# What to expect after you are expecting?

## An analysis of mothers' interruption duration and return-to-work behaviour after childbirth

vorgelegt von

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Kumulative Dissertation

To my parents

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# 1 Non-technical Abstract

How do institutional factors and their interaction with individual resources influence the length of mothers' interruption durations after childbirth and return-to-work behaviour? This thesis answers this question from a family sociology and labour market perspective, and concentrates on how institutional factors explain varying durations of mothers' employment interruptions and the differences in their return-to-work behaviour after childbirth. In this cumulative thesis, I analyse three institutional factors, the introduction of a paid leave entitlement, the expansion of childcare availabilities, and the specific hours of employment across different occupations. After an introduction in Chapter 1, the first two parts (Chapter 2 and 3) are concerned with the influence of two policy reforms (aiming at easing the conflict between family and career) on mothers' return-to-work behaviour, whereas the third part (Chapter 4) seizes on the occupational opportunity structure and its impact on mothers' return-to-work behaviour. More specifically, Chapter 1 outlines the overarching framework, based on life course research, and discusses how the chapters relate to the existing literature of life course research. Chapter 2 studies the effect of a first-time roll-out of a paid maternity entitlement in Australia on mothers' return-to-work behaviour and how the reform effect differs by educational groups. The results suggest that the introduction of a statutory paid leave entitlement has stimulated a change in re-entry behaviour to work, although its impact varies across educational groups. Chapter 3, in co-operation with Gundula Zoch, examines how increased availability of low-cost, state-subsidised childcare for under-three-year-olds in Germany is associated with shorter employment interruptions amongst West and East German mothers. The results indicate that increased childcare availability for under-three-year-olds reduces the length of mothers' employment interruptions, particularly for West German mothers. Chapter 4, together with Sandra Buchholz, investigates whether occupation-specific hours of employment (not just the number of hours worked, but also the level of flexibility of when they are worked) affect mothers' interruption duration and their return-to-work behaviour after childbirth. The results show that occupation-specific employment hours, even after controlling for individual characteristics, are significantly associated with the length of mothers' employment interruptions. The effect of occupation-specific employment hours for the interruption duration depends on the mother's level of education and as the results suggest they have a larger impact on the interruption duration of lower educated mothers. The thesis contributes to the literature on how institutions shape individual life courses. It shows, in particular, that institutions do not have the same effect on all mothers but influence the lives of individuals in stratified ways and can contribute to growing inequalities of labour market opportunities for mothers with differing resources.

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# 1 Introduction, Overview, and General Framework

## 1 Introduction

The rise of female labour force participation in all Organisation for Economic Co-operation and Development (OECD) countries is one of the most important social changes of the last century. In recent decades, women's participation in the labour market has increased dramatically, as married women and mothers enter the labour market more often (Blau et al., 2006). Increased availability of birth control, women's increasing levels of educational attainment, better career prospects, and increasing income are all potential explanations for the surge in female labour market participation.

Figure 1.1 shows the significant increase in female labour market participation for four countries – Australia, Germany, Sweden and the United States – since 1970. As shown in Figure 1.1, female labour market participation rates in Australia, Germany and the United States were around 45% in 1970 (OECD, 2016a).[1] In Sweden, by contrast, nearly 60% of women already participated in the labour market at that time (OECD, 2016a). In the following decades, labour market participation increased drastically in all OECD countries and the difference in labour market participation between OECD countries and Scandinavian countries, such as Sweden (shown in Figure 1.1), decreased (OECD, 2016a).

Although female labour market participation shows an upward trend across multiple countries, many women are still only employed part-time. For example, in Germany and Australia, over one third of all working women are employed part-time over the observation period. In the United States and Sweden, the percentage of part-time employed women is somewhat smaller (OECD, 2016a).

The drastic increase in female labour market participation is often referred to as a gender revolution. The scientific literature demonstrates how women's lives have become more centred on the labour market. For example, Bergmann (2005) shows that women have increased their labour market attachment, not only due to an increasing wage

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[1]Female labour market participation rate measures the number of employed women divided by the total female population aged 15-64 in a specific country.

Figure 1.1: Trends in female labour market participation rates
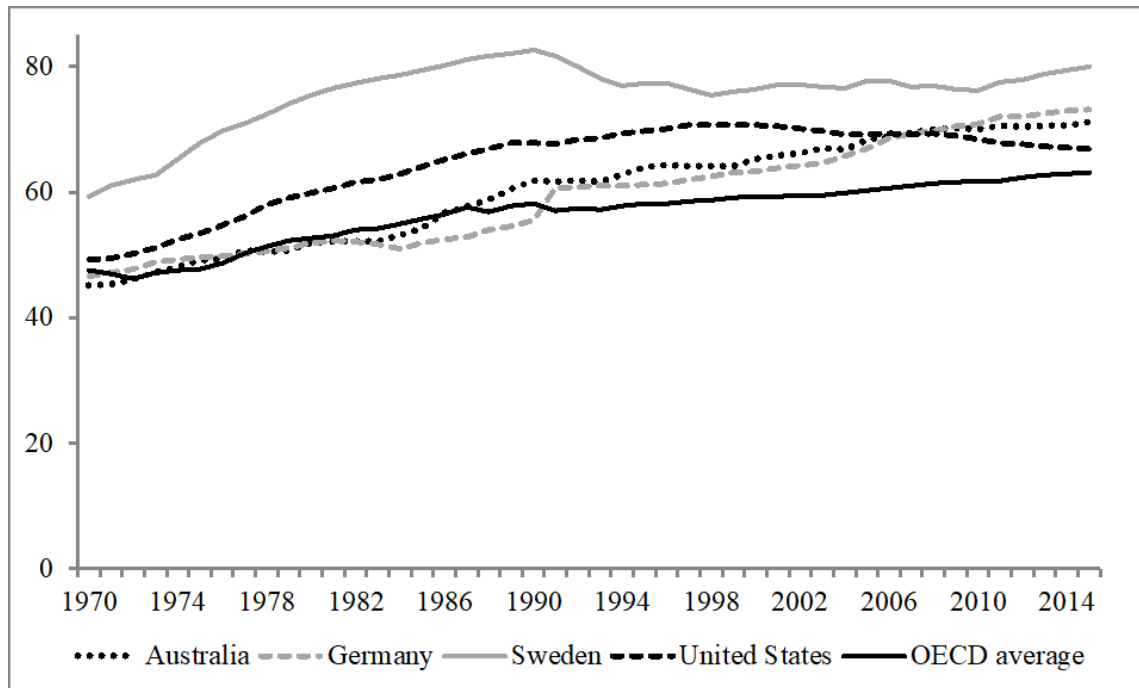


Note: % of female population ages 15-64.
Source: OECD (2016); Author's illustration.

level and human capital impelled by educational expansion, but also due to increasing economic necessity (Blau et al., 2006).

However, there is growing evidence that the rise in female labour market participation is not continuing (e.g. England, 2010). Figure 1.1 also shows that the continuous increase in female labour market participation terminated and has become flatter or even stalled in some countries after the 1990s. In this context, authors such as Airlie Russell Hochschild and Felice N. Schwartz began to speak about a "stalled revolution" or an "opt-out revolution", which raised the question: *Can women have it all?* That is, can women realistically balance family and career, despite this implication to the contrary?

The most prominent reason for the stalled revolution is the various difficulties that mothers face. The birth of a child is still considered to be a significant obstacle for women's employment, as it implies a break in a woman's career (Aisenbrey et al., 2009). Women most often take primary caregiving responsibility for a child, due both to deeply entrenched gender roles and to biological reasons, such as breastfeeding. This care load leads to an interruption from work after childbirth, and even once mothers return to the labour market, they must juggle work and family demands.

The role the birth of a child plays in women's careers has been addressed in many studies. For example, a recent study by Aisenbrey and Fasang (2017) shows that mothers'

careers are complex and characterised by disrupted work trajectories as a result of leave periods and time out of the labour market. Childbirth also significantly affects women's wages, leading to a persistent gender or family wage gap. Gangl and Ziefle (2009) show that the family wage gap in the United States and Great Britain can entirely be explained by pre- and post-birth factors, such as the duration of employment interruptions, employer changes, human capital, and job status. In Germany, by contrast, a large share of the wage penalty for motherhood remains unexplained; the authors conclude that this discrepancy is due to statistical discrimination against mothers (Gangl and Ziefle, 2009).

In order to address the employment interruptions and difficulties mothers face, policy-makers have designed policies to support the reconciliation of work and family. Accordingly, the March 2017 EU gender inequality report stresses the importance of promoting couples' shared responsibility for unpaid care and the importance of social policies in fostering the reconciliation of work and family (European Commission, 2017). In recent times, many countries have reformed their family policies to support women in combining work and family obligations (Cascio et al., 2015). For example, the Australian government introduced its first statutory paid maternity leave entitlement in 2011 and Germany reformed its childcare system by increasing childcare capacities for under-three-year-old children from 2005. However, the public debate on reconciliation is also concerned with the importance of the employer and with occupational characteristics, such as typical hours of employment in an occupation, and how they influence a mother's ability to combine work and family.

These recent developments in family policy, including the role that occupational characteristics play in women's interruption duration and return-to-work behaviour, are yet to be investigated. Therefore, this thesis examines the question: *Which factors, besides the individual differences between mothers, can explain the differing durations of the mothers' employment interruptions after childbirth and differences in their return-to-work behaviour?*

To answer this research question, I briefly outline the relevance of the topic of this thesis (Section 2) by describing the analytical significance of the factors influencing interruption duration and return-to-work behaviour (Section 2.1). Moreover, I discuss how interruption duration and return-to-work behaviour are analysed in this doctoral thesis (Section 2.2). Next, I provide an overview of this thesis's specific contributions to family sociology and labour market research (Section 3). In Section 4, I elaborate on the overarching framework, based on life course research, in greater depth and discuss how the chapters relate to the existing literature of life course research. In this context, I present the three chapters of this thesis in detail (Section 4.2 and Section 4.3) and finally, I draw a conclusion in Section 5.

# 2 Relevance of the interruption duration and return-to-work behaviour

In this section, I present several reasons why it is important to understand the driving factors behind mothers' interruption duration and return-to-work behaviour. I then describe how I analysed a selected number of driving factors for mothers' interruption duration and return-to-work behaviour.

## 2.1 Importance of analysing the factors influencing the interruption duration and return-to-work behaviour

Understanding the factors influencing interruption duration and return-to-work behaviour of mothers has practical relevance for women and for society.

First, the changing demographic structure, with both an increasing number of retirees and a decreasing number of employees, puts many welfare states under pressure (OECD, 2016b). Increasing the working population is therefore an important means to secure current and future wealth. If women perceive it as costly to have children, the total fertility rate might decrease, further contributing to this demographic change. The opportunity better to combine career and family can mitigate the costs for children, for example through better childcare facilities (e.g. Bauernschuster et al., 2016). This seems especially true for higher-educated mothers, who tend to have higher opportunity costs for a career interruption (Balbo et al., 2013; Gauthier, 2007).

Second, and partly related to the demographic change, encouraging women (especially highly educated women) to return to the labour market faster and assisting them in reconciling work and family is a key strategy to respond to skill-biased technological change, which implies a shift in the production technology that increased the need for a skilled workforce.

Third, as more women nowadays have a higher educational attainment and feel closely attached to the labour market, a long career interruption after childbirth can hinder prosperous working careers (e.g. Ochsenfeld, 2012; Waldfogel, 1998). Such interruptions are often shadowed by income losses (e.g. Mincer and Polachek, 1974; Mincer and Ofek, 1982; Beblo and Wolf, 2002; Gangl and Ziefle, 2009) or a demotion to part-time employment in the so-called mummy track (Lundberg and Rose, 2000). Although most couples hold egalitarian gender ideologies, child-related interruption periods can foster a traditional separation of work and family responsibilities, where the mother takes up most of the caregiving and housework (Grunow et al., 2012). This is particularly problematic as work and caring roles are not easily interchangeable.

Fourth, having a continuous employment history can at once protect women from poverty in old age by ensuring sufficient retirement benefits, ensure a secure source of income during a partner's unemployment period, and help women maintain their income and standard of living after divorce (Vandecasteele, 2011). The March 2017 EU report on gender inequality highlights the importance of continuous female earnings by estimating that 70% of couples with children would fall into poverty if the father suddenly became unemployed. Similarly, in 2015, the average EU risk of poverty for single parents, of which the vast majority are single-mother households, was more than double the risk of poverty in the total population, 47.7% for single parents compared to 23.7% for the total population (European Commission, 2017).

## 2.2 The thesis perspective on interruption duration and return-to-work behaviour

As described above, it is important to understand which factors influence the way mothers perceive the conflict between work and family obligations and decide when to return to the labour market after a child-related interruption. The possibility to reconcile work and family obligations to return to the labour market is not the same for all mothers. Instead, it differs with regard to individual resources, such as education or financial resources (which are micro-level features); institutional structural aspects, such as a country's family policy (which are macro-level institutional features) (e.g. Aisenbrey et al., 2009; Grunow et al., 2011); or other institutional factors, such as specific employer and occupational characteristics (which are meso-level institutional features) (e.g. Abraham et al., 2011; Müller and Shavit, 1998).[2] Occupational characteristics are of particular relevance in countries with a dominant occupational structure with a strong path-dependency between educational certificates and occupations, such as Germany (Allmendinger, 1989; Konietzka, 1999; Müller and Shavit, 1998). Through this opportunity structure, institutional factors influence the individual's decision of when to return to the labour market and the way individuals perceive their ability to reconcile work and family obligations.

Precisely, this thesis aims at addressing the question: *How do institutional factors and their interaction with individual resources influence the length of mothers' interruption duration after childbirth and return-to-work behaviour?* In this cumulative thesis, I analyse three institutional factors, which are spread over three chapters. These three institutional factors are either recent developments in family policy or occupational characteristics (for an overview, see Table 1.1).

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[2]In this thesis, I go beyond the usual definition of institutions only entailing a country's family policy and also understand occupational characteristics as institutions.

Table 1.1: Overview on the chapters of the thesis

| Chapter | Co-author | Date | Title | Journal | Status |
|---|---|---|---|---|---|
| 2 | – | 2017 | Does maternity leave pay off? Evidence from a recent reform in Australia | *Social Politics* 24(1): 29-54 | published |
| 3 | Gundula Zoch | 2017 | The Expansion of Low-Cost, State-Subsidized Childcare Availability and Mothers' Return-to-Work Behaviour in East and West Germany | *European Sociological Review* 33(5): 693–707. | published |
| 4 | Sandra Buchholz | 2017 | Do occupational hours of employment influence the interruption duration of women? A longitudinal study on the return of German mothers to their pre-birth occupation | *Journal of Family Research* 29(2): 156-178 | published |

In Chapter 2, I analyse the effect of a first time roll-out of a paid maternity entitlement in Australia on women's return-to-work behaviour and how the reform effect differs by level of educational attainment. In Chapter 3, I examine how a large state-subsidised childcare expansion in Germany influences mothers' interruption duration and return-to-work behaviour in East and West Germany. In Chapter 4, I investigate whether occupation-specific hours of employment (not just the number of hours worked, but also the level of flexibility of when they are worked) affect mothers' interruption duration and their return-to-work behaviour after childbirth, as well as how the effect of occupational hours of employment differs by education level.

The policy reforms of Chapters 2 and 3 are focused on the macro-level institutional setting, where individuals and their employment trajectories are embedded. Such macro-level factors include the availability of a paid maternity leave entitlement and the availability of a childcare infrastructure (I provide more detail on the macro-level in Section 4). However, the chapters are not only concerned with a direct effect of the macro-level institutional setting to the individual return-to-work decision, but also with identifying how the macro-level interacts with different individual resources, such as education (Chapter 2) or access to childcare as a function of where the individual resides (i.e. in East or West Germany) (Chapter 3). These variations in resource availability provide individuals with different possibilities to reconcile work and employment and might moderate the effect institutions have on the return-to-work decision.

Chapter 4 is located on the meso-level. The meso-level encompasses determinants such as occupational characteristics or social networks that are linked to the individual level (I provide more detail on the meso-level in Section 4). Again, the focus is not only on the meso-level effect of occupational hours of employment, but also on how this effect interacts with the mothers' educational attainment level, to test if the effect of occupational hours of employment is different for mothers with high, medium or low education levels.

# 3 Contribution of this doctoral thesis

An extensive body of literature investigates mothers' employment and their return-to-work behaviour. The existing chapters highlight the importance of individual and institutional factors in order to explain the length of mothers' interruption duration and return-to-work behaviour. Most studies concentrate on the question of how individual factors, such as educational attainment, earnings, occupational status or household resources, influence interruption duration and return-to-work behaviour (e.g. Drasch, 2013; Drobnic et al., 1999; Gustafsson et al., 1996).

