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The Gender Wage Gap, Labor-Market Experience, and Family Choices: Lessons from East Germany?

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PRELIMINARY - PLEASE DO NOT CITE

Abstract

Female labor-market engagement in general and the gender wage gap in particular differ substantially between former East and West Germany, giving rise to a substantial “gap in the gap” within Germany. I show that differences in labor-market experience play a dominant role for understanding this “gap in the gap”. Substantial differences in the accumulation of labor-market experience between mothers in East and West Germany persist regardless of accounting for differences in education, industry, occupation or the number of children. While the literature has discussed East-West differences in social norms, attitudes, and provision of public child care as likely explanations, I additionally investigate whether men, particularly fathers, in East Germany behave differently than in West Germany, thereby contributing to the higher labor market participation of women in the East through informal childcare. My findings indicate no such regional differences in the labor market engagement of fathers.

Keywords: Gender wage gap; Gender wage gap decomposition; Germany; Maternal labor supply; Labor market experience;

JEL classification: J12; J16; J22; J31;

1 Introduction

Across the developed world, gender wage gaps persist since decades, serving as a stark reminder of the challenges that women continue to face in the labor market. A pivotal element contributing to this disparity is the lower labor-market experience of women, often amplified by career interruptions and reductions in labor supply following child birth.¹ Supporting gender equality has become an important societal goal, and an essential stepping stone towards this goal is enabling mothers to maintain their professional careers, especially during the crucial early years of their children’s lives. A range of policies have been proposed and partly implemented to support maternal employment. These policies range from the provision of universal child care to subsidized paternal leave, which aims at reinforcing the role of fathers in child care responsibilities.

An interesting case study in this context is Germany, a developed nation with striking regional disparities in the gender wage gap. On a national level, the gender wage gap in Germany is comparable to the United States.² But there are substantial differences between the former Eastern and Western part of the country, with notably smaller gender wage gaps in former socialist East Germany. In 2021, the gender wage gap in East Germany was 6%, whereas the gap in West Germany was 19% (Federal Statistical Office, 2023). Thus, thirty years after German reunification, there remains a persistent “gap in the gap” within Germany.

In East Germany, women also accumulate more labor-market experience, return to work sooner after child birth, and work more often in full-time employment (Hanel and Riphahn, 2012; Keller and Kahle, 2018; Müller and Wrohlich, 2020). In addition, often attributed to its history, former East Germany has a higher supply of daycare facilities, especially for

¹The link between (maternal) labor supply reductions and the gender wage gap has been emphasized in the literature, see Goldin (2006), Goldin (2014), Bertrand et al. (2010), Angelov et al. (2016), Kleven et al. (2019), Bertrand (2020), Kleven et al. (2021), Andresen and Nix (2022), and Cortés and Pan (2023).

²For the U.S., Guzman and Kollar (2023, Table A-7) document a female to male earnings-ratio of 0.837 in 2021 based on CPS data. According to the Federal Statistical Office (2023), the gender wage gap in Germany in 2021 is 18%.

children below the age of three.³ Accessible child care has been argued to play a critical role in facilitating East German mothers' participation in the workforce, although results on the causal effect of policy reforms are mixed (Bick, 2016; Müller and Wrohlich, 2016; Zoch and Hondralis, 2017; Müller and Wrohlich, 2020).

This paper seeks to draw insights from the case of East Germany and derive lessons for family policies. On the one hand, one might conjecture that the higher availability of childcare is solely responsible for enhancing women's labor market attachment in East Germany. Yet, there may be additional contributing factors: First, family norms may be more egalitarian in the former Eastern part of the country than in the West. Second, the unique particularities of former East Germany, such as its specific industrial composition or lower marriage rates, may have relevance, although these are factors that are challenging to alter. Third, there may be differences in parental roles, e.g., a stronger involvement of *fathers* in child care responsibilities in Eastern Germany. It could be that, in line with more positive attitudes towards female employment in East Germany, East German men (or fathers) provide more housework and more (informal and unpaid) child care within the couple and thereby enable their female partners to increase their labor supply. If fathers in East Germany take up such a different role in the family compared to West Germany, this would imply an at least temporary reduction or interruption in their working hours. Hence, a testable implication associated with this possible explanation is that there should be differences in the accumulation of men's (or fathers') labor-market experience between East and West Germany.

I contribute as follows: First, I underline that accumulated work interruptions (measured in years of labor-market experience) contribute substantially to the gender wage gap in Germany. Using a standard Oaxaca-Blinder decomposition of the gender wage gap applied

³Attendance rates in public child care for children under the age of three are substantially higher in East Germany compared to West Germany (41% vs. 10% in 2007, 53% vs. 32% in 2022). Child care attendance rates from 2007 to 2022 by federal state are provided by the [Federal Statistical Office](#) (2022, p. 107). Wrohlich (2008) documents excess demand for public child care in both, East and West Germany.

to data from the German Socio-Economic Panel (SOEP), I find that the major contributing component in all of those decompositions are gender differences in labor-market experience.⁴

Given the importance of gender differences in labor-market experience, I then investigate these differences more closely. I find that there is a substantial gap in gender experience gaps between East and West Germany. Thus, similar to the regional pattern in the gender wage gap, there is a “gap in the gap” in labor-market experience between the East and the West. To uncover a potential link between East-West differences in gender experience gaps and East-West differences in the gender wage gap, I decompose the East-West gap in the gender wage gap into an explained and unexplained part in an Oaxaca-Blinder decomposition style. My second main result is that East-West gaps in experience gaps also explain large shares of the East-West gap in the gender wage gap.

Third, I investigate what drives regional (East-West) differences in gender experience gaps. I do so using a regression approach in which I compare otherwise similar men and women over their life-cycles. One main result of this analysis is that the experience gaps between women in East and West Germany are driven by *mothers* and their differing labor-supply decisions over the life cycle. Specifically, East German mothers spend significantly more years in the labor force, and, though slightly smaller, these differences persist also for younger cohorts, who spent their working lives in reunified Germany with the same laws and regulations. Interestingly, I find that the documented differences prevail even when accounting for worker and job characteristics, including education, the number of children over the life cycle, and the industry and occupation mix. Differences in the provision of public child care could be an explanation for the persistent experience gaps even among similar mothers in East and West Germany. To illustrate this, I provide some descriptive evidence on the correlation between public child care coverage and maternal labor supply histories.

⁴Following Averkamp et al. (2024), I also perform an extended decomposition in a sample of dual-earners to take into account the role of the family.

Fourth, I rule out that the role of men and fathers in the family is strongly related to the East-West gaps in labor-market experience and wages. On average, East German fathers indeed accumulate slightly less full-time experience than West German fathers of the same age. However, this is related to differences in, e.g., education, the industry structure, and higher years of unemployment experience. I find that the total years of labor-market experience are very similar for fathers and men in East and West Germany. Hence, it is not the case that East German fathers reduce their labor-market participation more strongly than West German fathers to free up time for labor-market participation of mothers. Overall, the absence of different labor-supply decisions of fathers implies that informal child care by fathers in East Germany is not applicable to explain differences in labor supply histories of mothers between East and West Germany. It thereby indirectly corroborates the role of (public) external child care.

The remainder of this chapter is structured as follows. Section 2 relates my paper to the literature. Section 3 presents the data and the sample selection. Section 4 decomposes the gender wage gap, first, in all of Germany, and second, separately for East and West Germany. Additionally, I decompose the East-West gap in the gender wage gap into an explained and unexplained part. Section 5 examines the accumulation of labor-market experience over the life cycle, first for women, and then for men. Section ?? discusses alternative contributing factors for the employment patterns of women in East and West Germany. Section 6 concludes.

2 Related Literature

My paper is related to several strands of the literature. First, it is related to the large literature on the gender wage gap (see, e.g., Blau and Kahn, 2017; Averkamp et al., 2024; Boll et al., 2017; Piazzalunga, 2018; Fuchs et al., 2021; Minkus and Busch-Heizmann, 2020). Prominent studies show that actual labor-market experience is central to understanding the

gender wage gap (see, e.g. Mincer and Polachek, 1974; Olivetti, 2006; Gayle and Golan, 2012; Blau and Kahn, 2017). I add to this literature by stressing the role of labor-market experience in various decompositions of the gender wage gap in Germany.

Second, there is a broad literature that focuses on labor-market experience in the form of past labor supply decisions and its role for wages. Using the SOEP, Paul (2016) estimates the causal effect of working part-time on wages. She finds that working part-time in the past has a negative effect on current wages, although the effect is smaller than the wage effect of work interruptions. In their cohort studies, Noonan et al. (2005) and Bertrand et al. (2010) stress the importance of work force interruptions and working part-time for wages. Both studies document that large parts of the widening earnings gap over time between men and women can be related to differences in work interruptions and differences in weekly working hours. My results strengthen these findings. Related to experience gaps is the literature on the motherhood penalty and its differences in East and West Germany. Several recent studies document higher motherhood penalties for mothers living in West Germany than for mothers living in East Germany (Jessen, 2022; Collischon et al., 2020; Bönke et al., 2019).

Third, I contribute to the literature focusing on the provision of public child care and maternal labor supply. The empirical results of the literature on the causal effects of expanding public child care are mixed for Germany (Müller and Wrohlich, 2016; Bick, 2016; Müller and Wrohlich, 2020) but also for other countries such as Norway (Havnes and Mogstad, 2011). Bick (2016) stresses the role of nonpaid, nonmaternal child care for the inconclusive results. Similarly, Havnes and Mogstad (2011) underline that the expansion of public child care might crowd out informal child care, leaving maternal labor supply unchanged. I contribute to this literature by ruling out more informal child care by fathers in East Germany compared to West Germany as a major channel of nonpaid and nonmaternal child care. Closely related to my analysis focussing on fathers, Pollmann-Schult and Reynolds (2017) investigate the actual and preferred labor supply of fathers in West Germany. Their primary finding indicates that, in West Germany, fatherhood has a minimal impact on the hours fathers

wish to work, and any changes in their preferences are effectively accommodated within the labor market. I add to their work by showing that there is no substantial difference in the accumulated labor supply of fathers in East and in West Germany.⁵ Regarding the division of labor within couples, Bünning (2020) shows that fathers who work part-time contribute more to domestic work (in both housework and child care), but only during their part-time employment.⁶ She relates parts of this result to a mix of time availability constraints, bargaining power, and gender ideologies. My study complements her work by investigating the labor-market attachment of fathers and mothers over the life cycle, also investigating differences in experience in part-time employment.

Fourth, the literature has emphasized differences in gender norms and attitudes towards female labor supply (see, e.g., Jessen et al., 2022) and towards maternal labor supply (see, e.g., Welteke and Wrohlich, 2019, Collischon et al., 2020 or Boelmann et al., 2021) for understanding differences in women’s employment patterns between East and West Germany (Müller and Wrohlich, 2020).⁷ The male bread winner norm has been prevalent in West Germany, whereas this is not the case for East Germany (Lippmann et al., 2020). East Germany has been shown to follow more gender-egalitarian norms in line with higher employment rates for women, and there has been a slow convergence in attitudes between East and West since reunification 30 years ago (Alesina and Fuchs-Schündeln, 2007; Bauernschuster and Rainer, 2012; Campa and Serafinelli, 2019; Beblo and Gorges, 2018; Bondar and Fuchs-Schündeln, 2022).⁸ Yet, in the existing literature, there is much less focus on what these more gender-egalitarian norms imply for the role of fathers in the household. I do not

⁵Using a policy reform in France, Périevier and Verdugo (2023) show that increasing the earmarked months of parental leave for fathers in 2015 did not lead to an increased participation of fathers in parental leave. On the contrary, the authors find a positive effect on father’s earnings. The increase of the earmarked months of paternal leave of fathers simultaneously leads to a shorter parental leave for mothers. The authors point out that the shorter parental leave for mothers could encourage fathers to actually work *more* instead of taking parental leave.

⁶Only fathers whose female partner works full-time, too, continue to provide more domestic work than before their part-time employment.

⁷See Giuliano (2020) for a review on changes in gender norms towards, among others, female labor supply.

⁸The summary assessment in Section 5.3 provides a more detailed discussion of the literature on social norms in East and West Germany.

find fundamentally different labor-supply behavior of East and West German fathers.⁹

In the broader context of OECD countries, Bertrand (2020) states that the main hurdles on the path to gender equality in the labor market are women's educational choices and their consequential decisions after becoming mothers. She stresses the importance of stereotypes about gender-specific skills and gender-specific roles as the drivers of the decision patterns of women. Using Germany as an interesting case with strong regional variation in both the raw gender wage gap, social norms, and maternal labor supply, I provide insights about whether East German men or fathers contribute to the regional differences by behaving differently in their labor market involvement compared to West German men.

3 Data

For the empirical analysis, I use the SOEP, a longitudinal survey run by the German Institute for Economic Research (DIW, Berlin).¹⁰ The yearly survey was first implemented in 1984 in West Germany, since 1990 it covers both East and West Germany. Importantly, the SOEP provides information on actual labor-market experience in years of full-time, part-time and unemployment experience. The DIW creates and provides the experience variables based on detailed monthly labor force status calendars in the individual questionnaires that allow to distinguish between full-time and part-time employment.¹¹ Respondents newly entering the SOEP are asked to report their labor force status in an annual calendar from the age of 16 up to the year of the survey. Even though also calendar reports suffer from retrospective bias (Jürges, 2007), the question format using calendar in the SOEP is more precise than the questions used in other surveys such as the Panel Study of Income Dynamics (PSID) where new respondents simply state the number of years they have worked full-time and part-time.

⁹The tax and transfer system is often mentioned in the context of low female and maternal labor supply in Germany. Since the tax system is the same in reunified Germany, it is unlikely to influence different labor supply rates in East and West Germany directly.

¹⁰Socio-Economic Panel (SOEP), version 36, 2021. For more details, see Goebel et al. (2019).

¹¹In the questionnaire of the SOEP, full-time employment is defined as working 35 hours per week or more, working part-time is defined as working 20 to 34 hours per week.

The measure of labor-market experience in the SOEP has several advantages compared to the measures obtained in other survey data (if available at all), e.g., the PSID. First, the experience measures in the SOEP are available for all respondents, not only for subsamples (e.g., reference person and spouse). Second, because of the employment calendars used, the DIW can distinguish between full-time and part-time experience. This is particularly important for my analysis of employment histories in Section 5. Third, the SOEP is a yearly survey and therefore there are no issues with gap years.

I perform the decomposition of the wage gap using survey year 2019 (the year before the start of the COVID pandemic), while my life-cycle analysis uses pooled survey years for the period 1990 to 2019. I exclude self-employed or disabled individuals, pensioners, farmers or individuals in military service. Further, I drop individuals who are not living in the household at the time of the survey or individuals with zero weights.¹² I also exclude individuals with missing or implausible experience information.¹³ For the different steps of my analysis, I use different subsamples of this baseline sample.

Sample for gender wage gap analysis. For the analysis of the gender wage gap in Germany in Section 4, I focus on a sample of employed men and women between 20 to 60 years old in survey year 2019. In this sample, I keep only individuals without missing wages and without missing values in explanatory variables.¹⁴ I exclude individuals who report a real log wage rate below the 0.5% percentile or above the 99.5% percentile, separately by gender and year. The sample for the gender wage gap analysis in 2019 consists of 4,418 men and 5,216 women.

In a robustness check where I implement the approach developed by Averkamp et al. (2024) using the German SOEP data, I additionally select on dual-earner households. For

¹²I use sample weights throughout.

¹³I define implausible experience information as values that imply that the individual has worked before the age of 15 (full-time and part-time employment are higher than the individual's age minus 14 years, the latter number being motivated by German child labor laws.).

¹⁴Following the treatment used in the official decomposition of the Federal Statistical Office (FSO), in my baseline analysis I also keep part-time employed individuals.

the dual-earner sample, I restrict the sample to couples (married or cohabiting) where, additionally, the spouse is employed, reports a positive hourly wage rate, and has no missing values in his/her (the spouse's) explanatory variables. Similar to the selection above, I exclude individuals with self-employed spouses and spouses in the military.

Sample for experience profiles. In Section 5, I investigate differences in experience accumulation between East and West Germany over the life cycle. For this analysis, I use women and men between age 25-55 from pooled survey years 1990 to 2019. The experience sample contains individuals who are currently employed or who have worked in the past and who have non-missing data for the explanatory variables included in the analysis (see Section 5). I exclude individuals whose last reported occupation is in the military and individuals for which the SOEP reports a positive number of children over the life cycle but for which the years of birth of the children are missing. The sample for the life-cycle analysis contains 120,459 person-year observations for men and 136,686 for women.

Hourly wage rates and explanatory variables. The hourly wage rate is calculated as monthly labor earnings divided by monthly actual hours worked (see, e.g., Holst and Marquardt, 2018; Selezneva and van Kerm, 2016; Tyrowicz et al., 2018).

For the wage-gap decomposition, I start from the standard specification of the wage equation in Blau and Kahn (2017) and extend it by variables used in the literature for the wage-gap decomposition in Germany (see e.g., Bauer and Sinning, 2010 and Fuchs et al., 2021). I include the individual's education (years of schooling and dummy variables for bachelor and master degrees), labor-market experience (years of full-time experience, years of part-time experience) (I describe these measures in more detail below), whether the individual has a migration background, a dummy for living in a rural area, as well as variables containing job information, such as industry (8 one-digit groups, based on NACE¹⁵), occupation (9 one-digit groups, ISCO-88 occupation code), union coverage, and

¹⁵NACE is the Statistical Classification of Economic Activities in the European Community. Due to low numbers of observations, I combine industry categories "Energy", "Mining", and "Other" into one category.

Table 1: Sample means by gender and region in SOEP, survey year 2019.

	Germany			West Germany			East Germany		
	Men (1)	Women (2)	Δ (3)	Men (4)	Women (5)	Δ (6)	Men (7)	Women (8)	Δ (9)
Number of observations	4418	5216		3573	4191		845	1025	
Real hourly wage (€)	18.8	15.3	3.4	19.4	15.6	3.8	15.2	13.9	1.3
Log real hourly wage	2.82	2.63	0.19	2.85	2.64	0.21	2.63	2.54	0.09
Years of full-time experience	17.9	10.8	7.2	17.8	10.2	7.6	18.5	13.8	4.7
Years of part-time experience	1.2	6.7	-5.5	1.2	7.0	-5.8	1.3	5.1	-3.9
Years of tenure	10.8	9.6	1.1	10.9	9.3	1.6	9.9	11.3	-1.4
Years of education	12.6	12.8	-0.2	12.6	12.8	-0.1	12.6	12.8	-0.2

Notes: Sample sizes and descriptive statistics for selected characteristics. Columns (1), (2), (4), (5), (7), and (8) show gender-specific weighted averages. Columns (3), (6), and (9) show male average minus female average.

whether the respondent is working for the government. I include years of tenure as an additional experience measure. Years of tenure are defined as the number of years the individual has been with his current employer. Further, I include a dummy for living in East Germany. For other job information, I include a dummy for working full-time, whether the individual has a permanent contract, whether the individual is paid according to a collectively agreed wage agreement, whether the wage is imputed by the DIW, and the size of the firm in terms of the number of employees.

For the extended decomposition proposed by Averkamp et al. (2024), I additionally include the corresponding labor-market experience, education, migration background, and job variables of the individual’s partner. I will refer to this as the “extended” specification of the wage equation.

Descriptive statistics. Table 1 shows gender-specific weighted means for the sample of employed individuals in Germany (columns (1)-(3)), West Germany (columns (4)-(6)), and East Germany (columns (7)-(9)). Columns (3), (6) and (9) show male minus female averages.

The gender wage gap in the sample for Germany is 19% in 2019.¹⁶ In the Western part of Germany, the gender wage gap is 21%, whereas the gap in East Germany is substantially smaller and amounts to 9%. To put these numbers into perspective, men in East Germany earn 1.3€ more per hour than women in East Germany, whereas in West Germany this gap

¹⁶This is in line with the official data on the gender wage gap for Germany provided by the FSO.

amounts to 3.8€.

The key variables in my analysis are the experience measures provided in the SOEP. On average, men have 7.2 years in full-time experience more than women. The gap in part-time experience is of opposite sign; women accumulate 5.5 more years in part-time employment than men. Gender gaps in terms of tenure are smaller compared to the other experience measures; men are on average one year longer with their current employer than women.

Concerning East-West differences, Table 1 shows that, across all experience measures, West German gender gaps are (in absolute values) larger than the gaps in all of Germany. East German gaps are considerably smaller than both. For example, the East-West difference in gender gaps in full-time experience (columns 6 and 9) is roughly three years. The gender gap in part-time experience amounts to almost six years in West Germany and almost four years in East Germany, leading to an East-West difference of roughly two years. Note that average experience of men is relatively similar between East and West Germany, while this is not the case for women. East German women have on average more full-time experience, less part-time experience and longer tenure than West German women. Thus, East-West differences in gender experience gaps are likely related to the different labor market choices of women in East and West Germany, which I will analyze in Section 5.

In line with the literature, there is no gender education gap anymore. If anything, women have slightly more years of education. Interestingly, there are no different patterns in East and West Germany for years of education.

In summary, Table 1 gives two insights: Firstly, it shows the differences in measures of labor-market experience between men and women in Germany. I will underline the relevance of these differences for the gender wage gap, see Section 4.1. Secondly, Table 1 highlights regional differences and similarities between East and West Germany for men and women. Differences are larger for women, while there are less differences for men. I present a closer investigation of these East-West differences in Sections 4.2 and 5.

4 Decomposing gender wage gaps in Germany

In this section, I perform Oaxaca-Blinder wage-gap decompositions for Germany. I will show that gender gaps in labor-market experience explain the largest parts in the gender wage gap. Then, I decompose the *East-West gap* in the gender wage gap into an explained and unexplained part. Also for understanding this “gap in the gap”, labor-market experience will be shown to be critical.

4.1 Oaxaca-Blinder decomposition of the gender wage gap in Germany

Standard decomposition. The first step of a standard Oaxaca-Blinder decomposition (Oaxaca, 1973; Blinder, 1973) is to estimate a log wage equation:

$$w_i = \beta_{g(i)} \cdot X_i + \epsilon_i, \quad (1)$$

where index g denotes gender (male, m , or female, f), $\beta_{g(i)}$ is a vector of coefficients, X_i is a vector of observable characteristics, and ϵ_i is a residual. Usually, the wage equation is estimated using data for men, $g = m$, because biases in the estimates for women are expected to be larger due to selection and potential labor-market discrimination.¹⁷

The gender wage gap is $\Delta = \bar{w}_m - \bar{w}_f$, where \bar{w}_g is the average log wage by gender. Following the standard Oaxaca-Blinder decomposition, the gender wage gap can be decomposed

¹⁷The decomposition does not require the estimation of *both* wage equations. Kitagawa (1955) was the first to propose a decomposition of differences between two populations into an explained and unexplained part. Her decomposition approach can be seen as a special case of the Oaxaca-Blinder decomposition.

into

$$\begin{aligned}
\Delta &= \bar{w}_m - \bar{w}_f = \hat{\beta}_m \bar{X}_m + \underbrace{\bar{\epsilon}_m}_{=0} - \left(\hat{\beta}_f \bar{X}_f + \underbrace{\bar{\epsilon}_f}_{=0} \right) \\
&= \hat{\beta}_m \bar{X}_m - \hat{\beta}_f \bar{X}_f \\
&= \hat{\beta}_m \bar{X}_m - \hat{\beta}_f \bar{X}_f + \hat{\beta}_m \bar{X}_f - \hat{\beta}_m \bar{X}_f \\
&= \underbrace{\hat{\beta}_m (\bar{X}_m - \bar{X}_f)}_{\substack{\text{Differences} \\ \text{in covariates} \\ \hat{\Delta}|_X \text{ ("explained")}}} + \underbrace{\bar{X}_f (\hat{\beta}_m - \hat{\beta}_f)}_{\substack{\text{Differences} \\ \text{in coefficients} \\ \hat{\Delta}|_\beta \text{ ("unexplained")}}} \tag{2}
\end{aligned}$$

where \bar{X}_g denotes gender-specific average characteristics and $\hat{\beta}$ indicates estimates. The decomposition yields an “explained” part of the gap,

$$\left(\hat{\Delta}|_X \right) = \hat{\beta}_m (\bar{X}_m - \bar{X}_f),$$

that is assigned to differences in observable characteristics and an “unexplained” part

$$\left(\hat{\Delta}|_\beta \right) = (\hat{\beta}_m - \hat{\beta}_f) \bar{X}_f \tag{3}$$

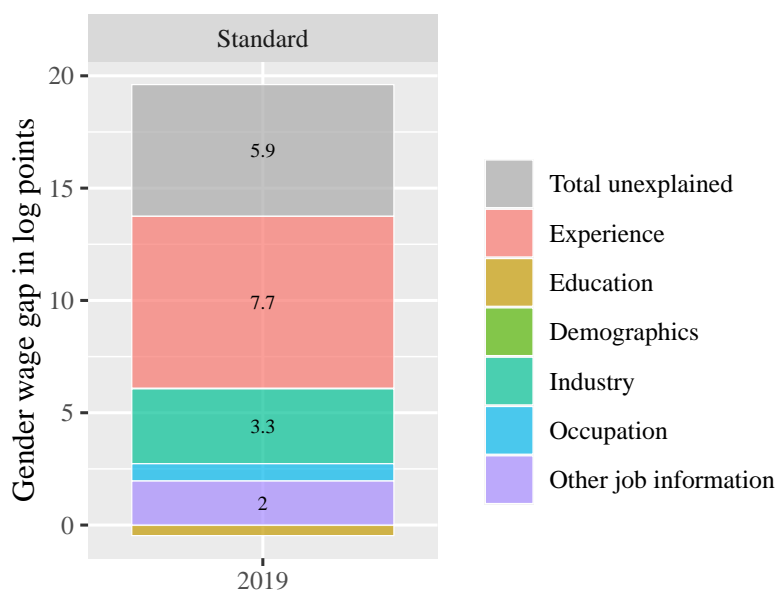
that this approach identifies as unrelated to observable characteristics.

