

## DEVELOPMENT OF THE GENDER INEQUALITY IN FULL-TIME AND PART-TIME EMPLOYMENT

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DOI: <https://doi.org/10.31410/limen.2018.374>

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**Abstract:** *Employment in a part-time position has been increasing during the past years. People preferred part-time positions over full-time positions. However, this differs depending on a gender and a country analysed. Therefore, the paper describes development of a full-time employment and a part-time employment in the European Union countries. Gender inequality in a full-time and a part-time employment was analysed as well. By comparing employment in a full-time and a part-time positions, we have discovered that women are employed more in part-time positions than men. However, gender inequality in both, a full-time employment and a part-time employment has been decreasing in analysed countries.*

**Keywords:** *gender, inequality, employment*

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### 1. INTRODUCTION

Inclusion of women on the labour market has been increasing during the last two decades. However, their inclusion differs depending on their education, age, previous working positions or type of employment. Women are expected to take care of their household, which leaves them with less time available for employment. However, their participation on the labour market has been increasing. Women usually choose part-time employment, due to lack of time available. Even though, part-time employment is starting to be more attractive not only for women, but also for men. Therefore, we observe increase of part-time employment in the European Union for both genders.

By only observing tendency of part-time and full-time employment, we could not identify if this is due to women increased participation on the labour market or there are other factors that influence it. Therefore, we have calculated gender inequality indicator for both part-time and full-time employment and we analysed it's tendency. Extracting tendency of gender inequality from the tendency of the part-time and full-time employment, gave us clear picture of the gender inequality development in the European Union. We were also able to compare the strategies of the European union toward gender equality with actual results of its implementation.

The paper is structured as follows. We begin with literature review of the previous studies of the gender inequality in the labour market of the European Union. Consequently, gender inequality methodology was described, followed by the results of gender inequality across countries and time. Finally, we gave our conclusions.

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## 2. LITERATURE REVIEW

Existence of supranational organizations and their policy toward gender equality have huge effect on the countries social policies, that, together with effects from globalization, leads to creation of the harmonized social policy [1]. As a response to rigid policies of country, part-time employment has expanded. Companies employed part-time employees as a response to economic conditions in a country and due to lower labour costs [2]. Part-time employment is related with occupational attainment of the workforce, however, it has been proven that with higher rates of part-time employment, unemployment tends to be lower [3]. Inclination toward part-time employment is not only segregated by occupational attainment, but also by gender or country. Women presence in the labour market has been increased, mainly in the services sector, however, the levels of gender inequality differ across countries [4]. Increased presence of women on the labour market was due to married women entering labour market and choosing part-time employment after child-birth [5], [6]. The reason while women with children choose part-time employment is lack of time that makes them chose employment with flexible working hours or part-time employment [7]. Wage gender inequality was higher in countries with high rates of the part-time employment [8]. Wage inequality is higher among young people, and decreases with age. However, the opposite is true for those who migrated. Older employees who migrated were being worse off on the labour market [9].

The negative consequence of the part-time employment and gender inequality or both at the same time is the poverty of the retired people that worked in these conditions. Women are the majority in this group. Therefore, the decrease of the gender inequality is crucial for the well-being of the retired population [10]. Decrease of the gender inequality also led to decrease of the economic inequality across countries [11]. Economy would also benefit from the decreased levels of the gender inequality. For example, GDP would increase with the decreased levels of gender inequality [12].

The paper contributes to the literature by providing comparison of the gender inequality in part-time and full-time employment across European Union member countries and across time. It provides proof of average gender inequality in the part-time and full-time employment of the European Union member countries. The results of the paper are important, because provides information about gender inequality that was calculated and compared, employing the approach we propose as more accurate measurement method of the gender inequality.

## 3. DATA AND METHODOLOGY

We employed data from the OECD database of 28 European Union member countries. Data of employment rates in part-time and full-time employment disaggregated by gender, over the period 2000-2017, were employed.

