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Fired and Pregnant: Gender Differences in Job Flexibility Outcomes after Job Loss

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NON-TECHNICAL SUMMARY

Over the last decades, governments and firms have put in much effort to narrow gender gaps in employment and wages. The main motivation of the present paper is to assess whether gender-related persistence in the job flexibility outcomes of work hours and commutes prevents further closing of gender gaps. Using unique administrative monthly micro data from Statistics Netherlands over the period 2006-2017 and a quasi-experimental design involving job displacement because of firm bankruptcy, we investigate what happens to gender gaps for displaced females and males in the period of three years after job loss.

First, our results suggest that displaced part-time employed women as well as displaced low-commute women have a persistence in job flexibility outcomes, characterised by relatively few working hours and short commutes also after job loss. For displaced men we do not find these patterns, as they tend to work more hours and experience about an 18 per cent increase in commuting distance after job loss.

Second, we show for different subpopulations of displaced women that their loss in wages is low compared to their male counterparts, suggesting women lose relatively less in wage premiums and human capital than do men. However, we show that displaced women take longer to become re-employed than displaced men. One interpretation of these results is that female workers' job flexibility increases the unemployment duration, but in the short run does not widen the gender wage gap.

Third, we show that female workers who are pregnant when job loss occurs experience large losses in employment, and conditional on re-employment take up a flexible job. Even three years since job loss, full-time employed married women who were pregnant upon dismissal are on average over 30 percentage points less employed than comparable displaced women who were not pregnant. In contrast, displaced men have a higher re-employment rate when they are expecting a baby or have young children, especially if they are married.

Taken together, women relative to men are better off in terms of wages and commuting but do experience a longer unemployment duration and a larger loss in working hours after job loss. Importantly, current policies to protect pregnant female workers against the consequences of job loss due to firm bankruptcy are insufficient, as job loss widens the gender employment gap in the short run and possibly the gender pay gap in the long run. Policy advice is to put a safety net in place to protect pregnant women against the long-term consequences of dismissal and to raise awareness within households of these consequences. Policies may involve providing more high-quality child care and encouraging men to share child care responsibilities.

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ABSTRACT

We study whether women and men cope with job loss differently, focusing on the importance of workers' job flexibility and household setting. Our empirical analysis is based on Dutch administrative monthly micro data over the period 2006-2017 using a quasi-experimental design involving job loss following firm bankruptcy. We find for displaced women, but not for displaced men, a persistence in job flexibilities involving limited working hours and short commutes. Importantly, job loss results in a smaller loss in hourly wages and longer unemployment for women, narrowing the gender wage gap but widening the gender employment gap. Also, we show that female workers who are pregnant when job loss occurs experience large losses in employment and conditional on re-employment take up a flexible job. Policy advice is to put a safety net in place to protect pregnant women against the long-term consequences of job loss.

Keywords: job loss; gender; job flexibility; household; pregnancy

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1. Introduction

Over the last decades, governments and firms have put in much effort to narrow gender gaps in labour market outcomes. However, as in many other countries, gender gaps in the Netherlands remain pervasive.[1] Many studies have related the gender gaps in employment and wages to preferences from the supply side of the labour market (Goldin, 2014; Blau and Kahn, 2017). The literature argues that females have a higher preference for flexible work, as they prefer to be employed in part-time positions (Booth and Van Ours, 2008, 2013) and to work close to home (Crane, 2007; Barbanchon et al., 2019). This observation points out that flexibility is a non-wage job attribute, which may come at a price through a compensating wage differential. As such, any persistence in the different gender-related preferences for flexibility may prevent further closing of gender gaps. At present, however, there is no knowledge of the persistence in job flexibilities. Any persistence is likely to happen during an episode of job loss, when displaced workers reconsider their need for flexible work given the constraints of their personal circumstances at home.

The first aim of this paper is to examine whether there is a gender difference in the persistence in the job flexibility outcomes of work hours and commutes when job loss occurs, and its consequences for the gender gaps in employment and wages. On the one hand, a stronger preference for flexibility could make women selective in post-displacement working hours and commutes, widening the gender gaps in employment and hourly wages after job loss through a compensating differential. Indeed, previous research shows that women's preference for work hours flexibility is strong (Flabbi and Moro, 2012; Wiswall and Zafar, 2018), resulting in a gender wage gap (Bertrand et al., 2010; Cortés and Pan, 2019). Similarly, for women the disutility of commuting is higher than for men (Gutiérrez-i-Puigarnau and Van Ommeren (2010); Roberts et al. (2011)). Barbanchon et al. (2019) show that the gender difference in the willingness to commute accounts for about 10 per cent of the post-unemployment observed gender wage gap. On the other, a gender difference in pre-displacement human capital accumulation could make women lose less human capital and wage premium upon the incidence of job loss, narrowing the gender gaps.[2]

Our second aim is to analyse the importance of workers' household setting for job flexibility outcomes after job loss. The worker's household setting, which we define based on having a partner and by the presence of children, is relevant as it causes women to have a stronger preference

[1] In 2017, Dutch women relative to men have a 10 percentage points lower labour force participation, a 15 per cent lower wage, a 50 percentage points lower full-time employment and a 20 per cent shorter commute (CBS, 2019).

[2] Human capital accumulation and depreciation and associated wage premiums are gender-specific, as women work more part time, experience more depreciation during workforce interruptions and traditionally undertaken smaller investments in human capital than do men (Mincer and Polachek, 1974; Blau and Kahn, 2013, 2017).

for flexibility through traditional gender roles and intra-household decision making.[3] We use a unique group of displaced workers with high flexibility needs, individuals expecting a baby upon the incidence of unforeseen job loss, to assess how labour supply and fertility interact with each other. After a job loss, the preference for flexibility could be relatively strong for married pregnant women, reducing their working hours and commutes thereby decreasing employment prospects and hourly wages. For single persons, however, the gender difference in coping with job loss could be smaller because there is less specialisation within the household. We examine whether the displacement effects are different for expectant mothers and expectant fathers, and how the effects differ by the worker's marital status.

We conduct the analysis by using rich administrative micro data sets from Statistics Netherlands that contain the entire population of Dutch individuals, households and firms. We use data from Statistics Netherlands for three main reasons: (i) the data allow us to study the short-run and medium-run displacement effects by using a rich monthly panel over the time period January 2006 to December 2017. We follow workers who were displaced between 2008 and 2014 for two years before and three years after the month of job loss. Importantly, the monthly data offer the unique possibility to examine the role of pregnancy in the labour-market effects of job loss. Moreover, the Dutch setting is ideal to study differences between part-time and full-time workers, as the Netherlands is characterised by the highest part-time employment rate of the OECD member countries (OECD, 2019a).[4] (ii) the data are based on the contract and monthly income statements of the worker, which allows us to observe wages and working hours limiting measurement error. (iii) the data observe a rich set of variables including demographic (gender, age, education; and nationality), household (marital status, having a child; and home location) and job characteristics (wages, working hours, tenure in the job, firm size, economic sector; and work location).

We use the setting of job displacement due to firm bankruptcy as a quasi-experimental design, which ensures the reason for job loss and job search is identical to all workers. This design limits the potential of various selection mechanisms, including selection into (part-time) employment, quit behaviour, unemployment and non-employment. To deal with any further selection into job displacement, we use Coarsened Exact Matching (CEM) on a large set of observables to make displaced and non-displaced workers observationally equivalent (Iacus et al., 2011). We use four

[3]The traditional gender roles refer to the division of responsibilities within the household, where traditionally married women invest more time in household production whereas married men invest more time in the labour market production (Chiappori and Mazzocco, 2017).

[4]Dutch part-time employment as a percentage of total employment equals 76 per cent for females and 27 per cent for males in 2017 (CBS, 2019). Dutch involuntary part-time employment as a percentage of total part-time employment is relatively low, ranging from 4 to 9 per cent for females and 5 to 12 per cent for males in the period 2006-2017 (OECD, 2019b).

reduced-form models and apply a double differences estimator to compare the post-displacement labour market outcomes in employment, hourly wages, working hours and commuting distance, respectively, of displaced workers to non-displaced workers. We apply a triple differences estimator to investigate how workers with different characteristics differ in displacement effects, such as for the worker's gender, full-time/part-time status and household setting. Thereby, any selection into job loss that is common among groups of displaced workers is also cancelled out. Our analysis contributes to three literatures.

First, we contribute to the literature on job displacement by showing that displaced women put more emphasis on working hours flexibility and commuting flexibility than do displaced men.[5] A novel finding is that displaced women, compared to displaced men, experience about a 5 percentage points higher loss in working hours and a 6 percentage points smaller increase in commutes, suggesting that women highly value job flexibility margins.

Second, we contribute to the literature on work flexibility and the gender pay gap (Bertrand et al., 2010; Goldin, 2014; Cortés and Pan, 2019; Barbanchon et al., 2019). We contribute to this literature by focusing on the persistence in job flexibility outcomes after job loss and how this persistence relates to the gender gaps in employment and wages. A novel finding is that displaced female workers who were in a part-time position when job loss occurred are selective in post-displacement commutes, and a similar pattern holds for females who were in a position with a low commuting distance when job loss occurred as they reduce working hours after job loss. In contrast, these patterns do not hold for displaced men. Overall, compared to displaced full-time employed men, we find that displaced full-time or part-time female workers take more time to become re-employed but tend to acquire a job with fewer working hours, closer to home and with a smaller loss in hourly wage. Displaced women's relatively small loss in hourly wages corroborates the view that women lose less firm-specific human capital (Blau and Kahn, 2017). The premise of our paper is that displaced female workers' job flexibility matters for unemployment duration, but in the short run does not lead to a wider gender hourly wage gap.

Third, we contribute to the literature on the motherhood/child penalty by focusing on job loss of expectant mothers and expectant fathers.[6] We show that pregnancy increases post-displacement work flexibilities of displaced women, reducing work hours, commutes and re-employment. Specifically, we find that conditional on re-employment, displaced expectant mothers reduce working hours by 15 percentage points and commutes by over 20 percentage points. Moreover, pregnancy

[5]The literature on job displacement documents large and long-lasting effects of job loss on employment and wages (Kuhn, 2002), building on the seminal paper by Jacobson et al. (1993).

[6]The literature on the child penalty examines the gender difference in the impact of parenthood. For example, see Bertrand et al. (2010); Angelov et al. (2016); Adda et al. (2017); Kuziemko et al. (2018); Kleven et al. (2019).

reduces re-employment by about 30 percentages points for displaced married women and by 14 percentage point for displaced single women. The effects are long lasting and particularly striking given that we find them for women who were in a full-time job when the job loss occurs. For displaced full-time employed men we do not find negative effects and, if anything, they experience a smaller loss in employment when expecting a baby. Our findings complement the literature on intra-household decision making and traditional gender roles, documenting that women's unforeseen job loss is the start of a large gender gap in employment over the life course, which may in the longer term result in a gender gap in wages through the career costs of children (e.g., see Adda et al. (2017)). The policy advice is to put a safety net in place to protect pregnant women against the consequences of dismissal, as for this disadvantaged subgroup of workers there is no protection against job loss due to firm bankruptcy.

2. Conceptual Framework

We use a simple job search framework to guide our empirical analysis. Following the findings by Barbanchon et al. (2019) who show that gender gaps in wages and commutes are predominantly supply-side driven, we focus on the supply side of the labour market. After a job loss, the worker's unemployment duration depends on the arrival rate of job offers and the probability of accepting a job. The worker's financial incentive to become employed is key in explaining the exit rate into employment. For workers with higher opportunity costs of continued search, the unemployment duration is expected to be shorter because of a higher probability of accepting a job, for example by lowering the reservation wage.

It seems reasonable that the worker's preference for flexibility affects the probability of accepting a job as well. We consider flexibility outcomes in two dimensions, that is in the number of working hours as well as in the distance of commutes. Fewer work hours and shorter commutes gives workers the opportunity to work according to their own preferences. However, working part time is costly, since there are fewer career opportunities.[7] Moreover, lower commutes are costly, since the set of potential employers is more limited.[8] Importantly, the worker's preference for flexibility constrains the exit rate into employment, as the set of potential job opportunities is decreasing for workers who are more selective in the number of working hours or in the geographical scope of search, imposing a compensating differential reducing employment and/or wages.

[7]The literature on part-time employment shows that part-time wage penalties are large for men, but much smaller for women (Hirsch, 2005; Russo and Hassink, 2008; Manning and Petrongolo, 2008).

[8]For literature on the trade-offs between employment, wages and commute, see Van Ommeren and Fosgerau (2009); Mulalic et al. (2014); Meekes and Hassink (2019b); Guglielminetti et al. (2019).

We examine the gender difference in coping with job loss, which is relevant as there seems to be a difference between males and females in the preference for flexibility.[9] It has been shown that women set lower reservation wages (Krueger and Mueller, 2016; Caliendo et al., 2017). As such, it may be easier for displaced female workers to become re-employed rapidly. However, women tend to have a stronger preference for flexibility, which through a compensating differential may hinder rapid re-employment and/or lead to lower hourly wages. Specifically, the labour economics literature shows that women have a stronger preference for part-time work, limiting the set of potential jobs (Flabbi and Moro, 2012; Goldin, 2014; Wiswall and Zafar, 2018). Similarly, the spatial economics literature shows that for women the utility loss of commuting is higher than for men, causing a gender difference in labour supply making women less competitive in the labour market through a smaller local labour market (Gutiérrez-i-Puigarnau and Van Ommeren, 2010; Black et al., 2014; Meekes and Hassink, 2019a). Moreover, Van den Berg and Gorter (1997) and Barbanchon et al. (2019) show women trade-off commute against wages.

Importantly, the literature suggests a gender difference in the persistence in work hours flexibility, as female workers strongly prefer a part-time job whereas male workers prefer a full-time job (Booth and Van Ours, 2008, 2013). Moreover, although men do not prefer a high-commute job by itself, they could be more likely than women to allow for increases in commute after a job loss as their disutility of commuting is lower. Hence, displaced female workers who were in a part-time job or short-commute job may be more likely to take up a post-displacement job that is also flexible in terms of working hours and commutes. Moreover, it could be argued that displaced full-time female workers decrease their working hours after job loss, whereas displaced part-time employed men tend to increase working hours. This leads to the following four predictions: (i) after a job loss, re-employed female workers have a persistence and consistence in job flexibility outcomes involving fewer working hours and shorter commutes compared to their displaced male counterparts. Consequently, (ii) displaced women have a relatively long unemployment duration.

Interestingly, the gender difference in the displacement effect on wages is ambiguous. On the one hand, displaced women's preference for flexibility could cause higher wage losses through the compensating wage differential, where non-wage job attributes make up for lower wages. On the other, displaced women could lose relatively less in wage premiums, because of smaller investments in firm-specific capital and more depreciation during earlier workforce interruptions. We will analyse the net effect of these mechanisms by estimating the gender difference in the displacement effect on hourly wages.

[9]Note that the underlying mechanisms of a stronger preference for flexibility include women being forced to undertake flexible work due to lack of other options, lack of affordable child care and cultural and social expectations.

Following, we assess whether persistence in job flexibility outcomes is amplified by workers' household setting. The worker's household setting affects post-displacement outcomes because of intra-household decisions on labour supply. That is, traditional gender roles are more pronounced when having a partner and by the presence of children (Chiappori and Mazzocco, 2017), which increases the value of work flexibilities for women who are married or have children. Thus: (iii) for displaced women being married and/or having children causes fewer working hours and shorter commutes, reducing employment prospects and/or wages through a compensating differential. In addition, we examine a disruptive shock involving job loss combined with expecting a baby. This shock might increase women's preference for flexibility as well as men's financial incentive to become re-employed rapidly, as traditional gender-role attitudes become more pronounced after becoming a parent (Perales et al., 2018). Consequently: (iv) the gender difference in coping with job loss is amplified when expecting a baby, decreasing women's working hours and commutes thereby widening gender gaps in employment and/or hourly wages.

3. Institutional setting and data

3.1. Institutional setting in the Netherlands

We first discuss the Dutch institutional setting on job displacement and unemployment benefits (UB). Normally, a notification of termination of employment should be provided by the employer to the worker. However, in the case of dismissal due to firm bankruptcy, as it is a very time-sensitive dismissal, the notification is not required from the bankrupt firm to the displaced workers. Only if the Public Employment Service agency requests a notification requirement, the firm is obliged to give one. Moreover, as a bankrupt firm is insolvent, severance payments or transition payments are generally not provided by the bankrupt firm to the displaced worker.

UB are provided by the Public Employment Service agency for at least 3 months and up to 38 months. For each consecutive year of employment that a worker has at least 208 working hours, the worker will receive one more month of UB. For the first 2 months of UB, the amount of benefits is equal to 75 per cent of the monthly wage received in the displaced job. After 2 months of UB, the amount equals 70 per cent of the monthly wage. In the regression analysis we aim to take the duration of UB into account by controlling for the worker's age and tenure in the job.

The provision of UB is particularly technical when being displaced and pregnant. Pregnant employees cannot experience involuntary job loss, as a pregnant worker has stronger employment protection than other workers. However, when being pregnant, dismissal can occur for reasons involving firm bankruptcy or being fired on the spot. A displaced worker who is pregnant when

job loss occurs is entitled to maternity benefits (in Dutch: zwangerschaps- en bevallingsverlofuitkering (WAZO)). The WAZO is provided for 16 weeks in total: for about one month before and three months after giving birth. For this reason, in our empirical analysis we assess whether the displacement effects differ over time since job displacement. The WAZO provides 100 per cent of the monthly wage to a displaced pregnant worker. When the displaced worker is no longer receiving WAZO, the worker is entitled to UB. The duration and amount of UB is the same as for other displaced workers and depends on the number of years in previous employment.

The Dutch institutional setting on childcare is as follows. The costs of formal childcare depend on the type of childcare and the calendar year, ranging from about 5 to 8 euro per hour in the period 2006 to 2017. Formal childcare is defined as general child care for children up to four years and out-of-school care for children who are in primary school. About 30 per cent of all households with children aged up to 12 years receive childcare subsidy (CBS, 2019). Households are only eligible for childcare subsidy if both parents are employed. Households that receive childcare subsidy spend on average 5,500 to 7,000 euro on childcare per annum, of which 60 to 80 per cent is reimbursed by the government to the household through childcare subsidies.

Childcare subsidy is based on an employer contribution and a government contribution. The employer contribution depends on the hourly cost of the formal childcare. The government contribution depends on the household income, with a higher household income imposing a lower contribution. Since 2012, the government contribution also depends on the number of working hours of the household members. Specifically, the government contribution is higher when the number of working hours of the household member working fewest hours increases. If a household member becomes unemployed and the household has been receiving childcare subsidy, the subsidy will be provided for a remaining period of three months since job loss.

The type of tax system is important for intra-household decision making on labour supply (Chiappori and Mazzocco, 2017), as it could provide a financial incentive for a gap in working hours between two household members. In the Netherlands there is joint taxation, which allows households to strategically allocate deductions such as home mortgage interest from the taxable income of the highest income earner within the household. Although workers will pay a higher marginal tax if their gross income is higher, for the highest (lowest) earner within the household it might be financially attractive to increase (decrease) production in the labour market. Specifically, the joint tax system provides an incentive for the highest earner to work full time while deducting as much as possible from his or her taxable income.

3.2. Administrative data from Statistics Netherlands

We draw on administrative panel data sets from Statistics Netherlands over the period 2006-2017 to study the gender difference in how workers cope with job loss. The data contain the entire population of Dutch individuals, households and firms, which are encrypted using Randomised Identification Numbers (RIN).