Averkamp et al. (2024) propose to additionally include the characteristics *of the partner* into the wage equation (1) to take into account career-prioritization within dual-earner couples (“extended decomposition”).¹⁸ I will provide results for both the standard and extended approach.

Results for Germany as a whole. Figure 1 shows the decomposition of the gender wage gap in Germany in 2019, using the variables presented in Section 3. The total height of the bar shows the total gender wage gap in log points. In Germany as a whole, this gap is $\Delta = 19.1$ log points. The gray colored area of the bar indicates the part of the gender wage gap that cannot be explained by gender differences in observables, $\hat{\Delta}|_\beta$. The

¹⁸Using data for the U.S., they show that embedding the role of the family in the analysis of pay differences yields an unbiased decomposition.

Figure 1: Standard Oaxaca-Blinder decomposition of the gender wage gap using the SOEP.



total of the colored areas corresponds to the part of the gender wage gap that is explained by gender differences in covariates, $\widehat{\Delta}|_X$. The variable group “experience” (coral red) contains years of full-time and part-time experience, and years of tenure. The variable group “education” contains years of education and the variables related to the university degree. “Demographics” collects migration background, living in East Germany, and living in a rural area. Variable groups “Industry” and “Occupation” are self-explanatory.¹⁹ “Other job information” collects remaining job variables, working full-time, permanent contract, imputed wage, collective wage agreement, and firm size.

70% of the total gender wage gap can be related to gender differences in observables. Gender differences in measures of labor-market experience, indicated by the coral red area, are by far the largest contributing factor. 7.7 log points, or equivalently 40%, of the gender wage gap can be related to gender differences in experience. The second largest contribution, which is already substantially smaller, is associated with gender differences in industry shares, indicated by the turquoise shaded area.

In Appendix Figure A.1, I restrict the analysis to a sample of full-time employed indi-

¹⁹Working for government is attributed to “Occupation”.

Figure 2: Robustness checks using dual-earner sample.



viduals. In line with my baseline results, I find that the biggest share of the gender wage gap can be related to gender differences in labor-market experience.

Robustness check. As a robustness check, I also provide results using the extended decomposition developed by Averkamp et al. (2024). For this approach, one has to select on dual-earner households. For completeness, I first perform the *standard* decomposition using the dual-earner sample (panel (a) in Figure 2). The right panel (b) shows the results when additionally accounting for partner characteristics, following Averkamp et al. (2024).

In the dual earner sample, the gender wage gap is substantially larger (27.5 log points) compared to the main sample (19.1 log points). In line with the results for the U.S. reported by Averkamp et al. (2024), the extended approach explains larger shares of the gender wage gap (95%) than the standard approach (82%) (in the dual-earner sample).²⁰ In the dual-earner sample, results are even more pronounced regarding the role of gender experience gaps for the gender wage gap. Differences in labor-market experience explain 51% of the gender wage gap in the standard approach (panel (a) of Figure 2) and almost 60% of the gender wage gap in the extended specification (panel (b) of Figure 2). Experience is by far the most

²⁰ Apparently, both decomposition approaches explain higher shares in the dual-earner sample than the standard approach in the main sample in Figure 1.

important factor in explaining wage differences. The next two large contributing factors, in both approaches, are gender gaps in industry (in turquoise) and other job information (in light purple). All other variable group’s contributions to the gender wage gap are smaller than 2 log points in both approaches.

4.2 Decomposing the “gap in the gap”

The analysis of the gender wage gap in Section 4.1 has underlined the importance of gender experience gaps for wage differences. As a next step, I investigate the “East-West gap” in the gender wage gap, i.e., the “gap in the gap”. For this purpose, I derive a decomposition of the East-West gap in the gender wage gap into an explained and unexplained part in an Oaxaca-Blinder decomposition style.

Deriving a decomposition of the East-West gap in the gender wage gap. The gender wage gap in region R is $\Delta_R = \bar{w}_{m,R} - \bar{w}_{f,R}$, where $\bar{w}_{g,R}$ is the average log wage by gender (men, m , or women, f) in region R (East Germany, E , West Germany, W). To begin with, the gender wage gap in region R can be decomposed as²¹

$$\begin{aligned} \Delta_R = \bar{w}_{m,R} - \bar{w}_{f,R} &= \underbrace{\hat{\beta}_{m,R}(\bar{X}_{m,R} - \bar{X}_{f,R})}_{\substack{\text{Differences} \\ \text{in covariates, } \Theta_R^{\bar{X}}}} + \underbrace{\bar{X}_{f,R}(\hat{\beta}_{m,R} - \hat{\beta}_{f,R})}_{\substack{\text{Differences} \\ \text{in coefficients, } \Theta_R^{\hat{\beta}}}} \\ &= \underbrace{\hat{\beta}_{m,R}\Theta_R^{\bar{X}}}_{\hat{\Delta}|_X \text{ (“explained”)}} + \underbrace{\bar{X}_{f,R}\Theta_R^{\hat{\beta}}}_{\hat{\Delta}|_\beta \text{ (“unexplained”)}} \end{aligned} \quad (4)$$

where $\bar{X}_{g,R}$ denotes gender-specific average characteristics in region R , and $\Theta_R^{\bar{X}} = \bar{X}_{m,R} - \bar{X}_{f,R}$ measures the gender gap in average characteristics in region R . $\Theta_R^{\hat{\beta}}$ measures the gender gap in coefficients in region R .

Now define the difference between the gender wage gap in West and East Germany (the

²¹This initial step corresponds to a standard wage gap decomposition *by region* R , thus, a standard Oaxaca-Blinder decomposition performed separately for West and East Germany, respectively.

“gap in the gap”), Γ , as

$$\Gamma = \Delta_W - \Delta_E = \bar{w}_{m,W} - \bar{w}_{f,W} - (\bar{w}_{m,E} - \bar{w}_{f,E}). \quad (5)$$

With the expressions from equations (4) for East and West Germany, respectively, this can be written as

$$\Gamma = \Delta_W - \Delta_E = \hat{\beta}_{m,W} \Theta_W^{\bar{X}} + \bar{X}_{f,W} \Theta_W^{\hat{\beta}} - \left[\hat{\beta}_{m,E} \Theta_E^{\bar{X}} + \bar{X}_{f,E} \Theta_E^{\hat{\beta}} \right].$$

Extending by zero with $\hat{\beta}_{m,W} \Theta_E^{\hat{\beta}}$ and rearranging gives the “decomposition of the decomposition”:

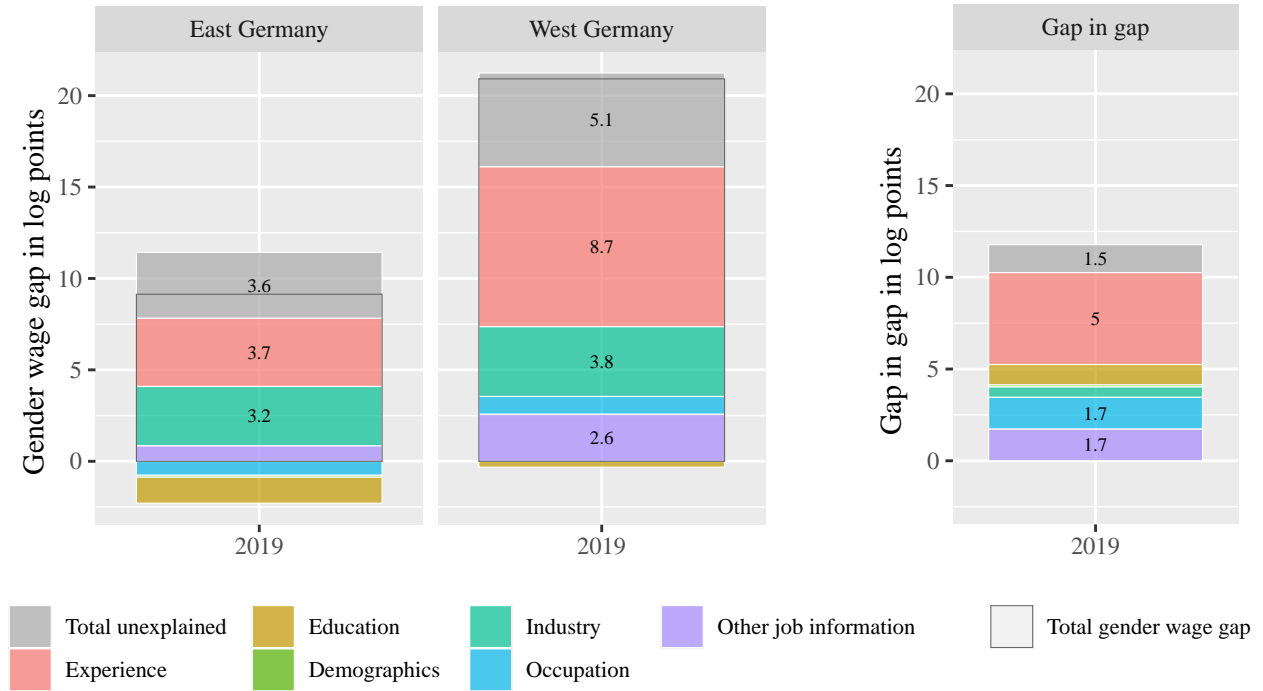
$$\begin{aligned} \Gamma = \Delta_W - \Delta_E &= \hat{\beta}_{m,W} \Theta_W^{\bar{X}} - \hat{\beta}_{m,E} \Theta_E^{\bar{X}} + \bar{X}_{f,W} \Theta_W^{\hat{\beta}} - \bar{X}_{f,E} \Theta_E^{\hat{\beta}} \\ &\quad + \hat{\beta}_{m,W} \Theta_E^{\bar{X}} - \hat{\beta}_{m,W} \Theta_E^{\bar{X}} \\ &= \underbrace{\hat{\beta}_{m,W} \left(\Theta_W^{\bar{X}} - \Theta_E^{\bar{X}} \right)}_{\hat{\Gamma}|_X \text{ (“explained”)}} + \underbrace{\Theta_E^{\bar{X}} \left(\hat{\beta}_{m,W} - \hat{\beta}_{m,E} \right)}_{\hat{\Gamma}|_\beta \text{ (“unexplained”)}} \\ &\quad + \underbrace{\bar{X}_{f,W} \Theta_W^{\hat{\beta}}}_{\hat{\Delta}|_\beta^W \text{ (“unexplained”)}} - \underbrace{\bar{X}_{f,E} \Theta_E^{\hat{\beta}}}_{\hat{\Delta}|_\beta^E \text{ (“unexplained”)}}. \end{aligned} \quad (6)$$

The first term on the RHS of equation (6), $\hat{\Gamma}|_X$, is the measure of interest. It measures the part of the East-West gap in the gender wage gap that is related to differences in gender *gaps* in observables between East and West Germany. This corresponds to the part of the East-West gap in the gap that can be “explained” by East-West differences in gender differences in observables. Note that this first term in the decomposition, $\hat{\Gamma}|_X$, also informs about the decomposition of the gender wage gap in East and West Germany (thus, by region), using the West German male wage equation.²² Specifically, the two components of $\hat{\Gamma}|_X$ in equation (6) identify $\hat{\beta}_{m,W} \Theta_E^{\bar{X}}$ and $\hat{\beta}_{m,W} \Theta_W^{\bar{X}}$, which I will plot below when discussing

²²I use the West German male wage equation for the decomposition of the gender wage gap in East and West Germany for similar reasons economists usually use the male wage equation instead of the female wage equation for the decomposition. The East German labor market is likely characterized by selection issues (Fuchs-Schündeln and Schündeln, 2009; Stawarz et al., 2020). Selective emigration from the East German labor market towards West Germany is likely to affect the coefficients of the East German male wage equation.

Figure 3: Decomposition of (gaps in) gender wage gaps in East and West Germany.

(a) By region, based on the West German male wage equation.



the results.

The second term on the RHS measures the part of the gap in the gap that is related to differences in male coefficients between East and West Germany. Adopting the terminology by Blinder (1973) and Oaxaca (1973), one may label this part “unexplained”. The last two terms on the RHS are the unexplained parts of the gender wage gaps for West and East Germany, respectively. By definition, they also contribute to the “unexplained” part of the gap in the gap.

Results. Figure 3a shows the decomposition of the gender wage gap in East Germany (left panel) and West Germany (right panel) based on the West German male wage equation. Specifically, I plot $\hat{\beta}_{m,W}\Theta_E^{\bar{X}}$ and $\hat{\beta}_{m,W}\Theta_W^{\bar{X}}$, which are the two components of the explained part $\hat{\Gamma}|_X$ in equation (6). The differences between both terms, and hence $\hat{\Gamma}|_X$, is shown in panel (b).

The total gender wage gap in East Germany amounts to 9.1 log points, which is graphically the sum of all white framed rectangles in the left panel of Figure 3a, or, aggregated,

the dark gray framed rectangle in this panel. With 20.1 log points the total gender wage gap in West Germany, indicated by the dark gray framed rectangle in the right panel of Figure 3a, is substantially larger.²³ Roughly 61% (75%) of the gender wage gap in East (West) Germany can be related to differences in observables.²⁴ In East Germany, gender differences in experience contribute 3.7 log points (41% of the gender wage gap), which is again the largest contributing factor. In West Germany, gender experience gaps explain 8.7 log points of the gender wage gap, which corresponds to 42% of the gender wage gap. Only gender differences in industry shares, and for West Germany also “other job information”, amount to sizable contributions in East Germany and West Germany. Again, gender experience gaps dominate the decomposition. This is especially the case for West Germany, where gender experience gaps are largest.

I now turn to the analysis of the “gap in the gap”, i.e., I investigate the East-West gap in the gender wage gap, $\widehat{\Gamma}$, from equation (6), and its decomposition into an explained and unexplained part, see Figure 3b. As before, I divide the gap in the gap into colored rectangles that can be related now to East-West differences in gender gaps in observables ($\widehat{\Gamma}|_X$) and the remaining unexplained part in gray (the sum of $\widehat{\Gamma}|_\beta$, $\widehat{\Delta}|_\beta^W$, and $\widehat{\Delta}|_\beta^E$). The bars can be interpreted analogously as before, only the variable groups now represent the contribution of *East-West differences* in gender differences in, for example, years of labor-market experience, to the gap in the gap.

The total East-West gap in the gender wage gap amounts to 11.7 log points. The major share (87%) of this gap in the gap can be related to East-West differences in gender differences in observables (again in coral red). East-West differences in gender gaps in experience are the major factor (43%) in explaining the gap in the gap. The other two sizable variable groups, with 15% respectively, are occupation shares (in sky blue) and other

²³These numbers are identical to the numbers for the wage gaps in West and East Germany reported in Table 1.

²⁴This already includes the variable groups with negative contributions.

job information (in purple).²⁵ Although other factors also contribute to the gender wage gap, East-West differences in gender experience gaps dominate. This pattern is even more pronounced in a sample of full-time employed workers, see Figure A.2 in the Appendix.

Having shown that East-West differences in gender experience gaps explain almost half of the East-West gap in the gender wage gap, I now take a closer look at the accumulation of such gaps over the life cycle.

5 East-West differences in experience accumulation

Women in West Germany accumulate substantially less years of labor-market experience than women in East Germany, see Table 1 in Section 3. Apparently, this difference results from differences in accumulated labor-supply decisions of women regarding full-time employment, part-time employment and labor-market participation between the East and the West. I now investigate what drives regional differences in gender experience gaps.

Often, East-West differences between female employment patterns are explained by the availability of public child care (Müller and Wrohlich, 2020). To illustrate this, I first offer descriptive evidence of the correlation between public child care coverage and maternal labor supply histories. Yet, even in a thought experiment where East and West Germany had the same provision of public child care, labor-supply decisions might still differ because industry and occupation structures are quite different between East and West Germany. While the literature has further discussed East-West differences in social norms and attitudes towards maternal labor supply as likely explanations,²⁶ a third reason why increasing public child care in West Germany might not be fully sufficient to boost maternal labor supply is that it might crowd out informal child care. To shed some light on this, I use a regression approach

²⁵This is in line with the study of Fuchs et al. (2021) who investigate the gender wage gap in NUTS 3 regions with IAB data. Their results indicate the importance of regional variation in firm size, occupation, tenure and, as their proxy for experience, age. This matches with my results with respect to East-West differences, where East-West differences in experience gaps (years of labor-market experience and tenure), firm size (“other job information”), and occupation explain large shares of the gap in the gap.

²⁶Section 5.3 provides a more detailed discussion of the literature on social norms in East and West Germany.

to compare otherwise similar men and women over their life-cycles.

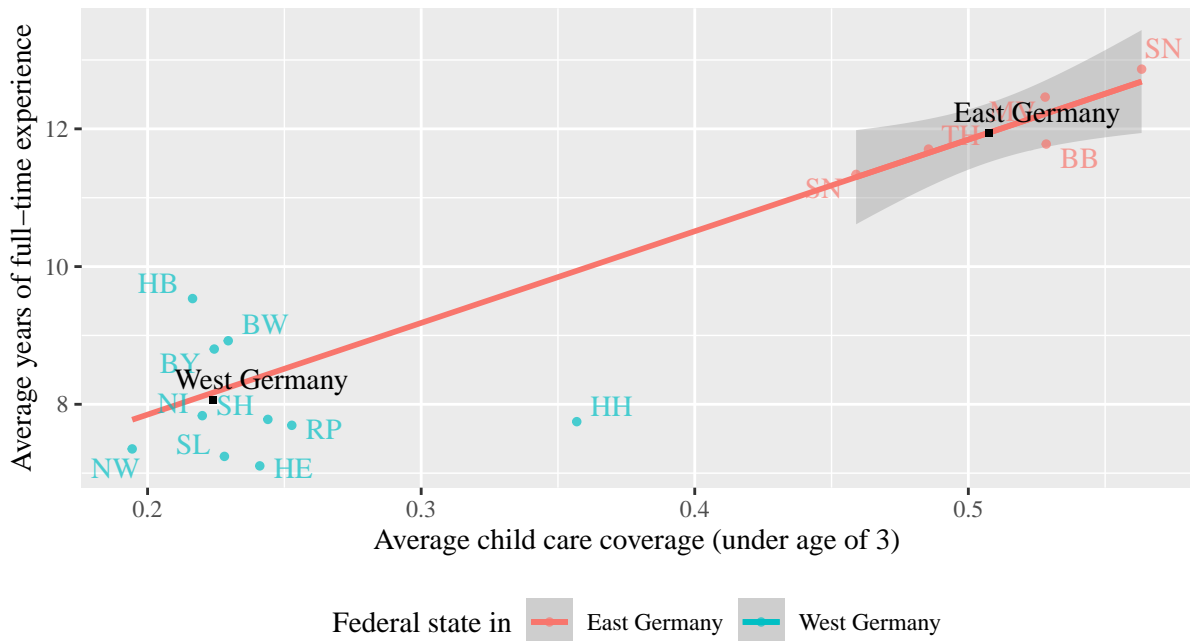
5.1 Descriptive evidence of the correlation between public child care coverage and maternal labor supply

There is a vast literature that documents differences in and positive effects of the expansion of public child care on the labor supply of mothers in Germany (Domeij and Klein, 2013; Bick, 2016; Zoch and Hondralis, 2017; Müller and Wrohlich, 2016). Studies using quasi-experimental policy reforms to quantify causal effects of the expansion of public child care find mixed results (see Müller and Wrohlich, 2020 for a short review). For example, Müller and Wrohlich (2020) underline that preferences for the quality of day care can also dampen the response of maternal labor supply. Specifically, Schober and Spiess (2015) find a negative correlation between group sizes in child care and maternal employment of mothers with children below the age of three in East Germany. Schober and Spiess (2015) point out that due to the lower availability of child care for children under the age of three in West Germany, parents in West Germany could have more doubts with regard to the quality of daycare. In addition, Havnes and Mogstad (2011) find that, in Norway, the extension of public child care does not increase maternal labor supply but mostly crowds out informal child care arrangements. Though not explicitly for East and West Germany, Chhaochharia et al. (2021) document lower motherhood penalties for German counties with higher child care provision.

Thirty years after German reunification, attendance rates for children under the age of 3 in East Germany (53% in 2019) are substantially larger than in West Germany (30% in 2019), see the Federal Statistical Office (2022).²⁷ To provide some descriptive evidence, I combine SOEP data on labor-market experience with data on child care coverage by federal state between 2007 and 2019 from the Federal Statistical Office (2022, Table ZR8). For

²⁷In all of Germany, there is excess demand for child care below the age of three (Wrohlich, 2008). Since 2016, the German Youth Institute (DJI) provides yearly reports that show that actual attendance rates are below parental needs for external care for children under the age of 3 (see, e.g. Kayed et al., 2023). Hence, attendance rates are likely close to the actual supply rates for child care.

Figure 4: Average child care coverage and mother’s full-time experience by federal state.



Notes: Dots show weighted averages by federal state, squares show weighted averages for East and West Germany. The regression line is plotted with a 95% confidence interval. Sample of mothers born in or after 1970.

maternal full-time experience, I use mothers born in or after 1970 who are 40 to 45 years old during 2010 and 2019 ($n = 9976$).²⁸

Figure 4 shows average child care coverage and full-time experience of mothers by federal states in East Germany (red dots) and West Germany (blue dots).²⁹ There is a positive correlation between child care coverage and full-time experience of mothers in East Germany, illustrated by the red regression line (the regression uses federal states in East Germany). Both child care coverage and full-time experience are substantially lower in West Germany. The association for West Germany (at lower levels of child care coverage) is not as clear as for East Germany. The black squares display the averages for East and West Germany (by construction, the mean for East Germany lies on the regression line). Interestingly, the West German average is close to the extrapolation of the regression line, indicating a similar pattern in West Germany. In this sense, one might say that West Germany could

²⁸Individuals are considered to be parents since the year of birth of their first child (biological or adopted). The birth year of the first child is provided by the SOEP. Information on children is asked in the biography interview at entry into the SOEP and updated during the participation in the SOEP.

²⁹Berlin is excluded.

potentially reach similar levels of full-time experience as East Germany if it had higher child care coverage. Yet, a more detailed analysis using microeconomic data is needed to take into account various effects, such as the industry and occupation structure, or differences in child bearing. I provide such analysis in the next sections.

5.2 Life-cycle regression approach

I measure differences between East and West Germany in the accumulation of labor-market experience over the life cycle using the following regression, estimated separately by gender

g

$$y_{it} = \alpha_{gy} \text{age}_{it} + \beta_{gy} \text{age}_{it} \times \text{east}_{it} + \gamma_{gy} X_{it} + \delta_{gy} \text{year}_t + \varepsilon_{it} \quad (7)$$

where y_{it} is a measure for years of labor-market experience of individual i in year t , age_{it} is a full set of age dummies, east_{it} is a dummy for living in East Germany³⁰, X_{it} is a vector of additional explanatory variables to be discussed below, and year_t are year dummies.

The coefficients α_{gy} give the average years of labor-market experience that an individual living in West Germany accumulates at his or her specific age. The coefficients on the interaction term, β_{gy} , are the coefficients of interest and give the average additional years of experience of an individual at a certain age living in East Germany compared to an individual of the same age living in West Germany. I do not include a separate East dummy in addition to the interaction term so that the coefficients β_{gy} capture the marginal effect of being a certain age while living in East Germany, facilitating a direct interpretation.

