

Women's employment in Europe - Towards gender equality in 2612?

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In Europe, there are huge inter-country disparities in female employment. The European Union repeatedly stresses the importance of developing women's employment fixing specific targets, particularly in light of combating poverty and balancing public finances. How can these targets be achieved when growth is weak and generally not conducive to employment and when few policies address gender inequalities?

In all countries, despite the dramatic growth in women's level of education and existing equality legislation, gender segregation and pay gaps persist. Also, new forms of discrimination have emerged slowing down progress towards gender equality in employment by creating new ghettos to which women's labor supply is channeled.

INTRODUCTION

In Europe, there are huge inter-country disparities between female employment rates (in headcount and full-time equivalent) and the importance of part-time work also varies considerably across countries. The European Union has repeatedly stressed the importance of developing women's employment, particularly in light of combating poverty and balancing public finances, especially pension expenditures. Employment targets were set for 2010 at the Lisbon summit in 2000 (70% for the population as a whole and 60% for women), but they have not been reached in most countries and in Europe as a whole. Under the Europe 2020 strategy, a target of 75% has been proposed for the employment rate of the population aged 20-64. How can such targets be achieved, despite the fact that growth is weak and generally not conducive to employment in European countries and that few policies address these inequalities?

As Maruani & Meulders (2013) pointed out: Inequalities between women and men in the labor market are a constant feature observed in all the countries of the European Union.

- In the EU-15, fifty years of uninterrupted growth of labor supply and of women's employment have not been able to overcome gender discrimination.
- In the countries of Central and Eastern Europe, the transition to a market economy has led to a dramatic fall in the employment of women and a sharp rise in inequality.

In all countries, despite the dramatic growth in the level of education of women and despite existing legislation requiring equal treatment, gender pay gaps persist.

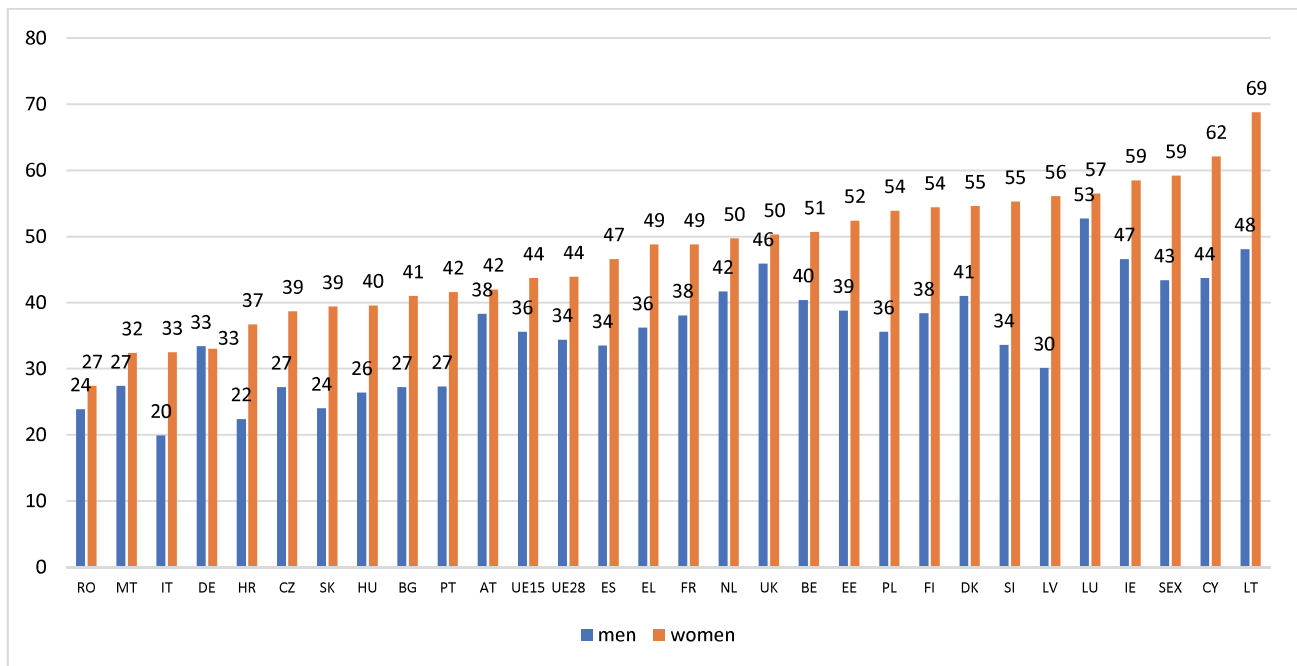
Vertical and horizontal segregation do so as well: women are still concentrated in a limited number of economic sectors and occupations and they are always underrepresented in management positions. New forms of discrimination have emerged: the development of part-time work, career breaks, flexible working hours and temporary work have slowed down progress towards gender equality in employment by creating new ghettos to which women's labor supply is channeled.

In fact, a new form of division of labor is observed: if the dominant model of work within couples is often that in which both partners participate in the labor market, this model accommodates strong inequality in the division of domestic work and childcare: Women work more than men, they have less leisure time as they combine gainful activities with unpaid domestic and care work, but they are paid less and as a result have a lower level of autonomy.

WOMEN'S EDUCATION AND LABOR MARKET ACTIVITY IN EUROPE

In Europe, in all countries, young women are now more educated than men. In 2016, 44% of women aged 30-34 have a higher education degree, while for men this figure is only 34%. And the trends indicate that this process is not ready to stop.

FIGURE 1
MEN AND WOMEN WITH A HIGHER EDUCATION DEGREE IN 2016 – POPULATION AGED 30-34



Source: Eurostat

Despite this increase in the level of education, inequalities persist. Human capital theory (Becker, 1964), which attempts to explain the differences in wages and working conditions between men and

women by the latter's lower investment in human capital, is undermined: even more educated than men, women remain disadvantaged in the labor market. Women are overrepresented in precarious jobs such as part-time work, fixed-term contracts, temporary work or informal work. And wage inequalities resist all directives and laws on professional equality.