Using the RIN of both individual and firm, we have precise information on job endings surrounding bankruptcy of a firm entity. We define displaced workers as workers whose job ended between six months before and one year after the date of bankruptcy. By including workers who leave up to six months before bankruptcy in the group of displaced workers, we include workers with relatively good employment prospects also referred to as the 'early leavers' (Schwerdt, 2011). See Table A13 for the time gap between job loss and firm bankruptcy by gender and full-time/part-time status. This selection ensures we will not overestimate the displacement effects. Our analyses are based on monthly data over the period 2006 to 2017. We follow each individual worker for 61 months, two years before until three years after job displacement. For this reason, we include workers who became displaced over the period January 2008 to December 2014.

For each worker and month we observe (i) demographic characteristics (gender, age; Dutch nationality), (ii) household characteristics (home location at the neighbourhood level, marital status [single or partner]; presence of children and birth date of youngest child), (iii) job characteristics (employment, number of working hours, wages, full-time employed for $\geq$ 35 hours and part-time employed for 20 to 35 hours, job location at the municipality level [set of 388 municipalities with an average size of 12 square kilometres that existed in the calendar year 2017], tenure in the job [3-6 years, 6-12 years, 12-18 years or $>$ 18 years], type of contract [permanent or fixed contract]); and (iv) firm characteristics (economic sector [21 International Standard Industrial Classification of All Economic Activities (ISIC) sectors], size of the firm [10-49, 50-99, 100-499 or $\geq$ 500 employed workers]).[10]

We applied several sample selections. We use individuals with a relatively strong attachment to the labour market by selecting employed workers with a job tenure of at least three years working at least 20 hours a week in the month of job displacement. This group of workers has relatively strong motivation to work, limiting the incidence of labour force withdrawal (non-employment) and entry into self-employment. We retained the worker-month observation based on the job with the highest wage for workers who have multiple jobs in a given month. We removed worker-month

[10]For about half of our sample we observe the individual's educational attainment, categorised by lower, secondary or tertiary education based on the International Standard Classification of Education (ISCED) classification. We show in Tables C1 and C2 of Appendix C that controlling for the worker's education level does not affect the gender difference in displacement effects.

observations of individuals with an hourly wage less than three euro. We also removed individuals who (i) are aged below 21 or above 60 years, (ii) did not participate in the labour market such as students, retirees and disabled individuals; and (iii) work at a bankrupt firm that engaged in a merger or acquisition, approximated by calculating if more than 40 per cent of the displaced workers became re-employed at the same employer.

3.3. Key variables

We use data on four dependent variables: employment expressed as a binary variable that equals one if the individual is employed, the natural logarithm of the hourly wage constructed by taking the logarithm of the contractual gross wage in euro relative to the contractual working hours, the natural logarithm of the number of contractual working hours and the natural logarithm of the commuting distance based on the absolute distance in kilometres from neighbourhood of home to municipality of work.

In our empirical analysis on commutes, we use the logarithm of a transformed version of the worker's commuting distance computed by taking the logarithm of the distance plus one. Thereby, for the logged commuting variable we retain positive values for workers with a distance between zero and one. In addition, the data on commuting distance is not entirely consistent, resulting in a loss of efficiency. First, the employee's work location is only observed in December of each calendar year, so for workers who had a job that has not been observed in December the work location is missing. Second, Statistics Netherlands uses data on workers' home and work location to link employees to the employer's firm entities. The inconsistency arises from the fact that firms only provide information on the number of firm entities, its locations and the number of employees at each entity, but not on the exact work location of the employee. We ran a robustness check by using a sample of workers with complete information on work location (see Table C3), and our conclusions are robust.

The set of key independent variables consists of treatment status, post-displacement status, gender, full-time/part-time status, marital status and the presence and age of children. These variables are all time-constant and measured in the month of job displacement, except for the post-displacement status which is time-varying. The variables are expressed as zero-one indicator variables. The treatment status, post-displacement status and gender equal one if the worker is displaced, observed after displacement and female, respectively. The full-time/part-time employment status has two categories, consisting of part-time jobs that range from 20 to 35 working hours a week and full-time jobs for jobs with 35 or more working hours a week. We define marital status such that it equals one if the worker is married or has a registered partnership, and zero otherwise. The variable that represents the presence and age of children has four categories. The categories

consist of no child, pregnancy approximated by a birth within 8 to 1 months from the month under observation, youngest child aged 0 to 18 years; and youngest child over 18 years.

4. Methodology

4.1. Identification challenges and strategy

We analyse the gender difference in how workers cope with job loss. In this section we discuss the identification challenges and our strategies to overcome these.

The key identification challenge is that labour turnover is endogenous to many factors including gender. Women, for example, are more likely than men to give up their job for family reasons or to self-select into a part-time job, and the presence of a partner or children amplifies this difference of selection into unemployment and part-time employment (Blau and Kahn, 2017). In turn, the reason for and incidence of labour turnover is important as through human capital accumulation and signalling it affects workers' long-term labour market outcomes. In line with the literature on job displacement, our identification strategy exploits a quasi-experimental empirical design involving job loss due to firm bankruptcy as an exogenous negative employment shock to the employment status of workers.[11] This strategy ensures that women and men experience unforeseen job loss for an identical reason. The key identification restriction involves parallel pre-displacement trends for displaced and non-displaced workers as well as for workers who differ in gender, full-time/part-time status and household setting, which we will evaluate in our results section. See Figures C1 and C2 for placebo treatment tests on parallel pre-treatment trends, matching displaced to non-displaced workers in the twelfth month before actual displacement. The results satisfy our key identification restriction.

Another identification challenge is that it is not random who works at a firm that has been declared bankrupt, as firm bankruptcy is particularly sensitive to business cycle effects on specific economic sectors. To deal with this identification challenge, we use the coarsened exact matching procedure to make displaced and non-displaced workers observationally equivalent (Iacus et al., 2011).[12] Matching of displaced to non-displaced workers on observables limits the potential of

[11] Fackler et al. (2018) show that dismissals because of firm bankruptcies and mass layoffs are more likely to be exogenous employment shocks to workers than job loss due to closures without bankruptcy.

[12] See Tables A1 and A2 for the individual summary statistics for the non-matched sample and matched sample, respectively. The full set of matching variables is as follows: gender, age (six categories), Dutch nationality, having a partner, being widowed, being divorced, presence of children, provincial area of workplace (twelve categories), type of contract, working hours (four categories), tenure in the job (four categories), economic sector (21 ISIC industries) and size of the firm (four categories). The matching rate equals about 52 per cent. See Tables A3 and A4 for the female summary statistics and male summary statistics based on the matched sample, respectively.

selection into job displacement for example caused by economic sector of the firm (see Table A5 for firm summary statistics on the firm size and economic sector of firms that went bankrupt). The displaced workers are the treatment group. A control group is computed by matching displaced workers on the month of job displacement to identical, non-displaced workers. Thereby, the 'actual' month of job displacement of a displaced worker reflects the 'potential' month of displacement of a non-displaced worker. In the years following the actual or potential displacement, the workers in our sample could become unemployed for voluntary reasons as well as for involuntary reasons except for job displacement due to firm bankruptcy. This ensures we will not overestimate the displacement effects (Krolikowski, 2018). Our empirical approach increases the internal validity of our analysis but decreases the external validity in terms of generalisability to workers who are not easily matched on observables or experience other reasons for job loss.

A final identification challenge is that job stability and fertility are interrelated. For example, the incidence of job loss decreases fertility rates for over six years (Del Bono et al., 2015; Huttunen and Kellokumpu, 2016). This limits our ability to examine the causal impact of the presence of young children on workers' post-displacement outcomes. To tackle this identification challenge, we exploit a group of workers who are expecting a baby upon the incidence of unforeseen job loss. Thereby, we use fertility as an exogenous shock to assess how fertility interacts with employment, wages and the job flexibility outcomes of working hours and commuting distance. See Table A6 for the time gap between birth and job loss for expectant mothers as well as for expectant fathers, which reveals no clear pattern of strategic behaviour in leaving a job over the time gap of one to eight months before birth. This descriptive finding supports that fertility in relation to firm bankruptcy is exogenous.

Our identification strategy involving job loss due to firm bankruptcy is ideal to study gender differences in job flexibility outcomes after job dismissal for various reasons. First, upon the incidence of job loss, workers might exogenously change their reservation wage in relation to their preference for flexibility in working hours and commute. For traditional workers, variation in job flexibility outcomes is low (Flabbi and Moro, 2012). Second, we examine the displacement effects while limiting demand-side factors such as wage discrimination and a more homogeneous spatial distribution of female jobs (Blau and Kahn, 2017), as these demand-side factors are to some extent cancelled out as they affect pre-displacement outcomes as well as post-displacement outcomes. Third, confounding effects of on-the-job search and firms offering higher wages to reduce labour turnover are limited, because we focus on post-displacement labour market outcomes. Fourth, controlling for having a part-time job or full-time displaced job, we take into account the static confounding effects of human capital accumulation. Finally, the setting of job displacement limits

confounding effects of fertility and home relocation, as job displacement reduces the likelihood of having children (Del Bono et al., 2015; Huttunen and Kellokumpu, 2016) as well as the incidence of changing home in the Netherlands (Meekes and Hassink, 2019b).

4.2. Empirical models

We use an empirical design that compares pre-displacement outcomes with post-displacement outcomes of displaced and non-displaced workers. The displaced and non-displaced workers will be followed for 24 months before until 36 months after the month of actual and potential job displacement, respectively.

We specify a generic empirical model, shown in (1), to estimate the displacement effect on each of the four outcome variables, Y. Y stands for employment, log hourly wage, log working hours and log commuting distance. Our baseline model takes the form:

$$\begin{aligned} Y_{irt} = \delta_Y(DISPLACED_i \times POST_{it}) + \rho_Y POST_{it} \\ + \beta_Y' X_{it} + \alpha_{Y,i} + N_{Y,r} + D_{Y,t} + \varepsilon_{Y,irt} \end{aligned} \tag{1}$$

$i \in 1, 2, ..., N$; $r \in 1, 2, ..., 40$; $t \in 1, 2, ..., 144$

where subscripts i, r and t denote the worker, regional area and month, respectively. The parameters of interest of interest are denoted by δ_Y, which capture the displacement effects on each of the dependent variables Y. The displacement effect is identified based on a two-way interaction term between the scalar indicator variables *DISPLACED* and *POST*. *DISPLACED* is time-constant and equals one for displaced workers. *POST* equals one for the period of 36 months after job loss, and zero for the month of job loss and the 24 months before job loss. The worker's time-varying covariates are represented by column vector X, with a vector of parameters β_Y. Individual-specific fixed effects are denoted by α_Y, which control for time-constant unobservables such as the worker's ability as well as for time-constant observables such as gender and nationality. N_Y represents indicators for the regional area based on the NUTS 3 regional classification. Parameter D_Y denotes the monthly time indicators and ε_Y denotes the idiosyncratic error term.

Equation (2) extends (1) by allowing the displacement effects to depend on the number of months since job loss. We examine how the displacement effects change over the post-displacement period and assess whether the parallel pre-displacement trends hold. The empirical model is

$$\begin{aligned} Y_{irt} = \sum_{\tau=-24}^{36} [\delta_Y^\tau DISPLACED_i \times G_{it}^\tau + \rho_Y^\tau G_{it}^\tau] \\ + \beta_Y' X_{it} + \alpha_{Y,i} + N_{Y,r} + D_{Y,t} + \varepsilon_{Y,irt} \end{aligned} \tag{2}$$

where δ_Y^τ denote the parameters of interest, i.e. the time-dependent displacement effects. The parameters δ_Y^τ are identified using interaction terms between *DISPLACED* and the scalar indicator variables G^τ. Parameter τ is defined as the time gap between the month under observation and the month of job loss, ranging from minus twenty-four to plus thirty-six in increments of one. At $\tau = 0$, displaced workers have their actual month of job displacement and matched non-displaced workers have their potential month of displacement. Hence, G^τ, $\tau = -24, ..., 36$, denotes the τ-th time gap between the month under observation and month of job loss. We used the twelfth month before job loss as the base category, i.e. $G^{\tau=-12}$, to overcome the potential problem that workers experience changes in outcomes in the month of firm bankruptcy.

We specify a model in (3), which complements (1), to assess whether the displacement effects differ by worker characteristics. Specifically, we include interaction terms among the vector of worker characteristics X, *DISPLACED* and *POST*.

$$\begin{aligned} Y_{irt} = &(\kappa_Y' X_{it}) \times DISPLACED_i \times POST_{it} \\ &+ (\gamma_Y' X_{it}) \times DISPLACED_i + (\eta_Y' X_{it}) \times POST_{it} \\ &+ \delta_Y DISPLACED_i \times POST_{it} + \rho_Y POST_{it} \\ &+ \beta_Y' X_{it} + \alpha_{Y,i} + N_{Y,r} + D_{Y,t} + \varepsilon_{Y,irt} \end{aligned} \tag{3}$$

where vector κ_Y denotes the parameters of interest and vector X contains time-varying covariates as well as time-constant covariates.

We specify a model in (4), which complements that of (2), to assess whether the importance of worker characteristics for the displacement effects changes over time since job loss. Again, we use G^τ instead of *POST*, including three-way interaction terms among the indicator variables X, *DISPLACED* and G^τ. The empirical model is

$$\begin{aligned} Y_{irt} = &\sum_{\tau=-24}^{36} [(\kappa_Y'^\tau X_{it}) \times DISPLACED_i \times G_{it}^\tau \\ &+ \delta_Y^\tau DISPLACED_i \times G_{it}^\tau + (\eta_Y'^\tau X_{it}) \times G_{it}^\tau \\ &+ \rho_Y^\tau G_{it}^\tau] + (\gamma_Y' X_{it}) \times DISPLACED_i \\ &+ \beta_Y' X_{it} + \alpha_{Y,i} + N_{Y,r} + D_{Y,t} + \varepsilon_{Y,irt} \end{aligned} \tag{4}$$

where vector κ^τ denotes the parameters of interest.

5. Empirical analysis

We first present empirical evidence on the average displacement effect on employment, hourly wages, working hours and commuting distance. Following, we examine the gender difference in the impact of job displacement. Then we consider how the displacement effects depend on workers' full-time/part-time employment status and commuting distance of the displaced job as well as workers' household setting when job loss occurred.

5.1. Baseline displacement effects

Table 1 shows the displacement effects based on the sample of all matched displaced and non-displaced workers together. Columns (1), (2), (3) and (4) display the effects on employment, hourly wages, work hours and the commuting distance, respectively.

Table 1 shows that compared to the non-displaced workers, over the post-displacement period of 36 months, displaced workers experience on average a loss of 25 percentage points in employment and, conditional on re-employment, a loss of 6 per cent in hourly wages, a loss of 3 per cent in work hours and an increase of 15 per cent in the commuting distance. The displacement effects in Table 1 on employment and wages are consistent with those reported in the literature. While studies on the US traditionally focus on displacement effects on wages and earnings (Jacobson et al., 1993; Stevens, 1997; Couch and Placzek, 2010; Davis et al., 2011; Krolikowski, 2018), studies on European countries tend to assess the displacement effects on employment and wages (Eliason and Storrie, 2006; Huttunen et al., 2011; Ichino et al., 2017; Huttunen et al., 2018; Halla et al., 2018). In the European context, employment is arguably a more important margin of adjustment because of the more centralized wage system (Kuhn, 2002). For the UK, Hijzen et al. (2010) show displaced workers experience income losses ranging between 18 to 35 per cent. Supporting the results by Meekes and Hassink (2019b) on the Netherlands, Table 1 shows that workers experience a substantial increase in the commuting distance following job loss.

We are interested in how the displacement effects change over the post-displacement period. Figure 1 shows the displacement effects over the number of months since job displacement, which allows us to examine the role of post-displacement unemployment duration in the displacement effects on job attributes. Specifically, the share of displaced workers who become re-employed increases over the post-displacement period, which affects the displacement effects on hourly wages, work hours and commuting distance. The y-axis registers the impact on the outcome variable, which is in percentage points for employment (Figure 1A) and in percentages for hourly wages (Figure 1B), working hours (Figure 1C) and commutes (Figure 1D). The x-axis registers the number of months between the month under observation and the month of job loss, and equals zero for

the month of displacement.[13]

Figure 1A shows that after six months since job loss, displaced workers are about 31 percentage points less employed than non-displaced workers. After 18 months and 36 months the loss in employment equals about 20 and 16 percentage points, respectively. Figure 1B shows that the loss in wages becomes smaller over the period soon after job loss, ranging from 6 per cent the first month since job loss to 4 per cent after four months since job loss. After a post-displacement period of 12 months, the negative displacement effect on wages is more pronounced and remains stable at about 6 per cent. Figure 1C shows that the displacement effect on working hours is most severe up to six months after displacement, which suggests that workers who become re-employed relatively soon after job loss do so by taking up a job with about 5 to 25 per cent fewer working hours. After six months, the loss in hours work equals 5 per cent and diminishes further over the post-displacement period of 36 months. Figure 1D shows that the displacement effect on commutes increases to about 23 per cent over the first three months since job loss, and thereafter decreases to about 10 per cent over the post-displacement period of three years.

Together, our results suggest that workers who become re-employed within three months, realise this re-employment with relatively low losses in wages, high losses in work hours and large increases in commutes, whereas workers who stay unemployed for a longer period experience high losses in wages but smaller changes in working hours and commutes.

5.2. Gender differences in displacement effects

We examine the gender difference in the impact of job loss. Table 2 shows the displacement effects separately for women and men. We observe in Panel A of Table 2 that compared to non-displaced women, displaced women experience over the post-displacement period of 36 months an average loss of about 29 percentage points in employment and, conditional on re-employment, a loss of 5 per cent in hourly wages and a loss of 4 per cent in working hours. Interestingly, displaced women do not experience a significant increase in the commuting distance. Conversely, compared to non-displaced men, displaced men experience a loss of about 23 percentage points in employment and, conditional on re-employment, a loss of 6 per cent in wages, a loss of 3 per cent in working hours and an increase of 18 per cent in commute (see Panel B). These results suggest that compared to displaced men, displaced women experience a higher loss in employment, almost similar changes in wages and working hours, but a smaller increase in the commuting distance.

[13] Observe in Figure 1 the parallel pre-displacement trends for displaced and non-displaced workers. This identifying restriction also holds for the role of gender (Figure 2) and full-time/part-time status (Figure 3) in the displacement effects as well as for the displacement effect by stratified samples (as provided in Appendix D). Admittedly, this restriction is less convincing for male part-time workers and the household setting (Figure 5).

Comparing the results based on the sample of female workers to the sample of male workers using a double differences model is, however, sensitive to differences in observables between women and men. For example, women are more often in part-time employment as well as employed in the servicing economic sector (See Tables A3 and A4). In Panel C of Table 2 we control for these differences in observables using a triple differences model as in Equation (3), including among other observables the worker's full-time/part-time status, job tenure, firm size and economic sector. Indeed, the gender difference in displacement effects on employment and commutes become smaller, equal to 2 percentage points and 6 percentage points, respectively, whereas the gender difference in working hours increases to 5 percentage points. Consistent with Farber (2017), we find that women experience a larger negative displacement effect on employment than do men. The finding of smaller wages losses for displaced women is consistent with Davis et al. (2011) who document that after job loss the drop in earnings is slightly smaller for women than men.

The parameter estimates provided in Figure 2 are based on a triple differences model as in Equation (4), which controls for differences in displacement effects among workers with different individual and job characteristics.[14] Figure 2A shows that the gender difference in the displacement effect on employment is largest at two months since job displacement and equals 6 percentage points, but disappears after about 18 months since job displacement. Figures 2B and 2C show that the gender difference in the loss in wages and working hours is relatively persistent over the post-displacement period at about 2 percentage points and 5 percentage points, respectively. Figure 2D shows that displaced women experience about a 5 percentage points smaller increase in the commuting distance than do displaced men, although this difference disappears after about three years since job loss.

