

# **Job Creation, Job Destruction, and Their Impact on Union Formation and First Birth**

## **Extended Abstract**

### **Research Objectives**

This study investigates the union formation and fertility effects of individuals' exposure to job creation and destruction in their early careers in Germany. It contributes to the literature by 1) proposing and examining new measures (i.e., job creation and job destruction) for labor market changes in family demography; 2) exploring how skill-specific job creation and destruction affect family planning for new entrants of different skill levels; 3) examining the long-term effects of initial labor market conditions of individuals on not only the probability but also the timing of their union formation and fertility.

### **Background**

Previous research on how labor market performances influence demographic outcomes mainly focused on workers' employment status, such as unemployment (e.g., Adsera, 2005; Bono et al., 2015; Özcan et al., 2010), precarious employment (e.g., Scherer, 2009; Schmitt, 2021; Vignoli et al., 2020), and female labor force participation (e.g., Adsera, 2004; Ahn & Mira, 2002). However, less attention has been paid to the creation and destruction of jobs. Because occupations typically expand by hiring young workers and contract by curtailing such hiring, job creation and destruction affect young workers and new entrants to the labor market more significantly than the more experienced ones (Autor & Dorn, 2009). Since early careers and first jobs affect people's entire career path (Hamaaki et al., 2013; Oyer, 2006), persons entering into a labor market with scarce or sufficient new jobs could follow different life course trajectories. This study, nonetheless, focuses exclusively on early-life events, namely the union formation and the birth of a first child.

This study contributes to the literature on the demographic effects of labor market changes in three important ways. First, this study introduces the measurements of 'job creation' and 'job destruction' in the demographic literature. Job creation captures the gross job gains from expanding and entering firms, indicating how easily a person can find a job. On the contrary, job destruction reflects gross job losses from contracting and exiting firms, showing how secure or insecure a person's job is. In general, a high rate of job creation yields more opportunities for new entrants, allowing them to accumulate their human capital for their future careers shortly after education. Particularly when job destruction is low, even though the new entrants may not find a job that fully meets their expectations at the beginning, they could be more confident to find a better one soon and be less concerned about their job insecurity. Consequently, they are more likely to form unions and have children earlier. For young people who want to have a family early, the second-best scenario should be a high degree of job creation with a high rate of job destruction. In this situation, they encounter a lower degree of job security than the previous one, but the probability of finding a new job is still high. Furthermore, the substantial job creation in the first two scenarios also implies that new entrants could attain a relatively stable income, provided they persist in their job search and are open to accepting positions that may not fully satisfy them. The relatively stable income could also facilitate young workers' union formation and transition to parenthood. What if low job creation and low job destruction coexist? In such a less dynamic labor market, the new entrants face fierce competition to join the workforce with an average prolonged search period. While low job destruction indicates a lower risk of job loss, the simultaneously low likelihood of finding another job and the disadvantaged position as young workers may still reduce their subjective job security. Therefore, young people could be less likely to form their families or take more time to do so, compared to the second-best scenario. Nonetheless, in the second and third situations, the employment rate can be at the same level, though the young workers do experience different labor market conditions. Finally, the most challenging scenario for new entrants occurs when job creation is minimal, yet job destruction is prevalent. Essentially, this mirrors an economic downturn, in which the new entrants suffer from persistent earnings and wage reductions (Schwandt & Wachter, 2019). As a result, they have to delay

their family plans and potentially resulting in a smaller number of children.

The association of job creation and destruction with new entrant's union formation and first birth may also depend on gender. Hofmann & Hohmeyer (2016) showed that economic downturn at graduation increases the transition rate to first pregnancy among female graduates significantly, but not their male counterparts. They argued that the lower probability of holding a degree-adequate job in an economic recession decreases the opportunity cost of having children for women. In this regard, high job destruction and/or low job creation could also be positively related to the likelihood of union formation and the timing of first birth for females, but not for males. Nevertheless, we still need to carefully test these hypotheses, for instance, female workers may also value a high degree of job creation, which can make their return to the labor market after maternity leave less challenging.

