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Article

Gender care gap and gender pay gap increase substantially until middle age

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AT A GLANCE

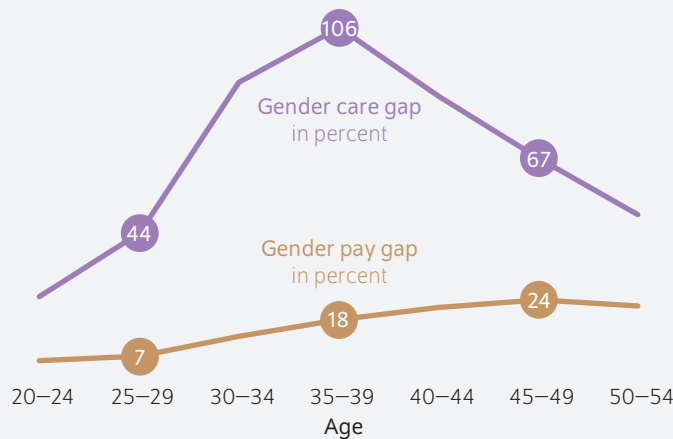
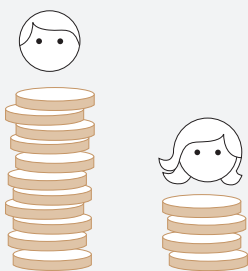
Gender Care Gap and Gender Pay Gap Increase Substantially until Middle Age

By Clara Schäper, Annekatri Schrenker, and Katharina Wrohlich

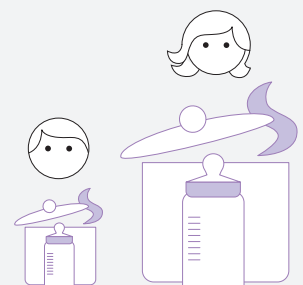
- Gender pay gap and gender care gap develop similarly over the life course
- Socio-Economic Panel data shows that gender care gap also increases in middle age
- Women perform substantially more unpaid care work, take longer parental leave, and work part time more frequently after
- Gender pay gap and gender care gap are lower in eastern Germany than western Germany
- Policymakers should tackle the gender pay and care gaps simultaneously by incentivizing a more equal split of parental benefits and reforming the joint income taxation of married couples

Gender pay gap and gender care gap both increase sharply until middle age

Gender pay gap: Difference between the hourly wages of men and women compared to the hourly wage of men.



Gender care gap: Difference between the daily unpaid care work performed by men and women compared to the unpaid care work performed by men.



Source: Authors' calculations based on SOEP v37, waves 2010-2020 (weighted figures); sample: employees.

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FROM THE AUTHORS

“The gender care gap begins to decrease at age 40, while the gender pay gap remains consistently high. Thus, although the amount of care work performed converges somewhat again, the unequal distribution of income has a more long-term effect.”

— Clara Schäper —

MEDIA



Audio Interview with Clara Schäper (in German)
www.diw.de/mediathek

Gender Care Gap and Gender Pay Gap Increase Substantially until Middle Age

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ABSTRACT

While the gender pay gap between men and women in Germany remains at 18 percent, this figure is not the same for all employees. There are, for example, major differences by age. Beginning at age 30, the gender pay gap increases sharply and remains constantly high at 20 percent until retirement. Closely related to this is the gender care gap, the difference in unpaid care work between women and men. Based on data from the Socio-Economic Panel (SOEP), this Weekly Report shows that the gender care gap also increases up to middle age: At around nine hours per day, women between 35 and 39 perform more than twice as much care work as men of the same age. The time around the birth of a child thus remains decisive for the allocation of unpaid care work and for the wage development of many women. If policymakers want to change this, they must create incentives for a more equal distribution of care work between women and men. Expanding the number of months with parental leave benefits earmarked for each parent could be one starting point. Moreover, a reform of the joint income taxation of married couples (*Ehegatten-splitting*) and the tax subsidies for minijob employees is also long overdue.