The displacement effects on hourly wages, hours work and commuting distance are composition effects, caused by workers' re-employment, job-to-job turnover and home relocation. We compare the displacement effects based on all worker-month observations as displayed in Figure 2 to the effects based on a sample excluding the worker-month observations of displaced workers who experienced post-displacement job-to-job turnover (see Figure C5). The results are robust, except for the gender difference in the displacement effect on commutes after 18 months since job displacement which is larger for workers in their first job since job displacement, ranging between 5 to 10 percentage points (Figure C5) instead of 0 to 5 percentage points (Figure 2). This finding suggests that through job-to-job turnover the gender difference in the displacement effect on

[14] See Figure B1 for results based on a model where we excluded the interaction terms among full-time/part-time status, *DISPLACED* and *G*. See Figures B2-B8 in Appendix B for the role of other observables in displacement effects based on the model of Figure 2.

commute becomes smaller.[15]

To the best of our knowledge, only Madden (1987) and Crossley et al. (1994) specifically examine the gender difference in the cost of job loss. Crossley et al. (1994) argue that women's longer unemployment durations suggest selectivity in post-displacement job attributes. For this reason, Crossley et al. (1994) conclude that gender differences in the job search process are more likely to explain differences in post-displacement wages than do the notions of discrimination and specific human capital. Our novel results on the gender difference in displacement effects on working hours and commutes contribute to this research.

In contrast to Madden (1987) and Crossley et al. (1994), we find that displaced women experience smaller losses in wages than do displaced men. This finding can be explained in three ways. A first explanation is displaced women earn wages closer to the minimum wage level, making them less likely to experience large wage losses. For example, Blau and Kahn (2003) argue that countries with a highly centralized wage system, characterised by high wage floors, have a more narrow gender pay gap. In a robustness check, however, we assess the gender difference in the displacement effect on wages by comparing high-wage to low-wage workers (see Table C4 and Figure C3). We define a high-wage worker as earning an hourly wage of at least 12.5 euro, which is well above the minimum hourly wage of about 9 euro that was in place in 2017. We find that compared to displaced high-wage men, displaced high-wage women experience a 2.3 percentage points smaller loss in wages, consistent with Panel C of Table 2. This robustness check is robust to using 17 euro as threshold to define high-wage workers, which amounts to the median hourly wage of displaced workers, and these results are available upon request.

A second explanation is displaced women set high reservation wages relative to the previous wage. Based on the literature on reservation wages, however, this seems unlikely (e.g., see Krueger and Mueller (2016), Caliendo et al. (2017) or Barbanchon et al. (2019)). The third explanation is displaced women lose relatively less in wage premiums and firm-specific human capital. This explanation seems more plausible, as indeed women undertake smaller investments in (firm-specific) human capital (Mincer and Polachek, 1974; Blau and Kahn, 2017) and experience more depreciation during workforce interruptions than do men (Blau and Kahn, 2013). Although over time the gender difference in human capital accumulation has become less pronounced, mainly because of increased women's education and labour market experience (Blau and Kahn, 2017), it is still substantial through differences in on-the-job training and workforce interruptions (Manning and Swaffield, 2008). Overall, our results suggest that in the short run displaced female workers'

[15] In the Netherlands home relocation is relatively low and does not matter for the variation in displacement effects over the post-displacement period. These results are available upon request.

flexibility outcomes matter for unemployment duration but do not lead to a wider gender pay gap.

5.3. Full-time/part-time status and the gender difference in displacement effects

Our analysis continues by assessing whether there is a difference in displacement effects for workers who differ in full-time/part-time status when job loss occurs, where a full-time job is defined as ≥ 20 to < 35 working hours a week and a full-time job is defined as ≥ 35 working hours a week. Table 3 shows the displacement effects for the four groups of workers who differ in gender and the full-time/part-time status, where the reference category consists of male workers who worked full time during the incidence of job loss.[16]

Table 3 shows that displaced part-time or full-time employed women experience a 4 to 5 percentage points larger loss in employment than do displaced full-time employed men. The loss in employment is highest for displaced part-time employment men. Moreover, we show that displaced part-time or full-time employed women experience a smaller loss in wages than their male counterparts. In addition, observe that the loss in working hours is more modest for female workers as well as for workers who worked part time in the month of job displacement. Column (4) shows that the increase in the commuting distance after job loss is particularly large for full-time or part-time employed men. Displaced part-time female workers experience the smallest increase in commuting distance, suggesting a persistence in job flexibility across the two dimensions of working hours and commutes.

Figure 3 complements the empirical evidence of Table 3 and shows the displacement effects by gender and full-time/part-time status over the 61-months period, based on the triple-differences model as in Equation (4).[17] Compared to displaced full-time employed men, displaced full-time employed women are about 9 percentage points less employed over the first 6 months since job displacement, but this difference equals about 3 percentage points 18 months after job loss (Figure 3A). Figure 3B shows that the gender difference in the displacement effect on wages as observed in Figure 2 is caused by part-time employed men, as they experience about a 5 percentage points higher loss in hourly wages than the other subgroups of workers. One interpretation of this finding is that, from the firm's perspective, having a part-time job could signal low productivity. The latter holds for men in particular, as in the Netherlands about a quarter of men are in a part-time job whereas about three quarters of women are in a part-time job. Indeed, for the Dutch pharmacy

[16] See Tables A7, A8 and A9, respectively, for the displaced workers' within changes in hourly wages, working hours and the commuting distance. See Tables A10, A11 and A12, respectively, for the displaced workers' distribution of hourly wages, working hours and the commuting distance.

[17] See Figure D2 for the displacement effects by stratified samples based on a double-differences model.

sector, Künn-Nelen et al. (2013) show that productivity is higher for firms with a higher female part-time employment share, explained by a more efficient allocation of labour within the firm.

Interestingly, displaced part-time employed men experience an increase in working hours (see Figures 3C and D2), whereas displaced full-time employed women experience the highest decrease in working hours. Note that part-time employed men seem to experience more periodic changes in working hours, possibly because of jobs with a fixed contract of 6 to 12 months. A key question is whether the high loss in working hours for full-time employed women is caused by a preference for flexibility through fewer working hours or by more availability of part-time jobs in female-oriented occupations? Importantly, as we compare the pre-displacement outcomes with the post-displacement outcomes of displaced and non-displaced workers, we take into account the demand side of the labour market. In this regard, our results suggest that displaced women have a stronger preference for fewer working hours in their post-displacement job than do men. This interpretation complements the research based on US survey data by Farber (1999, 2017), who shows that a displaced part-time worker is more likely than a displaced full-time worker to voluntarily take up a part-time job after job loss, and that displaced female workers are more likely to be voluntarily part-time employed.

Figure 3D shows that displaced part-time employed women experience the smallest increase in commuting whereas displaced full-time employed men experience the largest increase in commuting. Over the period from 6 to 24 months since job loss, the difference in commute between displaced full-time employed women and displaced full-time employed men increases from about 0 to 5 percentage points while the difference in employment loss decreases from 9 to 3 percentage points. This finding suggests that full-time female workers who are longer unemployed are relatively selective in commuting distance, as well as in working hours. In addition, a novel finding is that the persistence in job flexibility in working hours and commutes seems to hold for displaced part-time employed women but not for displaced part-time or full-time employed men.

Moreover, we examine the role of the worker's commuting distance of the displaced job in post-displacement labour market outcomes (see Table C5 and Figure C4). We define a low-commute displaced job and a high-commute displaced job as a job with a commuting distance less than 10 kilometres and equal to or higher than 10 kilometres, respectively. The results suggest that compared to high-commute and low-commute displaced men, respectively, high-commute and low-commute displaced women experience a larger loss in employment, a smaller loss in wages, a larger loss in working hours, and a smaller increase in commutes. A novel finding is that low-commute women are selective in working hours, suggesting a persistence in job flexibility in working hours and commuting distance, whereas this does not hold for their male counterparts.

5.4. Household setting, pregnancy, and the gender difference in displacement effects

Following, we focus on the role of the displaced worker's household setting in the displacement effects. We examine the importance of the worker's marital status and the presence and age of children for women (Table 4 and Figure 4) and men (Table 5 and Figure 5). Workers' marital status is defined as being married in case of marriage or a registered partnership, and single otherwise. The presence and age of children is categorised in workers who are expecting a baby, have a child aged 18 years or lower, have a child aged over 18 years; and have no child.

Table 4 shows that displaced full-time employed women who were single and pregnant when job loss occurred experience a 15 percentage points larger loss in employment than displaced single women without a child. For displaced married expectant mothers, the extensive margin of labour supply is even more important as the pregnancy effect on employment equals 31 percentage points. Part of this effect may be attributed to the demand side of the labour market through discrimination, but the difference between singles and married suggests a significant role of the household in post-displacement labour supply of pregnant women. Moreover, the evidence shows that displaced full-time employed workers who are single and pregnant when job loss occurs become re-employed by taking up a job with about 14 percentage points fewer working hours and 44 percentage points shorter commuting distance. In addition, the role of marital status in the displacement effects on hourly wages and working hours seems minor. In contrast, displaced married women tend to experience a smaller increase in commuting than single women. The results on heterogeneity effects by household group based on the sample of part-time employed women are less convincing, providing weak evidence that pregnancy leads to a higher loss in employment.

Figure 4 shows that for displaced full-time employed single women, the negative pregnancy effect on post-displacement employment becomes smaller after about 9 months since job loss and equals 10 percentage points after about 18 months. For full-time employed married women, however, the negative pregnancy effect on employment remains large over the entire post-displacement period and ranges between 50 and 20 percentage points. Moreover, the negative effect of job loss on working hours equals about 20 percentage points for pregnant women at two years following the job loss. Our results of the pregnancy effect on the extensive and intensive margin are comparable with those reported by Bertrand et al. (2010), who show a 13 to 18 percentage points lower employment and 17 to 24 percentage points fewer working hours in the four-year period after birth. For full-time employed single expectant mothers the employment loss is less severe and the increase in commute is smaller as well, although the negative effect on wages is largest. Importantly, note that except for pregnancy, the role of the worker's household setting in displacement effects is relatively small, especially for part-time employed workers.

Table 5 and Figure 5 show the results on the role of the household setting in male workers' post-displacement outcomes. Compared to displaced male workers who were single and had no baby, displaced male workers who were single and expecting a baby experience smaller losses in both employment and working hours. In general, displaced men have a smaller loss in employment when they are expecting a baby or have young children, especially if they are married.

6. Conclusion

Policy makers are putting in much effort to narrow gender gaps in employment and wages. An emerging body of research shows that the gender gaps have become narrower over time. Despite these developments, women and men differ in non-wage job attributes such as working hours and commuting distance, which may hinder further closing of gender gaps in employment and wages. Using Dutch administrative data, our paper investigates the gender difference in coping with job loss, focusing on the persistence in job flexibility outcomes and the role of the household.

Our results imply that displaced part-time employed women as well as displaced low-commute women have a persistence in job flexibility outcomes, characterised by relatively few working hours and short commutes also after job loss. For displaced men we do not find these patterns. Moreover, we show that displaced full-time employed women experience a higher loss in employment than do displaced full-time employed men, especially the first 18 months since job loss. Notably, it seems that the consistent job flexibilities do not widen the gender hourly wage gap, as we show for different subpopulations of displaced women that their loss in wages is low compared to their male counterparts, suggesting women lose relatively less in wage premiums and human capital than do men. One interpretation of these results is that female workers' job flexibility increases the unemployment duration, but in the short run does not widen the gender wage gap.

Finally, we examine the role of the worker's household setting in job flexibility outcomes after job loss. We focus on a highly disadvantaged subpopulation: workers who are expecting a baby upon the incidence of job displacement. We show that even three years since job loss, full-time employed married women who were pregnant upon dismissal are on average over 30 percentage points less employed than comparable displaced women who were not pregnant. Moreover, conditional on re-employment, displaced pregnant women, especially singles, take up a job with few working hours and short commutes. In contrast, displaced men have a higher re-employment rate when they are expecting a baby or have young children, especially if they are married. Taken together, current policies to protect pregnant female workers against the consequences of job loss due to firm bankruptcy are insufficient, as job loss widens the gender employment gap in the short run and possibly the gender pay gap in the long run. Policy advice is to put a safety net in place to

protect pregnant women against the long-term consequences of dismissal and to raise awareness within households of these consequences. Policies may involve providing more high-quality child care and encouraging men to share child care responsibilities.

References

Adda, J., C. Dustmann, and K. Stevens (2017). The career costs of children. *Journal of Political Economy 125*(2), 293–337.

Angelov, N., P. Johansson, and E. Lindahl (2016). Parenthood and the gender gap in pay. *Journal of Labor Economics 34*(3), 545–579.

Barbanchon, T. L., R. Rathelot, and A. Roulet (2019). Gender differences in job search: Trading off commute against wage. *Mimeo*.

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.

Black, D. A., N. Kolesnikova, and L. J. Taylor (2014). Why do so few women work in New York (and so many in Minneapolis)? Labor supply of married women across US cities. *Journal of Urban Economics 79*, 59–71.

Blau, F. D. and L. M. Kahn (2003). Understanding international differences in the gender pay gap. *Journal of Labor Economics 21*(1), 106–144.

Blau, F. D. and L. M. Kahn (2013). The feasibility and importance of adding measures of actual experience to cross-sectional data collection. *Journal of Labor Economics 31*(2), S17–S58.

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

Booth, A. L. and J. C. Van Ours (2008). Job satisfaction and family happiness: The part-time work puzzle. *Economic Journal 118*(526), F77–F99.

Booth, A. L. and J. C. Van Ours (2013). Part-time jobs: what women want? *Journal of Population Economics 26*(1), 263–283.

Caliendo, M., W.-S. Lee, and R. Mahlstedt (2017). The gender wage gap and the role of reservation wages: New evidence for unemployed workers. *Journal of Economic Behavior & Organization 136*, 161–173.

CBS (2019). CBS Open Data Statline, https://opendata.cbs.nl/statline/.

Chiappori, P.-A. and M. Mazzocco (2017). Static and intertemporal household decisions. *Journal of Economic Literature 55*(3), 985–1045.

Cortés, P. and J. Pan (2019). When time binds: Substitutes for household production, returns to working long hours, and the skilled gender wage gap. *Journal of Labor Economics 37*(2), 351–398.

Couch, K. A. and D. W. Placzek (2010). Earnings losses of displaced workers revisited. *American Economic Review 100*(1), 572–589.

Crane, R. (2007). Is there a quiet revolution in women's travel? Revisiting the gender gap in commuting. *Journal of the American Planning Association 73*(3), 298–316.

Crossley, T. F., S. R. G. Jones, and P. Kuhn (1994). Gender differences in displacement cost: Evidence and implications. *Journal of Human Resources 29*(2), 461–480.

Davis, S. J., T. Von Wachter, R. E. Hall, and R. Rogerson (2011). Recessions and the costs of job loss. *Brookings Papers on Economic Activity*, 1–72.

Del Bono, E., A. Weber, and R. Winter-Ebmer (2015). Fertility and economic instability: The role of unemployment and job displacement. *Journal of Population Economics 28*(2), 463–478.

Eliason, M. and D. Storrie (2006). Lasting or latent scars? Swedish evidence on the long–term effects of job displacement. *Journal of Labor Economics 24*(4), 831–856.

Fackler, D., S. Müller, and J. Stegmaier (2018). Plant-level employment development before collective displacements: Comparing mass layoffs, plant closures and bankruptcies. *Applied Economics 50*(50), 5416–5435.

Farber, H. S. (1999). Alternative and part–time employment arrangements as a response to job loss. *Journal of Labor Economics 17*(S4), S142–S169.

Farber, H. S. (2017). Employment, hours, and earnings consequences of job loss: US evidence from the displaced workers survey. *Journal of Labor Economics 35*(S1), S235–S272.

Flabbi, L. and A. Moro (2012). The effect of job flexibility on female labor market outcomes: Estimates from a search and bargaining model. *Journal of Econometrics 168*(1), 81–95.

Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review 104*(4), 1091–1119.

Guglielminetti, E., R. Lalive, P. Ruh, and E. Wasmer (2019). Home sweet home? Job search with commuting and unemployment insurance. *Mimeo*.

Gutiérrez-i-Puigarnau, E. and J. Van Ommeren (2010). Labour supply and commuting. *Journal of Urban Economics 68*(1), 82–89.

Halla, M., J. Schmieder, and A. Weber (2018). Job displacement, family dynamics and spousal labor supply. IZA Discussion Paper 11752, Institute of Labor Economics.

Hijzen, A., R. Upward, and P. W. Wright (2010). The income losses of displaced workers. *Journal of Human Resources 45*(1), 243–269.

Hirsch, B. T. (2005). Why do part-time workers earn less? The role of worker and job skills. *ILR Review 58*(4), 525–551.

Huttunen, K. and J. Kellokumpu (2016). The effect of job displacement on couples' fertility decisions. *Journal of Labor Economics 34*(2), 403–442.

Huttunen, K., J. Møen, and K. G. Salvanes (2011). How destructive is creative destruction? Effects of job loss on job mobility, withdrawal and income. *Journal of the European Economic Association 9*(5), 840–870.

Huttunen, K., J. Møen, and K. G. Salvanes (2018). Job loss and regional mobility. *Journal of Labor Economics 36*(2), 479–509.

Iacus, S. M., G. King, and G. Porro (2011). Multivariate matching methods that are monotonic imbalance bounding. *Journal of the American Statistical Association 106*(493), 345–361.

Ichino, A., G. Schwerdt, R. Winter-Ebmer, and J. Zweimüller (2017). Too old to work, too young to retire? *Journal of the Economics of Ageing 9*, 14–29.

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan (1993). Earnings losses of displaced workers. *American Economic Review 83*(4), 685–709.

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.

Künn-Nelen, A., A. De Grip, and D. Fouarge (2013). Is part-time employment beneficial for firm productivity? *ILR Review 66*(5), 1172–1191.

Krolikowski, P. (2018). Choosing a control group for displaced workers. *ILR Review 71*(5), 1232–1254.

Krueger, A. B. and A. I. Mueller (2016). A contribution to the empirics of reservation wages. *American Economic Journal: Economic Policy 8*(1), 142–179.

Kuhn, P. (2002). *Losing work, moving on: International perspectives on worker displacement*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Kuziemko, I., J. Pan, J. Shen, and E. Washington (2018). The mommy effect: Do women anticipate the employment

effects of motherhood? NBER Working Paper 24740, National Bureau of Economic Research.

Madden, J. F. (1987). Gender differences in the cost of displacement: An empirical test of discrimination in the labor market. *American Economic Review: Papers and Proceedings 77*(2), 246–251.

Manning, A. and B. Petrongolo (2008). The part-time pay penalty for women in Britain. *Economic Journal 118*(526), F28–F51.

Manning, A. and J. Swaffield (2008). The gender gap in early-career wage growth. *Economic Journal 118*(530), 983–1024.

Meekes, J. and W. H. J. Hassink (2019a). Endogenous local labour markets, regional aggregation and agglomeration economies. IZA Discussion Paper 12765, Institute of Labor Economics.

Meekes, J. and W. H. J. Hassink (2019b). The role of the housing market in workers' resilience to job displacement after firm bankruptcy. *Journal of Urban Economics 109*, 41–65.

Mincer, J. and S. Polachek (1974). Family investments in human capital: Earnings of women. *Journal of Political Economy 82*(2), S76–S108.

Mulalic, I., J. Van Ommeren, and N. Pilegaard (2014). Wages and commuting: Quasi-natural experiments' evidence from firms that relocate. *The Economic Journal 124*(579), 1086–1105.