Gender inequality rates were further calculated as follows. Let suppose that employment rate of women ( $E_f^*$ ) is equal to the employment rate of men ( $E_m^*$ ). Then gender equality would be concluded and the indicator of the gender equality would be set to zero,

$$E_m^* = E_f^* \Rightarrow GII^* = 0, \quad (1)$$

where  $GII^*$  is Gender Inequality Index (GII) by distinct types of the employments denoted by \*. The asterix \* denotes either part-time or full-time employment. It means, when we compare employment rates of women and men in part-time employment, the labeling would be  $E_f^{part-time}$  for women and  $E_m^{part-time}$  for men. When we compare full-time employment, the labeling would change to  $E_f^{full-time}$  for women and to  $E_m^{full-time}$  for men.

Further, if only men were employed, and no women, we would conclude absolute gender inequality in disadvantage of women (2), opposite inequality was denoted by (3) (women being employed and no men was employed)

$$E_m^* > 0 \wedge E_f^* = 0 \Rightarrow GII^* = 100, \quad (2)$$

$$E_f^* > 0 \wedge E_m^* = 0 \Rightarrow GII^* = -100. \quad (3)$$

Using equations (1), (2) and (3) the scale of gender inequality was set. Equation (1) suggests that gender equality is set to zero (employment rate of women and men are equal). If the employment rates of men were higher than employment rates of women, then the obtained value of the GII, would be a number higher than zero and less than 100 (equation (4)) or equal to 100 if only men were employed and no women. If the employment rates of women were higher than employment rates of men, then the obtained value of the GII, would be a number lower than zero and higher than -100 (equation (5)) or equal to -100 if only women were employed and no men.

$$E_m^* > E_f^* \Rightarrow GII^* = \left( \left( E_f^* / E_m^* \right) - 1 \right) \times (-100) \quad (4)$$

$$E_f^* > E_m^* \Rightarrow GII^* = \left( \left( E_m^* / E_f^* \right) - 1 \right) \times 100 \quad (5)$$

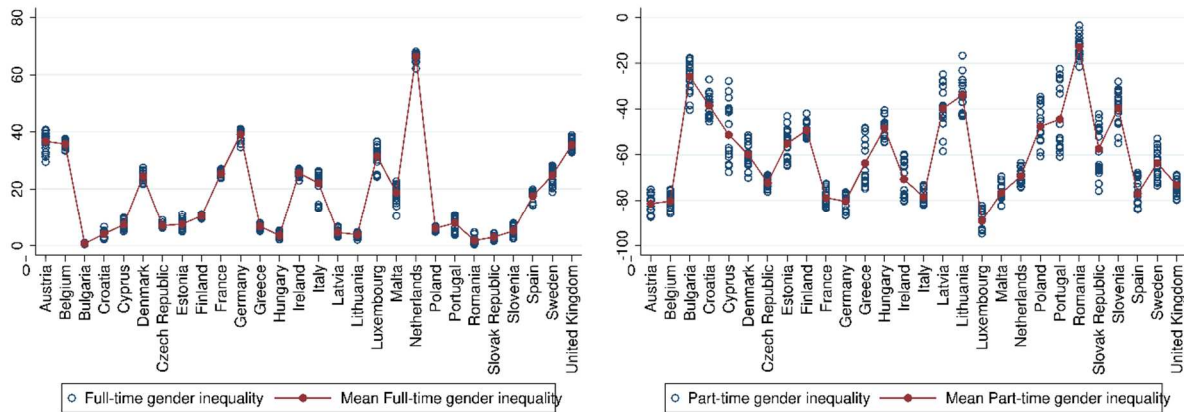
Using equations (4) and (5), gender inequality was measured as a ratio of the lower to higher employment rate, then subtracted from one and multiplied by -100 for equation (4), and by 100 for equation (5). By doing so, the gender inequality was being expressed as rate. Tendency of the gender inequality series was identified by employing Simple Linear Regression, where relevance of the results was validated using Coefficient of determination  $R^2$  and ANOVA.