I use different measures of labor-market experience as dependent variable. The SOEP provides three measures directly, years of full-time experience, part-time experience, and years in unemployment. Because I am also interested in total labor supply histories, I

³⁰Mobility rates in Germany are low (Stawarz et al., 2020). During the sample period, there is net migration from East to West Germany (Fuchs-Schündeln and Schündeln, 2009; Stawarz et al., 2020), hence from the region where the experience gap is small to the region where it is larger. If there is an selection issue, it should lower the experience gap in West Germany and thereby cushion my results.

additionally combine those three measures to total years in the labor force.

I estimate equation (7) as baseline specification without additional control variables, and with two sets of additional explanatory variables described below. Appendix B.1 discusses descriptive statistics on the key variables included in the analysis.

5.3 Estimation results for women & mothers

I first present estimation results for women.

Full-time experience. Figure 5 shows point estimates and 95% confidence intervals of $\hat{\beta}_{gy}$ from equation (7), using full-time experience as dependent variable.³¹ I consider three samples: All women (first panel in Figure 5), women who have children (second panel), and women who do not (yet) have children (third panel).³² The coefficients plotted in the figure show the additional average years of full-time labor-market experience of a women living in East Germany compared to a women of the same age living in West Germany. If the confidence interval overlaps with zero, the coefficient is not statistically significant.

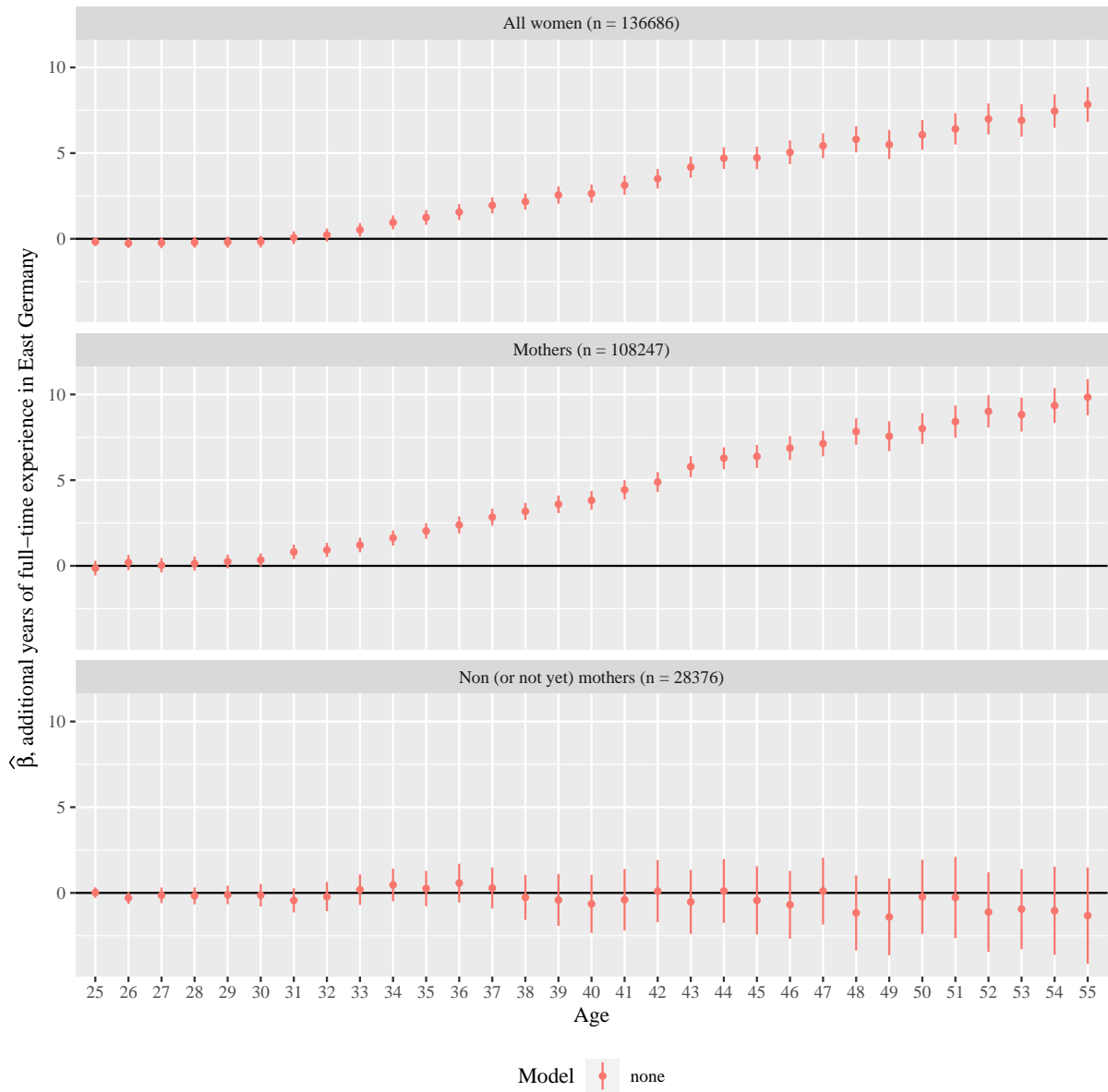
Below age 33, there is almost no difference in the accumulation of years of full-time experience between East German and West German women (top panel; all women). After the age of 33, there emerge significant and quantitatively important differences between East and West German women. East German women accumulate substantially more years of full-time experience than West German women. This difference increases with age to up to more than 7.5 years at age 55.

The second panel in Figure 5 shows the results for mothers. For mothers, differences in full-time experience emerge slightly earlier in the life cycle and diverge stronger, resulting in a difference of 10 years at the age of 55. Differences in experience accumulate over the life cycle and there is no stagnation pattern, so that there results a persistent difference in employment patterns. West German mothers work significantly less years in full-time em-

³¹Standard errors are heteroscedasticity robust throughout.

³²As pointed out by the literature, children are one of the remaining pain points (Bertrand, 2020).

Figure 5: Years of full-time experience, samples of women (employed and non-employed).



Notes: Dots are point estimates from the regression model without additional covariates. Lines are 95% confidence intervals based on heteroscedasticity robust standard errors.

ployment than East German mothers. The *ongoing* accumulation over the life cycle indicates that, apparently, many mothers in West Germany do not return to full-time employment for a number of years.³³

A different picture emerges for the sample of women who do not (yet) have children (bottom panel in Figure 5). For childless women, no significant differences between East and West Germany arise at any point over the life cycle.³⁴

These results show that the overall differences in full-time experience are driven by the different labor-supply decisions of *mothers* in East and West Germany. In the following, I will therefore focus on the sample of mothers. Results for the samples of all women or non-mothers are available in Appendix B.

Conditioning on observable variables. Potentially, the documented differences between mothers in East and West Germany are due to differences in observable characteristics, such as education, number of children or the industry mix. Therefore, I now investigate whether the documented differences between mothers shrink or even disappear once the effects of control variables have been accounted for. The choice of control variables is guided by the literature on maternal labor supply.

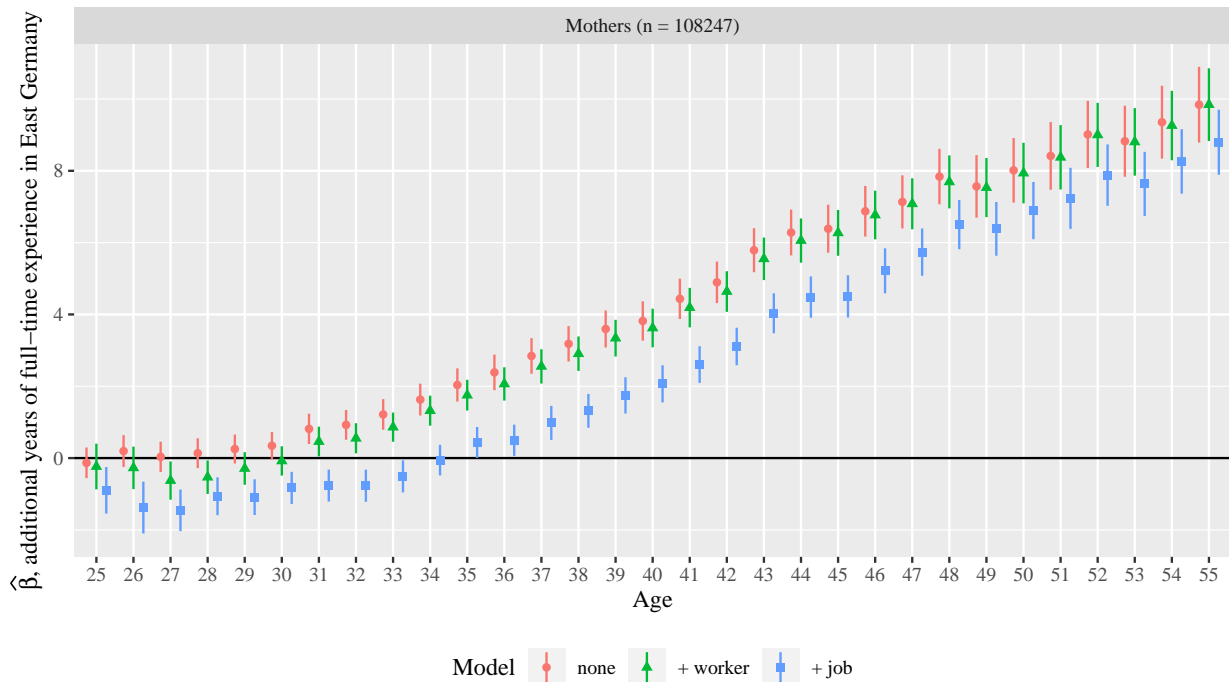
The results for mothers are summarized in Figure 6. For comparison, I repeat the estimates from the model without controls, displayed in red and with point shape. The first set of controls contains worker characteristics (“worker”). I include marital status, whether the individual was ever married, the number of children over the life cycle (as dummies), years of education and whether the individual has some tertiary degree.³⁵ The results for this specification are plotted in green triangles. I find that including worker characteristics leaves the coefficients on the interaction terms mainly unchanged. Hence, controlling for education

³³As a thought experiment, with the average women having two children, the 10 years difference in full-time employment at the age of 55 is even larger than an anticipated career interruption due to the lack of child care for children below the age of three in West Germany.

³⁴For older women, the confidence intervals are larger due to the small number of observations. If anything, West German women accumulate slightly *more* years of full-time experience.

³⁵Detailed information on tertiary education is available from 2010 onwards.

Figure 6: Years of full-time experience, samples of mothers, with different sets of covariates.



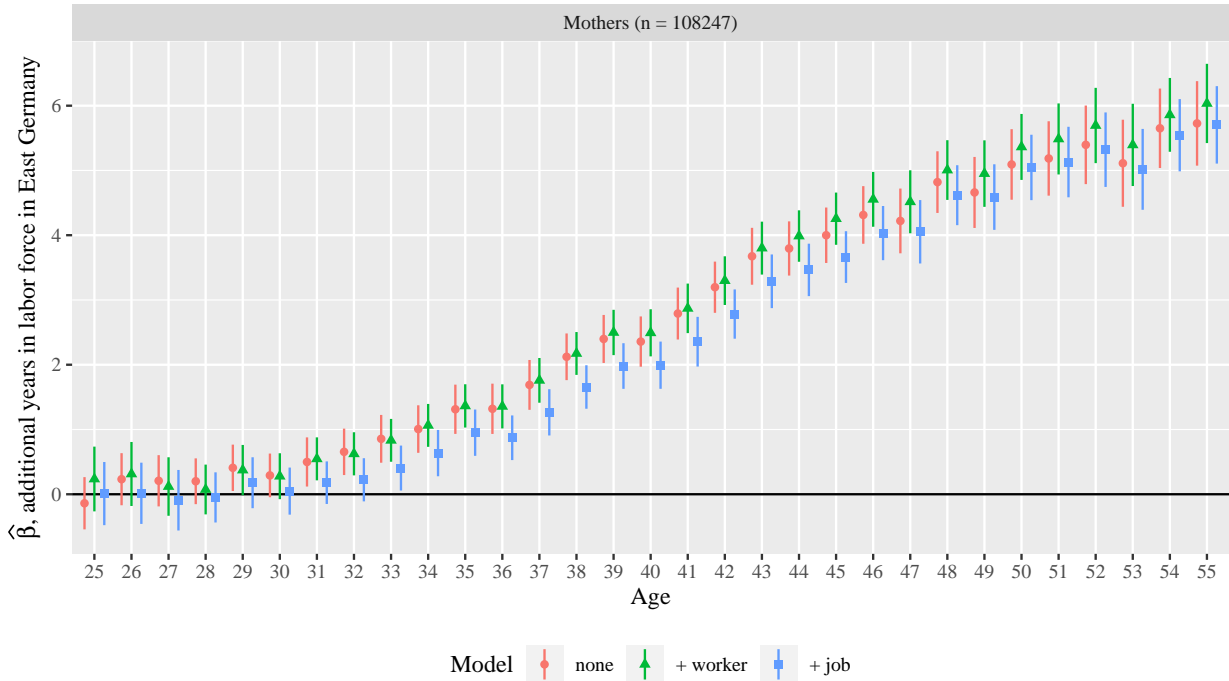
level and the family situation does not reduce East-West differences in the accumulation of full-time experience, neither for mothers, nor for non-mothers (compare Figure B.3 in the Appendix).

As a second specification using control variables, I additionally include job characteristics (“job”). Here, I add to the previous model a dummy for currently working full-time, the last reported occupation (9 one-digit groups, ISCO-88 occupation code) and the last reported industry (8 one-digit groups, based on NACE).³⁶ The estimates are plotted in blue squares. Including job characteristics reduces East-West differences in years of full-time experience for mothers, especially in their late 30s and early 40s. However, the difference between East and West German mothers still amounts to up to 9 years.

Total years in labor force. In West Germany, the share of women working in full-time employment is lower than in East Germany. It could be that East-West experience differences for mothers diminish when we include part-time experience in the analysis. I therefore now use *total years in the labor force* as dependent variable to account for experience in part-

³⁶In order to avoid a selection on currently employed individuals, I use information on last reported industry and occupation.

Figure 7: Years in labor force, samples of mothers, with different sets of covariates.



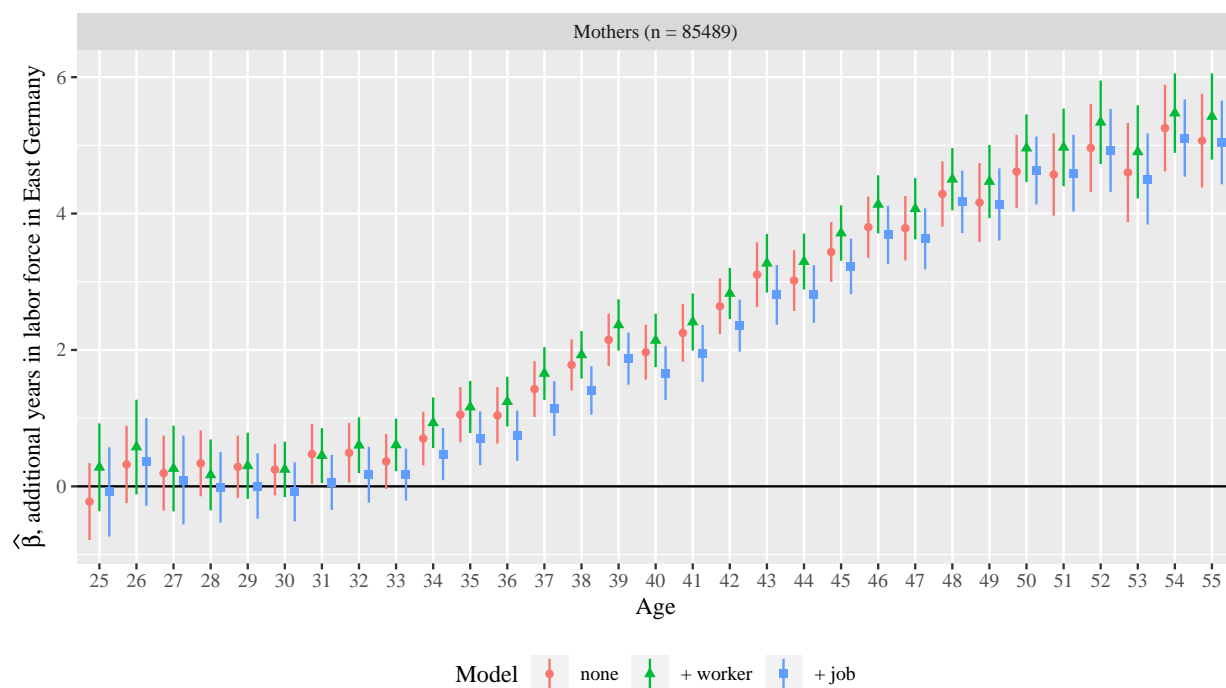
time employment and unemployment.³⁷

Figure 7 shows the results. Again, I consider two sets of explanatory variables, indicated by color and point shape. As expected, for years in the labor force, differences between East and West German mothers at the same age are smaller than for full-time experience. Yet, the differences accumulate to almost 6 years at the age of 55 which is still a sizable gap. Similar to the patterns in Figure 5 and 6, differences start to become significant after the mid-thirties of mothers. The analysis using control variables (green and blue markers in Figure 7) shows that the differences prevail even when accounting for worker and job characteristics, including education, the number of children over the life cycle, and the industry and occupation mix.

Currently employed women. For completeness, I also consider a sample of currently employed women, which yields a sample that is more similar to the one used for the analysis

³⁷Appendix Figure B.9 shows differences in the years of part-time experience over the life cycle. As expected, West German mothers accumulate significantly more years of part-time experience than their East German counterparts. East-West differences for non-mothers are insignificant. Appendix Figure B.10 shows differences in years of unemployment. Across all subsamples, women in East Germany accumulate one year more in unemployment.

Figure 8: Years in labor force, samples of currently employed mothers, with different sets of covariates.

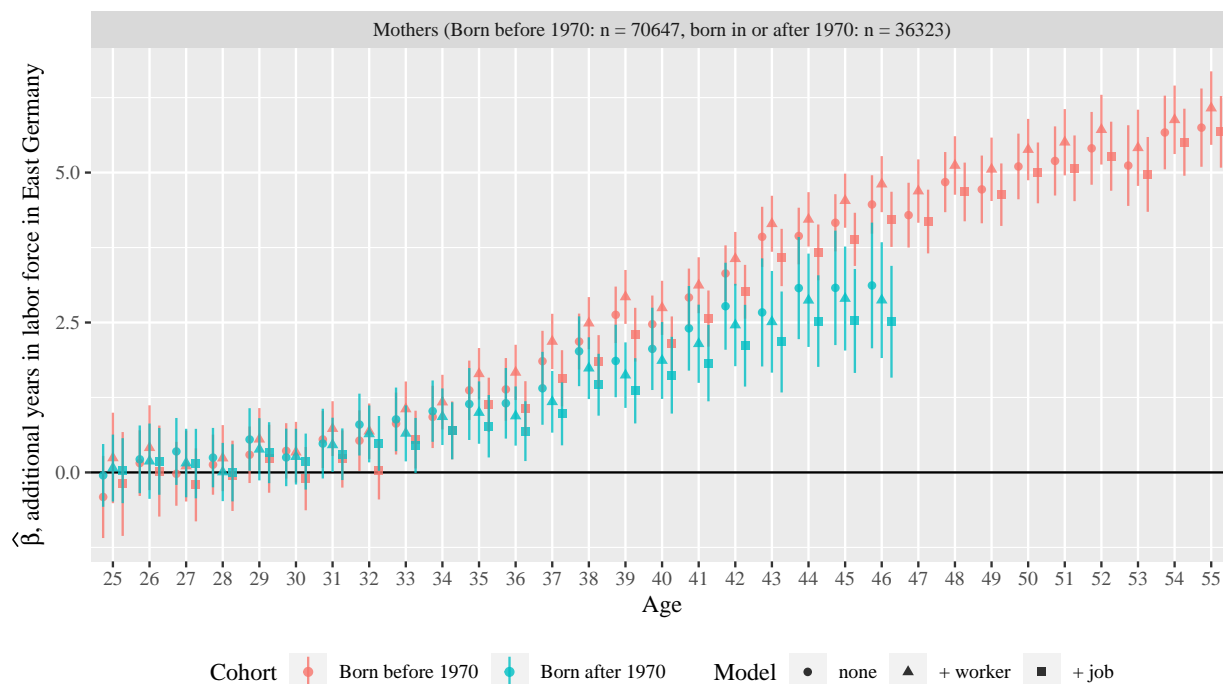


of the gender wage gap in Section 4. By focusing on currently employed mothers, I rule out that the large experience gaps are driven by (probably West German) mothers who do not return to the labor market at all. The sample size changes from 108,247 by roughly 22,700 observations to 85,489 currently employed mothers.

Figure 8 shows the results. I find that focusing on only currently employed women yields similar patterns as in the baseline sample.

Sample split by cohort. Zoch (2021) starts her cohort analysis on changes in gender attitudes in East and West Germany with the cohort born in 1971. Mothers born after 1970 have worked most of their lives in reunified Germany and are very likely to become mothers only after the reunification of Germany during which they were 20 years old or younger. Thus, East and West German mothers in the younger cohort share the same laws and regulations with regard to, e.g., labor protection during motherhood, parental leave, parental allowances, and the tax system. Also, the younger cohort has not used public

Figure 9: Years in labor force, samples of women (employed and non-employed) born before and in/after 1970, with different sets of covariates.



child care provided by the GDR, but only child care provided in reunified Germany.³⁸ The majority of mothers in the older subsample, born before 1970, have given birth before the reunification of Germany, with different institutional settings in East and West Germany.

I therefore consider a sample split into pre/post 1970s cohorts.³⁹ Again, I estimate three different regressions. Figure 9 shows the results for years in the labor force, split by year of birth (born before 1970 in red and born during or after 1970 in blue). Again, I focus on the results for mothers.⁴⁰ For both cohorts, significant differences between East and West German mothers arise in their mid 30s. For the younger cohort, differences amount to 3 years at the age of 46 and including different sets of covariates does not reduce these differences considerably.

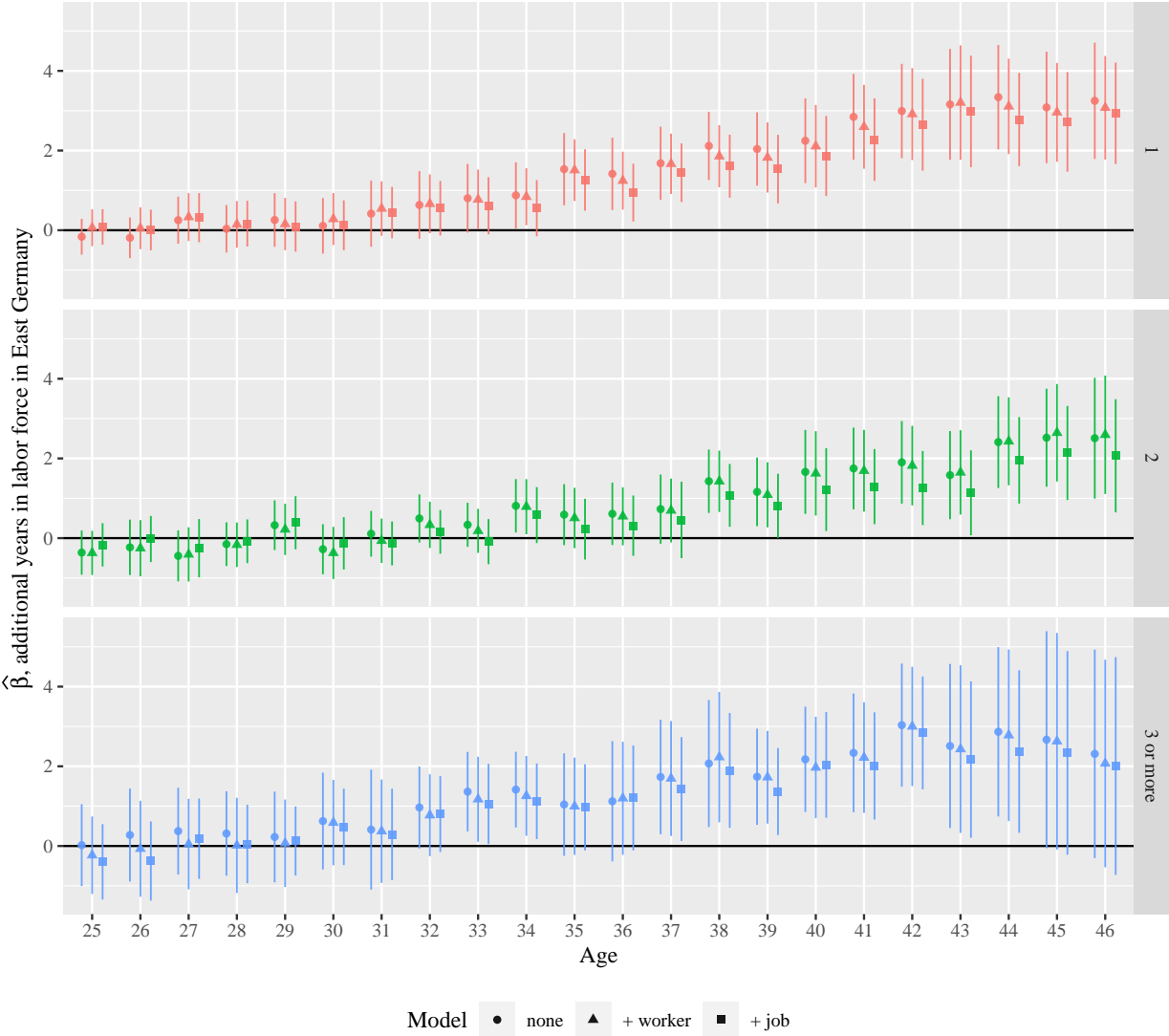
For this age range, where both cohorts are observed (30s and 40s), differences between

³⁸During the 1990s, public child care coverage for children under the age of 3 was substantially higher in East Germany (36% in 1998) than in West Germany (3% in 1998). For comparison, in 1989 in the former GDR, the child care coverage for children under the age of 3 was 56% (Dittrich et al. 2002, p. 100).