Apart from individual and household resources, cross-national comparative research demonstrates the role of institutions for women's life courses. Cross-national comparisons point out how the combination of specific policies influence mothers' labour market participation and often define leave entitlement, childcare availability, and the taxation system as influential (e.g. Boeckmann et al., 2015; Mandel and Semyonov, 2006; Pettit and Hook, 2005). Nevertheless, cross-national comparisons often fail to pinpoint the immediate effect that different institutions have on mothers' labour market participation and often only test welfare state regimes, rather than explicitly testing the effect of specific policy differences between countries. The reason for this shortcoming is that unobserved confounders between countries, such as social norms, might be partly responsible for the different labour market behaviours of mothers. Similarly, it is difficult to determine if one specific policy or rather a combination of policies leads to the different outcomes (Korpi et al., 2013).

Instead, this thesis answers Keck and Saraceno's (2013) call for research focussing on comprehensive country-case analyses of institutional factors' impact on mothers' employment interruptions. In this vein, several studies evaluate the explanatory power of institutional factors in country-case analyses, such as maternity leave entitlements (e.g. Lalive and Zweimüller, 2009; Rønsen and Sundström, 2002; Ziefle and Gangl, 2014) and stress the importance of institutional factors for women's return-to-work decisions. However, there are only a few studies that concentrate on the impact of specific and recent (post-2005) reforms in a country's family policy (for example, Ziefle and Gangl (2014) on a parental leave reform in Germany, or Havnes and Mogstad (2011) on childcare reform in Norway) and none that exclusively and systematically analyses occupational characteristics.

This thesis attempts to fill this research gap and examines how two recent country-specific reforms, along with occupational characteristics, influence mothers' return-to-work behaviour. Hence, I contribute to the literature by focussing, *first*, on new developments in two different welfare states' family policies that aim to ameliorate the conflict between work and family for women; these developments have not yet been analysed. These policy reforms provide a unique opportunity to exploit exogenous variation, which helps credibly to isolate how mothers respond to changes in the macro-level family policy structure. Exogenous variation at hand allows for robust inference and is best suited to handle unobserved heterogeneity, helping to clarify the effect of institutional changes, such as new family policies, on mothers' return-to-work behaviour.

Specifically, I exploit exogenous variation from changes in the family policy in two countries – Australia and Germany. The reform variation, which has not previously been analysed, emerges from two recent developments in the Australian paid maternity

leave and German childcare availability. Australia and Germany provide two interesting country-cases to examine: Australia recently rolled out its first statutory paid maternity leave entitlement, and only very few OECD countries exist where the effect of a first-time national roll-out can still be observed (Chapter 2). Similarly, with the recent expansion of childcare availability, along with other family policy changes, Germany changed the design of its family policy from supporting the male-breadwinner model to a more dual-earner model (Chapter 3) (Spiess and Wrohlich, 2008).

*Second*, I extend the literature on reconciliation of work and family by moving away from the simple macro-micro-link and add a new aspect on the meso-level – pre-birth occupation. It is key to account for meso-level institutional factors such as pre-birth occupation in mothers' return-to-work decisions, because mothers are not only bounded by the macro-level opportunity structure, but also by meso-level occupational career structures (Chapter 4). Again, I chose Germany as a country-case, because occupational changes without retraining are rarely possible, allowing for consistency of career tracking (Konietzka, 1999). Therefore, the hours of employment that are typical for a particular occupation coincide with different opportunities to return to the labour market. Although I cannot fall back on external variation whilst analysing the impact of occupation-specific employment hours, I provide the first detailed overview and a comprehensive analysis of another, heretofore largely unexamined, important factor for mothers' return-to-work decisions. This contributes to a more holistic understanding of mothers' decision-making process.

*Third*, in Section 4 of this framework chapter, I develop a micro-macro and micro-meso theoretical model applying a dynamic life course perspective. In this life course model, I simultaneously observe how micro-level processes, such as the transition back to employment after childbirth, are affected by macro-level institutional changes or by meso-level occupational characteristics. These micro-level processes are embedded within the macro- and meso-context. Simultaneously, I observe how the macro- and meso-context interacts with individual resources, such as education (Chapters 1 and 3) or location (in this case, whether the respondent lives in East or West Germany) (Chapter 3).

Beyond this, this thesis makes a number of methodological contributions to the literature. The majority of the available studies concentrates on the general labour force participation of mothers, rather than interruption duration and return-to-work behaviour, which is the focus of this thesis. Studies that focus on labour force participation often lump all women of working age together, thereby mixing up cohort effects in female labour force participation, educational expansion and changes in the family policy. Understanding the factors that curb maternal employment after birth requires a long observation period and high-quality longitudinal data. The *first* methodological contribution of this

thesis is, therefore, the use of rich longitudinal data, which enables me to concentrate on the highly dynamic process of the length of mothers' interruption duration and the transition rates back to employment, rather than merely on the labour force participation. All three chapters use such high-quality longitudinal data, either from a national household panel or from retrospective life history data. Beyond this, for Chapters 2 and 3, I created a broad, new dataset by merging regional childcare data or occupational characteristics, respectively, to the longitudinal data.

The *second* methodological contribution is the use of state-of-the-art quantitative methods, such as duration analysis, propensity score matching analysis and shared frailty models. Thereby, I am able to investigate the dynamic transition from the child-related interruption back to work and flexibly to control for observed heterogeneity.

## 4  Theoretical micro-macro and micro-meso model

The next three chapters of this thesis examine how different institutional factors influence mothers' interruption duration and return-to-work behaviour. The thesis concentrates on factors located on the macro- and meso-levels. The following section describes the life course perspective, which functions as an overarching framework for this thesis. Drawing on the life course perspective is ideally suited to explain how institutional factors on the macro- and meso-level are linked to individual employment decisions. In Sections 4.2 and 4.3, I describe how the next three chapters of this thesis fit into the life course model.

### 4.1  Life courses as a multilevel process

In principle, the life course perspective examines how individual lives are embedded within the context of a social structure, by taking up different social positions and roles (Mayer, 2004).[3] The individual biography and its social structural context are profoundly interwoven, and at multiple levels. The social structure sets, on the macro-level, the conditions that shape individual life courses on the micro-level. Individual life courses are embedded within the macro-level structural conditions and the historical context in which individuals live. The meso-level, which is also embedded within the macro-level

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[3] Although leading American life course researchers, such as Glen Elder, have made an important contribution to the development of life course perspective, I choose a more structural definition of the life course, similar to the one put forward by Mayer and colleagues. Considering that two of the selected case studies concentrate on Germany, which is still considered a country with a strong life course regime (Krüger 2003), where individual life courses are highly influenced by a country's institutions, this structural perspective appears more fruitful than a more psychological or ethnological perspective.

structure, sets opportunities and boundaries for the individual life course, through, for example, the occupational structure.

Figure 1.2 demonstrates how the individual micro-level life course is embedded within a macro-level and meso-level context. Institutions play an important role in determining how individual lives are embedded within the social structure, since they create opportunities and boundaries *(Rahmenbedingungen)* and shape transitions, sequences, and trajectories over the life course (Kohli, 1985; Leisering, 2003; Mayer, 2004; Weymann, 2003). Figure 1.2 also highlights how modern life courses are organised around the labour market, where opportunities and social positions are assigned through active labour market participation (Esping-Andersen, 1990; Kohli, 1985).

In this thesis, I study the transition from the family-related employment break back to the labour market and how this transition is institutionally influenced through paid maternity leave, childcare slots, and the occupational structure. This research agenda adds to the understanding on how individual life course decisions are affected by institutional settings; hence, it is possible to determine how individual agency is formed by the macro-level and meso-level institutions (Elder et al., 2003; Giddens, 1977). These institutions, which set the formal and informal rules of society and the workplace, thus reduce transaction costs and uncertainty as to when to return to the labour market after childbirth (Leisering, 2003; Mayer, 2009; Weymann, 2003).[4]

The central life course event of interest in this thesis – the time of the individual transition to the labour market after childbirth – is located on the micro-level in the middle of Figure 1.2. Figure 1.2 shows two direct influences that the macro- and the meso-levels – represented as the two encompassing dotted ellipse around the individual employment interruption section – exert on the micro-level, which is represented by the dashed ellipse. The two arrows from the outer ellipses represent the influence macro- and meso-level institutions have on the individual life course. The life course perspective suggests that the influence of the macro- and meso-level institutional factors is not the same for all women, but instead may be considered a *multilevel process*. This is due to the fact that the effect institutions have on the individual life course also depends on micro-level individual resources (e.g. level of educational attainment, transaction costs or preferences).

With relevance for this thesis, a number of studies have demonstrated how institutions shape mothers' transitions after childbirth to the labour market and their employment trajectories.

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[4]This shows the importance to integrate economic theory of utility maximisation with institutional analysis to understand life course decision (Weymann 2003). The three chapters of this thesis will apply economic theory of utility maximisation to derive specific hypotheses.

Figure 1.2: Family-related employment interruption in the life course
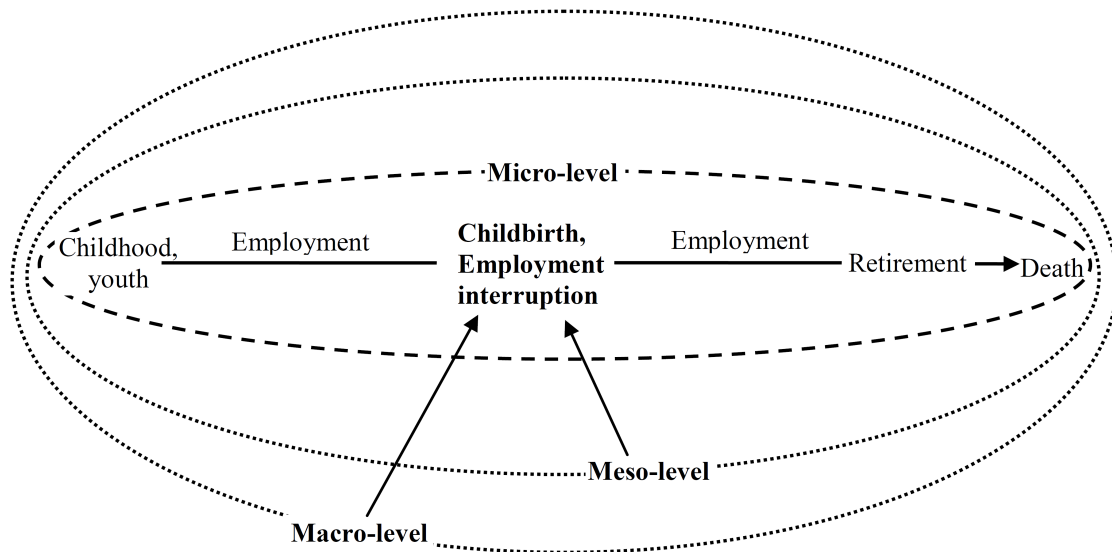


Source: Adapted from Leisering (2003: 212).

To begin with the way paid maternity leave entitlements shape mothers' life courses (Chapter 2), empirical studies uniformly show how the time out of the labour force and the timing of re-entry are respectively affected and regulated by the length of the paid maternity leave entitlement. They conclude that mothers use the maximum available leave before returning to the labour market, with lengthier leave periods leading to a longer time out of the labour market (Gregg et al., 2007; Lalive and Zweimüller, 2009; Ondrich et al., 1996; Rønsen and Sundström, 2002; Ziefle and Gangl, 2014). Similarly, studies that analyse how childcare availability affects maternal labour supply (Chapter 3), can briefly be summarised as follows: Whilst some show a positive association between childcare availability and maternal employment (e.g. Baker et al., 2008; Del Boca and Vuri, 2007; Müller and Wrohlich, 2016; Pettit and Hook, 2005), others find no statistically significant effect (e.g. Havnes and Mogstad, 2011; Lundin et al., 2008; Schober and Spiess, 2015). These findings demonstrate the impact that macro-level institutions have on shaping mothers' employment trajectories. They shape the opportunity structure that determines whether and when mothers return to work.

When concentrating on how occupational characteristics on the meso-level influence mothers' employment trajectories and return-to-work decisions (Chapter 4), it becomes obvious that only a small number of studies exist (e.g. Stuth et al., 2009; Stuth and Hennig, 2014; Krüger et al., 1989; Busch, 2013); therefore, this under-researched aspect is worth inspecting. One potential explanation for the research gap is that occupational characteristics, rather than the employer's characteristics (which are often the focus of

analysis in the United States context (Desai and Waite, 1991; Glass and Riley, 1998)), are more relevant when explaining the return-to-work decision in Germany. The few available return-to-work studies for Germany all highlight the importance of occupational characteristics for the return-to-work decision (Stuth et al., 2009; Stuth and Hennig, 2014; Krüger et al., 1989; Busch, 2013), though omitting longitudinal individual information.

In the following, I will describe how institutions with relevance for this thesis, such as maternity leave policies (macro-level), childcare availability (macro-level) and occupational structure (meso-level), shape and regulate the individual transition from the time away from work after birth to employment. In this context, I will also briefly summarise the design and main findings of the three chapters.

## 4.2 Macro-Level

To pinpoint the exact role of institutions on mothers' return-to-work behaviour, it is necessary to observe institutional change within a certain county. Analysing institutional change allows to control for unobserved time-constant confounders, such as norms and attitudes. Concentrating on specific country-case analyses, such as Australia and Germany, makes it possible to exploit exogenous variation.

On the macro-level, I analyse how a recent change in the paid maternity leave regulation in Australia (Chapter 2) and a change in childcare availability in Germany (Chapter 3) influence the micro-level decision-making process of when to return to the labour market. The exogenous variation arising from the implementation of those reforms allows me to disentangle various other institutional factors and their impact on the micro-level decision-making process from whether women adjust their labour market behaviour specifically in reaction to the new policy.

Figures 1.3 to 1.5 are an extension of Figure 1.2. I now add the effect of the maternity leave scheme on the individual life course (Chapter 2) to Figure 1.3, indicated by the box labelled Study 1 and the effect of availability of childcare slots on the individual life course (Chapter 3) to Figure 1.4, indicated by the box labelled Study 2. (I will get to Figure 1.5 in Section 4.3.) The overarching influence of these two macro-level policies, which set the opportunity structure for the individual return-to-work decision, are depicted in Figures 1.3 and 1.4 by the outer dotted ellipses. In Figures 1.3 and 1.4, the direct effect of macro-level policies on the micro-level return-to-work decision is represented by the direct link in the graph. In Figures 1.3 and 1.4, I also add the relevant individual resources. In Figure 1.3, I add a box depicting the education of the mother, and I include an indirect link from the education level to the direct link of the maternity leave reform. Similarly, I add to Figure 1.4, at the micro-level, whether the mother lives in East or West Germany. Again, I add an indirect link from East-West to the direct link of the childcare availability.

These moderating links represent the interactions that I describe in greater detail in the context of summarising Chapters 2 and 3. In the following, I briefly summarise the two chapters (Chapter 2 and 3) and describe how the chapters fit into the life course perspective.

Figure 1.3: Research focus of Chapter 2 in the life course
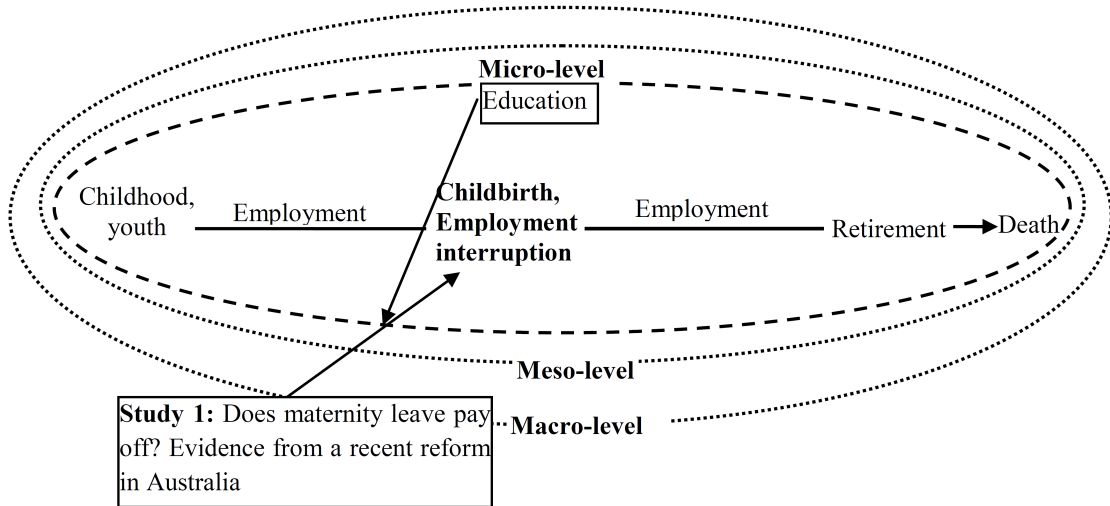


Source: Adapted from Leisering (2003: 212).

