a comprehensive rating but not eligible to rehabilitation benefit or disability benefit have been eligible to the reduction.[15] On July 1 2019 the social contribution tax decreased by 2 percentage points to 17.5 per cent.[16]

5.2.2 Exemption of working pensioners from contributions

In order to promote the employment of pensioners, since 1 January 2019, pensioners in their own right, employed under the Labour Code, have been

13 Government Decree 324/2018. (XII. 30.) on the minimum wage and the guaranteed minimum wage in 2019.

14 Act LII of 2018 on the social contribution tax.

15 Act XLI of 2018 on the amendment of certain tax laws and related Acts and on the special immigration tax.

16 Act XLVIII of 2019 on reducing the rate of the social contribution tax and on the amendment of related legislation.

exempt from the 10 percent pension contribution and from the 4 percent in-kind health insurance contribution stipulated by the Act on Social Security Contributions[17] previously.[18] Such employment is also exempt from the social contribution tax and vocational training tax.[19]

5.2.3 Changes in the cafeteria system

The cafeteria system was significantly modified on 1 January 2019. Due to the amendment of the Act on the Personal Income Tax, only up to HUF 450 thousand per year may be given to employees on SZÉP-cards as a non-cash fringe benefit from 2019 on. The tax rate on this benefit slightly grew because of modification of the social contribution tax (from 34.22 per cent to 34.5 per cent). Additionally, the sub-accounts of the SZÉP-cards of each employee are allocated separate bank account numbers. The cash benefit of HUF 100 thousand per year no longer qualifies as a benefit in kind.

From 2019 on, only benefits specified in the Act may qualify as certain specific benefits. In the future these will not include benefits which qualified as benefits in kind until 2017, such as the school start allowance, local travel allowance, Erzsébet voucher and contributions to voluntary pension insurance funds.

The maximum amount of the "allowance for cultural services", exempt from personal income tax, has increased from HUF 50 thousand to HUF 149 thousand, equal to the minimum wage. However, the tax exemption of several allowances ceased: assistance for housing, housing assistance for mobility, risk insurance premium and assistance for repaying student loans will be subject to tax as earned income.

5.3 Overtime Act

The amendment of the Labour Code adopted in December 2018 took effect on 1 January 2019.[20] The amendment increased the maximum timeframe of working time from 12 months to 36 months in the case of collective agreements. Employers may continue to require 250 hours of overtime annually; however, under the amendment, based on a written agreement concluded by the employer and the employee, an additional 150 hours of overtime (voluntary overtime) per calendar year at most may be required by the employer. In the case of collective agreements, an additional 100 hours of voluntary overtime may be required annually at most, based on a written agreement, in addition to a maximum of 300 hours of overtime annually.

The amended law also legislates on the rules of allocating rest days: two rest days a week must be allocated but not necessarily evenly. After six consecutive working days a minimum of one resting day a week must be provided. In the case of an uneven work schedule, uninterrupted, seasonal or shift work, at least one of the weekly resting days must be provided every month. At least

17 Act LXXX of 1997 on the beneficiaries of social security provisions and private pension and on the contributions payable to cover these.

18 Act XLI of 2018 on the amendment of certain tax laws and related Acts and on the special immigration tax.

19 Act LII of 2018 on the social contribution tax.

20 Act CXVI of 2018 on the amendment of Acts related to the organisation of working time and the minimum fee payable for temporary employment.

one of the weekly resting days per month must be provided on Sundays, except for part-time employees working on Saturday and Sunday.

5.4 Expanding the programme on building workers' accommodation

Since the autumn of 2019, employers are also eligible to grants for building workers' accommodation, in addition to municipalities. Due to the expansion of the programme, business organizations can apply for regional investment aid for building workers' accommodation, with a 50 percent rate in Northern Hungary, Northern Great Plain, Southern Great Plain and Southern Transdanubia, a 35 percent rate in Central Transdanubia and a 25 percent rate in Western Transdanubia, while small enterprises may secure an additional 20 percent and medium-sized enterprises an additional 10 percent investment aid. The grant is for establishing workers' accommodation for at least 80 persons and eligible costs include construction and refurbishment costs and the costs of new tangible assets required for the investment. The beneficiary must undertake to operate the facility for at least ten years.[21]

5.5 Summer student work

The Ministry of Finance has also published its summer student work programme in 2019, with a budget of HUF 3.6 billion. This time, however, youth aged between 16 and 25 may not only be employed by regional and local municipalities or municipality institutions but also by enterprises active in agriculture, tourism or catering. According to the estimates of the Ministry, from the budget available in 2019 it is possible to provide work for about 30 thousand students between 1 July and 31 August, with a daily maximum working time of 6 hours. Employers are reimbursed for 75 per cent of wages and related social contribution tax, while for municipalities the rate is one hundred percent.[22]

21 A new economy protection measure: enterprises are also eligible to a workers' accommodation grant.

22 Up to 30 thousand students may work in the summer student work programme.

References

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Appendix

Table A1: Expenditures and revenues of the employment policy section of the national budget, 2013–2019 (million HUF)*

Expenditures	2013 actual	2014 actual	2015 actual	2016 plan	2016 actual	2017 plan	2017 actual	2018 plan	2019 plan
1. Active subsidies									
Employment and training subsidies	25,105.9	28,120.8	12,302.4	16,172	27,503.9	16,172.0	27,238.9	35,000.0	35,000.0
Co-financing EU-funded employability (and adaptability) projects	16,279.6	17,130.1	11,064.6	3,808.7	3,808.7				84,300.0
8. Public works (SART work programme)	171,053.4	225,471.1	253,723.3	340,000.0	267,965.7	325,000.0	265,837.2	225,000.0	180,000.0
SROP 1.1. Labour market services and support	33,804.9	35,790.1	12,305.1	54.5	79.5				
SROP 1.2. Normative support for promoting employment	14,477.3	1,080.1							
EDIOP 5. Employment priority – annually published budget						81,600.0		7,800.0	28,000.0
Of which CCHOP funding						1,000.0			
EDIOP 6. Competitive workforce – annually published budget						74,380.0			9,770.0
Reimbursement of social security contribution relief	3,277.5	551.5							
Pre-financing labour market programmes 2014–2020		0.0	13,654.9	54,700.0	50,101.3	74,116.4	70,995.3	84,300.0	
2. Vocational and adult training subsidies	18,736.2	24,725.9	30,084.7	13,819.0	27,872.0	20,000.0	29,919.4	29,930.0	
4. Passive expenditures									
Job seekers' allowances	51,819.9	49,235	49,657.7	47,000.0	53,454.1	47,000.0	59,674.0	55,000.0	75,000.0
Transfer to Pension Insurance Fund	961.3	451.6	309.1	0.0					
5. Payments from Wage Guarantee Fund	5,487.8	4,178.5	3,790.7	4,950.0	3,994.3	4,000.0	3,341.2	4,000.0	4,500.0
6. Operational expenditures	1,472.8	2,418.3	2,816.0	3,283.4	2,899.3	3,500.0	2,785.6	2,900.0	4,310.0
7. Other budget contribution									70,000.0
15. Headline stability reserves				389.5	389.5				
Supplementary subsidies for employers									
16. Sectoral subsidy for minimum wage increase	7,000.0	9.1							
17. Other expenditures	22.3								
Total expenditures	349,498.9	389,162.1	389,708.5	484,177.1	438,068.3	645,768.4	459,791.6	443,930.0	522,574.8

Revenues	2013 actual	2014 actual	2015 actual	2016 plan	2016 actual	2017 plan	2017 actual	2018 plan	2019 plan
25. Revenues from SROP measures**	51,276.1	39,776.7	22,466.1	51,700.0	46,365	60,000.0	64,512.6	70,400.0	70,000.0
26. Other revenues									
Other revenues, regional	602.3	1,507.8	1,290.8	1,000.0	1,839.5	1,000.0	2,188.1	1,000.0	1,000.0
Other revenues, national	1,376.8	2,537.1	901.5	1,000.0	1,745.6	1,000.0	2,013.8	1,000.0	1,000.0
Other revenues from vocational and adult training	692.6	216.8	10,147.6	800.0	2,169.2	800.0	1,643.1	800.0	800.0
31. Vocational training contribution	60,398.7	60,910.8	65,308.2	56,996.1	70,327.6	60,706.7	80,074.5	74,436.3	95,490.6
33. Redemption of wage guarantee subsidies	1,046.1	934.5	663.6	1,000.0	424.6	1,000.0	783.0	1,000.0	1,000.0
34. Debt management revenues (technical)									
35. Part of health and labour market contributions payable to the National Employment Fund	125,614.6	135,819.4	144,953.2	150,476.4	155,369.2	165,801.9	176,338.0	194,169.2	216,621.9
36. Funding from the national budget	20,000.0		8,449.0	95,000.0	31,023.3			25,000.0	
38. Part of the social contribution tax payable to the National Employment Fund					68,605.5	217,539.6	194,435.5	0.0	68,001.0
Contribution to the Job Protection Action Plan	91,542.7	95,936.7	100,541.7	105,769.9	52,884.9				
Total revenues	352,549.9	337,639.8	354,721.7	463,742.4	430,754.4	507,848.2	521,988.5	367,805.5	453,913.2
Pending items	–964.6								
Changes in deposits	–2,086.4								
Total	351,560.1	389,162.1	354,721.7	484,177.1	430,754.4	507,848.2	521,988.5	367,805.5	453,913.2
At 2013 prices (deflated by a consumer price index)	351,560.1	389,942.0	355,788.4	483,698.2	430,328.4	495,455.0	509,250.2	349,056.2	430,774.5

* The ordinal numbers in the table correspond to the title numbers identifying the headlines of the national budget.

** Regarding 2017, 2018 and 2019 it includes the revenue "Reimbursement of the expenditures of the pre-financed EU programmes".

Source: The act on the national budget of Hungary (plan) and the act on the implementation of the national budget of the given year (actual); regarding the plan of 2013, the figure of 153,779.8 was modified by Government Decisions No. 1507/2013 of 1st August and 1783/2013 of 4th November with an additional budget of 26,118 million HUF to public works; regarding the plan of 2014, the original figure of 183,805.3 was modified by Government Decision 1361/2014 of 30th June (allocating an additional budget of 47,300 million HUF to public works). Regarding the plan of 2017, the figure was modified by Act LXXXVI on the modification of Act XC of 2016 on the 2017 Central Budget of Hungary'. The source of the expenses of EDIOP is Government Resolution No. 1006/2016 of 18th January on the annual development budget of the Economic Development and Innovation Operational Programme and further Government Decisions on its modification.

STATISTICAL DATA

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Statistical tables on labour market trends that have been published in The Hungarian Labour Market Yearbook since 2000 can be download in full from the website of the Research Centre for Economic and Regional Studies: http://adatbank.krtk.mta.hu/tukor_kereso

DATA SOURCES

CIRCA	Communication & Information Resource Centre Administrator
KSH	Table compiled from regular Central Statistical Office publications [Központi Statisztikai Hivatal]
KSH IMS	CSO institution-based labour statistics [KSH intézményi munkaügyi statisztika]
KSH MEF	CSO Labour Force Survey [KSH Munkaerő-felmérés]
KSH MEM	CSO Labour Force Account [KSH Munkaerő-mérleg]
NAV	National Tax and Customs Administration [Nemzeti Adó- és Vámhivatal]
NEFMI	Ministry of National Resources [Nemzeti Erőforrás Minisztérium]
NEFMI EMMI STAT	Ministry of National Resources, Educational Statistics [Nemzeti Erőforrás Minisztérium, Oktatásstatisztika]
NFA	National Market Fund [Nemzeti Foglalkoztatási Alap]
NFSZ	National Employment Service [Nemzeti Foglalkoztatási Szolgálat]
NFSZ BT	National Employment Service Wage Survey [NFSZ Bértarifa-felvétel]
NFSZ IR	NFSZ integrated tracking system [NFSZ Integrált (nyilvántartási) Rendszer]
NFSZ PROG	National Employment Service Short-term Labour Market Projection Survey [NFSZ Rövid Távú Munkaerőpiaci Prognózis]
NFSZ REG	National Employment Service Unemployment Register [NFSZ regisztere]
NGM	Ministry of National Economy [Nemzetgazdasági Minisztérium]
NMH	National Labour Office [Nemzeti Munkaügyi Hivatal]
NSZ	Population Census [Népszámlálás]
NYUFIG	Pension Administration [Nyugdíjfolyósító Igazgatóság]
ONYF	Central Administration of National Pension Insurance [Országos Nyugdíjbiztosítási Főigazgatóság]
TB	Social Security Records [Társadalombiztosítás]

EXPLANATION OF SYMBOLS

(–)	Non-occurrence.
(..)	Not available.
(n.a.)	Not applicable.
(...)	Data cannot be given due to data privacy restrictions.

Table 1.1: Basic economic indicators

Year	GDP[a]	Industrial production[b]	Export[c]	Import[c]	Real earnings	Employ-ment	Consumer price index	Unemploy-ment rate
1990	96.5	90.7	95.9	94.8	94.3	97.2	128.9	..
1995	101.5	104.6	108.4	96.1	87.8	98.1	128.2	10.2
2000	104.2	118.1	121.7	120.8	101.5	101.0	109.8	6.4
2001	103.8	103.7	107.7	104.0	106.4	100.3	109.2	5.7
2002	104.5	103.2	105.9	105.1	113.6	100.1	105.3	5.8
2003	103.8	106.9	109.1	110.1	109.2	101.3	104.7	5.9
2004	105.0	107.8	118.4	115.2	98.9	99.4	106.8	6.1
2005	104.4	106.8	111.5	106.1	106.3	100.0	103.6	7.2
2006	103.9	109.9	118.0	114.4	103.6	100.7	103.9	7.5
2007	100.4	107.9	115.8	112.0	95.4	99.3	108.0	7.4
2008	100.9	100.0	104.2	104.3	100.8	98.6	106.1	7.8
2009	93.4	82.2	87.3	82.9	97.7	97.4	104.2	10.0
2010	100.7	110.6	116.9	115.1	101.8	99.6	104.9	11.2
2011	101.7	105.6	109.9	106.7	102.4	100.7	103.9	11.0
2012	98.4	98.2	100.7	99.9	96.6	101.8	105.7	11.0
2013	102.1	101.1	104.2	105.0	103.1	101.7	101.7	10.2
2014	104.2	107.7	106.9	108.8	103.2	105.3	99.8	7.7
2015	103.5	107.4	107.8	106.3	104.4	102.7	99.9	6.8
2016	102.3	100.9	104.4	104.9	107.4	103.4	100.4	5.1
2017	104.1	104.6	105.9	108.3	110.3	101.6	102.4	4.2
2018	104.9	103.6	104.2	106.3	108.3	101.1	102.8	3.7

[a] After 1996 there was a change in the methodology for accounting the undivided service fee of financial intermediation. The method of measurement changed in 2014 with the adoption of ESA2010 (European System of National and Regional Accounts). Unadjusted data. Previous year = 100.

[b] 1990–2000: those with more than 5 employees, 2001–: excluding water and waste management, including businesses with fewer than 5 employees.

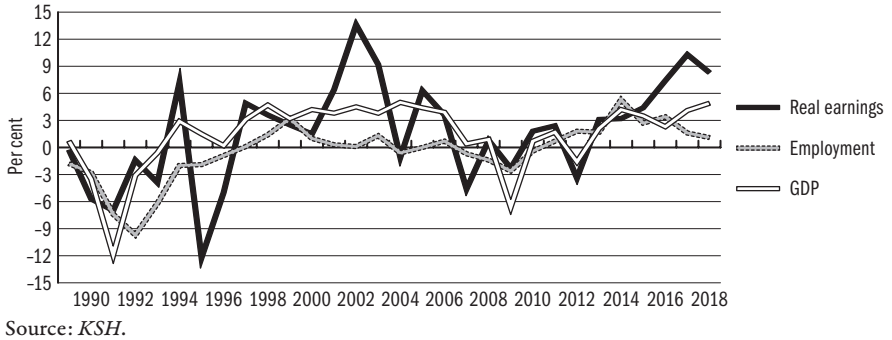
[c] Volume index.

Note: Previous year = 100, except for unemployment rate.

Source: GDP: *STADAT* (2019.03.01. version). Industrial production index: 2001–: *STADAT* (2019.04.12. version). Export and import: 2001–: *STADAT* (2019.03.04. version). Real earnings: 1995–: *STADAT* (2019.02.21. version). Employment: 1990: *KSH MEM*; 1995–: *KSH MEF* (2019.03.13. version). Consumer price index: *STADAT* (2019.01.15. version). Unemployment rate: *STADAT* (2019.03.13. version). Other data: *KSH*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent01_01

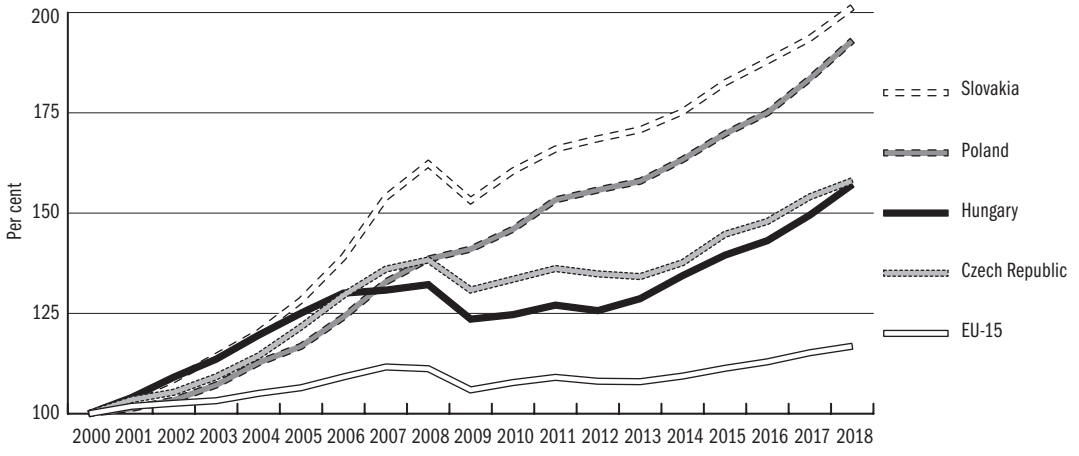
Figure 1.1: Annual changes of basic economic indicators



Source: *KSH*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena01_01

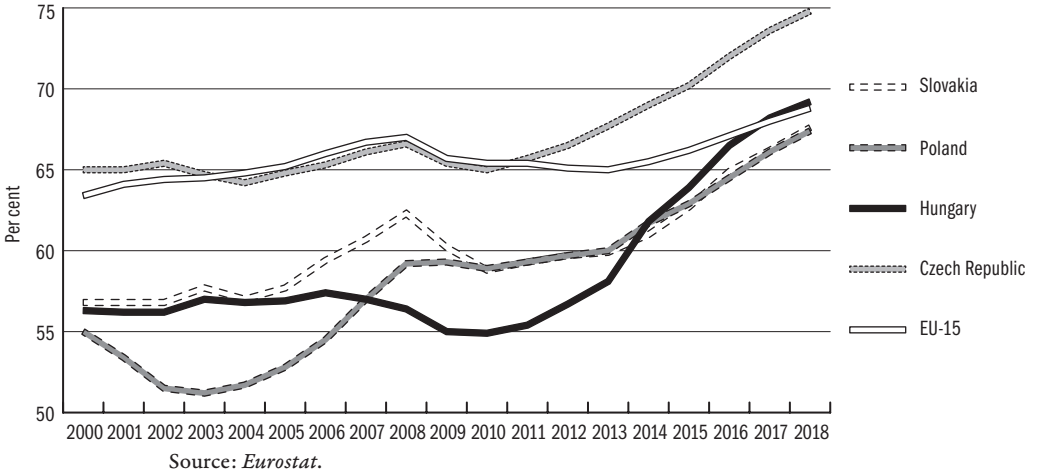
Figure 1.2: Annual GDP time series (2000 = 100%)



Source: *Eurostat*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena01_02

Figure 1.3: Employment rate of population aged 15 –64



Source: *Eurostat*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena01_03

Table 2.1: Population[a]

Year	In thousands	1992 = 100	Annual changes	Population age 15 –64, in thousands	Demographic dependency rate	
					Total population[b]	Old age[c]
2000	10,221	98.5	–0.3	6,961.3	0.47	0.21
2005	10,098	97.3	–0.2	6,940.3	0.45	0.23
2006	10,077	97.1	–0.2	6,931.8	0.45	0.23
2007	10,066	97.0	–0.1	6,932.4	0.45	0.23
2008	10,045	96.8	–0.2	6,912.7	0.45	0.24
2009	10,031	96.7	–0.1	6,898.1	0.45	0.24
2010	10,014	96.5	–0.1	6,874.0	0.46	0.24
2011	9,986	96.3	–0.2	6,857.4	0.46	0.24
2012	9,932	95.7	..	6,815.7	0.46	0.25
2013	9,909	95.5	–0.2	6,776.3	0.46	0.25
2014	9,877	95.2	–0.3	6,719.7	0.47	0.26
2015	9,856	95.0	–0.2	6,664.2	0.48	0.27
2016	9,830	94.7	–0.3	6,609.4	0.49	0.27
2017	9,798	94.4	–0.3	6,546.7	0.50	0.28
2018	9,778	94.2	–0.5	6,504.5	0.50	0.28

[a] January 1st. The data for 2000 –2011 are estimates based on the 2001 census and demographic data (reference date 2001.02.01.). Those for 2012 –2016 are estimates based on the 2011 census (reference day 2011.10.01.) and demographic data.
[b] (population age 0–14 + 65 and above) / (population age 15–64)
[c] (population age 65 and above) / (population age 15–64)
Source: *KSH STADAT* (2018.06.29. version)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent02_01

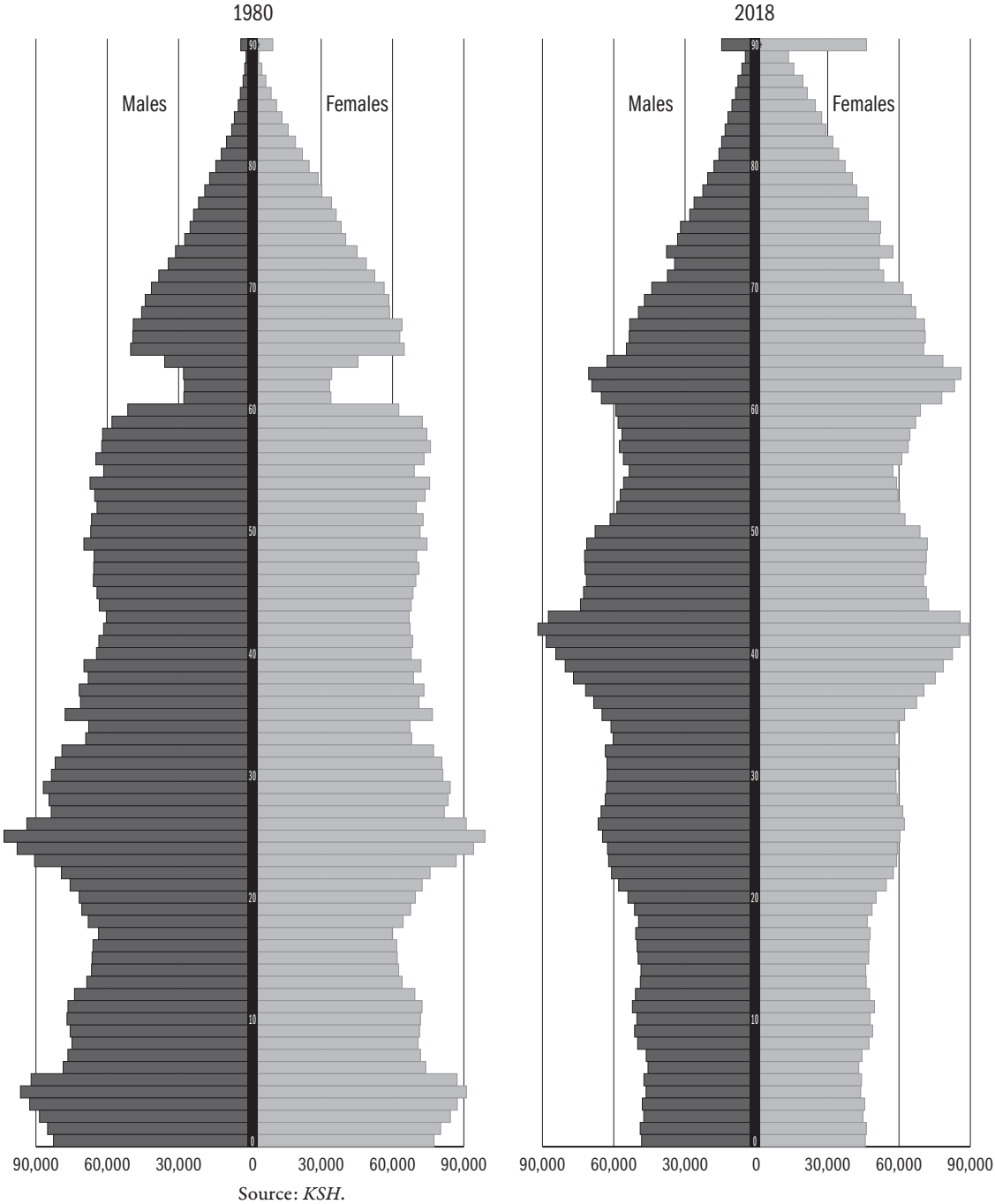
Table 2.2: Population by age groups, in thousands[a]

Year	0–14	15–24	25–54	55–64	65+	Total
			years old			
2000	1,729.2	1,526.5	4,291.4	1,143.4	1,531.1	10,221.6
2005	1,579.7	1,322.0	4,409.1	1,209.2	1,577.6	10,097.6
2006	1,553.5	1,302.0	4,399.8	1,230.0	1,590.7	10,076.6
2007	1,529.7	1,285.9	4,393.9	1,251.5	1,605.1	10,066.1
2008	1,508.8	1,273.3	4,377.1	1,262.3	1,623.9	10,045.4
2009	1,492.6	1,259.9	4,346.1	1,292.0	1,640.3	10,030.9
2010	1,476.9	1,253.4	4,293.7	1,326.9	1,663.5	10,014.4
2011	1,457.2	1,231.7	4,257.7	1,367.8	1,671.3	9,985.7
2012	1,440.3	1,214.1	4,164.6	1,437.0	1,675.9	9,931.9
2013	1,430.9	1,196.4	4,144.8	1,435.0	1,701.7	9,908.8
2014	1,425.8	1,172.8	4,123.8	1,423.2	1,731.8	9,877.4
2015	1,427.2	1,147.1	4,112.6	1,404.5	1,764.2	9,855.6
2016	1,424.4	1,120.1	4,109.6	1,379.7	1,796.6	9,830.4
2017	1,422.9	1,089.7	4,105.3	1,351.4	1,828.3	9,797.6
2018	1,421.9	1,068.0	4,118.7	1,317.8	1,852.0	9,778.4

[a] January 1st. The data for 2000 –2011 are estimates based on the 2001 census and demographic data (reference date 2001.02.01.). Those for 2012 –2016 are estimates based on the 2011 census (reference day 2011.10.01.) and demographic data.
Source: *KSH STADAT* (2018.06.29. version)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent02_02

Figure 2.1: Age structure of the Hungarian population, 1980, 2018



Source: *KSH*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena02_01

Table 2.3: Male population by age groups, in thousands[a]

Year	0–14	15–24	25–59	60–64	65+	Total
			years old			
2000	885.0	780.9	2,403.8	224.8	570.8	4,865.2
2005	809.5	674.6	2,480.0	252.2	576.8	4,793.1
2006	796.7	664.0	2,493.7	249.3	580.9	4,784.6
2007	784.5	655.4	2,503.7	249.4	586.1	4,779.1
2008	773.9	649.2	2,501.3	252.5	592.8	4,769.6
2009	765.8	642.7	2,497.0	258.4	599.2	4,763.1
2010	757.7	640.4	2,488.8	261.7	608.3	4,756.9
2011	747.6	629.7	2,480.4	274.7	611.5	4,743.9
2012	739.5	623.1	2,449.9	294.1	617.9	4,724.6
2013	734.7	614.4	2,439.4	297.0	630.5	4,716.0
2014	732.2	602.1	2,419.1	305.3	644.7	4,703.4
2015	732.8	589.1	2,395.1	319.1	659.7	4,695.8
2016	731.3	575.8	2,379.0	327.1	675.3	4,688.5
2017	730.4	560.3	2,365.0	330.8	688.9	4,675.4
2018	730.0	549.2	2,365.5	327.0	699.9	4,671.6

[a] January 1st. The data for 2000 –2011 are estimates based on the 2001 census and demographic data (reference date 2001.02.01.). Those for 2012 –2016 are estimates based on the 2011 census (reference day 2011.10.01.) and demographic data.
Source: *KSH STADAT* (2018.06.29. version)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent02_03

Table 2.4: Female population by age groups, in thousands[a]

Year	0–14	15–24	25–54	55–59	60+	Total
			years old			
2000	844.3	745.6	2,170.5	334.8	1,261.3	5,356.5
2005	770.2	647.4	2,221.9	341.7	1,323.1	5,304.3
2006	756.8	638.6	2,213.0	356.6	1,327.0	5,292.0
2007	745.1	630.6	2,206.8	369.6	1,335.0	5,287.1
2008	734.9	624.1	2,194.5	373.2	1,349.1	5,275.8
2009	726.8	617.2	2,176.0	381.8	1,366.1	5,267.9
2010	719.2	613.1	2,145.5	396.8	1,382.8	5,257.4
2011	709.6	601.9	2,124.0	404.4	1,401.9	5,241.8
2012	700.8	590.9	2,079.5	416.2	1,419.9	5,207.3
2013	696.2	582.0	2,066.5	411.2	1,436.9	5,192.8
2014	693.6	570.7	2,052.7	395.5	1,461.5	5,174.0
2015	694.4	558.0	2,043.2	370.2	1,494.0	5,159.8
2016	693.1	544.3	2,037.9	347.4	1,519.2	5,142.0
2017	692.5	529.4	2,032.5	327.9	1,539.9	5,122.3
2018	691.9	518.8	2,035.0	314.1	1,547.0	5,106.8

[a] January 1st. The data for 2000 –2011 are estimates based on the 2001 census and demographic data (reference date 2001.02.01.). Those for 2012 –2016 are estimates based on the 2011 census (reference day 2011.10.01.) and demographic data.
Source: *KSH STADAT* (2018.06.29. version)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent02_04

Table 3.1: Labour force participation of the population over 14 years, in thousands[a]

	Population of males 15–59 and females 15–54								Population of males over 59 and females over 54			
			Inactive									
Year	Employed	Unemployed	Pensioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Employed	Unemployed	Pensioner, other inactive	Total
1980	4,887.9	0.0	300.8	370.1	259.0	339.7	1,269.6	6,157.5	570.3	0.0	1,632.1	2,202.4
1990	4,534.3	62.4	284.3	548.9	249.7	297.5	1,380.4	5,977.1	345.7	0.0	1,944.9	2,290.6
1991	4,270.5	253.3	335.6	578.2	259.8	317.1	1,490.7	6,014.5	249.5	0.0	2,045.2	2,294.7
1992	3,898.4	434.9	392.7	620.0	262.1	435.9	1,710.7	6,044.0	184.3	9.8	2,101.7	2,295.8
1993	3,689.5	502.6	437.5	683.9	270.5	480.1	1,872.0	6,064.1	137.5	16.3	2,141.2	2,295.0
1994	3,633.1	437.4	476.5	708.2	280.9	540.7	2,006.3	6,076.8	118.4	11.9	2,163.8	2,294.1
1995	3,571.3	410.0	495.2	723.4	285.3	596.1	2,100.0	6,081.3	107.5	6.4	2,180.6	2,294.5
1996	3,546.1	394.0	512.7	740.0	289.2	599.4	2,141.2	6,081.3	102.1	6.1	2,184.6	2,292.8
1997	3,549.5	342.5	542.9	752.0	289.0	599.9	2,183.8	6,075.8	96.9	6.3	2,189.0	2,292.2
1998	3,608.5	305.5	588.8	697.0	295.5	565.7	2,147.0	6,061.0	89.3	7.5	2,197.6	2,294.4
1999	3,701.0	283.3	534.7	675.6	295.3	549.8	2,055.4	6,039.6	110.4	1.4	2,185.2	2,297.0
2000	3,745.9	261.4	517.9	721.7	281.4	571.4	2,092.4	6,099.7	130.3	2.3	2,268.0	2,400.6
2001	3,742.6	231.7	516.3	717.9	286.6	601.6	2,122.4	6,096.7	140.7	2.4	2,271.8	2,414.9
2002	3,719.6	235.7	507.1	738.3	286.8	593.0	2,125.2	6,080.5	164.1	3.2	2,263.9	2,431.2
2003	3,719.0	239.6	485.0	730.7	286.9	595.0	2,097.6	6,056.2	202.9	4.9	2,245.6	2,453.4
2004	3,663.1	247.2	480.5	739.8	282.4	622.4	2,125.1	6,035.4	237.3	5.7	2,236.1	2,479.1
2005	3,653.9	296.0	449.7	740.8	278.6	590.3	2,059.4	6,009.3	247.6	7.9	2,258.3	2,513.8
2006	3,680.1	309.9	416.1	811.4	261.1	524.3	2,012.9	6,002.9	248.3	8.4	2,270.2	2,526.9
2007	3,649.5	303.7	413.2	822.7	273.9	519.7	2,029.5	5,982.7	252.5	8.4	2,292.9	2,553.8
2008	3,596.3	315.5	394.7	814.3	282.2	549.0	2,040.2	5,952.0	252.0	10.9	2,323.6	2,586.5
2009	3,480.9	403.0	360.3	805.7	282.0	578.4	2,026.4	5,910.3	266.9	14.8	2,345.7	2,627.4
2010	3,435.8	450.1	336.6	805.4	275.9	558.1	1,976.0	5,861.9	298.5	19.3	2,353.3	2,671.1
2011	3,430.1	440.9	296.4	783.8	280.7	557.9	1,932.0	5,789.8	328.9	25.1	2,366.3	2,720.3
2012	3,498.6	447.0	260.1	769.6	263.2	484.3	1,777.2	5,722.8	328.6	26.1	2,407.2	2,761.9
2013	3,551.1	415.7	247.6	737.3	255.4	466.4	1,706.7	5,673.5	341.6	25.2	2,424.5	2,791.3
2014	3,720.7	317.5	222.3	701.2	237.8	412.5	1,573.8	5,612.0	380.0	25.8	2,419.0	2,824.8
2015	3,782.1	281.3	197.3	688.8	240.0	368.1	1,494.2	5,557.6	428.4	26.5	2,400.8	2,855.7
2016	3,860.6	211.3	181.6	656.3	242.4	361.2	1,441.5	5,483.8	491.0	23.3	2,364.1	2,878.4
2017	3,909.9	172.2	164.1	636.5	233.1	362.0	1,362.5	5,444.7	511.4	19.6	2,356.7	2,887.7
2018	3,933.9	158.3	140.9	627.6	232.1	368.4	1,369.0	5,461.2	535.6	13.6	2,339.2	2,888.4

[a] Annual average figures.

Note: Up to the year 1999, weighting is based on the 1990 population census. From 2000 to 2011, weighting is based on the 2001 population census. From 2012 onwards population weights are based on the 2011 population census. To ensure comparability, the estimates for 2006 –2011 have been modified by the new weighting scheme.

Data on 'employed' includes conscripts and those working while receiving pension or child support. The data on students for 1995–97 are estimates.

'Other inactive' is a residual category calculated by deducting the sum of the figures in the indicated categories from the mid-year population, so it includes the institutional population not observed by MEF. The population weights have been corrected using the 2011 Census data.

