

DIW Weekly Report

A policy bulletin from the German Institute for Economic Research



Economy. Politics. Science.

 DIW BERLIN

9 2021



65 Report by Julia Schmieder and Katharina Wrohlich

Gender pay gap in a European comparison: positive correlation between the female labor force participation rate and the gender pay gap

- The gender pay gap in Germany was 19 percent in 2019
- European comparison: a higher female labor force participation rate is associated with a larger gender pay gap
- Compared to countries with similar female labor force participation, Germany has one of the highest pay gaps

LEGAL AND EDITORIAL DETAILS



DIW Berlin — Deutsches Institut für Wirtschaftsforschung e.V.
Mohrenstraße 58, 10117 Berlin

www.diw.de

Phone: +49 30 897 89-0 Fax: -200

Volume 11 March 3, 2021

Publishers

Prof. Dr. Tomaso Duso; Prof. Marcel Fratzscher, Ph.D.; Prof. Dr. Peter Haan;
Prof. Dr. Claudia Kemfert; Prof. Dr. Alexander S. Kritikos; Prof. Dr. Alexander
Kriwoluzky; Prof. Dr. Stefan Liebig; Prof. Dr. Lukas Menkhoff; Dr. Claus
Michelsen; Prof. Karsten Neuhoff, Ph.D.; Prof. Dr. Carsten Schröder;
Prof. Dr. C. Katharina Spieß; Dr. Katharina Wrohlich

Editors-in-chief

Dr. Gritje Hartmann; Dr. Anna Hammerschmid (Acting editor-in-chief)

Reviewer

Dr. Charlotte Bartels

Editorial staff

Marten Brehmer; Rebecca Buhner; Claudia Cohnen-Beck; Kristina van
Deuverden; Petra Jasper; Sebastian Kollmann; Sandra Tubik

Sale and distribution

DIW Berlin Leserservice, Postfach 74, 77649 Offenburg
leserservice@diw.de

Phone: +49 1806 14 00 50 25 (20 cents per phone call)

Layout

Roman Wilhelm, DIW Berlin

Cover design

© imageBROKER / Steffen Diemer

Composition

Satz-Rechen-Zentrum Hartmann + Heenemann GmbH & Co. KG, Berlin

ISSN 2568-7697

Reprint and further distribution—including excerpts—with complete
reference and consignment of a specimen copy to DIW Berlin's
Customer Service (kundenservice@diw.de) only.

Subscribe to our DIW and/or Weekly Report Newsletter at

www.diw.de/newsletter_en

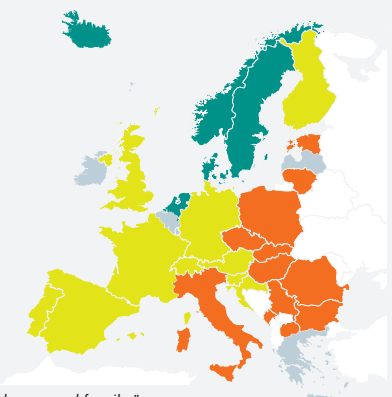
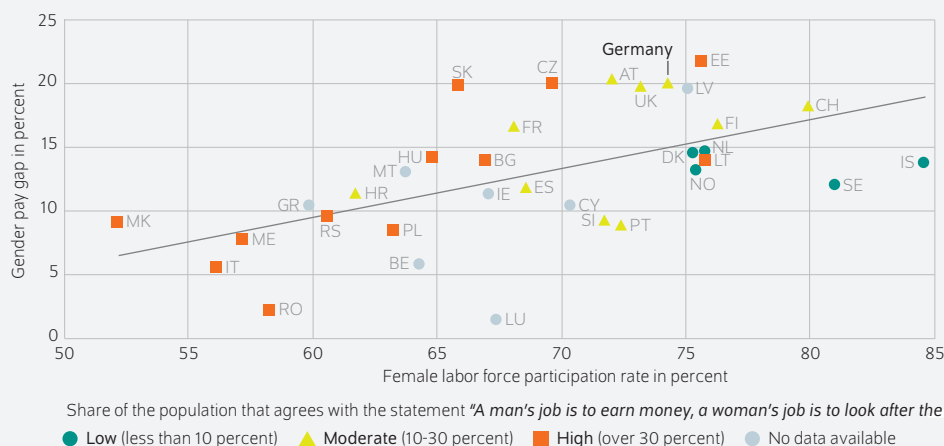
AT A GLANCE