OECD (2019a). Part-time employment rate (indicator), https://doi.org/10.1787/f2ad596c-en.

OECD (2019b). Incidence of involuntary part time workers, https://doi.org/10.1787/1bf17112-en.

Perales, F., Y. Jarallah, and J. Baxter (2018). Men's and women's gender-role attitudes across the transition to parenthood: Accounting for child's gender. *Social Forces 97*(1), 251–276.

Roberts, J., R. Hodgson, and P. Dolan (2011). "It's driving her mad": Gender differences in the effects of commuting on psychological health. *Journal of Health Economics 30*(5), 1064–1076.

Russo, G. and W. Hassink (2008). The part-time wage gap: A career perspective. *De Economist 156*(2), 145–174.

Schwerdt, G. (2011). Labor turnover before plant closure: "Leaving the sinking ship" vs. "Captain throwing ballast overboard". *Labour Economics 18*(1), 93–101.

Stevens, A. H. (1997). Persistent effects of job displacement: The importance of multiple job losses. *Journal of Labor Economics 15*(1), 165–188.

Van den Berg, G. J. and C. Gorter (1997). Job search and commuting time. *Journal of Business & Economic Statistics 15*(2), 269–281.

Van Ommeren, J. and M. Fosgerau (2009). Workers' marginal costs of commuting. *Journal of Urban Economics 65*(1), 38–47.

Wiswall, M. and B. Zafar (2018). Preference for the workplace, investment in human capital, and gender. *Quarterly Journal of Economics 133*(1), 457–507.

List of Tables

Table 1
Impact of job loss on employment, hourly wages, working hours and commuting distance (Eq. (1)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
Full sample:				
DISPLACED × *POST*	-0.2458***	-0.0577***	-0.0343***	0.1484***
	(0.0022)	(0.0013)	(0.0011)	(0.0071)
Number of parameters	187	187	187	187
Number of individuals	75,992	75,992	75,992	75,992
Number of observations	4,635,512	4,298,593	4,298,593	4,254,421

Notes: Each column gives the dependent variable and each row gives the parameter estimate of the two-way interaction term *DISPLACED* × *POST*. Standard errors clustered on the individual level are in parentheses. *** corresponds to the significance level of 1%. Reference category of the displaced workers, *DISPLACED*, contains the non-displaced workers. Reference category of *POST* represents the pre-displacement period. The regression analyses include individual-specific fixed effects that control for gender, nationality, educational attainment, as well as for several variables measured in the month of job displacement including *DISPLACED*, presence and age of children, marital status, firm size, economic sector, job tenure, full-time/part-time status, type of contract and year of job displacement. Moreover, we include indicator variables for *POST*, age (3), the NUTS 3 location of the household (39) and calendar month (143). The period under observation is from January 2006 to December 2017 and the displaced and non-displaced workers are followed for 24 months before until 36 months after the month of job loss. Parameter estimates of the covariates are not reported.

Table 2
Gender difference in the impact of job loss.

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
Panel A: Sample of women (Eq. (1)):				
DISPLACED × *POST*	-0.2860***	-0.0450***	-0.0422***	0.0263
	(0.0049)	(0.0026)	(0.0033)	(0.0161)
Panel B: Sample of men (Eq. (1)):				
DISPLACED × *POST*	-0.2348***	-0.0609***	-0.0323***	0.1795***
	(0.0024)	(0.0014)	(0.0011)	(0.0080)
Panel C: Full sample (Eq. (3)):				
DISPLACED × *POST* × *Female*				
Base category: Men				
Women	-0.0176**	0.0239***	-0.0548***	-0.0646***
	(0.0070)	(0.0042)	(0.0042)	(0.0237)

Notes: Each column gives the dependent variable and each row gives the parameter estimate of the two-way interaction term *DISPLACED* × *POST* (Panels A and B) or of the three-way interaction term *Female* × *DISPLACED* × *POST* (Panel C). Each parameter estimate is based on a different regression. Panels A and B provide results based on stratification by gender and the double differences model (Eq. (1)), in which the number of estimated parameters in each regression equals 187 (see Table 1). Panel C provides the results based on the triple differences model (Eq. (3)), in which the number of estimated parameters in the regression equals 242. The triple differences model of Panel C includes three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143). The number of individuals equals 75,992, including 15,763 women and 60,229 men. See Table 1 for additional notes.

Table 3
The role of gender and full-time/part-time status in the effects of job loss (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Employment Status*:				
Base category: Full-time men				
Full-time women	-0.0414***	0.0091*	-0.0403***	-0.0442
	(0.0088)	(0.0054)	(0.0054)	(0.0317)
Part-time women	-0.0487***	0.0149***	0.0276***	-0.1120***
	(0.0070)	(0.0038)	(0.0045)	(0.0235)
Part-time men	-0.0609***	-0.0279***	0.1010***	-0.0213
	(0.0081)	(0.0049)	(0.0044)	(0.0249)
Number of parameters	244	244	244	244
Number of individuals	75,992	75,992	75,992	75,992
Number of observations	4,635,512	4,298,593	4,298,593	4,254,421

Notes: Each column gives the parameter estimates of the three-way interaction term of *Employment Status* × *DISPLACED* × *POST* of a different regression. Reference group for the full-time/part-time employment status by gender is the group of displaced male workers who worked full-time when job loss occurred. Full-time workers and part-time workers are defined as, in the month of job displacement, working 35 or more hours a week and 20 to 35 hours a week, respectively. The number of full-time employed women, part-time employed women, full-time employed men and part-time employed men, equals 5,273, 10,490, 53,877, and 6,352, respectively. See Table 2 for additional notes.

Table 4
The role of female workers' household setting in the effects of job displacement (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
Panel A: Sample of full-time women:				
DISPLACED × *POST* × *Household Setting*:				
Base category: Single and no child				
Single and pregnant	-0.1441***	-0.0497	-0.1305***	-0.4411**
	(0.0519)	(0.0303)	(0.0474)	(0.2034)
Single and child ≤ 18 yrs	-0.0383	-0.0139	-0.0148	0.0474
	(0.0289)	(0.0206)	(0.0188)	(0.0979)
Single and child > 18 yrs	0.0361	0.0111	-0.0098	-0.0680
	(0.0232)	(0.0134)	(0.0141)	(0.0918)
Married and pregnant	-0.3082***	-0.0121	-0.1450***	-0.2441
	(0.0670)	(0.0359)	(0.0462)	(0.2498)
Married and child ≤ 18 yrs	-0.0018	-0.0103	-0.0187	-0.2036**
	(0.0271)	(0.0169)	(0.0181)	(0.0943)
Married and child > 18 yrs	-0.0469	0.0112	0.0144	-0.1959
	(0.0403)	(0.0205)	(0.0229)	(0.1451)
Married and no child	-0.0196	-0.0113	-0.0374**	-0.1124
	(0.0268)	(0.0171)	(0.0178)	(0.0996)
Panel B: Sample of part-time women:				
DISPLACED × *POST* × *Household Setting*:				
Base category: Single and no child				
Single and pregnant	-0.1297*	0.0117	-0.0156	-0.2199
	(0.0761)	(0.0299)	(0.0381)	(0.2351)
Single and child ≤ 18 yrs	0.0186	0.0004	-0.0049	-0.0920
	(0.0280)	(0.0135)	(0.0202)	(0.0861)
Single and child > 18 yrs	0.0128	0.0199	0.0031	0.1091
	(0.0370)	(0.0160)	(0.0268)	(0.1147)
Married and pregnant	-0.0503	0.0280	0.0153	0.0450
	(0.0508)	(0.0313)	(0.0418)	(0.1834)
Married and child ≤ 18 yrs	0.0498*	0.0071	0.0034	-0.0708
	(0.0261)	(0.0126)	(0.0191)	(0.0799)
Married and child > 18 yrs	0.0285	0.0133	-0.0199	0.1017
	(0.0316)	(0.0145)	(0.0233)	(0.0942)
Married and no child	-0.0534	0.0019	-0.0055	0.0263
	(0.0373)	(0.0165)	(0.0262)	(0.1104)

Notes: Parameter estimates of the three-way interaction terms among *Household Setting* × *DISPLACED* × *POST* are provided. Reference category of household setting is the group of displaced women who were single and had no children when job loss occurred. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, job tenure (3), type of contract, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Results are provided separately for a sample of 5,273 full-time women and a sample of 10,490 part-time women. See Table 1 for additional notes.

Table 5
The role of male workers' household setting in the effects of job displacement (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
Panel A: Sample of full-time men:				
DISPLACED × *POST* × *Household Setting*:				
Base category: Single and no child				
Single and expecting a baby	0.0478**	-0.0138	0.0286***	-0.0320
	(0.0220)	(0.0144)	(0.0109)	(0.0864)
Single and child ≤ 18 yrs	0.0273***	-0.0062	0.0060	-0.0246
	(0.0096)	(0.0056)	(0.0042)	(0.0341)
Single and child > 18 yrs	0.0072	0.0035	0	0.0211
	(0.0105)	(0.0060)	(0.0048)	(0.0370)
Married and expecting a baby	0.0410**	0.0071	0.0043	-0.0988
	(0.0197)	(0.0112)	(0.0084)	(0.0742)
Married and child ≤ 18 yrs	0.0617***	-0.0132***	0.0038	-0.0417
	(0.0077)	(0.0044)	(0.0034)	(0.0269)
Married and child > 18 yrs	0.0417***	-0.0161**	-0.0026	-0.0644*
	(0.0115)	(0.0064)	(0.0054)	(0.0380)
Married and no child	0.0217*	-0.0026	-0.0006	-0.0087
	(0.0122)	(0.0074)	(0.0054)	(0.0413)
Panel B: Sample of part-time men:				
DISPLACED × *POST* × *Household Setting*:				
Base category: Single and no child				
Single and expecting a baby	0.1065	0.0206	-0.0990**	0.1009
	(0.0836)	(0.0729)	(0.0472)	(0.2155)
Single and child ≤ 18 yrs	0.0364	0.0216	-0.0328*	0.2203**
	(0.0370)	(0.0208)	(0.0194)	(0.1073)
Single and child > 18 yrs	0.0026	-0.0050	-0.0469**	0.0960
	(0.0369)	(0.0228)	(0.0192)	(0.1073)
Married and expecting a baby	0.1642**	0.0619*	-0.0322	0.3297
	(0.0680)	(0.0362)	(0.0356)	(0.3066)
Married and child ≤ 18 yrs	0.1419***	0.0152	-0.0139	0.0864
	(0.0301)	(0.0168)	(0.0153)	(0.0852)
Married and child > 18 yrs	0.1005***	0.0450**	-0.0134	0.0057
	(0.0366)	(0.0203)	(0.0186)	(0.1033)
Married and no child	0.0457	0.0587**	-0.0419**	0.0407
	(0.0469)	(0.0253)	(0.0211)	(0.1405)

Notes: Parameter estimates of the three-way interaction terms among *Household Setting* × *DISPLACED* × *POST* are provided. Reference category of household setting is the group of displaced men who were single and had no children when job loss occurred. Results are provided separately for a sample of 53,877 full-time men and a sample of 6,352 part-time men. See Table 4 for additional notes.

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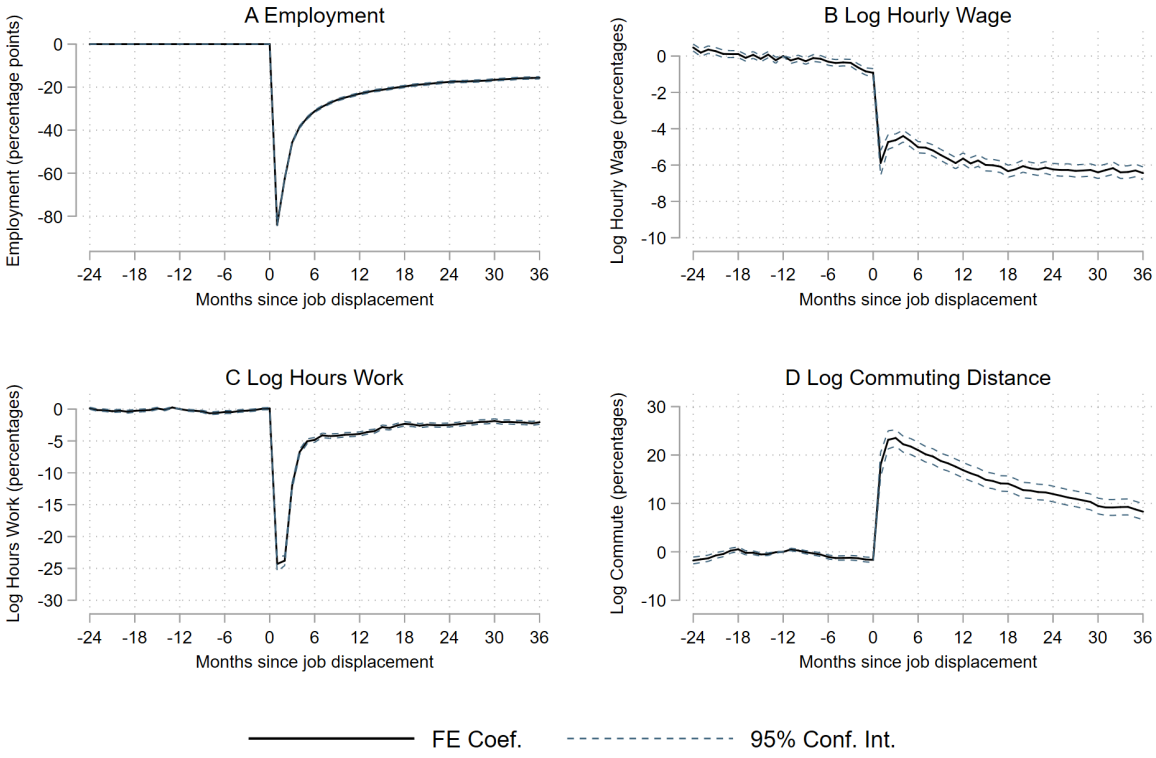

Fig. 1. Time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (2)).
Notes: Each line gives the parameter estimates of the interaction term $DISPLACED \times G^{\tau}$ of a different regression. Reference category of the displaced workers, *DISPLACED*, contains the non-displaced workers. Reference month is G^{-12}, the twelfth month before job loss. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 304 parameters. The number of individuals equals 75,992. See Table 1 for additional notes.

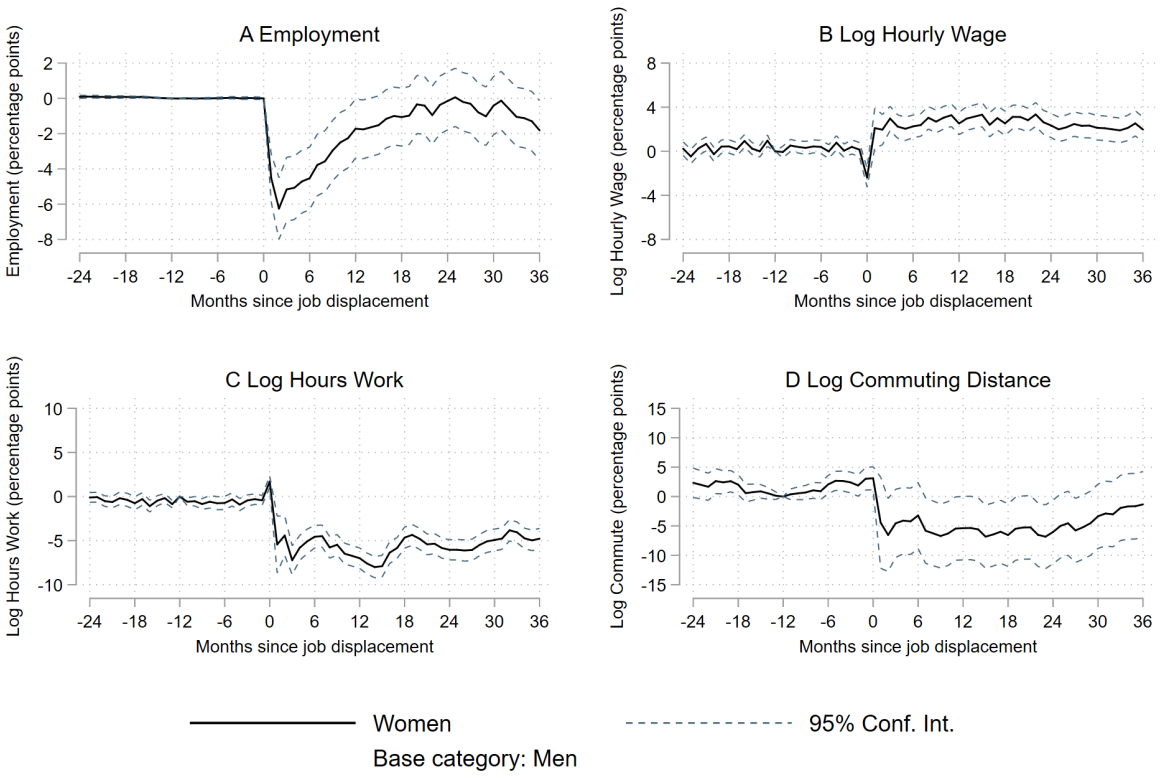

Fig. 2. Gender difference in the time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and log commuting distance (D) (Eq. (4)).

Notes: Each line gives the parameter estimates of the three-way interaction term *Female* × *DISPLACED* × G^{τ} of a different regression. Reference group is the group of displaced male workers. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and G^{τ} interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, full-time/part-time status, firm size (3), manufacturing sector and the year of job displacement (6), respectively. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 3,427 parameters. See Figure 1 for additional notes.

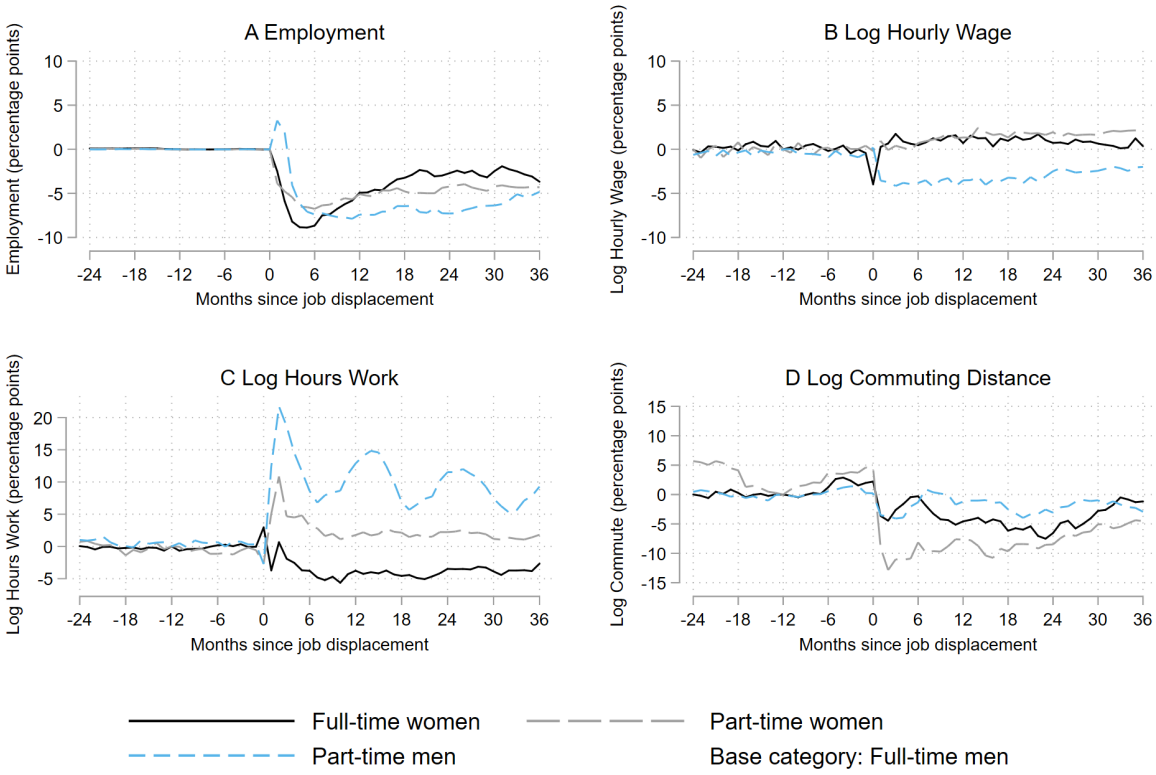

Fig. 3. Role of the full-time/part-time status and gender in the time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Each graph gives the parameter estimates of a different regression. The regression analyses include a three-way interaction term of *Employment Status* × *DISPLACED* × G^r. Reference group for the full-time/part-time status by gender is the group of displaced male workers who worked full-time when job loss occurred. Each fixed effects regression model includes 3,547 parameters. See Figure 2 and Table 3 for additional notes.