Secondly, this study takes the skill level of new entrants into consideration using skill-specific job creation and destruction. Oesch & Piccitto (2019) found that employment strongly expanded in high-skilled jobs while contracted in the low-skilled ones in Germany since the early 1990s. Hence, skill-specific job creation and destruction can describe new entrants' labor market conditions more precisely. With these measurements, we can explore whether the growing number of available jobs for high-skilled young workers and the decrease in jobs for low-skilled newcomers lead to differences in the probability and timing of their union formation and first birth.

Third, this study adds evidence to small but growing literature on the long-term effects of initial labor market conditions of individuals on the following life events. Current research primarily focuses on how economic recession and the employment status of new graduates affect the probability of union formation and childbearing (e.g., Currie & Schwandt, 2014; Hershbein, 2012; Maclean et al., 2016; Wachter, 2020 for the US; Hashimoto & Kondo, 2012 & Kondo, 2012 for Japan; Hofmann & Hohmeyer, 2016 for Germany; Choi et al., 2020 for South Korea). Our study, nonetheless, pays special attention to the timing of these life events. Due to the biological clock, the timing of union formation and first birth directly influences whether people can progress to higher-order birth as they want. Thus, investigating the timing of early life events provides explanations of why or why not can people achieve their ideal family size.

## **Data and Methods**

This study focuses on Germany, a country where the relationship between job creation/ destruction and fertility has been examined at the macro level by Luo (2023, unpublished). It found that at the county level, job creation was positively associated with the regional total fertility rate, whereas job destruction demonstrated the opposite relationship. Besides, the associations were gendered. Focusing on male- and female-specific job creation and destruction, it argued that job creation for female workers and job destruction for male workers were essential to regional fertility. Nonetheless, this study was based on data after 2007, and due to ecological fallacy, one cannot infer individual behaviors directly from macro-level results.

In this study, data on individuals' life events will be derived from the LabFam Individual Biographies (LIB), built upon the German Socio-Economic Panel (GSOEP). This dataset contains spell data on the family and employment histories of the GSOEP respondents and can be merged with the GSOEP dataset for variables on the respondents' socioeconomic characteristics.

We use the Establishment History Panel (BHP) to estimate job creation and destruction. BHP are cross-sectional datasets since 1975 for West Germany and 1992 for East Germany. It is a 50% sample of all establishments throughout Germany with at least one employee subject to social security as of 30 June of a given year (Ganzer et al., 2022). In the dataset, the annual number of observations is between 640,000 and 1.5 million establishments (Ganzer et al., 2022). A high sampling rate allows us to have a consistent estimation of job creation and job destruction in the German labor market. For every firm, the structures of employees by gender, educational and vocational qualifications, and occupational

groups are recorded. With this information, we are able to calculate job creation and destruction by occupations, skill requirements, and genders for the whole country and each federal state, using the classical method developed by Davis & Haltiwanger (1992):

$$JC_{it} = \sum_j \frac{E_{ijt} - E_{ij(t-1)}}{(E_{it} + E_{i(t-1)})/2}, \text{ for all } E_{ijt} - E_{ij(t-1)} > 0 \quad (1)$$

$$JD_{it} = \sum_j \frac{|E_{ijt} - E_{ij(t-1)}|}{(E_{it} + E_{i(t-1)})/2}, \text{ for all } E_{ijt} - E_{ij(t-1)} < 0 \quad (2)$$

where  $JC_{it}$  and  $JD_{it}$ , stand for job creation (JC) and job destruction (JD) at time  $t$  of occupation  $i$ . The letter  $j$  represents firms, and  $E$  is the number of workers. Following Kuhn et al., (2016), we also aggregate job creation and destruction by the skill levels to capture the skill-specific job creation and destruction. The empirical work is based on the merging of the two datasets by the year of labor market entry of individuals and their characteristics such as their educational attainment and early career occupation. And we split the sample by gender.

This study performs the mixture cure modeling introduced by Berkson and Gage (1952). It is an extension of classical time-to-event models that an unknown fraction of the population under study never experiences the event of interest (Bremhorst et al 2016). This feature is essential for the study of Germany because of its high rate of childlessness, particularly for women with a college education (Aaronson et al., 2014; Kamhofer & Westphal, 2019). Additionally, with the mixture cure model, we are able to estimate the quantum and the timing of the monitored event (Bremhorst et al 2016, Lambert and Bremhorst, 2020) separately. Hence, this study could ascertain whether individuals' early career exposure to job creation and destruction influences the timing and likelihood of marriage and the birth of their first child.

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