Source: Pensioners: 1980–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990–91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_01

Table 3.2: Labour force participation of the population over 14 years, males, in thousands[a]

Year	Population of males 15–59								Population of males 60 and over			
	Employed	Unemployed	Inactive					Total	Employed	Unemployed	Pensioner, other inactive	Total
			Pensioner	Full time student	On child care leave	Other inactive	Inactive total					
1980	2,750.5	0.0	173.8	196.3	0.0	99.1	469.2	3,219.7	265.3	0.0	491.8	757.1
1990	2,524.3	37.9	188.4	284.2	1.2	80.3	554.1	3,116.3	123.7	0.0	665.5	789.2
1991	2,351.6	150.3	218.7	296.5	1.5	115.0	631.7	3,133.6	90.4	0.0	700.7	791.1
1992	2,153.1	263.2	252.0	302.4	1.7	174.8	730.9	3,147.2	65.1	3.2	722.1	790.4
1993	2,029.1	311.5	263.2	346.9	2.0	203.3	815.4	3,156.0	47.9	4.5	735.7	788.1
1994	2,013.4	270.0	277.6	357.1	3.7	239.6	878.0	3,161.4	41.6	3.8	740.0	785.4
1995	2,012.5	259.3	282.2	367.4	4.9	237.8	892.3	3,164.1	37.1	2.1	742.6	781.8
1996	2,007.4	242.4	291.9	372.8	3.3	248.3	916.3	3,166.1	28.9	1.3	746.3	776.5
1997	2,018.0	212.2	306.0	377.6	1.5	251.6	936.7	3,166.9	25.5	1.9	743.5	770.9
1998	2,015.5	186.5	345.4	350.4	1.0	264.2	961.0	3,163.0	26.2	2.8	737.3	766.3
1999	2,068.4	170.3	312.7	338.8	4.2	261.5	917.2	3,155.9	34.7	0.4	727.2	762.3
2000	2,086.0	158.2	315.2	358.2	4.1	261.7	939.2	3,183.4	39.8	0.7	758.8	799.3
2001	2,087.6	141.6	311.0	353.4	4.3	283.2	951.9	3,181.1	41.1	0.9	763.0	805.0
2002	2,080.4	137.3	307.5	370.3	5.0	273.4	956.2	3,173.9	45.2	0.7	764.4	810.3
2003	2,073.5	137.6	293.6	367.9	4.3	288.1	953.9	3,165.0	53.0	0.9	762.5	816.4
2004	2,052.7	136.2	293.5	371.2	4.6	300.2	969.5	3,158.4	64.6	0.6	758.8	824.0
2005	2,050.7	158.2	278.8	375.4	5.8	288.8	948.8	3,157.7	65.4	0.9	763.9	830.2
2006	2,078.4	163.4	258.9	404.1	4.0	249.6	916.6	3,158.4	60.2	1.1	771.5	832.8
2007	2,067.4	162.5	261.8	410.2	4.1	248.8	924.9	3,154.8	61.9	1.0	777.5	840.4
2008	2,033.6	172.7	261.2	408.3	4.7	264.6	938.8	3,145.1	60.0	1.0	790.4	851.4
2009	1,961.9	230.3	240.1	409.0	4.4	288.7	942.2	3,134.4	63.1	1.6	798.9	863.6
2010	1,929.5	259.5	228.7	410.3	4.6	287.1	930.7	3,119.7	63.0	2.2	812.9	878.1
2011	1,950.9	248.7	203.7	397.9	3.6	286.8	892.0	3,091.6	70.1	2.9	826.2	899.2
2012	1,979.2	257.9	187.7	395.6	4.2	238.8	826.3	3,063.4	69.6	4.1	846.1	919.8
2013	2,022.2	234.4	169.5	375.6	3.8	232.0	780.9	3,037.5	81.5	4.8	852.4	938.7
2014	2,120.3	173.1	151.3	352.5	3.0	200.9	707.7	3,001.1	100.1	8.6	855.6	964.3
2015	2,152.1	152.1	133.7	345.1	3.1	181.4	663.3	2,967.5	131.4	9.8	849.3	990.5
2016	2,192.4	119.0	119.6	332.3	3.8	173.6	629.3	2,940.7	170.1	8.5	832.5	1,011.1
2017	2,228.9	89.8	107.3	322.9	1.9	169.2	601.2	2,920.0	188.4	6.0	828.8	1,023.2
2018	2,245.4	83.9	94.2	315.9	1.3	171.0	582.4	2,911.7	200.8	4.1	824.4	1,029.3

[a] Annual average figures.

Note: Up to the year 1999, weighting is based on the 1990 population census. From 2000 to 2011, weighting is based on the 2001 population census. From 2012 onwards population weights are based on the 2011 population census. To ensure comparability, the estimates for 2006 –2011 have been modified by the new weighting scheme.

Data on 'employed' includes conscripts and those working while receiving pension or child support. The data on students for 1995–97 are estimates.

'Other inactive' is a residual category calculated by deducting the sum of the figures in the indicated categories from the mid-year population, so it includes the institutional population not observed by MEF. The population weights have been corrected using the 2011 Census data.

Source: Pensioners: 1980–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990–91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_02

Table 3.3: Labour force participation of the population over 14 years, females, in thousands[a]

Year	Population of females 15–54								Population of females 55 and above			
	Employed	Unemployed	Inactive					Total	Employed	Unemployed	Pensioner, other inactive	Total
			Pensioner	Full time student	On child care leave	Other inactive	Inactive total					
1980	2,137.4	0.0	127.0	173.8	259.0	240.6	800.4	2,937.8	305.0	0.0	1,140.3	1,445.3
1990	2,010.0	24.5	95.8	264.7	248.5	217.3	826.3	2,860.8	222.0	0.0	1,279.4	1,501.4
1991	1,918.9	103.1	116.9	281.8	258.3	201.9	858.9	2,880.9	159.1	0.0	1,344.5	1,503.6
1992	1,745.3	171.7	140.8	317.6	260.4	261.1	979.9	2,896.9	119.2	6.6	1,379.6	1,505.4
1993	1,660.4	191.1	174.3	337.0	268.5	276.8	1,056.6	2,908.1	89.6	11.8	1,405.5	1,506.9
1994	1,619.7	167.4	198.9	351.1	277.2	301.1	1,128.3	2,915.4	76.8	8.1	1,423.8	1,508.7
1995	1,558.8	150.7	213.0	356.0	280.4	358.3	1,207.7	2,917.2	70.4	4.3	1,438.0	1,512.7
1996	1,538.7	151.6	220.7	367.2	285.9	351.1	1,224.9	2,915.2	73.2	4.8	1,438.3	1,516.3
1997	1,531.5	130.3	236.9	374.4	287.5	348.3	1,247.1	2,908.9	71.4	4.4	1,445.3	1,521.1
1998	1,593.0	119.0	243.4	346.6	294.5	301.5	1,186.0	2,898.0	63.1	4.7	1,460.3	1,528.1
1999	1,632.6	113.0	222.0	336.8	291.1	288.3	1,138.2	2,883.8	75.8	1.0	1,458.0	1,534.8
2000	1,659.9	103.2	202.7	363.5	277.3	309.7	1,153.2	2,916.3	90.5	1.6	1,509.2	1,601.3
2001	1,655.0	90.1	205.3	364.5	282.3	318.3	1,170.4	2,915.5	99.6	1.5	1,508.8	1,609.9
2002	1,639.2	98.4	199.6	368.0	281.8	319.6	1,169.0	2,906.6	118.9	2.5	1,499.5	1,620.9
2003	1,645.6	102.0	191.4	362.8	282.6	306.9	1,143.7	2,891.2	149.9	4.0	1,483.2	1,637.1
2004	1,610.2	111.0	186.8	368.6	277.8	322.2	1,155.4	2,876.6	172.8	5.1	1,477.3	1,655.2
2005	1,603.2	137.8	170.9	365.4	272.8	301.5	1,110.6	2,851.6	182.2	7.0	1,494.4	1,683.6
2006	1,601.7	146.5	157.2	407.3	257.1	274.7	1,096.3	2,844.5	188.1	7.3	1,498.7	1,694.1
2007	1,582.1	141.2	151.4	412.5	269.8	270.9	1,104.6	2,827.9	190.6	7.4	1,515.4	1,713.4
2008	1,562.7	142.8	133.5	406.0	277.5	284.4	1,101.4	2,806.9	192.0	9.9	1,533.2	1,735.1
2009	1,519.0	172.7	120.2	396.7	277.6	289.7	1,084.2	2,775.9	203.8	13.2	1,546.8	1,763.8
2010	1,506.3	190.6	107.9	395.1	271.3	271.0	1,045.3	2,742.2	235.5	17.1	1,540.4	1,793.0
2011	1,479.2	192.2	92.7	385.9	277.1	271.1	1,040.0	2,698.2	258.8	22.2	1,540.1	1,821.1
2012	1,519.4	189.1	72.4	374.0	259.0	245.5	950.9	2,659.4	259.0	22.0	1,561.1	1,842.1
2013	1,528.9	181.3	78.1	361.7	251.6	234.4	925.8	2,636.0	260.1	20.4	1,572.1	1,852.6
2014	1,600.4	144.4	71.0	348.7	234.8	211.6	866.1	2,610.9	279.9	17.2	1,563.4	1,860.5
2015	1,630.0	129.2	63.6	343.7	236.9	186.7	830.9	2,590.1	297.0	16.7	1,551.5	1,865.2
2016	1,668.2	92.3	62.0	324.0	238.6	187.6	812.2	2,543.1	320.9	14.8	1,531.6	1,867.3
2017	1,681.0	82.4	56.8	313.6	231.2	192.8	761.3	2,524.7	323.0	13.6	1,527.9	1,864.5
2018	1,688.5	74.4	46.8	311.7	230.7	197.4	786.6	2,549.5	334.8	9.5	1,514.8	1,859.1

[a] Annual average figures.

Note: Up to the year 1999, weighting is based on the 1990 population census. From 2000 to 2011, weighting is based on the 2001 population census. From 2012 onwards population weights are based on the 2011 population census. To ensure comparability, the estimates for 2006 –2011 have been modified by the new weighting scheme.

Data on 'employed' includes conscripts and those working while receiving pension or child support. The data on students for 1995–97 are estimates.

'Other inactive' is a residual category calculated by deducting the sum of the figures in the indicated categories from the mid-year population, so it includes the institutional population not observed by MEF. The population weights have been corrected using the 2011 Census data.

Source: Pensioners: 1980–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990–91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_03

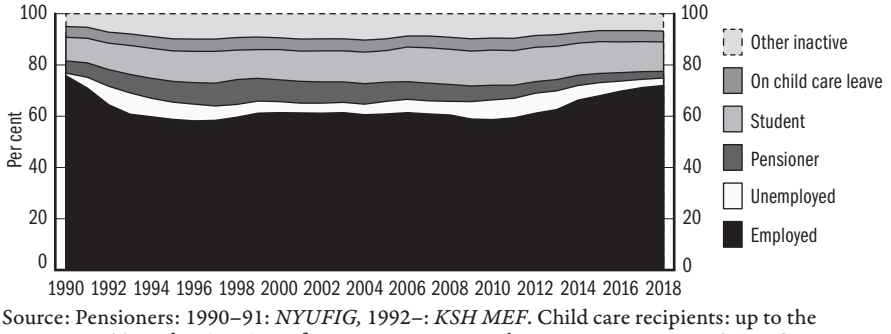
Table 3.4: Labour force participation of the population over 14 years, per cent

Year	Population of males 15–59 and females 15–54								Population of males over 59 and female over 54			
	Employed	Unemployed	Inactive					Total	Employed	Unemployed	Pensioner, other inactive	Total
			Pensioner	Full time student	On child care leave	Other inactive	Inactive total					
1980	79.4	0.0	4.9	6.0	4.2	5.5	20.6	100.0	25.9	0.0	74.1	100.0
1990	75.9	1.0	4.8	9.2	4.2	5.0	23.1	100.0	15.1	0.0	84.9	100.0
1995	58.7	6.7	8.1	11.9	4.7	9.8	34.5	100.0	4.7	0.3	95.0	100.0
2000	61.4	4.3	8.5	11.8	4.6	9.4	34.3	100.0	5.4	0.1	94.5	100.0
2001	61.4	3.8	8.5	11.8	4.7	9.9	34.8	100.0	5.8	0.1	94.1	100.0
2002	61.2	3.9	8.3	12.1	4.7	9.8	35.0	100.0	6.7	0.1	93.1	100.0
2003	61.4	4.0	8.0	12.1	4.7	9.8	34.6	100.0	8.3	0.2	91.5	100.0
2004	60.7	4.1	8.0	12.3	4.7	10.3	35.2	100.0	9.6	0.2	90.2	100.0
2005	60.8	4.9	7.5	12.3	4.6	9.8	34.3	100.0	9.8	0.3	89.8	100.0
2006	61.3	5.2	6.9	13.5	4.3	8.7	33.5	100.0	9.8	0.3	89.8	100.0
2007	61.0	5.1	6.9	13.8	4.6	8.7	33.9	100.0	9.9	0.3	89.8	100.0
2008	60.4	5.3	6.6	13.7	4.7	9.2	34.3	100.0	9.7	0.4	89.8	100.0
2009	58.9	6.8	6.1	13.6	4.8	9.8	34.3	100.0	10.2	0.6	89.3	100.0
2010	58.6	7.7	5.7	13.7	4.7	9.5	33.7	100.0	11.2	0.7	88.1	100.0
2011	59.2	7.6	5.1	13.5	4.8	9.6	33.1	100.0	12.1	0.9	87.0	100.0
2012	61.1	7.8	4.5	13.4	4.6	8.5	31.1	100.0	11.9	0.9	87.2	100.0
2013	62.6	7.3	4.4	13.0	4.5	8.2	30.1	100.0	12.2	0.9	86.9	100.0
2014	66.3	5.7	4.0	12.5	4.2	7.3	28.0	100.0	13.5	0.9	85.6	100.0
2015	68.1	5.1	3.6	12.4	4.3	6.6	26.9	100.0	15.0	0.9	84.1	100.0
2016	70.4	3.9	3.3	12.0	4.4	6.6	26.3	100.0	17.1	0.8	82.1	100.0
2017	71.8	3.2	3.0	11.7	4.3	6.6	25.0	100.0	17.7	0.7	81.6	100.0
2018	72.0	2.9	2.6	11.5	4.2	6.7	25.1	100.0	18.5	0.5	81.0	100.0

Source: Pensioners: 1980–90: *NYUFIG,* 1995–: *KSH MEF*. Child care recipients: up to the year 1995 *TB* and estimation, after 1995 *MEF*. Unemployment: 1990: *NFSZ REG,* 1995–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_04

Figure 3.1: Labour force participation of population for males 15–59 and females 15–54, total



Source: Pensioners: 1990–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990 –91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena03_01

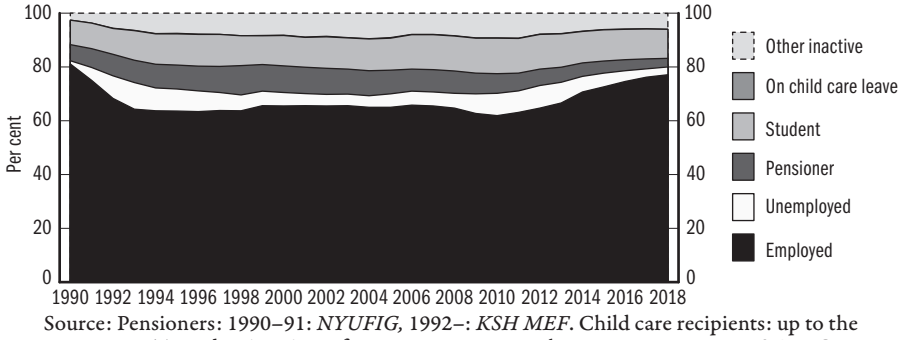
Table 3.5: Labour force participation of the population over 14 years, males, per cent

Year	Population of males 15–59								Population of males 60 and above			
	Employed	Unemployed	Inactive					Total	Employed	Unemployed	Pensioner, other inactive	Total
			Pensioner	Full time student	On child care leave	Other inactive	Inactive total					
1980	85.4	0.0	5.4	6.1	0.0	3.1	14.6	100.0	35.0	0.0	65.0	100.0
1990	81.0	1.2	6.0	9.1	0.0	2.6	17.8	100.0	15.7	0.0	84.3	100.0
1995	63.6	8.2	8.9	11.6	0.2	7.5	28.2	100.0	4.7	0.3	95.0	100.0
1996	63.4	7.7	9.2	11.8	0.1	7.8	28.9	100.0	3.7	0.2	96.1	100.0
1997	63.7	6.7	9.7	11.9	0.0	7.9	29.6	100.0	3.3	0.2	96.4	100.0
1998	63.7	5.9	10.9	11.1	0.0	8.4	30.4	100.0	3.4	0.4	96.2	100.0
1999	65.5	5.4	9.9	10.7	0.1	8.3	29.1	100.0	4.6	0.1	95.4	100.0
2000	65.5	5.0	9.9	11.3	0.1	8.2	29.5	100.0	5.0	0.1	94.9	100.0
2001	65.6	4.5	9.8	11.1	0.1	8.9	29.9	100.0	5.1	0.1	94.8	100.0
2002	65.5	4.3	9.7	11.7	0.2	8.6	30.1	100.0	5.6	0.1	94.3	100.0
2003	65.5	4.3	9.3	11.6	0.1	9.1	30.1	100.0	6.5	0.1	93.4	100.0
2004	65.0	4.3	9.3	11.8	0.1	9.5	30.7	100.0	7.8	0.1	92.1	100.0
2005	64.9	5.0	8.8	11.9	0.2	9.1	30.0	100.0	7.9	0.1	92.0	100.0
2006	65.8	5.2	8.2	12.8	0.1	7.9	29.0	100.0	7.2	0.1	92.6	100.0
2007	65.5	5.2	8.3	13.0	0.1	7.9	29.3	100.0	7.4	0.1	92.5	100.0
2008	64.7	5.5	8.3	13.0	0.1	8.4	29.8	100.0	7.0	0.1	92.8	100.0
2009	62.6	7.3	7.7	13.0	0.1	9.2	30.1	100.0	7.3	0.2	92.5	100.0
2010	61.8	8.3	7.3	13.2	0.1	9.2	29.8	100.0	7.2	0.3	92.6	100.0
2011	63.1	8.0	6.6	12.9	0.1	9.3	28.9	100.0	7.8	0.3	91.9	100.0
2012	64.6	8.4	6.1	12.9	0.1	7.8	27.0	100.0	7.6	0.4	92.0	100.0
2013	66.6	7.7	5.6	12.4	0.1	7.6	25.7	100.0	8.7	0.5	90.8	100.0
2014	70.7	5.8	5.0	11.7	0.1	6.7	23.6	100.0	10.4	0.9	88.7	100.0
2015	72.5	5.1	4.5	11.6	0.1	6.1	22.4	100.0	13.3	1.0	85.7	100.0
2016	74.6	4.0	4.1	11.3	0.1	5.9	21.4	100.0	16.8	0.8	82.3	100.0
2017	76.3	3.1	3.7	11.1	0.1	5.8	20.6	100.0	18.4	0.6	81.0	100.0
2018	77.1	2.9	3.2	10.8	0.0	5.9	20.0	100.0	19.5	0.4	80.1	100.0

Source: Pensioners: 1980–90: *NYUFIG,* 1995–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990: *NFSZ REG,* 1995–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_05

Figure 3.2: Labour force participation of population for males 15–59



Source: Pensioners: 1990–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990 –91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena03_02

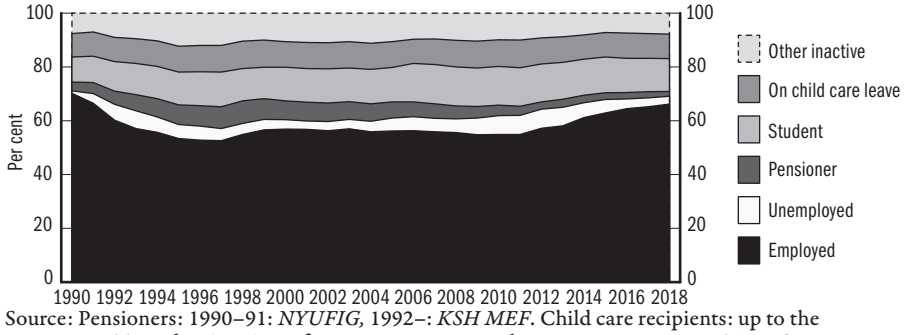
Table 3.6: Labour force participation of the population over 14 years, females, per cent

Year	Population of females 15-54								Population of females 55 and above			
	Employed	Unemployed	Inactive					Total	Employed	Unemployed	Pensioner, other inactive	Total
			Pensioner	Full time student	On child care leave	Other inactive	Inactive total					
1980	72.8	0.0	4.3	5.9	8.8	8.2	27.2	100.0	21.1	0.0	78.9	100.0
1990	70.3	0.9	3.3	9.3	8.7	7.6	28.9	100.0	14.8	0.0	85.2	100.0
1995	53.4	5.2	7.3	12.2	9.6	12.3	41.4	100.0	4.7	0.3	95.1	100.0
1996	52.8	5.2	7.6	12.6	9.8	12.0	42.0	100.0	4.8	0.3	94.9	100.0
1997	52.6	4.5	8.1	12.9	9.9	12.0	42.9	100.0	4.7	0.3	95.0	100.0
1998	55.0	4.1	8.4	12.0	10.2	10.4	40.9	100.0	4.1	0.3	95.6	100.0
1999	56.6	3.9	7.7	11.7	10.1	10.0	39.5	100.0	4.9	0.1	95.0	100.0
2000	56.9	3.5	7.0	12.5	9.5	10.6	39.5	100.0	5.7	0.1	94.2	100.0
2001	56.8	3.1	7.0	12.5	9.7	10.9	40.1	100.0	6.2	0.1	93.7	100.0
2002	56.4	3.4	6.9	12.7	9.7	11.0	40.2	100.0	7.3	0.2	92.5	100.0
2003	56.9	3.5	6.6	12.5	9.8	10.6	39.6	100.0	9.2	0.2	90.6	100.0
2004	56.0	3.9	6.5	12.8	9.7	11.2	40.2	100.0	10.4	0.3	89.3	100.0
2005	56.2	4.8	6.0	12.8	9.6	10.6	38.9	100.0	10.8	0.4	88.8	100.0
2006	56.3	5.2	5.5	14.3	9.0	9.7	38.5	100.0	11.1	0.4	88.5	100.0
2007	55.9	5.0	5.4	14.6	9.5	9.6	39.1	100.0	11.1	0.4	88.4	100.0
2008	55.7	5.1	4.8	14.5	9.9	10.1	39.2	100.0	11.1	0.6	88.4	100.0
2009	54.7	6.2	4.3	14.3	10.0	10.4	39.1	100.0	11.6	0.7	87.7	100.0
2010	54.9	7.0	3.9	14.4	9.9	9.9	38.1	100.0	13.1	1.0	85.9	100.0
2011	54.8	7.1	3.4	14.3	10.3	10.0	38.1	100.0	14.2	1.2	84.6	100.0
2012	57.1	7.1	2.7	14.1	9.7	9.2	36.0	100.0	14.1	1.2	84.7	100.0
2013	58.0	6.9	3.0	13.7	9.5	8.8	35.1	100.0	14.0	1.1	84.9	100.0
2014	61.3	5.5	2.8	13.4	9.0	8.1	33.2	100.0	15.0	0.9	84.0	100.0
2015	62.9	5.0	2.5	13.3	9.1	7.2	32.1	100.0	15.9	0.9	83.2	100.0
2016	65.6	3.6	2.4	12.7	9.4	7.4	31.9	100.0	17.2	0.8	82.0	100.0
2017	66.6	3.3	2.3	12.4	9.2	7.6	30.2	100.0	17.3	0.7	81.9	100.0
2018	66.2	2.9	1.8	12.2	9.1	7.7	30.9	100.0	18.0	0.5	81.5	100.0

Source: Pensioners: 1980–90: *NYUFIG,* 1995–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990: *NFSZ REG,* 1995–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_06

Figure 3.3: Labour force participation of population for females 15–54



Source: Pensioners: 1990–91: *NYUFIG,* 1992–: *KSH MEF*. Child care recipients: up to the year 1997 *TB* and estimation, after 1997 *MEF*. Unemployment: 1990 –91: *NFSZ REG,* 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena03_03

Table 3.7: Population aged 15–64 by labour market status (self-categorised), in thousands

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Together													
In work	3,862.5	3,831.6	3,769.3	3,681.5	3,660.3	3,690.1	3,748.4	3,824.5	4,039.5	4,159.5	4,298.5	4,366.9	4,401.6
Unemployed	470.4	450.2	476.7	591.3	670.7	675.8	700.4	666.5	538.8	454.6	366.3	314.0	284.1
Students, pupils	846.3	861.1	863.7	854.8	854.6	842.2	811.2	772.5	733.5	710.3	675.6	650.4	644.2
Pensioner	622.9	592.2	635.6	627.6	599.3	582.0	630.3	613.6	557.5	477.5	420.1	392.6	364.9
Disabled	506.8	554.4	525.8	498.9	488.4	455.1	356.7	335.7	317.7	318.0	303.1	285.7	253.4
On child care leave	275.5	286.2	295.0	293.0	289.3	290.2	265.0	259.1	237.0	236.9	236.4	227.5	228.6
Dependent	115.2	111.9	104.0	101.9	95.3	104.3	93.1	96.9	85.3	91.7	93.7	93.2	106.2
Out of work for other reasons	107.7	101.8	101.7	104.9	78.2	78.9	89.1	78.0	78.4	81.9	84.1	84.9	86.4
Total	6,807.3	6,789.4	6,771.6	6,753.8	6,736.0	6,718.5	6,694.1	6,646.8	6,587.7	6,530.4	6,477.9	6,415.2	6,369.5
Males													
In work	2,106.3	2,095.3	2,056.8	1,993.3	1,958.0	1,985.4	2,009.3	2,065.1	2,186.4	2,256.0	2,331.6	2,384.2	2,407.8
Unemployed	251.6	242.0	255.8	333.6	375.6	372.2	382.9	364.4	283.7	241.4	198.9	159.4	146.9
Students, pupils	418.3	428.4	431.7	430.6	432.7	427.2	416.1	393.4	366.9	354.3	338.2	329.1	322.6
Pensioner	234.9	217.4	243.4	246.2	245.6	243.7	254.9	236.7	209.7	167.1	133.1	118.3	109.4
Disabled	243.0	269.4	257.9	238.2	234.6	215.7	177.1	161.6	152.5	152.0	149.4	137.8	123.1
On child care leave	5.6	4.3	5.6	5.7	6.7	4.5	4.1	4.1	3.1	2.9	3.8	1.9	1.4
Dependent	5.4	6.3	6.8	6.8	9.6	10.0	7.0	9.8	8.3	9.4	8.9	7.8	9.9
Out of work for other reasons	55.1	51.8	51.6	49.8	36.1	35.8	40.8	37.1	36.0	39.8	39.2	38.4	40.1
Total	3,320.2	3,314.9	3,309.6	3,304.2	3,298.9	3,294.4	3,292.2	3,272.1	3,246.7	3,222.9	3,203.1	3,176.9	3,161.2
Females													
In work	1,756.3	1,736.3	1,712.4	1,688.2	1,702.2	1,704.7	1,739.1	1,759.4	1,853.1	1,903.6	1,967.0	1,982.7	1,993.9
Unemployed	218.8	208.3	220.9	257.6	295.1	303.6	317.5	302.1	255.0	213.2	167.4	154.5	137.2
Students, pupils	428.0	432.7	432.0	424.2	421.9	415.0	395.1	379.0	366.6	356.0	337.4	321.3	321.6
Pensioner	388.0	374.8	392.2	381.4	353.7	338.2	375.4	376.9	347.8	310.3	287.0	274.3	255.5
Disabled	263.9	285.0	267.9	260.7	253.8	239.5	179.6	174.1	165.2	166.0	153.7	147.9	130.3
On child care leave	269.9	281.9	289.4	287.3	282.6	285.7	260.9	255.0	233.8	233.9	232.6	225.6	227.2
Dependent	109.7	105.6	97.2	95.1	85.7	94.3	86.1	87.2	77.0	82.3	84.7	85.4	96.3
Out of work for other reasons	52.6	50.0	50.1	55.1	42.1	43.1	48.3	40.9	42.4	42.2	44.9	46.5	46.3
Total	3,487.1	3,474.5	3,462.1	3,449.6	3,437.1	3,424.1	3,401.9	3,374.7	3,341.1	3,307.5	3,274.8	3,238.2	3,208.3

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_07

Table 3.8: Population aged 15–64 by labour market status (self-categorised), per cent

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Together														
In work	56.5	56.7	56.4	55.7	54.5	54.3	54.9	56.0	57.5	61.3	63.7	66.4	68.1	69.1
Unemployed	7.2	6.9	6.6	7.0	8.8	10.0	10.1	10.5	10.0	8.2	7.0	5.7	4.9	4.5
Students, pupils	11.6	12.4	12.7	12.8	12.7	12.7	12.5	12.1	11.6	11.1	10.9	10.4	10.1	10.1
Pensioner	11.1	9.2	8.7	9.4	9.3	8.9	8.7	9.4	9.2	8.5	7.3	6.5	6.1	5.7
Disabled	5.3	7.4	8.2	7.8	7.4	7.3	6.8	5.3	5.1	4.8	4.9	4.7	4.5	4.0
On child care leave	4.0	4.0	4.2	4.4	4.3	4.3	4.3	4.0	3.9	3.6	3.6	3.6	3.5	3.6
Dependent	2.0	1.7	1.6	1.5	1.5	1.4	1.6	1.4	1.5	1.3	1.4	1.4	1.5	1.7
Out of work for other reasons	2.3	1.6	1.5	1.5	1.6	1.2	1.2	1.3	1.2	1.2	1.3	1.3	1.3	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Males														
In work	62.7	63.4	63.2	62.1	60.3	59.4	60.3	61.0	63.1	67.3	70.0	72.8	75.0	76.2
Unemployed	8.0	7.6	7.3	7.7	10.1	11.4	11.3	11.6	11.1	8.7	7.5	6.2	5.0	4.6
Students, pupils	12.0	12.6	12.9	13.0	13.0	13.1	13.0	12.6	12.0	11.3	11.0	10.6	10.4	10.2
Pensioner	9.1	7.1	6.6	7.4	7.4	7.4	7.4	7.7	7.2	6.5	5.2	4.2	3.7	3.5
Disabled	5.4	7.3	8.1	7.8	7.2	7.1	6.5	5.4	4.9	4.7	4.7	4.7	4.3	3.9
On child care leave	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Dependent	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3
Out of work for other reasons	2.4	1.7	1.6	1.6	1.5	1.1	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females														
In work	50.6	50.4	50.0	49.5	48.9	49.5	49.8	51.1	52.1	55.5	57.6	60.1	61.2	62.1
Unemployed	6.4	6.3	6.0	6.4	7.5	8.6	8.9	9.3	9.0	7.6	6.4	5.1	4.8	4.3
Students, pupils	11.3	12.3	12.5	12.5	12.3	12.3	12.1	11.6	11.2	11.0	10.8	10.3	9.9	10.0
Pensioner	12.9	11.1	10.8	11.3	11.1	10.3	9.9	11.0	11.2	10.4	9.4	8.8	8.5	8.0
Disabled	5.2	7.6	8.2	7.7	7.6	7.4	7.0	5.3	5.2	4.9	5.0	4.7	4.6	4.1
On child care leave	7.6	7.7	8.1	8.4	8.3	8.2	8.3	7.7	7.6	7.0	7.1	7.1	7.0	7.1
Dependent	3.7	3.1	3.0	2.8	2.8	2.5	2.8	2.5	2.6	2.3	2.5	2.6	2.6	3.0
Out of work for other reasons	2.3	1.5	1.4	1.4	1.6	1.2	1.3	1.4	1.2	1.3	1.3	1.4	1.4	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent03_08

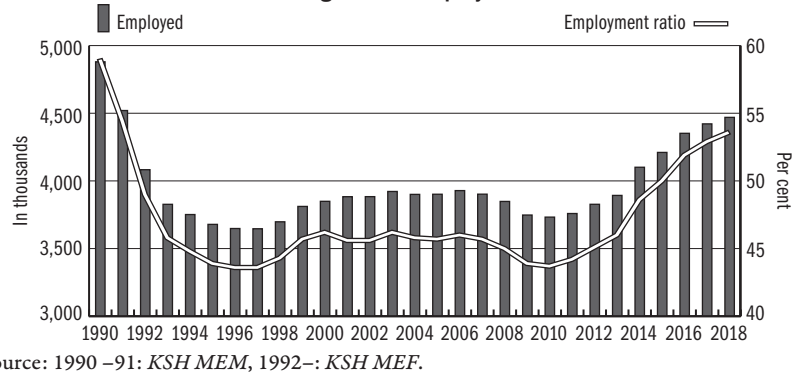
Table 4.1: Employment

Year	In thousands	1992 = 100	Annual changes	Employment ratio[a]
1990	4,880.0	119.5	..	59.0
1991	4,520.0	110.7	–7.4	54.4
1992	4,082.7	100.0	–9.7	49.0
1993	3,827.0	93.7	–6.2	45.8
1994	3,751.5	91.9	–2.0	44.8
1995	3,678.8	90.1	–1.9	43.9
1996	3,648.2	89.4	–0.9	43.6
1997	3,646.4	89.3	0.0	43.6
1998	3,697.8	90.6	1.4	44.3
1999	3,811.4	93.4	3.2	45.7
2000	3,849.1	94.3	1.0	46.2
2001	3,883.3	95.1	0.3	45.6
2002	3,883.7	95.1	0.0	45.6
2003	3,921.9	96.1	1.2	46.2
2004	3,900.4	95.5	–0.5	45.8
2005	3,901.5	95.6	0.0	45.7
2006	3,928.4	96.2	0.7	46.0
2007	3,902.0	95.6	–0.7	45.7
2008	3,848.3	94.3	–1.4	45.0
2009	3,747.8	91.8	–2.6	43.9
2010	3,732.4	91.4	–0.4	43.7
2011	3,759.0	92.1	0.7	44.2
2012	3,827.2	93.7	1.8	45.1
2013	3,892.8	95.3	1.7	46.0
2014	4,100.9	100.4	5.3	48.6
2015	4,210.5	103.1	2.7	50.0
2016	4,351.7	106.7	3.4	51.9
2017	4,421.4	108.3	1.6	52.9
2018	4,469.5	109.4	1.1	53.6

[a] Per cent of the population over 14 years of age.
Source: 1990–91: *KSH MEM,* 1992–: *KSH MEF.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_01

Figure 4.1: Employed



Source: 1990 –91: *KSH MEM*, 1992–: *KSH MEF.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena04_01

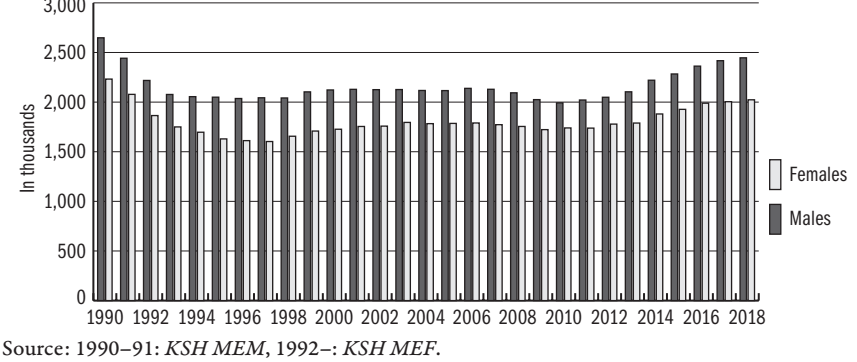
Table 4.2: Employment by gender

Year	Males		Females		Share of females (%)
	In thousands	1992 = 100	In thousands	1992 = 100	
1990	2,648.0	119.4	2,232.0	119.7	45.7
1991	2,442.0	110.1	2,078.0	111.5	46.0
1992	2,218.2	100.0	1,864.5	100.0	45.7
1993	2,077.0	93.6	1,750.0	93.9	45.7
1994	2,055.0	92.6	1,696.5	91.0	45.2
1995	2,049.6	92.4	1,629.2	87.4	44.3
1996	2,036.3	91.8	1,611.9	86.5	44.2
1997	2,043.5	92.1	1,602.9	86.0	44.0
1998	2,041.7	92.0	1,656.1	88.8	44.8
1999	2,103.1	94.8	1,708.4	91.6	44.8
2000	2,122.4	95.7	1,726.7	92.6	44.9
2001	2,128.7	96.0	1,754.6	94.1	45.2
2002	2,125.6	95.8	1,758.1	94.3	45.3
2003	2,126.5	95.6	1,795.4	96.2	45.8
2004	2,117.3	95.5	1,783.1	95.6	45.7
2005	2,116.1	95.4	1,785.4	95.8	45.8
2006	2,138.6	96.4	1,789.8	96.0	45.6
2007	2,129.3	96.0	1,772.7	95.1	45.4
2008	2,093.6	94.4	1,754.7	94.1	45.6
2009	2,025.1	91.3	1,722.8	92.4	46.0
2010	1,992.5	89.8	1,739.8	93.3	46.6
2011	2,021.0	91.1	1,738.0	93.2	46.2
2012	2,048.8	92.4	1,778.4	95.4	46.5
2013	2,103.7	94.8	1,789.0	96.0	46.0
2014	2,220.5	100.1	1,880.4	100.9	45.9
2015	2,283.5	103.0	1,927.0	103.4	45.8
2016	2,362.5	106.5	1,989.1	106.7	45.7
2017	2,417.3	109.0	2,004.1	107.5	45.3
2018	2,446.2	110.3	2,023.3	108.5	45.3