Gender pay gap in a European comparison: positive correlation between the female labor force participation rate and the gender pay gap

By Julia Schmieder and Katharina Wrohlich

- Public interest in the gender pay gap has increased strongly since 2015
- Gender pay gap was 19 percent in Germany in 2019; it has barely changed over the last 15 years
- A European comparison shows that a lower female labor force participation rate is associated with a smaller pay gap
- Germany has one of the highest gender pay gaps in Europe, overall and in comparison with countries with similar female labor force participation rates
- Nordic countries have high female labor force participation rates *and* relatively small pay gaps; their tax and family policies should be an example for Germany

In a European comparison, a higher female labor force participation rate is associated with a larger gender pay gap – Germany has one of the largest pay gaps



Sources: Eurostat (female labor force participation rates and gender pay gaps), European Values Study (attitudes towards gender roles), authors' illustration.

© DIW Berlin 2021

FROM THE AUTHORS

"Germany must catch up in terms of its policies to promote gender equality—measures such as extending the partner quota in parental leave, expanding child care, and reforming the joint taxation of married couples would reduce the gender pay gap sustainably over the long term."

— Katharina Wrohlich —

MEDIA



Audio Interview with K. Wrohlich (in German)
www.diw.de/mediathek

Gender pay gap in a European comparison: positive correlation between the female labor force participation rate and the gender pay gap

By Julia Schmieder and Katharina Wrohlich

ABSTRACT

Public interest in the gender pay gap has risen significantly over the past years in Germany, but the size of the gender pay gap has barely changed. A comparison across European countries shows that a lower female labor force participation rate is associated with a smaller gender pay gap. The gender differences in the characteristics of the labor force, which vary across countries, are one explanation for this. Germany has one of the highest gender pay gaps in Europe compared to all countries as well as to those with a similar female labor force participation rate. With comparatively low gender pay gaps and high female labor force participation rates, the Nordic countries stand out positively in Europe. The extension of partner months in parental leave, the quantitative and qualitative expansion of child care, and a reform of joint taxation of married partners (*Ehegattensplitting*) are suitable instruments to achieve more gender equality on the labor market in terms of participation and wages.

According to the Federal Statistical Office, Germany had a gender pay gap — the difference between the average hourly wage of men and women relative to the average wage of men — of 19 percent in 2019, which has barely changed over the past 15 years (Figure 1).

However, although the gap has not changed, public discourse on the topic has increased significantly over the past years. While the German media rarely mentioned the gender pay gap from 2010 to 2014, it became a much more popular topic in the subsequent years: The number of media mentions of the term “gender pay gap” grew from 63 in 2014 to 455 in 2018, a sevenfold increase. The increasing popularity of the topic is also reflected in the stark rise of Google searches for “gender pay gap” (Figure 2).

The maximum number of search requests for “gender pay gap” over the last ten years was in March 2019; there were a high number of searches in March 2018 and 2017 as well. This is presumably related to the Equal Pay Day, which is dedicated to raising awareness about the gender pay gap. This day marks how far into the subsequent year women have to work to earn what the average man would have earned in the previous year.¹ With a gender pay gap of 19 percent, Equal Pay Day will take place in Germany on March 10 in 2021.²

Germany has a high gender pay gap compared to other European countries

In a European comparison, Germany has one of the largest gender pay gaps and ranks 31st out of 34 countries according to Eurostat 2018 data³ (Box, Table). Only Austria and Estonia have higher gender pay gaps than Germany. Romania

¹ For further information, see the homepage of the State Agency for Civic Education of Baden-Württemberg (*Landeszentrale für politische Bildung Baden-Württemberg*) (in German; available online; last access on February 10, 2021. This applies to all other online sources in this report unless stated otherwise).

² For further information, see the Equal Pay Day homepage (in German; available online).

³ The most recent nonprovisional data on the gender pay gap available on Eurostat are from the year 2018.