According to the Federal Statistical Office, the gender pay gap,¹ the difference between the average gross hourly wage of men and women relative to the average wage of men, was 18 percent in 2022, unchanged from 2021.² However, this gender pay gap, which is relatively high by international standards,³ is not the same for all employees. Rather, this average hides important differences, for example by region: The Federal Statistical Office reports a gender pay gap of 19 percent for western Germany and only a seven percent gap for eastern Germany.

Strong increase in gender pay gap from age 30

The gender pay gap also differs substantially by age group.⁴ As calculations based on Socio-Economic Panel data (Box) show, the gender pay gap is not yet very pronounced for 20 to 30 year olds. While the average gross hourly wages of women in this age group are a bit below those of the men, both groups experience similar wage growth at this age. After age 30, however, the gender pay gap rises sharply, as average gross hourly wages for women barely increase from that point onward, while men experience high wage growth until age 40 (Figure 1).

The gender pay gap is thus around seven percent for the 20 to 30 year olds. However, it then increases substantially to over 22 percent by age 40 and remains at this high level until retirement (Figure 2). Empirical studies have shown that this pattern has not changed since the early 1990s.⁵

One of the main reasons cited for the increase is the unequal distribution of paid work and unpaid care work between men

¹ For more information, see the entry on the gender pay gap in the DIW Berlin Glossary (available online; in German. Accessed on February 10, 2023. This applies to all other online sources in this report unless stated otherwise).

² Federal Statistical Office press release, January 30, 2023 (in German; available online).

³ 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," *DIW Weekly Report*, no. 9 (2021): 65–70 (available online).

⁴ Annekatri Schrenker and Aline Zucco, "Gender Pay Gap steigt ab dem Alter von 30 Jahren stark an," *DIW Wochenbericht*, no. 10 (2020): 137–145 (in German; available online).

⁵ Annekatri Schrenker and Katharina Wrohlich, "Gender Pay Gap ist in den letzten 30 Jahren fast nur bei den Jüngeren gesunken," *DIW Wochenbericht*, no. 9 (2022): 149–154 (in German; available online).

and women.⁶ It is not coincidental that the gender pay gap rises sharply at the average age a woman gives birth to her first child: Following the birth of a child, women are more likely than men to take family-related career breaks and are more likely to work part-time. Both of these decisions negatively affect the hourly wage.⁷

Sharp increase in gender care gap from 25 to 35

In addition to the gender pay gap, which has increasingly been in the media focus over the past years,⁸ the gender care gap⁹ has also been receiving more attention in recent years, both internationally and in Germany.¹⁰

The gender care gap measures the difference between the amount of time women and men spend performing unpaid care work (Box). Unpaid care work refers to all unpaid services that are performed within a household for its members or for people outside the household requiring care. On average, women in Germany perform about one and a half times as much unpaid care work as men, resulting in an average gender care gap of a good 50 percent.¹¹ In a global comparison, Germany ranks in the middle.¹²

Similar to the gender pay gap, an uneven progression over the life course can be observed for the gender care gap (Figure 3). The group of 20 to 24 year olds spends the least time performing care work: for men about two hours a day, for women between three and four hours a day. If the gender care gap is calculated in the same way as the gender pay gap—as the difference between the amount of care work performed between men and women in relation to the amount of care work performed by men—the gender care gap is a good 25 percent for employed 20 to 24 year olds (Figure 2). For the 35 to 39 year olds, the gender care gap is 106 percent, meaning women in this group spend over twice as much time on unpaid care work as men.

⁶ Schrenker and Zucco, "Gender Pay Gap steigt ab dem Alter von 30 Jahren stark an."

⁷ The effects of family-related career interruptions on mothers have been well researched. Cf. for example Henrik Kleven, "Child penalties across countries: Evidence and explanations," *AEA Papers and Proceedings*, Vol 109 (2019): 122–126 (available online); Jonas Jessen, "Culture, Children and Couple Gender Inequality," *European Economic Review* 150 (2022); Corinna Frodermann, Katharina Wrohlich, and Aline Zucco, "Parental Leave Policy and Long-run Earnings of Mothers," *Labour Economics* 80 (2023) (available online).