Source: 1990–91: *KSH MEM*, 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_02

Figure 4.2: Employment by gender



Source: 1990–91: *KSH MEM*, 1992–: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena04_02

Table 4.3: Composition of the employed by age groups, males, per cent

Year	15–19	20–24	25–49	50–54	55–59	60+	Total
	years old						
2000	1.5	12.4	67.3	10.6	6.4	1.8	100.0
2001	1.2	10.4	68.6	11.1	6.7	2.0	100.0
2002	0.9	9.4	69.4	11.3	6.9	2.1	100.0
2003	0.7	8.6	69.1	11.8	7.3	2.5	100.0
2004	0.7	7.4	69.5	12.0	7.3	3.0	100.0
2005	0.6	6.8	68.9	12.7	7.9	3.1	100.0
2006	0.6	6.7	71.1	10.3	8.5	2.8	100.0
2007	0.5	6.7	71.3	10.2	8.4	2.9	100.0
2008	0.5	6.4	71.2	10.6	8.5	2.8	100.0
2009	0.4	5.7	70.6	10.9	9.3	3.1	100.0
2010	0.3	5.8	70.5	10.8	9.8	2.8	100.0
2011	0.3	5.5	69.8	10.9	10.0	3.5	100.0
2012	0.3	5.5	69.4	10.7	10.7	3.4	100.0
2013	0.4	6.1	68.6	10.3	10.7	3.9	100.0
2014	0.5	6.4	68.2	9.9	10.5	4.5	100.0
2015	0.7	6.3	67.3	10.0	10.1	5.8	100.0
2016	0.7	6.7	66.1	9.9	9.5	7.2	100.0
2017	0.6	6.6	65.6	10.4	9.0	7.8	100.0
2018	0.7	6.5	64.9	10.7	9.0	8.2	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_03

Table 4.4: Composition of the employed by age groups, females, per cent

Year	15–19	20–24	25–49	50–54	55+	Total
	years old					
2000	1.4	11.1	69.6	12.7	5.2	100.0
2001	1.1	9.6	70.5	13.1	5.7	100.0
2002	0.8	9.2	69.4	13.8	6.8	100.0
2003	0.5	8.2	68.8	14.0	8.5	100.0
2004	0.5	7.1	68.2	14.6	9.7	100.0
2005	0.4	6.3	67.7	15.4	10.2	100.0
2006	0.4	6.0	70.1	12.9	10.6	100.0
2007	0.3	5.8	70.0	13.1	10.8	100.0
2008	0.3	5.6	69.8	13.4	10.9	100.0
2009	0.2	5.4	69.1	13.5	11.8	100.0
2010	0.3	5.3	67.4	13.6	13.4	100.0
2011	0.2	5.1	66.4	13.4	14.9	100.0
2012	0.2	5.2	66.6	13.4	14.6	100.0
2013	0.3	5.1	67.1	13.1	14.4	100.0
2014	0.4	5.6	66.4	12.7	14.9	100.0
2015	0.4	6.1	65.6	12.5	15.4	100.0
2016	0.5	6.0	65.2	12.2	16.1	100.0
2017	0.5	5.8	65.4	12.2	16.1	100.0
2018	0.5	5.5	64.4	13.0	16.6	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_04

Table 4.5: Composition of the employed by level of education, males, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2001	15.6	42.8	26.0	15.6	100.0
2002	14.6	43.2	26.4	15.8	100.0
2003	14.0	41.3	27.7	17.0	100.0
2004	13.0	40.4	28.0	18.6	100.0
2005	13.0	40.8	27.7	18.5	100.0
2006	12.3	41.0	28.2	18.5	100.0
2007	11.7	40.7	28.8	18.8	100.0
2008	11.7	39.4	29.1	19.8	100.0
2009	10.9	38.7	30.1	20.3	100.0
2010	10.6	38.3	30.6	20.5	100.0
2011	10.7	37.2	30.2	21.9	100.0
2012	10.6	36.8	30.1	22.5	100.0
2013	10.2	37.1	30.1	22.6	100.0
2014	11.1	35.8	30.6	22.5	100.0
2015	11.8	34.5	31.0	22.7	100.0
2016	11.9	34.6	31.6	21.9	100.0
2017	11.5	35.4	31.0	22.1	100.0
2018	11.4	35.6	30.4	22.6	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_05

Table 4.6: Composition of the employed by level of education, females, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2001	19.1	21.3	40.3	19.3	100.0
2002	18.5	21.5	40.2	19.8	100.0
2003	16.4	21.5	40.9	21.2	100.0
2004	15.9	20.5	40.2	23.4	100.0
2005	15.4	20.2	40.0	24.4	100.0
2006	14.2	20.7	40.0	25.1	100.0
2007	13.5	21.2	40.0	25.3	100.0
2008	13.3	20.3	39.2	27.2	100.0
2009	12.5	19.8	39.3	28.4	100.0
2010	12.3	20.3	38.8	28.6	100.0
2011	11.7	20.1	38.0	30.2	100.0
2012	11.0	19.5	38.4	31.1	100.0
2013	10.9	19.6	38.1	31.4	100.0
2014	11.4	19.4	37.8	31.5	100.0
2015	11.5	19.1	37.4	32.0	100.0
2016	12.0	18.4	38.3	31.3	100.0
2017	12.4	18.6	38.4	30.6	100.0
2018	11.5	19.0	37.5	32.0	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_06

Table 4.7: Employed by employment status, in thousands

Year	Employees	Member of cooperatives	Member of other partnerships	Self-employed and assisting family members	Total
2004	3,347.8	8.1	136.6	407.8	3,900.3
2005	3,367.3	5.8	146.7	381.7	3,901.5
2006	3,428.9	4.8	128.0	366.7	3,928.4
2007	3,415.5	4.7	123.9	357.9	3,902.0
2008	3,378.4	2.6	120.9	346.4	3,848.3
2009	3,274.9	2.5	131.7	338.7	3,747.8
2010	3,272.7	2.9	137.6	319.3	3,732.5
2011	3,302.5	2.0	133.3	321.2	3,759.0
2012	3,378.1	2.3	144.3	302.5	3,827.2
2013	3,453.9	3.3	156.6	279.0	3,892.8
2014	3,652.0	3.6	157.3	288.0	4,100.9
2015	3,753.8	1.7	150.3	304.7	4,210.5
2016	3,884.4	0.9	147.1	319.2	4,351.6
2017	3,964.4	0.4	156.4	300.2	4,421.4
2018	4,003.9	0.4	148.7	316.5	4,469.5

Note: Conscripts are excluded. The participants of winter-time training programs within the Public Works Program are accounted as employees (contrary to the practice of STADAT). There are differences in data for 2014 –2016.
Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_07

Table 4.8: Composition of the employed persons by employment status, per cent

Year	Employees	Member of cooperatives	Member of other partnerships	Self-employed and assisting family members	Total
2004	85.8	0.2	3.5	10.5	100.0
2005	86.3	0.1	3.8	9.8	100.0
2006	87.3	0.1	3.2	9.4	100.0
2007	87.6	0.1	3.1	9.2	100.0
2008	87.7	0.1	3.2	9.0	100.0
2009	87.5	0.1	3.6	8.8	100.0
2010	87.7	0.1	3.7	8.5	100.0
2011	87.9	0.0	3.5	8.5	100.0
2012	88.3	0.1	3.8	7.9	100.0
2013	88.9	0.1	4.0	7.0	100.0
2014	89.1	0.1	4.0	6.8	100.0
2015	89.1	0.0	3.6	7.3	100.0
2016	89.3	0.0	3.4	7.3	100.0
2017	89.7	0.0	3.5	6.8	100.0
2018	89.6	0.0	3.3	7.1	100.0

Note: Conscripts are excluded. The participants of winter-time training programs within the Public Works Program are accounted as employees (contrary to the practice of STADAT). There are differences in data for 2014 –2016.
Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_08

Table 4.9: Composition of employed persons by sector, by gender, per cent

	2014			2015			2016			2017			2018		
	Males	Females	Males	Males	Males	Together	Males	Females	Together	Males	Females	Together	Males	Females	Together
Agriculture, forestry and fishing	5.0	1.7	3.5	5.3	1.9	3.7	5.4	1.9	3.8	5.5	1.8	3.8	5.1	2.0	3.7
Mining and quarrying	0.4	0.1	0.3	0.4	0.1	0.2	0.3	0.1	0.2	0.4	0.0	0.2	0.4	0.1	0.3
Manufacturing	28.1	18.0	23.3	27.4	18.0	23.0	27.5	18.1	23.1	28.4	18.6	23.8	28.0	18.4	23.6
Electricity, gas, steam and air conditioning supply	1.4	0.6	1.0	1.3	0.4	0.9	1.2	0.5	0.9	1.2	0.5	0.9	1.4	0.5	1.0
Water supply; sewerage, waste management and remediation activities	2.2	0.7	1.5	2.1	0.7	1.5	2.3	0.7	1.5	2.1	0.6	1.4	2.1	0.6	1.4
Construction	10.0	1.0	5.7	10.2	0.9	5.8	10.1	0.9	5.8	10.5	1.1	6.2	11.7	1.3	7.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	10.2	15.5	12.7	9.6	15.2	12.3	9.7	14.6	12.0	9.9	14.5	12.0	9.9	14.9	12.1
Transportation and storage	9.1	3.8	6.6	9.0	3.7	6.5	9.4	3.5	6.6	9.6	3.7	6.9	9.2	3.7	6.6
Accommodation and food service activities	3.0	5.2	4.1	3.5	5.3	4.4	3.8	5.1	4.4	3.4	5.3	4.2	3.4	4.9	4.1
Information and communication	3.0	1.8	2.4	3.1	1.5	2.4	3.3	1.7	2.6	3.3	1.5	2.4	3.6	1.4	2.6
Financial and insurance activities	1.6	3.0	2.3	1.3	3.0	2.1	1.5	3.0	2.2	1.7	2.6	2.1	1.4	2.8	2.0
Real estate activities	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.6	0.5	0.5	0.7	0.6
Professional, scientific and technical activities	2.0	3.5	2.7	1.9	3.5	2.7	1.8	3.3	2.5	1.8	3.5	2.6	2.2	3.8	3.0
Administrative and support service activities	4.1	3.0	3.6	4.3	2.9	3.6	4.2	3.2	3.7	3.7	3.1	3.5	3.6	3.1	3.4
Public administration and defence; compulsory social security	10.5	11.6	11.0	10.9	13.0	11.9	10.9	13.5	12.1	10.3	13.1	11.6	8.9	11.8	10.1
Education	3.8	14.1	8.7	3.6	13.6	8.3	3.2	13.7	8.1	3.5	13.4	8.0	3.5	13.5	8.1
Human health and social work activities	2.5	11.9	7.0	2.5	11.6	6.8	2.4	11.7	6.8	2.2	12.1	6.8	2.7	12.3	7.1
Arts, entertainment and recreation	1.5	1.6	1.5	1.7	2.0	1.8	1.4	2.1	1.7	1.4	1.8	1.6	1.4	2.0	1.7
Other services	1.2	2.4	1.8	1.2	2.3	1.7	1.2	2.1	1.6	1.1	2.1	1.5	1.1	2.2	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_09

Table 4.10: Employed in their present job for 0–6 months, per cent

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hungary	7.2	6.3	6.6	7.2	6.8	7.0	6.8	7.5	7.6	7.4	7.9	7.3	8.4	9.1	8.9	8.4	7.5	7.7	8.1

Source: MEF, IV. quarterly waves.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_10

Table 4.11: Distribution of employees in the competitive sector[a] by firm size, per cent

Year	Less than 20	20 –49	50–249	250–999	1000 and more
	employees				
2002	21.6	14.0	21.5	20.1	22.9
2003	23.0	15.3	20.5	19.3	21.8
2004	23.6	14.8	21.3	18.3	22.0
2005	27.0	15.0	20.5	17.5	20.0
2006	15.7	10.7	25.7	24.3	23.6
2007	25.2	14.2	20.0	18.4	22.2
2008	26.0	15.7	20.7	18.9	18.6
2009	23.4	15.7	19.7	18.4	22.8
2010	23.5	15.7	18.6	18.0	24.2
2011	24.9	15.6	18.5	17.7	23.4
2012	24.2	14.7	18.3	18.6	24.1
2013	23.2	14.5	18.1	19.0	25.2
2014	23.8	15.0	18.4	19.2	23.5
2015	24.0	15.4	18.5	17.9	24.2
2016	24.9	15.9	18.0	16.9	24.3
2017	24.4	16.1	17.4	16.6	25.5
2018	24.9	16.6	15.4	16.4	26.7

[a] Firms employing 5 or more workers.
Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_11

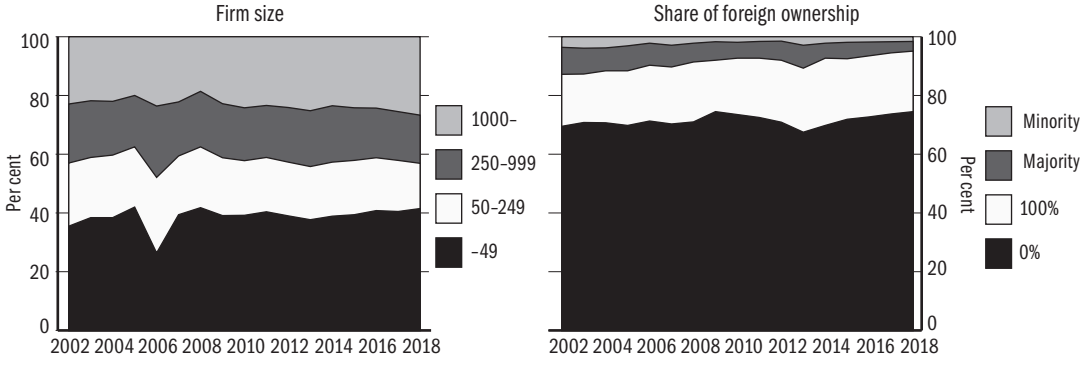
Table 4.12: Employees of the competitive sector[a] by the share of foreign ownership, per cent

Share of foreign ownership	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
100%	17.7	16.5	17.7	18.6	19.0	19.4	20.4	17.5	19.2	20.2	21.1	21.8	22.9	20.6	20.8	20.8	20.6
Majority	9.2	8.8	7.8	8.5	7.5	7.4	6.4	6.3	5.4	5.7	6.5	7.8	5.1	5.6	4.7	3.8	3.3
Minority	3.6	3.9	3.8	3.1	2.2	2.9	2.2	1.7	1.9	1.6	1.5	2.9	2.2	1.9	1.8	1.7	1.6
0%	69.5	70.8	70.7	69.8	71.3	70.3	71.0	74.6	73.5	72.4	70.9	67.5	69.9	71.9	72.6	73.8	74.5

[a] Firms employing 5 or more workers.
Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_12

Figure 4.3: Employees of the corporate sector by firm size and by the share of foreign ownership



Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena04_03

Table 4.13: Employment rate of population aged 15–74 by age group, males, per cent

Year	15–19	20–24	25–49	50–54	55–59	60–64	65–74	Total
1999	10.6	60.3	80.5	69.0	44.0	10.4	3.8	56.2
2000	8.4	58.9	80.9	69.6	49.6	11.8	3.8	56.8
2001	7.9	56.7	81.6	68.2	51.3	13.1	3.1	57.1
2002	5.6	53.1	81.9	68.6	52.8	14.4	3.4	57.1
2003	4.8	51.8	82.2	69.7	55.2	16.8	3.8	57.6
2004	4.5	46.5	82.7	69.7	54.0	20.1	4.3	57.5
2005	4.0	43.6	82.5	70.1	56.6	20.9	4.2	57.4
2006	4.1	44.0	83.1	70.7	58.5	18.9	4.2	58.0
2007	3.7	44.0	83.4	71.0	57.3	18.0	4.7	57.8
2008	3.5	42.0	82.9	71.6	54.5	16.5	4.8	56.9
2009	2.4	36.7	80.5	70.5	56.1	16.7	5.0	55.1
2010	2.2	36.7	79.6	69.0	56.3	16.5	4.7	54.2
2011	2.4	36.1	81.0	71.2	56.9	17.4	4.4	55.0
2012	2.2	35.9	81.5	73.1	61.2	17.0	5.2	55.7
2013	2.8	40.8	82.6	74.2	64.9	21.1	4.9	57.4
2014	3.8	45.6	86.6	76.9	70.6	26.9	4.4	60.8
2015	5.9	46.6	87.9	80.5	73.9	35.3	4.6	62.7
2016	6.2	52.7	89.0	83.0	76.2	44.7	5.9	65.0
2017	6.4	55.6	90.7	86.6	77.5	49.6	6.3	66.9
2018	6.9	56.6	91.0	87.1	80.6	52.5	7.8	67.9

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_13

Table 4.14: Employment rate of population aged 15–74 by age group, females, per cent

Year	15–19	20–24	25–49	50–54	55–59	60–64	65–74	Total
1999	8.7	48.1	67.3	59.4	16.2	5.5	1.6	42.3
2000	8.0	45.9	67.8	62.5	20.0	5.1	1.8	43.0
2001	6.3	44.2	68.0	62.1	23.2	5.5	1.3	43.1
2002	4.3	44.2	67.0	64.0	28.3	6.0	1.5	43.3
2003	3.1	41.9	67.8	65.8	35.1	7.3	2.0	44.3
2004	2.7	37.4	67.2	66.0	39.8	9.0	1.9	44.1
2005	2.6	34.7	67.4	66.6	41.7	9.6	1.5	44.2
2006	2.5	33.6	67.8	67.5	42.4	8.5	1.6	44.4
2007	2.0	32.4	67.8	68.1	40.0	9.4	2.2	44.1
2008	1.8	31.3	67.8	68.7	38.7	9.8	2.3	43.8
2009	1.5	30.0	66.7	68.3	40.7	9.7	2.2	43.1
2010	1.9	30.3	66.6	69.4	46.6	9.5	2.4	43.6
2011	1.5	30.0	66.2	68.8	49.9	11.0	2.6	43.7
2012	1.4	31.3	68.3	72.7	49.7	11.2	2.6	44.9
2013	1.7	30.5	69.3	74.0	51.4	11.1	2.4	45.4
2014	3.0	35.2	72.3	77.9	56.8	13.4	2.3	48.0
2015	2.9	39.9	73.4	80.3	60.0	17.3	2.6	49.5
2016	3.9	41.8	75.3	81.6	64.7	21.9	2.9	51.3
2017	4.3	42.2	76.5	81.1	66.1	23.3	3.3	52.1
2018	4.6	41.4	76.5	84.0	68.2	26.4	3.9	52.9

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_14

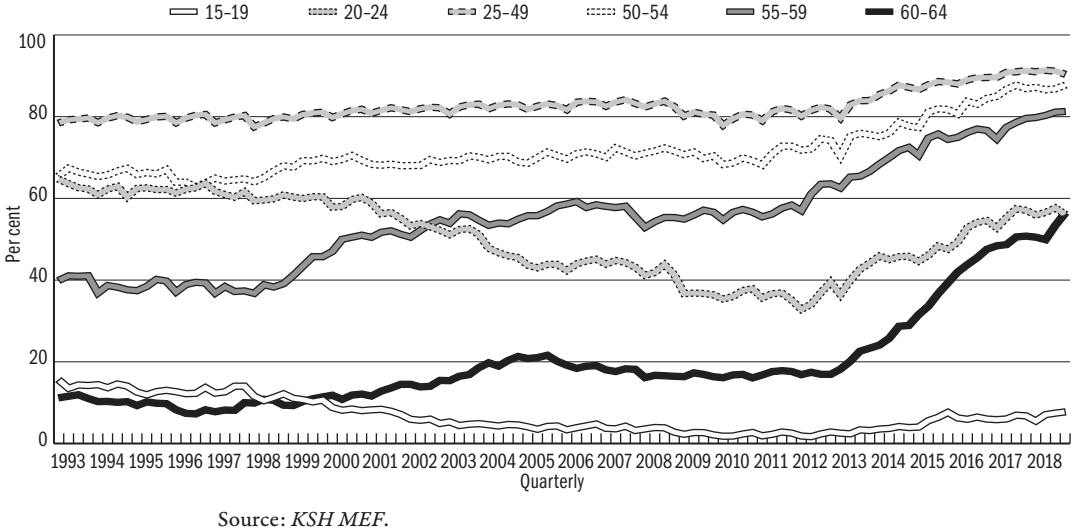
Table 4.15: Employment rate of population aged 15–64 by level of education, males, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
1998	35.0	75.3	67.0	84.9	60.4
1999	33.6	76.8	68.3	86.8	62.4
2000	33.6	77.4	67.9	87.1	63.1
2001	33.0	77.6	67.3	87.4	62.9
2002	32.0	77.6	67.1	85.8	62.9
2003	32.4	76.5	67.8	86.4	63.4
2004	31.0	75.7	67.3	87.1	63.1
2005	31.6	74.7	66.9	86.9	63.1
2006	31.4	75.6	67.7	86.0	63.9
2007	31.0	74.4	67.3	85.6	63.7
2008	31.1	72.4	66.1	84.3	62.7
2009	28.8	69.5	64.6	82.8	60.7
2010	28.1	67.7	64.2	81.8	59.9
2011	29.0	68.0	64.5	83.7	60.7
2012	30.0	68.7	64.6	84.4	61.6
2013	30.8	70.9	67.1	85.3	63.7
2014	36.3	74.8	71.2	87.1	67.8
2015	39.9	77.1	73.2	88.6	70.3
2016	42.5	80.1	76.1	90.5	73.0
2017	44.2	82.6	77.8	91.6	75.2
2018	45.8	83.9	77.9	91.9	76.3

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_15

Figure 4.4: Activity rate by age groups, males aged 15 –64, quarterly



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena04_04

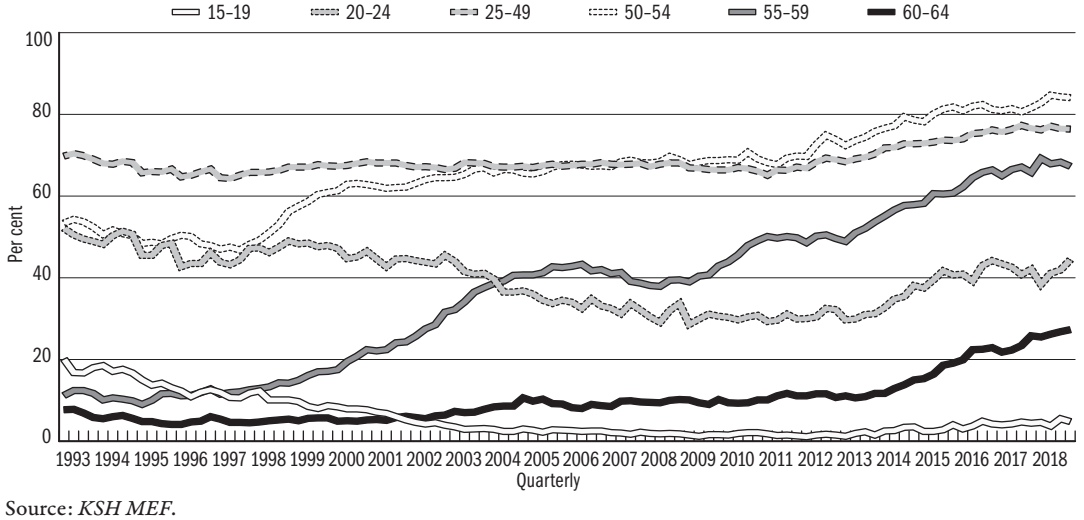
Table 4.16: Employment rate of population aged 15–64 by level of education, females, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
1998	26.6	60.5	58.1	76.9	47.3
1999	26.1	61.4	59.0	77.5	49.0
2000	26.0	61.0	59.3	77.8	49.7
2001	26.1	60.8	59.2	77.8	49.8
2002	26.0	60.4	58.6	77.9	49.8
2003	25.3	59.7	59.5	78.3	50.9
2004	25.0	58.8	58.1	78.1	50.7
2005	25.1	57.6	57.9	78.9	51.0
2006	24.3	57.8	57.5	78.0	51.1
2007	23.6	57.2	57.2	75.5	50.7
2008	23.7	55.2	56.1	75.3	50.3
2009	22.7	54.0	54.6	74.2	49.6
2010	23.3	56.2	54.0	74.3	50.2
2011	22.5	56.1	53.9	74.6	50.3
2012	22.6	56.8	56.3	74.3	51.9
2013	23.7	57.1	56.6	74.2	52.6
2014	27.3	60.4	59.1	76.1	55.9
2015	28.7	62.3	61.3	77.3	57.8
2016	31.5	63.4	64.1	80.0	60.2
2017	33.7	64.6	65.2	78.9	61.3
2018	33.7	66.7	64.8	80.0	62.3

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent04_16

Figure 4.5: Activity rate by age groups, females aged 15 –64, quarterly



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena04_05

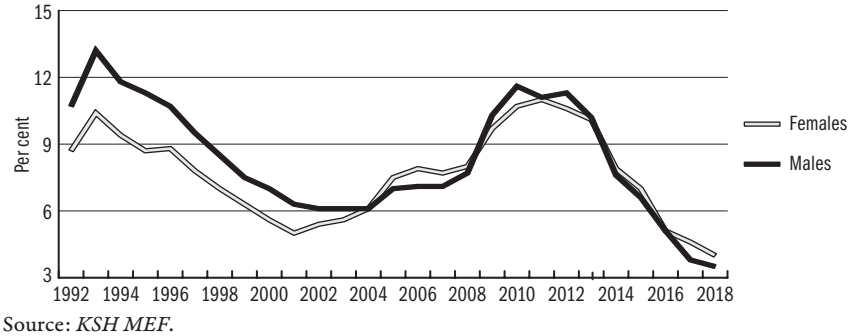
Table 5.1: Unemployment rate by gender and share of long term unemployed, per cent

Year	Unemployment rate			Share of long term unemployed[a]
	Males	Females	Total	
1992	10.7	8.7	9.8	..
1993	13.2	10.4	11.9	..
1994	11.8	9.4	10.7	43.2
1995	11.3	8.7	10.2	50.6
1996	10.7	8.8	9.9	54.4
1997	9.5	7.8	8.7	51.3
1998	8.5	7.0	7.8	48.8
1999	7.5	6.3	7.0	49.5
2000	7.0	5.6	6.4	49.1
2001	6.3	5.0	5.7	46.7
2002	6.1	5.4	5.8	44.9
2003	6.1	5.6	5.9	43.9
2004	6.1	6.1	6.1	45.0
2005	7.0	7.5	7.2	46.2
2006	7.1	7.9	7.5	46.9
2007	7.1	7.7	7.4	48.1
2008	7.7	8.0	7.8	48.1
2009	10.3	9.7	10.0	42.9
2010	11.6	10.7	11.2	50.6
2011	11.1	11.0	11.0	49.4
2012	11.3	10.6	11.0	47.0
2013	10.2	10.1	10.2	50.4
2014	7.6	7.9	7.7	49.5
2015	6.6	7.0	6.8	47.6
2016	5.1	5.1	5.1	48.4
2017	3.8	4.6	4.2	42.6
2018	3.5	4.0	3.7	41.0

[a] Long term unemployed are those who have been without work for 12 months or more, excluding those who start a new job within 90 days.
Note: Conscripted soldiers are included in the denominator.
Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_01

Figure 5.1: Unemployment rates by gender



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_01

Table 5.2: Unemployment rate by level of education, males, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2000	13.4	7.7	4.8	1.6	7.0
2001	13.6	6.4	4.3	1.2	6.3
2002	14.1	6.2	4.0	1.4	6.1
2003	13.6	6.6	3.9	1.6	6.1
2004	14.3	6.4	4.1	1.7	6.1
2005	15.6	7.4	4.9	2.3	7.0
2006	17.3	7.0	5.1	2.6	7.1
2007	18.7	6.8	5.1	2.4	7.1
2008	20.2	7.7	5.2	2.3	7.7
2009	24.6	10.7	7.6	3.6	10.3
2010	27.2	12.2	8.3	4.9	11.6
2011	25.5	12.1	8.3	4.1	11.1
2012	25.3	12.0	9.6	4.2	11.3
2013	24.5	10.8	8.4	3.4	10.2
2014	18.4	7.8	6.2	2.8	7.6
2015	16.7	6.7	5.3	2.2	6.6
2016	13.7	4.9	4.0	1.8	5.1
2017	11.0	3.6	2.8	1.4	3.8
2018	10.3	3.2	2.9	1.5	3.5

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_02

Table 5.3: Composition of the unemployed by level of education, males, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2000	32.9	45.8	17.9	3.4	100.0
2001	36.5	43.2	17.5	2.8	100.0
2002	36.7	43.3	16.7	3.3	100.0
2003	34.0	44.7	17.2	4.1	100.0
2004	33.9	42.6	18.6	4.9	100.0
2005	32.1	43.1	19.0	5.8	100.0
2006	33.4	40.3	19.9	6.4	100.0
2007	35.1	38.6	20.4	5.9	100.0
2008	35.9	39.4	19.2	5.5	100.0
2009	31.2	40.5	21.7	6.6	100.0
2010	30.3	40.5	21.1	8.1	100.0
2011	29.4	41.1	21.9	7.6	100.0
2012	28.1	39.3	24.9	7.6	100.0
2013	29.2	39.3	24.4	7.1	100.0
2014	30.6	37.0	24.5	7.9	100.0
2015	33.4	34.9	24.5	7.2	100.0
2016	34.9	33.2	24.6	7.3	100.0
2017	35.7	33.7	22.5	8.1	100.0
2018	35.6	32.8	24.2	7.4	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_03

Table 5.4: Unemployment rate by level of education, females, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2000	9.1	7.4	4.9	1.5	5.6
2001	8.4	6.4	4.0	1.6	5.0
2002	9.3	6.5	4.4	2.4	5.4
2003	10.5	7.2	4.4	1.9	5.6
2004	10.3	8.0	5.3	2.9	6.1
2005	13.0	9.8	6.7	3.1	7.5
2006	16.2	10.4	6.5	2.7	7.9
2007	16.3	9.7	6.2	3.2	7.7
2008	17.4	9.6	6.8	3.1	8.0
2009	21.6	12.6	7.8	4.1	9.7
2010	22.8	12.6	9.6	4.3	10.7
2011	24.5	12.9	9.9	4.4	11.0
2012	24.4	12.7	9.4	4.7	10.6
2013	22.7	12.8	9.0	4.3	10.1
2014	18.7	9.3	7.1	3.4	7.9
2015	18.1	8.7	5.9	2.6	7.0
2016	12.7	6.8	4.3	1.8	5.1
2017	11.3	5.4	4.0	1.8	4.6
2018	11.7	4.3	3.6	1.8	4.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_04

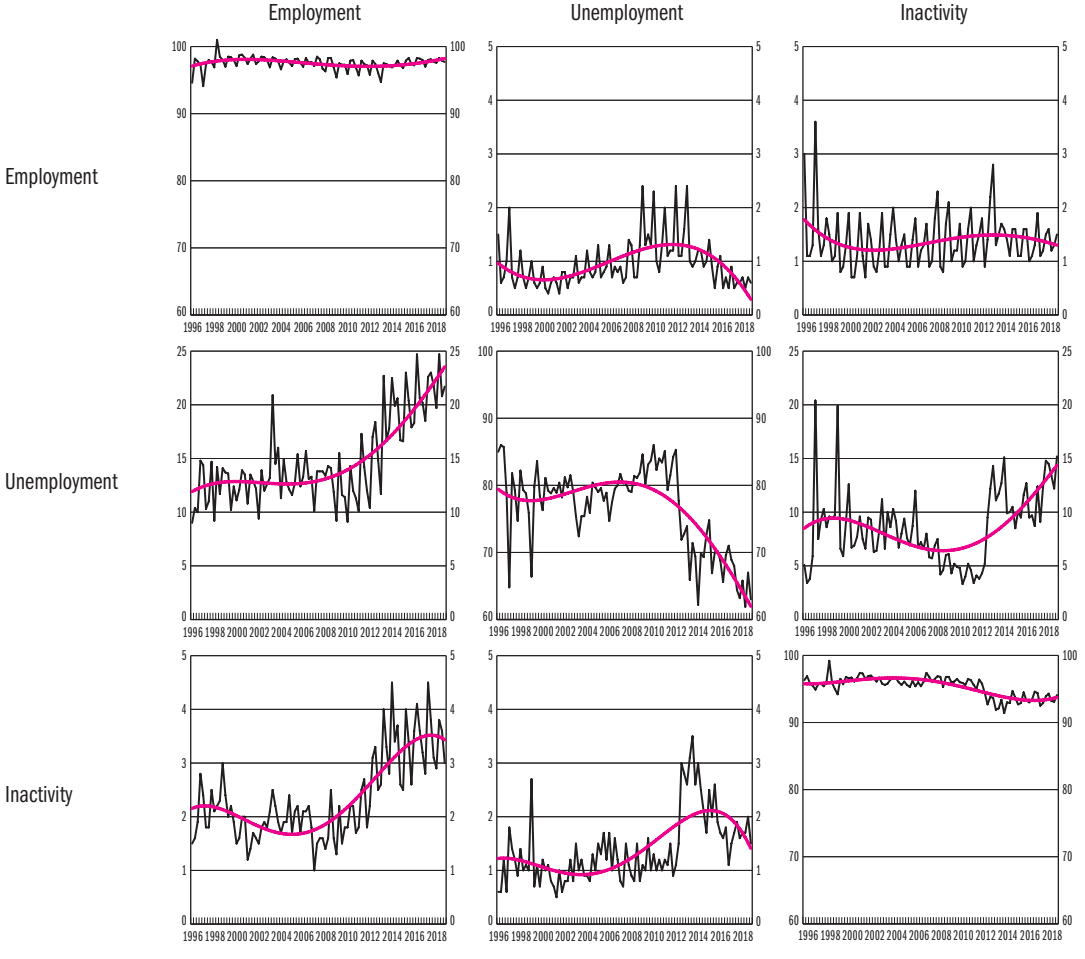
Table 5.5: Composition of the unemployed by level of education, females, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, university	Total
2000	31.8	28.2	35.0	5.0	100.0
2001	33.7	28.0	32.2	6.1	100.0
2002	33.2	26.0	32.2	8.5	100.0
2003	32.7	28.3	32.0	7.0	100.0
2004	27.8	27.4	34.2	10.6	100.0
2005	28.2	27.1	35.2	9.5	100.0
2006	31.8	27.9	32.3	8.0	100.0
2007	31.3	27.2	31.6	9.9	100.0
2008	32.3	24.7	33.0	10.0	100.0
2009	31.8	26.4	30.6	11.2	100.0
2010	30.5	24.4	34.3	10.7	100.0
2011	30.8	24.1	33.9	11.2	100.0
2012	29.8	23.8	33.5	12.9	100.0
2013	28.5	25.6	33.4	12.5	100.0
2014	30.5	23.1	33.4	13.0	100.0
2015	33.5	24.1	31.2	11.3	100.0
2016	32.4	24.9	31.8	10.9	100.0
2017	33.0	22.2	33.1	11.7	100.0
2018	32.8	20.8	33.0	13.4	100.0

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_05

Figure 5.2: Intensity of quarterly flows between labour market status, population between 15–64 years



Note: The calculations were carried out for the age group between 15 –64 based on KSH labour force survey microdata. The probability of transition is given by the number of people who transitioned from one status to the other in the quarter, divided by the initial size of the group in the previous quarter, which were then corrected to preserve the consistency of stock flows. The red curves show the trend smoothed using a 4th degree polynomial.
Source: *KSH MEF.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_02

Table 5.6: The number of unemployed[a] by duration of job search, in thousands

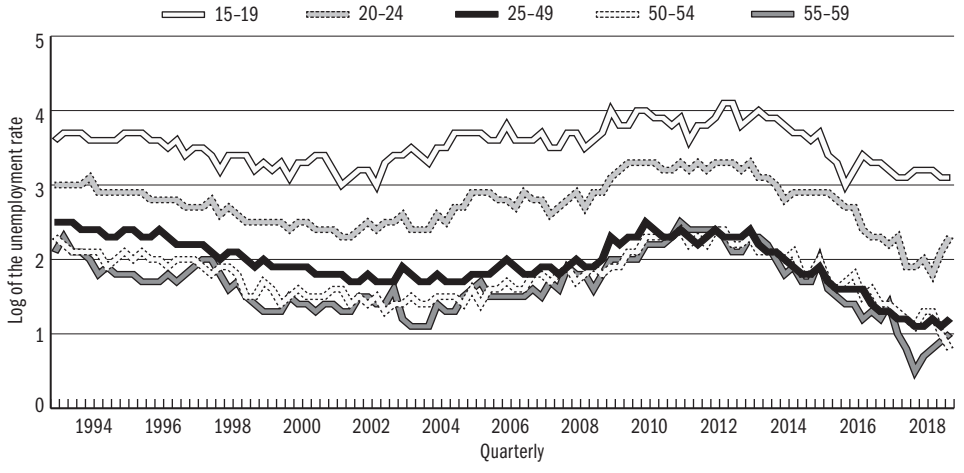
Year	Length of job search, weeks [month]								Total
	1–4 [<1]	5–14 [1–3]	15–26 [4–6]	27–51 [7–11]	52 [12]	53–78 [13–18]	79–104 [19–24]	105– [>24]	
1992	43.9	90.9	96.4	110.7	10.6	41.7	38.4	n.a.	432.6
1993	36.2	74.8	87.9	120.5	14.7	75.1	83.7	n.a.	492.9
1994	30.5	56.5	65.0	91.9	8.4	63.0	73.8	40.4	429.5
1995	23.0	51.0	56.5	69.4	20.2	57.2	34.3	93.2	404.8
1996	19.9	46.4	49.3	61.5	18.2	56.1	37.1	100.2	388.7
1997	16.1	43.7	45.9	54.4	15.7	44.5	31.1	77.3	328.7
1998	12.9	44.2	44.5	45.7	16.0	39.0	27.6	63.5	293.4
1999	15.4	44.1	38.8	46.0	13.2	38.1	26.8	62.3	284.7
2000	16.7	38.5	35.1	42.8	12.7	36.9	23.6	55.4	261.3
2001	14.9	37.0	33.2	38.6	11.5	31.6	20.9	44.2	231.9
2002	15.5	39.4	34.8	40.7	11.6	32.7	19.8	42.5	237.0
2003	15.9	42.1	38.9	42.0	14.5	27.6	17.6	43.0	241.6
2004	13.0	42.0	39.9	41.8	13.5	33.4	19.6	47.2	250.4
2005	14.8	48.9	44.1	51.3	14.1	41.0	27.4	54.3	295.9
2006	13.2	51.1	48.5	52.0	17.9	41.1	26.6	59.7	310.0
2007	13.9	49.5	44.2	50.5	12.8	42.8	26.2	65.1	304.9
2008	13.5	50.3	47.9	53.4	13.5	39.1	26.3	74.0	317.9
2009	18.7	71.4	66.6	77.5	18.4	51.3	27.1	79.0	410.0
2010	16.9	65.4	62.5	83.5	23.2	74.7	42.6	93.7	462.5
2011	28.9	70.7	62.8	70.0	18.0	64.7	40.1	103.7	458.9
2012	39.2	64.0	63.1	80.5	22.2	59.5	36.6	100.9	466.0
2013	48.2	49.4	53.7	62.1	25.3	49.8	45.0	97.1	430.7
2014	36.5	41.5	44.9	46.3	19.0	35.1	29.2	82.7	335.3
2015	30.9	43.0	38.6	44.0	18.2	30.0	23.7	69.6	298.0
2016	28.9	29.8	29.3	29.4	12.2	24.1	20.4	52.8	226.9
2017	24.2	29.9	26.0	25.2	9.2	19.0	14.0	35.8	183.3
2018	22.5	26.7	24.7	21.6	9.5	14.7	11.7	30.7	162.1

[a] Not including those unemployed who will find a new job within 30 days; since 2003: within 90 days.