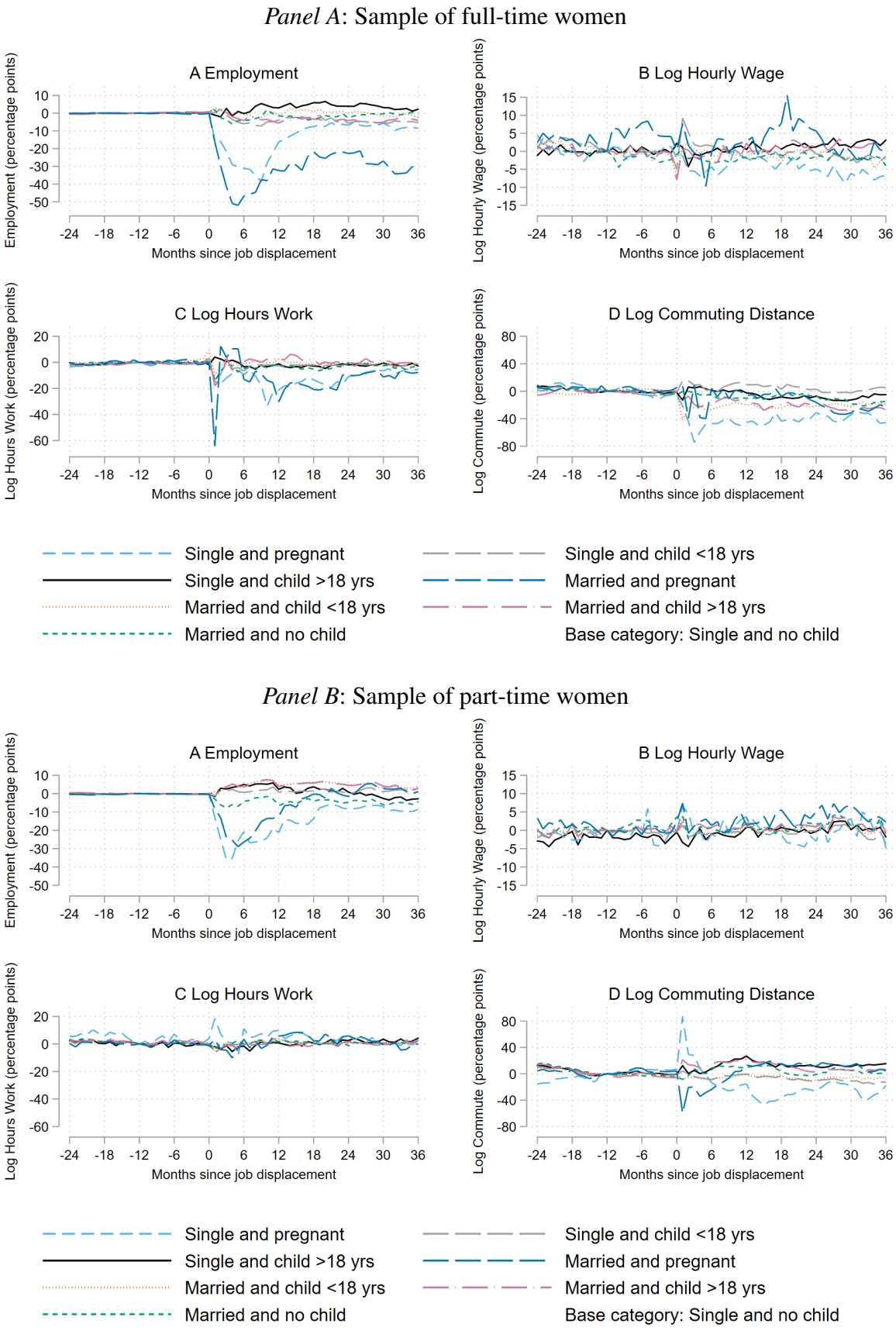

Fig. 4. Time-dependent displacement effects for displaced female workers by household setting on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Each graph gives the parameter estimates of a different regression. The regression analyses include the three-way interaction term *Household Setting* × *DISPLACED* × G^{τ}. Reference group for household setting is the group of displaced workers who are single and have no kids when job loss occurred. Each fixed effects regression model includes 3,547 parameters. See Figure 2 and Table 4 for additional notes.

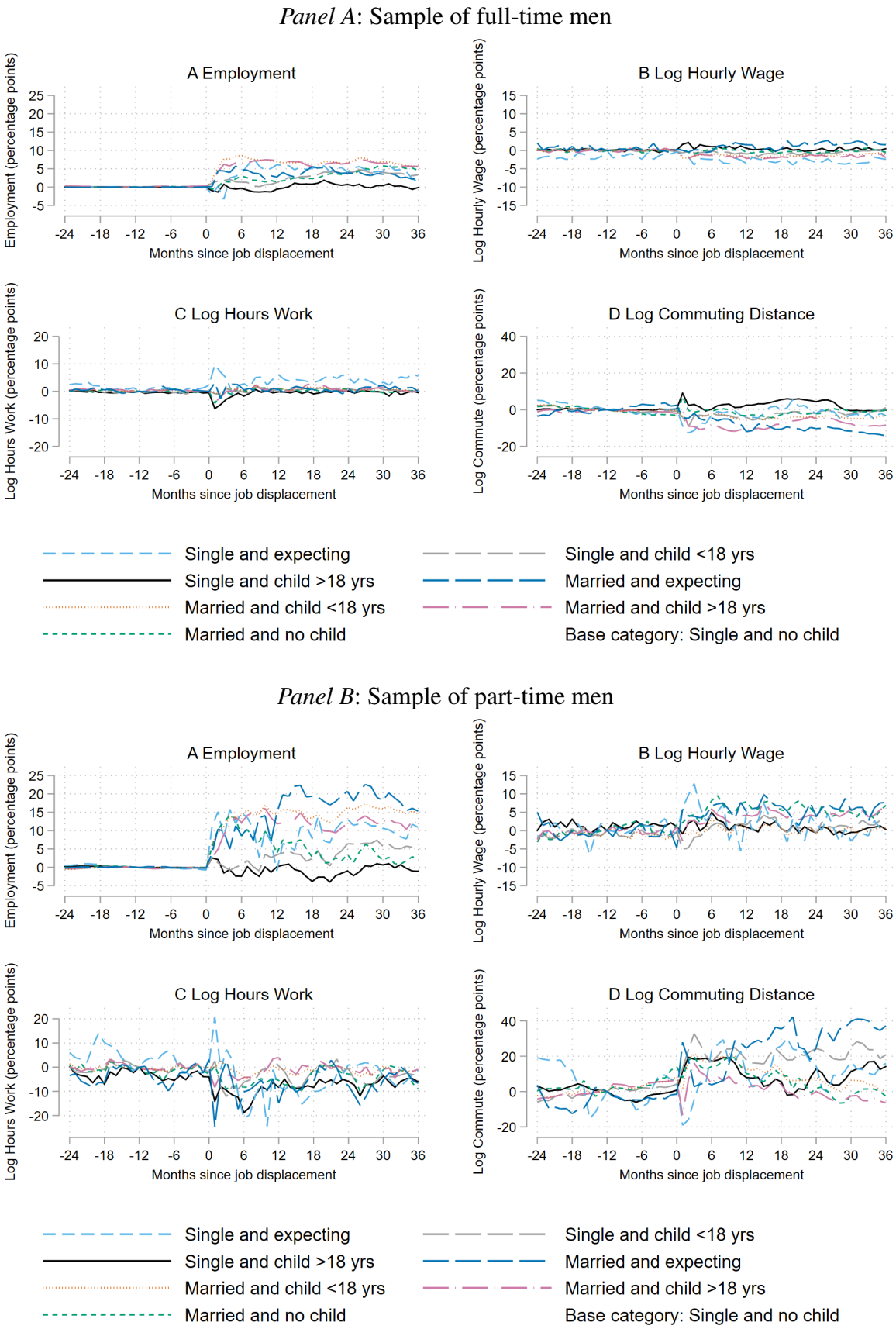

Fig. 5. Time-dependent displacement effects for displaced male workers by household setting on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: See Figure 4 and Table 5 for additional notes.

Appendix A Summary statistics

Table A1
Individual characteristics of displaced and non-displaced workers using the non-matched sample.

	Non-displaced		Displaced		
	Mean	St. Dev.	Mean	St. Dev	*t*-statistic
Employment (=1)	1	0	1	0	
Work hours (log)	4.9212	0.2824	4.9474	0.3259	-21.53***
Work hours (#)	142.0725	33.7114	147.2131	38.0282	-35.42***
Hourly wage (log)	2.9256	0.3780	2.8565	0.4013	42.41***
Hourly wage (€)	20.1716	10.3655	19.1370	13.3498	23.17***
Commuting distance (log)	2.1267	1.1548	2.1854	1.1692	-11.80***
Commuting distance (km)	15.8676	21.9512	17.1269	23.6983	-13.33***
Female (=1)	0.4277	0.4947	0.2822	0.4501	68.32***
Age (in years)	43.3016	8.6733	42.1642	8.7680	30.47***
Low-educated (=1)	0.1385	0.3454	0.2205	0.4146	-46.76***
Average-educated (=1)	0.4070	0.4913	0.5494	0.4976	-57.08***
High-educated (=1)	0.4546	0.4979	0.2301	0.4209	88.83***
Dutch (=1)	0.9120	0.2833	0.9129	0.2820	-0.77
Partner (=1)	0.6286	0.4832	0.6083	0.4881	9.78***
Child (=1)	0.7236	0.4472	0.7333	0.4423	-5.00***
Pregnant (=1)	0.0241	0.1533	0.0264	0.1602	-3.47***
Fixed contract (=1)	0.9506	0.2167	0.9262	0.2614	26.11***
Full-time job (=1)	0.6246	0.4842	0.7258	0.4461	-48.56***
Tenure in the job (in months)	148.3830	92.6556	133.3405	84.7822	37.73***
Manufacturing sector (=1)	0.2418	0.4282	0.4106	0.4919	-91.54***
$8 \leq$ hours a week < 20 (=1)	0.0769	0.2664	0.0889	0.2846	-10.48***
$20 \leq$ hours a week < 30 (=1)	0.2149	0.4108	0.1566	0.3634	33.00***
$30 \leq$ hours a week < 35 (=1)	0.1396	0.3466	0.1089	0.3115	20.59***
≥ 35 hours a week (=1)	0.5686	0.4953	0.6456	0.4783	-36.13***
Number of individuals (#)	22,077,076		55,184		

Notes: Individual characteristics are provided for the period January 2008 to December 2014 based on the sample before applying coarsened exact matching. For displaced workers and non-displaced workers the sample means with standard deviations are provided for the month of actual and potential job loss, respectively. The *t*-statistic shows whether the statistics for the group of displaced workers and group of non-displaced workers are statistically different from each other. ***,**,*, correspond to the significance level of 1%, 5%, 10%, respectively. For the statistics on educational attainment, the number of non-displaced individuals and displaced individuals equal 10,138,098 and 38,930, respectively.

Table A2
Individual characteristics of displaced and non-displaced workers using the matched sample.

	Non-displaced		Displaced		
	Mean	St. Dev.	Mean	St. Dev	*t*-statistic
Employment (=1)	1	0	1	0	
Work hours (log)	5.0447	0.1831	5.0442	0.1918	0.35
Work hours (#)	157.6091	25.7889	157.8246	28.2168	-1.08
Hourly wage (log)	2.9189	0.3792	2.8878	0.3971	10.80***
Hourly wage (€)	20.0828	10.2965	19.6848	13.2719	4.62***
Commuting distance (log)	2.3457	0.9977	2.3602	0.9977	-1.94*
Commuting distance (km)	16.7923	23.5320	17.0170	23.3930	-1.28
Female (=1)	0.2037	0.4028	0.2135	0.4098	-3.24***
Age (in years)	42.2256	8.8425	42.2119	8.7248	0.21
Low-educated (=1)	0.1578	0.3646	0.2115	0.4083	-14.22***
Average-educated (=1)	0.4797	0.4996	0.5452	0.4980	-13.46***
High-educated (=1)	0.3625	0.4807	0.2434	0.4291	26.79***
Dutch (=1)	0.9595	0.1971	0.9529	0.2118	4.34***
Partner (=1)	0.6406	0.4798	0.6346	0.4815	1.66*
Child (=1)	0.7796	0.4145	0.7724	0.4193	2.31**
Pregnant (=1)	0.0253	0.1569	0.0241	0.1535	0.97
Fixed contract (=1)	0.9773	0.1489	0.9716	0.1661	4.90***
Full-time job (=1)	0.8238	0.3810	0.8068	0.3948	5.91***
Tenure in the job (in months)	137.1893	86.8049	137.1601	86.5426	0.05
Manufacturing sector (=1)	0.4131	0.4924	0.4169	0.4931	-1.05
$20 \leq$ hours a week < 35 (=1)	0.2158	0.4114	0.2312	0.4216	-4.97***
≥ 35 hours a week (=1)	0.7842	0.4114	0.7688	0.4216	4.97***
Number of individuals (#)	47,151		28,841		

Notes: Individual characteristics are provided for the period January 2008 to December 2014 based on the sample after applying coarsened exact matching. For displaced workers and non-displaced workers the sample means with standard deviations are provided for the month of actual and potential job loss, respectively. For the statistics on educational attainment, the number of non-displaced individuals and displaced individuals equal 21,332 and 20,766, respectively. See Table A1 for additional notes.

Table A3
Female individual summary statistics using the matched sample.

	Non-displaced women		Displaced women		
	Mean	St. Dev.	Mean	St. Dev	*t*-statistic
Employment (=1)	1	0	1	0	
Work hours (log)	4.8438	0.2258	4.8600	0.2429	-4.27***
Work hours (#)	130.2207	29.4729	132.9982	34.3410	-5.41***
Hourly wage (log)	2.8421	0.3428	2.7778	0.4020	10.73***
Hourly wage (€)	18.2584	7.5101	17.5972	11.3973	4.39***
Commuting distance (log)	2.1619	0.9370	2.2156	0.9699	-3.46***
Commuting distance (km)	13.1190	18.6792	14.5801	21.4282	-4.52***
Female (=1)	1	0	1	0	
Age (in years)	41.3600	8.9289	41.2557	8.8049	0.72
Low-educated (=1)	0.1076	0.3099	0.1480	0.3551	-6.01***
Average-educated (=1)	0.4558	0.4981	0.5267	0.4993	-7.03***
High-educated (=1)	0.4366	0.4960	0.3253	0.4685	11.40***
Dutch (=1)	0.9522	0.2133	0.9433	0.2312	2.47**
Partner (=1)	0.5841	0.4929	0.5757	0.4943	1.04
Child (=1)	0.7313	0.4433	0.7260	0.4460	0.72
Pregnant (=1)	0.0281	0.1653	0.0271	0.1624	0.37
Fixed contract (=1)	0.9847	0.1228	0.9808	0.1371	1.84*
Full-time job (=1)	0.3458	0.4756	0.3511	0.4773	-0.69
Tenure in the job (in months)	138.3736	87.0429	134.8892	85.1134	2.47**
Manufacturing sector (=1)	0.0835	0.2766	0.0971	0.2961	-2.93***
20 ≤ hours a week < 35 (=1)	0.6703	0.4701	0.6580	0.4744	1.59
≥ 35 hours a week (=1)	0.3297	0.4701	0.3420	0.4744	-1.59
Number of individuals (#)	9,605		6,158		

Notes: Individual characteristics are provided for the period January 2008 to December 2014 based on the sample after applying coarsened exact matching. For displaced workers and non-displaced workers the sample means with standard deviations are provided for the month of actual and potential job loss, respectively. For the statistics on educational attainment, the number of non-displaced individuals and displaced individuals equal 5,066 and 4,716, respectively. See Table A1 for additional notes.

Table A4
Male individual summary statistics using the matched sample.

	Non-displaced men		Displaced men		
	Mean	St. Dev.	Mean	St. Dev	*t*-statistic
Employment (=1)	1	0	1	0	
Work hours (log)	5.0961	0.1268	5.0942	0.1380	1.71*
Work hours (#)	164.6156	19.2876	164.5644	21.8967	0.30
Hourly wage (log)	2.9386	0.3855	2.9176	0.3905	6.44***
Hourly wage (€)	20.5496	10.8464	20.2516	13.6822	2.95***
Commuting distance (log)	2.3927	1.0073	2.3994	1.0016	-0.79
Commuting distance (km)	17.7320	24.5323	17.6786	23.8561	0.26
Female (=1)	0	0	0	0	
Age (in years)	42.4470	8.8067	42.4715	8.6849	-0.33
Low-educated (=1)	0.1735	0.3787	0.2301	0.4209	-12.71***
Average-educated (=1)	0.4872	0.4999	0.5506	0.4974	-11.43***
High-educated (=1)	0.3394	0.4735	0.2193	0.4138	24.25***
Dutch (=1)	0.9614	0.1926	0.9556	0.2061	3.51***
Partner (=1)	0.6550	0.4754	0.6506	0.4768	1.10
Child (=1)	0.7920	0.4059	0.7850	0.4108	2.04**
Pregnant (=1)	0.0245	0.1547	0.0233	0.1509	0.94
Fixed contract (=1)	0.9754	0.1549	0.9691	0.1731	4.64***
Full-time job (=1)	0.9461	0.2258	0.9305	0.2543	7.85***
Tenure in the job (in months)	136.8864	86.7425	137.7766	86.9182	-1.22
Manufacturing sector (=1)	0.4974	0.5000	0.5038	0.5000	-1.52
$20 \leq$ hours a week < 35 (=1)	0.0995	0.2993	0.1153	0.3194	-6.13***
≥ 35 hours a week (=1)	0.9005	0.2993	0.8847	0.3194	6.13***
Number of individuals (#)	37,546		22,683		

Notes: Individual characteristics are provided for the period January 2008 to December 2014 based on the sample after applying coarsened exact matching. For displaced workers and non-displaced workers the sample means with standard deviations are provided for the month of actual and potential job loss, respectively. For the statistics on educational attainment, the number of non-displaced individuals and displaced individuals equal 16,266 and 16,050, respectively. See Table A1 for additional notes.

Table A5
Firm characteristics of non-bankrupt firms and bankrupt firms using the matched sample.