Figure 1.4: Research focus of Chapter 3 in the life course
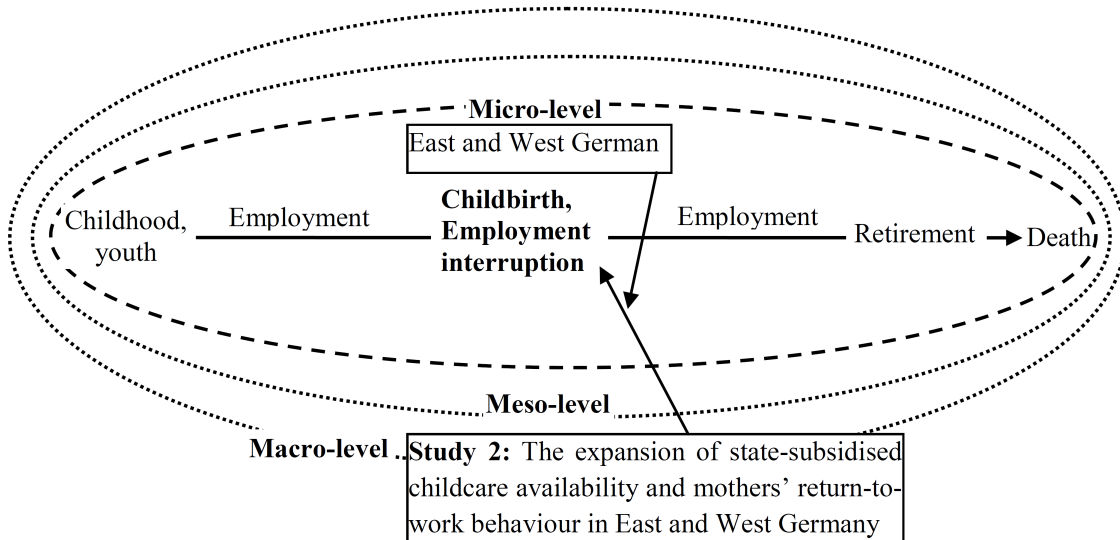


Source: Adapted from Leisering (2003: 212).

**Chapter 2: Hondralis, I. (2017). Does maternity leave pay off? Evidence from a recent reform in Australia.** *Social Politics* **24(1): 29-54.**

With the introduction of a first-time paid maternity leave entitlement in Australia, the opportunity structure changed significantly. The newly introduced maternity leave entitlement allows mothers to take 18 weeks of leave, paid at the minimum wage, after childbirth. The reform changed the incentive structure of whether and when to return to the labour market, and the way women conduct their life course in the new institutional setting. By providing mothers with an employment guarantee and by substituting their missing income to some extent, the paid maternity leave scheme reduces both uncertainty and transaction costs. The first chapter of this thesis attempts to answer the question: *Does the recent introduction of a universal paid maternity leave entitlement influence Australian women's return-to-work behaviour and the probability of employment after childbirth?* This research question is represented by the direct link between the macro-level maternity leave entitlement and the micro-level individual return-to-work decision in Figure 1.3.

It is valuable not only to understand the link between the macro-level policy and individual behaviour, but also to establish the link of how individuals respond to the policy change depending on their individual resources, such as their level of educational attainment. Chapter 2 attempts to shed light on this second mechanism and shows how the macro-level policy interacts with micro-level educational attainment. The interaction between micro-level educational attainment and the direct policy effect on the return-to-work decision is represented in Figure 1.3 by the indirect link between the mother's education on the direct link from the macro-level maternity leave effect to the return-to-work decision. Highly educated mothers are especially likely to be more career orientated (Baxter et al., 2015; Mandel, 2009) and therefore show a different response to the changed structure. Therefore, Chapter 2 also answers: *How does the paid maternity leave affect different educational groups?*

To isolate the effect of the paid maternity entitlement on mothers' return-to-work behaviour, I compare women with births between 2008 and 2010 (pre-reform), and between 2011 and 2013 (post-reform). The post-reform group had access to a universal paid leave entitlement, whilst the pre-reform group did not. To test the impact of the paid maternity leave scheme, I draw on the advantages of two methods, propensity score matching and shared frailty models and use rich micro-data on individuals from the 2008-2013 Household, Income and Labour Dynamics in Australia (HILDA) surveys.

The chapter's main findings are twofold: First, public policies do shape women's employment behaviour after birth. Second, women react sensitively to the features of the leave scheme. More specifically, the results show that the main response to the paid maternity leave scheme is to postpone the return to work until the end of the entitlement

period. After the expiry of the statutory maternity entitlements, I find a seven percentage points increase in the probability that mothers will resume employment. Further analyses show that highly educated women strongly engage in this return-to-work pattern, whilst lower-educated women do not tend to adjust their returns in accordance with the design of the paid leave entitlement. This finding supports the interpretation that the reform only altered the return behaviour of women with a strong labour market attachment due to greater opportunity costs by their education, whereas the return pattern of all other women remains unchanged.

From a life course perspective, Chapter 2 shows that the individual's return-to-work decision is heavily determined by institutions. Nevertheless, the individual's education is an important factor that moderates the effect institutions have on the individual life course and influences the way mothers respond to the changed institutional setting. This result stresses the importance of not only understanding the link between the macro-level policy and individual behaviour, but also of understanding how individuals respond to the policy change depending on their individual resources. For these reasons, the chapter extends the literature on mothers' return-to-work behaviour and highlights the important role institutions play for women's life courses by shaping their return-to-work decisions. Beyond this, the chapter adds to our understanding of social inequality by stressing the different effects family policies have for women with differing levels of educational attainment.

**Chapter 3: Zoch, G. and Hondralis, I. (2017). The expansion of state-subsidised childcare availability and mothers' return-to-work behaviour in East and West Germany.** *European Sociological Review* 33(5): 693–707.

In line with Chapter 2, Chapter 3 concentrates on the effect a change in the institutional setting has on mothers' return-to-work behaviour. Again, the focus is on a macro-level institution, which is childcare availability and its influence on the micro-level decision. This is, again, depicted through the outer dotted ellipse in Figure 1.4. Chapter 3 examines the effects of a large-scale childcare expansion to understand the impact institutional reforms have on individual life courses. Precisely, Chapter 3 answers the question of *whether the recent expansion of state-subsidised childcare facilities for under-three-year-olds is associated with a shorter employment interruption after childbirth, particularly for West German mothers.*

In contrast to the second chapter, Chapter 3 is interested in how the macro-level policy interacts with either being an East German or West German mother on the micro-level (Figure 1.4). From a life course perspective, it can be argued that the impact of the macro-

level childcare reform should be particularly weak for East German mothers, where previous generations of mothers already heavily relied on the childcare availability to return to work, where fewer women had adopted the housewife role, and where it is more acceptable for mothers with young children to be employed (Weymann, 2003). The former German Democratic Republic life course model, which encouraged continuous employment for all women alike, is one explanation for why fewer women align themselves with the housewife status (Weymann, 2003). Lower childcare availability in West Germany provides West German mothers with fewer opportunities effectively to combine work and family obligations and, from a life course perspective, returning to the labour market should be more difficult.

Many previous studies have linked East-West differences in maternal employment to persistent differences in state-subsidised childcare services without explicitly testing for childcare availability. Chapter 3 addresses these issues by offering a comprehensive analysis of a large-scale expansion of childcare on the duration of mothers' employment interruptions in Germany. In Chapter 3, we link rich individual and household panel information from the German Socio-Economic Panel (2005-2014) with annual administrative records on state-subsidised childcare provision on the respective county-level *(Kreisebene)* to develop a direct measure of childcare availability by county. This newly constructed dataset allows us to exploit large temporal and regional variation in childcare availability across counties within and between East and West Germany. In other words, Chapter 3 compares different women in different counties and across various points in time, applying event history analysis to investigate the impact of the childcare expansion on the duration of employment interruptions, controlling for different individual socio-economic characteristics and regional factors.

Chapter 3's main findings can be summarised as follows: Childcare availability for under-three-year-olds reduces the duration of employment interruptions among mothers. This is especially true if childcare availability is high. Yet the effects of increased childcare availability are only statistically significant for West German mothers, whereas no statistically significant effect is found for East German mothers. A plausible explanation for why we only find effects in West Germany is that pre-reform childcare availability was much lower, thus the potential to reduce the time mothers spend outside the labour market after childbirth was much greater. In contrast, East German mothers' employment interruptions were already comparatively short prior to the reform, and the potential to reduce these interruptions further was therefore limited.

Moreover, we find no statistically significant effect of the childcare reform on return-to-work behaviour following employment interruptions due to the birth of the first child. Interestingly, our estimates show that the effect of childcare on West German mothers

is statistically significant for employment interruptions following a second childbirth, when family planning is more likely to be completed (the hazard of returning to work is one percentage point in any month after a second birth). These results suggest that childcare demands are higher after the second birth than after the first.

Additionally, the results show that the reform increases mothers' hazard rate of returning to employment in the second year of the child's life, when paid leave entitlements run out and the opportunity to rely on childcare becomes more important.

Finally, Chapter 3 analyses the transition to full- and part-time employment, which we refer to as substantial employment, compared to a transition to marginal employment of less than 20 weekly working hours. Our findings suggest that childcare availability plays a significant role in supporting West German mothers' returns to part-time or full-time employment, whereas the effect of childcare availability on returns to marginal employment remain unaltered.

In a nutshell, Chapter 3 is the first to analyse the macro-level effects of the recent childcare expansion on women's interruption duration after childbirth in Germany. It provides evidence of how expanding childcare availability significantly encourages reductions in employment interruptions in West Germany and enables West German mothers to return to more substantial employment (i.e. part-time or full-time) after childbirth.

## 4.3 Meso-Level

To get a full-fledged image of the decisions mothers make with regard to the time they spend out of the labour market after childbirth, it is fruitful to also consider meso-level factors such as specific occupations and the characteristics inherent to these occupations. The possibility of returning to the pre-birth occupation is highly dependent on the occupation and its structural characteristics, such as hours of employment (Abraham et al., 2011). Occupations shape the return-to-work decision on the meso-level by whether they offer women flexible or viable options of employment hours (how many and at what time of day) and allow for different possibilities to reconcile work and family obligations.

The dominance of occupational characteristics as a factor shaping return-to-work behaviour is particularly prominent in Germany, which is selected as a case study in the third part of this thesis. Germany is characterised by highly institutionalised relationships between educational certificates and occupations, where occupational changes without retraining are rather unusual (Allmendinger, 1989; Konietzka, 1999; Müller and Shavit, 1998). Hence, occupations strongly regulate and shape individual life courses, whilst either easing or hindering the reconciliation of work and family obligations.

Figure 1.5 includes the meso-level impact of occupational hours of employment on

mothers' return-to-work decisions. The influence of the pre-birth occupation on the meso-level is depicted in Figure 1.5 by the inner dotted ellipse. The direct effect of the meso-level policies on the micro-level return-to-work decision is represented by the direct arrow from the meso-level to the return-to-work decision in the graph. Analysing this direct link of how the two levels are connected enables me to understand how meso-level contextual factors influence individual agency. Figure 1.5 also shows an indirect effect of the mother's education on the direct meso-level effect, which depicts the interaction effect between occupational characteristics and the level of educational attainment.

Figure 1.5: Research focus of Chapter 4 in the life course
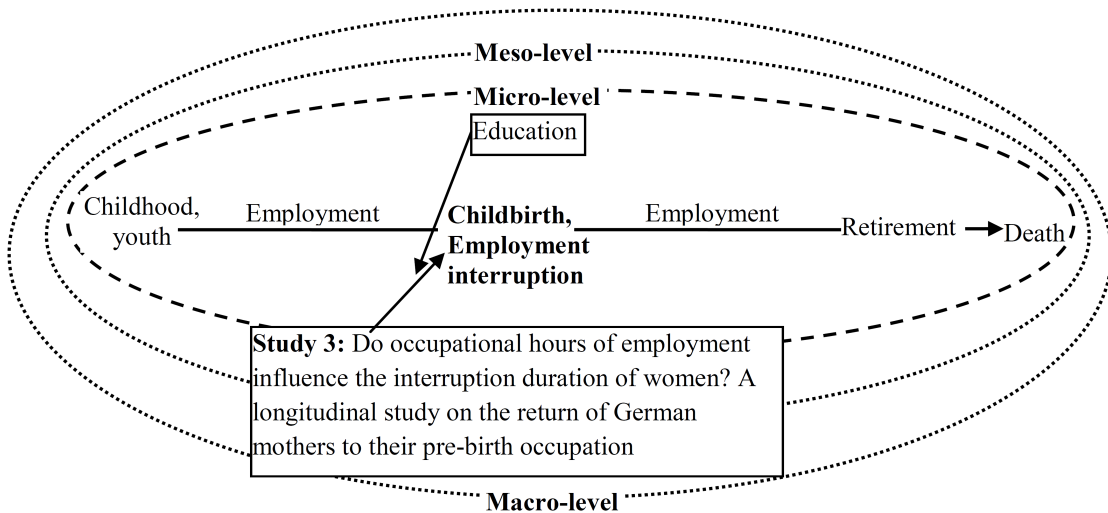


Source: Adapted from Leisering (2003: 212).

**Chapter 4: Hondralis, I. and Buchholz, S. (2017). Do occupational hours of employment influence the interruption duration of women? A longitudinal study on the return of German mothers to their pre-birth occupation.** *Journal of Family Research* **29(2): 156-178**.

In comparison to individual characteristics, much less is known about occupational factors like employment hours and how they influence the transition from a child-related interruption back to employment. Some occupations have characteristics that women perceive as particularly family-friendly and that support them in trying to reconcile work and family obligations; others do not. This effect is represented by the direct arrow from the box around Chapter 4 to the employment interruption in Figure 1.5.

Besides this direct link, the fourth chapter also analyses the importance of individual resources, such as the individual's education. Occupational hours of employment might differently affect women with different educational attainment levels. In Figure 1.5, I add the mother's education to the micro-level, since a mother's education influences the opportunity costs of the interruption duration, as the costs in terms of foregone income and human capital depreciation for an interruption duration are greater for highly educated women. The interaction between the micro-level educational attainment level and the meso-level effect of occupational hours is represented in Figure 1.5 by the indirect link between the box on the micro-level, representing the individual educational attainment, and the meso-level occupational hours of employment on the return-to-work decision. Chapter 4 contributes to the literature by not only bringing attention to this contextual meso-level factor affecting the employment trajectories of women, but also showing how the effect of this meso-level factor differs as it interacts with regard to micro-level resources like mothers' educational attainment (Figure 1.5).

Chapter 4 answers the question of *how occupational hours of employment influence the employment interruptions of women after family formation*. To answer the research question, we constructed a novel dataset by combining detailed longitudinal data from the National Educational Panel Study with aggregated occupational data from the German Micro Census. This dataset provides a unique opportunity to extend the literature by focussing on the effect of occupational hours of employment, whilst controlling for individual and institutional factors.

The chapter shows how occupation-specific employment hours, even after controlling for individual characteristics, significantly influence mothers' employment. The interruption duration of women with a high educational attainment is solely influenced by the occupational associated overtime; these women's return-to-work patterns show no change if there are any other hours of employment inherent in their occupational structure. This result indicates that the returns of highly educated women remain unaf-

fected by their hours of employment, with the exception of overtime, and that a high rate of return is thus more likely to be attributed to elevated opportunity cost and a higher career orientation. In contrast, medium- and less-educated women reduce the time out of their occupation when the length of working hours are short and working from home is possible. We find that atypical employment hours, such as night-shift or weekend work, are exclusively relevant for less-educated women and no other educational group. Overall, our results demonstrate that variations in hours of employment play an especially important role for the employment continuity of women without a tertiary education.

Analysing the effects of variations in occupational hours of employment on women's interruption duration after childbirth in Germany enables us to investigate occupational characteristics before birth and their influence on mothers' time out of the labour market. Furthermore, the chapter provides evidence of how occupational characteristics on the meso-level also affect individual life courses. These findings contribute to the prominent debate on the reconciliation of work and family obligations and show how occupations have to be designed around the family demands.

# 5 Conclusion

Female labour market participation increased in most countries over the last few decades. However, childbirth still curbs mothers' employment and raises the question of whether *women can have it all.* The central aim of this thesis is dynamically to examine how different institutional factors contribute to an explanation of the impediments mothers face when returning to work.

The central finding of this thesis is that institutional factors shape mothers' interruption duration and return-to-work behaviour. All three chapters stress the importance of institutional factors and confirm a well-known finding in the social sciences that *institutions matter* for individual life courses. However, institutions do not have the same effect on all women, but instead differ in their effect on women with different resources, such as differing levels of educational attainment.