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_06

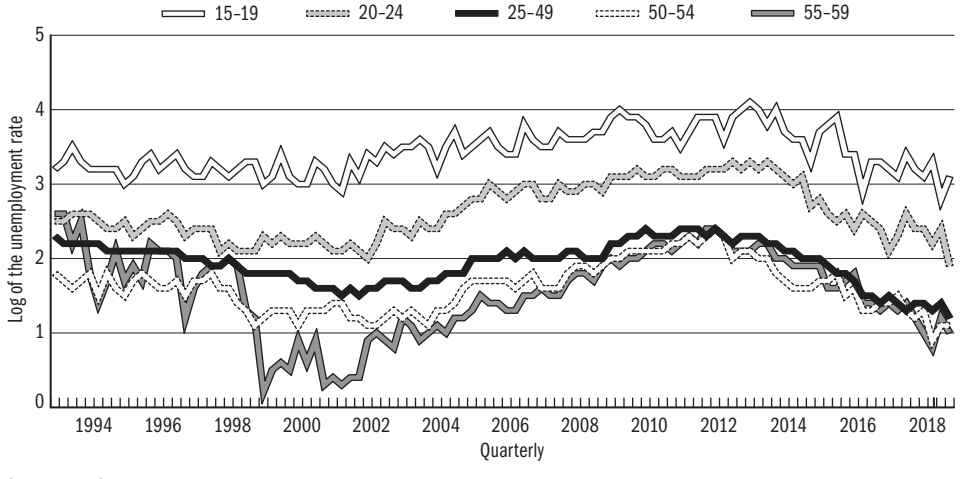
Figure 5.3: Unemployment rate by age groups, males aged 15 –59, quarterly



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_03

Figure 5.4: Unemployment rate by age groups, females aged 15 –59, quarterly



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_04

Table 5.7: Registered unemployed[a] and LFS unemployment

	Registered unemployed		LFS unemployed, total		LFS unemployed, age 15 –24	
Year	In thousands	rate in %	In thousands	rate in %	In thousands	rate in %
1995	507.7	11.9	416.5	10.2	114.3	18.6
1996	500.6	12.1	400.1	9.9	106.3	17.9
1997	470.1	11.6	348.8	8.7	95.8	15.9
1998	423.1	10.5	313.0	7.8	87.6	13.4
1999	409.5	10.2	284.7	7.0	78.6	12.4
2000	390.5	9.6	262.5	6.4	70.7	12.1
2001	364.1	8.8	232.9	5.7	55.7	10.8
2002	344.7	8.3	238.8	5.8	56.5	12.3
2003	357.2	8.7	244.5	5.9	54.9	13.4
2004	375.9	9.1	252.9	6.1	55.9	15.5
2005	409.9	9.8	303.9	7.2	66.9	19.4
2006	393.5	9.4	318.2	7.5	64.1	19.1
2007	426.9	10.1	312.1	7.4	57.4	18.0
2008	442.3	10.4	326.3	7.8	60.0	19.5
2009	561.8	13.5	417.8	10.0	78.8	26.4
2010	582.7	14.0	469.4	11.2	78.3	26.4
2011	582.9	14.0	466.0	11.0	74.5	26.0
2012	559.1	13.3	473.2	11.0	84.6	28.2
2013	527.6	12.4	441.0	10.2	83.5	26.6
2014	422.4	9.8	343.3	7.7	67.6	20.4
2015	378.2	8.6	307.8	6.8	58.9	17.3
2016	313.8	7.0	234.6	5.1	44.7	12.9
2017	283.0	6.1	191.7	4.2	36.3	10.7
2018	255.3	5.5	172.1	3.7	33.6	10.2

[a] Since 1st of November, 2005: database of registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers. After termination of compilation of Balance of Labour Force in 2016 the number of economically active population – that was the base of the registered unemployment rate – has been derived from the Labour Force Survey. At the same time data have been corrected retrospectively.

Note: the denominator of registered unemployment/jobseekers' rate in the economically active population on 1st January the previous year.

Source: Registered unemployment/jobseekers: *NFSZ;* LFS unemployment: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_07

Figure 5.5: Registered and LFS unemployment rates

Note: Since 1st of November, 2005: database of registered jobseekers.

Source: Registered unemployment/jobseekers: *NFSZ*; LFS unemployment: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_05

Table 5.8: Composition of the registered unemployed[a] by educational attainment, yearly averages, per cent

Educational attainment	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
8 grades of primary school or less	42.7	42.3	41.9	42.0	42.4	43.3	40.1	39.3	40.3	40.3	40.5	41.0	42.4	42.2	43.4	43.7
Vocational school	32.9	32.3	32.4	32.1	31.5	30.9	32.5	31.4	29.8	29.2	29.0	28.3	27.1	27.0	26.2	25.6
Vocational secondary school	13.1	13.4	13.5	13.4	13.3	13.1	14.4	15.0	14.9	15.1	15.3	15.3	15.0	14.9	14.6	14.7
Grammar school	7.5	7.7	7.9	8.0	8.2	8.2	8.5	9.1	9.5	9.7	9.8	10.1	10.1	10.1	10.1	10.3
College	2.7	3.1	3.2	3.3	3.3	3.3	3.2	3.7	3.8	3.8	3.6	3.4	3.4	3.5	3.4	3.4
University	1.0	1.1	1.2	1.3	1.3	1.2	1.2	1.5	1.7	1.8	1.8	1.9	2.0	2.2	2.3	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] Since 1st of November, 2005: registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_08

Table 5.9: The distribution of registered unemployed school-leavers[a] by educational attainment, yearly averages, per cent

Educational attainment	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
8 grades of primary school or less	34.7	35.2	36.1	38.2	40.1	41.3	37.7	35.2	35.6	34.9	35.5	39.4	43.8	44.9	45.8	45.1
Vocational school	20.4	20.2	20.5	19.7	18.1	17.3	18.9	18.9	18.5	19.8	20.1	18.3	16.9	16.6	16.4	15.7
Vocational secondary school	23.2	22.1	21.5	20.3	20.7	21.2	23.1	23.9	23.6	23.7	23.1	21.7	19.8	18.9	18.3	19.0
Grammar school	10.8	10.7	10.8	11.7	12.8	13.3	13.7	14.3	15.0	14.9	14.9	15.0	14.7	14.6	15.0	16.0
College	7.7	8.1	7.8	6.9	5.8	4.9	4.5	4.8	4.2	3.6	3.4	2.8	2.3	2.2	1.8	1.6
University	3.3	3.6	3.4	3.0	2.5	2.0	2.1	2.8	3.1	3.0	3.0	2.7	2.5	2.8	2.7	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] Since 1st of November, 2005: registered school-leaver jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_09

Table 5.10: Registered unemployed by economic activity as observed in the LFS, per cent

Year	Employed	LFS-unemployed	Inactive	Total	Year	Employed	LFS-unemployed	Inactive	Total
2001	6.5	45.2	48.3	100.0	2010	3.2	70.4	26.4	100.0
2002	4.4	47.4	48.2	100.0	2011	3.5	66.7	29.8	100.0
2003	9.4	44.1	46.5	100.0	2012	3.4	64.9	31.7	100.0
2004	3.0	53.5	43.5	100.0	2013	4.9	61.6	33.4	100.0
2005	2.3	59.7	38.0	100.0	2014	6.2	60.5	33.2	100.0
2006	3,0	60.9	36.1	100.0	2015	3.9	67.1	29.0	100.0
2007	3.7	62.2	34.1	100.0	2016	4.9	61.7	33.4	100.0
2008	3.9	62.8	33.2	100.0	2017	6.7	57.8	35.5	100.0
2009	3.7	67.1	29.2	100.0	2018	6.6	55.0	38.4	100.0

Note: The data pertain to those who consider themselves registered jobseekers in the KSH MEF. From 1999 those who reported that their last contact with the employment centre was more than two months ago were filtered from among those who reported themselves as registered unemployed.
Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_10

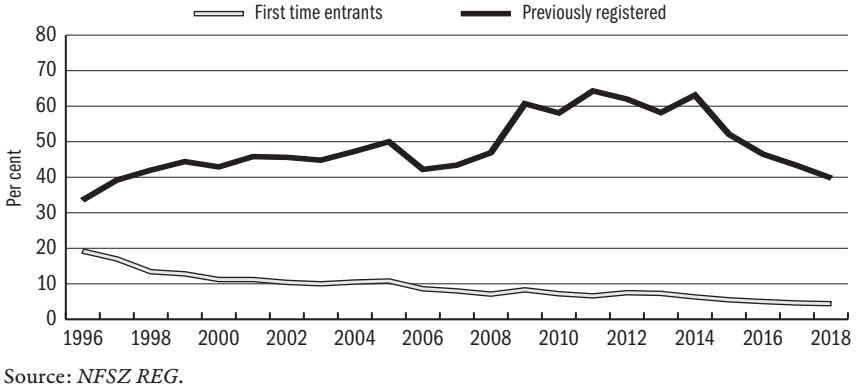
Table 5.11: Monthly entrants to the unemployment register[a], monthly averages, in thousands

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
First time entrants	11.2	10.4	10.0	10.5	10.8	8.6	8.0	7.1	8.3	7.2	6.6	7.5	7.3	6.3	5.5	5.0	4.6	4.4
Previously registered	45.8	45.6	44.8	47.3	50.0	42.2	43.4	46.9	60.7	58.1	64.3	62.0	58.2	63.1	52.1	46.5	43.3	39.8
Together	57.0	56.0	54.8	57.8	60.7	50.8	51.4	54.0	69.0	65.3	70.9	69.5	65.5	69.4	57.6	51.5	47.9	44.2

[a] Since 1st of November, 2005: database of jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_11

Figure 5.6: Entrants to the unemployment register, monthly averages, in thousands



Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena05_06

Table 5.12: Selected time series of registered unemployment, monthly averages, in thousands and per cent

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Registered unemployment[a]	409.5	390.5	364.1	344.7	357.2	375.9	409.9	393.5	426.9	442.3
Of which: School-leavers	29.9	26.0	26.8	28.5	31.3	33.8	40.9	38.7	40.4	41.4
Non school-leavers	379.6	364.4	337.4	316.2	325.9	342.2	369.1	354.7	386.5	400.9
Male	221.4	209.7	196.4	184.6	188.0	193.3	210.4	200.9	219.9	228.3
Female	188.1	180.8	167.7	160.1	169.2	182.6	199.5	192.5	207.0	214.0
25 years old and younger	85.4	79.1	75.6	71.1	71.6	71.4	78.9	75.8	80.3	75.9
Manual workers	336.8	321.2	302.0	286.3	296.2	308.5	336.2	321.9	..	..
Non manual workers	72.7	69.3	62.1	58.4	61.0	67.4	73.7	71.6	..	..
Unemployment benefit recipients[b]	140.7	131.7	119.2	114.9	120.0	124.0	134.4	151.5	134.6	136.5[e]
Unemployment assistance recipients[c]	148.6	143.5	131.2	113.4	116.2	120.4	133.4	121.8	133.0	147.5
Unemployment rate[d]	9.7	9.3	8.5	8.0	8.3	8.7	9.4	9.0	9.7	10.0
Shares within registered unemployed, %										
School-leavers	7.3	6.7	7.3	8.3	8.8	9.0	10.0	9.8	9.5	9.4
Male	54.1	53.7	53.9	53.5	52.6	51.4	51.3	51.1	51.5	51.6
25 years old and younger	20.9	20.3	20.8	20.6	20.0	19.0	19.2	16.5	18.8	17.2
Manual workers	82.3	82.2	82.9	83.1	82.9	82.1	82.0	81.8	..	..
Flows, in thousands										
Inflow to the Register	57.2	54.1	57.0	56.0	54.8	57.8	60.7	50.8	51.4	54.0
Of which: school-leavers	9.3	8.0	7.8	7.8	7.7	7.6	8.2	7.0	6.2	6.3
Outflow from the Register	57.2	56.8	59.4	55.8	53.5	54.4	59.8	51.4	48.4	51.3
Of which: school-leavers	9.4	8.2	7.7	7.5	7.6	7.1	7.9	7.1	6.0	6.2
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Registered unemployment[a]	561.8	582.7	582.9	559.1	527.6	422.4	378.2	313.8	283.0	255.3
Of which: School-leavers	49.3	52.6	52.9	61.5	66.0	54.6	47.0	35.8	29.6	24.8
Non school-leavers	512.5	530.1	529.9	497.6	461.6	367.8	331.2	278.0	253.4	230.5
Male	297.9	305.0	297.1	275.8	267.7	214.2	187.5	156.0	137.9	122.4
Female	263.9	277.7	285.8	283.3	259.9	208.2	190.7	157.8	145.1	132.9
25 years old and younger	104.3	102.8	102.3	101.1	97.8	78.2	68.8	56.0	49.8	43.6
Manual workers	..	..	..	..	..	..	..	..	..	..
Non manual workers	..	..	..	..	..	..	..	..	..	..
Unemployment benefit recipients[b]	202.1	187.7	159.9	71.1	61.2	56.4	57.1	60.2	63.1	64.0
Unemployment assistance recipients[c]	156.0	167.8	182.1	200.3	184.4	132.4	126.2	99.8	87.4	75.7
Unemployment rate[d]	12.8	13.3	13.2	12.6	11.9	9.5	8.5	6.9	6.1	5.5
Shares within registered unemployed, %										
School-leavers	8.8	9.0	9.1	11.0	12.5	12.9	12.4	11.4	10.5	11.0
Male	53.0	52.3	51.0	49.3	50.8	50.7	49.6	49.7	48.7	47.9
25 years old and younger	18.6	17.6	17.5	18.1	18.5	18.5	18.2	17.8	17.6	17.1
Manual workers	..	..	..	..	..	..	..	..	..	..
Flows, in thousands										
Inflow to the Register	69.0	65.3	70.9	69.5	65.5	69.4	57.6	51.5	47.9	44.2
Of which: school-leavers	7.5	7.9	8.2	10.0	10.8	11.2	9.0	7.7	6.7	5.9
Outflow from the Register	58.4	66.4	74.2	68.1	78.4	71.3	62.1	56.8	49.4	45.3
Of which: school-leavers	6.7	7.5	8.1	8.6	11.8	11.3	9.7	8.2	7.0	6.1

[a] Since 1st of November, 2005: registered jobseekers. (The data concern the closing date of each month.) From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.

[b] Since 1st of November, 2005: jobseeker benefit recipients. From September 1st, 2011, the system of jobseeking support changed.

[c] Only recipients who are in the NFSZ register. Those receiving the discontinued income support supplement were included in the number of those receiving income support supplement up to the year 2004, and in the number of those receiving regular social assistance from 2005 to 2008. From 2009, those receiving social assistance were included in a new support type, the on call support. This allowance was replaced by the wage replacement support from January 1, 2011, then from September 1, 2011, the name was changed to employment substitution support.
[d] Relative index: registered unemployment rate in the economically active population. From 1st of November, 2005, registered jobseekers' rate in the economically active population.
[e] The new IT system introduced at the NFSZ in 2008 made the methodological changes possible:
1) The filtering out of those returning after, or starting a break from, the number of those entering or leaving the different types of jobseeking support. The main reasons for a break are, work for short time periods, receipt of child support (GYES) or TGYÁS, or involvement in training.
2) Taking into account in the previous period the number of those entrants, for whom the first accounting of the jobseeking support was delayed due to missing documentation.
2008 data, comparable to 2009: 141.5 thousand people.
Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_12

Table 5.13: The number of registered unemployed[a] who became employed on subsidised and non-subsidised employment[b]

	2012		2013		2014		2015		2016		2017		2018	
	Persons	Per cent	Persons	Per cent	Persons	Per-sons	Persons	Per cent	Persons	Per cent	Persons	Per cent	Persons	Per cent
Subsidised employment	261,631	50.0	359,962	60.2	351,550	63.2	278,875	61.0	237,986	60.0	180,630	54.8	149,481	51.4
Non-subsidised employment	261,581	50.0	237,795	39.8	204,887	36.8	177,960	39.0	158,391	40.0	149,244	45.2	141,214	48.6
Total	523,212	100.0	597,757	100.0	556,437	100.0	456,835	100.0	396,377	100.0	329,874	100.0	290,695	100.0

[a] Since 1st of November, 2005: registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
[b] Annual totals, the number of jobseekers over the year who were placed in work. It reflects the placements at the time of their exit from the registry.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_13

Table 5.14: Benefit recipients and participation in active labour market programmes

Year		Unemployment benefit[a]	Regular social assistance[b]	UA for school-leavers	Do not receive provision	Public work[c]	Retraining[c]	Wage subsidy[c]	Other programmes[c]	Total
2000	In thousands	117.0	139.7	0.0	106.5	26.7	25.3	27.5	73.5	516.2
	Per cent	22.7	27.1	0.0	20.6	5.2	4.9	5.3	14.2	100.0
2001	In thousands	111.8	113.2	0.0	105.2	29.0	30.0	25.8	37.2	452.2
	Per cent	24.7	25.0	0.0	23.3	6.4	6.6	5.7	8.2	100.0
2002	In thousands	104.8	107.6	–	115.3	21.6	23.5	21.2	32.8	426.8
	Per cent	24.6	25.2	–	27.0	5.1	5.5	5.0	7.7	100.0
2003	In thousands	105.1	109.5	–	125.0	21.2	22.5	20.1	36.6	440.0
	Per cent	23.9	24.9	–	28.4	4.8	5.1	4.6	8.3	100.0
2004	In thousands	117.4	118.4	–	132.3	16.8	12.6	16.8	28.5	442.8
	Per cent	26.5	26.7	–	29.9	3.8	2.8	3.8	6.4	100.0
2005	In thousands	125.6	127.8	–	140.2	21.5	14.7	20.8	31.0	481.6
	Per cent	26.1	26.5	–	29.1	4.5	3.1	4.3	6.4	100.0
2006	In thousands	117.7	112.9	–	146.4	16.6	12.3	14.6	13.8	434.3
	Per cent	27.1	26.0	–	33.7	3.8	2.8	3.4	3.2	100.0
2007	In thousands	128.0	133.1	–	151.8	19.3	14.6	23.4	6.8	477.0
	Per cent	27.6	28.7	–	32.7	2.7	2.3	3.7	2.3	100.0
2008	In thousands	120.7[d]	145.7	–	158.2	21.2	21.2	25.0	14.1	506.1
	Per cent	23.8	28.8	–	31.3	4.2	4.2	4.9	2.8	100.0
2009	In thousands	202.8	151.9	–	215.0	135.3	13.6	17.8	54.1	790.5
	Per cent	25.7	19.2	–	27.2	17.1	1.7	2.3	6.8	100.0
2010	In thousands	159.6	163.5	–	222.4	164.5	17.8	26.7	40.3	794.8
	Per cent	20.1	20.6	–	28.0	20.7	2.2	3.4	5.1	100.0
2011	In thousands	120.2	168.2	–	242.3	91.6	12.6	26.1	3.4	664.4
	Per cent	18.1	25.3	–	36.5	13.8	1.9	3.9	0.5	100.0
2012	In thousands	54.0	185.6	–	283.4	134.1	28.6	25.7	2.9	714.3
	Per cent	7.6	26.0	–	39.7	18.8	4.0	3.6	0.4	100.0
2013	In thousands	52.6	169.3	–	266.7	157.2	42.0[e]	31.7	3.9	723.4
	Per cent	7.3	23.4	–	36.9	21.7	5.8	4.4	0.5	100.0
2014	In thousands	55.3	123.4	–	216.5	170.3	24.6	17.7	2.7	610.5
	Per cent	9.1	20.2	–	35.5	27.9	4.0	2.9	0.4	100.0
2015	In thousands	55.0	110.6	–	168.7	224.9	11.0	9.1	2.1	581.4
	Per cent	9.5	19.0	–	29.0	38.7	1.9	1.6	0.4	100.0
2016	In thousands	56.8	85.0	–	136.0	219.6	17.9	21.1	3.0	539.4
	Per cent	10.5	15.8	–	25.2	40.7	3.3	3.9	0.6	100.0
2017	In thousands	59.5	80.8	–	120.0	171.0	17.2	30.9	4.2	483.6
	Per cent	12.3	16.7	–	24.8	35.4	3.6	6.4	0.9	100.0
2018	In thousands	64.1	70.4	–	109.7	123.9	13.2	40.5	6.0	427.8
	Per cent	15.0	16.5	–	25.6	29.0	3.1	9.5	1.4	100.0

[a] Since 1st of November, 2005: jobseeker benefit recipients. From September 1, 2011, the system of jobseeking support changed.

[b] Only recipients who are in the NFSZ register. Those receiving the discontinued income support supplement were included in the number of those receiving income support supplement up to the year 2004, and in the number of those receiving regular social assistance from 2005 to 2008. From 2009, those receiving social assistance were included in a new support type, the on call support. This allowance was replaced by the wage replacement support from January 1, 2011, then from September 1, 2011., the name was changed to employment substitution support.

[c] Up to the year 2008 the number financed from the MPA Decentralized Base, since 2009 the number financed from MPA, TAMOP.

Public-type employment: community service, public service, public work programmes.

Wage subsidy: wage subsidy, wage-cost subsidy, work experience acquisition assistance to career-starters, support for employment of availability allowance recipients, part-time employment, wage support for those losing their job due to the crisis.
Other support: job preservation support, support to would-be entrepreneurs, contribution to costs related to commuting to work, job creation support, jobseeker's clubs.
[d] The new IT system introduced at the NFSZ in 2008 made the methodological changes possible:
1) The filtering out of those returning after a break or starting a break from the number of those entering or leaving the different types of jobseeking support. The main reasons for a break are work for short time periods, receipt of child support (GYES) or TGYÁS, or involvement in training.
2) Taking into account in the previous period the number of those entrants, for whom the first accounting of the jobseeking support was delayed due to missing documentation.
2008 data, comparable to 2009: 134.1 thousand people.
[e] In 2013, 18.1 thousand trainees were simultaneously involved in public works programmes.
Note: The closing numbers from October of each year. For the percentage data, the sum of those registered and those taking part in labour market programmes ≈100.0.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_14

Table 5.15: The ratio of those who are employed among the former participants of ALMPs[a], per cent

Active labour market programmes	2003[b]	2004[b]	2005[b]	2006[b]	2007[b]	2008[b]	2009[c]	2010[c]	2011[c]	2012[c]	2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]
Suggested training programmes[d]	43.0	45.5	43.8	41.1	37.5	42.2	40.4	49.4	42.6	44.9	55.1	61.4	54.8	47.8	48.2	44.2
Accepted training programmes[e]	46.0	45.6	51.4	50.9	47.6	48.0	41.9	48.8	41.6	56.7	65.9	58.8	63.4	55.7	44.9	48.7
Retraining of those who are employed[f]	93.3	92.1	90.4	..	92.3	93.9	..	59.9	75.0	65.7	72.7	61.4	87.7	41.7	92.2	93.8
Support for self-employment[g]	89.6	90.7	89.6	86.4	87.6	83.6	73.1	76.4	71.5	72.6	74.1	76.3	81.0	40.0	30.8	33.7
Wage subsidy programmes[h]	62.0	64.6	62.6	62.3	63.4	65.0	72.4	90.9	69.6	70.3	73.0	56.0	70.9	53.5	28.6	30.2
Work experience programmes[i]	66.1	66.5	66.8	66.6	66.3	74.6	..	..	72.0	69.9	68.5	–	–	–	–	–
Further employment programme[j]	78.2	71.5	70.9	65.0	77.5	–	–	–	–	–	–	–	–	–	–	–

[a] The data relate to people having completed their courses successfully.
[b] Three months after the end of programmes.
[c] Six months after the end of programmes.
[d] Suggested training: group training programmes for jobseekers organized by the NFSZ.
[e] Accepted training: participation in programmes initiated by the jobseekers and accepted by NFSZ for full or partial support.
[f] Training for employed persons: training for those whose jobs are at risk of termination, if new knowledge allows them to adapt to the new needs of the employer.
[g] Support to help entrepeneurship: support of jobseekers in the amount of the monthly minimum wage or maximum HUF 3 million lump sum support (to be repaid or not), aimed at helping them become individual entrepreneurs or self-employed.
[h] Wage support: aimed at helping the employment of disadvantaged persons, who would not be able to, or would have a harder time finding work without support. The data on wage subsidies and labour cost subsidies exclude the programs supporting job seeking school leavers and student work during summer vacation.
[i] Work experience-gaining support: the support of new entrants with no work experience for 6 –9 months, the amount of the support is equal to 50 –80% of the wage costs. The instrument was discontinued after December 31, 2006.. In 2009 they reintroduced the work experience gaining support for skilled new entrants, for employers who ensure employment of at least 4 hours a day and for 365 days. The amount of the support is 50 –100% of the wage cost. Monitoring for the first exiters is available from 2011. The program supporting the school to work transition of skilled school leavers was abolished in 2014.
[j] Further employment programmes: to support the continued employment of new entrants under the age of 25 for 9 months. Discontinued from December 31, 2006.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_15

Table 5.16: Distribution of registered unemployed[a], unemployment benefit recipients[b] and unemployment assistance recipients[c] by educational attainment

Educational attainment	2008	2008[e]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Registered unemployed												
8 grades of primary school or less	43.8	–	40.0	39.2	39.9	40.1	40.1	42.4	42.4	41.2	43.4	43.5
Vocational school	30.7	–	33.1	31.4	29.8	29.1	28.9	27.6	27.1	27.3	26.2	25.8
Vocational secondary school	12.8	–	14.4	15.0	15.0	15.2	15.6	14.9	15.1	15.4	14.6	14.9
Grammar school	8.1	–	8.3	9.1	9.7	9.8	10.0	9.9	10.0	10.3	10.1	10.1
College	3.2	–	3.0	3.7	3.9	3.9	3.6	3.3	3.4	3.6	3.4	3.4
University	1.2	–	1.1	1.5	1.7	1.9	1.9	1.8	2.0	2.3	2.3	2.3
Total	100.0	–	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	415.6	–	549.0	546.0	553.3	524.4	497.0	438.6	366.9	291.6	283.0	240.7
Unemployment benefit recipients[d]												
8 grades of primary school or less	24.4	26.3	25.7	24.1	23.4	20.2	21.8	27.8	24.8	26.7	31.4	31.7
Vocational school	37.0	39.2	39.4	36.2	34.5	34.5	34.8	33.3	33.1	32.8	31.4	31.1
Vocational secondary school	19.3	18.3	18.5	19.7	20.1	21.2	21.2	19.0	20.0	19.5	17.6	17.8
Grammar school	11.0	10.6	10.1	11.6	12.3	12.7	12.0	10.9	11.8	11.3	10.8	10.8
College	6.0	5.7	4.5	5.8	6.7	7.6	6.7	5.7	6.4	5.9	5.2	5.1
University	2.3	2.1	1.7	2.6	3.1	3.8	3.6	3.3	3.9	3.8	3.6	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	92.5	126.9	200.5	165.8	145.9	53.1	53.0	60.0	50.0	53.8	63.1	57.4
Unemployment assistance recipients[c]												
8 grades of primary school or less	60.3	–	59.4	56.4	56.1	53.4	52.4	53.5	54.1	53.4	56.3	57.5
Vocational school	26.5	–	26.6	27.4	26.1	26.4	26.6	26.1	25.6	25.5	24.3	23.5
Vocational secondary school	6.8	–	7.5	8.6	9.0	10.3	10.9	10.5	10.4	10.7	9.8	9.4
Grammar school	4.7	–	4.8	5.6	6.3	7.1	7.3	7.2	7.3	7.6	7.1	7.1
College	1.2	–	1.2	1.5	1.8	2.1	2.0	1.8	1.8	1.9	1.7	1.6
University	0.4	–	0.4	0.5	0.6	0.8	0.8	0.8	0.8	0.9	0.9	0.8
Total	100.0	–	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	145.8	–	144.1	161.7	174.7	193.5	177.4	138.8	130.8	94.4	87.4	73.1

[a] Since 1st of November, 2005: registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.

[b] Since 1st of November, 2005: those receiving jobseeking support. From the 1st of September 2011, the system of jobseeking support changed.

[c] Only recipients who are in the NFSZ register. Those receiving the discontinued income support supplement were included in the number of those receiving income support supplement up to the year 2004, and in the number of those receiving regular social assistance from 2005 to 2008. From 2009, those receiving social assistance were included in a new support type, the on call support. This allowance was replaced by the wage replacement support from January 1, 2011, then from September 1, 2011, the name was changed to employment substitution support.

[d] After 1st of November, 2005: jobseeking support. Does not contain those receiving unemployment aid prior to pension in 2004. From the 1st of September 2011, the system of jobseeking support changed.

[e] The new IT system introduced at the NFSZ in 2008 made the methodological changes possible:
1) The filtering out of those returning after or starting a break from the number of those entering or leaving the different types of jobseeking support. The main reasons for a break are, work for short time periods, receipt of child support (GYES) or TGYÁS, or involvement in training.
2) Taking into account in the previous period the number of those entrants, for whom the first accounting of the jobseeking support was delayed due to missing documentation.