	Firms			
	Non-bankrupt firms		Bankrupt firms	
	Mean	St. Dev.	Mean	St. Dev.
Firm size:				
1-9 employees (=1)	0	0	0	0
10-49 employees (=1)	0.5948	0.4909	0.7119	0.4529
50-99 employees (=1)	0.1420	0.3491	0.1176	0.3222
100-499 employees (=1)	0.1899	0.3922	0.1198	0.3247
500 or more employees (=1)	0.0732	0.2605	0.0507	0.2194
Firm sector:				
Agriculture, forestry and fishing (=1)	0.0031	0.0560	0.0070	0.0831
Mining and quarrying (=1)	0	0	0	0
Manufacturing (=1)	0.2753	0.4467	0.2128	0.4093
Electricity, gas, steam and air conditioning supply (=1)	0.0001	0.0115	0.0003	0.0176
Water supply; sewerage, waste management and remediation (=1)	0.0006	0.0237	0.0017	0.0412
Construction (=1)	0.1676	0.3735	0.1901	0.3924
Wholesale and retail trade; repair of motor vehicles and cycles (=1)	0.2757	0.4469	0.2150	0.4108
Transportation and storage (=1)	0.0445	0.2062	0.0600	0.2374
Accommodation and food service activities (=1)	0.0054	0.0732	0.0159	0.1252
Information and communication (=1)	0.0306	0.1723	0.0471	0.2119
Financial and insurance activities (=1)	0.0282	0.1654	0.0258	0.1586
Real estate activities (=1)	0.0027	0.0518	0.0070	0.0831
Professional, scientific and technical activities (=1)	0.0770	0.2666	0.0975	0.2967
Administrative and support service activities (=1)	0.0298	0.1700	0.0524	0.2228
Public administration and defence; compulsory social security (=1)	0	0	0	0
Education (=1)	0.0059	0.0767	0.0091	0.0951
Human health and social work activities (=1)	0.0492	0.2163	0.0451	0.2076
Arts, entertainment and recreation (=1)	0.0013	0.0354	0.0043	0.0656
Other service activities (=1)	0.0030	0.0548	0.0090	0.0943
Activities of households as employers and for own use (=1)	0	0	0	0
Activities of extraterritorial organisations and bodies (=1)	0	0	0	0
Number of firms (#)	37,512		6,406	

Notes: Firm characteristics are provided over the period January 2008 to December 2014 based on the sample after applying coarsened exact matching. The set of non-bankrupt firms contains all distinct firms where matched non-displaced workers work in the month of potential displacement. The set of bankrupts firms contains all distinct firms of which an entity is declared bankrupt and a worker is displaced in the month of actual displacement.

Table A6
Time gap between birth and job loss for women and men.

	Displaced Women	Displaced Men
Time Gap:	Frequency	Frequency
Job loss 8 months before birth	24	70
Job loss 7 months before birth	18	72
Job loss 6 months before birth	21	65
Job loss 5 months before birth	24	65
Job loss 4 months before birth	15	62
Job loss 3 months before birth	16	64
Job loss 2 months before birth	25	60
Job loss 1 months before birth	24	71
Number of individuals expecting a baby during job loss	167	529

Notes: The time gap is defined as the time difference between the month of birth of a baby and the month of job loss.

Table A7
The within change in hourly wage for displaced workers.

	Within change in hourly wage (€)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	1.0364	0.2557	0.2800	-0.9005
St. Dev.	5.1410	4.2138	6.2889	6.5808
Variance	26.4299	17.7564	39.5504	43.3073
Skewness	-0.4838	-6.4165	-5.4945	-7.9786
Kurtosis	19.9948	186.8970	138.0403	252.7257
1th percentile	-13.3262	-10.9394	-18.5147	-15.4676
5th percentile	-6.2373	-5.8205	-6.8779	-8.7954
25th percentile	-0.7546	-0.9925	-1.4041	-2.9764
50th percentile	1.2234	0.5755	0.6355	-0.1662
75th percentile	3.1152	1.9193	2.4712	1.6992
95th percentile	7.8446	5.2682	6.8646	5.4834
99th percentile	13.8619	10.0027	14.2418	10.6884
Number of individuals	1,595	3,034	16,125	1,898

Notes: The within change in hourly wage for displaced workers, measured by the difference in the values of hourly wages between the 24th month after job loss and the 12th month before job loss. For workers who are unemployed in the 24th month after job loss, the within change is not observed.

Table A8
The within change in work hours for displaced workers.

	Within change in work hours (#)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	-14.2977	-0.5778	-5.4613	12.8044
St. Dev.	31.2460	31.4750	26.3228	37.7030
Variance	976.3113	990.6748	692.8913	1421.5168
Skewness	-0.7345	0.6737	-1.0109	1.1481
Kurtosis	5.1766	10.4128	9.3716	9.5586
1th percentile	-110.00	-83.25	-98.00	-74.61
5th percentile	-77.00	-52.71	-58.39	-40.00
25th percentile	-27.00	-16.00	-13.00	-11.94
50th percentile	-8.00	0.00	-0.61	12.00
75th percentile	3.00	15.00	8.00	30.86
95th percentile	22.00	45.86	24.00	73.87
99th percentile	63.00	81.00	52.00	115.86
Number of individuals	1,595	3,034	16,125	1,898

Notes: The within change in work hours for displaced workers, measured by the difference in the values of work hours between the 24th month after job loss and the 12th month before job loss. For workers who are unemployed in the 24th month after job loss, the within change is not observed.

Table A9
The within change in commuting distance for displaced workers.

	Within change in commuting distance (km)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	2.9668	1.6156	5.2681	5.3446
St. Dev.	29.9248	26.8313	31.5509	29.0976
Variance	895.4925	719.9179	995.4564	846.6706
Skewness	0.2281	0.0993	1.0994	1.4527
Kurtosis	9.7744	16.5071	13.2442	13.9608
1th percentile	-94.5417	-100.3466	-85.0943	-75.7177
5th percentile	-46.4638	-31.5910	-34.3165	-27.8745
25th percentile	-3.2007	-0.6350	-1.3145	-0.7532
50th percentile	0	0	0	0
75th percentile	10.8212	6.2793	11.1712	9.6038
95th percentile	52.7208	35.2126	56.5733	54.6150
99th percentile	97.3645	100.3776	123.4067	123.2498
Number of individuals	1,559	2,948	15,716	1,832

Notes: The within change in commuting distance for displaced workers, measured by the difference in the values of commuting distance between the 24th month after job loss and the 12th month before job loss. For workers who are unemployed in the 24th month after job loss, the within change is not observed.

Table A10
Distribution of hourly wage for displaced workers.

	Hourly wage (€)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	17.9845	16.8390	19.6164	19.7183
St. Dev.	9.1709	6.4362	9.8868	8.2418
Variance	84.1048	41.4241	97.7488	67.9277
Skewness	2.7182	3.8876	5.1098	8.8383
Kurtosis	15.1456	46.1937	69.1856	196.6957
1th percentile	7.3333	8.3352	8.6609	9.2296
5th percentile	9.0489	9.5705	10.6424	11.6556
25th percentile	12.4277	13.0524	14.0727	15.5733
50th percentile	15.8178	15.7809	17.3293	18.5984
75th percentile	20.6250	19.0000	22.0520	21.9536
95th percentile	35.4118	27.6479	35.6500	31.6706
99th percentile	56.8462	37.8365	56.8068	47.3693
Number of individuals	2,106	4,052	20,067	2,616

Notes: The distribution of hourly wage for displaced workers, measured in the 12th month before job loss.

Table A11
Distribution of work hours for displaced workers.

	Work hours (#)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	160.7313	115.6855	167.4453	132.6107
St. Dev.	20.2306	23.0597	13.9362	23.7990
Variance	409.2783	531.7490	194.2188	566.3937
Skewness	-1.1100	0.7760	-0.2808	0.0676
Kurtosis	10.2780	6.7242	19.0755	3.8428
1th percentile	87	69	123.04	80
5th percentile	120	86	150.55	92.57
25th percentile	156	101	160	115
50th percentile	163	111	168	137.14
75th percentile	173	134	174	147
95th percentile	184	156	184	172
99th percentile	194	174	203	188.04
Number of individuals	2,106	4,052	20,067	2,616

Notes: The distribution of work hours for displaced workers, measured in the 12th month before job loss.

Table A12
Distribution of commuting distance for displaced workers.

	Commuting distance (#)			
	Displaced workers			
	Full-time women	Part-time women	Full-time men	Part-time men
Mean	16.2184	13.3801	17.6907	15.7375
St. Dev.	23.4530	20.2633	23.8661	20.6714
Variance	550.0448	410.6009	569.5904	427.3055
Skewness	3.0557	4.0221	3.2626	3.5107
Kurtosis	13.9795	23.3136	17.1282	19.8241
1th percentile	0.5491	0.6250	0.5819	0.6543
5th percentile	1.2324	1.1757	1.3578	1.4762
25th percentile	3.3230	3.4355	4.0808	4.1742
50th percentile	8.0543	6.7303	9.6029	9.0968
75th percentile	17.4107	14.7600	20.5680	18.1198
95th percentile	63.9439	45.4736	63.5747	53.5720
99th percentile	115.7233	117.5013	125.1094	117.5532
Number of individuals	2,106	4,052	20,067	2,616

Notes: The distribution of commuting distance for displaced workers, measured in the 12th month before job loss.

Table A13
Time gap between job loss and firm bankruptcy.

	Displaced Women		Displaced Men	
	Full-time	Part-time	Full-time	Part-time
Time Gap:	Frequency	Frequency	Frequency	Frequency
Job loss 6 months before bankruptcy	84	103	430	35
Job loss 5 months before bankruptcy	78	106	477	44
Job loss 4 months before bankruptcy	115	212	910	110
Job loss 3 months before bankruptcy	130	176	979	93
Job loss 2 months before bankruptcy	280	456	4141	336
Job loss 1 month before bankruptcy	935	2121	10201	1583
Job loss in the month of bankruptcy	216	493	1893	318
Job loss 1 month after bankruptcy	47	66	192	25
Job loss 2 or more months after bankruptcy	221	319	844	72
Number of individuals	2,106	4,052	20,067	2,616

Notes: The time gap is defined as the time difference between the month of firm bankruptcy and the month of job loss.

Appendix B The role of observables in displacement effects

Controlling for the full-time/part-time status of the displaced job could be important, as in our sample about two-thirds of women work part time whereas less than 10 per cent of men work part time (See Tables A3 and A4). Indeed, Figure B1 shows that without controlling for whether the worker was in a full-time or part-time job when job loss occurred, the gender differences in displacement effects on employment and working hours are substantially different. After 18 months since job loss, the gender difference in employment remains constant at about 4 percentage points (see Figure B1), compared to 0 percentage points as in Figure 2. Moreover, Figure B1 shows that women have a comparable loss in working hours to men, whereas it equals about 5 percentage points when controlling for full-time/part-time status as in Figure 2. However, consistent with Figure 2, Figure B1 shows that women have a 2 percentage points smaller loss in wages and a 5 percentage points smaller increase in commuting distance than do men. These results reveal that the full-time/part-time status of the displaced job is important for the analysis of gender differences in post-displacement outcomes.

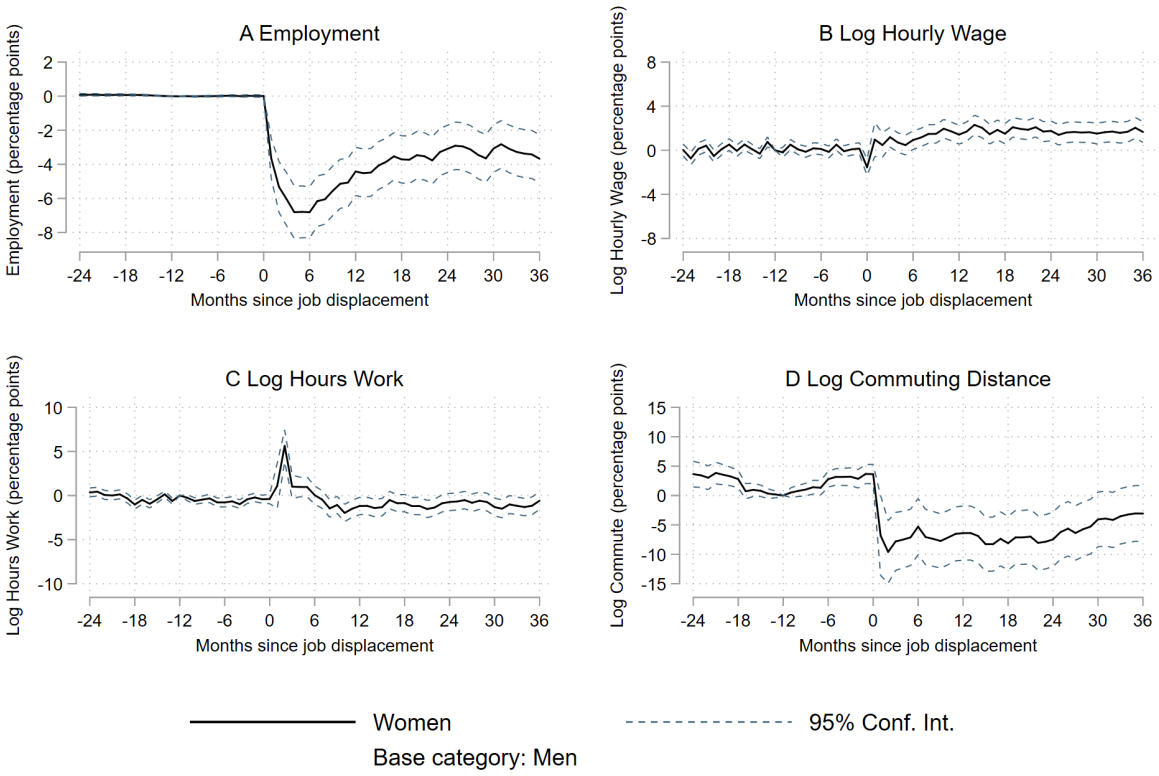

Fig. B1. Gender difference in the time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and log commuting distance (D) (Eq. (4)).
Notes: Each line gives the parameter estimates of the three-way interaction term $Female \times DISPLACED \times G^{\tau}$ of a different regression. Reference group is the group of displaced male workers. Reference month is the twelfth month before job loss. The worker's full-time/part-time status is not included in the set of covariates. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and G^{τ} interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143). The 95% confidence intervals are computed using clustered standard errors on the individual level. The number of individuals equals 75,992. Each fixed effects regression model includes 3,307 parameters.

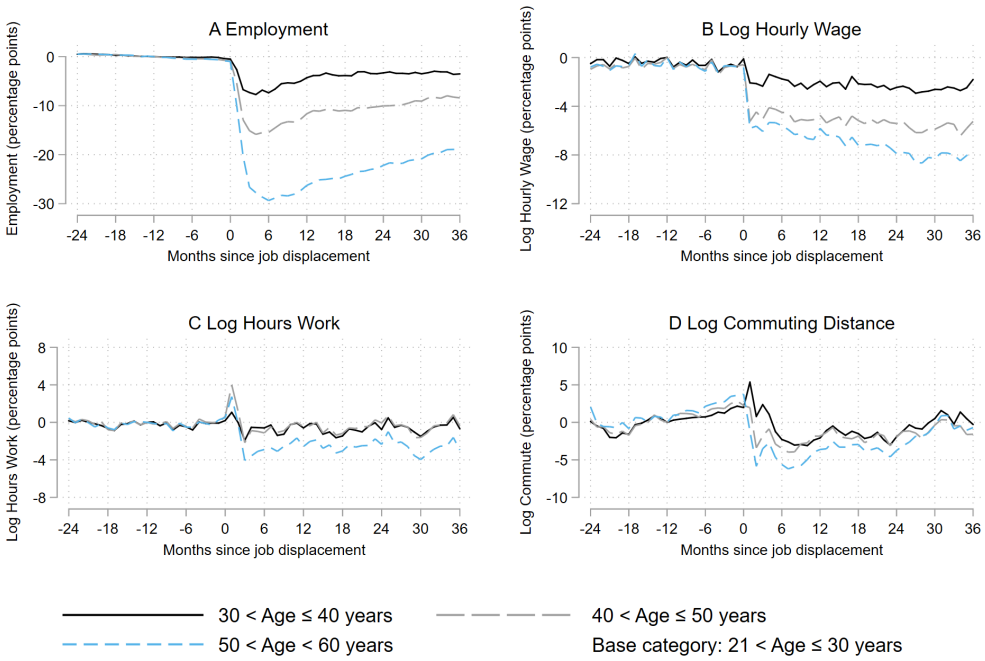

Fig. B2. Time-dependent displacement effects by age on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

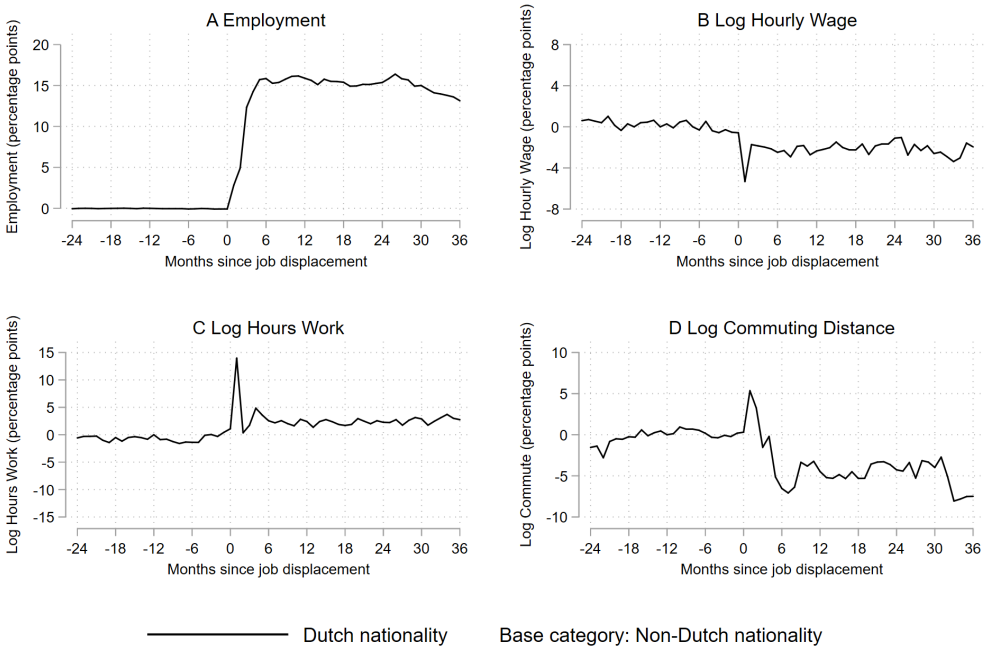

Fig. B3. Time-dependent displacement effects by nationality on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