#### 4. RESULTS

Employment gender inequality does depend on the employment type. In each European Union country, including United Kingdom, over the observed period 2000-2017, men were always employed more than women in the full-time employment, while women were always employed more than men in part-time employment. This evidence is in alignment with previous studies, that put women in part-time positions due to many reasons such as inclusion of the married women after child-birth on the labour force [6], which unable them to work full-time and gave them opportunity of flexible working hours [7]. We also found that this is true for the European Union member countries, by comparing mean gender inequality by type of the employment. Figure 1, depicts mean of gender inequality across distinct types of employment over the period 2000-2017. We observe that mean gender inequality was lower in full-time employment, and near to zero for almost half of the countries. This suggests, that European Union policy toward

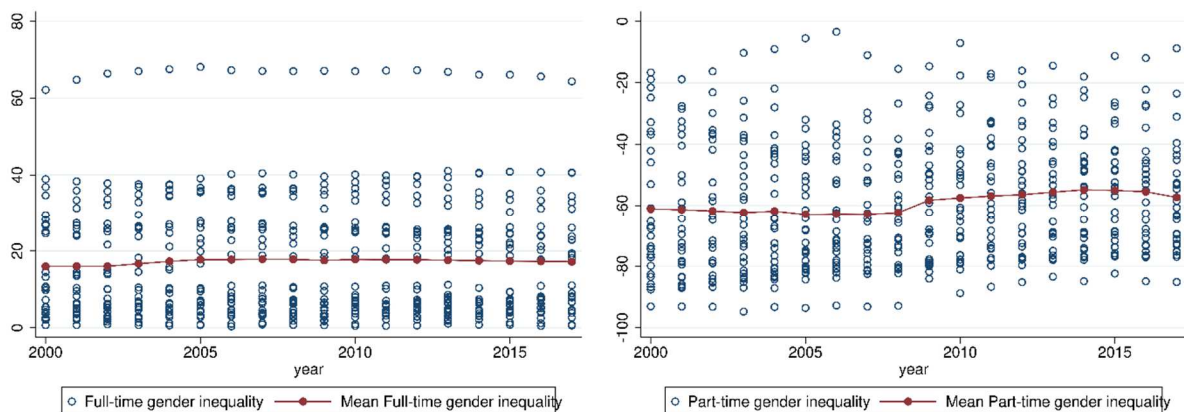
gender equality is effective, and the results are already notable in half of the European Union member countries. When observing gender inequality in part-time employment, we observe high levels of gender inequality for most of the European Union countries. However, Low levels of gender inequality were reported in Romania and Bulgaria. Not only gender inequality was higher in part-time employment, but variances were higher as well, indicating that gender inequality in part-time employment have been changing more than gender inequality in full-time employment.

Figure 1: Employment gender inequality in full-time and part-time employment across countries



In order to prove that gender inequality was steady in full-time employment and changeable in part-time employment, we analyzed it across time, which is presented in Figure 2. Mean gender inequality in full-time employment did not change over time. We observe that when it comes to time, mean gender inequality of the European Union in full-time employment was steady and near 20%, during the observed period (Figure 2). However, when analysing mean gender inequality in part-time employment, we observe decrease of gender inequality over time. We also observe structural break in gender inequality in part-time employment in year 2008, which could be due to economic crisis in this year. It appears that crisis have caused temporal decrease of gender inequality. Gender inequality in part-time employment was near 60% during the whole observed period, which suggests women domination of this type of employment (Figure 2).

Figure 2: Employment gender inequality in full-time and part-time employment over time



Further, we analyzed gender inequality of each country separately. We observe that in some countries such as Austria, Belgium, Germany and Luxembourg, gender inequality in part-time employment reaches more than 80% (Table 1), affirming that women dominate this type of employment. Note that these are all German speaking developed countries. On the other hand, Austria, Belgium and Germany were also countries with higher rates among European Union mean gender inequality rates of full-time employment, that made these country male friendly in full-time employment. However, the highest gender inequality in full-time employment was reported in the Netherlands, where men were employed more than women in this type by 66.371%. However, we should mention that full-time employment decreased by the end of the observed period to the half of its value from the beginning of the observed period. The lowest gender inequality in part-time employment has been found in Romania (12.838%), and then in Bulgaria (25.818) and curiously the lowest gender inequality in full-time employment was also reported in these two countries (Table 1), which are two neighboring Balkan countries. Low gender inequality in these two countries could be related with low part-time employment in these two countries, however the employment in full-time positions was among the highest in the European Union.