(around two percent), Italy and Belgium (each with around six percent) as well as Poland (around nine percent) have strikingly low gender pay gaps. In contrast, Spain and Sweden (each with around 12 percent), Norway (around 13 percent), as well as Denmark and the Netherlands (each with around 15 percent) have moderate wage gaps.

Traditional gender role attitudes widespread in some countries despite low gender pay gaps

According to the European Values Study, agreement with the statement “A man’s job is to earn money, a woman’s job is to look after the home and family” among the population is very high in some countries with very low gender pay gaps.⁴ For example, almost half of the adult population (around 48 percent) in Romania and 34 percent in Italy agreed with this statement. In contrast, only 14 percent of the population in Germany agreed (Table). In the Nordic countries (except for Finland), less than ten percent of the population agreed (Figure 3). Thus, the gender pay gap captures the prevailing views of gender roles across countries very inadequately.

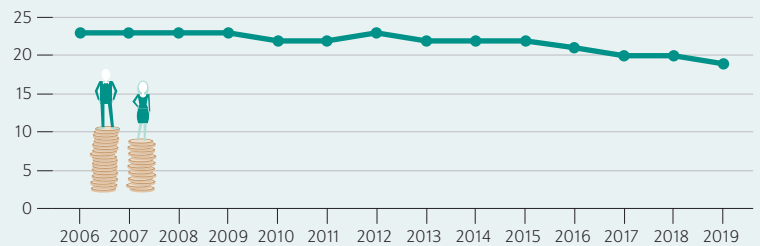
Positive correlation between wage gap and female labor force participation rate

How can it be explained that countries steeped in traditional gender role attitudes simultaneously have very low gender pay gaps? One part of the explanation is the varying labor force participation rate of women across countries.⁵

Figure 1

Gender pay gap in Germany, 2006–2019

In percent



Note: The gender pay gap is the difference between the average gross hourly wages of men and women compared to the gross hourly wage of men.

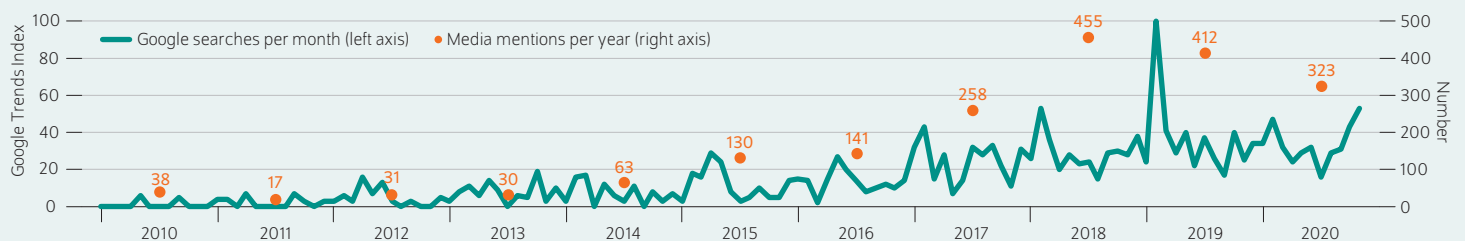
Source: Federal Statistical Office - Destatis, gender pay gap by territory (available online), authors' illustration.

© DIW Berlin 2021

The gender pay gap in Germany has barely changed over the last 15 years.

Figure 2

Google searches and media mentions of the term “gender pay gap” in Germany, 2010–2020



Note: The Google Trends Index for the gender pay gap measures the share of Google searches in Germany that contain the term “gender pay gap” relative to all searches made during the same period in Germany. These shares are scaled from 0 to 100, with 100 indicating the maximum search interest in Germany for the period from January 2010 to December 2020.

Sources: Google Trends, search term “gender pay gap” in Google searches in Germany, monthly data from January 2010 to December 2020; number of media mentions of the term “gender pay gap” in (print and online) *Der Spiegel*, *Tagesspiegel*, *EPD* (from 2011), *Frankfurter Allgemeine Zeitung* (from 2011), *Frankfurter Allgemeine Sonntagszeitung* (from 2013), *Frankfurter Rundschau*, *Süddeutsche Zeitung*, *Wirtschaftswoche* (from 2013), *Bild* (from 2012), *Die Welt*, *Die Zeit*, *taz*, *Handelsblatt* (from 2013) und *Reuters*, annual data from 2010 to 2020. The authors would like to thank Sebastian Kollmann for analyzing the media mentions.