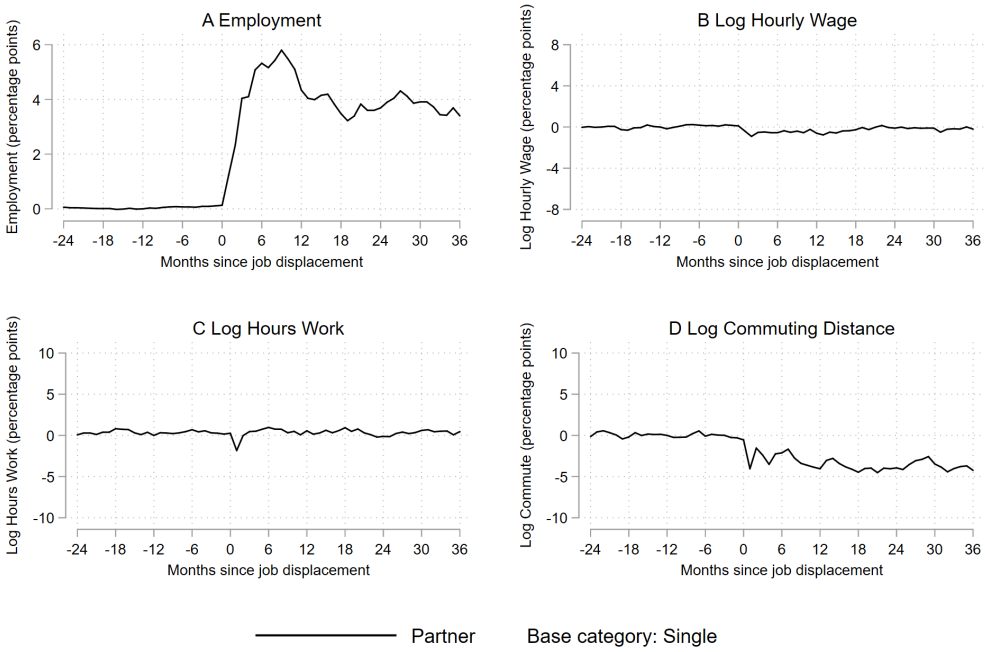

Fig. B4. Time-dependent displacement effects by marital status on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

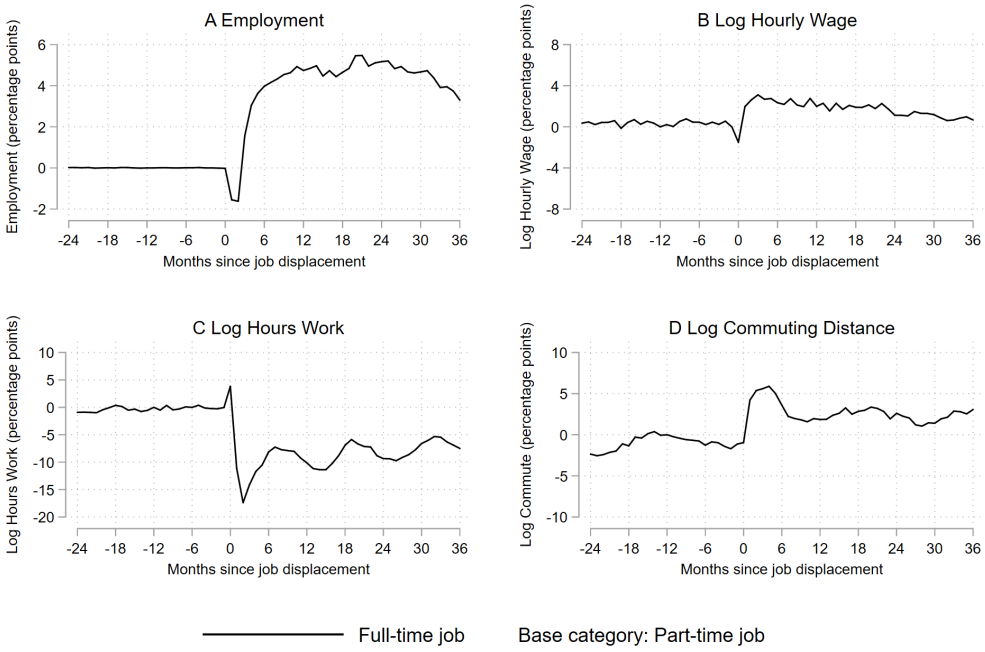

Fig. B5. Time-dependent displacement effects by full-time/part-time status on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

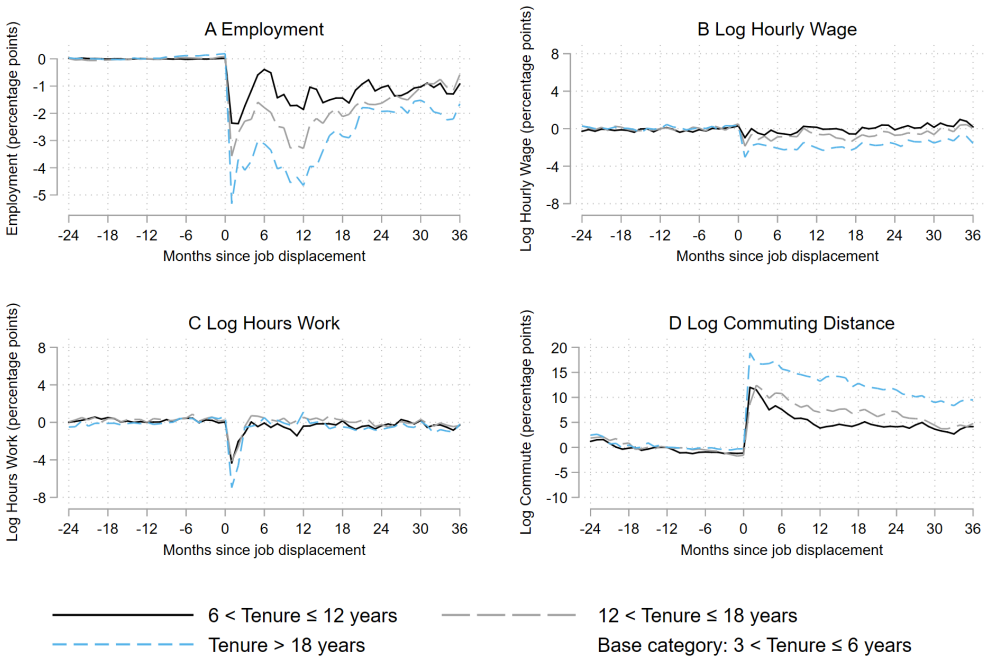

Fig. B6. Time-dependent displacement effects by tenure in the displaced job on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

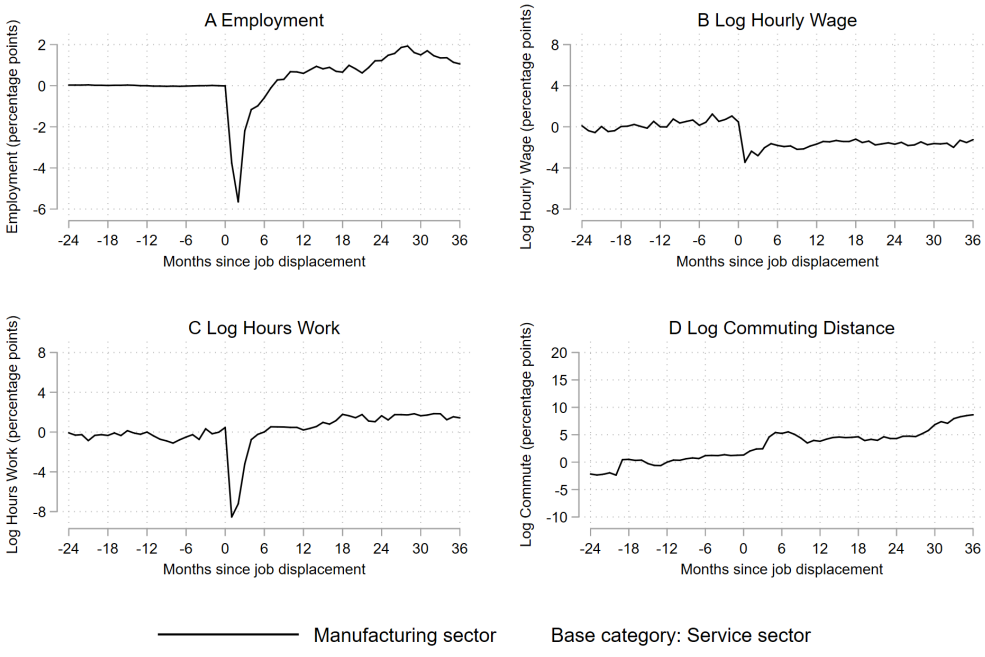

Fig. B7. Time-dependent displacement effects by economic sector of the displaced job on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

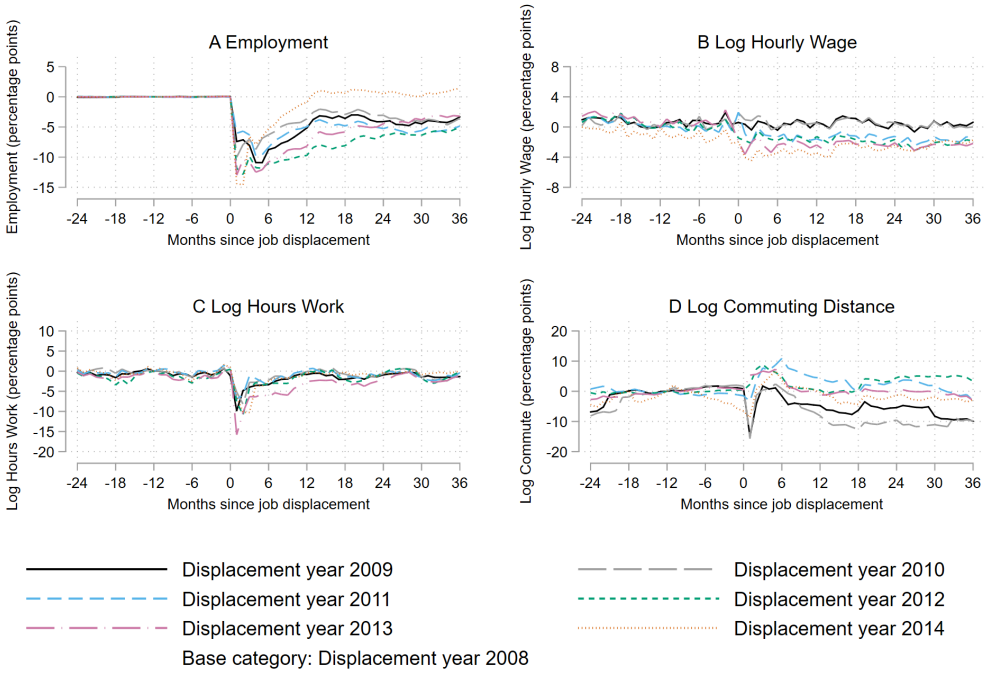

Fig. B8. Time-dependent displacement effects by displacement year on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Based on the same set of regressions as Figure 2. See Figure 2 for additional notes and statistics.

Appendix C Robustness checks

C.1 Educational attainment

Table C1
The role of gender in the effects of job loss (Eq. (3), sample of Table C2).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Female*:				
Base category: Men				
Women	-0.0106	0.0260***	-0.0524***	-0.0681**
	(0.0082)	(0.0051)	(0.0051)	(0.0287)
Number of parameters	242	242	242	242
Number of individuals	42,098	42,098	42,098	42,098
Number of observations	2,567,978	2,311,902	2,311,902	2,278,605

Notes: Each column gives the dependent variable and each row gives the parameter estimate of the three-way interaction term of a different regression. Reference group is the group of displaced male workers. Reference month is the twelfth month before job displacement. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), full-time/part-time status, type of contract, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143).

Table C2
The role of gender and education in the effects of job loss (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Female*:				
Base category: Men				
Women	-0.0112	0.0265***	-0.0530***	-0.0692**
	(0.0082)	(0.0051)	(0.0051)	(0.0287)
DISPLACED × *POST* × *EDUCATION*:				
Base category: Low-educated				
Average-educated	0.0441***	-0.0047	0.0104***	-0.0004
	(0.0072)	(0.0040)	(0.0038)	(0.0232)
High-educated	0.0445***	-0.0093*	0.0265***	0.0449
	(0.0084)	(0.0050)	(0.0044)	(0.0284)
Number of parameters	246	246	246	246
Number of individuals	42,098	42,098	42,098	42,098
Number of observations	2,567,978	2,311,902	2,311,902	2,278,605

Notes: Each column gives the parameter estimates of the three-way interaction term of a different regression. Reference group for gender is the group of displaced male workers. Reference group for educational attainment is the group of displaced low-educated workers. See Table C1 for additional notes.

C.2 Placebo treatment

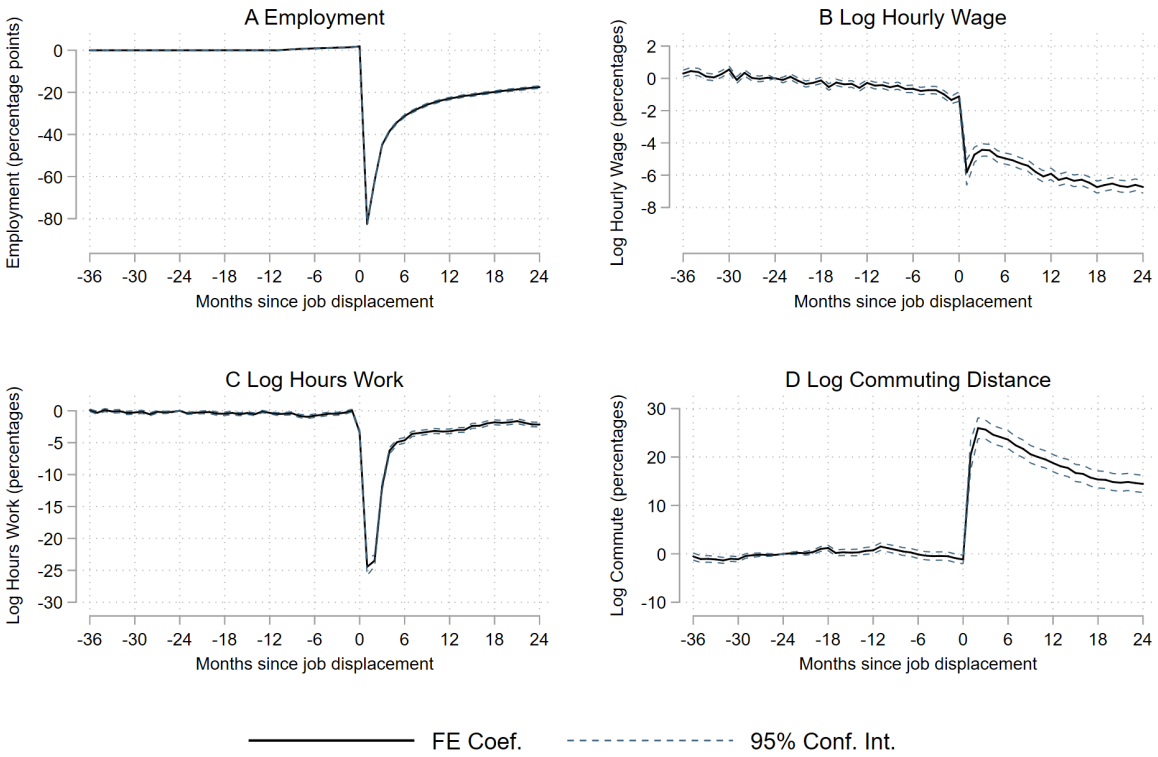

Fig. C1. Placebo displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (2)).
Notes: Each line gives the parameter estimates of the two-way interaction term $DISPLACED \times G^{\tau}$ of a different regression. Displaced and non-displaced workers are matched in the month of placebo treatment, which is the twelfth month before actual displacement of the displaced workers. Reference month is G^{-24}, the 24th month before job loss. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 280 parameters. The number of individuals equals 65,416. See Figure 1 for additional notes.

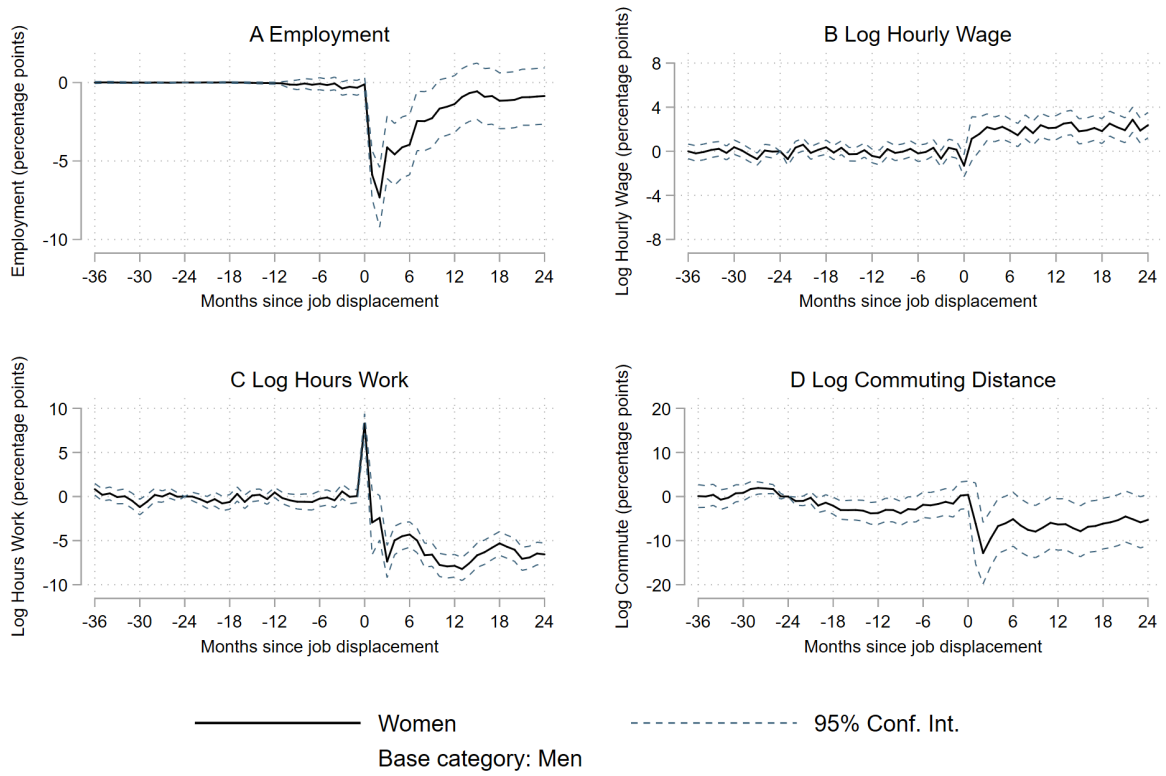

Fig. C2. Placebo gender difference in the displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).

Notes: Each line gives the parameter estimates of the three-way interaction term $Female \times DISPLACED \times G^{\tau}$ of a different regression. Displaced and non-displaced workers are matched in the month of placebo treatment, which is the twelfth month before actual displacement of the displaced workers. Reference month is G^{-24}, the 24th month before job loss. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 3,163 parameters. The number of individuals equals 65,416. See Figure 2 for additional notes.

C.3 Complete data on commuting distance

Table C3
The role of gender in the effects of job loss (Eq. (3), sample with complete data on commuting).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Female*:				
Base category: Men				
Women	-0.0235***	0.0096*	-0.0481***	-0.0653**
	(0.0088)	(0.0051)	(0.0051)	(0.0291)
Number of parameters	240	240	240	240
Number of individuals	49,220	49,220	49,220	49,220
Number of observations	3,002,420	2,773,489	2,773,489	2,773,489

Notes: Each column gives the dependent variable and each row gives the parameter estimate of the three-way interaction term of a different regression. Reference group is the group of displaced male workers. Reference month is the twelfth month before job displacement. All displaced workers and matched controls with missing data on work location are excluded from the sample. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), full-time/part-time status, type of contract, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143).