³⁹Since the last survey year is 2019, I include mothers up to the age of 46 from the younger cohort. The oldest age groups in the younger cohort from age 47 to 49 only have few observations and are therefore not included.

⁴⁰Figure B.7 in the Appendix shows the results for the different subsamples of women (all, mothers, and non-mothers).

Figure 10: Years in labor force, by number of children over the life cycle, samples of mothers born in or after 1970.



East and West German mothers are somewhat *larger* for the older cohort, in line with expectations. For the older cohort, East-West differences continue to rise until the age of 55 up to more than 5 years for mothers.

Overall, the analysis for the younger cohort yields quite similar patterns as for the older cohort. In the age range that can be compared for both cohorts, there are somewhat smaller differences in the younger cohort, but the differences between East and West remain quantitatively considerable. Appendix B.2 provides additional results for the pre/post 1970s cohort sample split that overall convey the same pattern.

Number of children. I now investigate whether experience gaps depend on the number of children. Figure 10 shows the life-cycle experience gaps of mothers in the post 1970s birth cohort sample by number of children. Since the individuals are born in or after 1970, we can assume that most of them gave birth in reunified Germany, hence the same maternity leave and paternal leave policies applied. Note that the scaling in this figure is different, since this evaluation by construction cannot include individuals in their 50s which is the age range where accumulated differences in labor-market experience are most pronounced. The visual impression therefore initially suggests rather substantial differences compared to the previous figures, but these differences are primarily due to the fact that individuals with a higher age are absent here (and the sample is the post 1970s birth cohort sample).

I find that there is no linear effect in the number of children, as experience gaps are largest (roughly three years) for mothers with only one child. Independent of the number of children, the experience gap between East and West German mothers at age 45 is roughly two and a half to three years (depending on the specification).

One pattern that could explain why experience gaps are rather independent of the number of children are differences in the timing when children enter external child care. Assume, for example, that West German mothers use external child care when the child is three or four years old, whereas East German mothers use external child care already when the child is one year old.⁴¹ This difference yields a two to three year gap in experience for mothers with one child. Assume now, for women with more than one children, that they give birth to their children every two years. In this example, a woman in West Germany stays at home for the first child, gives birth to another child after two years and stays out of the labor force until the youngest child enters child care at the age of four. This West German mother stays out of the labor market for $(2 + 4)$ six years. Her East German counterpart

⁴¹This is in line with data on child care coverage for children under the age of three in Germany. Since decades, attendance rates for children under the age of 3 are substantially larger in East Germany (36% in 1998, 41% in 2007, 52% in 2019) than in West Germany (3% in 1998, 10% in 2007, 30% in 2019), see Dittrich et al. (2002) and Federal Statistical Office (2022).

stays at home with the second child until it is two years old, with a career interruption of $(2 + 2)$ four years. The East West gap then is two years.⁴² This example illustrates that a stable experience gap across different numbers of children between mothers in East and West Germany can be rationalized with the different timing of the start of external child care in East and West Germany.

Social Generations. Many studies report persistence of culture and attitudes over generations (see, e.g., Alesina and Fuchs-Schündeln, 2007; Campa and Serafinelli, 2019; Giuliano, 2020; Zoch, 2021). It is therefore interesting to examine whether East-West differences in experience accumulation over the life cycle show different patterns for different social generations. Such an analysis is similar in scope as the sample split by birth cohort discussed before, though providing a more detailed picture.

I define social generations by birth year as follows: silent generation (born between 1928 - 1945), baby boomer (1946-1964), generation X (1965-1980) and generation Y (1981-1995).⁴³ I then estimate equation (7) separately for each generation.⁴⁴ Figure 11 displays the results for years in labor force for the baseline sample of employed and non-employed mothers. The social generations are indicated by colors, the models without and with covariates by point shapes. As before, controlling for worker and job characteristics does not have a big impact on the estimated East-West gaps in general.

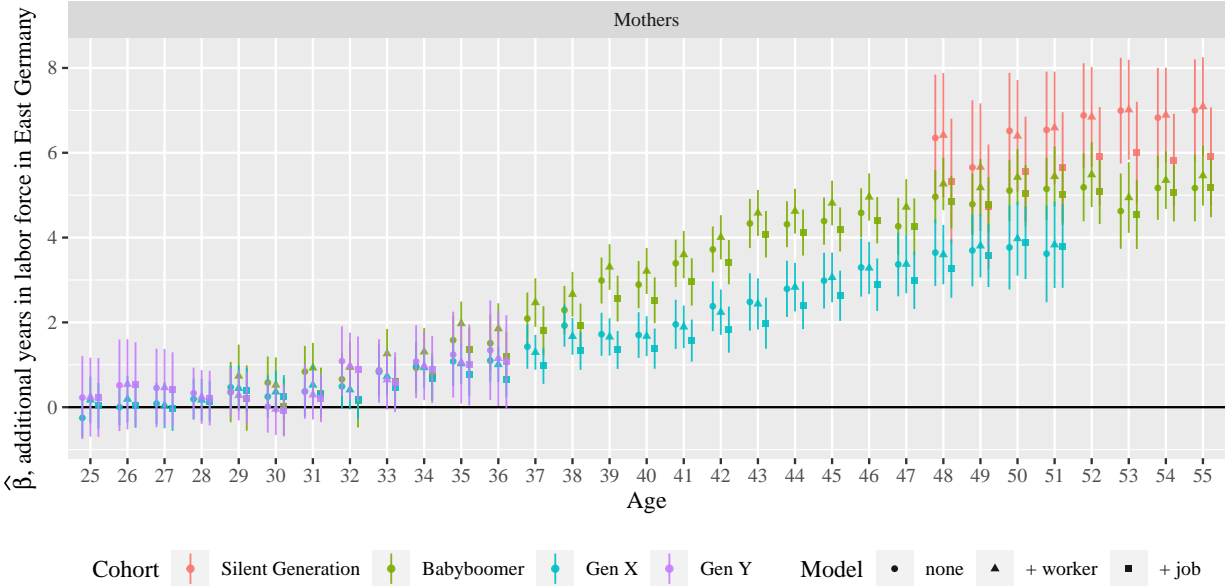
Figure 11 shows higher average gaps at the end of the life cycle for the earlier birth cohorts. Mothers from the silent generation show the highest East-West gaps in years in labor force with a gap of 7 years. The silent generation has been born before the division of

⁴²Applying the example to a situation with three children, the West German mother would stay at home until the youngest child is four years old, leading to a career interruption of $(2 + 2 + 4)$ eight years. The East German women would stay at home until the last child is two years old, leading to a labor-force interruption of $(2 + 2 + 2)$ six years. Again, the experience gap between East and West German mothers is two years.

⁴³Birth years for classifying social generations are not uniquely defined in the literature (Costanza et al., 2012). I use the definitions above to compare patterns across older and younger birth cohorts, while alternatives are possible, e.g., distinction by birth decades. For social generations, many dimensions interplay, e.g., birth setting, work environment, or child care institutions. Figure B.4 in the Appendix shows the age ranges of the social generation in the sample.

⁴⁴Year dummies are omitted here. For each generation, I drop the age groups at the top or bottom with too few observations (the age range is 25-55 as before).

Figure 11: Years in labor force, samples of employed and non-employed mothers, by social generation.



Germany and after growing up in the “German Reich” and the early years of the division, they spent most of their working lives under the two different regimes, in socialist East Germany and in capitalist West Germany.⁴⁵ The baby boomer, who were born during the division, accumulate a gap of 5 years, which is roughly two years smaller than that of the silent generation. In East Germany, these two generations have worked under institutions and polycys aiming for and in support of high female employment (paid maternity leave, public child care), whereas in West Germany the male bread-winner model was prevalent (Campa and Serafinelli, 2019). This is different for the younger generations, who show again slightly lower gaps compared to the Babyboomers. Generation X, who were 10 to 25 years old at German reunification, grew up during the division, but their working life mainly takes place after the reunification, with (former) West German institutions. And generation Y, who were younger than 10 years at the time of reunification, grew up during the 80s and 90s and have worked only in reunified Germany. Hence, for the two younger generations there are no differences in taxes or labor laws between East and West Germany. However, my results show that East-West gaps still prevail, clearly visible for generation X with a

⁴⁵Figure B.5 illustrates the age ranges of the social generations between 1950 and 2019.

year gap between mothers in East and West Germany at the age of 50. I observe generation Y until their mid-thirties, where East-West differences only begin to emerge. But the trend seems to be the same as for generation X.

Summary assessment & discussion. One wonders why East-West differences are still that dominant, even if the younger generations have barely lived under the socialist regime and we look at labor-supply decisions that are made more than 20 years after reunification. Put differently, an open question is why East German mothers, e.g., of the generation X, come to work 4 years more than West German mothers *under the same laws and regulations*. My analysis cannot explicitly answer this question. One might conjecture that prevailing differences in child care coverage for very young children play an important role (see Section 5.1). In addition, prevailing differences in gender norms or attitudes towards female/maternal labor supply in East and West Germany might be important, as argued by Boelmann, Raute, and Schönberg (2021), Campa and Serafinelli (2019) and others.

A large literature has documented differences in social norms between East and West Germany long after the reunification and their slow convergence, e.g., in studies on political attitudes (Alesina and Fuchs-Schündeln, 2007; Bondar and Fuchs-Schündeln, 2022), gender roles (Bauernschuster and Rainer, 2012, Jessen, 2022), and attitudes towards female and maternal employment (Beblo and Görges, 2018; Campa and Serafinelli, 2019; Lippmann et al., 2020; Zoch, 2021; Boneva et al., 2021). For example, Campa and Serafinelli (2019) use a spatial regression discontinuity design at the former border to show that women in East Germany value the importance of work and career higher than their West German counterparts.⁴⁶ Recently, the horizontal transmission of gender norms is the subject of several studies exploiting migration between East Germany and West Germany. Main results

⁴⁶Building a bridge between the expansion of public child care and gender ideologies, Zoch and Schober (2018) offer insights on the effects of the expansion of public child care on the attitudes of parents towards working mothers. However, their insights are somewhat inconclusive. They find a change towards less traditional gender ideologies for West German mothers in counties with low child care coverage. But for East German mothers, they find a change to more gender traditional gender ideologies in response to an expansion of public child care. These results are possibly related to the education level.

are that East German mothers stick to their labor supply pattern despite West German surroundings (Collischon et al., 2020; Jessen, 2022; Boelmann et al., 2021). In addition, with sufficiently many East German peers arriving around, (native) West German women and mothers increase their labor supply in West Germany (Jessen et al., 2022; Jessen, 2022; Boelmann et al., 2021). Both findings indicate cultural diffusion, but only in the direction towards a more gender egalitarian culture.⁴⁷ Related to preferences for conformity to peer behavior, Welteke and Wrohlich (2019) find causal peer effects on the decision of mothers regarding how long to take parental leave using a policy reform and employer-employee data for Germany. Interestingly, they find smaller reform and smaller peer effects in East Germany compared to West Germany. In line with the literature above, the authors explain this finding with smaller changes in social norms in East Germany.

My results are in line with the positive attitudes and social norms towards working mothers in East Germany. Note that the literature discussed above refers to a more gender egalitarian culture in East Germany, but does not explicitly deal with a higher involvement of fathers in housework and child care. This is yet another possible explanation for the prevailing East-West differences that follows from intra-household specialization and is hence a family-economics argument. It might be that East German *fathers* reduce their labor supply in a way that differs from the behavior of West German fathers. In contrast to differences in the availability of external child care mentioned before, this explanation relates to differences in *informal* child care. I investigate this hypothesis in the next section.

5.4 Estimation results for men & fathers

The previous analysis has documented pronounced differences in labor-market experience between East and West German women, in particular, mothers. I now investigate whether men or fathers in East Germany contribute to this gap.⁴⁸ It could be that East German

⁴⁷See Giuliano (2020) for a review on changes in gender norms towards, among others, female labor supply.

⁴⁸Men are considered to be fathers since the year of birth of their first child (biological or adopted), provided by the SOEP. Before 2001, men were not explicitly asked about their children's birth years and information

men (fathers) reduce their labor supply and thereby enable their female partners to work more than their West German counterparts.

Whether this candidate explanation is relevant is an empirical question and hence interesting to examine. There is a recent study for France investigating child care provided by fathers. Using a policy reform, P erivier and Verdugo (2023) show that increasing the earmarked months of parental leave for fathers in France in 2015 did not lead to an increased participation of fathers.

Full-time experience. Similar to the analysis of women’s experience gaps, I estimate equation (7) on samples of employed or non-employed men, aged between 25 and 55. Again, I start with years of full-time experience as dependent variable in a regression without further covariates. If East German fathers spent less time in full-time employment than West German fathers, the coefficients on the interaction effect would be *negative*.

Figure 12 shows the estimated interaction-term coefficients β_{gy} for all men, for fathers and for non- or not yet fathers. The first panel shows that East German men do *not* accumulate significantly less years of full-time experience than their West German counterparts. There is a slight negative trend for the older age groups, but differences are not significant. A similar picture emerges for fathers, see the second panel in Figure 12. East German fathers accumulate almost one year of full-time experience less than their West German counterparts, but this gap is small. The negative gap is statistically significant for fathers only in their early 30s, it then vanishes after their mid-30s and reappears in their 50s. The third panel shows the results for non-fathers. There are no significant differences.

Figure 13 shows the results for fathers when control variables are included. Similar to the analysis for women, including control variables changes the estimates on the interaction term only slightly. The general pattern for men is that including more control variables about fatherhood is underestimated in the SOEP as only the context of the household is available to determine the respondents biological children. Still, this should not be a problem for my analysis, since any possible error is made for both regions (East and West) in the same way. The shares of men that are parents in survey years before 2001 are close to 50%, thereafter numbers are close to 60%.

Figure 12: Years in full-time experience, samples of men (employed and non-employed).

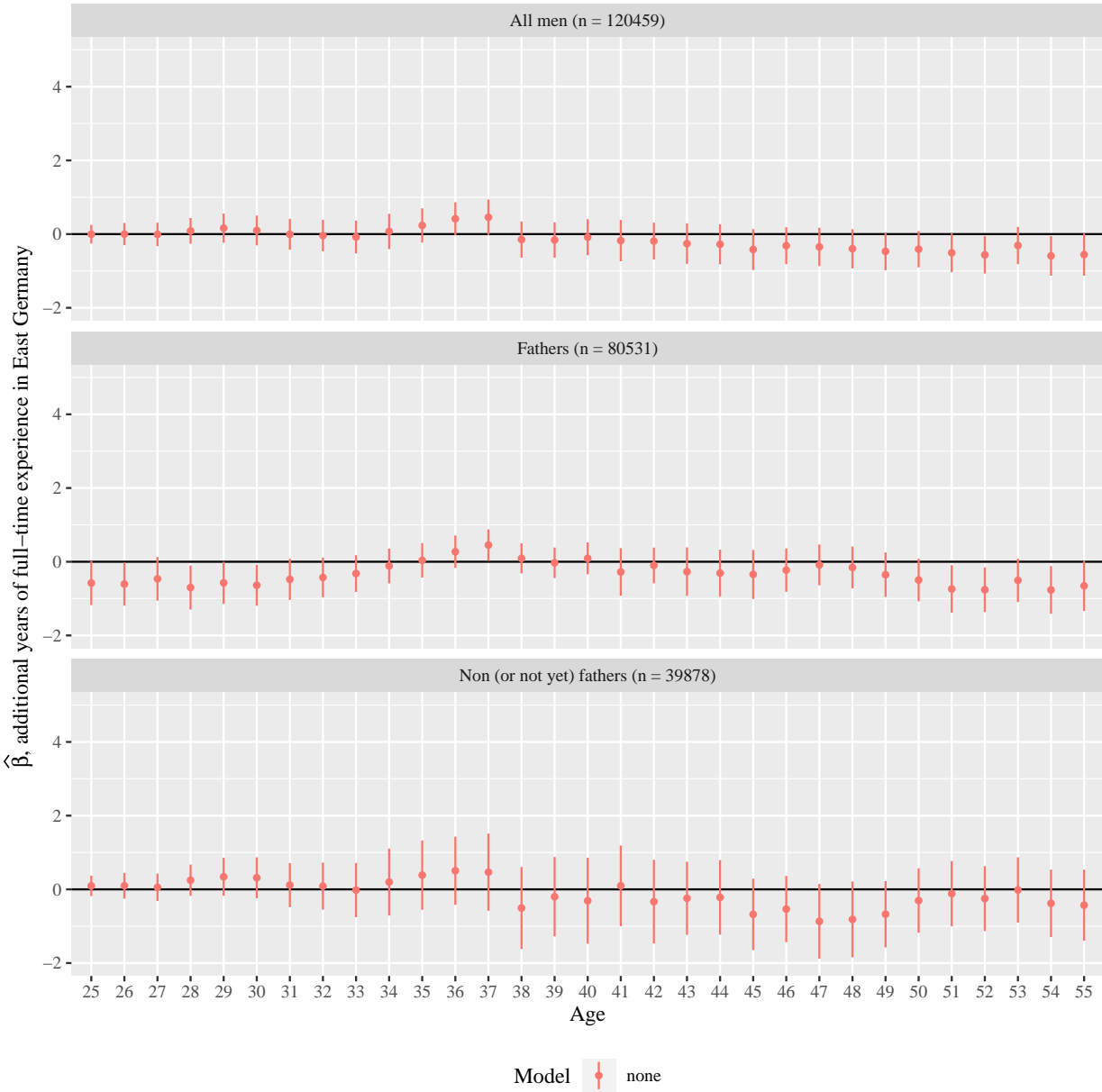
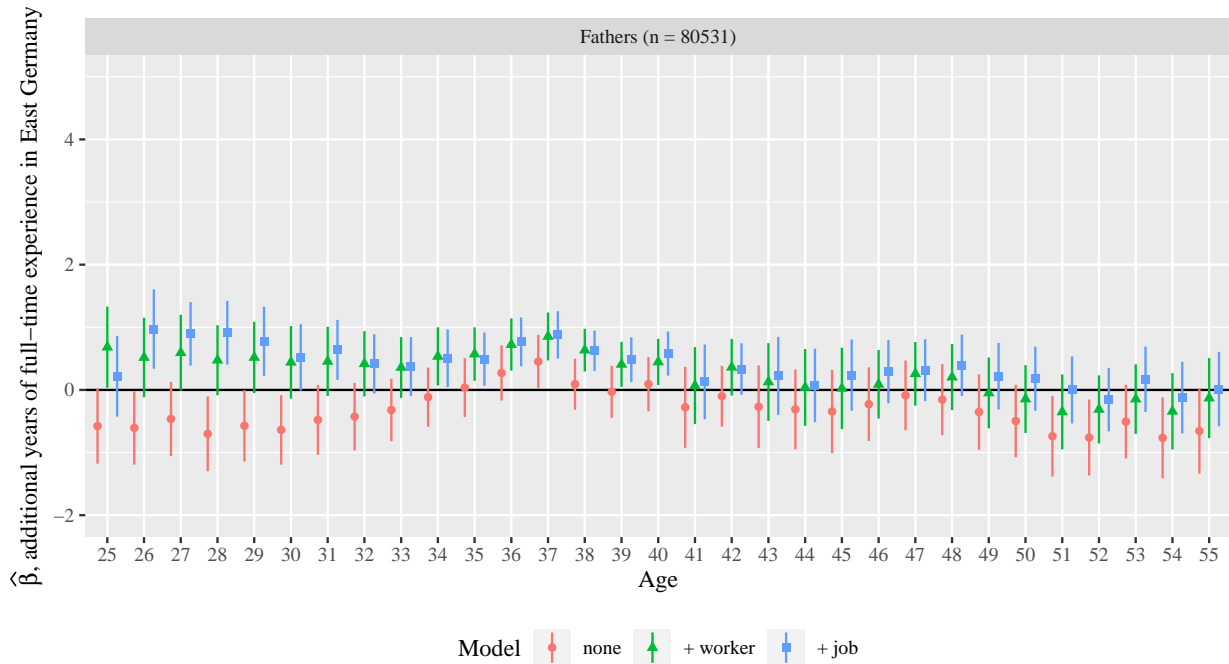


Figure 13: Years in full-time experience, samples of fathers (employed and non-employed).



results in the small but negative estimates changing to small positive estimates. If the hypothesis regarding potential differences in men’s contribution to internal child care were quantitatively relevant, one should find clearly negative coefficients. This is not what Figure 13 suggests.⁴⁹ The results are similar if I split the sample by birth cohort in 1970, see Figure B.12 in the Appendix.

There is no evidence that East German fathers reduce their labor supply in a way that differs from the behavior of West German fathers. In this sense, fundamental differences in the division of roles in the household cannot easily explain observed differences in work experience among mothers. My analysis provides no indication that fathers step back in their labor supply to provide informal child care any different in East Germany than in West Germany. Hence, one might speculate that it is unlikely that an expansion in child care would crowd out informal child care by fathers in West Germany or in East Germany any differently.

⁴⁹In the third specification, where I include worker and job characteristics, the point estimates for fathers below the age of 40 increase to positive levels, indicating that (young) East-German fathers have one year of full-time experience *more*. Differences are mostly insignificant at the later part of the life cycle and the gap amounts to at most one year.

Part-time experience and years in unemployment. Even when the results for full-time employment do not support the hypothesis that East German fathers reduce their labor-market participation more strongly than West German fathers, there might be differences for fathers in other forms of employment.

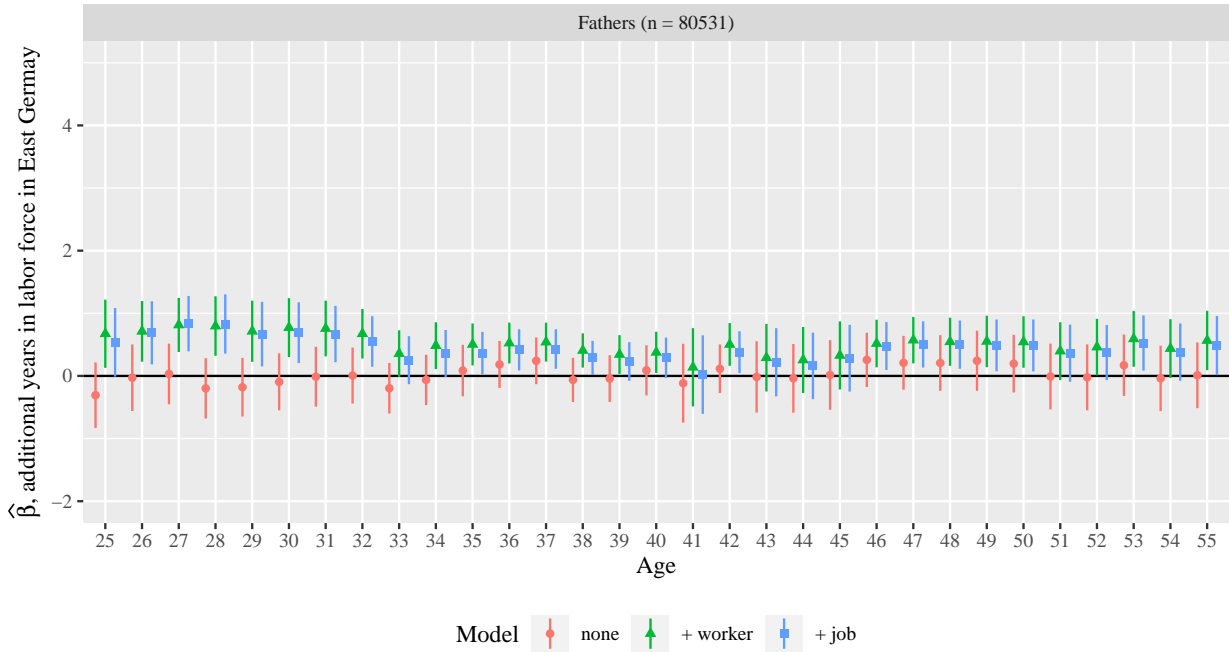
Working in part-time employment enables fathers to (potentially) take up more unpaid responsibilities in the household, such as child care. Bünning (2020) shows that fathers in Germany who work part-time are more involved in housework and childcare at home. Involvement in child care and housework substantially decreases when fathers return to full-time work. Bünning (2020) finds that East German fathers actually spent slightly less time in child care with their children when working part-time than West German fathers in part-time. However, if East German fathers have more part-time employment than West German fathers, that would be in support of East German fathers enabling their female partner to work.