© DIW Berlin 2021

The gender pay gap has been of increasing interest since 2015.

⁴ Another study uses agreement with this statement as a measure of traditional views on gender roles. Cf. Marianne Bertrand et al., “Social Norms, Labour Market Opportunities, and the Marriage Gap Between Skilled and Unskilled Women,” *The Review of Economic Studies* (forthcoming). In this study, the authors analyzed survey data from 2012 and earlier.

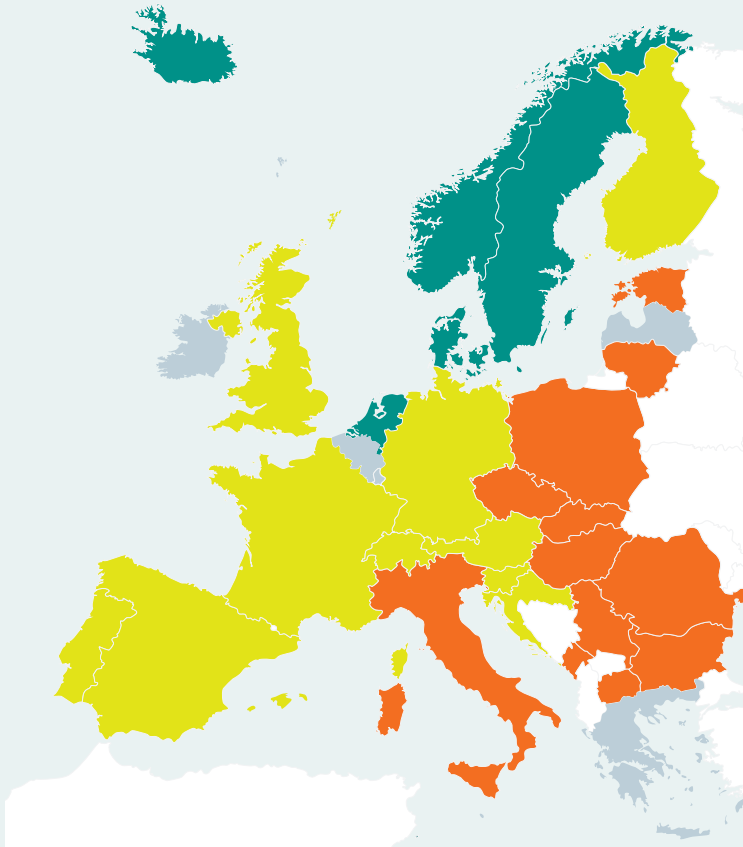
⁵ A further explanation for different gender pay gaps across European countries are differences in the wage structure. In countries with overall low wage inequality, the gender pay gap is also less pronounced than in countries with overall higher wage inequality. Cf. for example Francine D. Blau and Lawrence M. Kahn, “Understanding International Differences in the Gender Pay Gap,” *Journal of Labor Economics* 21 (2003): 106–44.

Figure 3

Share of the population with traditional views on gender roles in Europe

Share of the population that agrees with the statement "It is the man's job to earn money; the woman's job is to take care of the household and the family."

■ Low (less than 10 percent) ■ Moderate (10-30 percent) ■ High (over 30 percent)
■ No data available



Source: European Values Study, authors' illustration.

© DIW Berlin 2021

The Nordic countries (excluding Finland) and the Netherlands have the most egalitarian gender role attitudes.

Countries with a very low gender pay gap frequently also have a very low female labor force participation rate (Figure 4, Table). For example, Romania and Italy have small wage gaps and relatively low female labor force participation rates of 58 and 56 percent, respectively. At the same time, some countries with a high female participation rate have a substantially larger pay gap. The overall picture shows a clear positive correlation between the gender pay gap and the female labor force participation rate.

Varying gender differences in the composition of the labor force across countries partly explain this positive correlation. In countries with a low female labor force participation rate, women who work tend to be those with a high wage potential. In countries with a high female labor force participation rate, on the other hand, women active in the labor market do not differ as much from the overall female population.