The right-hand column of 2008 contains the 2008 data in a form comparable to the 2009 data.
Note: Data from the closing date of June in each year.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_16

Table 5.17: Outflow from the Register of Beneficiaries

Year	Total number of outflows	Of which: became employed, %	Of which: benefit period expired, %	Year	Total number of outflows	Of which: became employed, %	Of which: benefit period expired, %
2000	325,341	28.1	64.6	2009	345,216	37.9	56.0
2001	308,780	27.2	65.1	2010	352,535	38.9	55.8
2002	303,288	27.6	66.7	2011	329,728	39.2	55.7
2003	297,640	26.7	65.2	2012	368,803	21.9	77.8
2004	308,027	27.4	64.6	2013	328,508	21.3	75.6
2005	329,738	27.2	63.0	2014	300,516	27.0	67.4
2006	234,273	33.2	53.7	2015	296,171	32.5	63.4
2007	251,889	33.4	46.9	2016	287,062	35.9	60.5
2008	232,151	40.0	48.7	2017	284,284	34.9	61.4
2008[a]	261,573	43.4	48.9	2018	280,772	33.1	61.4

[a] The new IT system introduced at the NFSZ in 2008 made the methodological changes possible:
1) The filtering out of those returning after or starting a break from the number of those entering or leaving the different types of jobseeking support. The main reasons for a break are, work for short time periods, receipt of child support (GYES) or TGYÁS, or involvement in training.
2) Taking into account in the previous period the number of those entrants, for whom the first accounting of the jobseeking support was delayed due to missing documentation.
The row of 2008[a] contains the data from 2008 in the form comparable to the 2009 data.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_17

Table 5.18: The distribution of the total number of labour market training participants[a]

Groups of training participants	2003	2004	2005	2006	2007	2008	2009	2010
Participants in suggested training	45,261	33,002	29,252	36,212	32,747	48,561	41,373	50,853
Participants in accepted training	28,599	19,406	9,620	7,327	5,766	4,939	8,241	6,853
One Step Forward (OFS) programme	–	–	–	–	270	59,347	11,169	2,316
Non-employed participants together	73,859	52,407	38,872	43,539	38,783	112,847	60,783	57,706
Of which: school-leavers	18,320	12,158	9,313	1,365	1,111	18,719	21,103	12,030
Employed participants	9,036	7,487	4,853	3,602	3,467	37,466	12,496	336
Total	82,895	59,894	43,725	47,141	42,250	150,313	73,279	60,358
	2011	2012	2013[b]	2014[b]	2015[b]	2016[b]	2017[b]	2018[b]
Participants in suggested training	32,172	43,438	22,574	10,900	330	50,953	68,125	61,451
Participants in accepted training	2,495	2,446	22,574	1,275	1,189	1,410	1,370	241
One Step Forward (OFS) programme	–	–	–	–	–	–	–	–
Non-employed participants together	34,667	45,884	132,587	200,466	61,127	53,153	69,495	61,692
Of which: school-leavers	7,935	9,976	106,333	31,083	3,981	12,318	14,984	12,924
Employed participants	908	716	631	827	14,389	2,493	3,002	3,214
Total	35,575	46,600	133,218	201,293	75,516	55,646	72,497	65,176

[a] The data contain the number of those financed from the NFA decentralized employment base, as well as those involved in training as a part of the HEFOP 1.1 and the TÁMOP 1.1.2 programmes.
[b] The data include public works participants simultaneously involved in training (88,004 public works participants in 2013, 143,275 public works participants in 2014, 50,124 public works participants in 2015, 29,686 public works participants in 2016, 40,432 public works participants in 2017, 32,735 public works participants in 2018).
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_18

Table 5.19: Employment ratio of participants ALMPs by gender, age groups and educational attainment for the programmes finished in 2018[a], per cent

	Non-employed participants			Supported self-employment[b]	Wage subsidy programme
	suggested training	accepted training	total		
By gender					
Males	50.7	53.3	50.8	57.1	61.0
Females	49.6	50.5	49.7	58.3	66.7
By age groups					
–20	29.5	28.6	29.5	45.8	32.2
20–24	38.7	57.7	38.7	29.6	36.4
25–29	44.2	43.9	44.2	31.0	31.2
–29 together	38.5	47.3	38.5	30.8	34.8
30–34	46.3	44.0	46.3	27.4	29.5
35–39	47.9	48.0	47.9	28.2	34.2
40–44	48.9	53.3	48.9	29.6	30.9
45–49	48.0	55.2	48.1	32.4	34.0
50–54	49.7	35.0	49.6	34.0	35.3
55+	45.6	57.1	45.6	33.8	32.8
By educational attainment					
Less than primary school	39.4	–	39.4	5.0	19.2
Primary school	42.1	41.0	42.1	25.6	31.4
Vocational school for skilled workers	47.9	62.2	48.0	28.8	32.8
Vocational school	45.7	..	45.7	29.0	33.3
Vocational secondary school	49.7	51.7	49.7	31.6	37.0
Technicians secondary school	51.1	60.0	51.2	36.1	31.5
Grammar school	47.6	44.4	47.6	30.5	32.2
College	46.8	40.0	46.8	33.6	42.9
University	49.6	..	49.6	28.8	42.0
Total	44.2	48.7	44.2	30.2	33.7

[a] Includes all kinds of wage subsidies except financial support for student work during vacation.
[b] Survival rate.
Note: 6 months after the end of each programme.
Source: *NFSZ.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_19

Table 5.20: Distribution of the average annual number of those with no employment status who participate in training categorised by the type of training, percentage

Types of training	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Approved qualification	78.7	77.6	78.3	75.1	72.9	71.5	69.0	65.8	63.6	65.2	68.6	71.6	50.2	53.3	59.4	56.4	65.7	76.8
Non-approved qualification	14.0	13.6	12.6	15.0	14.5	16.9	19.9	22.8	26.4	25.4	21.1	19.0	44.2	43.2	37.9	40.6	30.8	20.1
Foreign language learning	7.3	8.8	9.1	9.9	12.6	11.5	11.1	11.4	10.0	9.4	10.3	9.4	5.6	3.5	2.7	3.0	3.5	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *NFSZ.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_20

Table 5.21: The distribution of those entering training programmes by age groups and educational level

	Training				Training for public works participants				Together			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Total number of entrants	12,016	17,312	18,958	32,171	28,036	26,361	31,508	32,735	40,052	43,673	50,466	64,906
By age groups, %												
–20	11.5	5.7	7.5	7.4	4.8	7.1	6.3	5.5	6.8	6.5	6.7	6.4
20–24	39.3	15.1	17.7	16.4	15.8	11.4	10.7	9	22.8	12.9	13.3	12.7
25–44	35.8	56.4	51.4	52.2	49.5	47.5	47.1	47.8	45.4	51.0	48.7	50.0
45–49	6.0	10.8	10.4	10.8	10.5	12.2	12.9	13.1	9.2	11.6	12.0	12.0
50+	7.4	12.0	13.0	13.1	19.4	21.9	23.0	24.7	15.8	17.9	19.2	18.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By level of education, %												
Less than primary school	0.8	1.1	2.2	2.2	6.9	15.6	16.0	16.3	5.1	9.9	10.8	9.3
Primary school	35.2	35.1	38.8	36.2	44.6	78.8	75.2	71.3	41.8	61.4	61.6	53.9
Vocational school	19.7	22.4	21.8	21.4	21.5	1.8	5.7	7.9	21.0	10.0	11.7	14.6
Vocational and technical secondary school	23.5	21.7	18.7	20.2	14.0	1.9	1.6	2.4	16.8	9.8	8.0	11.2
Grammar school	17.8	15.1	14.9	15.8	9.4	1.6	1.3	1.9	11.9	7.0	6.4	8.8
College, university	3.0	4.6	3.6	4.2	3.6	0.2	0.1	0.1	3.4	2.0	1.4	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent05_21

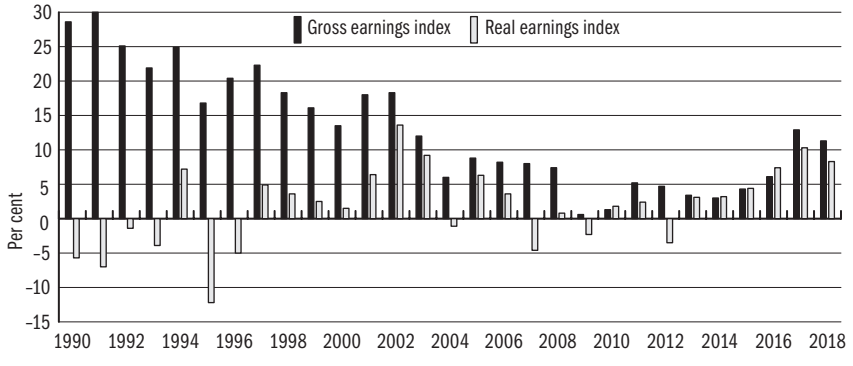
Table 6.1: Annual changes of gross and real earnings

Year	Gross earnings	Net earnings	Gross earnings index	Net earnings index	Consumer price index	Real earnings index
	HUF		previous year = 100			
1995	38,900	25,891	116.8	112.6	128.2	87.8
1996	46,837	30,544	120.4	117.4	123.6	95.0
1997	57,270	38,145	122.3	124.1	118.3	104.9
1998	67,764	45,162	118.3	118.4	114.3	103.6
1999	77,187	50,076	116.1	112.7	110.0	102.5
2000	87,750	55,785	113.5	111.4	109.8	101.5
2001	103,554	64,913	118.0	116.2	109.2	106.4
2002	122,481	77,622	118.3	119.6	105.3	113.6
2003	137,193	88,753	112.0	114.3	104.7	109.2
2004	145,523	93,715	106.1	105.6	106.8	98.9
2005	158,343	103,149	108.8	110.1	103.6	106.3
2006	171,351	110,951	108.2	107.6	103.9	103.6
2007	185,018	114,282	108.0	103.0	108.0	95.4
2008	198,741	121,969	107.4	107.0	106.1	100.8
2009	199,837	124,116	100.6	101.8	104.2	97.7
2010	202,525	132,604	101.3	106.8	104.9	101.8
2011	213,094	141,151	105.2	106.4	103.9	102.4
2012	223,060	144,085	104.7	102.1	105.7	96.6
2013	230,714	151,118	103.4	104.9	101.7	103.1
2014	237,695	155,717	103.0	103.0	99.8	103.2
2015	247,924	162,400	104.3	104.3	99.9	104.4
2016	263,171	175,009	106.1	107.8	100.4	107.4
2017	297,017	197,516	112.9	112.9	102.4	110.3
2018	329,943	219,412	111.3	111.3	102.8	108.3

Note: Earnings data include payments to public works participants.
Source: *KSH IMS* (earnings) and *consumer price accounting*. Gross earnings, gross earnings index: 2000 –: *STADAT* (2019.02.20. version). Net earnings, net earnings index: 2008 –: *STADAT* (2019.02.20. version). Consumer price index: 1995 –: *STADAT* (2019.01.13. version). Real earnings index: 1995 –: *STADAT* (2019.02.21. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent06_01

Figure 6.1: Annual changes of gross nominal and net real earnings



Source: *KSH IMS* (earnings) and *consumer price accounting STADAT* (2018. 02. 20. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena06_01

Table 6.2.a: Gross earnings ratios in the economy, HUF/person/month

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture, forestry and fishing	133,570	137,101	143,861	153,301	164,136	171,921	180,251	189,136	204,385	230,638	255,664
Mining and quarrying	225,650	244,051	234,243	254,607	271,012	279,577	287,036	289,665	299,354	332,985	375,494
Manufacturing	183,081	190,331	200,692	213,281	230,877	241,170	253,162	263,877	279,336	311,879	344,495
Electricity, gas, steam and air conditioning supply	321,569	345,035	363,900	379,606	404,073	410,485	422,444	439,282	454,361	498,280	546,640
Water supply; sewerage, waste management and remediation activities	178,049	181,818	193,604	207,614	223,206	224,654	224,447	230,574	234,037	269,090	300,387
Construction	146,475	152,204	153,130	156,682	163,649	177,790	185,680	196,947	201,095	227,524	254,711
Wholesale and retail trade; repair of motor vehicles and motorcycles	171,780	175,207	185,812	196,942	212,521	218,936	223,882	230,036	243,716	273,810	304,112
Transportation and storage	186,376	196,350	200,129	210,146	217,794	223,410	230,138	239,147	247,562	279,507	310,196
Accommodation and food service activities	120,600	122,561	122,699	125,757	139,731	147,023	152,874	157,560	165,969	189,489	211,984
Information and communication	358,217	366,752	368,113	392,963	410,045	426,460	449,412	460,122	479,625	510,675	561,443
Financial and insurance activities	431,601	427,508	433,458	456,980	459,744	470,966	486,054	493,956	519,027	561,576	608,234
Real estate activities	169,845	177,747	182,903	184,829	219,287	212,391	214,163	221,125	239,317	281,502	316,079
Professional, scientific and technical activities	281,150	292,974	297,489	303,292	330,860	320,422	345,198	369,460	392,266	431,838	462,814
Administrative and support service activities	147,125	149,131	145,576	149,675	163,300	169,223	181,338	198,050	215,241	246,072	277,744
Public administration and defence; compulsory social security	267,657	234,696	242,958	252,848	247,139	258,803	262,055	282,194	313,084	358,569	392,840
Education	204,600	194,958	195,930	192,984	197,344	216,927	245,933	258,200	274,211	297,404	320,233
Human health and social work activities	169,977	161,265	142,282	153,832	151,446	151,287	143,047	146,700	154,443	185,037	218,184
Arts, entertainment and recreation	183,813	179,199	179,976	192,407	209,930	216,869	226,327	213,286	227,509	289,154	333,997
Other service activities	157,950	160,375	150,025	162,490	175,872	174,777	181,601	193,303	207,222	243,967	271,921
National economy, total	198,741	199,837	202,525	213,094	223,060	230,664	237,695	247,924	263,171	297,017	329,943
Of which:											
– business sector	192,044	200,304	206,863	217,932	233,829	242,191	252,664	262,731	276,923	308,994	341,540
– budgetary institutions	219,044	201,632	195,980	203,516	200,027	207,191	209,706	220,210	237,494	275,251	308,508

Note: The data are recalculated based on the industrial classification system in effect from 2008. Earnings data include payments to public works participants.
Source: *KSH* mid-year IMS. Gross earnings, gross earnings index: *STADAT* (2019.02.21. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent06_02a

Table 6.2.b: Gross earnings ratios in the economy, per cent

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture, forestry and fishing	67.2	68.6	71.0	72.0	73.6	74.5	75.8	76.3	77.7	77.7	77.5
Mining and quarrying	113.5	122.1	115.5	119.5	120.9	121.2	120.7	116.8	113.7	112.1	113.8
Manufacturing	92.1	95.2	99.1	100.0	103.4	104.6	106.4	106.4	106.1	105.0	104.4
Electricity, gas, steam and air conditioning supply	161.8	172.7	179.6	178.2	181.1	178.0	177.8	177.2	172.6	167.8	165.7
Water supply; sewerage, waste management and remediation activities	89.6	91.0	95.6	97.4	100.0	97.4	94.7	93.2	88.9	90.6	91.0
Construction	73.7	76.2	75.5	73.5	73.4	77.1	78.0	79.4	76.4	76.6	77.2
Wholesale and retail trade; repair of motor vehicles and motorcycles	86.4	87.7	91.7	92.4	95.3	94.9	94.3	92.8	92.6	92.2	92.2
Transportation and storage	93.8	98.3	98.9	98.6	97.8	96.9	96.9	96.5	94.1	94.1	94.0
Accommodation and food service activities	60.7	61.3	60.6	59.0	62.7	63.7	64.4	63.6	63.1	63.8	64.2
Information and communication	180.2	183.5	181.7	184.4	183.9	184.9	189.0	185.6	182.2	171.9	170.2
Financial and insurance activities	217.2	213.9	214.0	214.5	206.2	204.2	204.1	199.2	197.2	189.1	184.3
Real estate activities	85.5	88.9	90.2	86.8	98.3	92.1	90.5	89.2	90.9	94.8	95.8
Professional, scientific and technical activities	141.5	146.6	146.9	142.4	148.4	138.9	145.1	149.0	149.1	145.4	140.3
Administrative and support service activities	74.0	74.6	71.9	70.3	73.3	73.4	77.3	79.9	81.8	82.8	84.2
Public administration and defence; compulsory social security	134.7	117.4	120.2	118.7	110.8	112.2	110.2	113.8	119.0	120.7	119.1
Education	102.9	97.6	96.7	90.6	88.5	94.0	103.4	104.1	104.2	100.1	97.1
Human health and social work activities	85.5	80.7	70.3	72.2	67.9	65.6	60.2	59.2	58.7	62.3	66.1
Arts, entertainment and recreation	92.5	89.7	88.8	90.3	94.1	94.0	95.0	86.0	86.4	97.4	101.2
Other service activities	79.5	80.3	74.1	76.1	78.9	75.8	76.1	78.0	78.7	82.1	82.4
National economy, total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Of which:											
– business sector	96.6	100.2	102.1	102.3	104.8	105.0	106.3	106.0	105.2	104.0	103.5
– budgetary institutions	110.2	100.9	96.8	95.5	89.7	89.8	88.2	88.8	90.2	92.7	93.5

Note: The data are recalculated based on the industrial classification system in effect from 2008. Earnings data include payments to public works participants.
Source: *KSH* mid-year IMS. Gross earnings, gross earnings index: *STADAT* (2019.02.21. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent06_02b

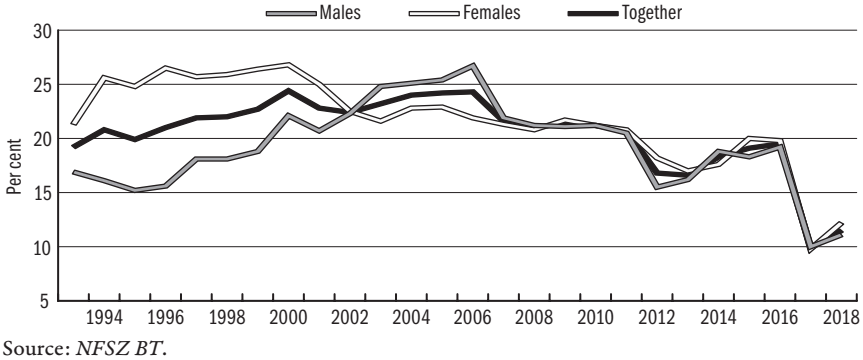
Table 6.3: Regression-adjusted earnings differentials

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Male	0.1500	0.1360	0.1680	0.1670	0.1440	0.1500	0.1550	0.1500	0.1420	0.1350	0.1520	0.1300
Less than primary school	–0.4800	–0.3720	–0.4140	–0.3650	–0.5540	–0.4950	–0.5200	–0.4260	–0.4800	–0.5240	–0.5360	–0.5710
Primary school	–0.3730	–0.3520	–0.4010	–0.3910	–0.4330	–0.4040	–0.3990	–0.3840	–0.3650	–0.3570	–0.3760	–0.4040
Vocational school	–0.2750	–0.2710	–0.2750	–0.2690	–0.2860	–0.2660	–0.2470	–0.2490	–0.2030	–0.1910	–0.2170	–0.2260
College, university	0.5900	0.5900	0.5670	0.5610	0.5970	0.6020	0.5970	0.5570	0.5630	0.6060	0.6000	0.5750
Estimated labour market experience	0.0238	0.0233	0.0243	0.0237	0.0262	0.0267	0.0256	0.0238	0.0227	0.0070	0.0245	0.0253
Square of estimated labour market experience	–0.0004	–0.0003	–0.0004	–0.0004	–0.0004	–0.0004	–0.0004	–0.0004	–0.0004	0.0000	–0.0004	–0.0004
Public sector	0.1130	0.1530	0.0444	0.0500	–0.0665	–0.1060	–0.1240	–0.2480	–0.1900	–0.0843	–0.2030	–0.3060

Note: the results indicate the earnings differentials of the various groups relative to the reference group in log points (approximately percentage points). All parameters are significant at the 0.01 level. The region parameters can be seen in Table 9.6.
Reference categories: female, with leaving certificate (general education certificate), not in the public sector, working in the Central-Transdanubia region.
Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent06_03

Figure 6.2: The percentage of low paid workers by gender, per cent



Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena06_02

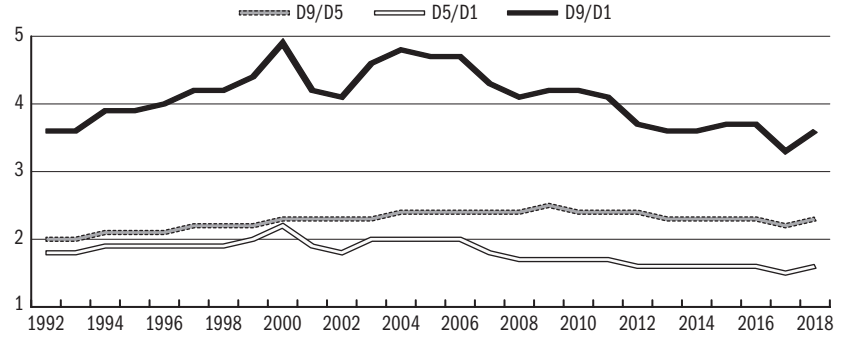
Table 6.4: Percentage of low paid workers[a] by gender, age groups, level of education and industries

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
By gender																		
Males	20.7	22.3	24.8	25.1	25.4	26.7	21.9	21.2	21.1	21.2	20.5	15.5	16.2	18.8	18.3	19.2	10.0	11.1
Females	25.0	22.5	21.6	22.8	22.9	21.9	21.3	20.8	21.7	21.2	20.8	18.2	17.0	17.6	20.0	19.8	9.8	12.2
By age groups																		
-24	35.5	37.6	39.9	43.9	44.2	46.3	40.1	34.6	38.9	38.2	36.6	26.4	30.9	29.7	31.2	31.7	16.4	16.4
25-54	21.9	21.8	22.3	23.6	24.0	24.2	21.4	20.6	21.0	20.9	20.4	16.3	16.3	18.0	18.5	19.0	9.3	10.6
55+	18.1	16.2	15.3	16.5	16.5	16.4	15.8	15.5	17.6	18.1	17.6	17.0	14.3	16.4	18.5	18.7	10.7	14.0
By level of education																		
8 grades of primary school or less	40.4	38.3	37.1	39.6	41.2	40.1	41.4	41.3	47.4	43.4	45.4	38.6	38.7	41.1	42.1	40.1	36.6	32.6
Vocational school	29.4	32.1	35.4	35.7	36.8	37.9	32.9	32.1	33.5	33.3	31.3	25.2	24.0	27.5	28.3	30.0	14.0	14.4
Secondary school	18.0	16.5	17.7	18.6	18.6	19.7	16.1	15.4	16.4	17.3	17.2	13.7	15.3	17.0	18.4	19.1	5.9	6.3
Higher education	4.7	3.6	3.5	3.9	3.8	4.3	2.5	2.4	2.3	2.9	2.7	2.0	2.5	3.0	2.9	3.9	0.9	1.4
By industries[b]																		
Agriculture, forestry, fishing	34.3	37.9	37.3	37.1	37.5	41.6	37.9	36.6	36.7	34.6	31.8	21.8	26.3	28.2	25.8	24.6	15.2	18.5
Manufacturing	19.1	19.4	25.4	24.7	22.1	24.1	20.8	23.5	23.0	20.5	19.4	13.7	14.1	16.7	15.1	15.9	10.9	9.8
Construction	41.7	44.8	49.8	51.2	50.2	55.2	43.1	37.5	38.1	43.0	41.9	31.8	35.9	43.8	41.0	44.7	22.8	24.0
Trade, repairing	41.3	44.0	49.0	49.3	51.5	49.4	40.9	35.9	35.2	36.4	35.2	24.2	27.3	28.9	31.3	31.8	13.5	12.2
Transport, storage, communication	10.6	10.5	13.6	12.6	13.8	15.1	13.2	14.6	11.2	13.3	13.1	10.1	11.6	14.9	13.8	13.6	8.7	10.5
Financial intermediation	22.6	20.7	23.1	23.9	24.6	26.2	20.9	20.0	20.5	20.7	19.6	15.0	16.6	19.0	16.5	18.7	9.8	9.2
Public administration and defence, compulsory social security	13.8	9.3	6.6	8.2	6.0	6.3	7.4	6.7	8.7	8.8	9.8	13.4	9.1	11.8	15.3	13.2	3.9	11.0
Education	22.6	16.0	4.8	6.9	8.8	6.1	9.0	7.2	11.9	10.6	11.2	16.3	14.9	10.2	15.7	13.8	3.1	12.7
Health and social work	19.9	16.1	6.3	8.4	10.3	8.6	12.6	11.1	14.5	13.8	14.3	18.2	13.6	9.2	14.6	14.8	8.0	11.3
Total	22.8	22.4	23.2	24.0	24.2	24.3	21.6	21.0	21.4	21.2	20.7	16.8	16.6	18.3	19.1	19.5	9.9	11.5

[a] Percentage of those who earn less than 2/3 of the median earning amount.
[b] 2001–2008: by TEÁOR'03, 2009: by TEÁOR'08.
Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent06_04

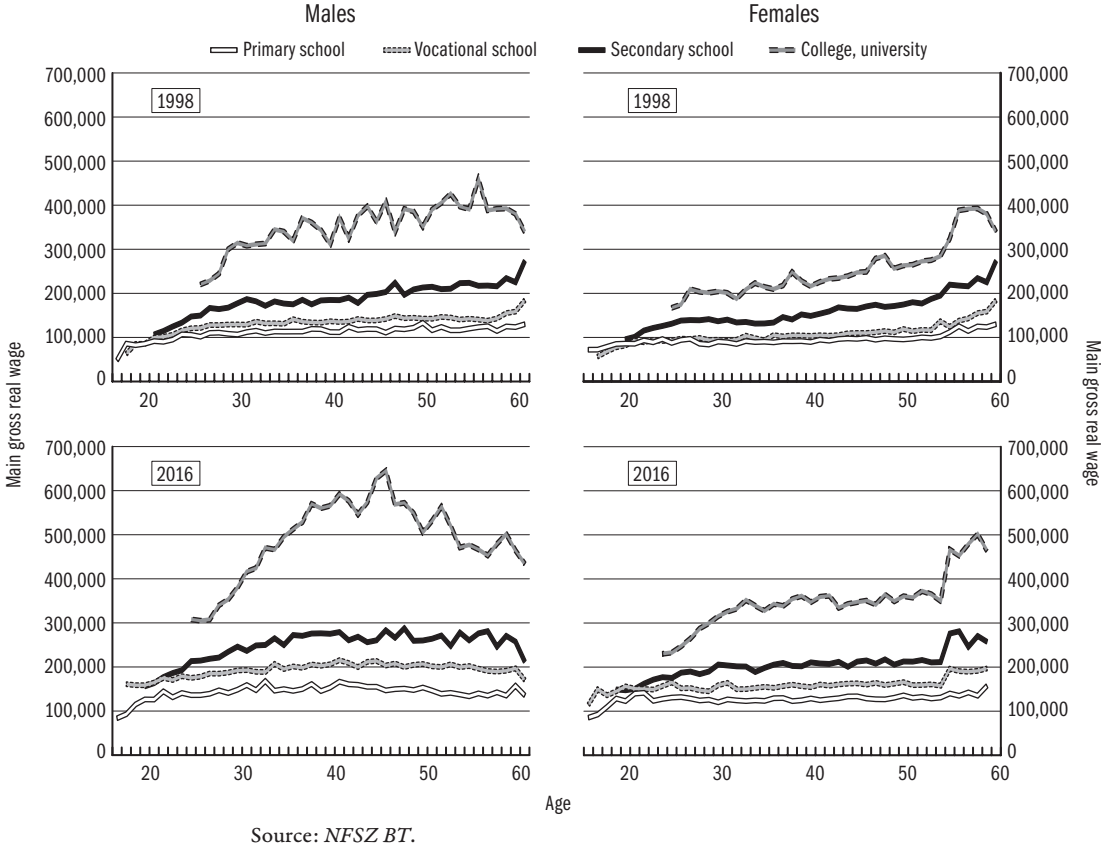
Figure 6.3: The dispersion of gross monthly earnings



Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena06_03

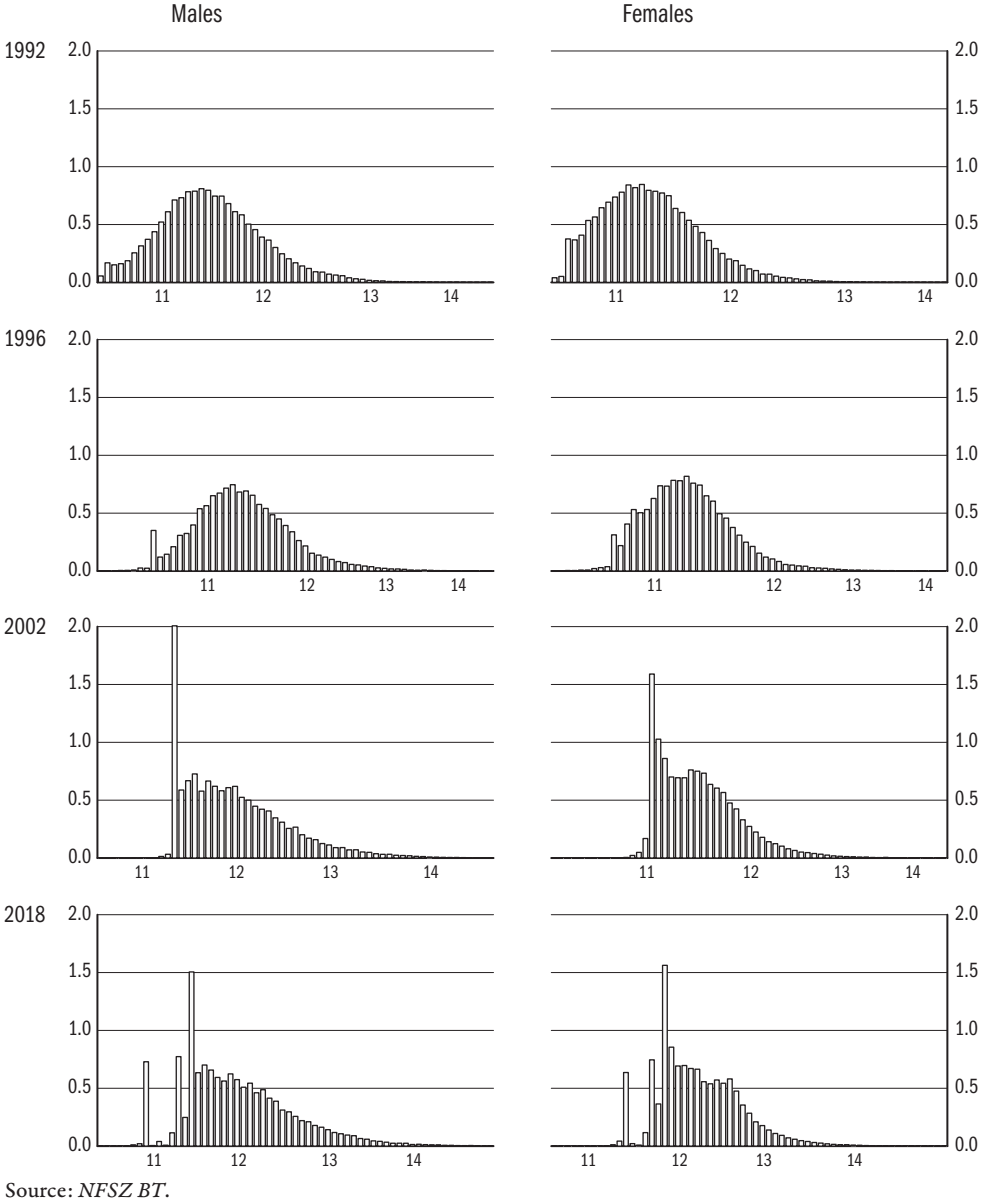
Figure 6.4: Age-income profiles by education level in 1998 and 2016, women and men



Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena06_04

Figure 6.5: The dispersion of the logarithm of gross real earnings (2016 = 100%)



Source: *NFSZ BT*.

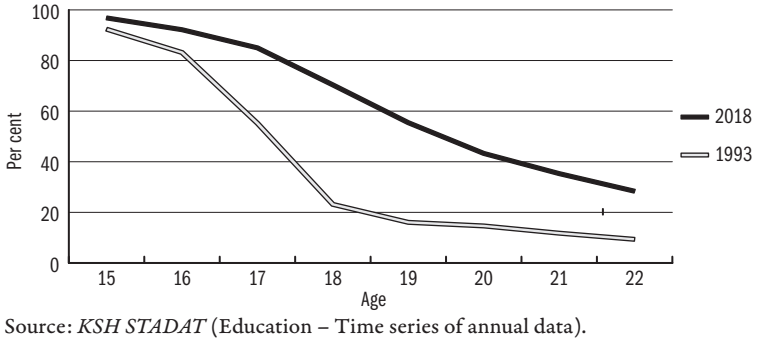
Online data source in xls format: http://www.bpdata.eu/mpt/2019ena06_05

Table 7.1: Graduates in full-time education

Year	Students finished 8th grade	Students passed final examination at secondary level	Students passed vocational examination	Students graduated at tertiary education
1990	169,059	53,039	61,099	15,963
1995	126,066	70,265	67,234	20,024
1996	124,115	73,413	65,022	22,147
1997	120,378	75,564	56,994	24,411
1998	117,190	77,660	54,115	25,338
1999	117,334	73,965	50,247	27,049
2000	121,100[a]	72,200[a]	..	29,843
2001	118,200	70,441	48,828	29,746
2002	118,038	69,612	56,235	30,785
2003	115,863	71,944	53,056	31,929
2004	117,093	76,669	54,912	31,633
2005	119,561	77,025	53,704	32,732
2006	118,223	76,895	51,040	29,871
2007	112,351	77,527	44,754	29,059
2008	109,680	68,453	44,831	28,957
2009	105,811	78,037	43,999	36,064
2010	106,626	77,957	45,437	38,456
2011	99,632	76,441	48,316	35,433
2012	94,852	73,845	56,404	36,262
2013	91,277	68,436	46,512	37,089
2014	89,176	69,176	43,498	39,226
2015	91,164	65,363	41,411	41,083
2016	89,786	62,099	40,772	39,962
2017	89,480	61,025	36,323	37,771
2018[b]	88,719	61,815	38,117	37,878

[a] Estimated data.
[b] Preliminary data.
Source: *KSH STADAT* (Education – Time series of annual data).
Online data source in xls format: http://www.bpdata.eu/mpt/2019ent07_01

Figure 7.1: Full time students as a percentage of the different age groups



Source: *KSH STADAT* (Education – Time series of annual data).
Online data source in xls format: http://www.bpdata.eu/mpt/2019ena07_01

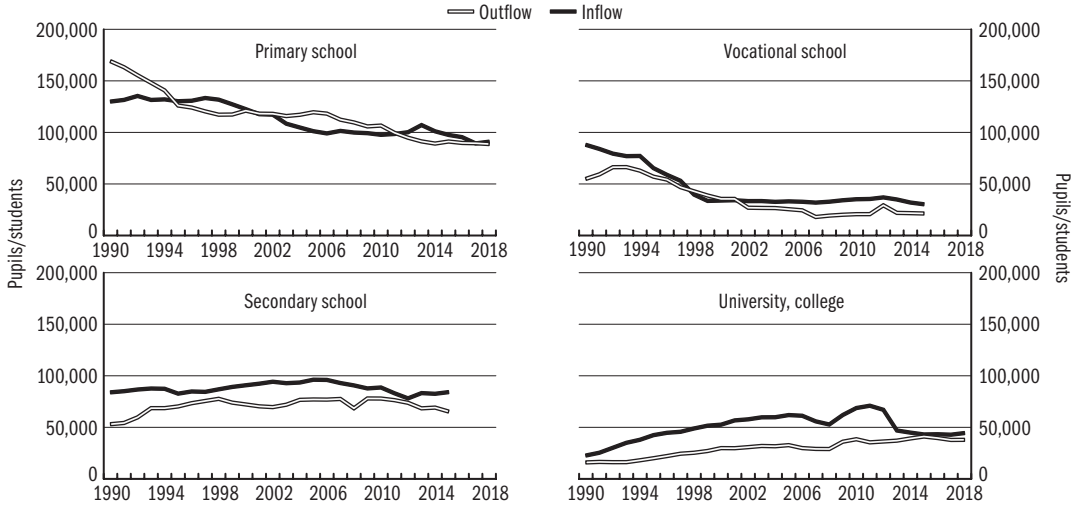
Table 7.2: Pupils/students entering the school system by level of education, full-time education

School year	Primary schools	Vocational schools and special skills development schools[a]	Secondary vocational schools[b]	Secondary general schools	Vocational grammar schools[c]	Tertiary undergraduate (BA/BSc) and postgraduate (MA/MSc) training[d]
2005/2006	101,157	2,684	33,276	46,252	49,979	61,898
2006/2007	99,025	2,795	32,780	45,711	50,328	61,231
2007/2008	101,447	2,809	32,012	43,796	49,212	55,789
2008/2009	99,871	2,907	32,852	43,150	47,571	52,755
2009/2010	99,270	2,935	34,270	41,398	46,371	61,948
2010/2011	97,664	2,780	35,386	42,464	46,223	68,715
2011/2012	98,462	2,637	35,507	40,819	42,255	70,954
2012/2013	100,183	2,555	37,033	38,665	39,504	67,014
2013/2014	107,108	2,320	35,015	41,650	41,624	46,931
2014/2015	101,070	3,562	32,068	42,744	39,825	44,867
2015/2016	97,553	3,617	30,400	44,803	39,351	43,080
2016/2017	95,391	3,593	30,265	47,326	38,157	43,292
2017/2018	89,343	3,497	28,046	48,608	36,582	42,856
2018/2019[e]	90,990	3,576	26,358	48,140	37,520	44,449

[a] Till 2015/2016 school year students in special vocational schools.
[b] Till 2015/2016 school year students in vocational schools.
[c] Till 2015/2016 school year students in secondary vocational schools.
[d] Including students in university and college level education and undivided training.
[e] Preliminary data.
Note: In secondary schools number of students in 9th grade. In tertiary education number of students in 1st grade, from 2013/2014 school year number of new entrants.
Source: *KSH STADAT* (Education – Time series of annual data).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent07_02

Figure 7.2: Flows of the educational system by level



Source: *KSH STADAT* (Education – Time series of annual data).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena07_02

Table 7.3: Students in full-time education

School year	Primary schools	Vocational schools and special skills development schools[a]	Secondary vocational schools[b]	Secondary general schools	Vocational grammar schools[c]	Tertiary undergraduate (BA/BSc) and postgraduate (MA/MSc) training[d]
2003/2004	909,769	8,147	123,457	190,447	247,622	204,910
2004/2005	887,785	8,369	123,403	193,366	245,302	212,292
2005/2006	859,315	8,797	122,162	197,217	244,001	217,245
2006/2007	828,943	9,563	119,637	200,292	243,096	224,616
2007/2008	809,160	9,773	123,192	200,026	242,016	227,118
2008/2009	788,639	9,785	123,865	203,602	236,518	224,894
2009/2010	773,706	9,968	128,674	201,208	242,004	222,564
2010/2011	756,569	9,816	129,421	198,700	240,364	218,057
2011/2012						
2012/2013	742,931	9,134	117,543	189,526	224,214	214,320
2013/2014	747,746	8,344	105,122	185,440	203,515	209,208
2014/2015	748,486	7,496	92,536	182,228	188,762	203,576
2015/2016	745,323	7,146	80,493	180,966	182,529	195,419
2016/2017	741,427	7,108	78,231	181,782	167,574	190,098
2017/2018	732,491	7,169	74,104	184,525	162,216	187,084
2018/2019[e]	726,266	7,159	68,863	187,599	152,793	185,278

[a] Till 2015/2016 school year students in special vocational schools.
[b] Till 2015/2016 school year students in vocational schools.
[c] Till 2015/2016 school year students in secondary vocational schools.
[d] Including students in university and college level education and undivided training.
[e] Preliminary data.
Note: In secondary schools number of students in 9th grade. In tertiary education number of students in 1st grade, from 2013/2014 school year number of new entrants.
Source: *KSH STADAT* (Education – Time series of annual data).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent07_03