In 2015, the wage gap per hour of work between men and women averaged 16.3% in the European Union (Eurostat). The gap is under 10% in Slovenia, Italy, Romania, Belgium and Luxembourg, it exceeds 20% in Estonia, the Czech Republic, and the United Kingdom. Men earn more than women in all countries, all sectors of activity and regardless of occupation. For decades, there has been only a slight and unstable reduction in the pay gap (Rubery, et al., 2005, Plantenga & Remery, 2006, Maron, et al., 2011, Meulders, et al., 2005).

Growth in women's labor supply and employment rates is a constant feature of the EU-15 landscape, it is observed from northern to southern Europe, although there are strong differences between countries. In 1995, 95 million men and 70 million women were active, and by 2016 these figures reached 103 million men and 89 million women. The growth of the labor force has been much stronger for women than for men. Men's participation rates have even slightly decreased over the past thirty years, notably due to the effect of early retirement systems and the increase in schooling in most countries.

For the countries of Central and Eastern Europe which joined the European Union in 2004 and 2007, the trend was very different: before the fall of the Berlin Wall in 1989, the employment rates of women were very high, most women worked full-time, on open-ended contracts and followed a continuous pattern of labor market participation. The transition to a market economy has led to a sharp decline in labor force participation and employment, and a sharp rise in inequalities between women and men in labor markets. Since the end of the 1990s these countries have undergone different developments: a further significant increase in female participation rates in Estonia and Latvia, moderate increases in Bulgaria, Lithuania, Hungary and Slovenia and stagnation in the Czech Republic, Poland and Romania.

In 2015 (Table 6), in the EU28, the average headcount employment rate for women aged 15-64 stood at 64.2%, and at 75.8% for men. The highest female employment rate (78.3%) is observed in Sweden; in Denmark, the Netherlands, Finland, Germany, Estonia, Latvia, Lithuania, and the United Kingdom the rates are above 70%. The lowest rates (below 60%) are found in Greece (46%), Malta (53,6%), Italy (50,6%), Croatia (55,8%), Romania (57,2%) and Spain (56,4%).

However, this image is biased by the measure used, the headcount employment rate, as it counts all employed people equally regardless of their working hours. The measure thus overestimates the level of female employment in countries where part-time work is widespread. Also, it implies that it is sufficient to split up all full-time jobs into part-time jobs to increase the headcount employment rate even though this would not entail any increase in the total number of hours worked.

It is therefore necessary to analyze employment rates expressed in full-time equivalents in order to have a more correct view of the volume of employment and, above all, to measure its evolution. It is regrettable that the European targets are formulated on the basis of the headcount employment rate and as such implicitly advocate the development of part-time employment.

The ranking in column three indicates that the only country where the female full-time equivalent employment rate exceeds 70% is Lithuania, in no other country does the female employment rate reach this level. Female FTE employment is highest in Lithuania, Estonia, Latvia, Sweden, Finland, the Czech Republic and Denmark. It is lowest in Greece, Italy, Malta, Spain and the Netherlands.

The Netherlands present the most remarkable example of the bias induced by the choice of the headcount rate as the employment indicator. With a headcount female employment rate of 70.8%, the Netherlands are ranked among the best performing countries in terms of female employment while the full-time equivalent female employment rate is only 48.2%, the fourth lowest rate in the 28 European Union member states. The gap between headcount and full-time equivalent rates predominantly characterizes female employment, the gaps for men are much smaller.

TABLE 1
EMPLOYMENT RATE IN HEADCOUNT AND FULL-TIME EQUIVALENT (20-64 YEARS) IN 2015

	Women		Men	
	headcount	FTE	headcount	FTE
Greece	46	43,2	64	62,2
Italy	50,6	43,7	70,6	68,3
Malta	53,6	48,1	81,4	80,8
Netherlands	70,8	48,2	81,9	75,3
Spain	56,4	49,7	67,6	65,7
Belgium	63	53,4	71,3	69,2
Ireland	62,6	53,4	75,1	71,6
Croatia	55,8	54,1	65,2	64,3
Austria	70,2	55,1	78,4	75,5
Romania	57,2	55,4	74,7	73
Germany	73,6	57,1	82,3	78,7
Luxembourg	65	57,9	76,7	75,7
Slovakia	60,3	58	75	73,6
United Kingdom	71,3	58,6	82,5	78,9
France	66	58,7	73,2	70,8
Cyprus	64	59	72,3	68,4
Poland	60,9	59,2	74,7	75
Hungary	62,1	60,3	75,8	74,8
Slovenia	64,7	61,4	73,3	72,2
Portugal	65,9	62,2	72,6	70,8
Bulgaria	63,8	63,5	70,4	69,8
Denmark	72,6	63,6	80,2	75,9
Czech Republic	66,4	64,3	83	83,5
Finland	71,8	66,8	73,9	71,5
Sweden	78,3	67,8	82,5	77,6
Latvia	70,5	69	74,6	74,5
Estonia	72,6	69,5	80,5	79,4
Lithuania	72,2	70,5	74,6	74
EU28	64,2	-	75,8	-

Source: Eurostat

All the positive findings on the growth of women's employment since the 1960s are put in a different and less enchanting light when working time enters the equation: in 2015, in the 28 member states of the European Union, the difference between the headcount employment rates of women and men averaged 11.6 points but it amounted to more than 18 points in full-time equivalent. The gap between the two figures is explained by the development of part-time work, which remains, everywhere in Europe, hegemonically female and as such contrasts with the spirit of a general reduction in working time.