⁸ Schmieder and Wrohlich, "Gender pay gap in a European comparison."

⁹ For more information, see the entry on the gender care gap in the DIW Berlin Glossary (in German).

¹⁰ In an international context, cf. studies from the ILO and OECD: Gaëlle Ferrant, Luca Maria Pesando, and Keiko Nowacka, *Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes*. (Paris: OECD, 2014): 211–266 (available online) and Laura Addati et al., *Care Work and Care Jobs for the Future of Decent Work* (International Labor Organization: 2018) (available online). For Germany, cf. Nina Klünder, *Differenzierte Ermittlung des Gender Care Gap auf Basis der repräsentativen Zeitverwendungsdaten 2012/13, Expertise für den Zweiten Gleichstellungsbericht der Bundesregierung* (2017) (in German; available online); Claire Samtleben, "Also on Sundays, Women Perform Most of the Housework and Child Care," *DIW Weekly Report*, no. 10 (2019): 86–92 (available online).

¹¹ Klünder, *Differenzierte Ermittlung des Gender Care Gap*.

¹² OECD, *Dare to Share – Deutschlands Weg zur Partnerschaftlichkeit in Familie und Beruf* (Paris: 2017) (in German; available online); Jacques Charmes, *The Unpaid Care Work and the Labour Market. An analysis of time use data based on the latest World Compilation of Time-use Surveys* (Geneva: International Labour Office, 2019) (available online).

Box

Data and methodology

The calculations in this Weekly Report use data from the Socio-Economic Panel (SOEP).¹ The SOEP is the longest-running, representative longitudinal study in Germany and is therefore particularly well-suited for observing the gender pay gap over time. The most recent SOEP data is from 2020. Data from the survey period from 2010 to 2020 are used for this report.

When calculating the gender care gap, all women and men in eastern and western Germany aged 20 to 55 are considered, independent of their employment status. For comparability with the gender pay gap, which is calculated only for the sample of employees, the gender care gap was also calculated separately for this group. The analyses for employees include full-time and part-time employees as well as minijob employees. The self-employed, persons in training, and the non-employed were not considered.

The **gender pay gap** measures the percentage difference between the average gross hourly wages of men and women compared to the average gross hourly wages of men. To calculate the gross hourly wages, monthly gross earnings are first divided by the number of contractually agreed upon work hours. Gross hourly wages are then adjusted for nominal price trends using the consumer price index (base year 2020). In addition, before calculating average wages, the top and bottom percent of the data for each survey year are excluded (trimming) to reduce the influence of outliers. When calculating averages, weighted figures are output that consider specifics of the sample design and changes in sample composition over time.

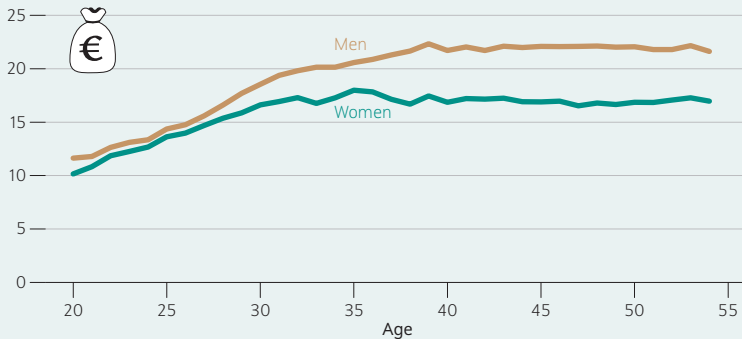
The **gender care gap** is the percentage difference between the average daily time women and men spend on unpaid care work. By default, the SOEP asks individuals each year how many hours they spend on an average weekday on child care, care for dependents, and household chores.² Housework includes laundry, cooking and cleaning, running errands, shopping and going to government offices, and repairing and gardening.