In this respect, this thesis is the first to analyse the effect of two recent (post-2005) policy changes on women's employment behaviour, exploiting external variation, and to provide new evidence on how occupational characteristics influence women's employment behaviour after childbirth. The second chapter of this thesis demonstrates, using a pre- and post-reform group comparison, how changes in the paid maternity leave entitlement in Australia lead to an altered return-to-work behaviour that only affects highly educated mothers' returns, whereas the return behaviour of all other women remains unchanged. This finding supports the interpretation that paid leave entitlement

deviates in its appeal to women with different levels of educational attainment. In a similar vein, the third chapter reveals how increasing childcare availabilities, relying on temporal and regional variation, induce a change in only West German mothers' return-to-work behaviour, whilst not affecting that of East German mothers. This East-West difference reinforces the view that the institutional and cultural context also structures the return-to-work behaviour of mothers. The fourth chapter highlights the importance of occupational characteristics on a mother's decision as to when to resume employment. However, the effect of variations in the occupational hours of employment is moderated by mothers' educational attainment levels: It is largest for less-educated women, and has less of an impact on higher-educated women. These findings underline the importance of institutions for mothers' return-to-work decisions, whilst drawing attention to the importance of micro-level factors. Individual factors such as educational attainment or living in East or West Germany largely moderate the effect of institutions.

I set out by raising the question: *Can women have it all?* Considering the chapters' findings, I conclude that women can come closer to having it all – that is, a career and a family – when institutions and policies are carefully designed around the needs of mothers with regard to aspects such as educational attainment. In this context, it is particularly important to tailor institutions, such as family policy or occupational hours of employment, to the needs of different social groups. Providing tailored incentives has the potential to reduce social inequality. Simultaneously, men also need to be considered as a significant target group when creating the institutionalised opportunity structures. Only when men are included in unpaid caregiving responsibilities, can the traditional division of labour be counteracted and gender inequality reduced.

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# 2 Does maternity leave pay off? Evidence from a recent reform in Australia

## 1 Abstract

Based on recent family policy changes in Australia's statutory paid maternity leave entitlement, this chapter provides empirical evidence on the relationship between family policy and mothers' employment behaviour following a birth. The results unambiguously point to the impact of the program, although its impact varies across groups, and suggest that the introduction of a statutory paid leave entitlement has stimulated a change in re-entry behaviour to work: Women entitled to paid leave delay their return to work in the first months after childbirth; once paid leave entitlements are exhausted, transitions back to work become increasingly frequent.
Keywords: Australia, family policy, interruptions after childbirth, maternal employment, maternity leave, mothers' careers, reform, return behaviour

## 2 Introduction

Mobilising mothers to participate in paid employment and to make meaningful progress toward gender equality remains at the top of the political agenda in most member countries of the Organisation for Economic Co-operation and Development (OECD). Consequently, many OECD countries have designed paid maternity leave programs to encourage the reconciliation of work and family (Esping-Andersen, 2009). One of the last OECD countries to introduce paid maternity leave was Australia, which rolled out its first

paid maternity leave scheme[1] on January 1, 2011. To date, empirical evidence on the effects of the newly-introduced paid maternity leave entitlement is scarce, but this information is critical for policy-makers. Therefore, this chapter attempts to answer the question: Does the recent introduction of a universal paid maternity leave entitlement influence Australian women's return-to-work behaviour and the probability of employment after childbirth, and if so, how and for whom?

By answering the research question, the chapter contributes to the existing literature in various ways: Firstly, the Australian context offers a unique opportunity to evaluate the effects of a first-time roll-out of a statutory paid leave scheme on women's return-to-work behaviour. While many countries have provided paid leave entitlements for many years, very few OECD country-cases exist where the effect of a first-time national roll-out can be observed. Examining the Australian paid maternity leave reform allows scholars and policy-makers from other countries to understand what impact the roll-out of a universal scheme has on female return-to-work behaviour. This chapter provides guidance for policy-makers in countries currently lacking mandatory entitlements or considering altering current entitlements, such as the United States (where paid leave entitlements are at the heart of the United States election campaign) or Germany (where paid parental leave was fundamentally reformed in 2007).

Secondly, this chapter contributes to the scientific debate about the role of social policies designed to improve the reconciliation of work and family. It is stated that such social policies have a negative impact on women's wages and careers (Estévez-Abe, 2005, 2006; Mandel and Semyonov, 2005, 2006; Mandel and Shalev, 2009). Although this chapter does not assess whether paid leave entitlements have any negative consequences on wages and careers, it analyses whether the outcome of the paid leave entitlement, which is meant to allow women to take time off work and afterwards to resume employment, occurs as anticipated by policy-makers. Consequently, the chapter expands on several recent cross-country comparisons that are unable to assess the immediate effect of paid leave entitlements on mothers' employment due to a lack of longitudinal data that incorporates pre- and post-reform information (i.e. Boeckmann, Misra, and Budig, 2015; Keck and Saraceno, 2013; Morgan and Zippel, 2003) and answers the call for papers focusing on comprehensive country-case analyses better to understand how social policies, such as paid maternity leave, affect maternal employment interruptions (Keck and Saraceno, 2013).

Thirdly, the recent maternity leave reform implementation in Australia makes it possi-

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[1]This chapter does not adopt the government's terminology (parental leave pay) and instead refers to the scheme as a paid maternity leave scheme to stress that the scheme is addressed to mothers in particular. Fathers are only exceptionally permitted to take paid leave, when they can prove that they are the primary parental caregivers (Department of Human Services, 2015).

ble to use an external stimulus and contextual variation, which allows for robust inference, to clarify the effects of paid maternity leave on maternal employment, and shed light on the as-yet ambivalent findings on the impact of paid leave on mothers' employment (Schönberg and Ludsteck, 2014). Previous studies on the effects of maternity leave entitlements can be summarised as follows: Findings from liberal welfare states indicate that paid maternity leave entitlements have a moderate to no effect on maternal employment participation (Baum, 2003; Han and Waldfogel, 2003; Hashimoto et al., 2004). These findings could, however, be attributed to unobserved heterogeneity between entitled and non-entitled mothers (Hashimoto et al., 2004), since paid maternity leaves in the United States and Australia prior to 2011 were not universal for all employees. However, more recent quasi-experimental evidence highlights a positive association between the mandatory Californian paid leave program and mothers' probability of employment after birth (Baum and Ruhm, 2016; Rossin-Slater, Ruhm, and Waldfogel, 2013). Similarly, empirical studies from other welfare states with statutory paid leave programs uniformly show how the time out of the labor force and the timing of re-entry are respectively affected by the duration of the paid maternity leave entitlement. They conclude that mothers use the maximum available leave before returning to the labor market, with lengthier leave periods leading to a longer time out of the labor market (e.g. Gregg, Maria Gutiérrez-Domènech, and Waldfogel, 2007; Lalive and Zweimüller, 2009; Ondrich, Spiess, and Yang, 1996; Rønsen and Sundström, 2002; Ziefle and Gangl, 2014).

Finally, Australia represents a particularly interesting country-case to examine. While it is often classified as a liberal welfare state, a strong orientation towards the male breadwinning and female caregiving norm prevails, encouraged by policies such as a quasi-joint family tax system, which replaces individual taxation for the majority of families with a quasi-joint taxation, and by inflexible or low childcare availability (Apps et al., 2012; Brady, 2016; Craig and Mullan, 2013; Craig, Powell, and Smyth, 2014; Mandel, 2009; Prince Cook and Baxter, 2010).

To address the research question, the chapter draws on labor market theory, gender construction theories and institutional explanations. From a general theoretical perspective, it can be expected that the availability of paid leave should increase the reservation wage, which describes the minimal wage rate a mother is willing to accept in order to return to work, and lead to a prolonged employment interruption ("payment effect"). Once paid leave entitlements are exhausted, women should return to the labor market to compensate for the lost income ("benefit expiry effect"). Then the chapter asks whether the paid leave entitlement is equally effective for different educational groups, to enhance our understanding of how the outcomes of paid maternity programs vary by socio-economic status. According to gender construction theories and institutional expla-

nations, a mother's response to a particular policy has to be understood in context (Korpi, Ferrarini, and Englund, 2013), as policies incorporate different gendered assumptions about women's employment and their caregiving role (Coltrane, 2000).

As stated above, the Australian institutional setting provides low support for maternal employment, due to its strong gender normativity. Its paid maternity leave scheme, with its short leave period paid at the minimum wage, should make it less attractive for lower-educated women with a strong preference for home time to quickly re-enter employment after birth, while higher-educated mothers, who feel closer attachment to the labor market, should be more responsive to the design of the paid leave entitlement. In this chapter, I test the impact of the paid maternity leave scheme, drawing on the advantages of two methods: propensity score matching and shared frailty models. I also draw on rich micro-data on individuals from the 2008-2013 Household, Income and Labor Dynamics in Australia (HILDA) surveys. This longitudinal data set provides comprehensive employment information and allows for almost weekly measure (every ten days) of the time out of the labor market, rather than by month.

# 3 Family policy in Australia

Australia, like the United States, the United Kingdom, Canada and New Zealand, is often classified as a liberal welfare state (Esping-Andersen, 1990; Gornick, Meyers, and Ross, 1998), but it is distinctly different in terms of female labor participation. Unlike in the other countries, the Australian employment pattern of mothers differs significantly from that of fathers. While 57.5% of mothers with children under the age of five years were engaging in or looking for paid work (predominately part-time: 60.5%), ninety-four percent of fathers were participating in the labor force (ABS, 2014b; OECD, 2015). Australian female part-time work is encouraged by a quasi-joint family tax system, and an inflexible and minimal child-care availability that has not increased by much in recent years (ABS, 2014a) with only one fifth of the under-three year olds enrolled in all-day child care (Brady, 2016; OECD, 2015). These factors curb female labor participation, particularly in full-time employment, and encourage the traditional division of labor (Craig and Mullan, 2013).

Prior to January 1, 2011, Australia and the United States were the only two OECD countries without any government-funded paid maternity leave scheme. In other liberal welfare states, such as the United Kingdom, up to thirty-nine weeks are available. Since 1979, however, twelve months of unpaid maternity leave have been available to Australian women, who have had job tenure of at least twelve months with the guarantee to return

to the same job (Rush, 2013).[2] Unpaid leave can be extended by another twelve months if the employer agrees and the mother's partner does not use his unpaid leave. Furthermore, women have been protected by a law against sex discrimination, and pregnant women cannot be dismissed or demoted (AIRC, 2009). Although no statutory paid leave was available prior to 2011, three-quarters of women with pre-birth employment took time off work after birth, for an average of thirty-eight weeks, while one-quarter remained continuously employed (Baxter, 2008). In addition to unpaid leave, employees had the possibility to claim paid maternity leave through individual negotiations or through company bargaining agreements. However, as employers had no legal obligation to provide paid leave periods, many women had no access thereto (Edwards, 2006); the number of employers offering paid maternity leave increased to just over fifty percent in the relevant years of this chapter (2008-2013) and remained unaltered in the years after the reform (WGEA, 2012; Whitehouse, et al. 2016). Employer-provided paid leave entitlements are especially prevalent among the following: public sector employees (who make up about a third of all employed women); full-time permanently employed women (compared to fixed-term and part-time employed); women with high earnings; and those in higher-skilled occupations, largely depending on the industry of employment (ABS, 2008; Whitehouse et al., 2013). While eighty-seven percent of public sector employees offer paid leave entitlements for an average of thirteen weeks to permanent employees, fifty-four percent of large private sector employers provide an average of eleven weeks of paid leave for permanent employees, and only seven percent of small private organisations offer paid leave entitlements (Whitehouse et al., 2016).

The Labor Party took control of the government after the 2007 federal election, and five years later rolled out Australia's first paid maternity leave scheme. Mothers giving birth after January 1, 2011 have access to up to eighteen weeks of paid leave, receiving the Australian minimum wage (approximately A$673 per week before tax). For comparison, in May 2016, all employed women earned a weekly average of A$925, and full-time employed women earned on average A$1,370 (ABS, 2016).

To be eligible for the government funded payment, a mother must have worked continuously for ten of thirteen months prior to the expected date of birth; worked for at least 330 hours in these ten months; and earned no more than A$150,000 in the financial year prior to the birth. The objectives of the new parental leave scheme, as it is officially called (despite specifically targeting mothers) were to enhance the mother's and the child's health after birth, to entice women to rejoin the labor force, and to promote gender

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[2]Since the HILDA survey started in 2001 and no variation over time on unpaid leave entitlements is observable, this chapter is unable to disentangle the effects of unpaid maternity leave on labor force participation. Therefore, the focus of this chapter is on the effects of statutory paid maternity leave on labor force participation.

equality in the home and the workplace (Martin et al., 2014).

# 4 Theory and hypotheses

According to labor market theory, a woman's decision to participate in the labor market is a rational decision comparing the preferred time spent at work, given her labor market opportunities, with the preferred time spent at home, given the value she places on time spent at home (Blau, Winkler, and Ferber, 2006; Kaufman and Hotchkiss, 2003). The theory assumes that the time out of the labor market after giving birth depends on the individual's market wage, alternative income sources such as household income or government transfers, and the value placed on time spent at home (Blau, Winkler, and Ferber, 2006). The value placed on home time can be assumed to be high after birth, since caregiving responsibilities are highest at the beginning of the child's life. Therefore, the reservation wage would be highest at the beginning and decline with each week of the child's life. Supporting this assumption, a recent government report on Australian mothers' labor force participation suggests that returns occur at a slower pace in the first months after the child's birth, with the probability increasing at around six months (Broadway et al., 2016; Martin et al., 2014). This report only surveys mothers until the children are approximately thirteen months old, exposing the survey to right censoring, since some mothers will not have returned to work by thirteen months, but this chapter overcomes that limitation by studying mothers' behaviour twenty-five months or longer after birth.

According to this theory, maternity leave entitlements have an impact on the labor market supply decision and influence the time women spend out of the labor market (Klerman and Leibowitz, 2000), because job guarantees and government transfers during leave periods provide an incentive for a temporary career interruption (Blau, Winkler, and Ferber, 2006; Klerman and Leibowitz, 2000). Therefore, the income replacement (full or partial) over an eighteen-week leave period, in comparison to no statutory payments before the reform or limited employer's voluntary paid leave, should lead to a "payment effect" among eligible mothers, providing an incentive for all women to stay out of the labor market while on leave and to take paid time off from work, regardless of their educational background. Despite the fact that in the pre-reform period, one-quarter of mothers remained continuously employed around the time of birth (Baxter, 2008), it can be assumed that since paid maternity leave entitlements are now available, these women who did not interrupt their careers in the pre-reform years will also take a career break while on paid maternity leave. During the absence from work, the pre-birth job is guaranteed for up to twelve months for the pre-reform period as well as thereafter. This

leads to the first hypothesis (H1), which should affect all women alike: *Paid maternity leave entitlements, all else equal, should lead to a drop in the labor force participation of all women in the first eighteen weeks, compared to that of women with births before the implementation of the policy.*

With increasing age of the infant, the mother's utility of staying at home and the level of her reservation wage both decrease. In addition, the utility of staying at home declines discontinuously when paid maternity entitlements are exhausted (Schönberg and Ludsteck, 2014). Empirical studies have unambiguously found that most mothers utilise the maximum length of leave available to them (e.g. Baker and Milligan, 2008; Ondrich, Spiess, and Yang, 1996; Rønsen and Sundström, 2002; Ziefle and Gangl, 2014). When paid entitlements expire, a negative income effect due to forgone earnings and higher opportunity costs to remain out of the labor market can be expected. Therefore, women who postponed early returns will re-commence employment when paid leave entitlements expire, creating a spike in returns. This leads to hypothesis (H2): *When paid leave entitlements are exhausted, all else equal, an increase in returns, catching up the postponed returns from the first eighteen weeks, should become evident compared to returns of women with births before the implementation of the policy ("benefit expiry effect").*

While the first hypothesis assumes that most women will interrupt their employment to take advantage of paid leave, it can be expected that not all women are equally inclined to return to work when paid entitlements are exhausted ("benefit expiry effect"). Regarding the timing of returns, gender construction and human capital theories accurately predict how the paid leave entitlement influences different educational groups. The exposure model (Bielby and Bielby, 1989) and the "doing gender" approach (West and Zimmerman, 1987) suggest that once a woman is predominantly exposed to a caretaking environment, she will tend to reduce her labor market attachment. This leads to a gendered division of labor, where the woman takes primary responsibility for the children. The theories also propose that less-educated women with less prosperous career opportunities are particularly affected by exposure to a caregiver role, thereby developing a stronger family identity and simultaneously feeling less attached to the labor market, while higher-educated women follow the model of continuous employment (Bielby and Bielby, 1989; Morgan and Zippel, 2003). Consequently, less-educated women are less likely to return to work when the paid leave entitlements expire. Similarly, human capital theory also suggests that less-educated women have a lower income potential and lower opportunity costs for an employment interruption than do higher-educated women, and therefore they will feel less inclined to return to work after entitlements are exhausted (Mincer, 1958). This assumption is further supported by the Australian institutional setting and cultural norms, which curb simultaneous employment and caretaking responsibilities

especially for the lower-educated, and foster a traditional division of labor (Baxter et al., 2015; Mandel, 2009). Higher-educated women not only have higher opportunity costs for an interruption, but are also in a better position to organise and pay for an alternate caretaking arrangement in order to return to work (Mandel and Shalev, 2009; Morgan, 2005).