TABLE 2
PART-TIME WORK AS A % OF TOTAL EMPLOYMENT AMONG 25-49 YEAR-OLDS IN 2016

	total	men	women
EU28	17,3	6,7	29,8
EU15	20,8	7,7	36,0
Netherlands	42,6	16,9	71,6
Austria	29,0	9,8	49,8
Germany	25,8	7,8	46,4
Belgium	21,6	6,6	38,5
United Kingdom	21,6	6,8	38,5
Italy	19,8	8,4	35,1
Sweden	20,5	10,1	32,0
Luxembourg	16,7	3,9	31,7
Ireland	18,1	9,1	28,3
Denmark	18,1	9,5	28,0
France	16,4	5,9	27,8
Malta	12,0	3,3	24,4
Spain	14,9	7,3	24,0
Finland	11,1	6,3	16,7
Cyprus	12,1	9,9	14,3
Greece	9,7	7,1	13,2
Estonia	7,9	4,3	12,3
Slovenia	6,9	3,8	10,5
Portugal	7,1	4,6	9,6
Latvia	7,0	4,7	9,4
Czech Republic	4,9	1,4	9,3
Poland	5,0	2,4	8,2
Lithuania	5,9	4,3	7,5
Slovakia	4,9	3,1	7,1
Croatia	4,8	3,4	6,5
Romania	5,6	5,7	5,5
Hungary	3,7	2,2	5,4
Bulgaria	1,4	1,3	1,5

Source: Eurostat

In 2016, in the EU28, 29.8% of women work part-time, compared with 6.7% of men. Women's part-time work is least widespread in Bulgaria, Hungary, Romania, Croatia, Slovakia, Lithuania, Poland, the Czech Republic, Latvia and Portugal, accounting for less than 10%. On the contrary, the Netherlands are characterized by a 71.6% share of female part-time workers. Austria and Germany are far behind with percentages nevertheless above 40%. They are followed, with rates above 30%, by Belgium, the United Kingdom, Italy, Sweden, and Luxembourg.

While in most EU countries, women's part-time work has increased over the past four decades, this growth has come to a halt in Sweden and Denmark and in Central and Eastern Europe where part-time work is much less developed and does not witness a rising trend.

Female part-time employment has mainly expanded in the countries of Northern Europe, Continental Europe and the Anglo-Saxon countries where it swept the idea of a general reduction in working time as a form of employment sharing off the track.

Role sharing is thus particularly unequal between men who pursue full-time careers and women who are admitted to the labor market on a part-time basis and as such earn lower wages, have more limited promotion opportunities and are subject to flexible working hours as part-time work accommodates staggered and variable hours and weekend work.

Part-time work is one of the factors that increase the likelihood of being at risk of poverty in different European countries. The over-representation of women in this form of employment is one of the factors that explain the gender wage gap. In other words, part-time work seriously undermines gender equality.

Age, education and parenthood have a strong influence on women's participation and employment rates. As age is concerned, it is among those aged 25 to 49 that activity is most intense and that the gap between female and male behavior is least pronounced. As of the age of 50, the gap increases, which partly reflects a generation effect.

TABLE 3
HEADCOUNT EMPLOYMENT RATES BY AGE GROUPS IN 2016

	men			women		
	20-24	25-49	50-64	20-24	25-49	50-64
EU28	53,5	84,8	69,8	47,7	73,0	57,3
EU15	54,0	84,3	71,1	50,4	72,7	59,0
Belgium	41,0	84,0	62,5	36,8	75,3	50,8
Bulgaria	39,1	79,9	63,9	27,5	72,5	58,9
Czech Republic	57,0	93,1	76,0	38,4	76,8	61,8
Denmark	63,3	86,4	77,5	67,1	78,0	70,0
Germany	64,4	88,0	79,5	63,0	79,4	70,1
Estonia	63,3	88,6	70,8	54,5	75,7	72,2
Ireland	56,1	82,2	70,9	54,6	69,7	55,0
Greece	26,4	76,4	56,4	21,0	57,3	35,4
Spain	33,9	77,8	63,2	30,4	66,9	49,0
France	50,7	84,4	62,8	45,3	75,0	58,0
Croatia	46,9	77,7	53,3	38,5	70,2	41,2
Italy	34,1	78,5	69,8	24,7	58,4	46,9
Cyprus	44,3	82,0	68,1	45,4	73,5	50,7
Latvia	54,8	83,2	65,0	52,8	78,1	66,9
Lithuania	55,0	83,1	71,9	46,3	83,2	69,3
Luxembourg	39,0	88,6	63,1	41,6	78,1	46,1
Hungary	52,7	89,0	67,0	41,8	75,3	53,1
Malta	68,6	92,8	71,0	63,1	68,0	32,1
Netherlands	68,6	88,5	77,8	69,2	78,6	61,4
Austria	66,8	87,0	68,3	66,0	80,9	55,7
Poland	56,0	87,4	62,6	40,4	74,9	47,5
Portugal	44,7	83,7	66,2	39,8	79,2	54,8
Romania	43,5	86,0	61,7	28,7	70,1	41,7
Slovenia	50,8	86,7	55,9	41,7	81,6	49,4
Slovakia	54,0	87,1	64,2	30,6	72,4	55,1
Finland	57,4	83,2	67,4	60,0	75,7	69,0
Sweden	62,5	87,9	81,7	62,0	83,7	77,4
United Kingdom	70,3	89,6	75,9	67,8	76,7	65,4

Source: Eurostat

The level of education also has a decisive effect on the employment of women in all European countries: on average, in 2016, for the EU28, the employment rate of women with a lower secondary level of education is 43.4.7%, it is 65.7% for the secondary education level and 80.2% for a level of tertiary education. These differences are observed in all countries. The continuous rise in the level of education of women will therefore result in a significant increase in their labor supply. If the direction of progression is the same for men, the deviations are less pronounced.