In countries with a low female participation rate, comparatively high wages of women are included in the calculations of the gender pay gap. As the male labor force participation rate is very high in all countries, their average wages are more representative of the wage potential of the overall male population. Thus, the gender pay gap in countries with a low female participation rate is lower than in countries with a higher rate. The importance of the selection of women into the labor force with respect to their potential wages was shown for France, Ireland, and the Southern European countries in an earlier study.⁶

For this reason, a simple comparison of the gender pay gap between countries with very different female labor force participation rates can be misleading. Instead, countries with similar participation rates and thus a similar selection of working women must be compared. When observing the 14 countries whose female labor force participation rates are between 70 and 80 percent and thus comparable to the rate in Germany (74 percent), Germany still ranks third to last (above Austria and Estonia). Both the labor force participation rates of women and the gender pay gaps in the United Kingdom and Latvia are very similar to those in Germany, while Slovenia and Portugal have somewhat lower participation rates (both 72 percent) and markedly lower gender pay gaps (both around nine percent). Ranging from 75 to 80 percent, Denmark, Norway, the Netherlands, Lithuania, Finland, and Switzerland have slightly higher female labor force participation rates *and* lower gender pay gaps compared to Germany. Sweden and Iceland stand out in particular, as they have very high female labor force participation rates and very low gender pay gaps at the same time.

When observing both the gender pay gap and the female labor force participation rate, labor market patterns can be aligned with the prevailing values in a society. In most countries with a high female labor force participation rate and a relatively low gender pay gap, traditional gender role attitudes are rare (Figure 4).

Countries focusing on gender equality in family and tax policies have high female labor force participation rates *and* relatively small gender pay gaps

When ranking the gender pay gap internationally, Germany should only be compared with countries with a similar female labor force participation rate. Such a comparison shows that there are numerous countries with an equal or higher female labor force participation rate *and* a markedly lower gender pay gap. The Nordic countries stand out due to having both high participation rates and significantly lower gender pay gaps than Germany. Additionally, gender role attitudes are the most egalitarian in these countries (with the exception of Finland).

⁶ Cf. Claudia Olivetti and Barbara Petrongolo, "Unequal Pay or Unequal Employment? A Cross-Country Analysis of Gender Gaps," *Journal of Labor Economics* 26, (4) (2008): 621–654.

Box

Data

The analyses in this report use data from Eurostat on all countries in Europe with statistics available on both the female labor force participation rate and the gender pay gap (34 countries). The statistics are based on data from the European Union Labour Force Survey (EU-LFS), a survey based on a random sample of the population of the individual countries. The goal of the EU-LFS is to provide comparable information on all European countries.

The female labor force participation rate is a measure for the share of the female working-age population (between 15 and 64 years old) that is actively participating on the labor market by being employed, self-employed, or unemployed. The data on the female labor force participation rate are from 2018.¹

The gender pay gap measures the difference between the average gross hourly wages of male and female employees compared to the average gross hourly wages of men. All employees working for companies with ten or more employees are included. Excluded were the sectors agriculture, forestry and fishing; public administration and defense, compulsory social security; activities of households as employers; and activities of extraterritorial organizations and bodies. The data on the gender pay gap are from 2018.²

The data on the attitudes regarding the statement, "A man's job is to earn money, a woman's job is to look after the home and family," are from the European Values Study (EVS) 2017.³ A representative sample of the adult population was used for each country to conduct this standardized cross-national survey. The respondents were presented with the following response options: "Agree strongly," "agree," "disagree," "disagree strongly," "don't know," and "no answer." The share of the population who agrees with the statement is defined as the number of all respondents who answered "agree completely" or "agree" relative to all respondents.

¹ Data extract from February 24, 2021 (available online).

² Data extract from February 24, 2021 (available online).

³ Source: EVS (2020): European Values Study 2017: Integrated Dataset (EVS 2017). GESIS Data Archive, Cologne. ZA7500 Data file Version 4.0.0 (available online).

That the Nordic countries perform especially well is no coincidence. Although these countries do not have uniform legislation concerning policy measures for gender equality, such as gender quotas for management positions or equal pay laws,⁷ they share a strong focus on gender equality in the area of family policy. The guiding principle of the family policy in the Nordic countries is a family model in which mothers and fathers equally share work and care duties ("dual

⁷ For example, Mari Teigen and Hege Skjeie, "The Nordic Gender Equality Model," in *The Nordic Models in Political Science. Challenge, but still Viable?*, ed. Oddbjørn Kutsen (2017): 125–147.

