Box 4. Gender inequality in terms of wage earnings in Romania

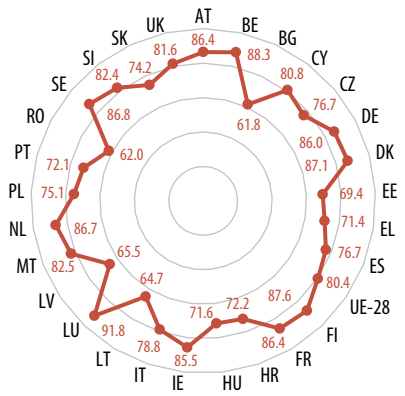
In 2018, the gap between the wages of men and women in Romania was, according to Eurostat, the smallest one in the European Union, i.e. 3 percent[1] of the average gross wage of men, whereas the EU-wide average was 14.8 percent. Nonetheless, the gap between the employment rate for men and that for women was 18.3 percentage points, ranking fourth in the EU, where the recorded average was 11.6 percentage points. This link between the narrow gap in terms of wages and the significant one in terms of employment rates could be explained by the fact that only the highly-skilled women relative to the skills distribution in the country under review are economically active, whereas the low-skilled ones are not in formal employment (The European Institute for Gender Equality, 2019). Moreover, the gender pay gap reported by Eurostat does not take into account such factors as occupation, work experience or required skills/qualifications. If in the case of a specific job and employees with the same work experience there are more pronounced gender inequalities, these may represent a discouraging factor for women to be economically active.

This box aims to investigate the gap between the wages of men and women using microeconomic data (from the *Household Budget Survey* – HBS, 2005-2018) and taking into account the impact of variables such as age or occupation. Based on the HBS data, the conclusion is that the wage gaps are significantly wider than the Eurostat estimates, especially during the last years.

As for the countries from Central and Eastern Europe (CEE), the literature looked at the issue of gender pay gap by mainly analysing the period of early transition from communism to a market economy. In what Romania is concerned, Andrén and Andrén (2015) reach the conclusion that during communism state institutions promoted gender equality, but this was no longer a priority for the governments after 1990. Moreover, according to this work, the unexplained wage gap between men and women was wider during the '90s than during the communist era. Paternostro and Sahn (1998) make use of the data from the *Household Budget Survey 1994* and estimate that for Romania the gender wage differential was 27 percent in urban areas and 82 percent in rural areas. The wage gap between men and women was also documented in other CEE countries (Russia: Newell & Reilly, 1996; Bulgaria: Jolliffe, 2002; Czechia and Slovakia: Jurajda, 2003). Nevertheless, lately, the ending of the transition period in CEE countries led to a relative decrease in the literature's interest in this subject analysed in the above-mentioned geographical area.

The gender wage gaps in Romania were often analysed by means of aggregate indicators, which take into consideration the broader issue of economic and social inequality between

Chart A
Gender Equality Index, 2019, in the domain of money



Note: The data for 2019 Index is from 2017.

Source: European Institute for Gender Equality (2019)

[1] Eurostat mentions that the value for Romania in 2018 is an estimate. Moreover, it is mentioned that the series is marked by methodological changes, data comparability being thus affected. The series recorded a peak in 2007 (12.5 percent) and a declining trend thereafter to the recent low values.

men and women[2]. For instance, the index constructed by the European Institute for Gender Equality shows Romania as ranking second in the European Union, following Bulgaria, in terms of gender inequality in the core domain of money, according to 2017 data (Chart A)[3].

The Household Budget Survey 2005-2018, which provided the data for the analysis carried out in this box, is a survey focusing on households' income and expenditure, conducted on a monthly sample of approximately 3,000 Romanian households which are representative for the entire population of Romania. The data on net wage earnings in each year, grouped according to the Classification of Occupations in Romania (COR), were used for the analysis of the gender wage gap. Specifically, cohorts of employees covered by the HBS were created both for all employees and separately for three major groups by occupation: professionals in various fields of activity (major group 2)[4], technicians and associate professionals (major group 3)[5] and craft and related trades workers (major group 7)[6]. The cohorts were defined based on the year of birth and gender[7], imposing the condition that employees should be aged between 25 and 55 years old at the time of the survey[8]. For each cohort, the average net monthly wage was extracted for each year included in the sample[9].