Table 7.4: Students in part-time education

School year	Primary schools	Vocational schools and special skills development schools[a]	Secondary vocational schools[b]	Secondary general schools	Vocational grammar schools[c]	Tertiary undergraduate (BA/BSc) and postgraduate (MA/MSc) training[d]
2003/2004	3,190	–	3,216	48,639	44,683	162,037
2004/2005	2,766	–	3,505	45,484	44,837	166,174
2005/2006	2,543	–	4,049	46,661	43,289	163,387
2006/2007	2,319	–	4,829	45,975	45,060	151,203
2007/2008	2,245	–	5,874	43,126	39,882	132,273
2008/2009	2,083	24	4,983	39,175	34,833	115,957
2009/2010	2,035	49	6,594	38,784	31,340	105,511
2010/2011	1,997	35	8,068	43,172	33,232	99,962
2011/2012	2,264	13	10,383	41,538	32,666	98,081
2012/2013	2,127	–	12,776	38,789	34,019	85,316
2013/2014	2,587	–	12,140	35,032	35,556	73,088
2014/2015	2,548	–	9,946	34,140	32,382	67,904
2015/2016	2,293	3	9,685	32,103	31,242	64,110
2016/2017	2,410	1	27,511	32,682	37,488	60,609
2017/2018	2,405	18	27,584	31,537	34,348	59,924
2018/2019[e]	2,440	29	25,016	28,046	31,766	60,486

[a] Till 2015/2016 school year students in special vocational schools.
[b] Till 2015/2016 school year students in vocational schools.
[c] Till 2015/2016 school year students in secondary vocational schools.
[d] Including students in university and college level education and undivided training.
[e] Preliminary data.
Note: In secondary schools number of students in 9th grade. In tertiary education number of students in 1st grade, from 2013/2014 school year number of new entrants.
Source: *KSH STADAT* (Education – Time series of annual data).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent07_04

Table 7.5: Number of applicants for full-time high school courses

Year	Applying	Admitted	Admitted as a percentage of applied	Applying as a percentage of the secondary school graduates in the given year	Admitted as a percentage of the secondary school graduates in the given year
1980	33,339	14,796	44.4	77.2	34.3
1989	44,138	15,420	34.9	84.0	29.3
1990	46,767	16,818	36.0	88.2	31.7
1991	48,911	20,338	41.6	90.2	37.5
1992	59,119	24,022	40.6	99.1	40.3
1993	71,741	28,217	39.3	104.6	41.1
1994	79,805	29,901	37.5	116.3	43.6
1995	86,548	35,081	40.5	123.2	49.9
1996	79,369	38,382	48.4	108.1	52.3
1997	81,924	40,355	49.3	108.4	53.4
1998	81,065	43,629	53.8	104.4	56.2
1999	82,815	44,538	53.8	112.0	60.2
2000	82,957	45,546	54.9	114.9	63.1
2001	84,499	50,515	59.8	120.0	71.7
2002	89,131	53,420	59.9	128.0	76.7
2003	87,110	52,703	60.5	121.1	73.3
2004	95,871	55,179	57.6	125.0	72.0
2005	91,677	52,957	57.8	119.0	68.8
2006	84,269	53,990	64.1	109.6	70.2
2007	74,849	50,941	68.1	96.5	65.7
2008	66,963	52,081	77.8	97.8	76.1
2009	90,878	61,262	67.4	116.5	78.5
2010	100,777	65,503	65.0	129.3	84.0
2011	101,835	66,810	65.6	133.2	87.4
2012	84,075	61,350	73.0	113.9	83.1
2013	75,392	56,927	75.5	110.2	83.2
2014	79,765	54,688	68.6	115.3	79.1
2015	79,255	53,069	67.0	121.3	81.2
2016	79,284	52,913	66.7	127.7	85.2
2017	74,806	51,487	68.8	122.6	84.4
2018	75,434	52,356	69.4	122.0	84.7

Note: Including students applying and admitted to BA/BSc, MA/MSc and undivided (joint bachelor and master courses) training. From 2008 students applying and admitted in repeated, spring and autumn admission procedures altogether.
Source: *KSH STADAT* (Education – Time series of annual data).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent07_05

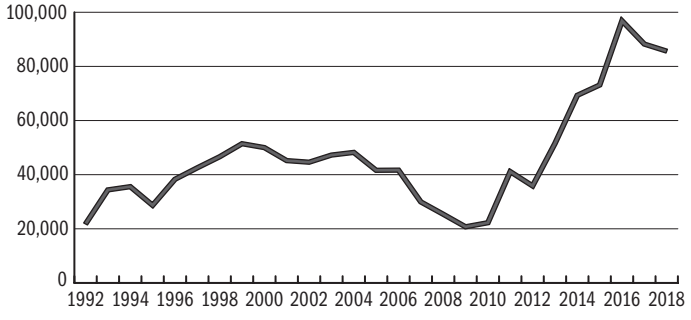
Table 8.1: The number of vacancies[a] reported to the local offices of the NFSZ

Year	Number of vacancies at closing date		Number of registered unemployed[b] at closing date	Vacancies per 100 registered unemployed[b]
	Total	Of which: public works participants		
1992	21,793	–	556,965	3.9
1993	34,375	–	671,745	5.1
1994	35,569	–	568,366	6.3
1995	28,680	–	507,695	5.6
1996	38,297	–	500,622	7.6
1997	42,544	–	470,112	9.0
1998	46,624	–	423,121	11.0
1999	51,438	–	409,519	12.6
2000	50,000	–	390,492	12.8
2001	45,194	–	364,140	12.4
2002	44,603	–	344,715	12.9
2003	47,239	–	357,212	13.2
2004	48,223	–	375,950	12.8
2005	41,615	–	409,929	10.2
2006	41,677	–	393,465	10.6
2007	29,933	–	426,915	7.0
2008	25,364	–	442,333	5.7
2009	20,739	–	561,768	3.7
2010	22,241	–	582,664	3.8
2011	41,123	–	582,868	7.1
2012	35,850	18,669	559,102	6.4
2013	51,524	27,028	527,624	9.8
2014	75,444	37,840	422,445	16.4
2015	73,122	34,591	378,181	19.3
2016	96,841	49,405	313,782	30.9
2017	88,243	43,659	282,970	31.2
2018	85,641	33,736	255,310	33.5

[a] Monthly average stock figures.
[b] Since 1st of November, 2005: registered jobseekers.
Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent08_01

Figure 8.1: The number of vacancies reported to the local offices of the NFSZ



Source: *NFSZ*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena08_01

Table 8.2: The number of vacancies[a] reported to the local offices of the NFSZ, by level of education

Year	Primary school	Vocational school	Secondary school	Secondary general school	College, university	Total
2008	15,039	7,046	1,020	1,259	1,000	25,364
2009	13,191	4,134	1,289	1,228	897	20,739
2010	13,359	5,289	1,281	1,388	924	22,241
2011	29,121	6,890	2,379	1,627	1,106	41,123
2012	21,227	8,005	2,732	1,945	1,941	35,850
2013	30,673	11,750	3,881	3,023	2,197	51,524
2014	45,555	16,440	7,216	3,329	2,904	75,444
2015	42,152	18,480	6,006	3,036	3,448	73,122
2016	58,781	22,184	8,840	4,085	2,951	96,841
2017	51,923	19,229	7,250	4,883	4,958	88,243
2018	52,690	18,124	6,872	4,754	3,200	85,641

[a] Monthly average stock figures.
Note: The data include vacancies posted in the Public Works program.
Source: NFSZ.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent08_02

Table 8.3: The number of vacancies

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of persons[a]	34,633	23,156	27,167	28,724	26,523	32,802	37,709	44,552	55,202	66,118	83,510
Per cent[b]	1.3	0.9	1.0	1.1	1.0	1.2	1.4	1.5	1.9	2.2	2.7

[a] Annual mean of the quarterly observations.
[b] Per cent of the filled and unfilled jobs.
Source: Eurostat. http://ec.europa.eu/eurostat/web/labour-market/job-vacancies/database (jvs_q_nace2: 2019.09.16. version, downloaded: 2019.10.04.)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent08_03

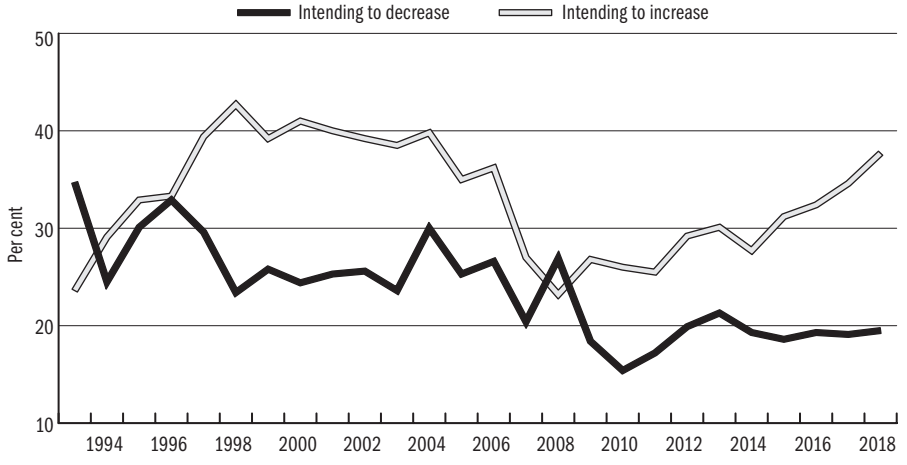
Table 8.4: Firms intending to increase/decrease their staff[a], per cent

Year		Intending to decrease	Intending to increase	Year	Intending to decrease	Intending to increase
1996	I.	32.9	33.3	2004	30.0	39.8
	II.	29.4	30.4	2005	25.3	35.0
1997	I.	29.6	39.4	2006	26.6	36.2
	II.	30.7	36.8	2007	20.4	27.0
1998	I.	23.4	42.7	2008	26.9	23.2
	II.	28.9	37.1	2009	18.4	26.8
1999	I.	25.8	39.2	2010	15.4	26.0
	II.	28.8	35.8	2011	17.2	25.5
2000	I.	24.4	41.0	2012	19.9	29.2
	II.	27.2	36.5	2013	21.3	30.1
2001	I.	25.3	40.0	2014	19.3	27.7
	II.	28.6	32.6	2015	18.6	31.2
2002	I.	25.6	39.2	2016	19.3	32.4
	II.	27.9	35.4	2017	19.1	34.6
2003	I.	23.6	38.5	2018	19.5	37.7
	II.	32.1	34.3			

[a] In the period of the next half year following the interview date, in the sample of NFSZ PROG, since 2004: 1 year later from the interview date.
Source: *NFSZ PROG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent08_04

Figure 8.2: Firms intending to increase/decrease their staff



Source: *NFSZ PROG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena08_02

Table 9.1: Regional inequalities: Employment rate[a]

Year	Budapest	Pest	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1996	58.1	54.5	52.7	59.4	50.3	45.7	45.6	52.8	52.4
1997	57.8	54.7	53.6	59.8	50.0	45.7	45.2	53.6	52.5
1998	58.4	55.4	55.7	61.6	51.6	46.5	46.7	54.2	53.6
1999	60.2	57.7	58.2	63.1	52.7	48.3	48.8	55.2	55.4
2000	60.9	58.8	58.8	63.3	53.3	49.6	49.0	55.6	56.0
2001	61.3	59.4	59.3	63.1	52.3	49.7	49.5	55.8	56.2
2002	61.8	59.6	60.0	63.7	51.6	50.3	49.3	54.2	56.2
2003	63.3	59.3	62.3	61.9	53.4	51.2	51.6	53.2	57.0
2004	65.1	59.5	60.3	61.4	52.3	50.6	50.4	53.6	56.8
2005	65.3	60.2	60.2	62.1	53.4	49.5	50.2	53.8	56.9
2006	64.6	61.0	61.3	62.5	53.2	50.7	51.1	54.0	57.4
2007	64.1	61.2	61.4	62.8	51.0	50.4	50.3	54.5	57.0
2008	64.5	60.1	59.9	61.6	50.8	49.4	49.5	54.0	56.4
2009	63.1	58.8	57.3	59.2	51.7	48.2	48.0	52.9	55.0
2010	61.4	57.9	57.0	58.6	52.4	48.3	49.0	54.1	54.9
2011	61.7	58.2	59.1	59.9	51.1	48.4	49.9	54.1	55.4
2012	63.8	58.9	59.2	61.0	51.9	49.1	51.8	55.5	56.7
2013	64.2	60.6	60.7	61.8	54.8	51.6	53.2	56.3	58.1
2014	67.5	63.9	64.3	65.8	58.6	55.7	57.3	59.7	61.8
2015	69.2	65.4	67.9	67.5	60.2	59.0	58.9	62.2	63.9
2016	72.7	68.1	68.4	68.9	62.2	61.8	62.0	65.7	66.5
2017	74.0	69.2	70.5	71.0	63.0	63.5	64.4	67.4	68.2
2018	73.1	70.6	70.9	73.0	64.5	65.6	65.8	68.8	69.2

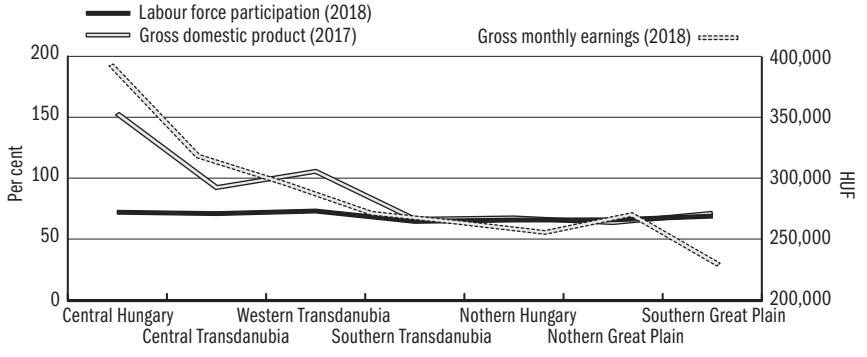
[a] Age: 15–64.

Note: The territorial code system was modified on 1 January 2018. The modification was justified by international and national legislative changes. Based on the changes, Budapest and Pest county are also planning and statistical regions, while Central Hungary became exclusively a statistical large region.

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_01

Figure 9.1: Regional inequalities: Labour force participation rates, gross monthly earnings and gross domestic product in NUTS-2 level regions



Source: Employment rate: *KSH MEF*; gross domestic product: *KSH*; earnings: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_01

Table 9.2: Regional inequalities: LFS-based unemployment rate[a]

Year	Budapest	Pest	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1998	5.5	6.0	6.8	6.1	9.4	12.2	11.1	7.1	7.8
1999	5.3	5.0	6.1	4.4	8.3	11.6	10.2	5.8	7.0
2000	5.2	5.1	4.9	4.2	7.8	10.1	9.3	5.1	6.4
2001	4.2	4.5	4.3	4.1	7.7	8.5	7.8	5.4	5.7
2002	3.7	4.3	5.0	4.0	7.9	8.8	7.8	6.2	5.8
2003	3.6	4.7	4.6	4.6	7.9	9.7	6.8	6.5	5.9
2004	4.4	4.7	5.6	4.6	7.3	9.7	7.2	6.3	6.1
2005	4.7	5.9	6.3	5.9	8.8	10.6	9.1	8.2	7.2
2006	4.9	5.5	6.0	5.8	9.2	10.9	10.9	8.0	7.5
2007	4.9	4.5	4.9	5.1	9.9	12.6	10.7	8.0	7.4
2008	4.2	5.0	5.8	5.0	10.3	13.3	12.1	8.7	7.8
2009	6.1	7.2	9.2	8.7	11.2	15.3	14.1	10.6	10.0
2010	9.0	8.8	10.0	9.3	12.4	16.2	14.4	10.4	11.2
2011	9.6	7.9	9.5	7.3	12.9	16.4	14.6	10.5	11.0
2012	9.6	9.3	9.9	7.5	12.1	16.1	13.9	10.3	11.0
2013	8.5	9.1	8.7	7.7	9.3	12.6	14.2	11.0	10.2
2014	6.0	6.5	5.6	4.6	7.8	10.4	11.8	9.0	7.7
2015	5.1	5.7	4.4	3.8	8.1	8.7	10.9	7.9	6.8
2016	4.3	3.1	3.0	2.7	6.2	6.3	9.3	5.6	5.1
2017	2.9	2.6	2.2	2.4	6.3	5.8	7.4	4.1	4.2
2018	3.1	2.2	2.2	2.0	5.6	4.7	6.6	3.3	3.7

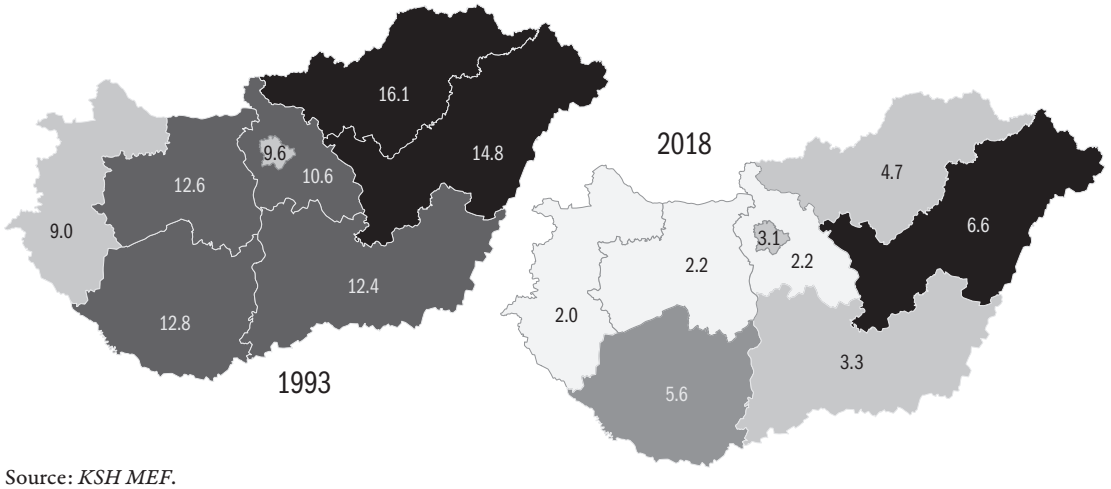
[a] Age: 15–74.

Note: The territorial code system was modified on 1 January 2018. The modification was justified by international and national legislative changes. Based on the changes, Budapest and Pest county are also planning and statistical regions, while Central Hungary became exclusively a statistical large region.

Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_02

Figure 9.2: Regional inequalities: LFS-based unemployment rates in NUTS-2 level regions



Source: *KSH MEF*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_02

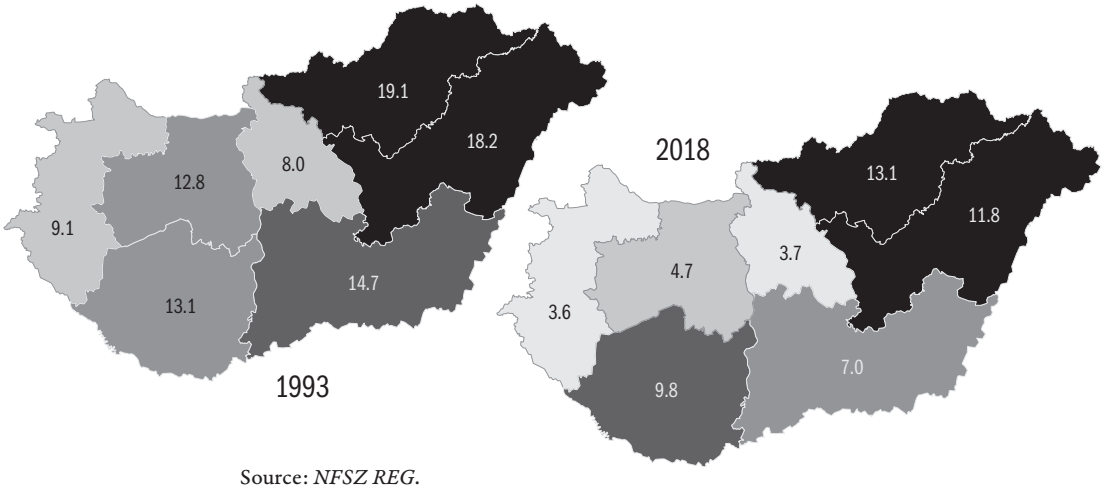
Table 9.3: Regional differences: The share of registered unemployed[a] relative to the economically active population[b], per cent

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1999	4.5	8.7	5.9	12.1	17.1	16.1	10.4	9.7
2000	3.8	7.5	5.6	11.8	17.2	16.0	10.4	9.3
2001	3.2	6.7	5.0	11.2	16.0	14.5	9.7	8.5
2002	2.8	6.6	4.9	11.0	15.6	13.3	9.2	8.0
2003	2.8	6.7	5.2	11.7	16.2	14.1	9.7	8.3
2004	3.2	6.9	5.8	12.2	15.7	14.1	10.4	8.7
2005	3.4	7.4	6.9	13.4	16.5	15.1	11.2	9.4
2006	3.1	7.0	6.3	13.0	15.9	15.0	10.7	9.0
2007	3.5	6.9	6.3	13.6	17.6	16.6	11.7	9.7
2008	3.6	7.1	6.3	14.3	17.8	17.5	11.9	10.0
2009	5.4	11.5	9.5	17.8	20.9	20.2	14.4	12.8
2010	6.6	11.8	9.3	17.1	21.5	20.9	15.2	13.3
2011	6.8	10.9	8.0	16.6	21.5	22.0	14.5	13.2
2012	6.6	9.9	7.4	16.4	21.2	21.0	13.6	12.6
2013	6.4	9.5	7.4	15.4	19.5	19.4	19.0	13.0
2014	5.2	7.1	5.4	13.6	17.4	16.7	10.5	9.8
2015	4.6	6.1	4.4	11.8	15.4	14.2	8.9	8.5
2016	3.7	4.7	3.6	9.8	13.1	11.8	7.0	6.9
2017	2.9	4.1	3.2	9.1	12.2	10.7	6.1	6.2
2018	2.4	3.7	2.9	8.3	11.1	9.7	5.4	5.5

[a] Since 1st of November, 2005: the ratio of registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
[b] The denominator of the ratio is the economically active population on January 1st of the previous year.
Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_03

Figure 9.3: Regional inequalities: The share of registered unemployed relative to the economically active population, per cent, in NUTS-2 level regions



Source: *NFSZ REG*.

Online data source in xls format: http://.bpdata.eu/mpt/2019ena09_03

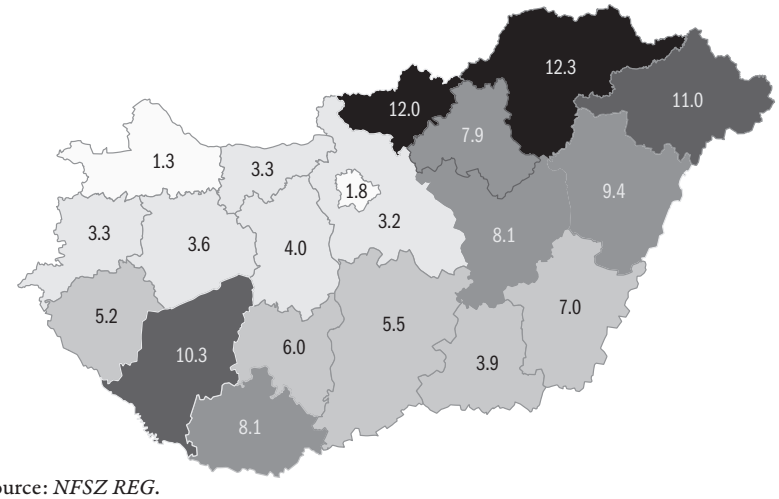
Table 9.4: Annual average registered unemployment rate[a] by counties, per cent[b]

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Budapest	3.0	2.6	2.2	2.4	2.8	2.9	2.6	3.0	3.1	4.6	5.9	6.2	6.1	5.8	4.5	4.0	3.0	2.2	1.8
Baranya	11.6	11.1	11.2	11.9	11.6	13.4	13.3	12.9	13.6	14.7	17.1	16.6	16.4	15.0	9.1	11.6	9.6	6.3	8.1
Bács-Kiskun	10.0	9.3	8.8	9.4	9.9	10.4	10.2	11.4	12.0	17.9	15.6	14.8	13.7	13.3	15.8	9.7	7.3	8.6	5.5
Békés	13.1	11.9	11.2	11.5	12.0	13.0	13.5	15.0	14.8	17.3	18.1	17.8	15.8	14.8	12.0	9.6	8.2	7.6	7.0
Borsod-Abaúj-Zemplén	20.3	19.0	19.1	19.6	18.3	18.9	18.0	19.9	20.1	23.1	23.7	23.5	22.9	20.9	19.6	16.6	14.0	13.2	12.3
Csongrád	8.6	8.3	8.1	8.5	9.7	10.7	8.8	9.2	9.3	11.6	12.4	11.5	11.5	11.0	8.5	7.2	5.6	4.6	3.9
Fejér	7.2	6.4	6.4	7.1	7.3	7.4	7.3	7.1	7.5	11.5	12.4	12.1	10.8	10.1	7.6	6.6	5.1	4.5	4.0
Győr-Moson-Sopron	4.6	4.1	4.0	4.1	4.6	5.4	4.6	4.1	4.1	6.9	6.8	5.7	5.0	4.6	2.9	2.4	1.9	1.6	1.3
Hajdú-Bihar	14.7	13.6	12.8	13.1	12.9	14.0	13.9	15.6	16.5	19.1	20.3	20.7	19.9	18.6	16.1	14.1	11.5	10.3	9.4
Heves	12.0	10.6	9.8	10.0	10.6	11.3	11.1	12.2	12.7	15.8	16.1	16.1	15.7	15.0	11.9	11.5	9.8	9.0	7.9
Jász-Nagykun-Szolnok	13.4	11.5	10.2	10.7	11.2	12.0	11.4	11.8	12.2	15.5	16.4	18.1	16.8	15.4	13.4	12.0	10.3	9.2	8.1
Komárom-Esztergom	8.3	7.0	6.7	6.0	5.8	6.8	5.8	5.4	5.5	10.2	10.4	9.5	8.9	8.7	6.5	5.7	4.1	3.8	3.3
Nógrád	14.9	14.3	13.8	14.6	14.6	16.1	16.1	17.7	17.8	21.2	22.0	22.9	23.9	21.7	19.1	17.4	15.3	13.9	12.0
Pest	5.2	4.4	3.7	3.7	3.8	4.2	3.9	4.3	4.4	6.7	7.7	7.6	7.4	7.2	6.2	5.5	4.7	3.9	3.2
Somogy	11.9	11.6	11.5	12.2	13.4	14.5	14.6	16.2	16.9	19.4	18.9	18.3	18.2	17.1	16.1	13.8	11.6	11.2	10.3
Szabolcs-Szatmár-Bereg	19.5	17.8	16.7	17.7	17.5	18.6	18.8	21.0	22.4	24.7	24.8	26.0	25.0	23.0	19.5	16.0	13.0	12.0	11.0
Tolna	11.8	11.0	10.0	10.7	11.6	11.8	10.5	11.5	12.1	15.2	14.7	14.2	13.7	13.7	11.1	9.3	7.7	7.2	6.0
Vas	5.2	4.9	4.5	5.0	6.0	6.8	6.1	6.2	6.1	9.8	9.6	7.7	6.7	6.9	5.1	4.3	3.5	3.5	3.3
Veszprém	7.2	6.9	6.6	7.0	7.3	8.0	7.7	8.0	8.2	12.6	12.3	10.8	9.6	9.4	6.9	5.9	4.5	3.9	3.6
Zala	7.2	6.5	6.4	7.0	7.4	9.3	9.0	9.3	9.4	13.0	12.9	11.7	11.6	12.3	9.6	7.8	6.3	5.8	5.2
Total	9.3	8.5	8.0	8.3	8.7	9.4	9.0	9.7	10.0	12.8	13.3	13.2	12.6	11.9	9.8	8.5	6.9	6.2	5.5

[a] Since 1st of November, 2005: the ratio of registered jobseekers. From the 1st of November, 2005 the Employment Act changed the definition of registered unemployed to registered jobseekers.
[b] The denominator of the ratio is the economically active population on January 1st of the previous year.
Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_04

Figure 9.4: Regional inequalities:
Means of registered unemployment rates in the counties, 2018



Source: *NFSZ REG*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_04

Table 9.5: Regional inequalities: Gross monthly earnings[a]

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
2002	149,119	110,602	106,809	98,662	102,263	98,033	97,432	117,672
2003	170,280	127,819	121,464	117,149	117,847	115,278	113,532	135,472
2004	184,039	137,168	131,943	122,868	128,435	124,075	121,661	147,111
2005	192,962	147,646	145,771	136,276	139,761	131,098	130,406	157,770
2006	212,001	157,824	156,499	144,189	152,521	142,142	143,231	171,794
2007	229,897	173,937	164,378	156,678	159,921	153,241	153,050	186,229
2008	245,931	185,979	174,273	160,624	169,313	160,332	164,430	198,087
2009	254,471	187,352	182,855	169,615	169,333	160,688	164,638	203,859
2010	258,653	194,794	183,454	171,769	173,696	162,455	169,441	207,456
2011	264,495	197,774	184,311	181,500	185,036	173,243	177,021	214,540
2012	279,073	215,434	202,189	208,895	196,566	191,222	187,187	230,073
2013	290,115	220,495	209,418	190,126	188,635	178,499	187,762	230,018
2014	296,089	228,974	219,727	200,359	204,472	194,654	196,667	240,675
2015	306,890	234,443	230,142	205,020	200,174	191,973	203,280	245,210
2016	332,046	258,131	244,828	219,194	205,679	198,726	216,677	263,317
2017	375,349	286,126	279,518	250,879	240,210	232,855	249,125	300,232
2018	393,854	319,102	296,756	272,186	264,661	256,392	271,062	324,719

[a] Gross monthly earnings (HUF/person), May.

Note: The data refer to full-time employees in the budgetary sector and firms employing at least 5 workers, respectively.

Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_05

Table 9.6: Regression-adjusted earnings differentials

Year	Central Hungary	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain
2002	0.0903	-0.0378	-0.1120	-0.0950	-0.1170	-0.1070
2003	0.0493	-0.0542	-0.1220	-0.1220	-0.1400	-0.1410
2004	0.0648	-0.0313	-0.1410	-0.0953	-0.1400	-0.1270
2005	0.0291	-0.0372	-0.1310	-0.1010	-0.1450	-0.1390
2006	0.0478	-0.0170	-0.1640	-0.0922	-0.1480	-0.1130
2007	0.0528	-0.0926	-0.1520	-0.1340	-0.1610	-0.1420
2008	0.0438	-0.0751	-0.1730	-0.1320	-0.1780	-0.1630
2009	0.0766	-0.0377	-0.1250	-0.1170	-0.1380	-0.1500
2010	0.0704	-0.0758	-0.1450	-0.1200	-0.1620	-0.1500
2011	0.0893	-0.0604	-0.1020	-0.0863	-0.1340	-0.1170
2012	0.0664	-0.0361	-0.0750	-0.0947	-0.1140	-0.1170
2013	0.0267	-0.0605	-0.1120	-0.1140	-0.1540	-0.1320
2014	0.0203	-0.0474	-0.1250	-0.1150	-0.1390	-0.1330
2015	0.0303	-0.0145	-0.0990	-0.0920	-0.1290	-0.1180
2016	0.0414	-0.0321	-0.1420	-0.1670	-0.1900	-0.1410

Note: the results indicate the earnings differentials of the various groups relative to the reference group in log points (approximately percentage points). All parameters are significant at the 0.01 level.

Reference category: women, with leaving certificate (general education certificate), not in the public sector, working in the Central-Transdanubia region.

Source: *NFSZ BT*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_06

Table 9.7: Regional inequalities: Gross domestic product

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
Thousand HUF/person/month								
2004	3,347	1,963	2,148	1,464	1,364	1,371	1,459	2,088
2005	3,631	2,102	2,213	1,544	1,480	1,439	1,540	2,237
2006	3,968	2,190	2,426	1,619	1,553	1,533	1,617	2,409
2007	4,242	2,356	2,487	1,717	1,627	1,597	1,679	2,554
2008	4,492	2,441	2,622	1,839	1,687	1,696	1,814	2,709
2009	4,432	2,198	2,464	1,810	1,602	1,706	1,741	2,636
2010	4,515	2,358	2,696	1,838	1,636	1,725	1,765	2,722
2011	4,595	2,513	2,874	1,915	1,708	1,839	1,900	2,839
2012	4,718	2,538	2,938	1,972	1,724	1,872	1,980	2,901
2013	4,924	2,732	3,094	2,069	1,862	1,931	2,117	3,058
2014	5,148	2,990	3,535	2,207	2,081	2,132	2,345	3,302
2015	5,361	3,253	3,770	2,267	2,316	2,223	2,503	3,493
2016	5,512	3,427	3,943	2,376	2,369	2,286	2,569	3,615
2017	5,992	3,618	4,140	2,597	2,641	2,490	2,789	3,919
Per cent								
2004	160.3	94.0	102.9	70.1	65.4	65.7	69.9	100.0
2005	162.4	94.0	98.9	69.0	66.2	64.4	68.9	100.0
2006	164.8	90.9	100.7	67.2	64.5	63.7	67.1	100.0
2007	166.1	92.3	97.4	67.2	63.7	62.5	65.7	100.0
2008	165.8	90.1	96.8	67.9	62.1	62.6	67.0	100.0
2009	168.0	83.4	93.5	68.7	60.8	64.8	66.1	100.0
2010	165.8	86.6	99.1	67.6	60.1	63.4	64.8	100.0
2011	161.8	88.6	101.3	67.5	60.2	64.8	67.0	100.0
2012	162.6	88.1	100.7	67.9	59.5	64.6	68.1	100.0
2013	161.0	89.4	100.8	67.7	61.0	63.2	69.3	100.0
2014	155.9	90.5	107.0	66.8	63.0	64.5	71.0	100.0
2015	153.5	93.1	107.9	64.9	66.3	63.6	71.7	100.0
2016	152.5	94.8	109.1	65.7	65.5	63.2	71.1	100.0
2017	152.9	92.3	105.6	66.3	67.4	63.5	71.2	100.0

Note: The data on 2004–2015 have been retrospectively revised following ESA2010 standards (European System of National and Regional Accounts).
Source: *KSH STADAT* (2018.12.21. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_07

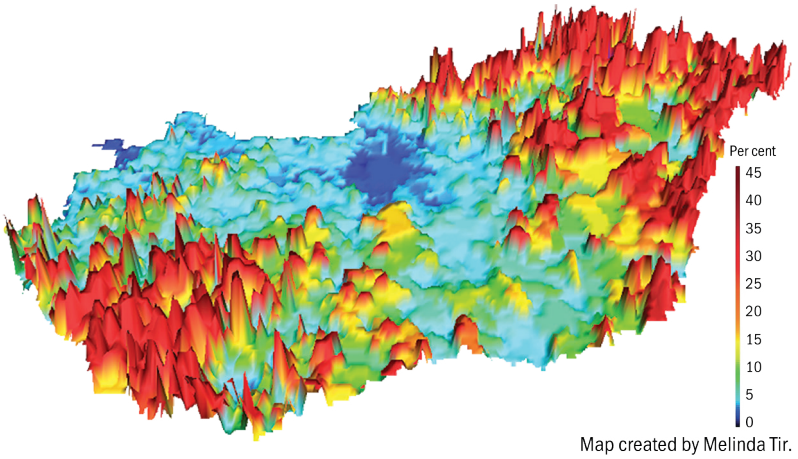
Table 9.8: Commuting

	Working in the place of residence		Commuter	
Year	in thousands	per cent	in thousands	per cent
1980	3,848.5	76.0	1,217.2	24.0
1990	3,380.2	74.7	1,144.7	25.3
2001	2,588.2	70.1	1,102.1	29.9
2005	2,625.1	68.2	1,221.3	31.8
2011	2,462.8[a]	62.5	1,479.8	37.2
2017	2,374.0	61.5	1,485.2	38.5

[a] Includes those working abroad but classified by the respondents of LFS as household members.
Source: NSZ, microcensus.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent09_08

Figure 9.5: The share of registered unemployed relative to the population aged 15–64, 1st quarter 2007, per cent

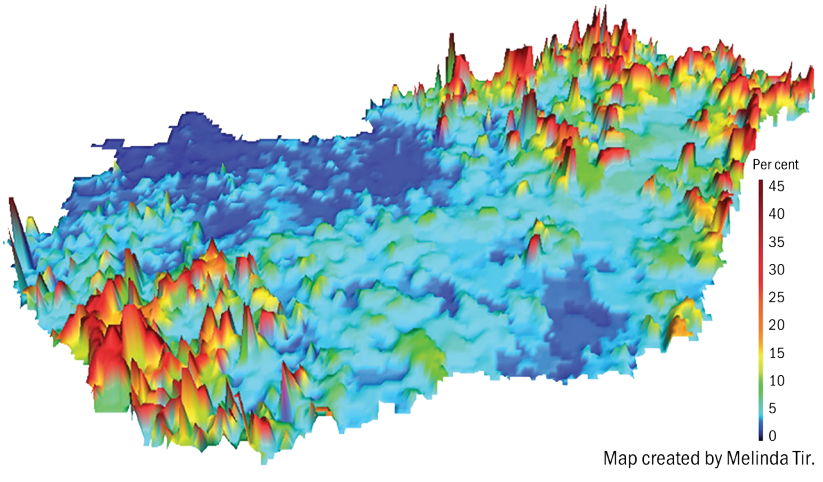


Map created by Melinda Tir.