Figure B.13 in the Appendix shows results for years in part-time employment. There are no differences in part-time employment between East and West men or fathers. The results are similar if I split the sample by birth cohort in 1970, see Figure B.14.

Figure B.15 displays the differences between East and West German fathers in length in unemployment over the life cycle. Only in the highest age groups, East German fathers have close to one year more in unemployment. At younger ages, there are no significant gaps for fathers. Again, if I split the sample by birth cohort in 1970, results are similar, see Figure B.16.

Years in labor force. Figure 14 shows the results for total years in the labor force as dependent variable. This evaluation provides some additional information as the dependent variable combines the various possible labor-market states of an individual. No significant differences for fathers emerge in the baseline specification without additional covariates. Including worker and job characteristics yields a positive significant gap of less than a year

Figure 14: Years in labor force, samples of fathers (employed and non-employed).



in the early 30s, the age where children are born on average. Over the life cycle, the difference reduces to half a year. If anything, this hints to a *higher* attachment to the labor market of East German fathers. Figure B.18 displays the results for years in labor force split by year of birth in 1970.

Social Generations. For mothers, we saw slight differences in the accumulated East-West gaps for different social generations, see Figure 11. Figure 15 shows the corresponding figure for fathers. There are no significant East-West differences between fathers for any social generation, except for some positive coefficients estimated for generation X. This gap of roughly one year dissolves again later.

Number of children. For mothers, I found differences between East and West Germany which accumulated to a career interruption gap of roughly two or three years independent of the number of children. For fathers, mostly no significant East-West differences emerge, see Figure 16. Only fathers in East Germany with two children spent roughly two more years in the labor force compared to their West German counterparts. The additional worker and job characteristics only slightly affect the estimated coefficients. Again, fathers in East

Figure 15: Years in labor force, sample of fathers by social generation.

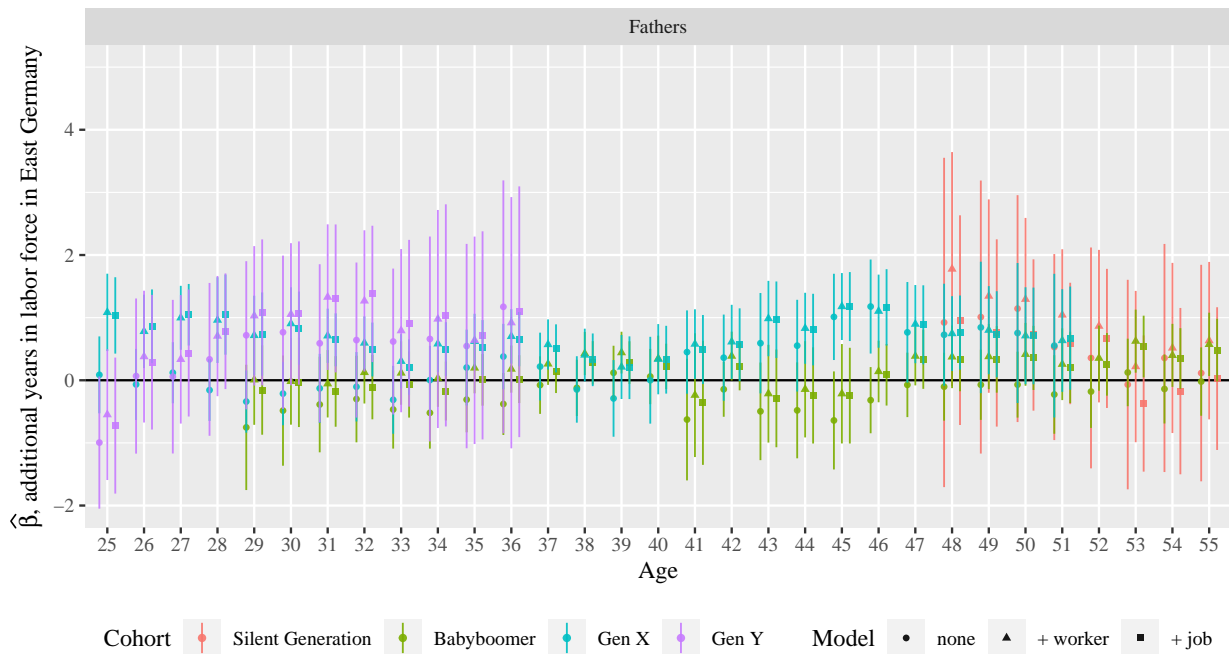
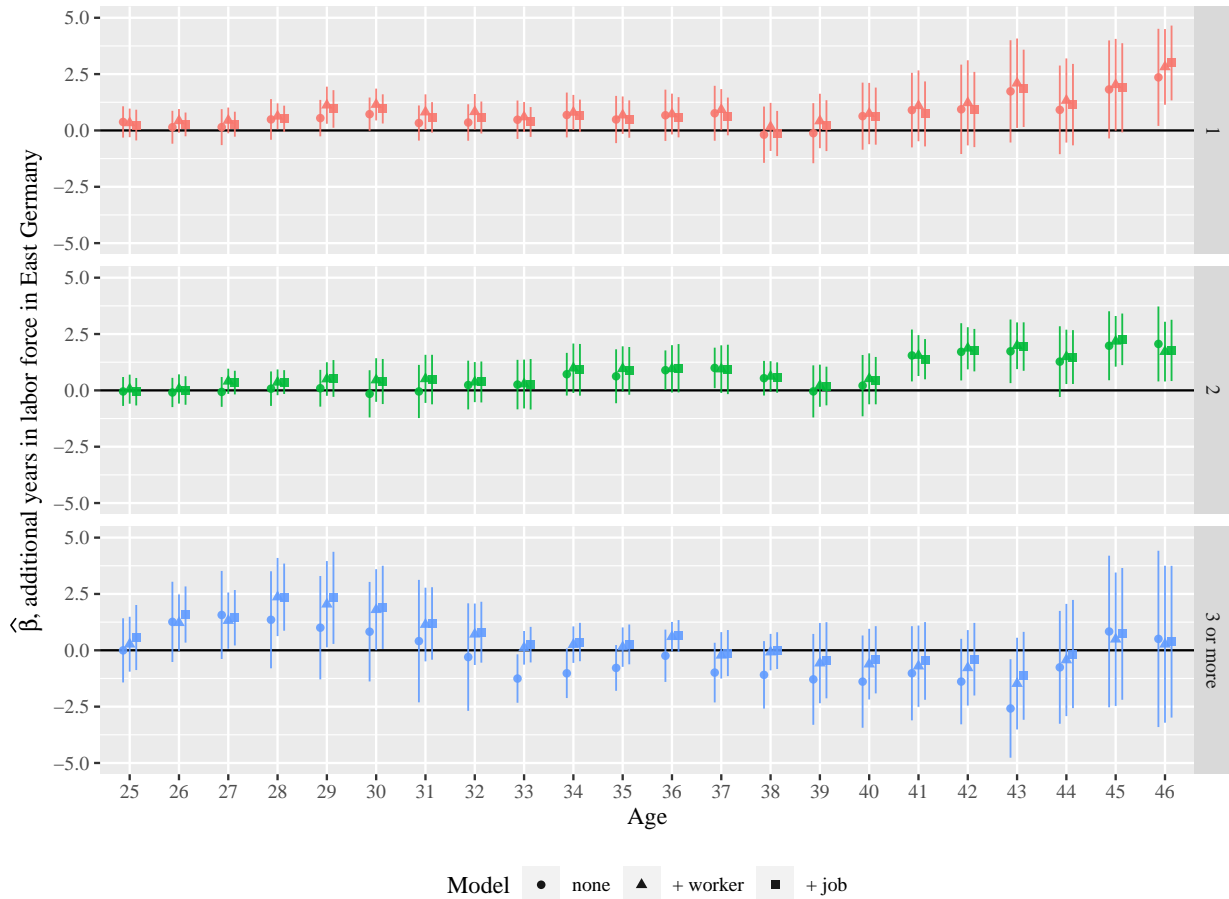


Figure 16: Years in labor force, by number of children over the life cycle, samples of fathers born in or after 1970.



Germany work more years, not less, than comparable fathers in West Germany. Figure B.19 and B.20 show the results for full-time and part-time experience by number of children over the life cycle.

5.5 Summary of experience profile analysis

My analysis has shown that West German women, or more precisely, mothers, accumulate substantial experience gaps compared to similar East German women and mothers. At the same time, there is no evidence that East German fathers reduce their labor supply in a way that differs from the behavior of West German fathers. Thus, differences in the behavior of fathers does not help explaining the differences in work experience among mothers. Another main result of my study is that accounting for obvious control variables measuring worker and job characteristics also does not help in explaining the documented differences in labor-supply behavior of mothers. In particular, I found that accounting for East-West differences in the industry mix and marriage rates leaves the estimated differences in various experiences measures largely unaffected.

Regarding differences in external child care, I provided some descriptive evidence on the correlation between public child care coverage and maternal labor supply in Section 5.1. Although one has to be aware of the limitations of such a simple analysis, the correlation is consistent with an important role of external child care. This assessment is also in line with the literature, see the discussion in Section 5.1. Contributing to this literature, my analysis provides no indication that fathers step back in their labor supply to provide informal child care any different in East Germany than in West Germany. Hence, it unlikely the case that an expansion in external child care would crowd out informal child care by fathers in West Germany or in East Germany any differently.

Overall, the absence of different labor supply decisions of fathers implies that informal child care by fathers in East Germany is not applicable to explain differences in labor supply histories of mothers between East and West Germany. This is an important result

with implications for the role of *external* (public) child care, indirectly corroborating its role.

6 Conclusion

This paper has examined differences in labor-market experience between individuals in East and West Germany. First, I have shown that differences in years of labor-market experience contribute substantially to the gender wage gap in Germany. Labor-market experience plays a dominant role and is the primary factor related to differences in observables across all decompositions.

Second, in the decomposition of the East-West “gap in the gender wage gap”, East-West differences between gender gaps in experience have been shown to explain by far the largest part.

Third, my analysis has shown that East German women accumulate several years more of full-time and total labor-market experience than women of the same age in West Germany. These experience gaps arise for mothers but not for women without children. There are East-West differences in the industry mix and marriage rates, but these differences cannot explain the observed experience differences of mothers.

Fourth, the hypothesis that men, or fathers, in East Germany contribute to this gap by reducing their labor supply is not supported by the data. There is no indication that East German fathers reduce their labor supply in a way that differs from the behavior of West German fathers.

Taken together, I interpret this set of results as indirectly corroborating the importance of public child care. There are still substantial differences between East and West Germany in the provision of public child care and the attitudes towards working mothers. Yet, my analysis does not provide evidence for different father roles that could be related to East-West experience gaps for mothers. My results underline the point of Bertrand (2020) that

children are one of the remaining pain points for women in the labor market. To support mothers in their labor participation, the provision of public child care seems crucial. Yet, enhancing public supply of childcare services alone might still be insufficient. It might be necessary to additionally transform the roles that fathers play in childcare and household responsibilities, encouraging fathers to increase their contributions to non-paid work within the household. But importantly, my analysis provides no indication that fathers step back in their labor supply to provide informal child care any *different* in East Germany than in West Germany.

References

- Alesina, A. and N. Fuchs-Schündeln (2007). Good-bye Lenin (or not?): The effect of communism on people's preferences. *American Economic Review* 97(4), 1507–1528.
- Andresen, M. and E. Nix (2022). What causes the child penalty? Evidence from adopting and same-sex couples. *Journal of Labor Economics* 40(4), 971–1004.
- Angelov, N., P. Johansson, and E. Lindahl (2016). Parenthood and the gender gap in pay. *Journal of Labor Economics* 34(3), 545–579.
- Averkamp, D., C. Bredemeier, and F. Juessen (2024). Decomposing gender wage gaps: A family economics perspective. *The Scandinavian Journal of Economics* 126(1), 3–37.
- Bauer, T. K. and M. Sinning (2010). Blinder–Oaxaca decomposition for Tobit models. *Applied Economics* 42(12), 1569–1575.
- Bauernschuster, S. and H. Rainer (2012). Political regimes and the family: How sex-role attitudes continue to differ in reunified Germany. *Journal of Population Economics* 25(1), 5–27.
- Beblo, M. and L. Görge (2018). On the nature of nurture. The malleability of gender differences in work preferences. *Journal of Economic Behavior & Organization* 151,

19–41.

Bertrand, M. (2020). Gender in the twenty-first century. *AEA Papers and Proceedings* 110, 1–24.

Bertrand, M., C. Goldin, and L. F. Katz (2010). Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American Economic Journal: Applied Economics* 2(3), 228–255.

Bick, A. (2016). The quantitative role of child care for female labor force participation and fertility. *Journal of the European Economic Association* 14(3), 639–668.

Blau, F. D. and L. M. Kahn (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature* 55(3), 789–865.

Blinder, A. S. (1973). Wage discrimination: Reduced form and structural estimates. *The Journal of Human Resources* 8(4), 436–455.

Boelmann, B., A. Raute, and U. Schönberg (2021). Wind of change? Cultural determinants of maternal labor supply. Technical Report 16149, CEPR Discussion Paper.

Boll, C., M. Jahn, and A. Lagemann (2017). The gender lifetime earnings gap—exploring gendered pay from the life course perspective. *Journal of Income Distribution*® 26(1), 1–53.

Bondar, M. and N. Fuchs-Schündeln (2022). Good bye Lenin revisited: East-West preferences three decades after reunification. Working paper.

Boneva, T., K. M. Kaufmann, and C. Rauh (2021). Maternal labor supply: Perceived returns, constraints, and social norms. Technical Report 14348, IZA Discussion Paper.

Bönke, T., U. Glogowsky, E. Hansen, H. Lüthen, and D. Sachs (2019). Family policies and child-related earnings gaps in Germany. Technical report.

Bünning, M. (2020). Paternal part-time employment and fathers' long-term involvement in child care and housework. *Journal of Marriage and Family* 82(2), 566–586.

- Campa, P. and M. Serafinelli (2019). Politico-economic regimes and attitudes: Female workers under state socialism. *Review of Economics and Statistics* 101(2), 233–248.
- Chhaochharia, V., S. Ghosh, A. Niessen-Ruenzi, and C. Schneider (2021). Public child care provision and women’s career choices. Working paper, SSRN.
- Collischon, M., A. Eberl, and M. Reichelt (2020). Structural legacies and the motherhood penalty: How past societal contexts shape mothers’ employment outcomes in reunified Germany.
- Cortés, P. and J. Pan (2023). Children and the remaining gender gaps in the labor market. *Journal of Economic Literature* 61(4), 1359–1409.
- Costanza, D. P., J. M. Badger, R. L. Fraser, J. B. Severt, and P. A. Gade (2012). Generational differences in work-related attitudes: A meta-analysis. *Journal of Business and Psychology* 27(4), 375–394.
- Dittrich, G., C. Peucker, and K. Schneider (2002). Zahlenspiegel: Daten zu Tageseinrichtungen für Kinder. Kindertageseinrichtungen in Stadtteilen mit besonderem Entwicklungsbedarf.
- Domeij, D. and P. Klein (2013). Should day care be subsidized? *The Review of Economic Studies* 80(2), 568–595.
- Federal Statistical Office (2022). Statistiken der Kinder- und Jugendhilfe: Kinder und tätige Personen in Tageseinrichtungen und in öffentlich geförderter Kindertagespflege am 01.03.2022.
- Federal Statistical Office (2023). Unbereinigter Gender Pay Gap (GPG) nach Gebietsstand ab 1995.
- Fuchs, M., A. Rossen, A. Weyh, and G. Wydra-Somaggio (2021). Where do women earn more than men? Explaining regional differences in the gender pay gap. *Journal of Regional Science* 61(5), 1065–1086.

- Fuchs-Schündeln, N. and M. Schündeln (2009). Who stays, who goes, who returns? *Economics of Transition* 17(4), 703–738.
- Gayle, G.-L. and L. Golan (2012). Estimating a dynamic adverse-selection model: Labour-force experience and the changing gender earnings gap 1968–1997. *Review of Economic Studies* 79(1), 227–267.
- Giuliano, P. (2020). Gender and culture. *Oxford Review of Economic Policy* 36(4), 944–961.
- Goebel, J., M. M. Grabka, S. Liebig, M. Kroh, D. Richter, C. Schröder, and J. Schupp (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher für Nationalökonomie und Statistik* 239(2), 345–360.
- Goldin, C. (2006). The quiet revolution that transformed women’s employment, education, and family. *American Economic Review* 96(2), 1–21.
- Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review* 104(4), 1091–1119.
- Guzman, G. and M. Kollar (2023). Income in the United States: 2022. Current Population Reports P60-279, U.S. Census Bureau, Washington, DC.
- Hanel, B. and R. T. Riphahn (2012). The employment of mothers – Recent developments and their determinants in East and West Germany. *Jahrbücher für Nationalökonomie und Statistik* 232(2), 146–176.
- Havnes, T. and M. Mogstad (2011). Money for nothing? Universal child care and maternal employment. *Journal of Public Economics* 95(11-12), 1455–1465.
- Holst, E. and A. Marquardt (2018). Die Berufserfahrung in Vollzeit erklärt den Gender Pay Gap bei Führungskräften maßgeblich. *DIW Wochenbericht* 85(30/31), 669–678.
- Jessen, J. (2022). Culture, children and couple gender inequality. *European Economic Review* 150, 104310.

- Jessen, J., S. Schmitz, and F. Weinhardt (2022). Immigration, female labour supply and local cultural norms. *SSRN Electronic Journal*.
- Jürges, H. (2007). Unemployment, life satisfaction and retrospective error. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 170(1), 43–61.
- Kayed, T., J. Wieschke, and S. Kuger (2023). *Der Betreuungsbedarf bei U3- und U6-Kindern. DJI-Kinderbetreuungsreport 2022. Studie 1 von 6*. München: Deutsches Jugendinstitut.
- Keller, M. and I. Kahle (2018). Realisierte Erwerbstätigkeit von Müttern und Vätern zur Vereinbarkeit von Familie und Beruf. *Wirtschaft und Statistik* 3, 54–71.
- Kitagawa, E. M. (1955). Components of a difference between two rates. *Journal of the American Statistical Association* 50(272), 1168–1194.
- Kleven, H., C. Landais, and J. E. Søgaard (2019). Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics* 11(4), 181–209.
- Kleven, H., C. Landais, and J. E. Søgaard (2021). Does biology drive child penalties? Evidence from biological and adoptive families. *American Economic Review: Insights* 3(2), 183–198.
- Lippmann, Q., A. Georgieff, and C. Senik (2020). Undoing gender with institutions: Lessons from the German division and reunification. *The Economic Journal* 130(629), 1445–1470.
- Mincer, J. and S. Polachek (1974). Family investments in human capital: Earnings of women. *Journal of Political Economy* 82(2, Part 2), S76–S108.
- Minkus, L. and A. Busch-Heizmann (2020). Gender wage inequalities between historical heritage and structural adjustments: A German–German comparison over time. *Social Politics: International Studies in Gender, State & Society* 27(1), 156–186.

- Müller, K.-U. and K. Wrohlich (2016). Two steps forward - one step back? Evaluating contradicting child care policies in Germany. *CESifo Economic Studies* 62(4), 672–698.
- Müller, K.-U. and K. Wrohlich (2020). Does subsidized care for toddlers increase maternal labor supply? Evidence from a large-scale expansion of early childcare. *Labour Economics* 62, 101776.
- Noonan, M. C., M. E. Corcoran, and P. N. Courant (2005). Pay differences among the highly trained: Cohort differences in the sex gap in lawyers' earnings. *Social Forces* 84(2), 853–872.
- Oaxaca, R. L. (1973). Male-female wage differentials in urban labor markets. *International Economic Review* 14(3), 693–709.
- Olivetti, C. (2006). Changes in women's hours of market work: The role of returns to experience. *Review of Economic Dynamics* 9(4), 557–587.
- Paul, M. (2016). Is there a causal effect of working part-time on current and future wages? *The Scandinavian Journal of Economics* 118(3), 494–523.
- Pérvier, H. and G. Verdugo (2023). Where are the fathers? The effects of earmarking parental leave on fathers in France.
- Piazzalunga, D. (2018). The gender wage gap among college graduates in Italy. *Italian Economic Journal* 4(1), 33–90.
- Pollmann-Schult, M. and J. Reynolds (2017). The work and wishes of fathers: Actual and preferred work hours among German fathers. *European Sociological Review* 33(6), 823–838.
- Schober, P. S. and C. K. Spiess (2015). Local day care quality and maternal employment: Evidence from East and West Germany. *Journal of Marriage and Family* 77(3), 712–729.

- Selezneva, E. and P. van Kerm (2016). A distribution-sensitive examination of the gender wage gap in Germany. *The Journal of Economic Inequality* 14(1), 21–40.
- Stawarz, N., N. Sander, H. Sulak, and M. Rosenbaum-Feldbrügge (2020). The turnaround in internal migration between East and West Germany over the period 1991 to 2018. *Demographic Research* 43, 993–1008.
- Tyrowicz, J., L. van der Velde, and I. van Staveren (2018). Does age exacerbate the gender-wage gap? New method and evidence from Germany, 1984–2014. *Feminist Economics* 24(4), 108–130.
- Welteke, C. and K. Wrohlich (2019). Peer effects in parental leave decisions. *Labour Economics* 57, 146–163.
- Wrohlich, K. (2008). The excess demand for subsidized child care in Germany. *Applied Economics* 40(10), 1217–1228.
- Zoch, G. (2021). Thirty years after the fall of the Berlin Wall—do East and West Germans still differ in their attitudes to female employment and the division of housework? *European Sociological Review* 37(5), 731–750.
- Zoch, G. and I. Hondralis (2017). The expansion of low-cost, state-subsidized childcare availability and mothers’ return-to-work behaviour in East and West Germany. *European Sociological Review* 33(5), 693–707.
- Zoch, G. and P. S. Schober (2018). Public child-care expansion and changing gender ideologies of parents in Germany. *Journal of Marriage and Family* 80(4), 1020–1039.

Figure A.1: Decomposition of gender wage gap on sample of full-time employed individuals.

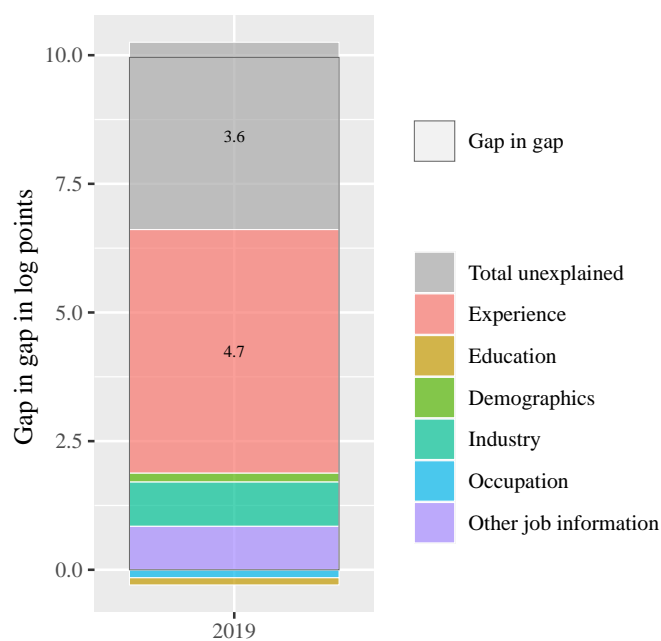


A Appendix to wage gap analysis

Figure A.1 provides the wage-gap decomposition in a sample of full-time employed individuals. In line with my baseline results, I find that the biggest share of the gender wage gap can be related to gender differences in labor-market experience.