Consequently, higher-educated mothers should be more responsive to the paid leave entitlement, as they feel closer attachment to the labor market. This leads to hypothesis (H3a): *When paid leave entitlements are exhausted, all else equal, an increase in returns should become evident for higher-educated mothers, compared to higher-educated women with births before the implementation of the policy.*

In contrast, lower-educated women are less likely to return to the labor market when paid leave entitlements are exhausted. Hence, no change in the return-to-work behaviour of less-educated women, compared to similar mothers with births before the reform, should be observable. This leads to hypothesis (H3b): *When paid leave entitlements are exhausted, all else equal, no increase in returns should become evident for lower-educated mothers, compared to lower-educated women with births before the implementation of the policy.*

In sum, this means that the short paid leave entitlement will have more of an impact on the return-to-work behaviour of higher-educated mothers than on that of less-educated mothers. Nevertheless, it is possible that the scheme encourages those women who would previously have quit their jobs to remain in the labor force to benefit from the entitlement. However, this chapter will not attempt to answer the question of whether a change occurred in the population of employed women at the time of birth.

# 5 Research design and dependent variable

## 5.1 Data and sample selection

This chapter uses rich micro-information from the thirteen available waves of the HILDA survey 2001-2013, a representative household-based panel study which conducts annual interviews with all adult members of each participating household (Summerfield et al., 2014). Individuals are interviewed annually on economic and subjective well-being, as well as labor market and family dynamics. The survey respondents also complete a detailed labor market history calendar, which contains information on various jobs and time spent in (un-)employment in each month of the last financial year. Precise calendar information is collected for the start, middle, or end of each month (three times a month, every ten days) (Watson, 2009). Therefore, it is possible to reconstruct the length of leave

away from work accurately, almost to the week. This is important, as eighteen weeks of mandated leave are available. Studies using monthly, rather than weekly, employment histories of respondents cannot accurately estimate the timing of return, and can over- or understate the length of interruption.

Although I can observe employment trajectories from 2001, I only analyse women with births between 2008 and 2010 (pre-reform), and between 2011 and 2013 (post-reform), narrowing the span to guarantee a comparable situation on the labor market and birth behaviour for control and treatment groups. A longer observation period of three years is necessary to boost the sample size. I observe 672 births in the thirty-six months before the reform, comprising the pre-reform sample or control group, and 799 births following the reform, forming the post-reform sample or treatment group (1,471 births total). I consider not only first-time mothers, but also mothers with a second birth or above. Due to the fact that longer periods of paid maternity leave were available to the majority of public servants prior to the observation window, and therefore particularly family-orientated women might self-select in this sector, I exclude public servants from the analysis. These make up less than ten percent of all observable births. The same procedure is applied to the self-employed, as different mechanisms for returning to work are expected for this group (Craig, Powell, and Cortis, 2012; König and Cesinger, 2015).

In order to construct the dependent variable, I use the labor market history calendar, which allows me to determine when the mother takes time off, when she returns to work, and whether she is employed prior to and during pregnancy. Women who are not employed during pregnancy should not be affected by the reform, as they do not meet the necessary work test (this is confirmed by the robustness checks [Table A2.3 in the appendix]). In the sample, as shown in Table 2.1, approximately sixty-six percent of mothers with a birth prior to 2011 are employed before the birth of the child. Slightly fewer women, sixty-one percent, are employed after the reform. Although statutory leave mandates are not available prior to 2011, around ninety percent of employed women take at least a week off from work after birth.[3] Approximately sixty percent of women with pre-birth employment are (or would be) eligible for the current maternity leave scheme and earn wages below the income cap. Less than half of all women for whom I observe a birth have an employer-provided leave entitlement. This is equivalent to the number recently published by the ABS (2008).

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[3]Beyond this, I examine if a change in the composition of leave-takers in the pre- and post- reform group occurred. No change in the composition of leave-takers is evident, so the likelihood of leave-taking remains the same for the pre- and post-reform groups.

Table 2.1: Employment, leave-taking, leave coverage

| | Pre-reform group (control group) | | Post-reform group (treatment group) | | Sig. Δ |
|---|---|---|---|---|---|
| | N | % | N | % | |
| All births | 672 | 100.00 | 799 | 100.00 | |
| Employed mothers pre-birth | 445 | 66.22 | 490 | 61.32 | + |
| Employed mothers with observable leave-taking | 378 | 92.87 | 433 | 91.54 | |
| Mothers who would be/ are eligible for statutory leave | 421 | 62.65 | 480 | 60.75 | |
| Mothers with employer provided leave entitlement | 272 | 40.48 | 355 | 44.43 | |

Note: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001.
Source: HILDA Release 13 (women with births between 2008-2010 and 2011-2013).

## 5.2 Statistical modeling

**Propensity score matching**

Better to understand the influence of the paid maternity leave program on women's employment patterns, I use a propensity score matching approach. The propensity score matching compares the return behaviour of mothers with statutory paid leave entitlements to the behaviour of mothers without (Heinrich, Maffioli, and Vázquet, 2010; Rosenbaum and Rubin, 1983). I use a probit regression that estimates the probability of women being part of the post-reform group (with access to a leave entitlement) to calculate the propensity scores. Once a statistical match is found for each woman in the treatment and control groups, disregarding cases (2.79%) where there is no match (Figure A2.1)[4], the two groups do not differ in any observed background characteristics (Morgan and Winship, 2007). The only difference is whether they are part of the pre- or post-reform sample. Thus comparing how outcomes differ for treated units relative to similar control units, it becomes possible to estimate the average effect of the paid maternity leave entitlement, precisely the average treatment effect on the treated (ATT). The ATT in this chapter measures the probabilities of returning to the labor market and of working in a certain week after childbirth. Different matching algorithms are tested, but the results are presented using Gaussian Kernel matching algorithm with a common support which guarantees the usage of women with comparable counterfactual observations and assures for the best balance (Gangl, 2010; Morgan and Winship, 2007).

The reader should keep in mind, that when substantial selection, cohort, or time effects are at work, a comparison between the pre- and post-reform sample becomes

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[4]The area of common support between the pre- and post-reform groups is large (Figure A2.1); I only discard twenty treatment observations (2.79%) for which no common propensity score exists.

impossible. To test indirectly whether women in the post-reform group change their labor market attachment prior to birth to benefit from the paid leave entitlement, and to test whether the same return-to-work behaviour becomes evident when considering the whole sample of employed and not employed women, I re-estimate the results for the whole sample of all eligible and ineligible women (Table A2.1). Secondly, I check if the return-to-work behaviour differs for women with and without an employer-provided leave entitlement. The motivation for this robustness test is that government-provided paid leave entitlement should affect the return behaviour of mothers without an employer-provided paid leave entitlement to a larger extent. Since these women are not able to rely on employer-provided income transfers, the predicted "payment effect" and "benefit expiry effect" should be more pronounced among women without an employer-provided leave (Table A2.2). Thirdly, I compare the return-to-work behaviour of women who fail to be eligible for statutory paid maternity leave entitlements, such as those with an income above the cut-off point or who fail to meet the employment criteria (Table A2.3). No change in returns should be observable here between the pre- and post-reform group, nor in the return patterns in randomly selected years without any family policy change (Table A2.4). Another possible threat to the validity of the results is the possibility that women might time their births as a response to the change in maternity leave legislation and postpone births to later periods to benefit from the reform. It is not possible to mitigate this threat with the available data, but macro data from the ABS does not show changed fertility behaviour in the pre- and post-reform sample (ABS, 2015).

**Shared frailty model**

To validate the results, I applied a piecewise-constant exponential model. Although the parsimonious propensity score matching, which is a non-parametric model, has considerable advantages (including appropriate weighting of covariates, excluding unmatched cases that could drive the results, and allowing for a simple mean comparison). I also use event history modeling techniques. The piecewise-constant exponential model allows flexible modeling of the duration dependency of the baseline hazard (Singer and Willett, 2003), best addresses the changing impact of the paid maternity leave scheme across time without making any assumptions about the functional form of time, and is better suited to handle right-censored observations in the data. Due to a limited observation period after the reform, women with a birth at the end of the observation window are more often censored. Additionally, because I observe some women with multiple births, I introduce frailty to the model, which is an extension of the standard piecewise-constant model. The model adjusts the standard errors to take intra-person correlation into consideration, and makes it possible to include a number of time-varying covariates (see below).

The dependent variable in the shared frailty model measures the duration of mothers' employment interruptions before returning to the labor market (instead of the probability of return in each time period as in the propensity matching analysis). With regard to the reform, I distinguish six periods: 1-18 weeks (while still on paid leave), 19-28 weeks (when entitlements are exhausted), 29-52 weeks (second semester), 13-18 months (53-72 weeks), 19-24 months (73-104 weeks), and 25 months or longer (105 weeks or longer). To measure the influence of paid leave entitlements on the return pattern, I include a two-way-interaction (i.e. Rønsen and Sundström, 2002), between the treatment status and the period-specific covariate for the period around paid-leave expiry (17-28 weeks).

## 5.3 Control variables

The HILDA provides detailed information on control variables that influence the treatment status of being part of the pre- or post-reform groups and the return pattern after birth. I include the following relevant individual characteristics measured at the time before birth: years of education, labor market experience, presence of other children in the household, marital status (including single mothers), migration background, area of residency, and mother's age. Information on the pre-birth employment characteristics is also included, which I measure in the year before birth to avoid capturing any change due to pregnancy: weekly working hours, employment status (employed or not employed), the average log wage in the year before birth, and whether the employer offers a private leave entitlement. The partner's weekly wage is also included. Finally, I include macro-indicators to capture the economic situation in the area, such as regional unemployment rates and job vacancies at a state level. Accessibility to formal day care is also taken into consideration, as the opportunity costs for returning to work sooner will be higher in areas with less formal childcare availability. Thus, I construct a variable indicating the average formal childcare usage in each state for the years of 2008, 2011, and 2014.[5] Eliminating missing values leaves a total of 716 births in the pre- (441) and post- (275) reform groups, on which I base the statistical analysis. Table 2.2 presents the distribution of the relevant characteristics in the pre- and post-reform samples. With respect to most characteristics, no significant differences exist, with the exception of slightly higher earnings, higher income of partners, higher unemployment, and greater all-day child-care availability in the post-reform sample. The differences between the pre- and post-reform samples are eliminated by applying a matching procedure.

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[5]For the missing years, I use a linear trend until the value of the follow up survey is reached.

Table 2.2: Descriptive Statistics (mean or proportion) by policy availability

| | Pre-reform group (control group) | | Post-reform group (treatment group) | | Sig. Δ |
|---|---|---|---|---|---|
| | (N=441) | | (N=275) | | |
| | Mean | Std.dev. | Mean | Std.dev. | |
| **Individual characteristics at birth** | | | | | |
| Years of education | 13.04 | 2.16 | 13.38 | 2.09 | ** |
| Labor market experience (in years) | 9.41 | 5.91 | 8.93 | 5.49 | |
| Number of other own children in the household | 1.76 | 0.93 | 1.81 | 0.91 | |
| Marital status (Ref. Unmarried) | 0.72 | 0.45 | 0.74 | 0.44 | |
| Migration background (Ref. AU or NZ born) | 0.17 | 0.37 | 0.18 | 0.38 | |
| Area of living (Ref. country) | 0.60 | 0.49 | 0.63 | 0.48 | |
| Age at birth | 30.40 | 5.91 | 30.29 | 5.65 | |
| **Pre-birth employment characteristics** | | | | | |
| Full-time (Ref. Part-time, no employment) | 0.22 | 0.42 | 0.24 | 0.43 | |
| Average log wage in the year before birth (in 2013-$) | 3.16 | 0.94 | 3.17 | 1.04 | |
| Private leave entitlement (Ref. no entitlement) | 0.44 | 0.02 | 0.48 | 0.02 | |
| **Partner characteristics at birth** | | | | | |
| Weekly log wage (in 2013-$) | 5.85 | 2.89 | 6.12 | 2.69 | * |
| **Macro indicators** | | | | | |
| Unemployment in the region (in %) | 5.07 | 0.77 | 5.35 | 0.72 | *** |
| Job vacancies at state level (in %) | 32.81 | 11.83 | 32.79 | 11.90 | |
| Long day care on the state level (in %) | 14.73 | 2.22 | 15.85 | 1.81 | *** |

Note: Mean comparison by treatment status; + $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.
Source: HILDA Release 13 (women with births between 2008-2010 and 2011-2013).

# 6 Results

First, I estimate the effects of the introduction of a statutory paid maternity leave on the return-to-work pattern for a restricted sample of women, using the Gaussian Kernel matching.[6] The restricted sample consists of entitled women who were employed with earnings below A\$150,000 (Table 2.3). Second, I re-estimate the effect of the statutory maternity leave on the return pattern to work using shared frailty models (Table 2.4). Lastly, I present the estimates for different educational groups (Tables 2.5 and 2.6).

Table 2.3 shows noticeable differences for the timing of return to work between the pre- and post-reform samples. In this model, I consider mothers who were employed and are entitled to, or who (in the case of the control group) would be eligible for the statutory paid leave prior to giving birth. It appears that the main response to the paid maternity leave scheme is to postpone the return to work by a couple of months. For the first to the eighteenth week, the probability of returning to work is reduced (although not significantly). This finding provides some support for the "payment effect" hypothesis, which predicts that returns to work are less common during the months when income is replaced by government transfers.

Between the nineteenth and the twenty-eighth weeks, the period when statutory maternity entitlements expire, the frequency of returns to work is seven percentage points higher compared to the pre-reform group of women without statutory paid leave entitlements. This effect is highly significant and provides support for the "benefit expiry" hypothesis, which predicts more frequent returns once leave entitlements expire, in order to compensate for the lost income. When examining the cumulative probabilities of returning, it becomes apparent that earlier returns are shifted from the first eighteen weeks to the period when leave entitlements are exhausted (19-28 weeks). Thereafter, the cumulative probability indicates that the inflow to employment for the post-reform group is again almost identical to the pre-reform group. This demonstrates that when comparing women in similar circumstances from before and after the reform, the pattern of return has changed.

Finally, I observe that the introduction of a maternity leave entitlement leads to higher probability of returns in the second semester and less-frequent returns to work in later periods, i.e. beyond twenty-four months. However, this result has limitations: as HILDA data is only available until 2013, the observation window for the post-reform group is much shorter than for the control group. Applying a shared frailty model (Table 2.4) is better suited to handle right-censored cases.

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[6]According to the standardised bias suggested by Rosenbaum and Rubin (1983) the matching quality can be considered sufficient as it is reduced from fourteen to 2.6 (16.3%) (Caliendo and Kopeinig, 2005).

Table 2.3: Return-to-work pattern for matched samples, sample restricted to eligible women with pre-birth employment

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.24 | 0.24 | 0.21 | 0.21 | -0.03 | |
| … 5-18 weeks | 0.15 | 0.39 | 0.13 | 0.34 | -0.02 | |
| … 19-28 weeks | 0.09 | 0.48 | 0.16 | 0.50 | 0.07 | ** |
| … 29-52 weeks (7-12 months) | 0.18 | 0.66 | 0.21 | 0.71 | 0.02 | |
| … 13-24 months | 0.25 | 0.91 | 0.26 | 0.97 | 0.01 | |
| … 25 months or older | 0.09 | 1.00 | 0.03 | 1.00 | -0.06 | ** |
| Observations | 281 | | 179 | | | |

Note: Relative frequency of all births observable in each group. + $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$ (two-sided).
Source: HILDA Release 13.

In the second step of the analysis, I repeat the previous analysis based on eligible women using shared frailty models, to illustrate the effect of paid maternity leave entitlements on women's return-to-work pattern. The model includes the full set of control variables (not shown in Table 2.4, but available on request). A two-way interaction between the reform membership (treatment vs. control group) and the period when paid entitlements are exhausted (19-28 weeks) is utilised to determine the effect of the reform.

As in the matching estimate, the survival analysis provides substantial support for the hypothesis that the introduction of statutory maternity leave entitlements changed re-entry behaviour. Examining the results in Table 2.4, the two-way interaction is significant and positive. This indicates that eligible mothers who gave birth after the introduction of the reform are more likely than the pre-reform group to re-enter at the time when paid leave entitlements are exhausted. Women who belong to the pre-reform group show a lower hazard rate at the time when paid leave entitlements expire.

These results are best understood graphically. Figure 2.1 illustrates the predicted baseline hazard of returning to work for the pre- and post-reform groups. The graph clearly demonstrates a significant increase in the hazard to returning to work around the nineteen-week mark for the post-reform group. The hazard for the pre-reform group is below that of the post-reform group in the interval 19-28 weeks; in all other periods, including the first interval, when women are still on paid leave the hazard for the pre-reform group is well above.