When differences were compared, we found that the highest differences in gender inequality were reported for the part-time employment. Gender inequality changes the most in Portugal, Cyprus and the Slovak Republic. The gender inequality substantially decreased in all of them, indicating increased presence of men in part-time employment. When the levels were compared, it was found that the gender inequality in part-time employment has been decreased by half in Slovak Republic and Portugal, and by two thirds in Cyprus, at the end of the observed period (Table 1). The highest differences in gender inequality in full-time employment were reported in Italy, Luxembourg, Malta and Austria, but unlike in part-time employment, in full-time employment gender inequality has increased. This fortified men presence in the employment in the full-time positions, and made them more men friendly than they were at the beginning of the observed period.

Tendency of the gender inequality in both types of employment revealed interesting results. In most countries, pattern was not describable, we could not conclude increase or decrease. However, there were countries where the trend could be identified. Gender inequality behaved differently based on analyzed country and the type of employment analyzed. When analyzing gender inequality in the full-time employment, we came to next conclusions. The fastest increase in gender inequality of 0.805% per year was reported in Italy, followed by Austria with 0.636% increase per year. Countries with lower increases of the gender inequality during the observed period were Czech Republic, Estonia, Germany, Greece, Hungary, Malta, Poland, Slovak Republic and Slovenia. While countries with higher decrease of gender inequality in full-time employment were Sweden with 0.510% decrease per year and Portugal with 0.466% decrease per year. Gender inequality in full-time employment also decreased in Croatia, Cyprus, France, Ireland, Romania and United Kingdom.

Table 1: Descriptive statistics of the full-time and part-time employment gender inequality