Figure A.2 decomposes the “gap in the gap” in a sample of full-time employed workers, i.e., the East-West gap in the gender wage gap, $\hat{\Gamma}$, from equation (6), and its decomposition into an explained and unexplained part. Again, and even more pronounced in this sample of full-time employed workers, East-West differences in gender experience gaps dominate.

Figure A.2: Decomposition of gap in gap, Γ , sample of full-time employed.



B Appendix to experience-gap analysis

B.1 Descriptive statistics

Table B.1 shows gender- and region-specific sample sizes and weighted averages for all variables included in the regression analysis. Columns (1) to (4) show averages for the total sample, columns (5) to (8) show averages for the subsample of individuals with children. The first row displays the sample sizes of the different subsamples and the second row shows the sample size of the subsample relative to all women, or men, respectively.

On average, West German women have 15.6 years of experience in the labor market, whereas East German women accumulate on average 2.6 years more. In the sample of mothers, where individuals are slightly older, this difference increases to three years. Similar to the results in Table 1 in the main text, East German women (mothers) accumulate 3.5 (4.9) years of full-time experience more compared to West German women (mothers). Again, for part-time experience the gaps are reversed: East German women and mothers have on average less years of part-time experience than West German women and mothers.

In contrast to the East-West differences between women, the experience measures for

Table B.1: Descriptive statistics in sample experience profiles (age 25-55).

	Women (<i>n</i> = 136686)		Men (<i>n</i> = 120459)		Mothers (<i>n</i> = 108247)		Fathers (<i>n</i> = 80531)	
	West (1)	East (2)	West (3)	East (4)	West (5)	East (6)	West (7)	East (8)
Number of observations	104325	32361	93411	27048	80270	27977	62311	18220
Share of all women/men (%)	76.3	23.7	77.5	22.5	58.7	20.5	51.7	15.1
<i>Experience measures</i>								
Years in labor force	15.6	18.2	18.4	18.8	16.3	19.2	20.6	20.3
Years of full-time experience	10.1	13.6	17.0	17.0	9.5	14.4	19.4	18.8
Years of part-time experience	4.8	3.2	0.7	0.6	6.1	3.4	0.6	0.5
Years in unemployment	0.6	1.4	0.7	1.2	0.7	1.4	0.6	1.0
<i>Baseline characteristics</i>								
Age*	40.2	40.5	40.5	40.5	42.1	41.8	42.4	42.0
Survey year*	2004.8	2004.3	2005.3	2005.1	2004.5	2003.8	2006.0	2005.6
<i>Worker characteristics</i>								
Married	60.3	59.7	60.2	52.8	74.0	66.8	84.7	73.3
Been married	70.0	67.7	66.6	59.3	85.5	76.0	91.3	80.9
Number of children*	1.4	1.6	1.2	1.1	2.0	1.9	2.0	1.8
Years of education	12.2	12.6	12.3	12.4	11.7	12.5	12.1	12.5
Some tertiary degree (%)	25.2	34.7	30.9	29.2	20.4	34.3	31.3	31.4
<i>Job characteristics (%)</i>								
Working full-time	42.8	57.8	86.3	79.3	28.0	55.5	89.6	83.9
Ind: Agriculture	0.7	3.2	1.0	4.9	0.7	3.4	1.0	4.8
Ind: Energy/Mining/Other	1.7	2.0	2.9	4.2	1.4	1.9	3.0	4.0
Ind: Manufacturing	17.7	13.0	37.1	26.5	18.0	12.6	40.2	26.2
Ind: Construction	1.7	2.3	9.4	16.8	2.0	2.4	10.2	18.5
Ind: Trade	20.6	18.6	10.7	11.2	21.9	17.8	10.0	9.6
Ind: Transport	3.3	4.5	7.3	8.1	3.2	4.7	7.2	7.5
Ind: Bank,Insurance	4.8	2.7	4.1	1.3	4.3	2.7	4.0	1.3
Ind: Services	49.6	53.7	27.5	27.0	48.5	54.4	24.5	28.1
Occ: Legislators/managers	3.0	3.6	6.2	3.7	2.1	3.4	6.8	4.2
Occ: Professionals	13.9	13.5	18.5	13.9	10.3	12.7	16.9	14.5
Occ: Technicians/associate prof.	28.1	31.7	19.1	13.9	26.0	32.5	17.8	13.9
Occ: Clerks	19.2	15.6	8.5	4.9	19.6	15.6	7.8	3.8
Occ: Service/shop workers	18.4	18.1	5.4	6.1	20.5	17.8	4.9	5.7
Occ: Skilled agric./fishery workers	0.6	1.9	0.7	2.3	0.6	1.9	0.7	2.0
Occ: Craft/trades workers	3.6	4.8	23.0	31.2	4.0	4.7	24.4	32.9
Occ: Plant/machine operators	3.3	2.8	12.3	14.6	3.9	2.9	14.3	14.8
Occ: Elementary occupations	10.0	8.1	6.2	9.4	13.0	8.6	6.4	8.0

Notes: Gender and region specific sample sizes and weighted averages for all variables included in the regression analysis. Columns (1) to (4) show averages for the main sample, columns (5) to (8) show averages for individuals with children.

* marks metric variables that are included as dummies in the regression.

men and fathers in East and West Germany are fairly similar (columns (3) to (4) and (7) to (8)). Across all experience measures, the average difference between men (fathers) in East Germany and men (fathers) amounts to less than a year. In the sample of fathers, averages are slightly larger for total years in the labor market and full-time experience. There are no East-West differences in full-time experience in the sample of men but East German fathers accumulate on average slightly less years in full-time employment. Part-time experience is similar for men (fathers) in East and West Germany.

For both genders, individuals living in East Germany accumulate roughly half a year more in unemployment.

As baseline characteristics, I use the age of the individual and a flag for living in East Germany. The average age is 40 for both men and women in East and West Germany. Only in the subsample of parents, the average age is slightly larger (42 years), but also here no substantial differences arise.

The next group of variables in Table B.1 contains the set of worker characteristics (“worker”). I include the current marriage status of the individual and whether the individual has ever been married. East and West German women have marriage rates at roughly 60%. In the sample of mothers, this share increases by almost 14% points in West Germany and only 6% points in East Germany.⁵⁰ For men and fathers, marriage rates are lower in East Germany. The shares of individuals that have ever been married are larger in West Germany across all samples.

I also include the number of children over the life cycle of the individual. On average, East German women have more children (1.6) than West German women (1.4). But conditional on having children, West German mothers have more children (2.0) than East German mothers (1.9). This reversal of East-West differences is not present for men. On average, men in East Germany have slightly fewer children than men in West Germany.

⁵⁰For completeness, compared to marriage rates, the share of couples living together is relatively similar across all samples and higher for individuals with children at roughly 80%.

Regarding years of education, East German women have on average half a year of education more than women in West Germany. In East Germany, 35% of women have some tertiary education, compared to 25% in West Germany. These differences are more pronounced in the sample of mothers. I observe no difference between women and mothers in East Germany, but in West Germany education levels are even lower for mothers than for all women. Differences for men/fathers in education variables between East and West Germany are very small.

The set of “job characteristics” is the last group of variables in Table B.1. Substantial differences arise between women in East and West Germany in the share of individuals currently working full-time. For women, full-time shares are 15 percentage points larger in East Germany, for mothers even 27 percentage points. Further, in East Germany, full-time rates for women are similar to those of mothers. In West Germany, full-time rates drop from 43% for all women to 28% for mothers. For men (fathers), full-time rates are very high at 80% (84%) and above, both in East and West Germany. Men (fathers) in East Germany have slightly lower full-time rates compared to men (fathers) in West Germany.

Finally, Table B.1 displays the employment shares of individuals by industry and occupation. The majority of women in both East and West Germany work in the service sector, followed by trade and manufacturing. There are no obvious industry differences between all women and mothers. For men, there are differences in industry shares between East and West Germany. The majority of West German men/fathers works in manufacturing, whereas the majority of East German men/fathers works in the service sector (like women). The occupations displayed in Table B.1 are sorted by descending skill level. Most women and mothers in East and West Germany work as associate professionals, clerks or service workers. No East-West differences arise. This is different for men. The share of managers, professionals and associate professionals is larger for men and fathers in West Germany than in East Germany. In occupations with lower skill levels such as craft workers or elementary occupations, the share of East German men is larger. On average, West German men work

in occupations with higher skill levels than East German men. East-West differences are slightly less pronounced for fathers.

B.2 Additional results for women

Figure B.3 displays the results for the accumulation of full-time experience in all samples of women. Controlling for education level and the family situation does not reduce East-West differences, neither for mothers, nor for non-mothers. Including job characteristics slightly reduces East-West differences in years of full-time experience after the age of 30.

Figure B.4 shows the age ranges of the social generations during the sample period 1990 to 2019. Figure B.5 illustrates the age ranges of the social generations between 1950 and 2019.

Figure B.3: Years of full-time experience, samples of mothers, with different sets of co-variates.

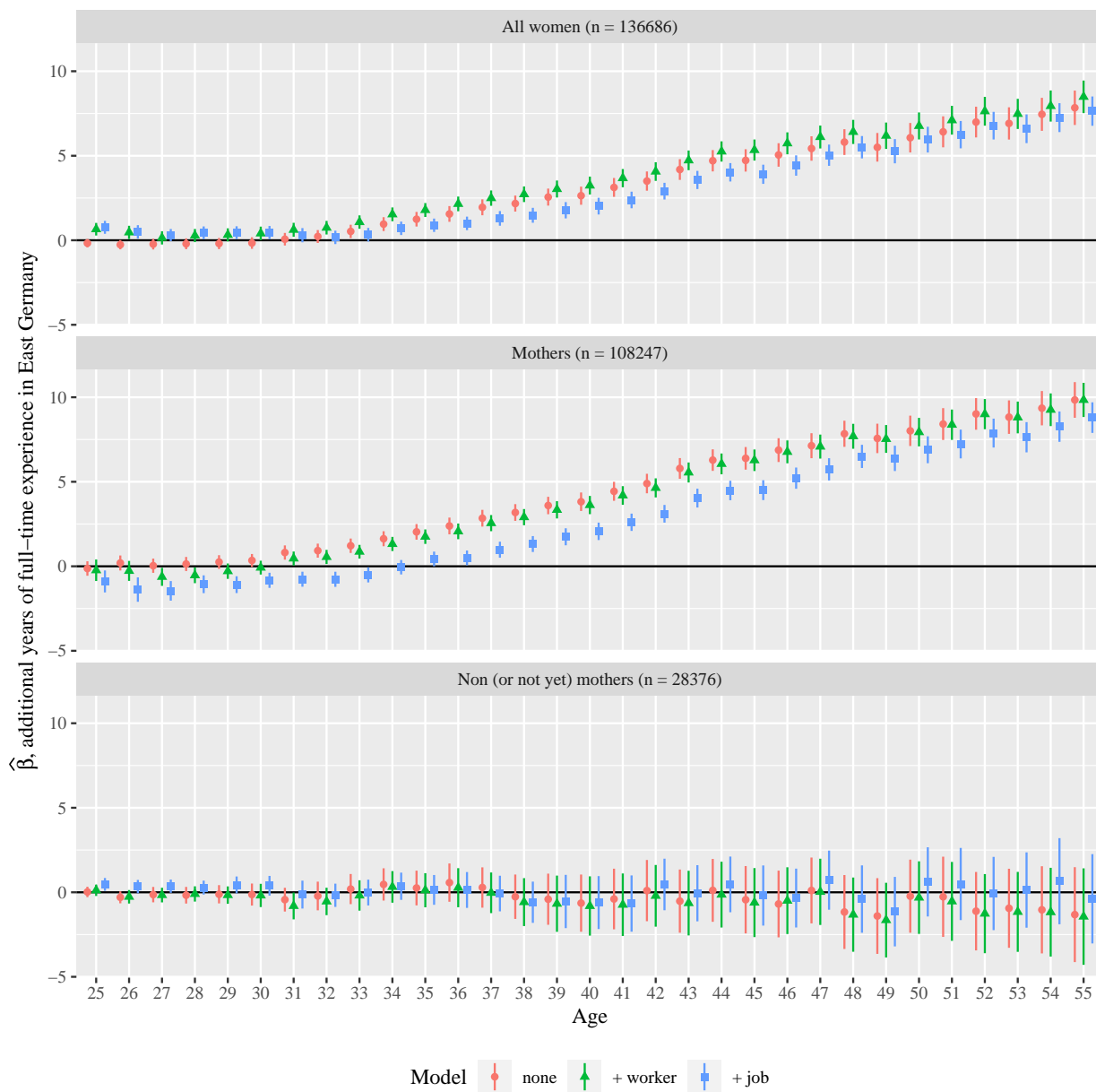


Figure B.4: Ages ranges of social generations in the sample of mothers and fathers during sample period.

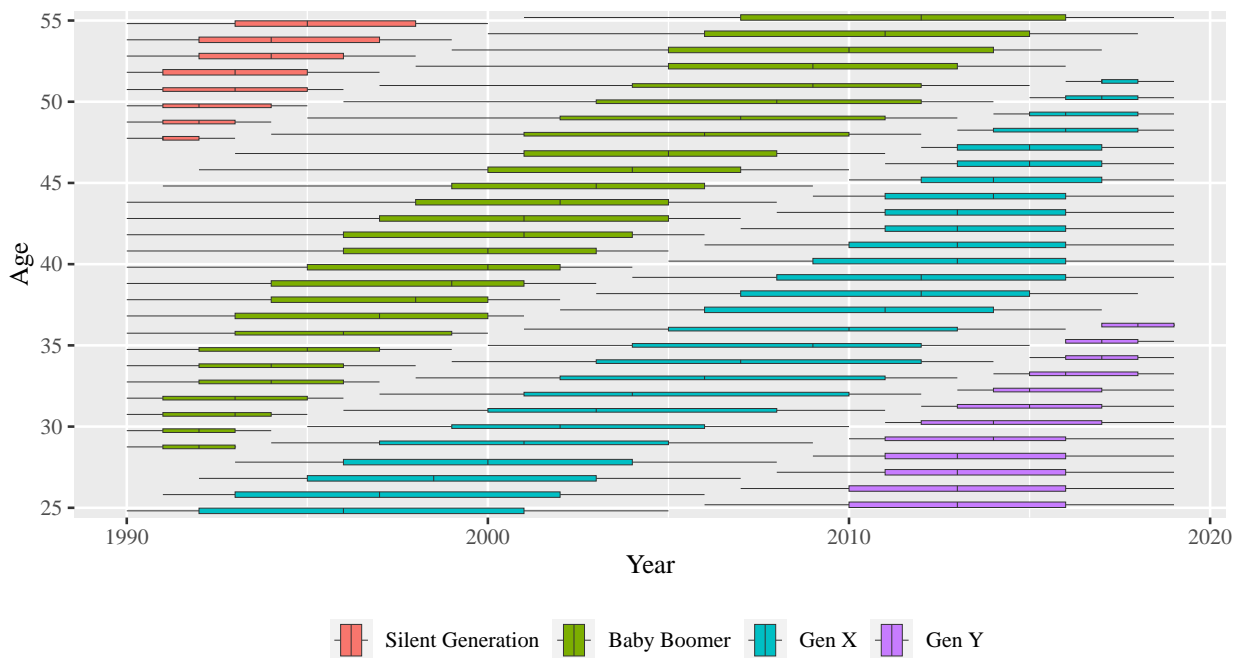
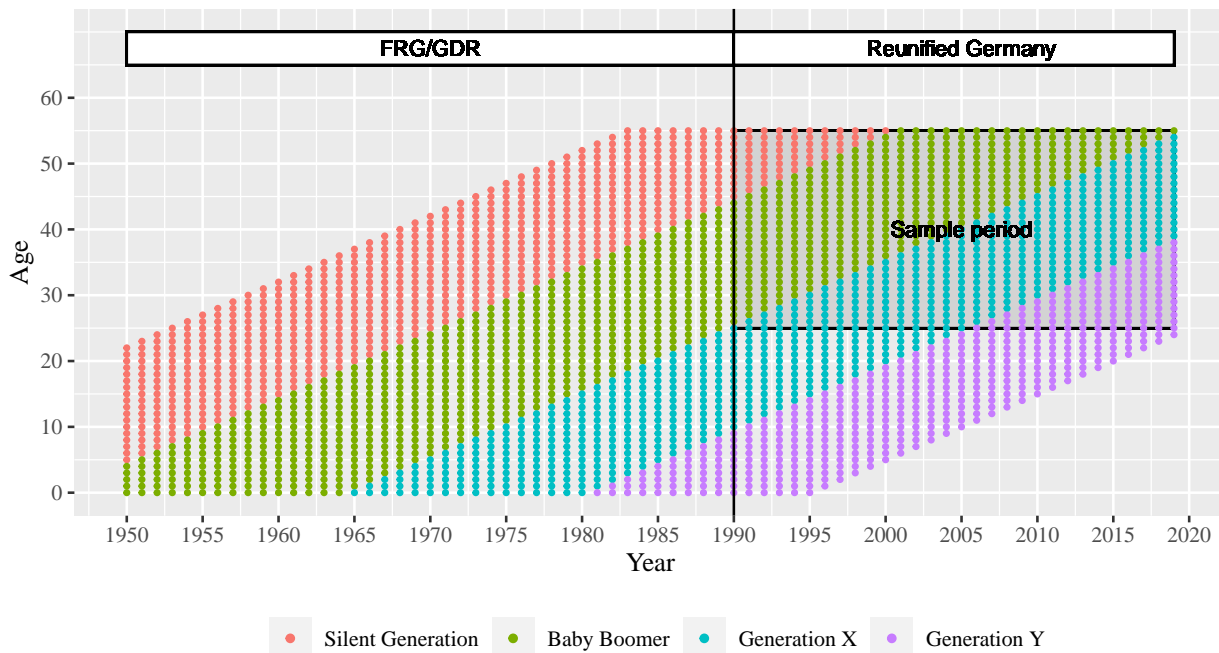
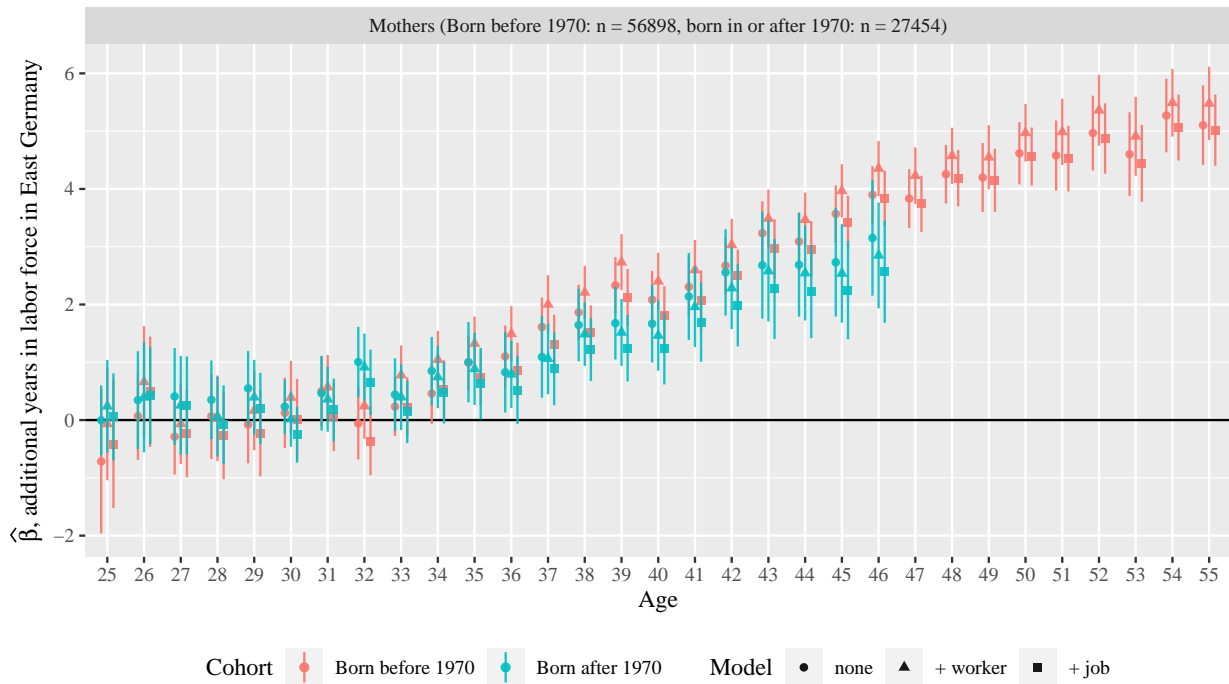


Figure B.5: Ages ranges of social generations from 1950 until 2019 (conceptual).



Source: Based on a depiction by Zoch (2021, Figure 1).

Figure B.6: Years in labor force, samples of employed mothers, by birth year.



Sample split by cohort. Figure B.6 displays the results (years in labor force) for currently employed mothers split by cohort as a counterpart to Figure 8 in the main text. Figure B.7 shows the results for all subsamples of women. Figures B.8, B.9, and B.10 show the results for the splitted samples for years of of full-time experience, part-time experience and years in unemployment, respectively. Overall, and in line with the results discussed in the main text, the analysis of the younger cohort yields in general similar patterns as for the older cohort.

Figure B.7: Years in labor force, samples of women (employed and non-employed) born before and in/after 1970, with different sets of covariates.

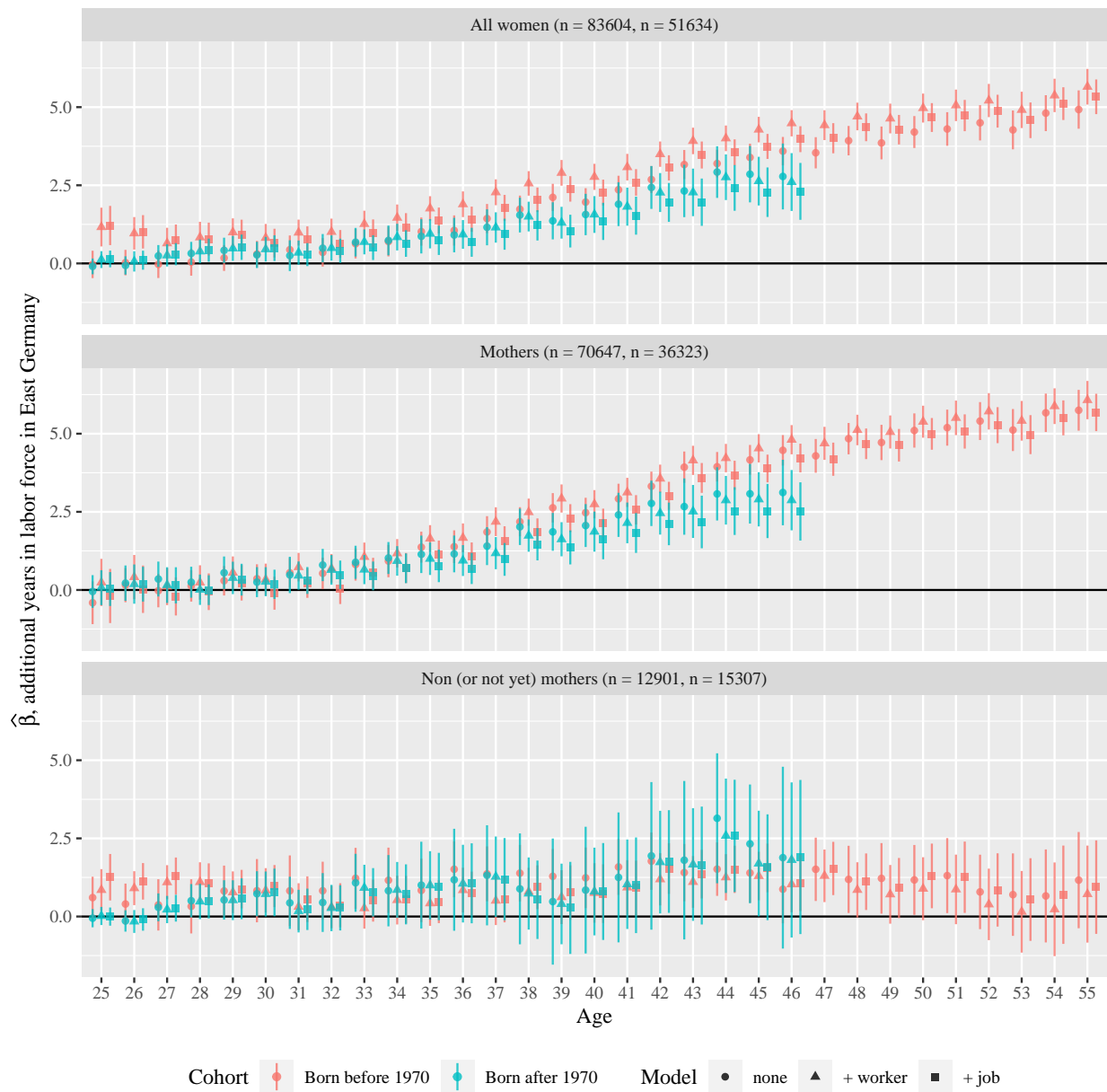


Figure B.8: Years in full-time experience, samples of women born before and in/after 1970, with different sets of covariates.