In short, the piecewise-constant model reaffirms the previous finding from the matching analysis, that paid maternity leave entitlements have a strong impact on the return-to-

Table 2.4: Maternity leave entitlements on the duration of employment interruptions and probability of return for eligible women, shared frailty

|  | Model 1 | |
| --- | --- | --- |
| **Time since childbirth** | | |
| Weeks 1-18 | −3.54*** | (0.69) |
| Weeks 19-28 (entitlement exhaustion) | −3.66*** | (0.72) |
| Weeks 29-52 | −2.89*** | (0.71) |
| Months 13-18 (53-72 weeks) | −2.35*** | (0.72) |
| Months 19-24 (73-104 weeks) | −2.16** | (0.74) |
| Months 25-36 (105-156 weeks) | −1.82* | (0.76) |
| Treatment group (post-reform/access to leave) | −0.63*** | (0.15) |
| Treatment group* Weeks 19-28 (entitlement exhaustion) | 0.57+ | (0.30) |
| **Controls** | | |
| Individual characteristics | yes | |
| Household characteristics | yes | |
| Contextual factors | yes | |
| Unobserved heterogeneity ($\theta$) | 0.40*** | (0.05) |
| | | |
| Observations (person months) | 27133 | |
| Events | 545 | |
| AIC | 4940.04 | |
| BIC | 5128.83 | |
| Log likelihood | −2447.02 | |

Note: Standard errors in parentheses. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided).
Source: HILDA Release 13.

Figure 2.1: Predicted baseline hazard of returning to work for the pre- and post-reform group
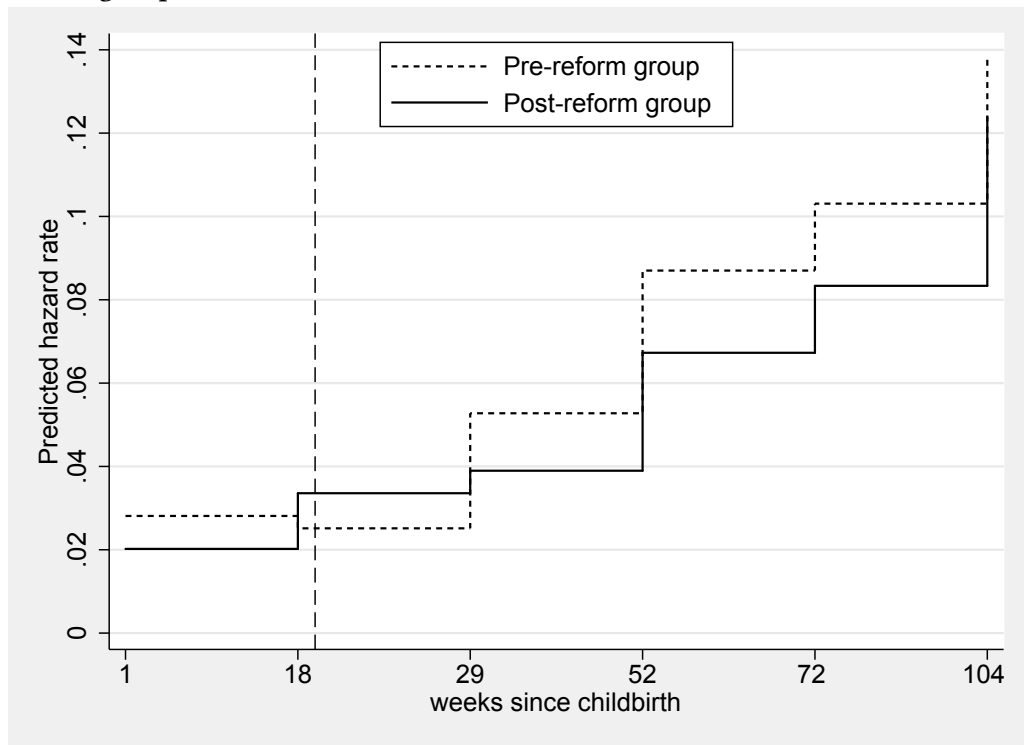


Note: Predicted hazard rates include all covariates based at their means.

work behaviour of mothers; although the leave entitlements are short and only the minimum wage is paid, a clear policy response is noticeable. The response is to postpone the return to work while on paid leave and to return around the time when paid leave entitlements are exhausted. But does the paid leave entitlement affect all women equally, or does the effect differ by educational group?

In the next step, I focus on the reform effect on different educational groups. Tables 2.5 and 2.6 contain the Gaussian Kernel matching estimates for eligible women with a high (university graduates) and low (vocational or no training) education. As a robustness check, I rerun the estimates based on the groups using shared frailty models, which are comparable.

Table 2.5 shows that once highly-educated women are entitled to statutory paid leave, their timing of return to work changes compared to highly-educated women in the pre-reform sample. Similar to the estimates for the whole population of entitled women, highly-educated mothers less frequently return to work in the first eighteen weeks, while on paid leave (although this decrease is again not statistically significant). This finding again supports the "payment effect" hypothesis. Table 2.5 also provides support for the "benefit expiry" hypothesis, since it shows that highly-educated mothers have a significantly higher frequency (eight percentage points higher) of returning to work between the nineteenth and the twenty-eighth weeks, the period when statutory maternity entitlements expire. The cumulative probability indicates that the inflow to employment for the highly-educated post-reform group is again almost identical to the highly-educated pre-reform group.

In contrast, Table 2.6 shows the estimates for lower-educated women compared to similar women in the pre-reform sample. For women with a lower education, no statistical significant differences in the timing of return after birth apparently exists, when comparing the pre- and post-reform sample of lower-educated women. This is in line with the third hypothesis that the policy, with its short leave entitlement paid at the minimum wage, only has an impact on the return behaviour of highly-educated mothers, who already feel closely attached to the labor market, and has no impact on women who are inclined to stay at home longer.

To check if the results are stable, Tables A2.1- A2.4 in the appendix show several robustness checks that reinforce the previous results. Table A2.1 takes the whole sample into consideration, adjusting for the fact that women might change their labor market attachment prior to birth. Results are similar for the unrestricted sample. Table A2.2 shows the return-to-work behaviour for women with employment prior to childbirth, but without an employer-provided paid leave entitlement. In comparison to the group with employer-provided paid leave (results for this group are not shown, but are available on

Table 2.5: Return-to-work pattern for matched samples, sample restricted to highly-educated eligible women with pre-birth employment

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.27 | 0.27 | 0.26 | 0.26 | -0.01 | |
| … 5-18 weeks | 0.11 | 0.38 | 0.09 | 0.35 | -0.02 | |
| … 19-28 weeks | 0.07 | 0.45 | 0.15 | 0.50 | 0.08 | * |
| … 29-52 weeks (7-12 months) | 0.18 | 0.63 | 0.19 | 0.69 | 0.01 | |
| … 13-24 months | 0.26 | 0.89 | 0.27 | 0.96 | 0.01 | |
| … 25 months or older | 0.11 | 1.00 | 0.04 | 1.00 | -0.07 | + |
| Observations | 112 | | 90 | | | |

Note: Relative frequency of all births observable in each group. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided).
Source: HILDA Release 13.

Table 2.6: Return-to-work pattern for matched samples, sample restricted to lower-educated eligible women with pre-birth employment

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.21 | 0.21 | 0.14 | 0.14 | -0.07 | |
| … 5-18 weeks | 0.15 | 0.36 | 0.18 | 0.32 | 0.03 | |
| … 19-28 weeks | 0.14 | 0.50 | 0.16 | 0.48 | 0.02 | |
| … 29-52 weeks (7-12 months) | 0.17 | 0.67 | 0.25 | 0.73 | 0.08 | |
| … 13-24 months | 0.25 | 0.92 | 0.25 | 0.98 | 0.00 | |
| … 25 months or older | 0.08 | 1.00 | 0.02 | 1.00 | -0.06 | + |
| Observations | 169 | | 85 | | | |

Note: Relative frequency of all births observable in each group. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided).
Source: HILDA Release 13.

request), the effects of the reform are much larger and strictly follow the predicted pattern of a delayed entry in the first months after birth, and a faster return when paid entitlements are exhausted, compared to similar women before the reform. Hence, mothers without alternative forms of income transfer after birth strongly respond to the statutory paid leave entitlement. Further analysis (available on request), subtracting the total days of employer-provided paid leave from mothers' total interruption duration, reveals the same return-to-work pattern as reported in Table A2.3. In comparison to the estimates in Table A2.3, the effects are more pronounced, which again allows for the interpretation that mothers strongly respond to the statutory paid leave entitlement. Lastly, Table A2.3 only considers ineligible women for whom no difference in the returns should be apparent, and Table A2.4 compares two samples stemming from previous arbitrary years (2005-2007 and 2008-2010) in which no policy change occurred. Tables A2.2 and A2.3 show no significant difference in returns, which strengthens the findings.

# 7 Discussion

This chapter analyses the return pattern of Australian women before and after the introduction of the first statutory paid leave entitlement. The scheme was introduced on January 1, 2011 and provides up to eighteen weeks of paid leave at the Australian minimum wage for women with employment prior to childbirth. This chapter is the first to analyse the effects of the recent policy change on women's employment behaviour in Australia using propensity score matching as well as shared frailty models stemming from a rich longitudinal panel data, the HILDA.

The findings show that public policies do shape women's employment behaviour after birth and that women react sensitively to the features of the leave scheme, which is in accordance with several other studies. Specifically, the results show that the main response to the paid maternity leave scheme is to postpone the return to work until the end of the entitlement period. After eighteen weeks, the period when statutory maternity entitlements expire, I find a seven percentage points increase in the probability that mothers will resume employment. Further analyses show that highly-educated women strongly engage in this return-to-work pattern, while lower-educated women do not adjust their returns in accordance with the design of the paid leave entitlement. This finding supports the interpretation that the reform only altered the return behaviour of women with a strong labor market attachment, whereas the return pattern of all other women remains unchanged. Although the statutory leave entitlements in Australia are not as comprehensive as those of European countries, highly-educated women react strongly to the available policy and markedly adjust their employment behaviour. However, less-

educated women tend to claim the paid leave, but fail to return to the labor market once entitlements are exhausted.

This finding has important policy implications, as it suggests that policy-makers should carefully design leave schemes and pay attention to the composition of their target group, as paid leave entitlements function as a powerful tool to affect women's return-to-work behaviour and deviate in their appeal to women with different educational backgrounds. Given this, the chapter concludes that the policy only successfully achieved one of its goals—namely, to enable women to take time off work to recover from birth and to spend a prolonged period with the new-born child, and afterwards to resume employment—and only for higher-educated women. This makes the short leave entitlement paid at the minimum wage particularly beneficial for advantaged women (i.e. highly-educated) and fuels inequality between different social groups. Since the paid leave entitlements fail to embody a benchmark for all women, as the majority of women still interrupt their employment beyond eighteen weeks without receiving any paid government support, many women remain economically dependent on their husbands, a situation that fosters traditional gender roles. This counteracts the third objective of the paid leave scheme, targeting greater gender equality in the home and at work. Consequently, a large potential exists to increase the length and the amount of paid leave entitlements in Australia in order to extend the scheme's influence on a broader target group of mothers and to meet the scheme's objective of gender equality. Simultaneously, it is necessary that paid leave entitlements equally include fathers, to counteract the traditional division of labor.

With regards to the argument that family-friendly social policies that encourage career interruptions have a negative impact on women's wages and careers, it can be concluded that while paid leave entitlements solely shape the return behaviour of highly-educated women by encouraging postponed returns by a few weeks, whether any negative consequences on their wages and careers are evident needs careful consideration in future research. Nevertheless, the Australian paid leave can provide a noteworthy incentive for pregnant women to remain in employment prior to work in order to benefit from leave entitlements that have the potential to conserve women's employer-specific human capital, and subsequently lead to higher wages.

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# 9 Appendix

Figure A2.1: Distribution of Propensity Score – Area of common support
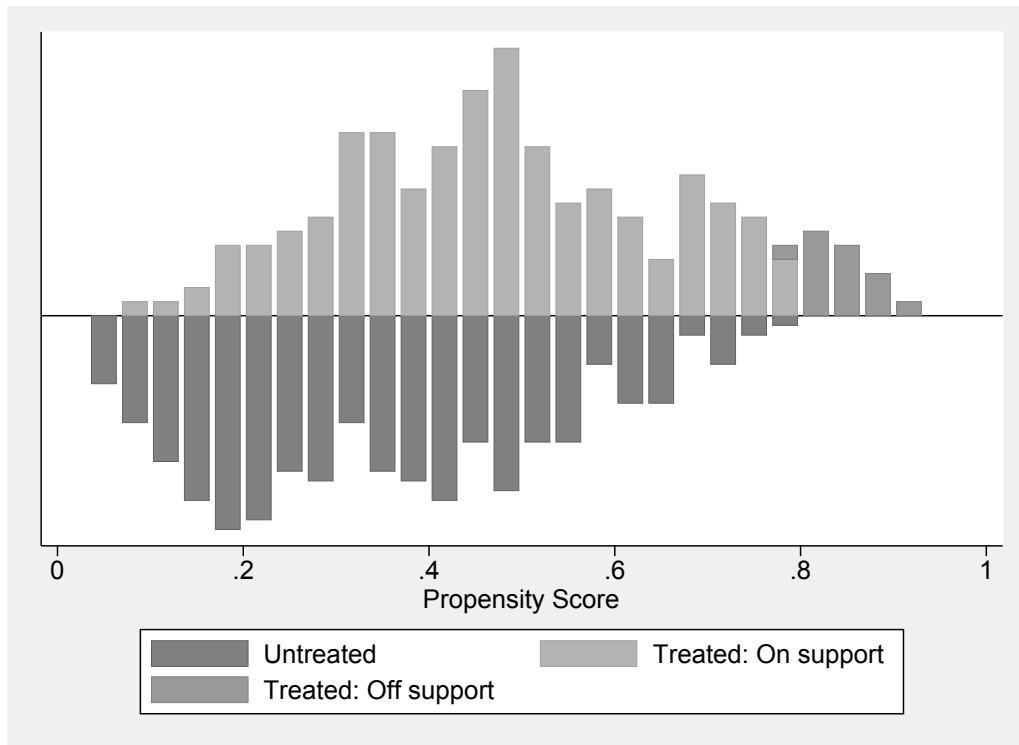


Table A2.1: Robustness check: Return-to-work pattern for matched samples, including eligible and ineligible women

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.18 | 0.18 | 0.20 | 0.20 | 0.02 | |
| … 5-18 weeks | 0.11 | 0.29 | 0.12 | 0.32 | 0.01 | |
| … 19-28 weeks | 0.08 | 0.37 | 0.16 | 0.48 | 0.08 | ** |
| … 29-52 weeks (7-12 months) | 0.17 | 0.54 | 0.21 | 0.69 | 0.04 | |
| … 13-24 months | 0.30 | 0.84 | 0.28 | 0.97 | -0.02 | |
| … 25 months or older | 0.16 | 1.00 | 0.03 | 1.00 | -0.13 | *** |
| Observations | 441 | | 275 | | | |

Note: Relative frequency of all births observable in each group. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided).
Source: HILDA Release 13.

Table A2.2: Robustness check: Return-to-work pattern for matched samples, only women with pre-birth employment and without an employer-provided leave entitlement

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.40 | 0.40 | 0.39 | 0.39 | -0.01 | |
| … 5-18 weeks | 0.22 | 0.62 | 0.21 | 0.60 | -0.01 | |
| … 19-28 weeks | 0.08 | 0.70 | 0.18 | 0.78 | 0.10 | + |
| … 29-52 weeks (7-12 months) | 0.12 | 0.82 | 0.11 | 0.89 | 0.01 | |
| … 13-24 months | 0.10 | 0.92 | 0.10 | 0.99 | 0.00 | |
| … 25 months or older | 0.08 | 1.00 | 0.01 | 1.00 | -0.07 | |
| Observations | 127 | | 83 | | | |

Note: Relative frequency of all births observable in each group. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided). Source: HILDA Release 13.

Table A2.3: Robustness check: Return-to-work pattern for ineligible women without pre-birth employment or income above the cut-off point, matched samples

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.03 | 0.03 | 0.11 | 0.11 | 0.08 | + |
| … 5-18 weeks | 0.02 | 0.05 | 0.04 | 0.15 | 0.02 | |
| … 19-28 weeks | 0.05 | 0.10 | 0.10 | 0.25 | 0.05 | |
| … 29-52 weeks (7-12 months) | 0.12 | 0.22 | 0.23 | 0.48 | 0.11 | |
| … 13-24 months | 0.45 | 0.67 | 0.45 | 0.93 | 0.00 | |
| … 25 months or older | 0.33 | 1.00 | 0.07 | 1.00 | -0.26 | *** |
| Observations | 121 | | 56 | | | |

Note: Relative frequency of all births observable in each group. + p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (two-sided). Source: HILDA Release 13.