Country	Full-time employment gender inequality							Part-time employment gender inequality						
	Mean	Std. Dev.	Range	Min.	Max.	$\beta$	R <sup>2</sup>	Mean	Std. Dev.	Range	Min.	Max.	$\beta$	R <sup>2</sup>
Austria	36.705	3.491	11.286	29.499	40.785	0.636***	0.947***	-81.405	4.432	12.412	-87.549	-75.136	0.813***	0.958***
Belgium	35.759	1.136	4.177	33.421	37.599	0.049	0.053	-80.325	3.386	10.673	-85.952	-75.279	0.619***	0.952***
Bulgaria	.719	.176	.612	.475	1.087	-0.007	0.047	-25.818	6.719	22.737	-40.401	-17.664	0.073	0.003
Croatia	4.109	1.170	4.400	2.182	6.582	-0.145***	0.437***	-38.591	4.938	18.381	-45.456	-27.075	0.279	0.091
Cyprus	7.301	1.322	4.846	5.001	9.847	-0.198***	0.636***	-51.280	13.135	39.866	-67.608	-27.741	2.257***	0.842***
Czech Republic	7.001	.762	2.815	6.148	8.962	0.107***	0.565***	-72.247	2.274	7.435	-76.226	-68.791	0.342***	0.646***
Denmark	24.459	1.610	5.823	21.658	27.481	-0.059	0.038	-59.914	5.307	18.584	-70.084	-51.500	0.963***	0.939***
Estonia	7.487	1.613	6.064	4.898	10.961	0.201***	0.440***	-55.072	6.486	21.731	-64.832	-43.101	-0.515*	0.180*
Finland	10.411	.548	1.806	9.376	11.182	0.048**	0.219**	-49.341	3.171	11.082	-53.013	-41.930	0.506***	0.725***
France	25.468	.886	3.286	23.801	27.087	-0.155***	0.869***	-78.818	3.522	10.738	-83.383	-72.646	0.638***	0.935***
Germany	39.098	2.005	6.417	34.659	41.077	0.321***	0.731***	-80.403	3.625	10.378	-86.765	-76.387	0.642***	0.894***
Greece	6.767	.845	2.795	5.081	7.875	0.108***	0.466***	-63.628	9.512	26.590	-74.797	-48.207	1.516***	0.724***
Hungary	3.524	.953	3.210	2.117	5.327	0.144***	0.646***	-48.434	4.252	14.079	-54.596	-40.517	-0.459**	0.333**
Ireland	25.592	1.116	4.234	22.930	27.164	-0.141***	0.458***	-70.683	8.249	20.668	-80.459	-59.791	1.360***	0.775***
Italy	22.077	4.800	13.138	13.222	26.360	0.805***	0.801***	-78.454	3.318	8.906	-82.107	-73.200	0.402***	0.419***
Latvia	4.567	1.053	3.643	3.058	6.701	0.073	0.136	-39.751	8.881	33.656	-58.478	-24.822	-1.025***	0.380***
Lithuania	3.832	.753	2.716	2.037	4.753	0.061*	0.190*	-33.921	7.445	26.475	-43.155	-16.680	-0.798**	0.327**
Luxembourg	31.567	3.766	12.373	24.301	36.674	0.245	0.121	-89.162	4.455	12.358	-94.748	-82.390	0.729***	0.764***
Malta	18.740	3.272	12.379	10.364	22.743	0.494***	0.650***	-76.711	3.800	12.972	-82.447	-69.474	0.371**	0.272**
Netherlands	66.371	1.422	5.987	62.121	68.108	0.025	0.009	-69.353	3.551	10.690	-74.255	-63.565	0.654***	0.967***
Poland	6.054	.512	2.031	4.791	6.822	0.057***	0.353***	-47.637	7.854	25.978	-60.654	-34.677	-1.438***	0.956***
Portugal	7.866	2.728	6.994	3.748	10.742	-0.466***	0.830***	-44.480	14.492	38.405	-60.839	-22.434	2.450***	0.815***
Romania	1.778	1.113	4.323	.375	4.698	-0.094*	0.205*	-12.838	4.918	18.135	-21.583	-3.448	0.128	0.019
Slovak Republic	2.978	.752	2.767	1.617	4.385	0.109***	0.598***	-57.358	10.762	33.618	-75.814	-42.196	1.460***	0.525***
Slovenia	5.140	1.902	5.384	2.482	7.866	0.347***	0.950***	-39.594	7.588	26.967	-54.984	-28.017	-1.285***	0.817***
Spain	17.517	1.950	5.599	14.283	19.882	0.249***	0.466***	-77.114	6.187	16.266	-84.112	-67.846	1.107***	0.912***
Sweden	24.849	2.962	9.335	18.934	28.269	-0.510***	0.845***	-63.566	6.436	20.516	-73.449	-52.933	1.197***	0.986***
United Kingdom	35.433	1.836	6.052	32.847	38.898	-0.330***	0.920***	-73.245	3.913	11.072	-79.869	-68.796	0.712***	0.943***

\*\*\*Significant at level 0.01; \*\*Significant at level 0.05; \*Significant at level 0.1

(Note that the values of the significance of R-squared are from ANOVA tables)

Further, gender inequality in part-time employment was analyzed. Results revealed that there were also countries where behavioral pattern could not be identified. The highest decrease of gender inequality in part-time employment was reported in Portugal and Cyprus. Gender inequality has been yearly decreasing by 2.45% in Portugal, and by 2.257% in Cyprus. Gender inequality in part-time employment has been also decreasing in Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Luxembourg, Netherlands, Spain, Sweden and the United Kingdom. Even in majority of the countries, gender inequality was decreasing in part-time employment, they were also countries, where gender inequality has been increasing. The highest increase of gender inequality in part-time employment was reported in Poland by 1.438% per year and in Slovenia by 1.285% per year. They were then followed by Latvia, Lithuania, Hungary and Estonia (Table 1). As presented gender inequality is highly dependent on country analyzed.

## 5. CONCLUSION

Women were employed more than men in part-time employment, while men were employed more in full-time employment in all European Union member countries, over the period 2000-2017. However, when the levels of gender inequality were compared, higher gender inequality was reported in part-time employment which suggests women dominance in this type of employment. Gender inequality depends on country analyzed, however it did not change over time when mean gender inequality of the European Union was analyzed. Common pattern of gender inequality tendency was not found, and this was highly dependent on country analyzed.

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