TABLE 4
HEADCOUNT EMPLOYMENT RATES BY LEVEL OF EDUCATION AMONG 20-64 YEAR-OLDS IN 2016

	men				women			
	total	low	medium	high	total	low	medium	high
EU28	76,8	63,6	77,2	87,1	65,3	43,4	65,7	80,2
EU15	76,9	64,4	77,7	86,7	65,9	44,6	67,6	79,8
Belgium	72,3	53,3	74,0	84,4	63,0	37,2	60,5	80,3
Bulgaria	71,3	46,6	73,4	86,6	64,0	31,1	63,3	82,6
Czech Republic	84,6	54,0	85,0	91,3	68,6	36,7	69,9	76,1
Denmark	80,7	68,9	82,0	88,2	74,0	53,2	75,8	83,5
Germany	82,8	67,2	82,3	90,9	74,5	51,9	76,5	84,3
Estonia	80,8	68,1	79,6	90,4	72,6	50,1	68,8	80,4
Ireland	76,5	60,4	76,3	86,4	64,2	33,8	60,2	78,5
Greece	65,8	60,3	63,2	75,7	46,8	34,6	41,7	64,3
Spain	69,6	61,6	68,1	81,6	58,1	42,8	56,4	74,8
France	73,8	57,7	73,1	85,4	66,3	43,9	65,8	80,0
Croatia	66,2	48,6	65,9	81,0	56,6	31,7	55,4	78,7
Italy	71,7	64,5	74,4	83,3	51,6	34,7	55,8	73,3
Cyprus	73,9	64,0	71,4	82,7	64,1	49,5	57,1	75,3
Latvia	74,7	60,0	72,9	87,8	71,8	46,4	64,7	85,9
Lithuania	76,2	46,4	72,3	92,0	74,3	35,7	64,2	89,5
Luxembourg	76,1	65,0	71,3	87,2	65,1	47,7	60,2	80,2
Hungary	78,6	61,4	79,2	90,5	64,6	42,1	65,0	80,0
Malta	83,1	78,5	85,3	92,7	55,5	33,7	70,0	86,7
Netherlands	82,6	71,9	82,6	90,2	71,6	49,7	73,3	84,9
Austria	78,7	60,0	78,4	86,5	70,9	49,9	71,4	82,2
Poland	76,4	50,1	75,4	90,5	62,2	28,1	55,9	82,7
Portugal	74,2	70,8	74,8	83,1	67,4	58,2	69,3	81,0
Romania	75,0	68,1	73,9	89,1	57,4	38,9	57,6	83,6
Slovenia	73,3	52,7	72,7	85,4	66,7	39,0	62,4	83,0
Slovakia	76,9	42,8	78,6	83,2	62,7	30,6	63,5	72,8
Finland	75,0	58,4	73,2	85,2	71,7	42,5	68,1	81,2
Sweden	83,0	67,9	84,2	88,9	79,2	53,1	79,3	87,5
United Kingdom	83,1	71,8	83,2	88,9	72,1	52,6	71,8	81,5

Source : Eurostat

Maternity has negative effects on mothers' employment in that it often leads them to interrupt their careers or reduce their working hours. These negative effects are observed to varying degrees in the

different European countries. Conversely, and this phenomenon is massive, throughout Europe, paternity has few significant effects on men's employment. So it is on mothers' employment that parenthood exerts a negative impact, they are forced to leave the labor market or to work part-time, at the risk of strongly obliterating the progression of their careers.

TABLE 5
HEADCOUNT EMPLOYMENT RATES BY NUMBER OF DEPENDENT CHILDREN AMONG
20-49 YEAR-OLDS, 2015

	men					women				
	total	0	1	2	3+	total	0	1	2	3+
Greece	70,9	64,4	76,0	84,6	81,5	54,3	53,9	55,8	55,0	49,5
Italy	75,6	69,7	78,7	85,5	81,4	56,8	60,6	56,9	54,0	41,3
Spain	73,7	69,2	75,6	82,2	73,9	63,8	67,6	62,8	62,4	50,0
Ireland	79,2	73,4	81,8	86,1	82,7	68,0	77,1	69,9	64,5	54,4
Romania	83,9	79,5	87,8	88,6	81,3	68,3	70,2	71,3	66,9	51,4
Croatia	74,8	67,6	77,8	83,9	76,6	68,7	66,7	69,8	73,7	58,7
Malta	91,3	87,7	94,6	94,6	95,3	69,3	81,7	68,1	59,2	50,6
Slovakia	84,6	80,3	87,4	92,3	79,3	69,3	79,5	67,2	66,1	48,1
Bulgaria	76,9	73,3	83,8	82,5	51,1	70,2	72,5	73,1	66,6	34,8
EU15	81,8	77,3	84,7	89,8	84,6	71,3	75,7	70,7	70,3	54,6
EU28	82,3	77,6	85,6	90,0	84,5	71,4	75,8	71,3	70,3	54,7
Hungary	86,0	82,9	89,5	91,3	83,7	72,2	82,0	70,5	68,9	44,0
Cyprus	78,6	73,3	79,4	85,4	85,3	72,7	76,2	69,9	74,1	62,4
Poland	84,9	77,2	88,5	92,1	87,7	73,1	76,6	75,1	71,9	59,4
France	81,0	75,0	82,9	90,1	82,9	73,3	76,4	74,8	76,6	55,0
Czech Republic	91,4	88,4	93,4	95,5	91,0	74,1	85,5	69,5	69,2	54,1
Belgium	81,5	75,5	84,8	90,5	82,9	74,2	75,2	75,3	78,9	59,4
Finland	80,1	73,4	86,8	90,8	88,2	74,5	75,8	71,9	78,8	64,6
Estonia	87,8	84,0	91,2	93,7	88,9	75,5	83,1	75,2	69,9	62,1
Luxembourg	87,5	86,2	86,2	91,9	86,9	76,0	80,1	74,0	75,9	62,6
United Kingdom	87,3	83,6	91,0	93,2	87,2	76,1	84,4	76,4	72,8	50,7
Portugal	81,1	72,9	86,0	89,6	83,9	76,4	74,1	78,0	79,1	65,9
Latvia	82,3	75,6	87,5	89,2	91,0	76,9	79,0	77,2	75,8	66,5
Netherlands	86,9	81,5	91,4	94,6	90,7	77,6	79,2	76,3	79,9	68,2
Slovenia	85,4	78,2	89,9	95,0	90,1	77,9	71,7	79,2	83,5	80,4
Germany	87,1	83,9	91,9	93,7	88,3	78,4	84,1	77,3	73,5	53,7
Denmark	85,5	77,1	91,0	95,6	95,6	79,3	75,0	76,5	85,8	82,0
Lithuania	81,6	75,4	87,6	89,2	84,0	79,5	77,9	82,1	83,2	62,0
Sweden	84,5	79,0	91,2	96,3	90,1	80,0	76,2	81,8	87,5	78,6
Austria	86,2	82,8	90,6	92,4	86,8	80,1	82,9	81,5	78,4	62,6