¹ For an introduction to the SOEP, see Gert G. Wagner et al., "Das Sozio-oekonomische Panel (SOEP): Multidisziplinäres Haushaltspanel und Kohortenstudie in Deutschland – Eine Einführung (für neue Datennutzer) mit einem Ausblick (für erfahrene Anwender)," *AStA Wirtschafts- und Sozialstatistisches Archiv* 2, no. 4 (2008): 301–328 (in German; available online).

² Every two years, respondents are also asked about how they use their time on weekends (cf. Samtleben, "Also on Sundays, Women Perform Most of the Housework and Child Care.") Since this report focuses on the care gap's comparability with the pay gap, only the specified times on weekdays are considered.

Figure 1

Average hourly wages by age
In euros



Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: employees.

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The gap between the hourly wages of men and women (gender pay gap) increases with age.

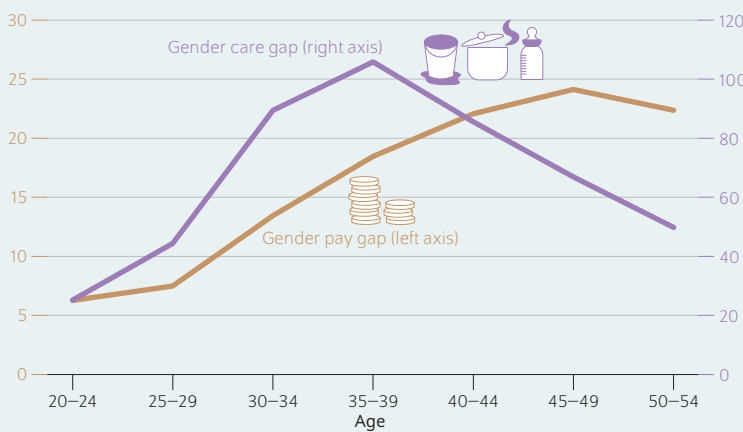
The gender care gap and the gender pay gap thus follow a very similar path, at least in the 35 to 40 year old group (Figure 2). The gender gap in both hourly wages and unpaid care work is still relatively small during the 20s. However, both then rise sharply until age 40. While the gender pay gap remains consistently high thereafter, the gender care gap falls again for those over 40, in particular because the time spent on child care declines over the life course (Figure 4). The care gap decreases steadily from age 40 for women, while the gender gap in housework remains consistently high. With increasing age, time spent on caring for relatives increases somewhat, but the amount of time remains at a substantially lower level overall than the time spent on housework and child care.

Gender pay gap and gender care gap lower in eastern Germany than in western Germany

The gender pay gap differs between western and eastern Germany. At seven percent, the average gender pay gap in eastern Germany is markedly lower than the 19-percent gap in western Germany. The development of the gap over the life course is also much flatter in eastern Germany than in western Germany (Figure 5). Similarly, the gender care gap is lower in eastern Germany as well. In both eastern and western Germany, the gender care gap is low at the beginning of the professional career and rises sharply by ages 30 to 35. However, the increase in eastern Germany at the ages of 35 to 40 is only moderate, while it remains substantially higher in western Germany until 40. On the one hand, this is due to the fact that men in eastern Germany spend more time on care work over the course of their lives than men in western Germany. On the other hand, beginning at age 32, women in eastern Germany spend less time on unpaid care work than women in western Germany (Figure 6). This is in part due to the fact that family-related career interruptions of women in eastern Germany are much shorter on average¹³ and women there work full-time more often than women in western Germany.¹⁴ This is related to different social norms, especially the social acceptance of working mothers with small children, together with institutional differences such as the availability of child care spots.¹⁵

Figure 2

Average gender pay gap and gender care gap by age
In percent



Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: employees.

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The gender care gap and gender pay gap increase sharply until middle age.