Chart B illustrates the development over time of average net monthly wages of men and women, both economy-wide and by the above-mentioned occupations. While wages generally increased for all categories taken into account, in order to assess gender inequality for each year, the difference between the average wage of men and women is presented as a share of the average net wage of men. Thus, it is noticeable that women have a smaller average wage both economy-wide and by each occupational group. Overall, the wage difference between men and women expressed as a share of the average net wage of men was significantly smaller in 2018 (10 percent) compared to 2005 (17 percent). Nevertheless, not all occupational groups reported this tendency. Inequality within the group of professionals did not post a clear trend in the mentioned period, the gap being slightly wider in 2018 (13.7 percent) versus 2005 (12.7 percent). The technicians group recorded dynamics similar to those economy-wide, whereas for skilled workers the gender wage gap narrowed in the period under review (although it

2 However, these indicators may have limited relevance due to numerous methodological issues, including those related to the aggregation of more dimensions into one single synthetic indicator (OECD, 2008).

3 A higher value of the index shows greater gender equality.

4 Defined according to COR as comprising people with tertiary education and including: chemists, physicians, computing professionals, doctors, lawyers, economists, etc.

5 Defined according to COR as comprising people with secondary and tertiary education and including: laboratory technicians, foremen, pilots, sea captains, etc.

6 Defined according to COR as comprising people with practical and manual skills in construction and industry and including: construction workers, carpenters, various categories of industrial workers, etc.

7 Thus, for each year of birth, there are two cohorts per each year of survey: men and women, respectively.

8 This condition is necessary in order to have cohorts containing a relatively constant number of people. If very young or old employees had been considered, then the probability for outliers to be included in the sample would have been higher.

9 The data in the present analysis include both the wages of full-time and part-time employees. The latter represent a very small share of total employees.

increased in 2018). Amid the 2008 global financial crisis there was a slight decrease in gender wage inequality starting with 2010, except for the technicians group[10].

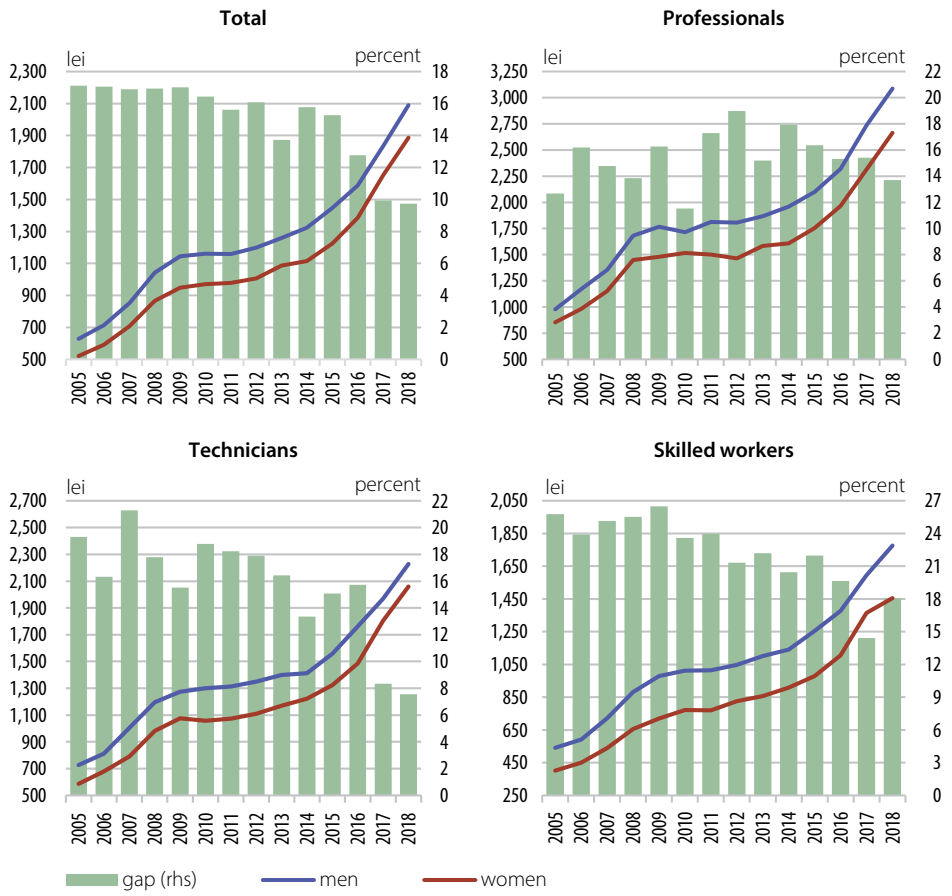


Chart B
Net wage earnings of men and women by occupation

Note: The gender gap in average wage is expressed as a share of the average wage of men (rhs). The wages for the two genders are expressed in lei.