Note: The ratio of registered unemployed was calculated using the following method: number of registered unemployed divided by the permanent population of age 15 –64. The number of registered unemployed is a quarterly average. The permanent population data is annual.
Source: *Registered unemployed: NFSZ IR. Population: KSH T-Star.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_05

Figure 9.6: The share of registered unemployed relative to the population aged 15–64, 1st quarter 2018, per cent

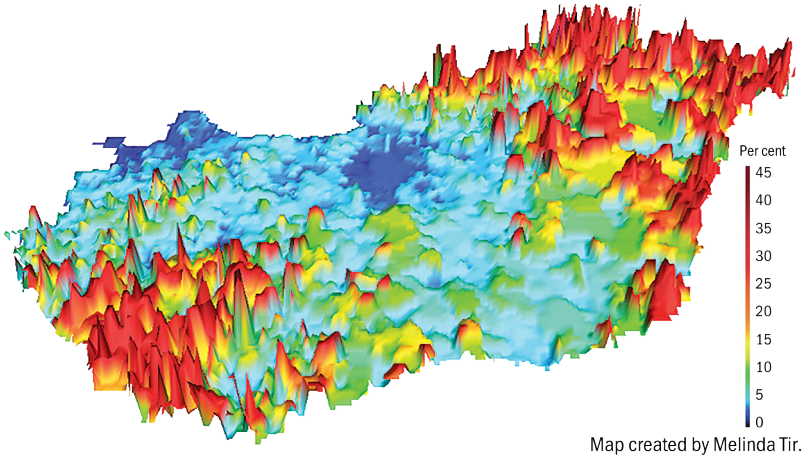


Map created by Melinda Tir.

Note: The ratio of registered unemployed was calculated using the following method: number of registered unemployed divided by the permanent population of age 15 –64. The number of registered unemployed is a quarterly average. The permanent population data is from the year 2017 (since 2018 data is not yet available).
Source: *Registered unemployed: NFSZ IR. Population: KSH T-Star.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_06

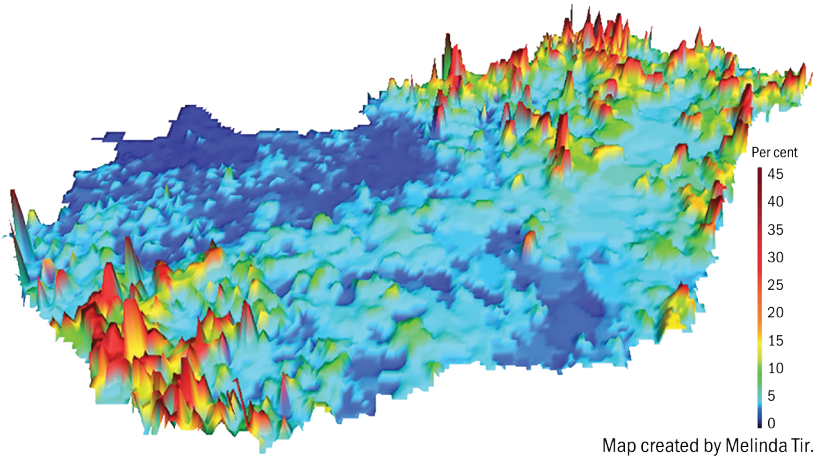
Figure 9.7: The share of registered unemployed relative to the population aged 15–64, 3rd quarter 2007, per cent



Note: The ratio of registered unemployed was calculated using the following method: number of registered unemployed divided by the permanent population of age 15 –64. The number of registered unemployed is a quarterly average. The permanent population data is annual.
Source: *Registered unemployed: NFSZ IR. Population: KSH T-Star.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_07

Figure 9.8: The share of registered unemployed relative to the population aged 15–64, 3rd quarter 2018, per cent



Note: The ratio of registered unemployed was calculated using the following method: number of registered unemployed divided by the permanent population of age 15 –64. The number of registered unemployed is a quarterly average. The permanent population data is from the year 2017 (since 2018 data is not yet available).
Source: *Registered unemployed: NFSZ IR. Population: KSH T-Star.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ena09_08

Table 10.1: Strikes

Year	Number of strikes	Number of persons involved	Hours lost, in thousands
2001	6	21,128	61
2002	4	4,573	9
2003	7	10,831	19
2004	8	6,276	116
2005	11	1,425	7
2006	16	24,665	52
2007	13	64,612	186
2008	8	8,633	..
2009	9	3,134	9
2010	7	3,263	133
2011	1	..	..
2012	3	1,885	5
2013	1	..	..
2014	0	0	0
2015	2	..	..
2016	7	39,101	271
2017	5	6,706	30
2018	6	15,535	289

Source: *KSH STADAT* strike statistics (2019.06.28. version).

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_01

Table 10.2: National agreements on wage increase recommendations[a]

	OÉT – from 2013 VKF – Recommendations			Actual indexes	
Year	Minimum	Average	Maximum	Budgetary sector	Competitive sector
2001	..	..	..	122.9	116.3
2002	108.0	..	110.5	129.2	113.3
2003	..	4.5% real wage growth	..	117.5	108.9
2004	..	107.0–108.0	..	100.4	109.3
2005	..	106.0	..	112.8	106.9
2006	..	104.0–105.0	..	106.4	109.3
2007	..	105.5–108.0	..	106.4	109.1
2008	..	105.0–107.5	..	106.2	108.4
2009	..	103.0–105.0	..	92.1	104.3
2010	..	real wage preservation	..	100.5[b]	103.2
2011	..	104.0–106.0	..	99.3	105.3
2012	–	no wage recommendations	–	103.7	107.2
2013	..	real wage preservation	..	110.9	103.6
2014	..	103.5	..	105.9	104.2
2015	..	103.0 –104.0	..	106.2	103.9
2016	..	verbal recommendation was issued and accepted	..	109.6	105.4
2017	..	recommendation wasn't accepted	..	113.0	111.6
2018	..	recommendation wasn't accepted	..	109.0	110.9

[a] Average increase rates of gross earnings from recommendations by the National Interest Reconciliation Council (OÉT) and the Permanent Consultation Forum of the Business Sector and the Government (VKF, from 2013 onwards). Previous year = 100.

[b] Mean real wage index.

Source: *KSH, PM.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_02

Table 10.3: Single employer collective agreements in the business sector

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	1,032	1,027	962	966	959	942	951	951	950	994	995	999
Number of persons covered	532,065	467,964	432,086	448,138	448,980	442,723	448,087	443,543	458,668	463,823	386,947	388,996

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_03

Table 10.4: Single institution collective agreements in the public sector

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	1,711	1,710	1,737	1,751	1,744	1,735	1,736	1,734	798	800	804	819
Number of persons covered	224,246	222,547	225,434	224,651	222,136	261,401	260,388	259,797	301,430	312,055	270,583	167,583

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_04

Table 10.5: Multi-employer collective agreements in the business sector

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	74	78	80	82	81	81	83	83	83	84	84	83
Number of persons covered	83,117	80,506	222,236	221,627	202,005	204,585	173,614	219,050	299,487	313,044	266,212	230,938

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_05

Table 10.6: Multi-institution collective agreements in the public sector

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	2	1	1	1	1	0	0	0	0	0	0	1
Number of persons covered	238	..	..	..	320	0	0	0	0	0	0	55,979

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_06

Table 10.7: The number of firm wage agreements[a], the number of affected firms, and the number of employees covered

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	214	202	785	905	888	863	874	876	867	878	873	874
Number of persons covered	171,259	100,206	377,677	414,522	416,562	415,751	422,887	384,182	424,914	437,238	368,021	336,288

[a] Until 2008, the data relate to the number of 'wage agreements' concerning the next year's average wage increase, in the typical case. In and after 2009, the figures relate to resolutions within collective agreements, which affect the remuneration of workers (including long-term agreements on wage supplements, bonuses, premia, non-wage benefits and rights and responsibilities connected with wage payments).

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_07

Table 10.8: The number of multi-employer wage agreements[a], the number of affected firms, and the number of covered companies and employees

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of agreements	40	45	62	68	68	73	74	74	74	73	70	72
Number of companies	147	150	2,350	2,460	2,199	2,219	1,096	2,886	3,700	1,833	1,833	1,830
Number of persons covered	33,735	40,046	191,258	211,753	180,131	191,013	160,092	208,128	289,154	199,779	165,789	165,293

[a] Until 2008, the data relate to the number of 'wage agreements' concerning the next year's average wage increase, in the typical case. In and after 2009, the figures relate to resolutions within collective agreements, which affect the remuneration of workers (including long-term agreements on wage supplements, bonuses, premia, non-wage benefits and rights and responsibilities connected with wage payments).

Source: *PM,* Employment Relations Information System.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_08

Table 10.9: The share of employees covered by collective agreements, percent[a]

	Multi-employer collective agreements in the business sector[b]					Single employer collective agreements in the national economy				
Industries	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Agriculture	21.12	40.83	36.90	35.88	37.33	9.87	21.81	15.77	14.34	14.99
Mining and quarrying	5.35	6.87	16.02	16.21	14.08	40.46	58.42	52.92	35.02	30.41
Manufacturing	11.94	10.82	11.15	8.96	8.73	25.86	27.28	27.14	21.61	21.16
Electricity, gas, steam and air conditioning supply	73.69	78.50	89.54	84.24	87.06	53.19	58.00	55.15	52.27	55.21
Water supply; sewerage, waste management and remediation activities	27.10	35.25	43.26	42.61	42.64	46.57	59.09	57.08	53.44	55.43
Construction	98.00	98.91	98.54	98.56	98.89	6.65	6.63	5.57	3.80	3.47
Wholesale and retail trade; repair of motor vehicles and motorcycles	6.88	7.56	6.65	5.84	5.54	7.71	7.34	6.81	5.03	4.57
Transportation and storage	37.38	42.22	50.17	57.91	33.59	54.40	59.69	61.93	69.12	66.06
Accommodation and food service activities	87.66	93.51	94.02	93.26	93.05	6.24	5.62	5.75	2.94	2.59
Information and communication	0.81	0.74	0.58	0.28	0.26	19.19	20.81	17.64	15.04	13.69
Financial and insurance activities	5.36	5.85	5.94	6.05	5.95	32.89	37.50	37.05	36.78	36.72
Real estate activities	17.36	16.77	16.81	1.38	1.39	26.14	26.82	29.89	5.68	5.79
Professional, scientific and technical activities	4.49	5.39	4.20	0.85	0.80	12.78	10.37	7.45	4.71	4.16
Administrative and support service activities	7.06	6.30	6.24	3.96	3.59	8.17	6.18	5.87	2.63	2.40
Public administration and defence; compulsory social security	..	..	..	0.00	0.00	15.55	7.27	9.75	3.82	12.62
Education	4.81	5.43	2.27	2.32	2.65	44.98	70.79	68.30	61.75	15.55
Human health and social work activities	..	..	..	0.00	0.00	36.38	26.50	27.36	24.35	26.79
Arts, entertainment and recreation	0.14	0.09	0.02	0.00	0.00	22.99	21.68	23.51	21.15	19.10
Other service activities	1.46	7.58	2.54	1.52	1.66	6.88	11.80	12.58	11.18	10.86
National economy, total	21.51	20.85	23.66	22.14	20.32	24.59	25.84	25.99	22.14	18.18

[a] Percentage share of employees covered by collective agreements.

[b] In the observed period only a single multi-employer collective agreement was in effect in the public sector.

Source: *PM*, Employment Relations Information System, Register of Collective Agreements.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_09

Table 10.10: Single employer collective agreements in the national economy

Industries	Number of collective agreements					The number of employees covered by collective agreements				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Agriculture	66	66	66	65	65	7,680	17,603	12,263	10,990	10,990
Mining and quarrying	9	9	9	9	9	1,498	2,057	1,751	1,136	1,136
Manufacturing	355	353	346	343	346	157,178	174,379	180,257	148,315	149,136
Electricity, gas, steam and air conditioning supply	44	43	45	44	44	12,414	13,450	13,210	12,410	12,524
Water supply; sewerage, waste management and remediation activities	68	69	59	56	63	19,010	25,021	25,796	23,283	24,316
Construction	46	47	45	46	45	7,488	7,540	6,358	4,511	4,510
Wholesale and retail trade; repair of motor vehicles and motorcycles	119	117	115	112	110	25,565	25,212	24,197	18,326	17,575
Transportation and storage	59	50	91	96	96	96,550	109,336	125,960	112,168	112,470
Accommodation and food service activities	35	34	36	36	37	4,986	4,969	5,127	2,805	2,699
Information and communication	15	15	16	16	16	13,727	15,514	13,954	12,255	12,255
Financial and insurance activities	26	26	27	29	29	20,892	22,476	22,882	22,285	22,672
Real estate activities	32	32	43	49	50	7,079	7,367	8,152	1,446	1,672
Professional, scientific and technical activities	54	57	55	53	53	10,047	9,534	7,432	4,981	4,791
Administrative and support service activities	24	24	23	25	25	11,080	10,238	9,589	4,270	4,263
Public administration and defence; compulsory social security	104	104	106	102	123	40,431	21,224	28,022	10,734	34,947
Education	1,292	352	355	354	354	114,377	176,637	177,956	175,162	45,072
Human health and social work activities	228	226	227	226	228	95,961	94,549	98,399	81,037	84,116
Arts, entertainment and recreation	91	92	96	96	97	7,592	9,341	9,955	8,181	8,181
Other service activities	18	19	21	20	22	1,474	2,283	2,552	2,311	2,330
National economy, total	2,685	1,735	1,781	1,777	1,812	655,029	748,730	773,812	656,606	555,655

Source: *PM*, Employment Relations Information System, Register of Collective Agreements.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_10

Table 10.11: Multi-employer collective agreements in the business sector[a]

Industries	The number of firms covered by the multi-employer[b] collective agreements					The number of employees covered by multi-employer collective agreements				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Agriculture	41	706	673	678	667	17,002	32,822	28,586	27,359	27,182
Mining and quarrying	4	4	6	6	6	195	242	530	526	526
Manufacturing	174	231	237	240	244	72,623	67,668	72,432	60,161	60,291
Electricity, gas, steam and air conditioning supply	35	34	40	39	37	17,142	17,962	21,151	19,720	19,440
Water supply; sewerage, waste management and remediation activities	28	28	32	33	31	9,283	11,450	14,039	13,053	12,990
Construction	510	555	558	549	558	110,173	112,034	112,352	116,659	128,317
Wholesale and retail trade; repair of motor vehicles and motorcycles	192	240	221	209	207	22,827	25,944	23,640	21,256	21,284
Transportation and storage	1,209	1,560	1,620	1,618	1,613	63,934	73,515	97,689	89,412	54,567
Accommodation and food service activities	37	35	39	39	40	63,526	73,759	75,848	79,360	86,972
Information and communication	12	11	9	9	9	597	550	461	231	231
Financial and insurance activities	9	12	12	13	12	3,269	3,499	3,662	3,652	3,652
Real estate activities	34	40	42	47	48	4,055	4,030	4,255	330	365
Professional, scientific and technical activities	45	58	56	57	58	3,326	4,368	3,783	815	843
Administrative and support service activities	104	111	104	105	105	10,013	9,310	9,433	6,007	6,009
Public administration and defence; compulsory social security	1	3	3	3	3	0	1,540	1,571	1,388	1,388
Education	24	26	25	25	24	172	189	134	122	122
Human health and social work activities	2	0	0	0	0	..	0	0	0	0
Arts, entertainment and recreation	4	2	1	0	0	13	10	2	0	0
Other service activities	2	13	9	9	9	204	1,125	381	236	236
National economy, total	2,467	3,669	3,687	3,679	3,671	398,354	440,017	469,949	440,287	424,415

[a] In the observed period only a single multi-employer collective agreement was in effect in the public sector.
[b] Multi-employer collective agreements are those concluded and/or extended by several employers or employer organizations.
Source: *PM*, Employment Relations Information System, Register of Collective Agreements.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent10_11

Table 11.1: Family benefits

Year	Family allowance[a]		Child-care benefit[a]		Child-rearing support[a]		Child-care allowance[a]		Infant-care benefit[b]
	Average monthly amount per family, HUF	Average number of recipient families	Average monthly amount, HUF	Average number of recipients	Average monthly amount per family, HUF	Average number of recipient families	Average monthly amount, HUF	Average number of recipients	Average number of recipients
2009	24,524	1,245,893	78,725	95,050	28,652	40,263	30,716	174,153	29,230
2010	24,442	1,224,042	81,356	94,682	..	39,275	30,388	178,532	27,289
2011	24,528	1,190,707	83,959	87,717	..	37,829	30,929	169,721	24,769
2012	24,491	1,167,640	91,050	81,839	..	38,608	30,640	168,037	25,223
2013	24,257	1,149,796	96,661	81,234	..	37,411	30,687	161,274	24,230
2014	23,674	1,134,556	104,547	83,701	..	36,101	31,180	161,226	24,753
2015	23,902	1,108,302	110,896	85,970	..	34,587	31,883	163,376	25,886
2016	23,849	1,094,004	118,607	91,126	..	33,381	31,880	162,992	26,931
2017	23,678	1,090,651	130,087	97,470	..	32,941	31,278	164,297	27,989
2018	23,681	1,082,791	142,084	102,512	..	32,607	31,248	159,226	27,696

[a] Annual mean.
[b] Pregnancy and confinement benefit till 31st December 2014. Infant-care benefit is 70 per cent of the recipient's daily income. The amount is subject to personal income tax but exempt from health and pension contributions.
Source: *KSH STADAT.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_01

Table 11.2: Unemployment benefits and average earnings

Year	Insured unemployment benefit and other non-means tested benefits[a]		Means tested unemployment assistance[b]		Net monthly earnings, HUF[c]
	Average monthly amount, HUF	Average number of recipients	Average monthly amount, HUF	Average number of recipients	
2009	51,831	152,197	23,117	167,287	124,115
2010	50,073	125,651	27,574	174,539	132,604
2011	52,107	110,803	25,139	209,918	141,151
2012	63,428	62,380	21,943	236,609	144,084
2013	68,730	48,019	22,781	212,699	151,117
2014	69,720	42,423	22,800	160,858	155,689
2015	72,562	40,576	22,787	158,141	162,391
2016	75,183	41,521	22,874	115,568	175,009
2017	82,912	42,344	22,868	99,783	197,515
2018	93,276	42,258	22,800	75,665	219,412

[a] Average of headcount at the end of the month. Since 1st of November, 2005 insurance based unemployment benefits are officially called "jobseeker's allowance".
[b] Persons receiving social assistance: registered job-seekers of working age, classified as vulnerable by the PES. Since 1st of January 2009 two types of social assistance exist; group 1 receive social benefit, while group 2 receive 'availability assistance', conditional on acceptance of job offers provided by the PES. From the 1st of January 2011, the second type of benefit was renamed as 'wage replacement allowance'. On 1st of September 2011 the name changed again to 'non-employment subsidy'. These welfare payments are regulated in Law 1993. III.
[c] The average net wage refers to the entire economy, competitive sector: firms with at least 4 employees.
Source: *NFSZ: Labour Market Report, 2001. KSH: Welfare systems 2007, Welfare Statistics, Yearbook of Demographics. KSH Social Statistics Yearbooks. KSH STADAT.*

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_02

Table 11.3.a: Number of those receiving pension[a], and the mean sum of the provisions they received in January of the given year

Year	Old age pension			Disability pension under and above retirement age		
	Number of recipients	Average amount before increase, HUF	Average amount after increase, HUF	Number of recipients	Average amount before increase, HUF	Average amount after increase, HUF
2000	1,671,090	33,258	35,931	762,514	29,217	31,556
2001	1,667,945	37,172	41,002	772,286	32,381	35,705
2002	1,664,062	43,368	47,561	789,544	37,369	40,972
2003	1,657,271	50,652	54,905	799,966	43,185	46,801
2004	1,637,847	57,326	60,962	806,491	48,180	51,220
2005	1,643,409	63,185	67,182	808,107	52,259	55,563
2006	1,658,387	69,145	72,160	806,147	56,485	58,935
2007	1,676,477	74,326	78,577	802,506	59,978	63,120
2008	1,716,315	81,975	87,481	794,797	65,036	69,160
2009	1,731,213	90,476	93,256	779,130	70,979	73,166
2010	1,719,001	94,080	98,804	750,260	73,687	77,500
2011	1,700,800	99,644	104,014	721,973	77,945	81,367
2012	1,959,202[b]	99,931	104,610	302,990[c]	..	..

[a] Pension: Excludes survivors pensions.
[b] From 2012 onwards, the disability pensions of persons older than the mandatory retirement age are granted as old-age pensions.
[c] Excludes persons older than the mandatory retirement age.
Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_03a

Table 11.3.b: Number of those receiving pension[a], and the mean sum of the provisions they received in January of the given year

Type of benefit	2015		2016		2017		2018	
	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)
Old age pension	2,022,905	118,439	2,014,666	121,041	2,045,738	123,725	2,027,256	129,637
Of which:								
–old age pension of persons above the mandatory retirement age[b]	1,894,897	118,194	1,870,457	120,930	1,901,565	123,799	1,876,148	129,801
–pension for women entitled to retire before the mandatory age after having accumulated at least 40 accrual years	122,253	117,926	139,639	119,457	141,904	121,184	149,971	126,797
–old age pension of persons younger than the mandatory retirement age	5,755	210,014	4,570	215,017	2,269	220,526	1,137	233,700

[a] Pension: Excludes survivors pensions. From 2012 onwards, no old-age pension is granted to persons younger than the mandatory retirement age. Exceptions are pensions for women having accumulated 40 or more accrual years.
[b] From 2012 onwards, the disability pensions of persons older than the mandatory retirement age are granted as old-age pensions.
Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_03b

Table 11.4.a: Number of those receiving social annuities for people with damaged health, and the mean sum of the provisions they received after the increase, in January of the given year

	Temporary annuity		Regular social annuity		Health damage annuity for miners		Total	
Year	Number of recipients	Average amount, HUF	Number of recipients	Average amount, HUF	Number of recipients	Average amount, HUF	Number of recipients	Average amount, HUF
2000	15,491	18,309	196,689	14,435	2,852	48,581	215,032	15,167
2001	15,640	20,809	198,820	15,610	3,304	53,379	217,764	16,556
2002	11,523	26,043	200,980	17,645	3,348	59,558	215,851	18,744
2003	12,230	30,135	203,656	19,907	3,345	65,380	219,231	21,171
2004	11,949	33,798	207,300	21,370	2,950	69,777	222,199	22,681
2005	13,186	36,847	207,091	22,773	2,839	74,161	223,116	24,259
2006	14,945	40,578	195,954	23,911	2,786	77,497	213,685	25,776
2007	19,158	42,642	184,845	25,050	2,693	80,720	206,696	27,406
2008	21,538	46,537	170,838	27,176	2,601	85,805	194,977	30,096
2009	21,854	46,678	159,146	27,708	2,533	86,165	183,533	30,774
2010	20,327	47,060	148,704	27,645	2,448	86,252	171,479	30,783
2011	16,448	47,096	139,277	27,588	2,371	86,411	158,096	30,500

Disability pensions and temporary provisions for disability groups 1 –2, granted prior to 2012, have been transformed to 'disability allotments'. The provisions for permanent social benefit recipients born before 1955 have also been transformed to 'disability allotments'. Disability pensions and permanent social benefits granted before 2012 to the members of disability group 3 have been transformed to 'rehabilitation allotment'. The conditions of these provisions will be set in the framework of a complex revision of entitlement and eligibility.

Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_04a

Table 11.4.b: Number of those receiving social annuities for people with damaged health, and the mean sum of the provisions they received after the increase, in January of the given year

	2015		2016		2017		2018	
Support for disabled persons	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)	Number of recipients	Average amount after increase (HUF/month)
Support for disabled persons	404,880	67,759	357,979	69,399	355,188	70,127	338,906	72,762
Of which:								
–disability provision for persons older than the mandatory retirement age	44,436	74,509	52,215	78,425	62,518	80,833	51,965	84,885
–disability provision for persons younger than the mandatory retirement	217,625	74,463	228,730	73,215	249,909	71,199	250,062	73,696
–rehabilitation provision	140,658	54,810	92,951	54,282	40,741	45,604	34,955	46,292
–annuity for miners with damaged health	2,161	96,567	2,038	98,621	2,020	100,817	1,924	104,818

Disability pensions and temporary provisions for disability groups 1 –2, granted prior to 2012, have been transformed to 'disability allotments'. The provisions for permanent social benefit recipients born before 1955 have also been transformed to 'disability allotments'. Disability pensions and permanent social benefits granted before 2012 to the members of disability group 3 have been transformed to 'rehabilitation allotment'. The conditions of these provisions will be set in the framework of a complex revision of entitlement and eligibility.

Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_04b

Table 11.5: The median age for retirement and the number of pensioners

Pension	2009		2010		2011		2012		2013	
	Age	Persons	Age	Persons	Age	Persons	Age	Persons	Age	Persons
Females										
Old age and similar pensions	59.9	15,243	60.7	13,617	58.5	84,922	59.2	51,011	59.6	40,032
Pension for women entitled to retire before the mandatory age after having accumulated at least 40 accrual years	–	–	–	–	57.6	54,770	57.8	26,554	58.0	24,033
Disability and accident-related disab. pens.	51.1	9,065	50.8	10,478	50.7	8,667	–	–	–	–
Rehabilitation annuity	44.9	6,574	47.6	6,789	47.2	4,386	..	..	..	..
Total	54.1	30,882	54.4	30,884	57.3	97,975	..	..	..	..
Males										
Old age and similar	59.7	37,116	60.2	37,219	60.3	43,240	61.8	20,411	62.2	21,525
Disability and accident-related disab. pens.	52.3	11,992	52.1	13,345	51.9	10,673	–	–	–	–
Rehabilitation annuity	44.8	6,278	47.4	6,123	47.0	4,102	..	..	..	..
Total	56.4	55,386	56.9	56,687	57.8	58,015	..	..	..	..
Together										
Old age and similar pensions	59.7	52,359	60.3	50,836	59.1	128,162	59.9	71,422	60.5	61,557
Disability and accident-related disab. pens.	51.8	21,057	51.5	23,823	51.4	19,340	–	–	–	–
Rehabilitation annuity	44.9	12,852	47.5	12,912	47.1	8,488	..	..	..	..
Total	55.6	86,268	56.0	87,571	57.5	155,990	..	..	..	..

Pension	2014		2015		2016		2017		2018[a]	
	Age	Persons	Age	Persons	Age	Persons	Age	Persons	Age	Persons
Females										
Old age and similar pensions	59.6	38,911	60.0	41,558	61.1	55,288	61.0	46,372	61.2	48,436
Pension for women entitled to retire before the mandatory age after having accumulated at least 40 accrual years	58.3	27,450	58.7	28,537	59.0	28,126	59.3	28,500	59.5	29,009
Disability and accident-related disab. pens.	–	–	–	–	–	–	–	–	–	–
Rehabilitation annuity	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..
Males										
Old age and similar pensions	62.7	18,634	62.7	22,195	63.1	49,831	63.5	31,822	63.6	33,851
Disability and accident-related disab. pens.	–	–	–	–	–	–	–	–	–	–
Rehabilitation annuity	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..
Together										
Old age and similar pensions	60.6	57,545	60.9	63,753	62.0	105,119	62.0	78,194	62.2	82,287
Disability and accident-related disab. pens.	–	–	–	–	–	–	–	–	–	–
Rehabilitation annuity	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..

Note: The source of these statistics is data from the pension determination system of the ONYF (NYUGDMEG), so these do not include the data for the armed forces and the police. Data on MÁV is included from 2008. 'Old age pensions' include some allowances of minor importance paid to recipients younger than the mandatory retirement age. The data on 2012 –2016 have been revised and may differ from those in earlier publications.

[a] Preliminary data.

Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_05

Table 11.6: The number of those receiving a disability annuity and the mean sum of the provisions they received after the increase, in January of the given year

Year	Disability annuity		Year	Disability annuity	
	Number of recipients	Average amount, HUF		Number of recipients	Average amount, HUF
2003	27,058	23,884	2011	32,314	33,429
2004	27,923	25,388	2012	32,560	33,426
2005	28,738	27,257	2013	32,463	33,422
2006	29,443	28,720	2014	32,497	33,422
2007	30,039	30,219	2015	32,528	34,034
2008	30,677	32,709	2016	32,430	34,581
2009	31,263	33,434	2017	32,789	35,147
2010	31,815	33,429	2018	33,027	36,494

Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_06

Table 11.7: Newly determined disability pension claims and detailed data on the number of newly determined old-age pension claims

Year	Disability and accident-related disability pensions (total number)	Old-age and old-age type pensions[a]			From the total: at the age limit			From the total: under the age limit		
		Male	Female	Together	Male	Female	Together	Male	Female	Together
2005	41,057	33,175	48,771	81,946	4,035	6,721	10,756	27,719	40,142	67,861
2006	36,904	34,207	47,531	81,738	4,013	732	4,745	29,025	45,675	74,700
2007	34,991	51,037	62,168	113,205	3,722	6,660	10,382	45,731	54,177	99,908
2008	19,832	25,912	39,423	65,335	3,154	288	3,442	22,180	38,761	60,941
2009	21,681	37,468	15,468	52,936	4,193	6,692	10,885	32,452	8,289	40,741
2010	24,094	37,394	13,719	51,113	6,350	7,213	13,563	29,990	5,801	35,791
2011	19,340	43,240	84,922	128,162	9,058	7,938	16,996	32,400	76,019	108,419
2012	n.a.	20,411	51,011	71,422	8,173	7,601	15,774	7,507	40,512	48,019
2013	n.a.	21,525	40,032	61,557	15,948	11,281	27,229	513	25,493	26,006
2014	n.a.	18,634	38,911	57,545	10,537	6,996	17,533	1,756	28,617	30,373
2015	n.a.	22,195	41,558	63,753	11,735	7,760	19,495	2,434	29,773	32,207
2016	n.a.	49,831	55,288	105,119	32,787	21,078	53,865	1,611	28,782	30,393
2017	n.a.	31,822	46,372	78,194	16,506	11,920	28,426	2,084	29,004	31,088
2018[b]	n.a.	33,851	48,436	82,287	17,029	12,079	29,108	1,963	29,393	31,356

[a] Before 2012 old-age type pensions include: old-age pensions given with a retirement age threshold allowance (early retirement), artists' pensions, pre-pension up until 1997, miners' pensions. From 2012 onwards the data include the recipients of allowances substituting (abolished) early retirement pensions.

[b] Preliminary data.

Note: These statistics exclude data for the armed forces and police, and those for the State Railways (MÁV) until 2008. Pensions disbursed in the given year (determined according to the given year's rules). The data for old age pensions include some items paid to people retiring before the mandatory age. The data on 2012–2016 have been revised and may differ from those in earlier publications. The column for 'of which in the year of reaching the mandatory age' exclude people, who retired before reaching the mandatory age but expected to reach it in the given calendar year.

Source: *MÁK*.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_07

Table 11.8: Retirement age threshold

Birth year	Calendar year																				
	2009	2010	2011	2012	2013	2014 I.	2014 II.	2015 I.	2015 II.	2016	2017 I.	2017 II.	2018 I.	2018 II.	2019	2020 I.	2020 II.	2021 I.	2021 II.	2022	2023	2024
1948	61	62	63	64	65	66	66	67	67	68	69	69	70	70	71	72	72	73	73	74	75	76
1949	60	61	62	63	64	65	65	66	66	67	68	68	69	69	70	71	71	72	72	73	74	75
1950	59	60	61	62	63	64	64	65	65	66	67	67	68	68	69	70	70	71	71	72	73	74
1951	58	59	60	61	62	63	63	64	64	65	66	66	67	67	68	69	69	70	70	71	72	73
1952 I.	57	58	59	60	61	62	62,5	63	63,5	64	65	65,5	66	66,5	67	68	68,5	69	69,5	70	71	72
1952 II.	57	58	59	60	61	61,5	62	62,5	63	64	64,5	65	65,5	66	67	67,5	68	68,5	69	70	71	72
1953	56	57	58	59	60	61	61	62	62	63	64	64	65	65	66	67	67	68	68	69	70	71
1954 I.	55	56	57	58	59	60	60	61	61,5	62	63	63,5	64	64,5	65	66	66,5	67	67,5	68	69	70
1954 II.	55	56	57	58	59	59,5	60	60,5	61	62	62,5	63	63,5	64	65	65,5	66	66,5	67	68	69	70
1955	54	55	56	57	58	59	59	60	60	61	61	62	63	63	64	65	65	66	66	67	68	69
1956 I.	53	54	55	56	57	58	58,5	59	59,5	60	61	61,5	62	62,5	63	64	64,5	65	65,5	66	67	68
1956 II.	53	54	55	56	57	57,5	58	58,5	59	60	60,5	61	61,5	62	63	63,5	64	64,5	65	66	67	68
1957	52	53	54	55	56	57	57	58	58	59	60	60	61	61	62	63	63	64	64	65	66	67
1958	51	52	53	54	55	56	56	57	57	58	59	59	60	60	61	62	62	63	63	64	65	66
1959	50	51	52	53	54	55	55	56	56	57	58	58	59	59	60	61	61	62	62	63	64	65
1960	49	50	51	52	53	54	54	55	55	56	57	57	58	58	59	60	60	61	61	62	63	64

Those persons are entitled to receive an old age pension who are at least of the age of the old age pension threshold indicated in the legislature – marked grey in the table – relevant to them (uniform for men and women), who have fulfilled the required number of years of service, and who are not insured. In the case of old age pension, the minimum service time is 15 years. The table displays the old age pension age threshold in the case of a "representative person". The cells show the age, based on the calendar year, of a person born in the given year.

Women who have accumulated at least 40 accrual years are entitled to a full old age pension, regardless of their age. Following December 31, 2011 (legislature number CLXVII/2011) no pension can be granted prior to the old-age threshold. At the same time, the legislature continues to provide previously determined allowances under different legal titles (pre-retirement age provision, service salary, allotments for miners and ballet dancers).

Prior to 2012, early retirement pensions included the following allowances : early and reduced-amount early retirement pensions, pensions with age preference, miner's pension, artist's pension, pre-retirement age old age pension of Hungarian and EU MPs and mayors, pre-pension, service pension of professional members of the armed forces.

Source: 1997. legislature number LXXXI.; 2011. legislature number CLXVII., http://www.ado.hu/rovatok/tb-nyugdij/nyudijkorhatar-elotti-ellatasok.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent11_08

Table 12.1: The mean, minimum, and maximum value of the personal income tax rate, per cent

Year	Mean tax burden, per cent	The personal income tax rate projected on the gross wage	
		minimum	maximum
1990	..	0	50
1991	..	0	50
1992	..	0	40
1993	..	0	40
1994	..	0	44
1995	..	0	44
1996	..	20	48
1997	..	20	42
1998	..	20	42
1999	..	20	40
2000	..	20	40
2001	..	20	40
2002	..	20	40
2003	..	20	40
2004	..	18	38
2005	18.89	18	38
2006	19.03	18	36
2007	18.63	18	36
2008	18.86	18	36
2009	18.10	18	36
2010[a]	16.34	21.59	40.64
2011[a]	13.78	20.32	20.32
2012[b]	14.90	16	20.32
2013	..	16	16
2014	..	16	16
2015	..	16	16
2016	..	15	15
2017	..	15	15
2018	..	15	15
2019	..	15	15

[a] In 2010 the nominal tax rate was 17% for annual incomes lower than 5,000,000 HUF. For incomes higher than 5,000,001 HUF it was 850,000 HUF plus 32% of the amount exceeding 5,000,000 HUF. In 2011, the nominal tax rate was 16%. The joint tax base is the amount of income appended with the tax base supplement (equal to 27%).