C.4 High-wage/low-wage status

Table C4
The role of gender and high-wage/low-wage status in the effects of job loss (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Wage Status*:				
Base category: High-wage men				
High-wage women	-0.0035	0.0227***	-0.0501***	-0.0647**
	(0.0075)	(0.0044)	(0.0045)	(0.0257)
Low-wage women	-0.0789***	0.0768***	-0.0862***	-0.0655
	(0.0115)	(0.0065)	(0.0081)	(0.0399)
Low-wage men	-0.0442***	0.0857***	-0.0363***	0.0102
	(0.0078)	(0.0044)	(0.0044)	(0.0270)
Number of parameters	246	246	246	246
Number of individuals	75,992	75,992	75,992	75,992
Number of observations	4,635,512	4,298,593	4,298,593	4,254,421

Notes: Each column gives the parameter estimates of the three-way interaction term of *Wage Status* × *DISPLACED* × *POST* of a different regression. High-wage workers and low-wage workers are defined as earning at least 12.5 euro per hour and less than 12.5 euro per hour in the month of job displacement, respectively. Reference group for the wage status by gender is the group of displaced male workers who earn at least 12.5 euro per hour when job loss occurred. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, full-time/part-time status, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143).

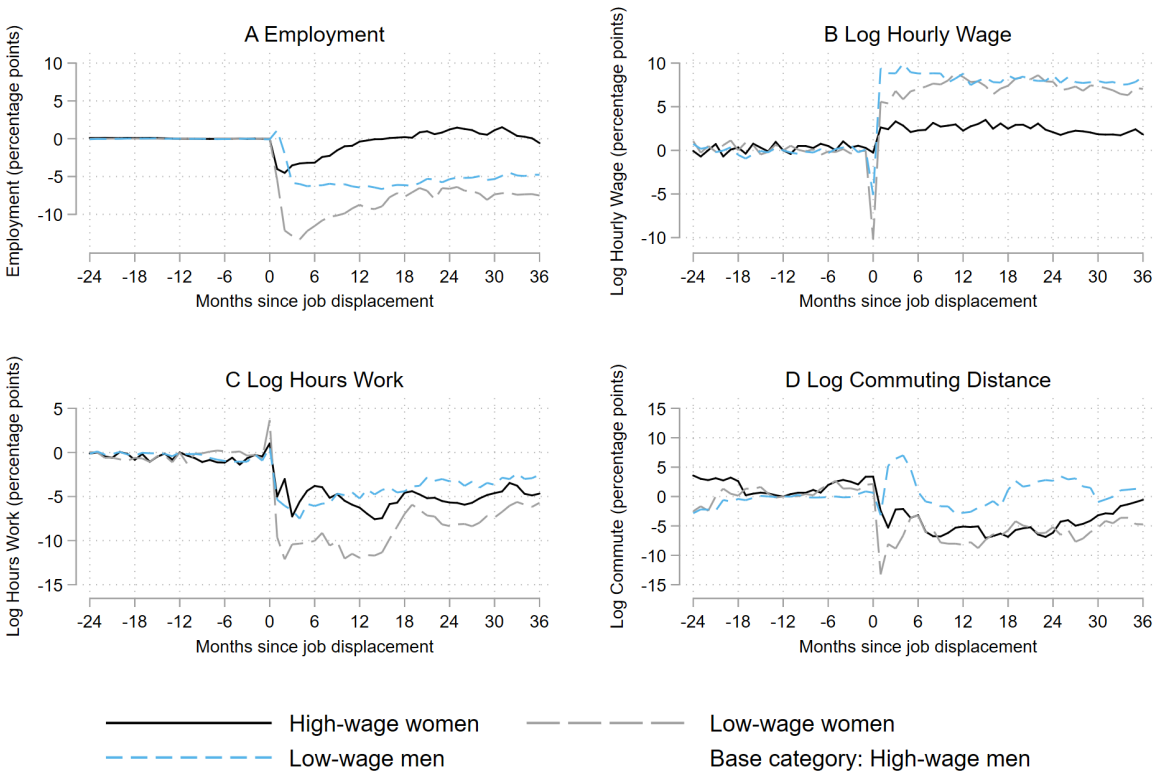

Fig. C3. Role of the high-wage/low-wage status and gender in the time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).
Notes: Each graph gives the parameter estimates of a different regression. The regression analyses include a three-way interaction term of *Wage Status* × *DISPLACED* × G^{τ}. High-wage workers and low-wage workers are defined as earning at least 12.5 euro per hour and less than 12.5 euro per hour in the month of job displacement, respectively. Reference group for the wage status by gender is the group of displaced male workers who earn at least 12.5 euro per hour when job loss occurred. Each fixed effects regression model includes 3,667 parameters. See Figure 3 and Table C3 for additional notes.

C.5 High-commute/low-commute status

Table C5
The role of gender and high-commute/low-commute status in the effects of job loss (Eq. (3)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
DISPLACED × *POST* × *Commute Status*:				
Base category: High-commute men				
High-commute women	-0.0164*	0.0199***	-0.0449***	-0.1034***
	(0.0092)	(0.0053)	(0.0058)	(0.0292)
Low-commute women	-0.0249***	0.0332***	-0.0641***	0.6511***
	(0.0084)	(0.0049)	(0.0051)	(0.0254)
Low-commute men	-0.0079*	0.0076***	-0.0024	0.8047***
	(0.0047)	(0.0028)	(0.0022)	(0.0146)
Number of parameters	246	246	246	246
Number of individuals	75,992	75,992	75,992	75,992
Number of observations	4,635,512	4,298,593	4,298,593	4,254,421

Notes: Each column gives the parameter estimates of the three-way interaction term of *Commute Status* × *DISPLACED* × *POST* of a different regression. High-commute workers and low-commute workers are defined as having a commuting distance of at least 10 kilometres and less than 10 kilometres in the month of job displacement, respectively. Reference group for the commute status by gender is the group of displaced male workers who have a commuting distance of at least 10 kilometres when job loss occurred. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and *POST* interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, full-time/part-time status, firm size (3), manufacturing sector and the year of job displacement (6), respectively. Moreover, we include individual-specific fixed effects and indicator variables for the NUTS 3 location of the household (39) and calendar month (143).

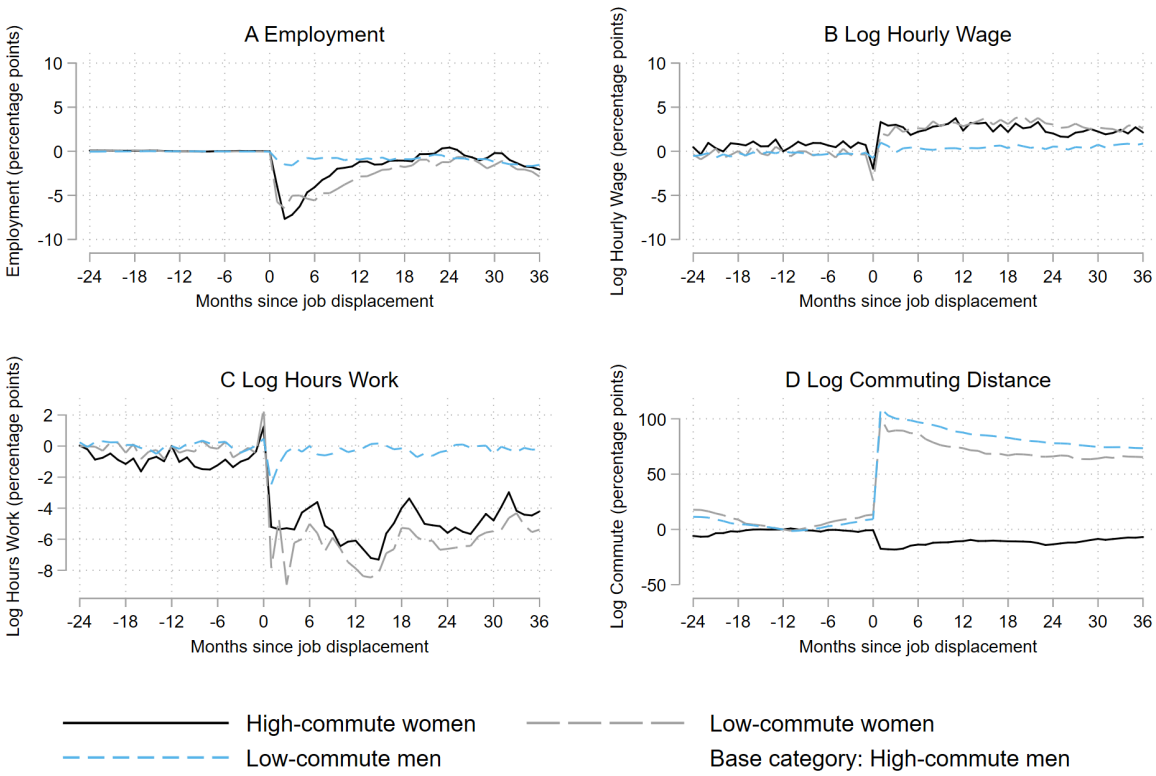

Fig. C4. Role of the high-commute/low-commute status and gender in the time-dependent displacement effects on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (4)).

Notes: Each graph gives the parameter estimates of a different regression. The regression analyses include a three-way interaction term of *Commute Status* × *DISPLACED* × G^{τ}. High-commute workers and low-commute workers are defined as having a commuting distance of at least 10 kilometres and less than 10 kilometres in the month of job displacement, respectively. Reference group for the commute status by gender is the group of displaced male workers who have a commuting distance of at least 10 kilometres when job loss occurred. Each fixed effects regression model includes 3,667 parameters. See Figure 3 and Table C4 for additional notes.

C.6 First job after job displacement

Fig. C5. Gender difference in the time-dependent displacement effects on hourly wages (A), hours work (B) and commuting distance (C) (Eq. (4)).

Notes: All individual-month observations of displaced workers who experienced post-displacement job-to-job turnover are excluded from the sample. Each graph gives the parameter estimates of a different regression. The regression analyses include a three-way interaction term of *Female* × *DISPLACED* × G^{τ}. Reference group is the group of displaced male workers. The regression analyses include three-way interaction terms, two-way interaction terms and main effects of *DISPLACED* and G^{τ} interacted with the variables age (3), Dutch nationality, marital status, presence and age of children (5), job tenure (3), type of contract, full-time/part-time status, firm size (3), manufacturing sector and the year of job displacement (6), respectively. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 3,427 parameters.

Appendix D Displacement effects by stratified samples

D.1 Gender

Figure D1 shows to what extent the displacement effects are different for women and men over the post-displacement period. Figure D1A shows that women and men have similar displacement effects on employment for the first three months since job displacement. Thereafter, the gender difference in the loss in employment increases over time and peaks at about 8 percentage points after six months since job displacement. Figure D1B shows that the loss in wages following displacement is similar for women and men over the post-displacement period after six months since job displacement. Figure D1C shows that for workers who are re-employed within three months since job displacement, the loss in hours work is larger for men than women. This finding could be explained by the fact that women are more in part-time employment than men, as is clear from the summary statistics provided in Tables A3 and A4 in Appendix A. We will examine the difference in displacement effects among workers who differ in full-time/part-time status, defined based on the number of working hours in the displaced job, in the next subsection.

Figure D1D shows that the displacement effect on the commuting distance is smaller for women than for men. Displaced women experience an increase of about 15 per cent in commutes until six months after displacement, which becomes smaller over time and equals zero after three years. Conversely, men experience an increase of about 30 per cent after six months, which equals 15 per cent after three years. Importantly, the results show that the gender difference in displacement effects on working hours and hourly wages remains constant after six months since job displacement. In contrast, observe that the gender difference in the displacement effect on commute becomes more pronounced in this period. Together, these findings suggest that women's preference for working close to home leads to a compensating differential, resulting in lower employment.

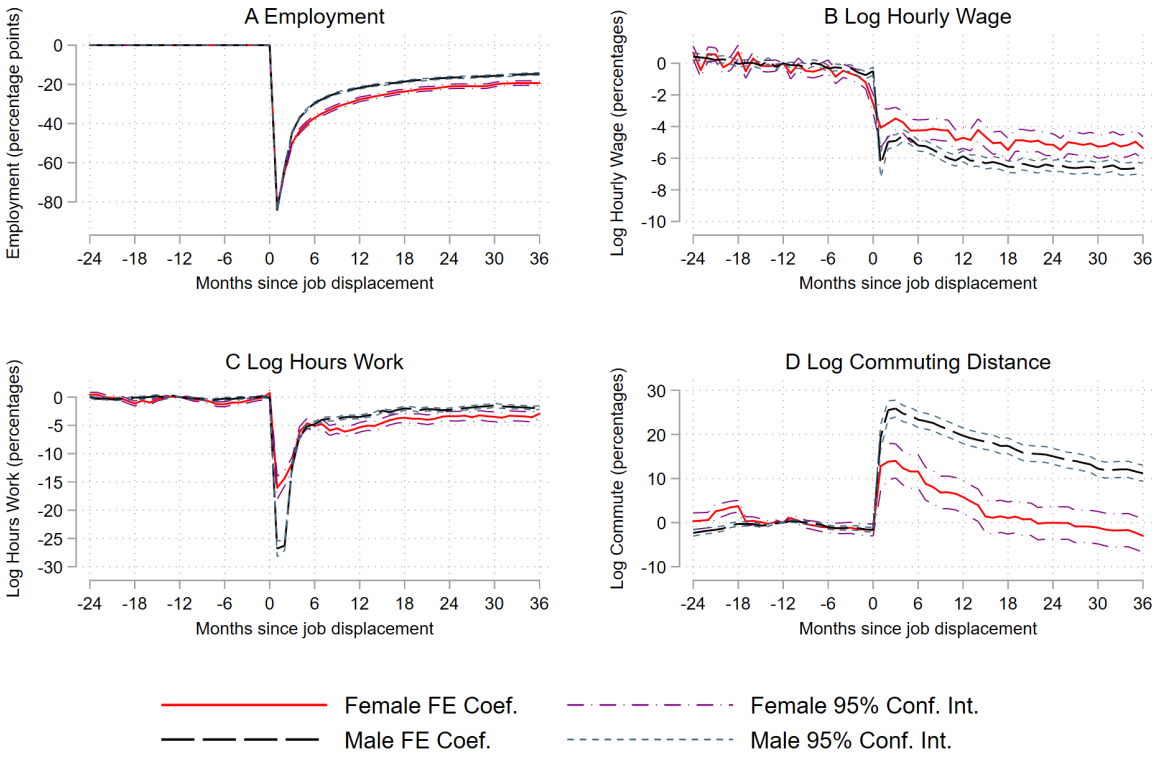

Fig. D1. Time-dependent displacement effects by gender on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (2)).
Notes: Each line gives the parameter estimates of the interaction term $DISPLACED \times G^{\tau}$ of a different regression. The samples are stratified by gender and the reference group of displaced women and displaced men is the group of non-displaced female workers and male workers, respectively. Reference month is the twelfth month before job displacement. The 95% confidence intervals are computed using clustered standard errors on the individual level. Each fixed effects regression model includes 304 parameters. See Figure 1 for additional notes.

D.2 Full-time/part-time displaced job

Table D1
Impact of job loss based on stratification by gender and full-time/part-time status (Eq. (1)).

	Employment (=1)	Hourly wage (log)	Work hours (log)	Commute (log)
	(1)	(2)	(3)	(4)
Panel A: Sample of full-time women (≥35 hr) :				
DISPLACED × *POST*	-0.2815***	-0.0350***	-0.0846***	0.0835***
	(0.0082)	(0.0050)	(0.0051)	(0.0289)
Panel B: Sample of part-time women (≥20 hr <35):				
DISPLACED × *POST*	-0.2884***	-0.0508***	-0.0194***	-0.0038
	(0.0061)	(0.0029)	(0.0041)	(0.0193)
Panel C: Sample of full-time men (≥35 hr) :				
DISPLACED × *POST*	-0.2275***	-0.0567***	-0.0431***	0.1786***
	(0.0025)	(0.0015)	(0.0011)	(0.0085)
Panel D: Sample of part-time men (≥20 hr <35):				
DISPLACED × *POST*	-0.2916***	-0.0945***	0.0550***	0.1922***
	(0.0078)	(0.0046)	(0.0042)	(0.0229)

Notes: Each column gives the dependent variable and each row gives the parameter estimate of the interaction term *DISPLACED* × *POST*. Each parameter estimate is based on a different regression. The samples are stratified by workers' gender and full-time/part-time employment status. Reference group of each of the four subgroups of displaced workers, which differ in gender and number of working hours in the displaced job, are their non-displaced counterparts. The number of individuals, for full-time women, part-time women, full-time men and part-time men, equals 5,273, 10,490, 53,877, and 6,352, respectively. See Table 1 for additional notes.

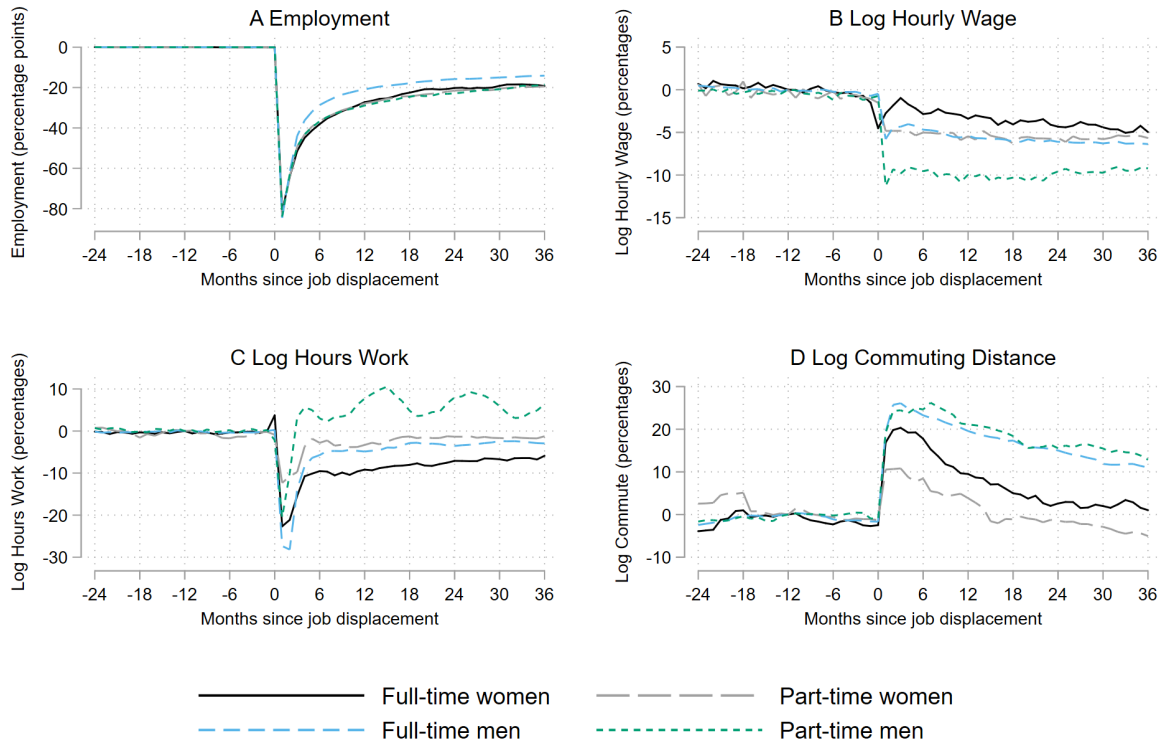

Fig. D2. Time-dependent displacement effects by gender and full-time/part-time status on employment (A), hourly wages (B), hours work (C) and commuting distance (D) (Eq. (2)).
Notes: Each line gives the parameter estimates of the interaction term $DISPLACED \times G^{\tau}$ of a different regression. The samples are stratified by workers' gender and full-time/part-time employment status. Reference group of each of the four subgroups of displaced workers, which differ in gender and number of working hours in the displaced job, are their non-displaced counterparts. Reference month is the twelfth month before job displacement. The 95% confidence intervals are computed using clustered standard errors by individual. Each fixed effects regression model includes 304 parameters. See Figure 1 for additional notes.