Source: Household Budget Survey, 2005-2018, NBR calculations

In order to gauge the impact of several variables on gender inequality, a simple regression model was used by employing the cohorts described above[11], defined according to year of birth and gender. The explanatory variable is the logarithm of real net wages (log sum), expressed as an average for each cohort, and the control variables are: *age*[12], *gender* (=1 for women, =0 (zero) for men), *year* (=1 assigned to the observations for the respective year and 0 (zero) to the other) and *public* (the share of the cohort working in the public sector). The model also contains terms of interaction between each year and gender in order to capture the specific effects of each year for women (*gender*=1) versus men (*gender*=0).

[10] In 2010, some occupations from major groups were reclassified within the COR, and this might influence the conclusions regarding the link between gender inequality and the global economic crisis.

[11] Since the model captures the dynamics of cohorts (averages of variables set based on stable criteria in time, in our case gender and year of birth) and not of the same individuals caught in a certain time interval, the data used are in the form of a pseudo-panel (Deaton, 1985).

[12] The variable measuring age has a quadratic specification, based on the assumption that when a person gets older, his/her wage increases, but at a diminishing rate. Thus, the quadratic term should have a negative coefficient, and the linear one, a positive coefficient.

Table A
Pseudo-panel regression results

	Total	Professionals	Technicians	Skilled workers
	logsum	*logsum*	*logsum*	*logsum*
age	0.0208***	0.0487***	0.0408***	0.0226***
age^2	-0.000250***	-0.000510***	-0.000442***	-0.000241***
gender	-0.209***	-0.130***	-0.228***	-0.280***
public	0.338***	-0.0677	0.0716*	0.219***
_cons	6.225***	6.117***	5.958***	6.049***
N	**868**	**868**	**868**	**868**
R^2	**0.9484**	**0.8019**	**0.7748**	**0.9018**

*) p<0.05, **) p<0.01, ***) p<0.001

Source: Household Budget Survey, 2005-2018, NBR estimates

Table A shows that, in the case of gender and age, the coefficients are statistically significant for each estimated equation and have the expected signs[13]. Regarding the magnitude of the wage gap between men and women, in 2018, controlling for age and activity sector, a woman in the group of professionals earns about 13.5 percent less than a man[14]. For the technicians group, the gap is 8.3 percent, whereas for skilled workers it is 18.9 percent. Economy-wide, the gap stands at 12.6 percent. It can be noted that the wage gaps between men and women for the analysed groups are not very different in the model from the data presented in Chart B.

The analysis of the HBS data indicates that wage inequalities are significantly higher than the estimates available on Eurostat, especially for recent years. Despite the fact that gender wage inequality decreased in the period 2005-2018, it remains at significant levels. Moreover, the narrowing of the gender wage gap is not present in the occupational group of professionals, which generally consists of people with higher education. However, the present analysis is limited by the availability of a representative sample for each analysed occupational group, the purpose of the HBS data being to supply information on household income and expenditure, and not to provide structural indicators of economic sectors.

References

Andrén, D., Andrén, T. – "Gender and Occupational Wage Gaps in Romania: From Planned Equality to Market Inequality?", *IZA Journal of Labor Studies 4*, 10, 2015

Deaton, A. – "Panel Data from Time Series of Cross-sections", *Journal of Econometrics, 30 (1-2)*, 1985, pg. 109-126

European Institute for Gender Equality – "Tackling the Gender Pay Gap: Not without a Better Work-Life Balance", Research note, 2019

Jolliffe, D. – "The Gender Wage Gap in Bulgaria: A Semiparametric Estimation of Discrimination", *Journal of Comparative Economics, 30(2)*, 2002, pp. 276-295

Jurajda, Š. – "Gender Wage Gap and Segregation in Enterprises and the Public Sector in Late Transition Countries", *Journal of Comparative Economics, 31(2)*, 2003, pp. 199-222

13 Fixed year effects are significant as well, yet the terms of interaction between gender and year are generally not significant and are small in size. For brevity, these effects are not shown in the table.

14 This value includes, in addition to the effect of the *gender* variable, the effects of the year and the interaction term, respectively (not reported in Table A).

Newell, A., Reilly, B. – „The Gender Wage Gap in Russia: Some Empirical Evidence", *Labour Economics, 3(3)*, 1996, pp. 337-356

OECD – "Statistics, Knowledge and Policy 2007: Measuring and Fostering the Progress of Societies", OECD Publishing, Paris, 2008

Paternostro, S., Sahn, D. E. – "Wage Determination and Gender Discrimination in a Transition Economy: The Case of Romania", The World Bank, 1999