[b] In 2012 the nominal tax rate was 16%. The joint tax base is the amount of income appended with the tax base supplement.

The amount of the tax base supplement:

– does not need to be determined for the part of the income included in the joint tax base that does not surpass 2 million 424 thousand HUF,

– should be determined as 27% of the part of the income included in the joint tax base that is over 2 million 424 thousand HUF.

Source: Mean tax burden: http://nav.gov.hu/nav/szolgaltatasok/adostatisztikak/szemelyi_jovedelemado/szemelyijovedelemado_adostatiszika.html. Other data: http://nav.gov.hu/nav/szolgaltatasok/adokulcsok_jarulekmertekek/adotablak.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent12_01

Table 12.2: Changes in the magnitude of the tax wedge in the case of minimum wage and the temporary work booklet (AMK)

Year	Minimum wage				Total wage cost in the case of minimum wage		Minimum wage tax wedge, %	AMK public burden[a], HUF/day		Total wage cost[a], HUF/day		AMK tax wedge, %[a]	
	gross, HUF/ month	gross, HUF/day	net, HUF/ month	net, HUF/day	HUF/month	HUF/day		general	registered unemployed	general	registered unemployed	general	registered unemployed
1997	17,000	783	15,045	693	26,450	1,196	43.1	500	500	1,193	1,193	41.9	41.9
1998	19,500	899	17,258	795	30,297	1,369	43.0	500	500	1,295	1,295	38.6	38.6
1999	22,500	1,037	18,188	838	34,538	1,546	47.3	500	500	1,338	1,338	37.4	37.4
2000	25,500	1,175	20,213	931	38,963	1,746	48.1	800	800	1,731	1,731	46.2	46.2
2001	40,000	1,843	30,000	1,382	58,400	2,638	48.6	1,600	1,600	2,982	2,982	53.6	53.6
2002	50,000	2,304	36,750	1,694	71,250	3,226	48.4	1,000	500	2,694	2,194	37.1	22.8
2003	50,000	2,304	42,750	1,970	70,200	3,191	39.1	1,000	500	2,970	2,470	33.7	20.2
2004	53,000	2,442	45,845	2,113	74,205	3,376	38.2	1,000	500	3,113	2,613	32.1	19.1
2005	57,000	2,627	49,305	2,272	79,295	3,572	37.8	700	500	2,972	2,772	23.6	18.0
2006	62,500	2,880	54,063	2,491	85,388	3,910	36.7	700	700	3,191	3,191	21.9	21.9
2007	65,500	3,018	53,915	2,485	89,393	4,095	39.7	700	700	3,185	3,185	22.0	22.0
2008	69,000	3,180	56,190	2,589	94,065	4,310	40.3	900	900	3,489	3,489	25.8	25.8
2009	71,500	3,295	57,815	2,664	97,403[b]	4,464	40.6	900	900	3,564	3,564	25.3	25.3
2010	73,500	3,387	60,236	2,776	94,448	4,352	36.2	900	900	3,676	3,676	24.5	24.5
	Minimum wage				Total wage cost in the case of minimum wage		Minimum wage tax wedge, %	Simplified employment[c], Ft/day		Total wage cost, HUF/day		Tax wedge, simplified employment,%	
	gross, HUF/ month	gross, HUF/day	net, HUF/ month	net, HUF/day	HUF/month	HUF/day		temporary work	seasonal agricultural/ tourism work	temporary work	seasonal agricultural/ tourism work	temporary work	seasonal agricultural/ tourism work
2011	78,000	3,594	60,600	2,793	100,230	4,619	39.5	1,000	500	3,793	3,293	26.4	15.2
2012	93,000	4,280	60,915	2,803	119,505	5,500	49.0	1,000	500	3,383	2,883	29.6	17.3
2013	98,000	4,510	64,190	2,954	125,930	5,795	49.0	1,000	500	3,511	3,011	28.5	16.6
2014	101,500	4,670	66,483	3,059	130,428	6,001	49.0	1,000	500	3,600	3,100	27.8	16.1
2015	105,000	4,830	68,775	3,164	134,925	6,207	49.0	1,000	500	3,689	3,189	27.1	15.7
2016	111,000	5,110	73,815	3,398	142,635	6,566	48.2	1,000	500	3,888	3,388	25.7	14.8
2017	127,500	5,870	84,788	3,904	157,463	7,543	46.2	1,000	500	4,318	3,818	23.2	13.1
2018	138,000	6,603	91,770	4,391	167,670	8,022	45.3	1,000	500	4,732	4,232	21.1	11.8
2019	149,000	7,163	99,085	4,764	180,290	8,668	45.0	1,000	500	5,049	4,549	19.8	11.0

[a] Wage paid at the amount in accordance with the gross daily minimum wage column and in the case of work performed with a temporary work booklet. The basis for the comparison with the minimum wage is the assumption that employers pay temporary workers the smallest possible amount.

[b] According to regulations pertaining to the first half of 2009.

[c] From April 1st, 2010. the temporary work booklets and the public contribution tickets were discontinued, these were replaced by simplified employment.

Note: The tax wedge is the quotient of the total public burden (tax and contribution) and the total wage cost, it is calculated as: tax wedge = (total wage cost – net wage)/total wage cost.

Source: Minimum wage: 1990 –91: http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qli041.html. Public contribution ticket: 1997. legislation number LXXIV. Simplified employment: 2010. Legislation number LXXV. Data for 2014 –2015: http://www.afsz.hu/engine.aspx?page=allaskeresoknek_ellatasok_osszegei_es_kozterhei, http://officina.hu/gazdasag/93-minimalber-2015, http://nav.gov.hu. Based on calculations of Ágota Scharle.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent12_02

Table 12.3: The monthly amount of the minimum wage, the guaranteed wage minimum, and the minimum pension, in thousands of current-year HUF

Date	Monthly amount of the minimum wage, HUF	As a percentage of mean gross earnings	As a ratio of APW, %	Guaranteed skilled workers minimum wage, HUF	Minimum pension, HUF
1990. II. 1.	4,800	..	40.9	–	4,300
1991. IV.1.	7,000	..	..	–	5,200
1992. I. 1.	8,000	35.8	41.4	–	5,800
1993. II. 1.	9,000	33.1	39.7	–	6,400
1994. II. 1.	10,500	30.9	37.8	–	7,367
1995. III. 1.	12,200	31.4	37.0	–	8,400
1996. II. 1.	14,500	31.0	35.8	–	9,600
1997. I. 1.	17,000	29.7	35.1	–	11,500
1998. I. 1.	19,500	28.8	34.4	–	13,700
1999. I. 1.	22,500	29.1	34.6	–	15,350
2000. I. 1.	25,500	29.1	35.0	–	16,600
2001. I. 1.	40,000	38.6	48.3	–	18,310
2002. I. 1.	50,000	40.8	54.5	–	20,100
2003. I. 1.	50,000	36.4	51.5	–	21,800
2004. I. 1.	53,000	37.2	50.7	–	23,200
2005. I. 1.	57,000	33.6	49.2	–	24,700
2006. I. 1.	62,500	36.5	52.3	68,000	25,800
2007. I. 1.	65,500	35.4	49.3	75,400	27,130
2008. I. 1.	69,000	34.7	49.5	86,300	28,500
2009. I. 1.	71,500	35.8	50.0	87,500	28,500
2010. I. I.	73,500	36.3	48.6	89,500	28,500
2011. I. I.	78,000	36.6	49.8	94,000	28,500
2012. I. I.	93,000	41.7	54.3	108,000	28,500
2013. I. I.	98,000	42.5	55.1	114,000	28,500
2014. I. I.	101,500	42.7	56.9	118,000	28,500
2015. I. I.	105,000	42.4	54.0	122,000	28,500
2016. I. I.	111,000	42.2	53.5	129,000	28,500
2017. I. I.	127,500	42.9	..	161,000	28,500
2018. I. I.	138,000	41.8	..	180,500	28,500
2019. I. I.	149,000	..	..	195,000	28,500

Notes: Up to the year 1999, sectors employing unskilled labour usually received an extension of a few months for the introduction of the new minimum wage.
The guaranteed wage minimum applies to skilled employees, the minimum wage and the skilled workers minimum wage are gross amounts.
The minimum wage is exempt from the personal income tax from September 2002. This policy resulted in a 15.9% increase in the net minimum wage.
APW: mean wage of workers in the processing industry, based on the NFSZ BT. In 1990, the data is the previous year's data, indexed (since there was no NFSZ BT conducted in 1990).
Source: Minimum wage: 1990–91: http://www.mszosz.hu/files/1/64/345.pdf, 1992–: CSO. Guaranteed wage minimum: http://www.nav.gov.hu/nav/szolgaltatasok/adokulcsok_jarulekmertekek/minimalber_garantalt. Minimum pension: http://www.ksh.hu/docs/hun/xtabla/nyugdij/tablny11_03.html. APW: NFSZ BT.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent12_03

Table 12.4: The tax burden on work as a ratio of tax revenue and earnings

Year	Tax burden on work as a ratio of tax revenue[a], %	Implicit tax rate[b]	Tax wedge on 67% level of mean earnings	Tax wedge on the minimum wage[c]
1990		..	..	38.2
1991	52.4	..	..	40.4
1992	54.8	..	..	40.9
1993	54.4	..	..	42.3
1994	53.7	..	..	41.2
1995	52.1	42.3	..	44.2
1996	52.5	42.1	..	41.8
1997	54.2	42.5	..	43.1
1998	53.1	41.8	..	43.0
1999	51.5	41.9	..	47.3
2000	48.7	41.4	51.4	48.1
2001	49.8	40.9	50.9	48.6
2002	50.3	41.2	48.2	48.4
2003	48.7	40.0	44.6	39.1
2004	47.5	39.1	44.8	38.2
2005	48.6	37.6	43.1	37.8
2006	48.8	38.2	43.3	36.7
2007	49.3	40.6	46.1	39.7
2008	51.0	41.9	46.8	40.3
2009	47.9	39.9	46.2	40.6[d]
2010	46.7	38.1	43.8	36.2
2011	46.8	37.9	45.2	39.5
2012	46.0	39.2	47.9	49.0
2013	45.7	39.0	49.0	49.0
2014	45.3	39.6	49.0	49.0
2015	45.0	41.6	49.0	49.0
2016	45.6	40.9	48.3	48.3
2017	45.3	39.5	46.2	46.2
2018	..	..	45.0	45.0

[a] Tax burden on work and contributions as a ratio of tax revenue from all tax forms.
[b] The implicit tax rate is the quotient of the revenue from taxes and contributions pertaining to work and the income derived from work.
[c] The tax wedge is the quotient of the total public burden (tax and contribution) and the total wage cost, it is calculated as: tax wedge = (total wage cost – net wage)/total wage cost.
[d] The tax wedge of the minimum wage is the 2009 annual mean (the contributions decreased in June).

Source: 1991–1995: estimate of Ágota Scharle based on Ministry of Finance (PM) balance sheet data. 1996–2002: http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm. 2003 –: https://ec.europa.eu/taxation_customs/business/economic-analysis-taxation/data-taxation_en, Eurostat online database. Implicit tax rate: Eurostat online database (gov_a_tax_itr). 2003 –: https://ec.europa.eu/taxation_customs/business/economic-analysis-taxation/data-taxation_en. Tax wedge on the 67 percent level of the mean wage: OECD: Taxing wages 2010, Paris 2011, OECD Tax Statisctics/ Taxing wages/ Comparative tables. Tax wedge at the level of the minimum wage: calculations of Ágota Scharle.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent12_04

Table 13.1: Employment and unemployment rate of population aged 15–64 by gender in the EU, 2018

	Employment rate			Unemployment rate		
Country	males	females	together	males	females	together
Austria	80.7	71.7	76.2	4.9	4.5	4.7
Belgium	73.9	65.5	69.7	6.2	5.4	5.8
Bulgaria	76.5	68.3	72.4	5.6	4.6	5.1
Cyprus	79.3	68.9	73.9	8.1	8.7	8.4
Czech Republic	87.4	72.2	79.9	1.7	2.8	2.2
Denmark	81.5	74.8	78.2	4.4	4.9	4.7
United Kingdom	83.7	73.8	78.7	3.6	3.5	3.6
Estonia	83.4	75.6	79.5	5.1	5.2	5.1
Finland	78.2	74.5	76.3	7.0	6.7	6.8
France	75.2	67.6	71.3	8.8	8.9	8.8
Greece	70.1	49.1	59.5	15.3	24.2	19.3
Netherlands	84.3	74.2	79.2	3.3	3.5	3.4
Croatia	70.3	60.1	65.2	7.4	9.0	8.2
Ireland	80.3	68.1	74.1	5.5	5.2	5.4
Poland	79.4	65.0	72.2	3.8	3.8	3.8
Latvia	79.0	74.8	76.8	8.5	6.6	7.5
Lithuania	79.0	76.7	77.8	7.0	5.6	6.3
Luxembourg	76.0	68.0	72.1	5.0	5.6	5.3
Hungary	82.1	66.8	74.4	3.3	3.9	3.6
Malta	85.7	63.4	75.0	3.5	3.2	3.4
Germany	83.9	75.8	79.9	3.8	2.9	3.3
Italy	72.9	53.1	63.0	9.7	11.6	10.5
Portugal	78.9	72.1	75.4	6.5	7.4	7.0
Romania	78.9	60.6	69.9	4.5	3.4	4.0
Spain	73.1	61.0	67.0	13.4	16.8	14.9
Sweden	84.7	80.4	82.6	5.8	5.6	5.7
Slovakia	79.2	65.5	72.4	5.9	6.9	6.4
Slovenia	79.0	71.7	75.4	4.6	5.8	5.1
EU-28	78.9	67.4	73.1	6.5	7.0	6.7

Source: Eurostat http://epp.eurostat.ec.europa.eu.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent13_01

Table 13.2: Employment composition of the countries in the EU[a], 2018

Country	Self employed[b]	Part time	Fixed term contract	Agriculture	Industry	Market services	Non market services[c]
Austria	10.4	27.3	8.1	3.3	25.7	38.6	32.5
Belgium	12.7	24.5	9.3	0.9	21.2	34.8	43.1
Bulgaria	10.6	1.8	3.6	6.4	30.4	38.1	25.1
Cyprus	11.7	10.8	12.2	1.7	16.7	48.7	32.8
Czech Republic	16.0	6.3	7.0	2.8	38.0	32.6	26.6
Denmark	7.2	24.8	10.3	2.1	18.7	37.8	41.4
United Kingdom	13.8	24.6	4.7	0.9	18.2	40.2	40.7
Estonia	10.4	11.1	3.1	3.2	30.3	37.5	29.0
Finland	11.6	15.1	14.2	3.3	22.5	35.2	39.0
France	11.0	18.0	14.8	2.4	20.4	36.0	41.1
Greece	29.1	9.1	7.6	11.7	15.4	43.1	29.9
Netherlands	15.4	50.1	17.8	2.0	16.3	41.3	40.5
Croatia	10.2	5.2	17.6	5.6	27.7	38.5	28.2
Ireland	12.9	19.5	8.6	3.8	19.1	41.9	35.1
Poland	17.4	6.4	19.5	9.4	32.1	32.4	26.0
Latvia	11.0	7.2	2.4	7.0	24.0	39.8	29.2
Lithuania	10.8	7.1	1.4	7.0	26.0	36.7	30.3
Luxembourg	7.5	17.7	8.9	1.0	11.7	42.0	45.3
Hungary	9.7	4.2	6.5	4.8	32.6	31.4	31.3
Malta	13.6	13.3	6.7	0.9	18.7	41.4	39.0
Germany	8.8	26.8	11.5	1.2	27.6	34.9	36.3
Italy	20.6	18.4	13.4	3.6	26.4	37.7	32.4
Portugal	13.1	8.1	19.0	3.8	25.7	35.9	34.6
Romania	15.5	6.5	0.9	19.8	31.1	29.8	19.4
Spain	15.2	14.5	22.7	4.2	20.4	40.6	34.9
Sweden	8.4	22.7	14.3	1.5	18.3	36.6	43.6
Slovakia	14.6	4.9	6.9	2.3	36.8	31.7	29.3
Slovenia	12.1	9.7	13.5	4.4	33.8	33.8	28.0
EU-28	13.5	19.2	12.1	3.7	24.3	36.7	35.2

[a] Per cent of employment, except for employees with fixed-term contracts: per cent of employees.
[b] Includes the members of cooperatives and business partnerships.
[c] One-digit industries O –U.
Source: *Eurostat* (Newcronos) Labour Force Survey.

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent13_02

Table 13.3: The ration of vacancies, IV. quarter, 2018

Country	Vacancy rate	Country	Vacancy rate
Bulgaria	0.9	Finland	2.2
Portugal	0.9	Norway	2.3
Poland	1.2	Latvia	2.4
Slovakia	1.2	Sweden	2.5
Romania	1.3	Slovenia	2.5
Lithuania	1.5	Hungary	2.7
North Macedonia	1.6	Netherlands	2.9
Luxembourg	1.7	Germany	3.1
Croatia	1.7	Czech Republic	5.7
Estonia	1.9		

Source: *Eurostat*. http://ec.europa.eu/eurostat/web/labour-market/job-vacancies/database (jvs_q_nace2: 2019.08.20. version, donwnloaded: 2019.08.24.)

Online data source in xls format: http://www.bpdata.eu/mpt/2019ent13_03

DESCRIPTION OF THE MAIN DATA SOURCES

The data have two main sources in terms of which office gathered them: the regular institutional and population surveys of the Hungarian Central Statistical Office (CSO, in Hungarian: Központi Statisztikai Hivatal, KSH), and the register and surveys of the National Employment Service (in Hungarian: Nemzeti Foglalkoztatási Szolgálat, NFSZ).

MAIN DATA SOURCES OF THE KSH

Labour Force Survey – KSH MEF

The KSH has been conducting a new statistical survey since January 1992 to obtain ongoing information on the labour force status of the Hungarian population. The MEF is a household survey which provides quarterly information on the non-institutional population aged 15–74. The aim of the survey is to observe employment and unemployment according to international statistical recommendations based on the concepts and definitions recommended by the International Labour Organization (ILO), independently from existing national labour regulations or their changes.

In international practice, the labour force survey is a widely used statistical tool to provide simultaneous, comprehensive, and systematic monitoring of employment, unemployment, and underemployment. The survey techniques minimise the subjective bias in classification (since people surveyed are classified by strict criteria), and provide freedom to also consider national characteristics.

In the MEF, the surveyed population is divided into two main groups according to the economic activity performed by them during the reference week (up to the year 2003, this was always on the week containing the 12th of the month): economically active persons (labour force), and economically inactive persons.

The group of economically active persons consists of those in the labour market either as employed or unemployed persons during the reference week.

The definitions used in the survey follow ILO recommendations. According to these, those designated employed are persons who, during the reference week worked one hour or more earning some form of income, or had a job from which they were only temporarily absent (on leave, illness, etc.).

Work providing income includes all activities that:
– result in monetary income, payment in kind, or
– that were carried out in the hopes of income realized in the future, or
– were performed without payment in a family business or on a farm (i.e. unpaid family workers).

From the survey's point of view the activities below are not considered as work:
– work done without payment for another household or institution (voluntary work),
– building or renovating of an own house or flat, internships tied to education (not even if it is compensated),
– housework, including work in the garden. Work on a person's own land is only considered to generate income if the results are sold in the market, not produced for self-consumption.

Persons on child-care leave are classified – based on the 1995 ILO recommendations for transitional countries determined in Prague – according to their activity during the survey week.

Since, according to the system of national accounting, defense activity contributes to the national product, conscripts are generally considered as economically active persons, any exceptions are marked in the footnotes of the table. The data regarding the number of conscripts comes from administrative sources. (The retrospective time-series based on CSO data exclude conscripted soldiers. This adjustment affects the data until 2003, when military conscription was abolished.)

Unemployed persons are persons aged 15–74 who:
– were without work, i.e. neither had a job nor were at work (for one hour or more) in paid employment or self-employment during the reference week,
– had actively looked for work at any time in the four weeks up to the end of the reference week,
– were available for work within two weeks following the reference week if they found an appropriate job.

Those who do not have a job, but are waiting to start a new job within 30 days (since 2003 within 90 days) make up a special group of the unemployed.

Active job search includes: contacting a public or private employment office to find a job, applying to an employer directly, inserting, reading, answering advertisements, asking friends, relatives or other methods.

The labour force (i.e. economically active population) comprises employed and unemployed persons.

Persons are defined economically inactive (i.e. not in the labour force) if they were neither employed in regular, income-earning jobs, nor searching for a job, or, if they had searched, had not yet started work. Passive unemployed are included here – those who would like a job, but have given up any active search for work, because they do not believe that they have a chance of finding any.

The Labour Force Survey is based on a multi-stage stratified sample design. The sample design strata were defined in terms of geographic units, size categories of settlements and area types such as city centres, outskirts, etc. The sample has a simple rotation pattern: any household entering the sample at some time is expected to provide labour market information at six consecutive quarters, then leaves the sample forever. The quarterly sample is made up of three monthly sub-samples. In each sampled dwelling, labour market information is collected from each household and each person aged 15–74 living there. The number of addresses selected for the sample in a quarter is about 38 thousand.

Grossing up of LFS data has been carried out monthly on the basis of the population number of the last Census corrected with the extrapolated population numbers. Estimated totals or levels based on the LFS sample are computed by inflating and summing the observations by suitable sample weights. The weights to the estimation are made in two steps. First the primary weights are calculated for the 275 strata of the sample, then these weights need to be adjusted for non-response by updated census counts in cross-classes defined by age, sex and geographic units. In the correction procedure the further calculated population and dwelling numbers have a key role.

Since 2003, the weights used to make the sample representative are based on the 2001 census population record base. At the same time, the 2001–2002 data was recalculated and replaced as well. The LFS-based time series published in this volume use the following weighting schemes: (i) in 1992 –1997 the weights are based on the 1990 Census (ii) in 1998 –2001 the weights based on the 1990 Census have been corrected using data of the 2001 Census (iii) in 2002 –2005 the weights are based on the 2001 Census (iv) from 2006 onwards the weights based on the 2001 Census have been corrected using the 2011 Census. Due to correction, the LFS statistics published earlier were modified.

Institution-Based Labour Statistics – KSH IMS

The source of the earnings data is the monthly (annual) institutional labour statistical survey. The sample frame covers enterprises with at least 5 employees, and public and social insurance and non-profit institutions irrespective of the staff numbers of employees.

The earnings data relate to the full-time employees on every occasion. The potential elements of the prevailing monthly average earnings are: base wage, allowances (including the miner's loyalty bonus, and the Széchenyi and Professor's scholarships), supplementary payments, bonuses, premiums, and wages and salaries for the 13th and further months.

Net average earnings are calculated by deducting from the institution's gross average earnings the employer's contributions, the personal income tax, according to the actual rates (i.e. taking into account the threshold concerning the social security contributions and employee deductions). The personal income tax is calculated based on the actual withholding rate applied by the employers when disbursing monthly earnings in the given year.

The size and direction of the difference between the gross and the net (after-tax) income indexes depends on actual annual changes in the tax table (tax brackets) and in the tax allowances. Thus the actual size of the differences are also influenced by the share of individuals at given firms that fall outside the bracket for employee allowances.

The indexes pertain to the comparable sample, taking changes in the definitions, and of the sample frame into account. The KSH traditionally publishes the main average index as the earnings growth measure. Thus the indicator of change in earnings reflects both the changes in the number of observations and the actual earnings changes simultaneously. The change of net real earnings is calculated from the ratio of net income index and the consumer price index in the same period.

Non-manual workers are persons with occupations classified by the standardized occupational code (FEOR) in major groups 1–4., manual workers are persons with occupations classified in major groups 5–9.

KSH Job vacancy statistics

The Job Vacancies Survey is a firm-based survey of quarterly frequency. The survey covers all corporations with more than 49 employees. Businesses with 5–49 employees are randomly sampled. Budgetary institutions and non-profit ones with more than two employ-

ees are observed on a full-scope basis. In line with EU recommendations, newly created, unfilled positions are those which are unfilled or about to become vacant within 3 months, provided that the employer takes active steps to find a suitable candidate for the job, and is in the position to fill the job.

KSH Strike statistics

The CSO data cover strikes with at least 10 participants and token strikes lasting for at least 2 hours.

Labour Force Accounting Census – KSH MEM

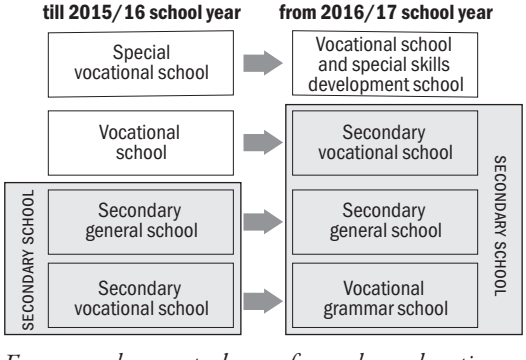
Before the publication of the MEF, the annual MEM gave an account of the total labour force in the time period between the two censuses.

The MEM, as its name shows, is a balance-like account that compares the labour supply (human resources) to the labour demand at an ideal moment (1 January). Population is taken into account by economic activity, with a differentiation between statistical data of those of working age and the population outside of the working age. Source of data: Annual labour survey on employment since 1992 of enterprises and of all government institutions, labour force survey, census, national healthcare records, social security records, and company registry. Data on unemployment comes from the registration system of the NFSZ.

Source of educational data

Data on educational institutions are collected and processed by the Ministry of Human Capacities (or the at all times ministry responsible for education). Data surveys relating to education have undergone changes both in content and in methodology since the 2000/2001 school-year (the paper-based questionnaires were replaced by the electronic data collection system, which in the year of transition temporarily has resulted in lower reliability data); they follow the structural and activity system laid down by Acts LXXIX. and LXXX. of 1993 on education. The observed units of the data survey are the educational institutions, and the activities and educational tasks within them. Since the 2000/2001 school-year October 1st and October 15th of every year was designated as the nominal date of the data survey (before 2000 it was a similar date, which nevertheless varied by school-types).

In the 2016/2017 school year significant transformations started in secondary education. In addition to changing the name of vocational institutions, the task they performed changed as well. The new name of special vocational schools is vocational school and special skills development school, the name of earlier vocational schools became secondary vocational school and that of earlier secondary vocational schools became vocational grammar school. In the new vocational schools pupils with special educational need who are unable to make progress with the other pupils are prepared for vocational examinations; the special skills development schools provide preparation for SEN-students with moderate disability for commencing independent life or the learning of work processes requiring simple training, which enable employment. In the new system secondary vocational schools students aquire a vocational qualification during the first 3 years, after which they have the opportunity to complete two further years preparing for a final examination at secondary level then they can pass a maturity examination. After completing the first four years of vocational grammar schools, students pass a vocational grammar school-leaving examination, during an additional year students prepare for the vocational examination. There was no change in the case of secondary general schools. The category of secondary school preparing students for final examination at secondary level (maturity examination) has changed. Earlier the secondary general school and the secondary vocational school belonged in this category, in the new system the secondary vocational school, the secondary general school and the vocational grammar school together are meant by it. As a result, some of the education time series can no longer be resumed in their earlier forms.



Former and current scheme of secondary education:

Other data sources

Census data were used for the estimation of the employment data in 1980 and 1990. The aggregate economic

data are based on national account statistics, the consumer's and producer's price statistics and industrial surveys. A detailed description of the data sources are to be found in the relevant publications of the KSH.

MAIN NFSZ DATA SOURCES

Unemployment (Jobseekers') Register Database – NFSZ-REG

The other main source of unemployment data in Hungary – and in most of the developed countries – is the huge database containing so called administrative records which are collected monthly and include the individual data of the registered unemployed/jobseekers.

The register actually includes all jobseekers, but from these, at a given point of time, only those are regarded as registered unemployed/jobseekers, who:

- had themselves registered with a local office of the NFSZ as unemployed/jobseekers (i. e. he/she has no job but wishes to work, for which they seek assistance from the labour market organisation);
- at the time of the examination (on the final day of any month), the person is not a pensioner or a full-time student, does not receive any rehabilitation provision or benefit, and is ready to co-operate with the local employment office in order to become employed (i. e. he/she accepts the suitable job or training offered to him/her, and keeps the appointments made with the local employment office's placement officer/counsellor/benefit administrator).

If a person included in the register is working under any subsidised employment programme on the closing day, or is a participant of a labour market training programme, her/his unemployed/jobseeker status is suspended.

If the client is not willing to co-operate with the local office, he/she is removed from the register of the unemployed/ jobseekers.

The data – i. e. the administrative records of the register – allow not only for the identification of date-related stock data, but also for monitoring flows, inflows as well as outflows, within a period.

The database contains the number of decrees pertaining to the removal or suspension of jobseeking benefits, the number of those receiving monetary support based on accounting items, support transactions, the exact date of entry and exit and the reason for the exit (for example, job placement, the end of entitlement, disqualification, entry into a subsidized employment programme, etc.), as well as the financial data of jobseeking benefits (for example, average monthly amount, average support paid for the number of participants on the closing date, for exiters, and those who found placement).

The jobseeking benefit register can also monitor the average duration of the period of benefit allocation and the average monthly amount of the benefits allocated.

For the period between 1991 and 1996, the register also contains the stock and flow data of the recipients of new entrant's unemployment benefit. Between 1997–2005, the system also contained the recipients of pre-retirement unemployment benefit.

Jobseeking allowance recipients: from September 1, 2011 the conditions for determining and disbursing the jobseeking allowance changed. The two phases of the jobseeking allowance were discontinued and the period of entitlement decreased from 270 days to 90 days. Jobseekers needed to have at least 360 days of work-time counting towards entitlement in the 5 years prior to becoming a jobseeker (prior to September 1, 2011, this was 365 days in the previous 4 years). Its amount is 60% of the allowance base, but the maximum is the amount of the smallest mandatory wage on the first day of the entitlement (allowance base: the monthly average amount from the four calendar quarters preceding the submission of the application).

Jobseeking assistance recipients: from September 1, 2011 the conditions for determining and disbursing the jobseeking assistance changed. The "a" and "b" type of benefit were discontinued, jobseekers can still request the "c" type of benefit under the title of pre-retirement jobseeking benefit, but the period of entitlement (and depletion) of at least 140 days decreased to 90 days.

Regular social assistance recipients: those from among the regular registered jobseekers who are of active age and are in a disadvantaged labour market position, and who receive social assistance to complement or substitute their income. From January 1, 2009, those receiving regular social assistance were included in two categories: regular social assistance recipients, and recipients of on call support. This support was replaced by a new type of assistance, the wage replacement support from January 1, 2011, then from September 1, 2011, the name was changed to employment substitution support. (Legislation III. of 1993 pertaining to social management and social assistance).

Based on the records of labour demand needs reported to the NFSZ, the stock and flow data of vacancies are also processed and published for each month.

Furthermore, detailed monthly statistics of participation in the different active programmes, number of participants, and their inflows and outflows are also prepared based on the assistance disbursed.

The very detailed monthly statistics – in a breakdown by country, region, county, local employment office service delivery area and community – build on the secondary processing of administrative records that are generated virtually as the rather important and useful "by-products" of the accomplishment of the NFSZ's main functions (such as placement services, payment of benefits, active programme support, etc.).

The NFSZ (and its predecessors, i. e. NMH, OMK – National Labour Centre, OMMK and OMKMK) has published the key figures of these statistics on a monthly basis since 1989. The denominators of the unemployment rates calculated for the registered unemployed/jobseekers are the economically active population data published by the KSH MEM.

The figures of the number of registered unemployed/jobseekers and the registered unemployment rate are obviously different from the figures based on the KSH MEF. It is mainly the different conceptual approach, definition, and the fundamentally different monitoring/measuring methods that account for this variance.

Short-Term Labour Market Projection Surveys – NFSZ PROG

At the initiative and under the coordination of the NFSZ (and its legal predecessors), the NFSZ PROG has been conducted since 1991, twice a year, in March and September, by interviewing over 7,500 employers. Since 2004 the survey is conducted once a year, in the month of September.

The interviews focus on the companies' projections of their material and financial processes, their development and human resource plans, and they are also asked about their concrete lay-off or recruitment plans, as well as their expected need for any active labour market programmes.

The surveys are processed from bottom up, from the service delivery areas, through counties, to the whole country, providing useful information at all levels for the planning activities of the NFSZ.

The survey provides an opportunity and possibility for the regions, the counties and Budapest to analyse in greater depth (also using information from other sources) the major trends in their respective labour markets, to make preparations for tackling problems that are likely to occur in the short term, and to effectively meet the ever-changing needs of their clients.

The forecast is only one of the outputs of the survey. Further very important "by-products" include regular and personal liaison with companies, the upgraded skills of the placement officers and other administrative personnel, enhanced awareness of the local circumstances, and the adequate orientation of labour market training programmes in view of the needs identified by the surveys.

The prognosis surveys are occasionally supplemented by supplementary questions and sets of questions to obtain some further useful information that can be used by researchers and the decision-makers of employment and education/ training policy.

From 2005, the surveys are conducted in cooperation with the Institute for Analyses of the Economy and Entrepreneurship of the Hungarian Chamber of Industry and Commerce (in Hungarian: Magyar Kereskedelmi és Iparkamara Gazdaság- és Vállalkozáskutató Intézet, MKIK GVI), with one additional benefit being that with the help of the surveyors of the Institute, the sample size has increased to nearly 8,000.

Wage Survey Database – NFSZ BT

The NFSZ (and its legal predecessors) has conducted since 1992, once a year, a representative survey with a huge sample size to investigate individual wages and earnings, at the request of the Ministry of National Economy (and its legal predecessors).

The reference month of data collection is the month of May in each year, but for the calculation of the monthly average of irregularly paid benefits (beyond the base wage/salary), 1/12th of the total amount of such benefits received during the previous year is used.

In the competitive sector, the data collection only covered initially companies of over 20 persons; it was incumbent on all companies to provide information, but the sample includes only employees born on certain dates in any month of any year.

Data collection has also covered companies of 10–19 since 1995, and companies of 5–9 have been covered since 2000, where the companies actually involved in data collection are selected at random (ca. 20 per cent), and the selected ones have to provide information about all of their full-time employees.

Data on basic wages and earnings structure can only be retrieved from these surveys in Hungary, thus it is, in practice, these huge, annually generated databases

that can serve as the basis of the wage reconciliation negotiations conducted by the social partners.

In the budgetary sector, all budgetary institutions provide information, regardless of their size, in such a way that the decisive majority of the local budgetary institutions – the ones that are included in the TAKEH central payroll accounting system – provide fully comprehensive information, and the remaining budgetary institutions provide information only about their employees who were born on certain days (regarded as the sample).

Data has only been collected on the professional members of the armed forces since 1999.

Prior to 1992, such data collection took place in every third year, thus we are in possession of an enormous database for the years of 1983, 1986 and also 1989.

Of the employees included in the sample, the following data are available:

– the sector the employer operates in, headcount, employer's local unit, type of entity, ownership structure;
– employee's wage category, job occupation, gender, age, educational background.

Based on the huge databases which include the data by individual, the data is analysed every year in the following ways:

– standard data analysis, as agreed upon by the social partners, used for wage reconciliation negotiations (which is received by every confederation participating in the negotiations);
– model calculations to determine the expected impact of the rise of the minimum wage;
– analyses to meet the needs of the Wage Policy Department, Ministry of National Resources, for the analysis and presentation of wage ratios;
– analyses for the four volume statistical yearbook (total national economy, competitive sector, budgetary sector, and regional volumes).

The entire database is adopted every year by the KSH, which enables the Office to also provide data for certain international organisations, (e. g. ILO and OECD). The NGM earlier the NMH also regularly provides special analyses for the OECD.

The database containing the data by individual allows for a) the analysis of data for groups of people determined by any combination of pre-set criteria, b) the comparison of basic wages and earnings, with special regard to the composition of the different groups analysed, as well as c) the analysis of the dispersion of the basic wages and earnings.

Since 2002, the survey of individual wages and earnings was substantially developed to fulfill all requirements of the EU, so from this time on it serves also for the purposes of the Structure of Earnings Survey (SES), which is obligatory for each member state in every fourth year. One important element of the changes was the inclusion of part-time employees in the sample since 2002.

SES 2002 was the first, and recently the databases of SES 2006 and 2010 were also sent to the Eurostat in anonymized form in accordance with EU regulations.

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THE HUNGARIAN LABOUR MARKET

IN FOCUS


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