Source: Eurostat

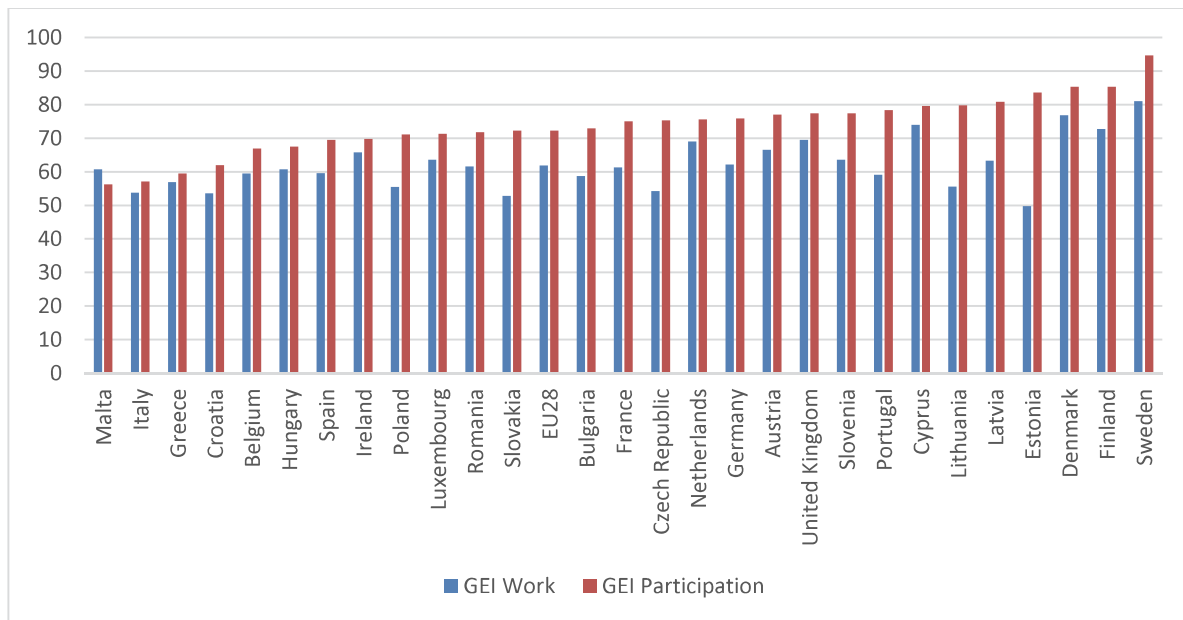
On average in the EU28, in 2015, the employment rate for women aged 20-49 without children was 75.8%, 71.3% for women with one child, 70.3% for those with two children and 54.7% for those with three or more children. For men, the slope is reversed: their employment rate is on average 77.6% in the absence of children, 85.6% for men with one child, 90.0% for those with two children and 84.5% for

those with at least three children. In most countries, it is only at the arrival of the third child that activity is reduced. This phenomenon is known as the male breadwinner-female carer model, which in French has a much better denomination: the model of “Monsieur gagne-pain et Madame gagne-petit”.

The link between the level of women's employment and the wage gap is not clear: in the Nordic countries, often cited as examples of gender equal labor markets and where female employment is very high, the wage gap is close to the European average and above the gaps observed in some southern European countries such as Italy where the employment rate for women is low. Higher employment rates will therefore not spontaneously lead to more equality: the figures show that wage differentials are not reduced spontaneously. There is no natural slope towards equality in this area (Maruani, 2003).

The European Gender Inequality Index takes into account different areas in which it measures gaps between women and men. These areas are: work, money, knowledge, time, power and health. The sub-domains of the labor indicator are: participation, segregation and employment quality. Participation is measured by the gap in full-time equivalent employment rates and the gap in duration of working lives.

GRAPH 2
EUROPEAN GENDER EQUALITY INDEX (GEI), DOMAINS OF WORK AND PARTICIPATION, 2012



Source: Gender inequality index 2015 - Measuring gender equality in the European Union 2005-2012. European Institute for Gender Equality, 2015

This index is based on the observed differences between men and women for different variables, that means that countries with a very low headcount employment rate for women may be very well classified if the male employment rate is also low.

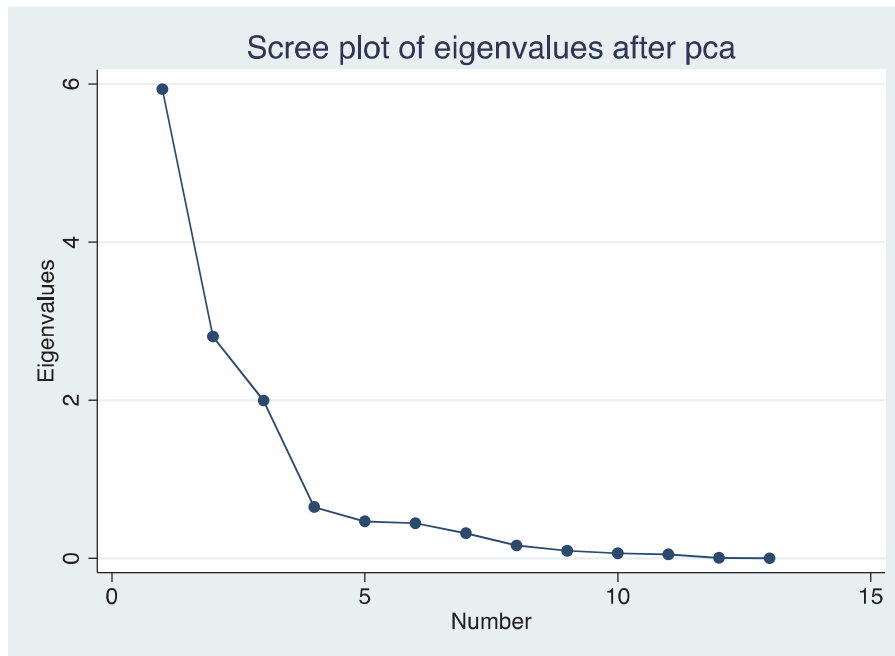
A TENTATIVE COUNTRY TYPOLOGY

In the section above we have analyzed a set of indicators that allow assessing women’s position on European labor markets. We will now use these indicators in a principal component analysis to identify groups of European countries with certain similarities in terms of the different dimensions of female employment. This analysis is thus based on the following 13 indicators:

1. The FTE employment rate of women aged 20-64 in 2015
2. The gender gap in FTE employment in the age group of 20-64 in 2015
3. The headcount employment rate of women aged 20-64 in 2015 (z_hc)
4. The gender gap in headcount employment in the age group of 20-64 in 2015 (z_hcgap)
5. The headcount employment rate of low-educated women aged 20-64 in 2016 (z_lowed)
6. The headcount employment rate of women aged 50-64 in 2016 (z_old)
7. Women's part-time employment rate in the age group 25-49 in 2016 (z_pt)
8. The headcount employment rate of women with three or more dependent children in 2015 (age group 20-49) (z_mother)
9. The employment penalty for women of having a first child in 2015 (age group 20-49) (z_firstchild)
10. The GEI Work (z_geiwork)
11. The GEI Participation (z_geipart)
12. The gender wage gap in 2015 (z_gwg)
13. Vertical segregation in ? (z_vertseg)

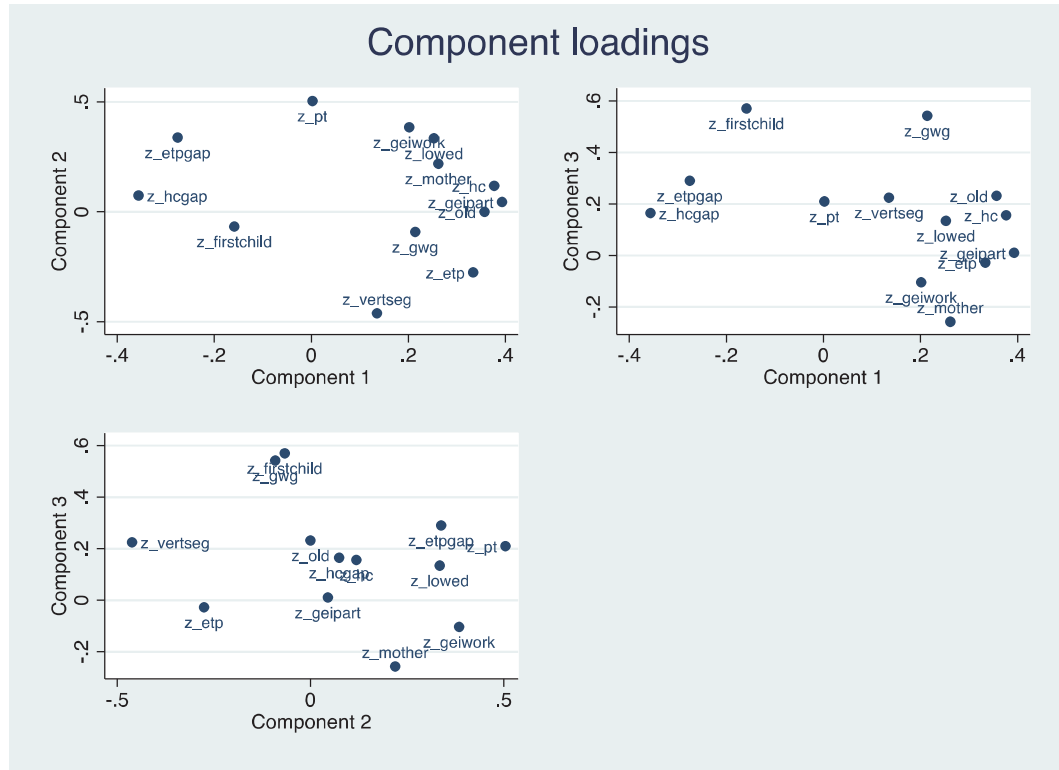
All of these indicator variables were standardized, i.e. rescaled to have a mean of zero and a standard deviation of one, thus creating what are called z-scores. Using these z-scores facilitates the interpretation of results in a Principal Component Analysis.

Principal Component Analysis (PCA) is a statistical tool that allows reducing the information provided through these 13 indicators into condensed “components” or “factors” on the basis of the inter-relations between the different indicators. The indicators that are most correlated will result in the emergence of a first factor. Subsequent factors will then be formed based on the correlations between the remaining indicators. Each subsequent factor explains a smaller share of the overall variance in the set of indicators. The scree plot below shows that the first three factors that emerge from our set of indicators capture almost all of its overall variance. This is a very strong result as few factors (three in our case) suffice to condense the overall information contained by our whole set of indicators without losing accuracy (the share of variance explained is high). Three factors should thus be retained in the PCA.



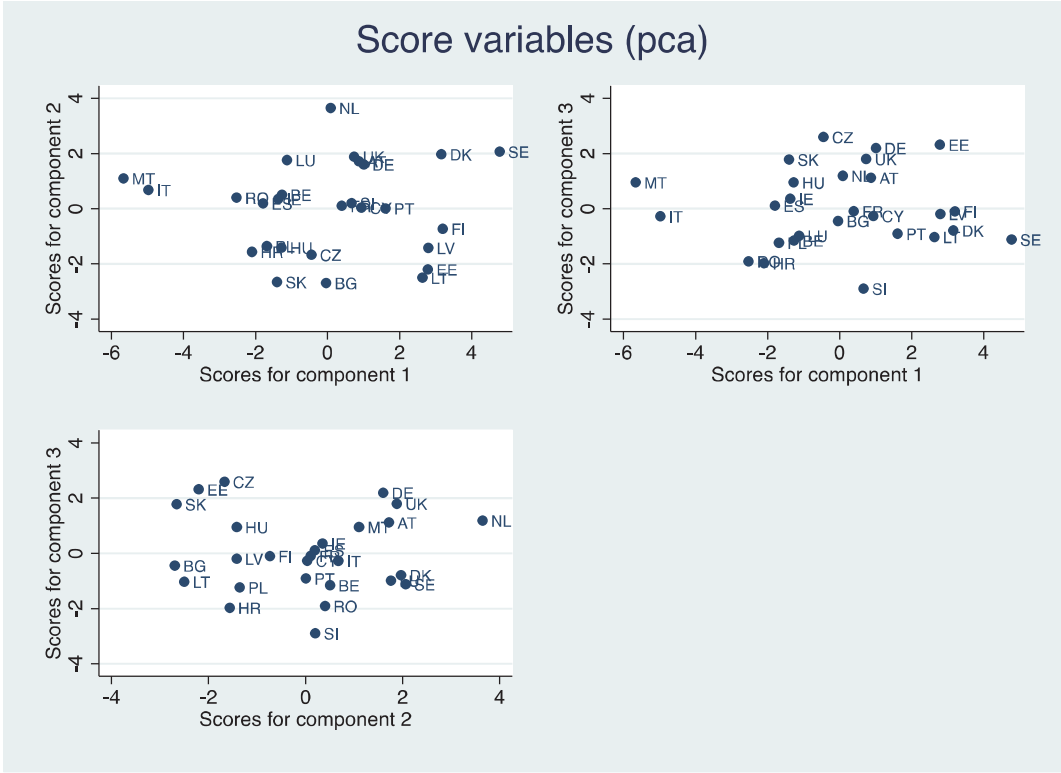
From the figure below it becomes clear that the indicators measuring the level of female employment (the overall female headcount employment rate and the employment rate of women aged 50-64) are