Table A2.4: Robustness check: Return-to-work pattern for random years and matched samples

| Relative frequency of return to work when child was … | Pre-reform group (control group) | | Post-reform group (treatment group) | | Difference | Sig. |
|---|---|---|---|---|---|---|
| | rates | cum. | rates | cum. | | |
| … 0-4 weeks | 0.21 | 0.21 | 0.18 | 0.18 | 0.03 | |
| … 5-18 weeks | 0.12 | 0.33 | 0.11 | 0.29 | -0.01 | |
| … 19-28 weeks | 0.08 | 0.41 | 0.08 | 0.38 | 0.00 | |
| … 29-52 weeks (7-12 months) | 0.15 | 0.56 | 0.18 | 0.56 | 0.03 | |
| … 13-24 months | 0.25 | 0.81 | 0.28 | 0.84 | 0.03 | |
| … 25 months or older | 0.19 | 1.00 | 0.16 | 1.00 | -0.03 | |
| Observations | 483 | | 441 | | | |

Note: Relative frequency of all births observable in each group. + $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$ (two-sided). Source: HILDA Release 13.

# 3 The Expansion of Low-Cost, State-Subsidized Childcare Availability and Mothers' Return-to-Work Behaviour in East and West Germany

## 1 Abstract

This chapter investigates whether increased availability of low-cost, state-subsidised childcare for under-three-year-olds in Germany is associated with shorter employment interruptions amongst mothers. By focusing on a major childcare reform in East and West Germany, we examine the effect in two contexts that differ markedly in the acceptance and use of formal childcare and maternal employment. We combine rich longitudinal data from the German Socio-Economic Panel (2006 to 2014) with annual administrative county-level data on the availability of low-cost, state-subsidised childcare, estimating event history models. The results indicate that increased childcare availability for under-three-year-olds reduces mothers' employment interruptions, particularly after a second childbirth, and increases the probability of returning to part-time or full-time employment as opposed to marginal employment. Furthermore, increased availability of low-cost, state-subsidised childcare increases mothers' likelihood of returning to employment in the second year after childbirth, when paid leave entitlements expire and the availability of childcare becomes important. However, our results are only statistically significant for West German mothers and only after the birth of a second child. The chapter extends the literature on women's return-to-work behaviour by providing evidence on the medium-term impact of family policy on the duration of mothers' employment interruptions.

## 2 Introduction

Germany has a long history as a conservative welfare state with low maternal labour force participation (e.g., Hanel and Riphahn, 2012), long employment interruptions after childbirth (e.g., Ziefle and Gangl, 2014) and a substantial motherhood penalty (e.g., Gangl and Ziefle, 2009). Long job-protected parental leave periods with low compensation and low childcare availability have encouraged the traditional male-breadwinner model, particularly in West Germany. Even 26 years after reunification, Germany remains a divided country, with East German mothers returning to employment faster after childbirth and more often to full-time employment than West German mothers (e.g., Grunow and Müller, 2012; Hanel and Riphahn, 2012). These persistent East-West differences have been frequently explained with greater availability of low-cost, state-subsidised childcare for under-three-year-olds in East Germany (e.g., Grunow and Müller, 2012; Kreyenfeld and Geisler, 2006).

Since 2005, the German government has made immense public investments to increase childcare services for under-three-year-olds to encourage faster returns to full-time employment among East and West German mothers. However, to the best of our knowledge, no study to date has addressed the question whether increased availability of low-cost, state-subsidised childcare actually reduces mothers' employment interruptions after childbirth. Studying mothers' interruption durations and therein resulting return-to-work behaviour is important to understand persistent gender inequalities. Long family-related employment interruptions do not only result in a traditional division of labour and an immediate loss of income for women, but also tend to place mothers on lower career and income trajectories over their life-course, resulting in higher job insecurity and lower pension entitlements (e.g., Sigle-Rushton and Waldfogel, 2007).

We contribute to the literature on the effects of childcare availability, by focusing on a major public childcare reform in Germany and investigate whether increased availability of low-cost, state-subsidised childcare shortens mothers' employment interruptions after childbirth. We link rich individual and household panel information from the German Socio-Economic Panel (2006-2014) with annual administrative records on childcare availability on the county-level textit(Kreisebene) to exploit large temporal and regional variation in childcare availability across counties within and between East and West Germany. By estimating separate event history models for East and West Germany, we study how the childcare effect varies in two contexts that differ markedly in their initial

levels of childcare availability and the acceptance of non-parental care and maternal employment.

# 3 Institutional context and childcare expansion

Up to the mid-2000s, Germany provided long parental leave periods with low compensation and limited state-subsidised childcare availability for under-three-year-olds, particularly in West Germany.[1] Together with joint taxation, family health insurance, and generous child benefits (Bach et al., 2011), this family policy setting encouraged especially West German mothers to take long career breaks of more than three years and to return most commonly to part-time employment (Frodermann et al., 2013). Although recent parental leave reforms have particularly encouraged shorter employment interruptions among West German mothers (e.g., Bergemann and Riphahn, 2015; Ziefle and Gangl, 2014), East German mothers still return to work sooner, and more often in full-time employment. This strong labour market attachment is often described as the legacy of the former German Democratic Republic, where paid maternal leave periods were comparatively short and childcare was widely available (Rosenfeld et al., 2004). After the German reunification, childcare availability was reduced in East Germany; however, East-West disparities in childcare availability persisted. Hence, in early 2006, before the start of the childcare expansion, more than 30 per cent of all under-three-year-old children in East Germany attended low-cost, state-subsidised childcare, whereas in West Germany, counties seldom reached rates above 20 per cent (Federal Statistical Office, 2008).

In the mid-2000s, the government started to implement a major childcare expansion aiming to speed up mothers' returns to employment, particularly in West Germany. Although nationally funded, the reform is planned and implemented by the German federal states and county-level authorities. In 2005 and 2008, two federal laws were passed to increase county-level availability of low-cost, state-subsidised childcare for under-three-year-olds to at least 35 per cent by 2013, including the legal right to childcare for all children aged one and older that went into effect in August 2013.[2] In 2014, 52 per

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[1]Despite the lack of state-subsidised childcare availability for under-three-year-olds in West Germany, incentives for private providers were low due to high-quality requirements and no or limited subsidies. As a result, up to 2006 less than 2 per cent of children attended for-profit providers (Spieß et al., 2008) and less than 5 per cent used informal paid care such as nannies or au-pairs (Schober, 2014).

[2]To date the legal right is not easily enforceable, as only few parents have taken legal action against regional authorities and these cases are still unsettled. In principle in 2016 the top court decided that employed parents are entitled to financial compensation (Financial Times, 2016). However, with only few observations available after August 2013, this paper focuses on the gradual expansion of childcare availability.

cent of under-three-year-olds in East Germany attended a childcare institution, compared to 27 percent in West Germany, where a childcare availability of more than 20 per cent became accessible only after 2009. However, these averages mask great regional variation in the childcare ratio, ranging from 45 to 63 per cent in East Germany and from 14 to 47 per cent in West Germany (Strunz, 2015).[3]

Along with formal childcare, previous research shows that return to work behaviour is also closely linked to parental leave benefits. Since 2007, parents receive an income-related paid parental leave for a period of twelve months, which parents can divide between them and extend it to a total of 14 months if one partner takes at least two months. Parental leave is paid at 65-67 per cent of net earnings before childbirth (capped at 1,800 Euros) and parents are provided with a three-year job guarantee.

This description of the institutional context highlights how the interaction of various family policies and a lack of low-cost, state-subsidised childcare have long encouraged the male-breadwinner model, particularly in West Germany, whereas greater availability of low-cost, state-subsidised childcare prior to the reform seems to have effectively supported maternal employment among East German mothers. With the recent increase in childcare availability in West Germany and additional capacities implemented in East Germany, the questions remains whether this has led to shorter interruption durations.

# 4 Previous research

So far, research has focused almost exclusively on the effect of formal childcare on maternal labour supply, as opposed to the interruption duration after childbirth, providing mixed results. International studies, exploiting exogenous quasi-experimental reform variation in childcare availability, can be summarised as follows: While some studies show positive employment effects (see Morrissey, 2016 for an overview), with some studies finding larger effects in countries where the childcare availability was low prior to an expansion (e.g, Brilli et al., 2016 on Italy), others find small or no significant effects (e.g., Havnes and Mogstad, 2011 on Norway; Lundin et al., 2008 on Sweden). These small or insignificant estimates are explained with heterogeneous reform effects or with substitution effects of households using low-cost, state-subsidised childcare instead of informal care or costly private formal care (e.g., Havnes and Mogstad, 2011).

To our knowledge, no study to date has addressed the question of whether the availability of low-cost, state-subsidised childcare is associated with shorter employment

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[3]In light of the limited but state-subsidised childcare in Germany, it appears to be the availability rather than the cost of childcare that matters (Kreyenfeld and Hank, 2000). Since state subsidies cover approximately 85 per cent of the costs per slot, parents only pay an

interruptions after childbirth. Germany, with its recent childcare expansion, provides an interesting case study to analyse this effect. International findings on the effects of other childcare expansions are not applicable, as Germany, in particular West Germany, had an unusually low level of both private and state-subsidised childcare prior to the reform. Also with regard to welfare or family policy regime typologies, Germany has become a unique exception, as it combines family policies which reinforce the traditional male-breadwinner model, such as joint taxation and family health insurance, with recent policies which support the dual-earner, dual-carer model, in particular, the parental leave and childcare policies (Schober, 2014). In sum, due to the division of Germany, East and West Germany provide the opportunity to investigate the effect of increased availability of low-cost, state-subsidised childcare in two contexts that differ remarkably in their pre-reform levels of childcare availability, maternal employment as well as cultural attitudes towards work and care for young children. The persistent East-West differences in maternal employment and employment interruption durations have been frequently explained by greater childcare availability in the East (e.g., Grunow and Müller, 2012). However, no study to date has applied administrative childcare data to systematically analyse whether the gap in childcare availability between East and West Germany is responsible for the East-West difference in maternal employment and employment interruption durations. Pre-reform studies show no statistically significant association between childcare availability and maternal employment (Büchel and Spieß, 2002; Kreyenfeld and Hank, 2000). These cross-sectional studies, however, focus exclusively on the unusually low level of childcare in West Germany and were unable to consider substantial changes in childcare availability over time, which may explain the non-significant effects.

To date, the few post-reform studies provide mixed evidence on the effects of the recent childcare expansion in Germany. However, they again concentrate on maternal labour supply instead of on employment interruption durations after childbirth, without focusing on East-West differences. Micro-simulations predict the childcare expansion (Haan and Wrohlich, 2011; Bonin et al., 2013) and the legal entitlement to a childcare slot for all children aged one year or older (Müller and Wrohlich, 2016) to increase maternal employment. Applying a quasi-experimental design, Geyer et al. (2015) show a positive effect on maternal labour supply, particularly among mothers with children aged two to three years, confirming the micro-simulations. In contrast, while distinguishing between East and West Germany, but using only a cross-sectional research design, Schober and Spiess (2015) do not find a statistically significant effect of childcare availability on maternal labour supply once they control for childcare quality.

Our chapter adds to the current field of research by investigating the effect of an increased availability of low-cost, state-subsidised childcare on the length of East and

West German mothers' employment interruption durations. We exploit the annual and regional variation in county-level administrative childcare and survey data, measuring actual employment behaviour instead of relying on simulation models. Additionally, we investigate whether the effect differs after the birth of a first or a second child and whether the effect is more pronounced when the paid parental leave benefits expire and the opportunity costs of employment increase in the second year after childbirth, as suggested by previous studies (Haan and Wrohlich, 2011; Geyer et al., 2015). Furthermore, we assess whether increased availability of low-cost, state-subsidised childcare alters the likelihood of returning to more substantial (full-time or part-time) employment compared to marginal employment (so-called 'mini-jobs'), which is defined by a maximum monthly income of 400 Euro (after 2013, 450 Euros) and no social insurance contributions for employees.

# 5  Theoretical framework

Based on both economic and sociological theories, we assume that increased availability of low-cost, state-subsidised childcare shortens mothers' employment interruptions and facilitates faster returns to more substantial employment.

Overall, economic theory predicts shorter employment interruptions whenever low-cost, state-subsidised childcare availability for very young children is comparatively high (e.g., Kreyenfeld and Hank, 2000; Morrissey, 2016). According to the neoclassical theory of labour supply, mothers rationally decide when to return to work after giving birth in order to maximise lifetime income as well as household utility by considering their time requirements at home, market wages as well as alternative income sources such as household income (Blau et al., 2006). Low-cost, state-subsidised childcare reduces the opportunity costs for a return to work and allows mothers living in counties with greater availability to rely more on childcare than in counties with lower availability (for a more in-depth discussion, see Leibowitz et al., 1992). In this theory, mothers who are indifferent about taking care of a child at home instead of enrolling the child in childcare will return to employment faster in a county with increased childcare availability than mothers who live in counties with lower availability. Beyond this, mothers might also decide based on the expectation that employers consider the duration of the interruption a signal of their productivity and work commitment (Spence, 1973). With widely available low-cost, state-subsidised childcare more mothers have the possibility to return to work faster and to thereby signal higher work commitment to employers.

Similarly, sociological theory suggests that formal childcare has the potential to reduce inter-role conflicts for working mothers (Greenhaus and Beutell, 1985). Particularly for

work-oriented mothers with young children, the combination of the role as a caregiver and worker is likely to result in interfering role demands. By allowing mothers to transfer some of their care responsibilities to a childcare institution, childcare potentially decreases the inter-role conflict and this might reduce mothers' employment interruptions.

Furthermore, constructivist identity approaches (Stets and Burke, 2000) describe the cultural construction of the ideal mother and worker associated with the individual opportunity structures and family policies (e.g., Banaszak, 2006; Sjöberg, 2004). Family policy reforms, such as shorter parental leave periods (Gangl and Ziefle, 2015) and increased availability of low-cost, state-subsidised childcare (Zoch and Schober, 2017) have been found to increase the cultural acceptance of maternal employment. Hence, mothers, who would have wanted to return to employment but felt constraint by traditional gender role ideologies, might be more likely to shorten their employment interruption, particularly in a comparatively traditional context, such as West Germany.

To summarise, both economic and sociological theories assume that the expansion of state-subsidised childcare for under-three-year-olds leads to shorter employment interruptions after childbirth. Based on these theories, we expect mothers to return to employment earlier in counties with more childcare available for under-three-year-olds (H1).

The economic labour supply theory also allows us to make a clear prediction of when the effect of childcare on mothers' return-to-work decisions is strongest. When paid parental leave entitlements expire in the second year of the child's life, the utility of staying at home declines and a negative income effect can be expected. Thereupon mothers heavily rely on childcare in order to return to work, which makes childcare availability particularly important. We therefore expect that increased availability of low-cost, state-subsidised childcare does not affect the probability of returning equally but is strongest in the second year after childbirth (H2).

Increasing childcare availability also allows mothers to work longer hours, as it becomes more accessible for mother to take-up childcare during specific hours, compared to informal caring arrangements, which are only available to few and for a few hours a day. We therefore expect mothers in counties with increased availability of low-cost, state-subsidised childcare to be more likely to work longer hours and, hence, to return to substantial employment, such as full-time or part-time work, compared to mothers living in counties with childcare rationing to return to marginal employment (H3).

Due to a long history of East-West differences in the take-up of formal childcare and the acceptance of maternal employment, we expect the expansion of childcare availability to have heterogeneous effects on East and West German mothers. In East Germany using formal childcare for children older than one year, has been and still is the dominant

social norm, whilst in West Germany, family care still prevails. These differences are also reflected in the more conservative attitudes towards maternal employment and formal childcare in West Germany, compared to East Germany. In 2012, only 13 per cent of East German women agreed with the statement that a child under six is likely to suffer from a working mother compared to 32 per cent of women in West Germany. With respect to childcare, only 17 per cent of East German mothers stated that care for under-six-year-olds should be provided by the family, whereas still 42 per cent of West German mothers agreed with the statement (Schober and Stahl, 2014). We therefore expect the effect of increased availability of low-cost, state-subsidised childcare on maternal employment returns to vary with cultural acceptance of formal childcare and of maternal employment, however, it is difficult to predict a priori for whom the effect will be more pronounced. On the one hand, an increased childcare availability in a region with a high acceptance of maternal employment and formal childcare take-up, such as East Germany, should encourage mothers to further decrease their employment interruptions (H4A). On the other hand, East Germany started expanding childcare at a higher level of availability, and returns to employment among mothers were already relatively fast; hence, there might exist a certain saturation effect with regard to faster returns to employment. Alternatively, increased availability of low-cost, state-subsidised childcare might have a stronger impact on the duration of employment interruptions among mothers in West Germany, where there is greater potential to shorten employment interruptions due to comparatively long interruption durations prior to the childcare expansion (H4B).