When the gender care gap is observed independent of employment status, i.e., for the whole population aged 20 to 55 years, it is even larger. For this group, too, the gap is greatest for 34 year olds. At this age, women spend an average of nearly nine hours a day on unpaid care work compared with only about three hours for men. This is a gender care gap of nearly 170 percent. The gap declines again somewhat after age 40, but it is still higher in the 50 and over group than in the 20s group.

Conclusion: Family policy needs to consider gender care gap and gender pay gap simultaneously

The parallel development of the gender pay gap and the gender care gap from ages 20 to 50 suggests that the birth of a child is a critical turning point for the development of women's and men's careers. Following the birth of a child,

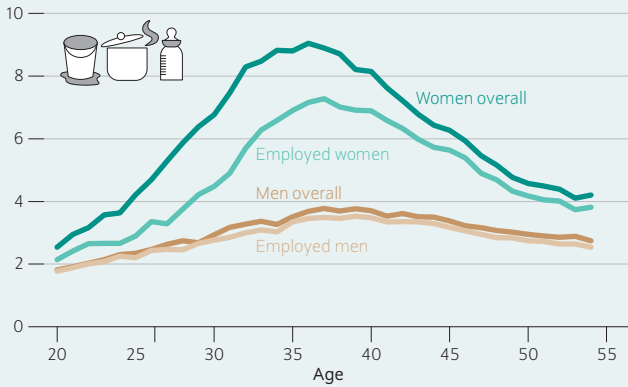
¹³ Matthias Keller and Irene Kahle, "Realisierte Erwerbstätigkeit von Müttern und Vätern zur Vereinbarkeit von Familie und Beruf," *Wirtschaft und Statistik*, no. 3 (2018): 54–71 (in German; available online).

¹⁴ Patricia Gallego Granados, Rebecca Olthaus, and Katharina Wrohlich, "Teilzeiterwerbstätigkeit: überwiegend weiblich und im Durchschnitt schlechter bezahlt," *DIW Wochenbericht*, no. 46 (2019): 845–850 (in German; available online).

¹⁵ Denise Barth, Jonas Jessen, C. Katharina Spieß, and Katharina Wrohlich, "Mütter in Ost und West: Angleichung bei Erwerbstätigenquoten und Einstellungen, nicht bei Vollzeiterwerbstätigkeit," *DIW Wochenbericht* no. 38 (2020): 699–706 (in German; available online).

Figure 3

Average time spent on care work by age
In hours per weekday



Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: all men and women (employees and non-employed).

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The gender care gap for employed persons is smaller than for the total population.

women take on substantially more unpaid care work, take more frequent and longer parental leave,¹⁶ and work part-time more often afterward.¹⁷ Although the gender care gap begins to decline at age 40, the gender pay gap remains at a high level until retirement. This suggests that the course is set for future earnings between 30 and 40 years old, exactly the time during which women take on substantially more unpaid care work than men. The unequal distribution of paid work and unpaid care work between men and women, especially in this period, is therefore an important explanation for the persistently high gender pay gap.

If policymakers are serious about promoting equal opportunities on the labor market for men and women, they should start with the division of paid work and unpaid care work during the critical period of the birth of a child. One promising measure would be the expansion of partner months with parental benefits. Two “partner months” were introduced in 2007, which can be taken in addition to the standard 12 months (for a total of 14 months) if both parents are receiving parental benefits. While this change has led to substantially more fathers taking parental leave than before, they predominantly only do so for the statutory minimum of two months in contrast to mothers’ twelve months of leave.¹⁸ Use of partner months should therefore be gradually increased until a rate of 50 percent (seven of 14 months) is achieved. Another possibility for subsidizing fathers’ longer use of parental leave would be to reduce the wage replacement rate