loaded on the first factor together with the GEI Participation (based on the gender gap in FTE employment and the gender gap in the duration of working life). The second component is charged with women's part-time employment and vertical gender segregation. Finally, the third factor takes up the employment penalty induced by the birth of a first child as well as the gender wage gap.

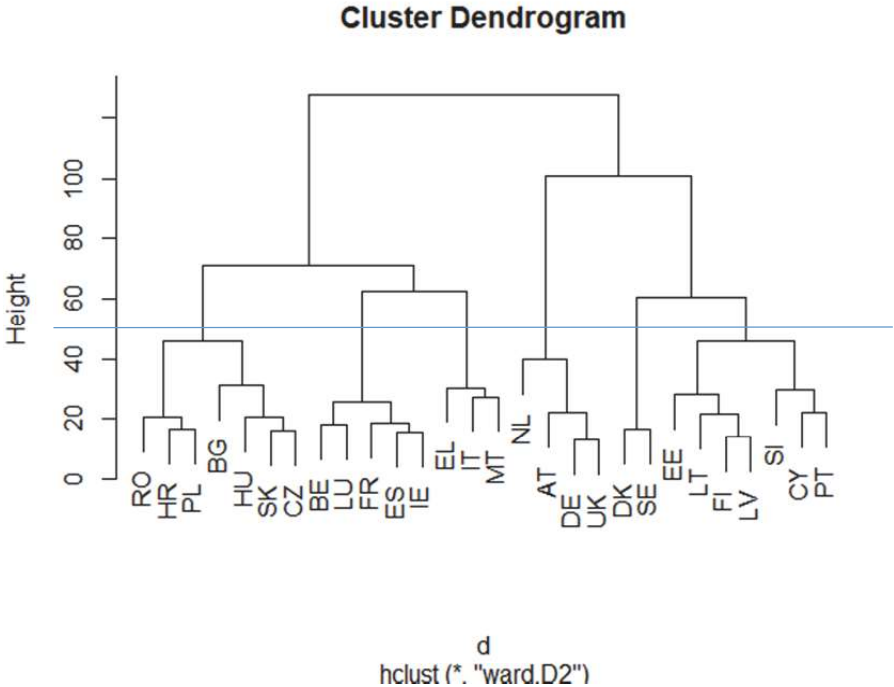


Plotting our variables (countries) on the component axes allows drawing some first but interesting findings. As regards the first component that takes up the level of female employment, the plot below unsurprisingly shows that the three Scandinavian countries (Denmark, Finland and Sweden) score most strongly on this dimension whereas Italy and Malta score very weakly. Regarding the second component associated with the extent of part-time work and vertical segregation, the plot clearly shows the outstanding position of the Netherlands in terms of part-time work as well as that of Bulgaria which is indeed the country with the highest level of vertical gender segregation. Finally, the Czech Republic is most exemplary of the third component as it is characterized by a very high employment penalty for mothers in the event of a first birth as well as by a huge gender wage gap.

We will now carry out a hierarchical cluster analysis to check whether indeed we can construct a typology of the 28 countries in our sample. We expect to find at least three groups of countries, a first one around the Scandinavian countries, a second one with the Netherlands and Bulgaria and a third one around the Czech Republic.



The tree diagram below allows visualizing the proximity between the countries and as such grouping similar countries together. Ward's minimum variance method was used for choosing the pair of clusters to merge at each step of the analysis. Ward's minimum variance criterion minimizes the total within-cluster variance. The dendrogram shows that some countries rapidly converge, the vertical distance before they are grouped together is small. This is for example the case of Germany and the UK.



We decided to cut the diagram at a height of around 50 in order to obtain six groups of countries.

Group 1: Italy, Malta and Greece

Group 2: Spain, Ireland, France, Belgium and Luxembourg

Group 3: Slovakia, the Czech Republic, Hungary, Bulgaria, Croatia, Poland and Romania

Group 4: the Netherlands, Austria, Germany and the UK

Group 5: Cyprus, Portugal, Slovenia, Finland, Latvia, Lithuania and Estonia

Group 6: Denmark and Sweden

This grouping of countries is robust in the sense that it does not change noticeably when some of the individual indicators are left out or when dissimilarity measures other than Ward's method are used.

Italy and Malta clearly share a very low level of female employment. It is this extremely low level of female employment that is their most distinguishing characteristic.

Group 2 contains 5 countries that score intermediately on all of our 13 indicators. They have no outstanding feature.

Except for Poland, all countries in the third group have particularly high levels of vertical gender segregation. They are similar also in terms of female employment level but much less so regarding the gender wage gap (Romania and Poland have a much smaller gap than the other countries in this group). Bulgaria stands out from the other countries by the absence of a motherhood-induced employment penalty. This probably explains why Bulgaria joins the group at a higher height in the dendrogram.

The most distinguishing feature shared by the countries in group 4 is the high share of female part-time employment.