Table

Gender pay gap, female labor force participation rate, and views on gender roles

Ranking (according to gender pay gap)	Country	Gender pay gap (in percent)	Female labor force participation rate (in percent)	Agreement with the statement "A man's job is to earn money, a woman's job is to look after the home and family" (in percent)
1	Luxembourg (LU)	1.4	67.4	
2	Romania (RO)	2.2	58.3	47.8
3	Italy (IT)	5.5	56.2	34.0
4	Belgium (BE)	5.8	64.3	
5	Montenegro (ME)	7.7	57.2	37.5
6	Poland (PL)	8.5	63.3	38.9
7	Portugal (PT)	8.9	72.4	27.3
8	North Macedonia (MK)	9.1	52.2	37.9
9	Slovenia (SI)	9.3	71.7	19.9
10	Serbia (RS)	9.6	60.6	35.1
11	Cyprus (CY)	10.4	70.4	
12	Greece (GR)	10.4	59.9	
13	Ireland (IE)	11.3	67.1	
14	Croatia (HR)	11.4	61.7	25.7
15	Spain (ES)	11.9	68.6	12.8
16	Sweden (SE)	12.1	81.0	5.1
17	Malta (MT)	13.0	63.8	
18	Norway (NO)	13.2	75.4	9.2
19	Iceland (IS)	13.8	84.6	7.1
20	Bulgaria (BG)	13.9	67.0	53.4
21	Lithuania (LT)	14.0	75.8	46.0
22	Hungary (HU)	14.2	64.9	44.4
23	Denmark (DK)	14.6	75.3	5.7
24	The Netherlands (NL)	14.7	75.8	7.2
25	France (FR)	16.7	68.1	16.4
26	Finland (FI)	16.9	76.3	11.9
27	Switzerland (CH)	18.3	79.9	18.3
28	Latvia (LV)	19.6	75.1	
29	United Kingdom (UK)	19.8	73.2	17.0
30	Slovakia (SK)	19.8	65.9	51.4
31	Germany (DE)	20.1	74.3	13.5
32	Czech Republic (CZ)	20.1	69.6	47.2
33	Austria (AT)	20.4	72.0	29.6
34	Estonia (EE)	21.8	75.6	37.3

Notes: There is no data from the European Values Study 2017 for some countries.

Sources: Eurostat (female labor force participation rates and gender pay gaps from 2018), European Values Study 2017 (views on gender roles), authors' illustration.

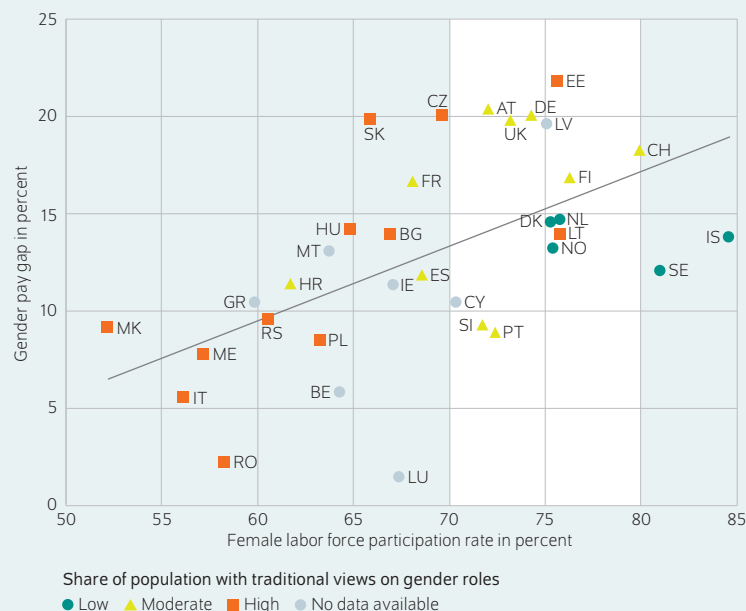
earner/dual carer-model").⁸ For example, the Nordic countries (with the exception of Finland) were the first to introduce partner months as a part of parental leave.⁹ Moreover, access to child care, even for children under the age of three,

⁸ Cf. Gudny Björk Eydal, Tine Rostgaard, and Heikki Hilaamo, "Family Policies in the Nordic Countries: Aiming at Equality," in *Handbook of Family Policy*, eds. Gudny Björk Eydal and Tine Rostgaard (Edward Elgar: 2018).