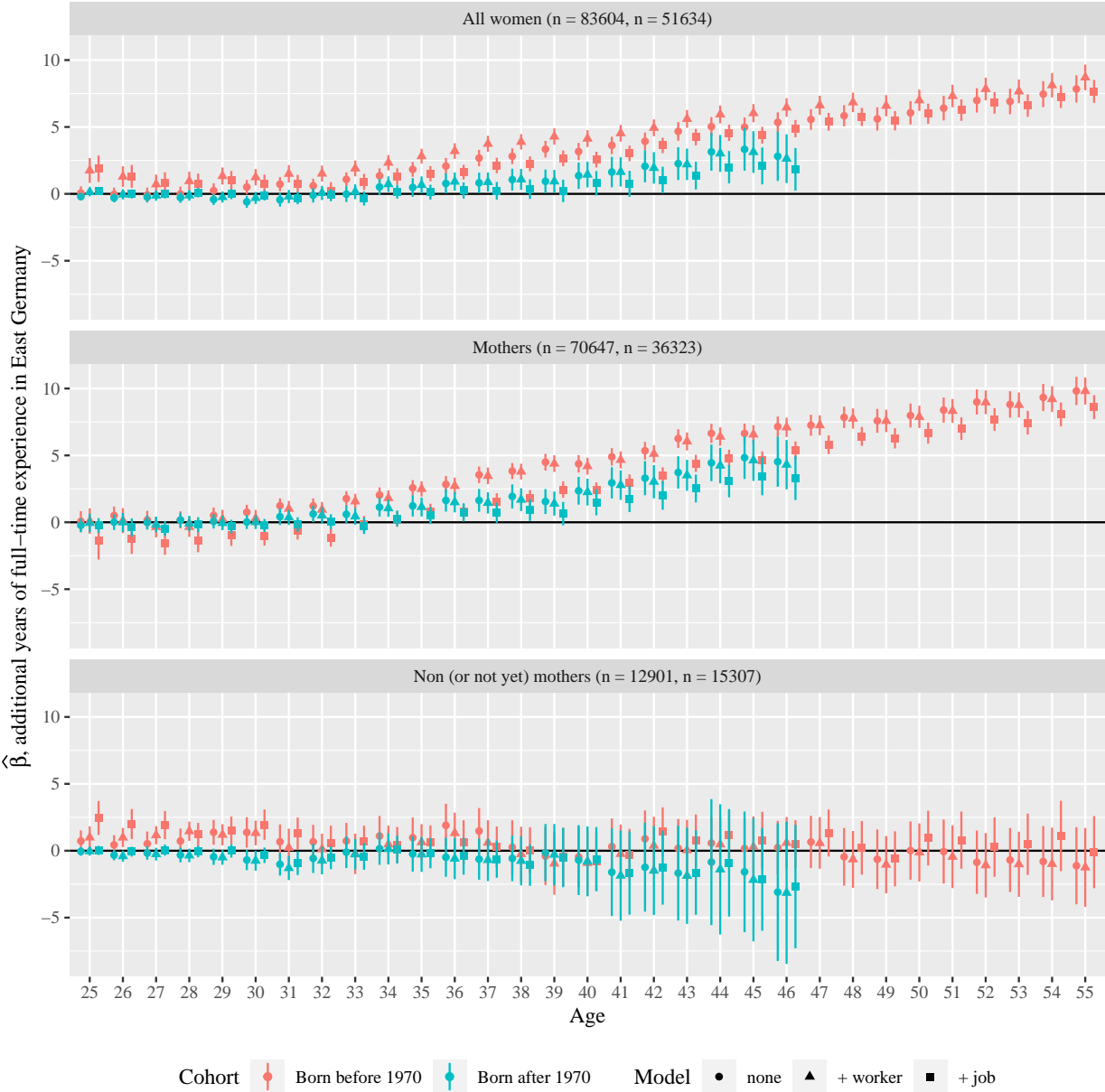


Figure B.9: Years in part-time experience, samples of women born before and in/after 1970, with different sets of covariates.

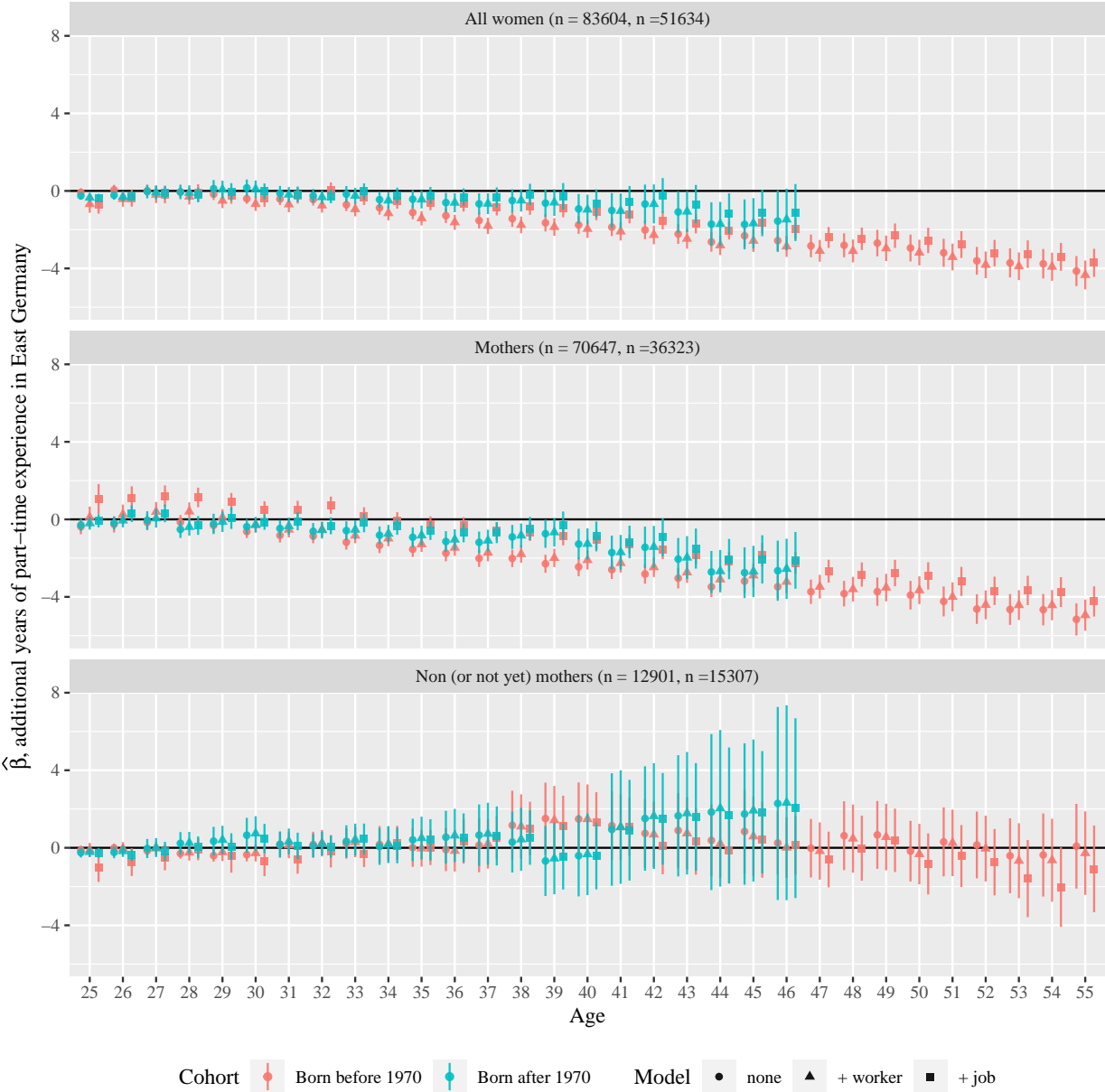


Figure B.10: Years in unemployment, samples of women born before and in/after 1970, with different sets of covariates.

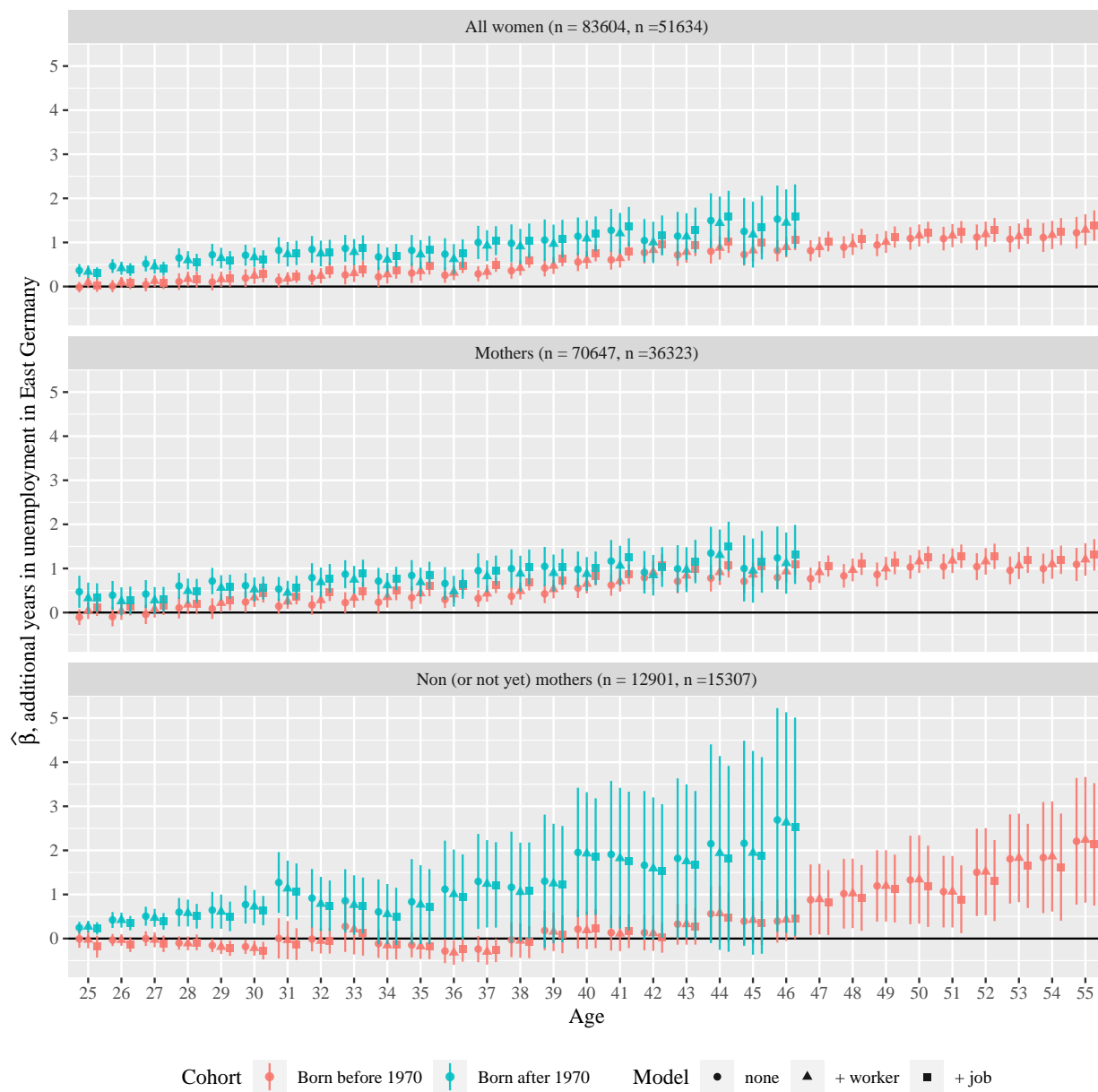
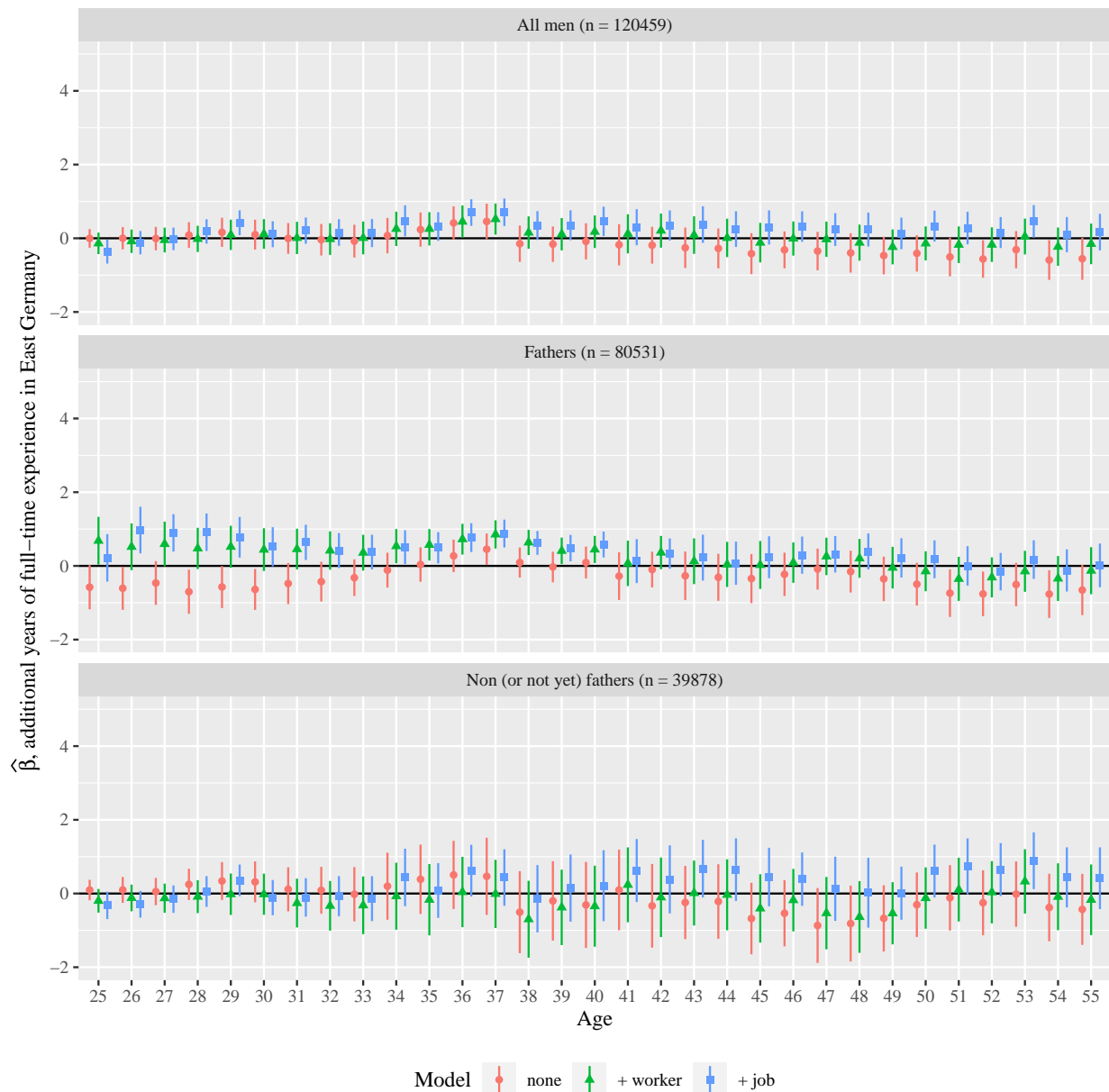


Figure B.11: Years of full-time experience, samples of men (employed and non-employed).



B.3 Additional results for men

Figure B.11 shows the results for years of full-time experience for different samples of men. Differences are mostly insignificant at the later part of the life cycle and the gap amounts to at most one year. Figure B.12 distinguishes between pre- and 1970 cohorts. The results are similar to the ones discussed in the main text.

Figure B.13 shows results for years in part-time employment. There are no differences in part-time employment between East and West German men or fathers. The result are

Figure B.12: Years in full-time experience, samples of men born before and in/after 1970 (employed and non-employed).

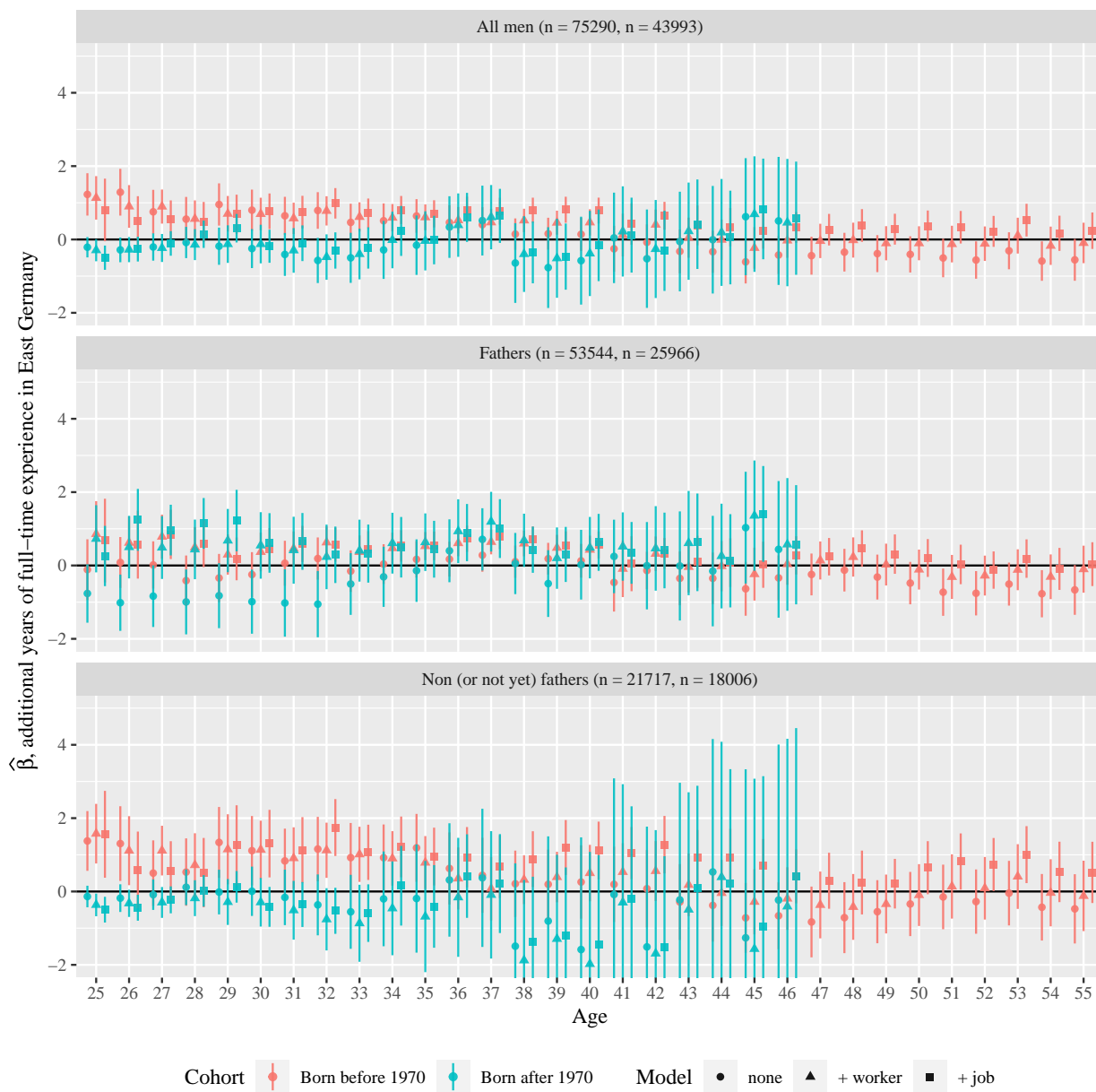
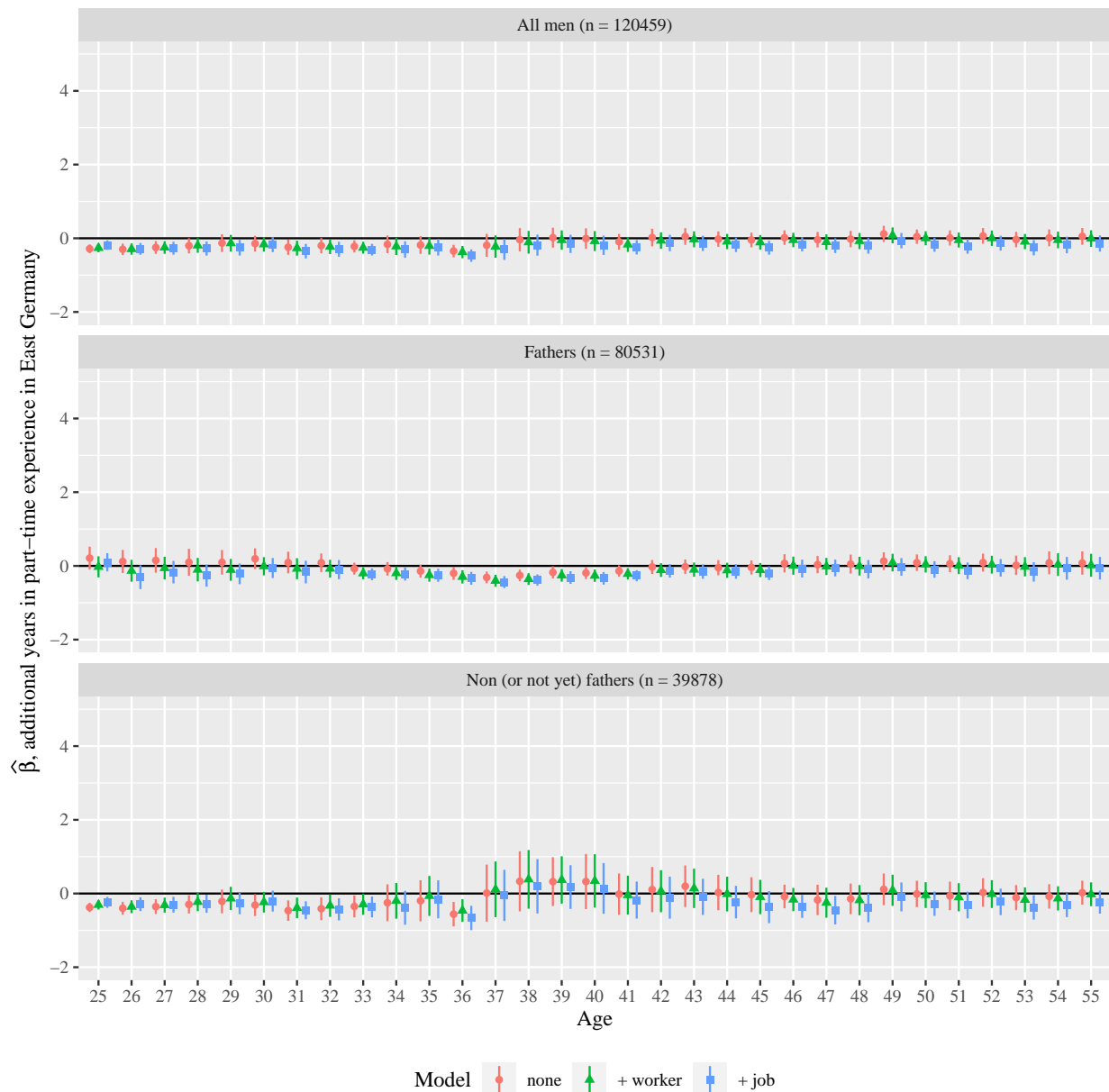


Figure B.13: Years of part-time experience, samples of men (employed and non-employed).



similar if I split the sample by birth cohort in 1970, see Figure B.14. East German fathers born after 1970 accumulate half a year *less* in part-time employment than West German fathers during their mid-30s. But this difference levels out around the age of 40. If anything, the results point towards a temporary *higher* full-time and *lower* part-time employment of East German fathers compared to their West German counterparts.

Figure B.15 displays the differences between East and West German fathers in length in unemployment. Only in the highest age groups, East German fathers have close to one year more in unemployment. At younger ages, there are no significant gaps for fathers. Figure

Figure B.14: Years of part-time experience, samples of men born before and in/after 1970 (employed and non-employed).