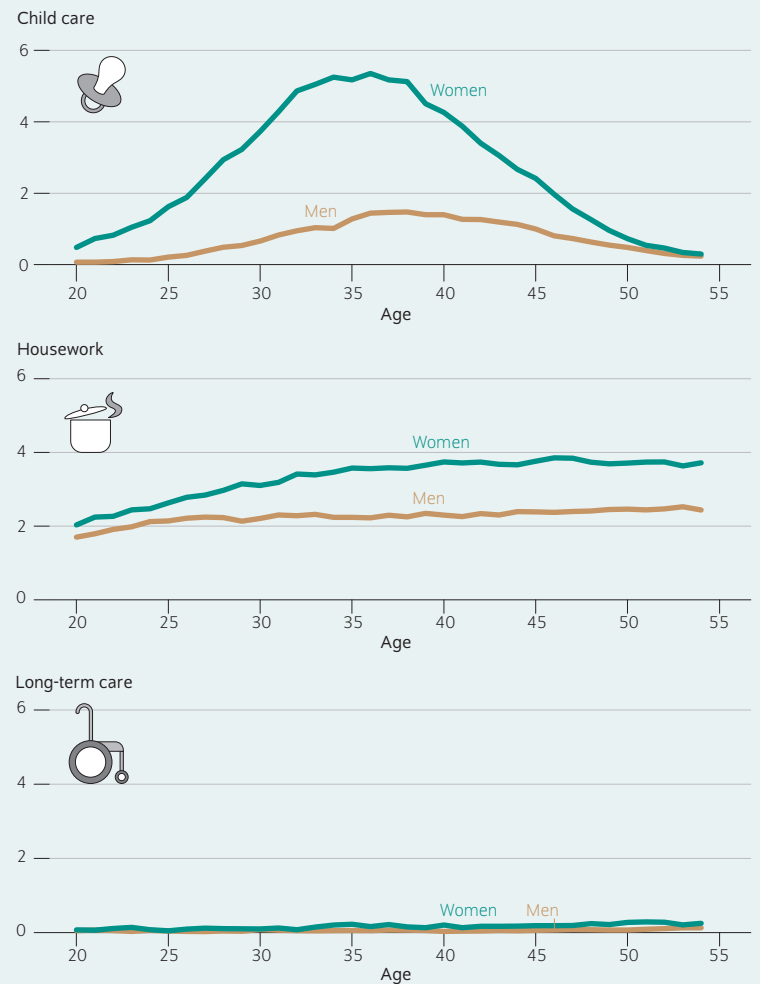
¹⁶ Claire Samtleben, Clara Schäper, and Katharina Wrohlich, “Elterngeld und Elterngeld Plus: Nutzung durch Väter gestiegen, Aufteilung zwischen Müttern und Vätern aber noch sehr ungleich,” *DIW Wochenbericht*, no. 35, 607–613 (in German; available online).

¹⁷ Schrenker and Zucco, “Gender Pay Gap steigt ab dem Alter von 30 Jahren stark an.”

¹⁸ Samtleben, “Also on Sundays, Women Perform Most of the Housework and Child Care.”

Figure 4

Average time spent on child care, housework, and long-term care by age
In hours per weekday



Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: all men and women independent of employment status.

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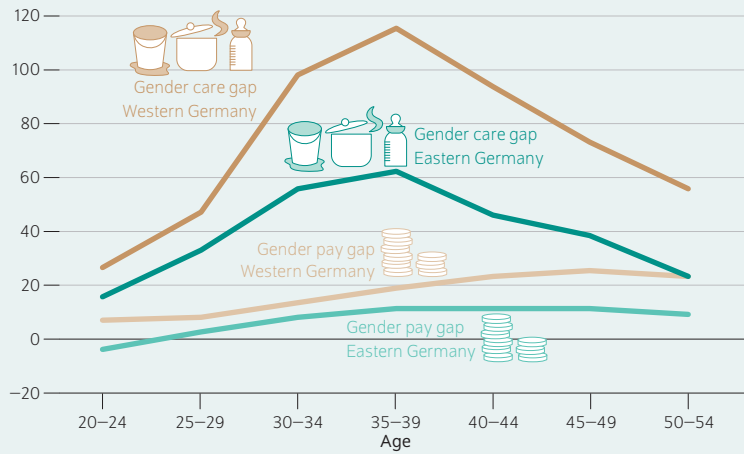
The gender gap in child care decreases after middle age, while the gender gap in housework remains consistently high after middle age.

for parental leave benefits over time.¹⁹ For example, both parents could receive parental leave benefits at a wage replacement rate of 80 percent for seven months. Following that, the wage replacement rate is decreased to 50 percent (for a maximum of four months). In this model, which has been suggested by the German Council of Experts in the 9th Family Report of the Federal Government, the total parental leave benefits of both parents would be highest if both parents each took a seven-month leave.