⁹ Partner months in parental leave were introduced in Norway in 1993, in Sweden in 1995, in Denmark in 1998 (repealed: 2002), in Iceland in 2000, and in Finland in 2013. Cf. for example Teigen and Skjeie, "The Nordic Gender Equality Model."

Figure 4

Relationship between the gender pay gap and the female labor force participation rate across different European countries



Notes: The line is a linear approximation of the relationship between the gender pay gap and the female labor force participation rate. Traditional views of gender roles are defined by the share of the population that agrees with the statement, "A man's job is to earn money; a woman's job is to look after the home and family." There are three categories: low (under ten percent), moderate (10–30 percent), and high (over 30 percent). The country names with the corresponding abbreviations are listed in the Table.

Sources: Eurostat (female labor force participation rates and gender pay gaps), European Values Study (views on gender roles), authors' illustration.

© DIW Berlin 2021

A higher female labor force participation rate is associated with a larger gender pay gap.

has been a given in these countries for some time. With the exception of Finland, the proportion of children under three enrolled in a day-care center has been over 30 percent since the early 2000s¹⁰ while at this time in western Germany, this share was less than three percent.¹¹ Last but not least, married partners in all Nordic countries have long been assessed individually for tax purposes,¹² which has been shown to contribute to higher labor force participation rates among women.¹³

In the area of family policy, Germany has made the first steps in the right direction by introducing parental allowance in 2007 and by expanding child care since 2005. A gradual extension of the partner quota in the parental leave benefit scheme, the introduction of the family working time model,¹⁴ and further supporting the quantitative and qualitative expansion of child care are important for improving equality between women and men on the labor market. Above all, Germany must reform *Ehegattensplitting*, the joint taxation of married couples.¹⁵ Reducing the high marginal tax burden on secondary earners would lead to greater equality of men and women on the labor market.

¹⁰ Cf. for example Teigen and Skjeie, "The Nordic Gender Equality Model."

¹¹ Cf. for example C. Katharina Spiess and Katharina Wrohlich, "Wie viele Kinderbetreuungsplätze fehlen in Deutschland? Neue Bedarfsermittlung für Kinder unter drei Jahren auf der Basis von Mikrodaten," *DIW Wochenbericht* 14 (2005): 223–227 (in German; available online).

¹² Cf. for example OECD, *Taxing Wages 2020* (Paris: OECD Publishing, 2020).

¹³ Cf. for example the literature overview in Alexander Bick and Nicola Fuchs-Schündeln, "Taxation and Labour Supply of Married Couples across Countries: A Macroeconomic Analysis," *Review of Economic Studies* 85, no. 3 (2018): 1543–1576.

¹⁴ Cf. Kai-Uwe Müller, Michael Neumann, and Katharina Wrohlich, "Familienarbeitszeit: mehr Arbeitszeit für Mütter, mehr Familienzeit für Väter," *DIW Wochenbericht* 46 (2015): 1095–1103 (in German; available online); Kai-Uwe Müller, Michael Neumann, and Katharina Wrohlich, "The family working-time model: Towards more gender equality in work and care," *Journal of European Social Policy* 28, no. 5 (2018): 471–486.

¹⁵ Cf. also Stefan Bach et al., "Reform des Ehegattensplittings: Realsplitting mit niedrigem Übertragungsbetrag ist ein guter Kompromiss," *DIW Wochenbericht* 41 (2020): 785–794 (in German; available online).

Julia Schmieder is a research associate in the Gender Economics Group and the Public Economics Department at DIW Berlin | [jschmieder@diw.de](mailto:j schmieder@diw.de)

Katharina Wrohlich is head of the Gender Economics Group in the Public Economics Department at DIW Berlin | kwrohlich@diw.de

JEL: J16, J31, J21, J22

Keywords: gender pay gap, female labor force participation, Europe, international comparison