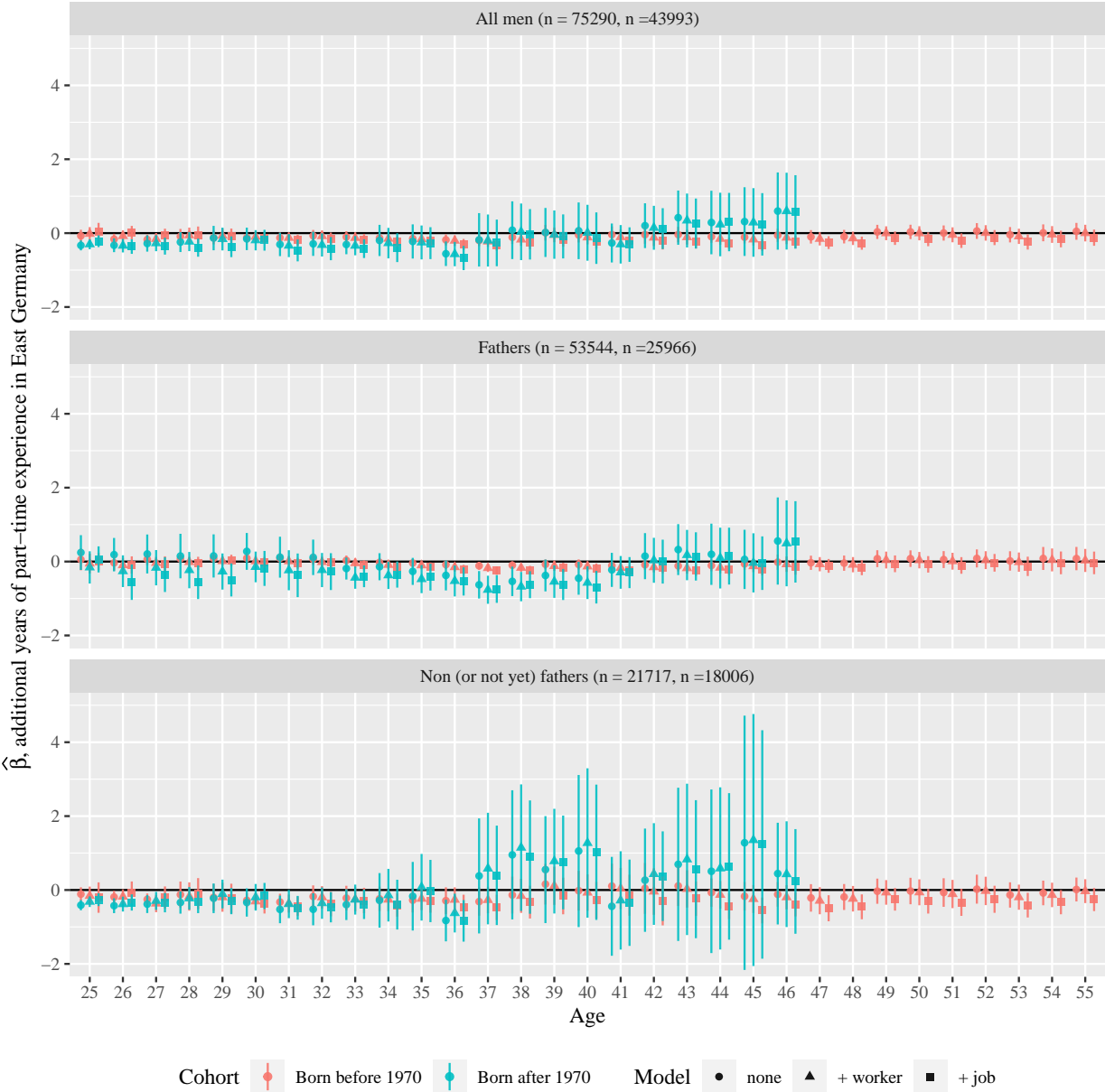
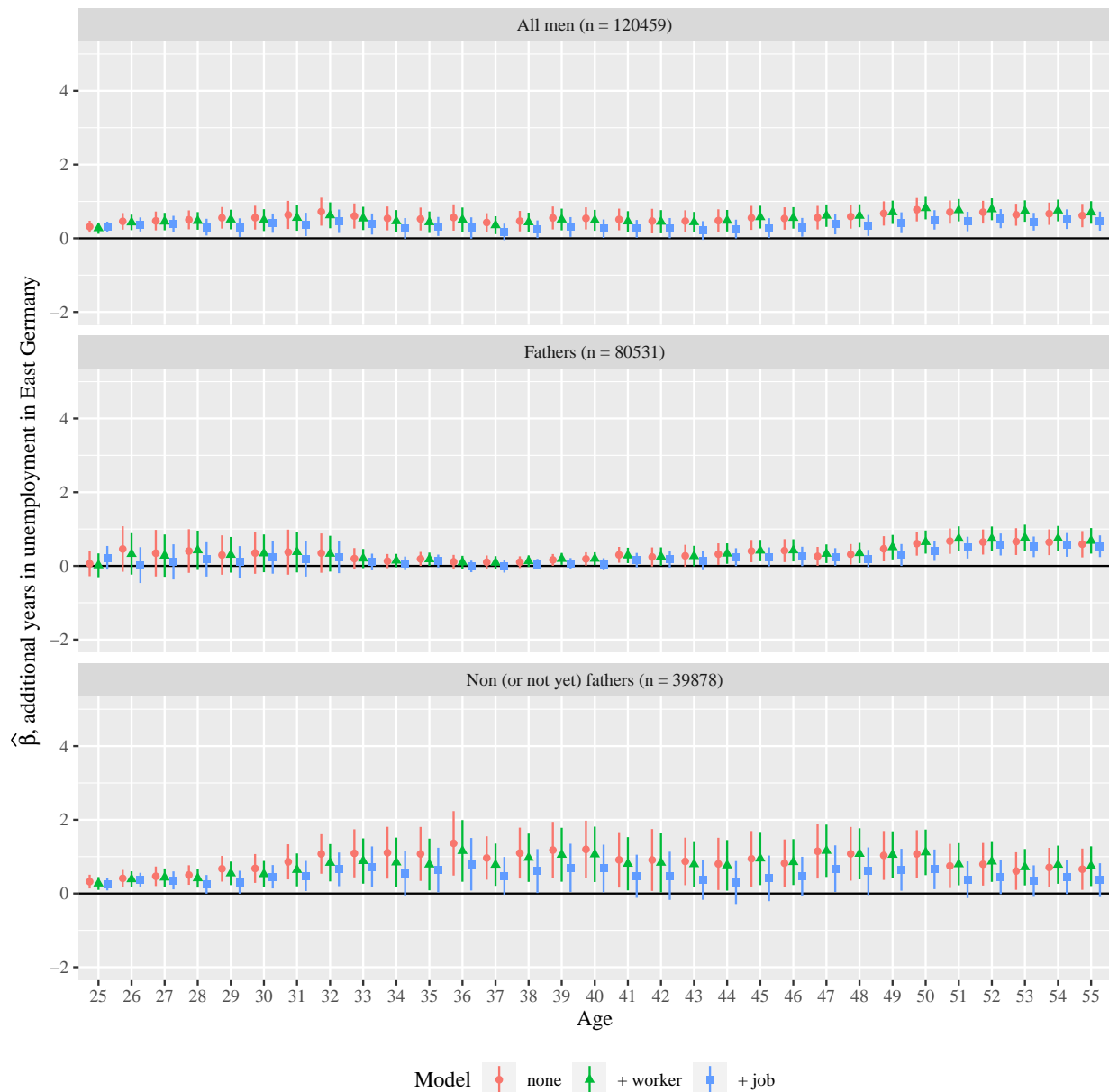


Figure B.15: Years in unemployment, samples of men born (employed and non-employed).



B.16 shows the results split by birth year before and after 1970. The main message is the same: If anything, East German fathers have slightly more years in unemployment. For the younger cohorts, East German fathers accumulate roughly one year more in unemployment than their West German counterparts. But these differences are mostly insignificant. It appears that unemployment gaps are higher for the younger cohort.

Figure B.17 complements Figure 14 in the main text and displays the results for other samples of men. Figure B.18 illustrates the outcomes for individuals in the labor force, categorized by birth year in 1970, across all male samples. Distinct patterns are observed

Figure B.16: Years in unemployment experience, samples of men born before and in/after 1970 (employed and non-employed).

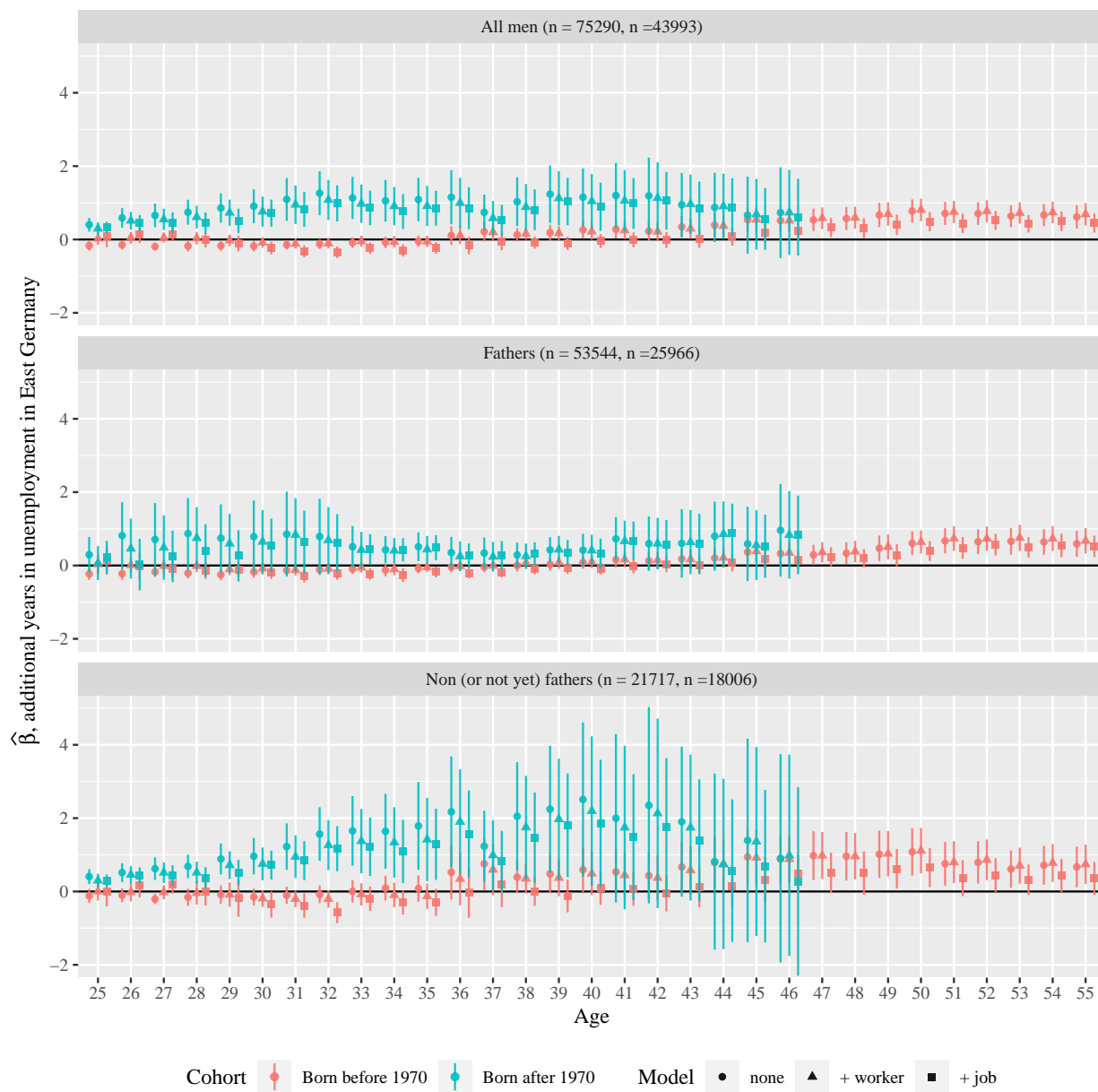
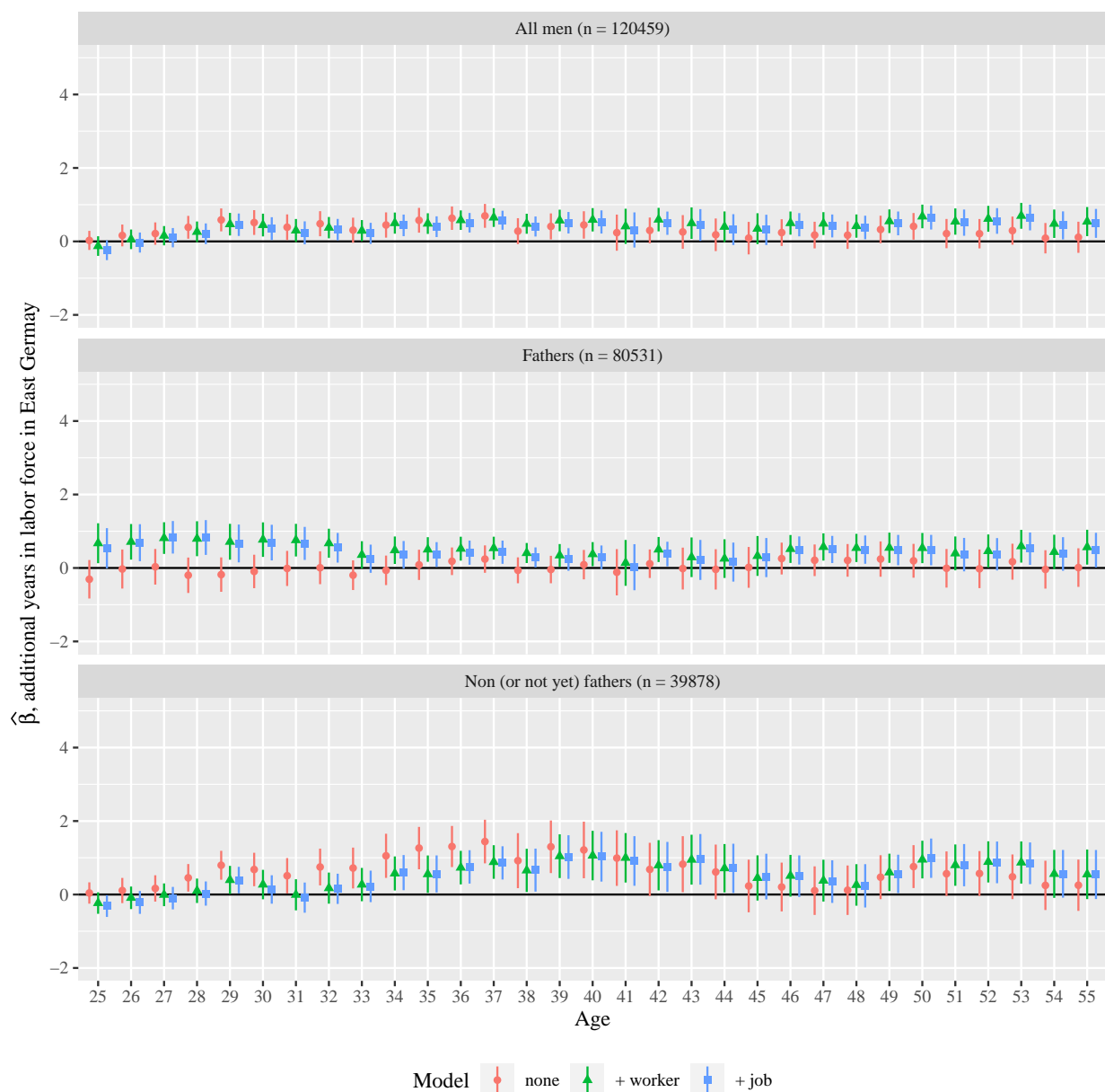


Figure B.17: Years in labor force, samples of men born (employed and non-employed).



between the older and younger cohorts, yet the primary finding persists: Among fathers, disparities are generally non-significant across most age groups. In instances where differences reach significance, East German fathers (men) exhibit a tendency to have spent more years in the labor force compared to their West German counterparts.

Figure B.18 displays the results for years in labor force split by year of birth in 1970 for all subsamples of men. Slightly different patterns emerge for the older and younger cohort, but the main result remains unchanged: For fathers, differences are not significant in most age groups. If there are significant differences, East German fathers (men) spent more years in the labor force than their West German counterparts.

Figures B.19 and B.20 show the results for full-time and part-time experience by number of children. There are no differences in full-time experience between fathers in East and West Germany with the same number of children, except for a short period for young fathers with three or more children. Young West German fathers work on average two more years in full-time employment, but when we add worker and job characteristics, differences vanish.

Similarly, for part-time experience, there are essentially no differences between fathers in East and West Germany. Only during their 30s, East German fathers with three or more children work roughly one year *less* in part-time employment than comparable West German fathers. However, also this small gap disappears at the age of 41. The evidence does not point towards a reduced labor supply of fathers in East Germany compared to West Germany.

Figure B.18: Years in labor force, samples of men born before and in/after 1970 (employed and non-employed).

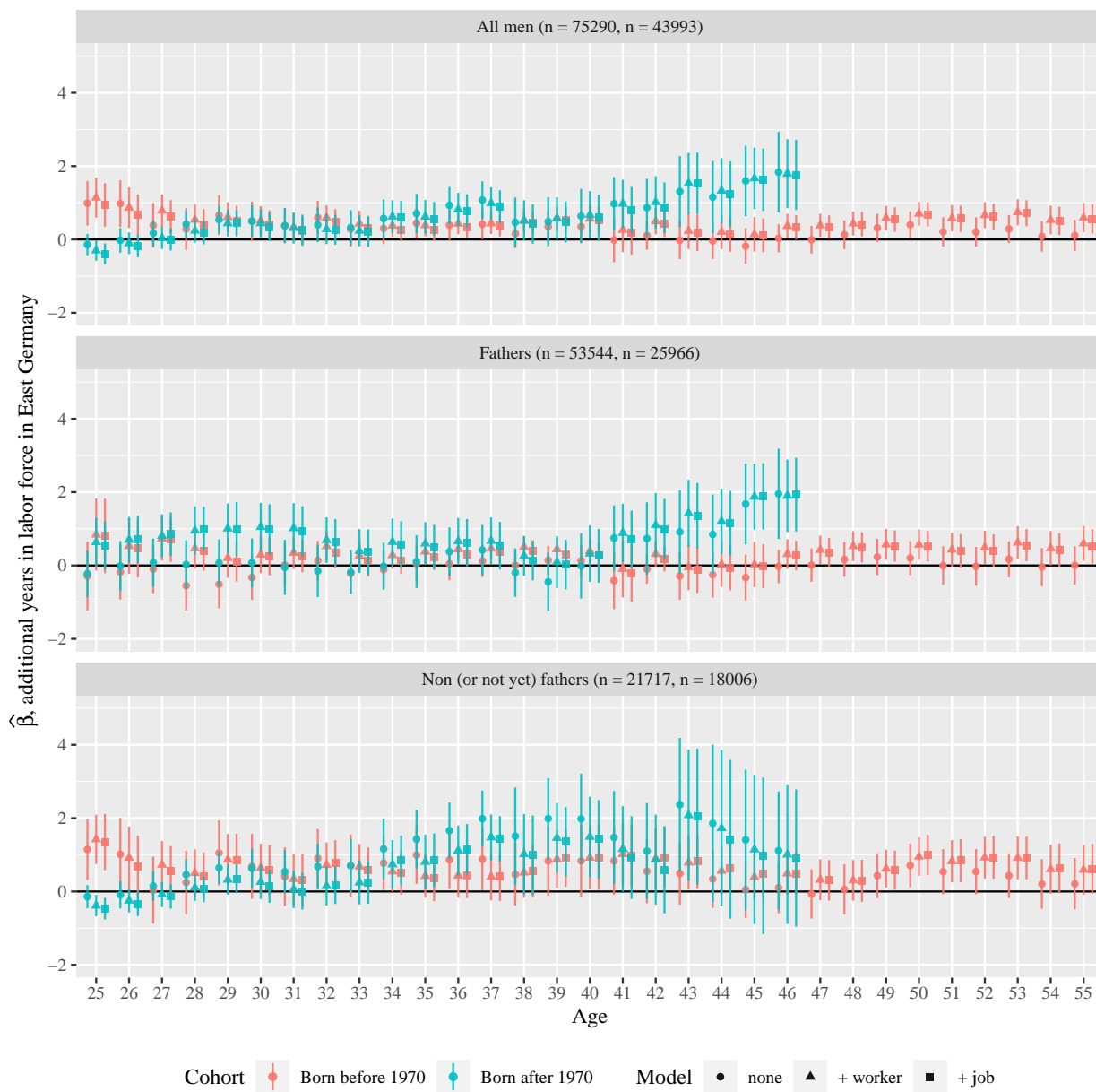


Figure B.19: Years in full-time experience, fathers born in/after 1970.

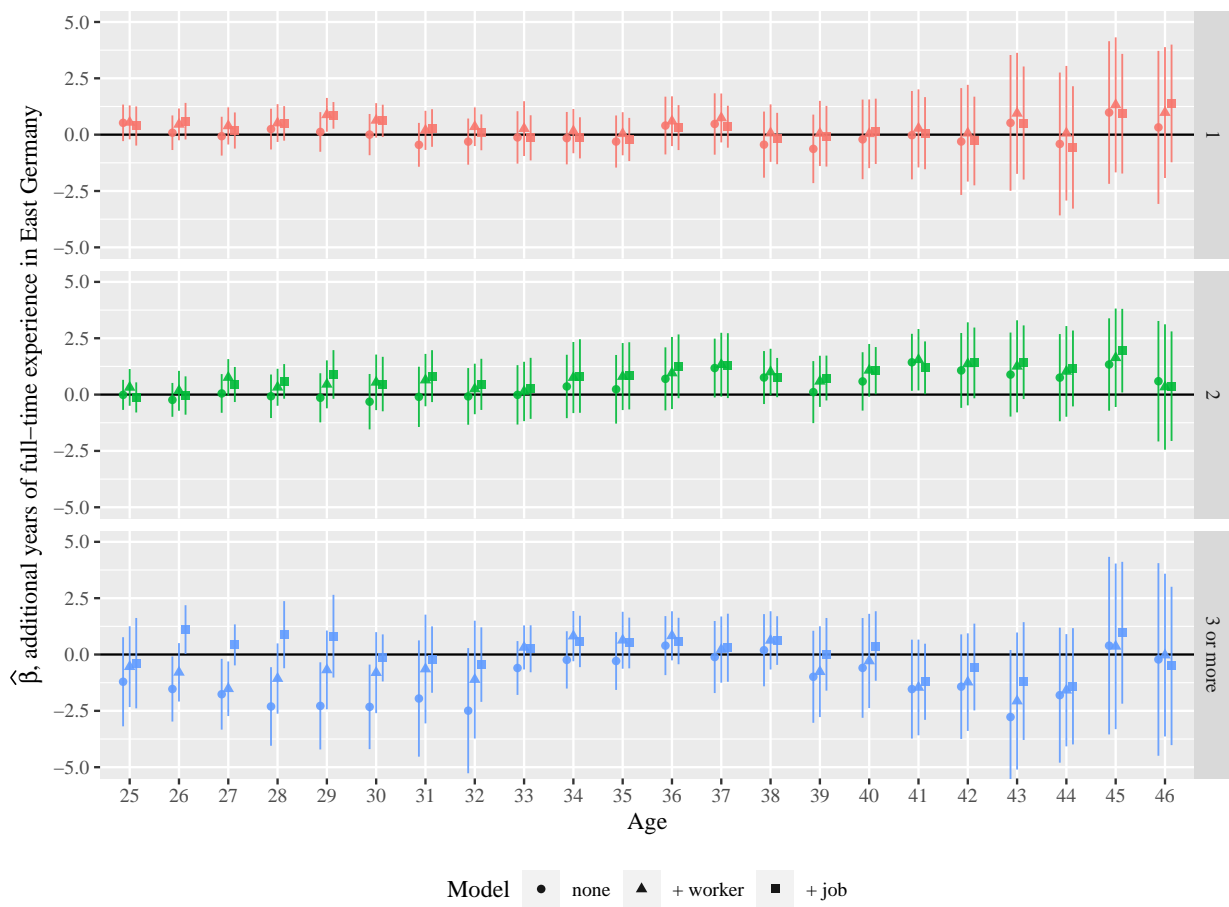


Figure B.20: Years in part-time experience, fathers born in/after 1970.