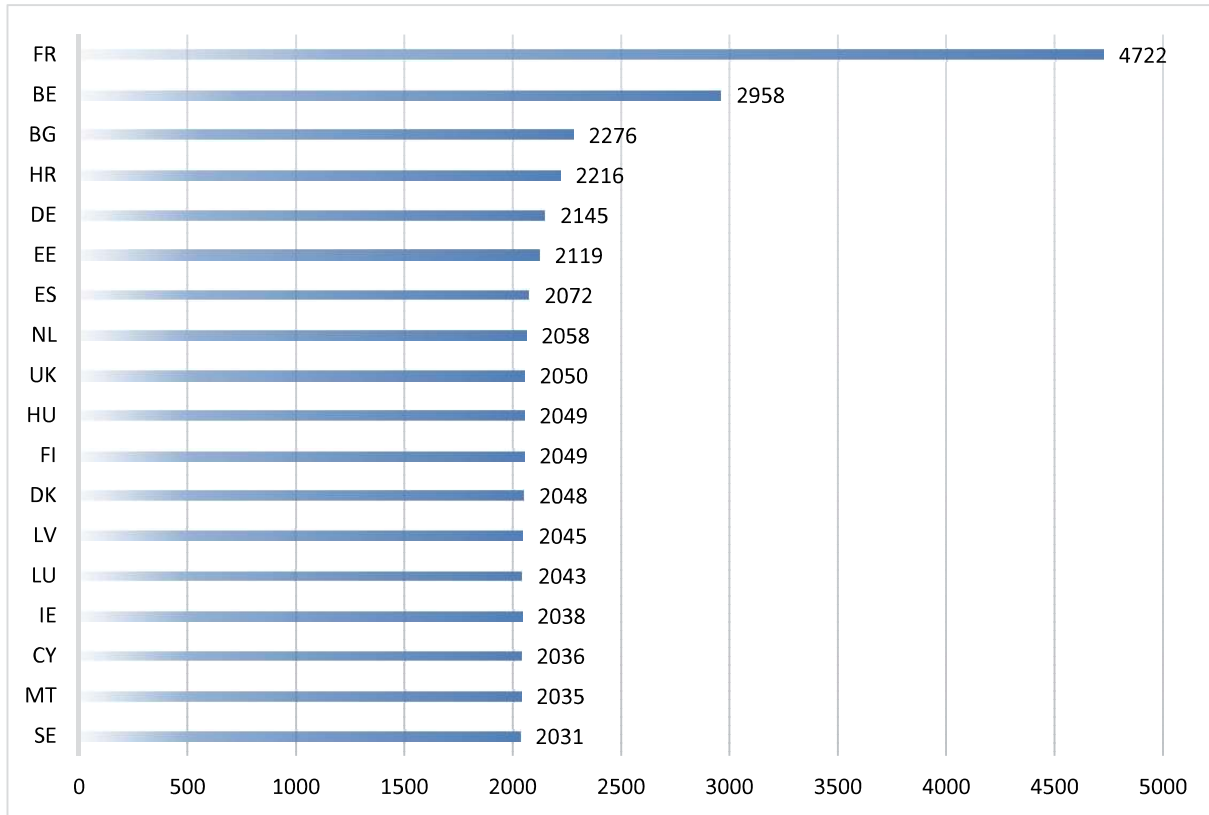
The dendrogram shows that the fifth group is created through the fusion of two subgroups. On the one hand, the Baltic states and Finland are similar in respect of their high level of female employment. On the other hand, Slovenia stands out from Cyprus and Portugal by a much lower gender wage gap and a much higher employment rate for mothers of three or more children whereas Cyprus stands out from Slovenia and Portugal by the existence of a motherhood-induced employment penalty (which does not exist in Slovenia and Portugal).

Finally, Denmark and Sweden form a last group, clearly because of the strong labor market attachment of women in these countries.

CONCLUSION

Throughout this contribution we have analyzed numerous gender differences that persist on European labor markets. A summary view is also given by the Gender Equality Index that is computed by the European Institute for Gender Equality for all EU member states and for different domains among which the domain of work. When comparing the scores of the 28 countries between the first publication of the indicator in 2005 and the most recent update in 2012, we find that in 10 of the 28 European member states the situation has worsened. We can therefore legitimately ask ourselves when we will finally have gender equal labor markets in Europe? For the 18 countries in which an improvement (as small as it sometimes is) is observed between 2005 and 2012 we have projected this positive evolution in the future to determine the year in which gender equality will be attained on their labor markets assuming that these countries will continue to make progress at the same pace as they did between 2005 and 2012. The Figure below presents the results of this exercise. The picture is not very promising. One third of the countries will not reach gender equality in the 21st century! In Belgium, we will have to wait 2958 and French women should definitely consider moving elsewhere as within their country they will be men's equals on the labor market only in 4722! Will Macron make the difference?

GRAPH 3
WHEN WILL WE HAVE GENDER EQUAL LABOR MARKETS IN EUROPE?



REFERENCES

- Becker, Gary (1964). *Human capital: a theoretical and empirical analysis, with special reference to education*. New York : National Bureau of Economic Research : Distributed by Columbia University Press, 187p.
- Maron, Leila, Meulders, Danièle, O'Dorchai, Síle, Plasman, Robert & Simeu, Natalie (2011). *L'écart salarial entre les femmes et les hommes dans les états membres de l'Union européenne: indicateurs quantitatifs et qualitatifs. Rapport de la Présidence belge 2010*. Bruxelles : Institut pour l'égalité des femmes et des hommes, 217p.
- Maruani, Margaret (2003). Les inégalités hommes/femmes. *Cahiers français*, 314, 92-97.
- Maruani, Margaret & Meulders, Danièle (2013). Genre et marché du travail dans l'Union européenne. In : *Travail et Genre dans le monde – L'état des savoirs*. Paris, France : Editions La découverte, 204-214.
- Meulders Danièle, Plasman, Robert & Rycx, François (2005). Les inégalités salariales de genre : expliquer l'injustifiable ou justifier l'inexplicable. *Reflets et perspectives de la vie économique*, XLIV (2), 95-107.
- Plantenga, Janneke & Remery, Chantal (2006). *The Gender Pay Gap. Origins and Policy Responses*. Luxembourg: Office for Official Publications of the European Communities.
- Rubery, Jill, Grimshaw, Damian & Figueiredo, Hugo (2005). How to close the gender pay gap in Europe: Towards the gender mainstreaming of pay policy. *Industrial Relations Journal*, 36 (3), 184-213.