¹⁹ This “dynamization of the wage replacement” was proposed by the German Council of Experts in its 9th Family Report, cf. BMFSFJ, *Eltern Sein in Deutschland – Ansprüche, Anforderungen und Angebote bei wachsender Vielfalt. Empfehlungen für eine Wirksame Politik für Familien. 9. Familienbericht (2021)* (in German; available online).

Figure 5

Average gender pay gap and gender care gap by age and by region
In percent



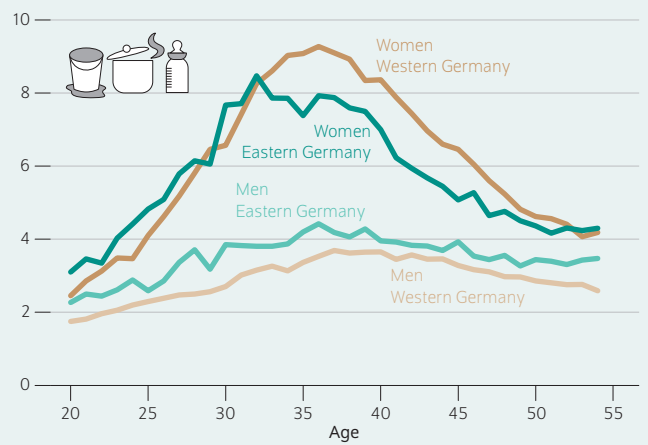
Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: employees.

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The gender pay gap and the gender care gap are higher throughout every phase of life in western Germany compared to eastern Germany.

Figure 6

Average time spent on care work by age and by region
In hours per weekday



Source: Authors' calculations based on SOEP v37, waves 2010–2020 (weighted figures); sample: all men and women independent of employment status, eastern and western Germany.

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The gender care gap decreases from age 30 in eastern Germany substantially more quickly than in western Germany.

However, other areas of the tax and transfer system must also be reformed to support an equal distribution of paid work and unpaid care work between women and men. It has been shown that the joint taxation of married couples with full income splitting (*Ehegattensplitting*), especially combined with the tax exemption of earnings from minijobs, creates disincentives for married women to work.²⁰ Therefore, an

20 For more on the negative incentives for the labor market participation of women due to the joint taxation of married couples with full income splitting, see Kai-Uwe Müller et al., "Evaluationsmodul: Förderung und Wohlergehen von Kindern," *Politikberatung Kompakt* 73 (2013) (in German; available online); Stefan Bach, Johannes Geyer, Peter Haan, and Katharina Wrohlich, "Reform des Ehegattensplittings: Nur eine reine Individualbesteuerung erhöht die Erwerbsanreize deutlich," *DIW Wochenbericht*, no. 41 (2011): 13–19 (in German; available online); Matthias Blömer and

income tax reform should be implemented, moving more towards individual taxation with a transferable amount for single-earner couples.²¹ Additionally, tax subsidies for minijobs should be abolished, except for possible exceptions for students and pensioners. These measures would have substantial gender equality policy effects and would also be effective ways to address labor shortages.

Andreas Peichl, "Für wen lohnt sich Arbeit? Partizipationsbelastungen im Steuer-, Abgaben- und Transfersystem," *ifo Forschungsberichte*, no. 118 (2020) (in German; available online).

21 Stefan Bach et al., "Reform proposal for marriage taxation in Germany: de facto income splitting with a low transferable amount," *DIW Weekly Report*, no. 41/42 (2020): 423–432 (available online).

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