# 6 Research design

## 6.1 Data description

To investigate whether increased availability of low-cost, state-subsidised childcare is associated with shorter employment interruptions among East and West German mothers, we combine annual administrative records on childcare availability on the county-level *(Kreisebene)* from the Federal Statistical Office with individual-level data from the representative German Socio-Economic Panel (SOEP) (Wagner et al. 2007). We use yearly individual and household information and monthly employment histories on East and West German mothers, with a first, second or any higher-order birth between January 2006 and December 2014.

Childcare availability is defined as the annual ratio of under-three-year-olds enrolled in subsidised childcare to the population of this age group, including half-day or full-

day childcare centres or child-minders.[4] Combining administrative county-level data with individual longitudinal information provides a unique opportunity to exploit, first, temporal variation from the years 2006 to 2014, second, regional variation between East and West Germany, and last, county-level variation in childcare availability from several counties in East and West Germany.

Figure 3.1 and 3.2 depicts the gradual increase in low-cost, state-subsidised childcare for under-three-year-olds over time and the variation around the mean in the East and West German counties observed in our sample. We observe mothers in counties, where the average childcare availability for under-three-year-olds increased from 7 to 27 per cent in West Germany and from 40 to 50 per cent in East Germany between 2006 and 2014. For West Germany, county-level childcare availability of more than 20 per cent is only observable after 2009 (see Appendix Table A3.1). These changes are comparable to official data on the increase in childcare availability in all counties across Germany. In the analysis, we utilise a categorical specification of childcare availability. Beyond this, we test linear, spline, u-shaped as well as different categorical childcare specifications (available on request), however, results presented are based on the most robust categorisation.

Figure 3.1: Average state-subsidised childcare availability for under-three-year-olds over time in our sample (West Germany)
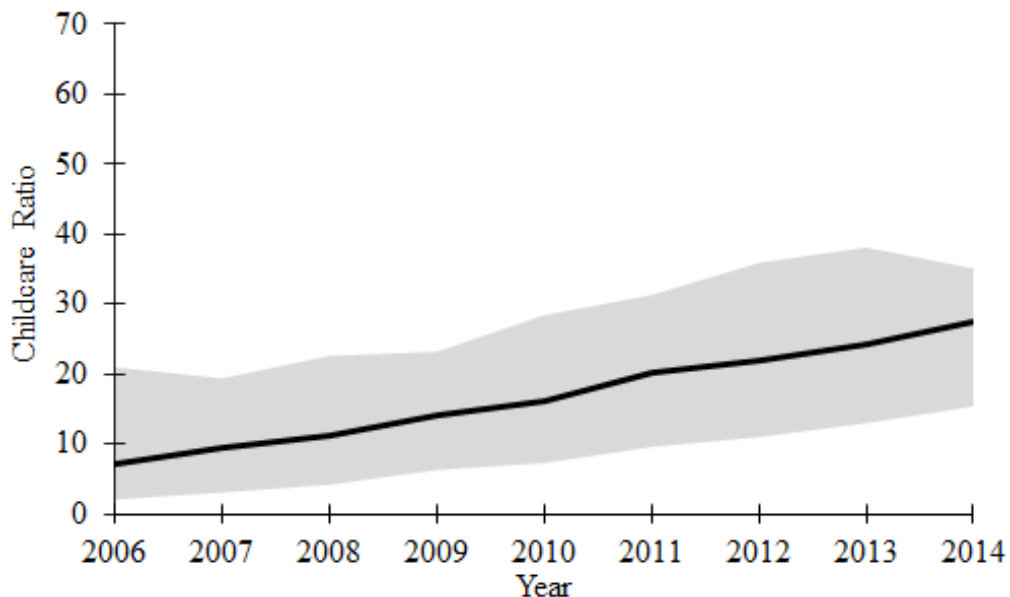


Source: SOEP v31, linked with regional data on the county-level (2006-2014).

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[4]Despite the substantial increase in childcare availability, demand still exceeds the supply in East and West Germany (BMFSFJ, 2015). As this is constantly monitored, the childcare attendance rate is considered as a measure of supply rather than demand, which is in line with previous studies on Germany (for a detailed description, see Kreyenfeld and Hank, 2000).

Figure 3.2: Average state-subsidised childcare availability for under-three-year-olds over time in our sample (East Germany)
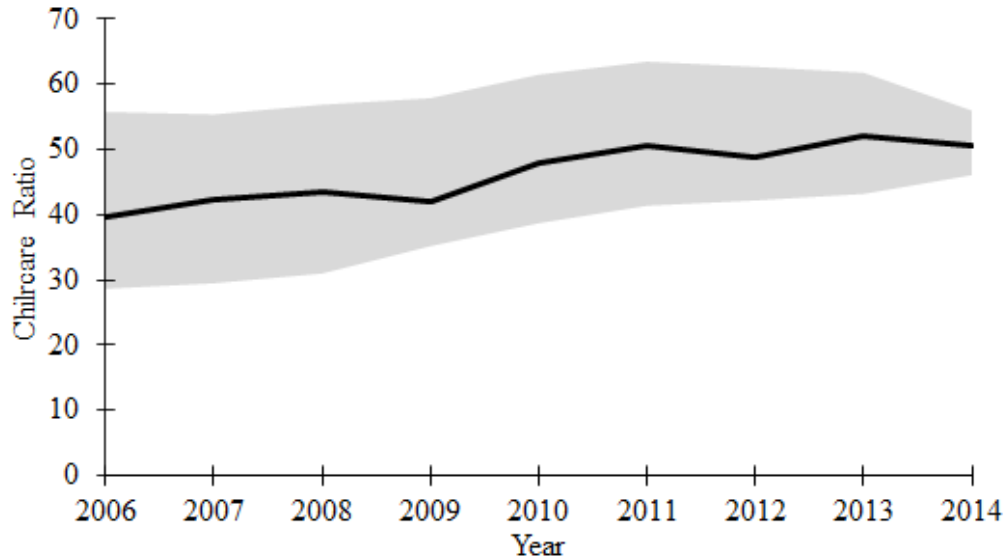


Source: SOEP v31, linked with regional data on the county-level (2006-2014).

## 6.2 Method of analysis

To estimate the probability of returning to employment conditional on not having returned to work yet and due to the discrete character of the data, we apply discrete event history analysis (Allison, 1982). More precisely, the piecewise-exponential model allows flexible modelling of the duration dependency of the baseline hazard and is better suited to handle right-censored observations in the data. Due to the relatively small number of events and a peak in the baseline hazard after 12 months (i.e. expiry of benefit payment), 24 months or 36 months (i.e. expiry of job guarantee), we present models using yearly intervals. However, results are comparable with monthly or half-year intervals.

Our risk set includes all mothers who gave birth, until we observe a return to the labour market (assigning an interruption of eight weeks to all, whilst employment is legally prohibited), another birth or the observation is censored. One of the model's assumptions is that the time of censoring is independent of the event. We define our dependent variable as a return to employment whenever the respondent states being marginal, part-time or full-time employed. To take the differing initial availability of state-subsidised childcare into account, we estimate separate models for East and West Germany. In a first step, we estimate the probability of a return to work for all births jointly, which includes first, second and higher-order births (Table 3.3, M1-M2). In a second step, to identify whether increased childcare availability has had different impacts on a mother's employment interruption after a first or a second birth, we split our samples

into returns after a first or a second birth for East and West German mothers, respectively (Table 3.3, M3-M6). Since we observe very few mothers with a higher-order birth, we are unable to analyse these interruptions separately. In a third step, we examine whether increased childcare availability has a more pronounced effect on mothers' return-to-work decisions in the second year after childbirth, when income-related parental leave benefits expire (Figure 3.3 and 3.4). In a fourth and final step, we test, using a competing risks model, whether childcare encourages mothers to return to more substantial forms of employment, that is, full-time or part-time employment, as opposed to marginal employment (Table 3.4).[5]

We restrict our sample to mothers who gave birth between 2006 and 2014, as annual official childcare data has only been collected since the start of the childcare expansion in 2006. We exclude women who moved between counties during our observation period to avoid selective moving due to higher childcare availability in some counties, as well as the oversampled subsamples such as the high-income sample and migration samples.[6] Following common practice, we right-censor observation periods after 6 years if no return is observed. Similarly, we right-censor spells that end with a birth of another child and instead let another observation period begin.

In total, we observe mothers in 287 of the 402 counties in Germany, 59 of which are located in East Germany. Based on all restrictions, our sample includes 1,016 episodes of 860 West German mothers for whom we observe 553 events. For East Germany, we observe 256 episodes of 219 mothers for whom we observe 166 events. 463 episodes of West German mothers (58 due to another birth) and 90 of East German mothers (12 due to another birth) are right-censored. The most censoring occurred due to missing information, non-response or a limited observation period (women with a birth at the end of the observation window are more often censored).

## 6.3 Control variables

We control for the following relevant time-constant individual characteristics observed for the mother prior to childbirth: age, education and migration background, and time-constant pre-birth employment characteristics, i.e. employment status (full-time, part-time or not employed) and the pre-birth hourly log wage adjusted for inflation (in 2011 Euros). We also include several time-varying control variables: family status (single,

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[5]Unfortunately, full-time returns are rarely observed, particularly in West Germany. Therefore, we define our dependent variable as a substantial return whenever the respondent states either being employed part-time or full-time.

[6]We also run estimates across all the SOEP samples. Although results are comparable, we present more conservative estimates based on representative samples.

cohabitation and marriage), number of children in the household, if the child was born after the introduction of the new income-related parental leave benefit scheme in 2007 and log household income adjusted to inflation (in 2011 Euros).

To capture aspects of the regional economic situation that might influence maternal employment participation, we include the centred unemployment rate and female labour force participation rate on the county-level, provided annually by the Federal Statistical Office. In addition, we include the number of marriages per 1000 adult inhabitants, as a proxy for cultural differences between rural and urban areas and as an indicator for the importance of traditional family norms. To control for further unobserved influences, we included period dummies in all models. Table 3.1 and 3.2 present the distribution of the control variables for West and East Germany.

# 7 Results

## 7.1 Childcare availability and interruption durations

We utilise a categorical specification of childcare availability. For West Germany, we differentiate among availability of less than 15 per cent (reference category), between 15 and 22 per cent, and more than 23 per cent. For East Germany, the categories are less than 42 per cent (reference category), between 42 and 49 per cent, and more than 50 per cent. This categorisation allows for an approximately equal distribution of the changing childcare availability over the observation period (see Appendix Table A3.1). At the start of the observation period in West Germany regional availability of low-cost, state-subsidised childcare of less than 15 per cent is most common. Capacities of more than 23 per cent are only available after 2009. For East Germany, increased availabilities also become more common over our observation period.

We present results for East and West German mothers' return-to-work behaviour after any birth in Table 3.3 (M1 and M2), reporting average marginal effects. Our results show that increased childcare availability shortens the duration of employment interruptions among West German mothers and increases their probability of returning to employment. In actual terms, this means that when the childcare availability in a West Germany county reaches 15 per cent or more but remains below 23 per cent compared to the reference category, the probability of returning to work increases by one percentage point in any month after birth (M1). Similarly, when childcare is available to more than 23 per cent of all under-three-year-old children in a county, the probability of returning to work increases by two percentage points in any month after birth (M1). This implies that substantially greater childcare availability is responsible for faster returns to employment

Table 3.1: Descriptive Statistics (West Germany)

| West Germany | All Births | | First Births | | Second Births | |
|---|---|---|---|---|---|---|
| | Mean | Sd | Mean | Sd | Mean | Sd |
| Childcare ratio < 15% | 0.41 | 0.49 | 0.49 | 0.50 | 0.38 | 0.49 |
| Childcare ratio 15% to < 23% | 0.39 | 0.49 | 0.33 | 0.47 | 0.42 | 0.49 |
| Childcare ratio >= 23% | 0.20 | 0.40 | 0.19 | 0.39 | 0.20 | 0.40 |
| **Individual Characteristics** | | | | | | |
| Mother's age at birth of child | 31.62 | 5.17 | 30.11 | 5.56 | 32.17 | 4.90 |
| No vocational degree (Ref.) | 0.16 | 0.36 | 0.12 | 0.33 | 0.11 | 0.31 |
| Vocational degree | 0.59 | 0.49 | 0.60 | 0.49 | 0.62 | 0.48 |
| Tertiary degree | 0.25 | 0.44 | 0.28 | 0.45 | 0.27 | 0.44 |
| Married (Ref.) | 0.82 | 0.38 | 0.74 | 0.44 | 0.87 | 0.34 |
| Cohabiting | 0.11 | 0.31 | 0.16 | 0.37 | 0.08 | 0.27 |
| Single mother | 0.07 | 0.25 | 0.10 | 0.29 | 0.05 | 0.22 |
| German (Ref.) | 0.69 | 0.46 | 0.74 | 0.44 | 0.70 | 0.46 |
| Migration background | 0.31 | 0.46 | 0.26 | 0.44 | 0.30 | 0.46 |
| **Pre-birth employment characteristics** | | | | | | |
| No employment (Ref.) | 0.52 | 0.50 | 0.23 | 0.42 | 0.59 | 0.49 |
| Part-time employment | 0.23 | 0.42 | 0.10 | 0.30 | 0.31 | 0.46 |
| Full-time employment | 0.25 | 0.43 | 0.66 | 0.47 | 0.10 | 0.30 |
| Non-missing employment status (Ref.) | 0.91 | 0.46 | 0.91 | 0.29 | 0.89 | 0.31 |
| Missing employment status | 0.09 | 0.29 | 0.09 | 0.29 | 0.11 | 0.31 |
| Log hourly wage in year before birth (deflated, in €) | 3.12 | 1.18 | 3.42 | 0.64 | 3.16 | 1.18 |
| **Household Characteristics** | | | | | | |
| Number of children | 2.03 | 0.87 | 1.00 | 0.00 | 2.00 | 0.00 |
| Parental entitlement before 2007 | 0.83 | 0.38 | 0.80 | 0.40 | 0.82 | 0.38 |
| Parental entitlement after 2007 (Ref.) | 0.17 | 0.38 | 0.20 | 0.40 | 0.18 | 0.38 |
| Log household income (deflated, in €) | 7.17 | 2.09 | 6.79 | 2.47 | 7.21 | 2.03 |
| **Regional Indicators** | | | | | | |
| Unemployment rate | 6.65 | 2.97 | 6.97 | 3.28 | 6.42 | 2.77 |
| Female employment rate | 46.93 | 4.27 | 46.47 | 4.46 | 47.11 | 4.22 |
| Marriage rate | 5.68 | 1.07 | 5.57 | 1.04 | 5.76 | 1.01 |

Source: SOEP v31 linked with regional data on the county-level (2006-2014).

Table 3.2: Descriptive Statistics (East Germany)

| West Germany | All Births | | First Births | | Second Births | |
|---|---|---|---|---|---|---|
| | Mean | Sd | Mean | Sd | Mean | Sd |
| Childcare ratio < 42% | 0.31 | 0.46 | 0.30 | 0.46 | 0.30 | 0.46 |
| Childcare ratio 42% to < 50% | 0.35 | 0.48 | 0.34 | 0.48 | 0.35 | 0.48 |
| Childcare ratio >= 50% | 0.34 | 0.47 | 0.36 | 0.48 | 0.35 | 0.48 |
| **Individual Characteristics** | | | | | | |
| Mother's age at birth of child | 30.51 | 4.90 | 28.76 | 4.54 | 30.73 | 4.15 |
| No vocational degree (Ref.) | 0.08 | 0.27 | 0.07 | 0.25 | 0.05 | 0.21 |
| Vocational degree | 0.55 | 0.50 | 0.55 | 0.50 | 0.58 | 0.49 |
| Tertiary degree | 0.38 | 0.48 | 0.39 | 0.49 | 0.38 | 0.49 |
| Married (Ref.) | 0.59 | 0.49 | 0.38 | 0.48 | 0.69 | 0.46 |
| Cohabiting | 0.28 | 0.45 | 0.42 | 0.49 | 0.23 | 0.42 |
| Single mother | 0.13 | 0.33 | 0.20 | 0.40 | 0.09 | 0.28 |
| German (Ref.) | 0.91 | 0.29 | 0.95 | 0.23 | 0.92 | 0.28 |
| Migration background | 0.09 | 0.29 | 0.05 | 0.23 | 0.08 | 0.28 |
| **Pre-birth employment characteristics** | | | | | | |
| No employment (Ref.) | 0.46 | 0.50 | 0.38 | 0.49 | 0.41 | 0.49 |
| Part-time employment | 0.20 | 0.40 | 0.08 | 0.28 | 0.27 | 0.45 |
| Full-time employment | 0.34 | 0.47 | 0.53 | 0.50 | 0.32 | 0.47 |
| Non-missing employment status (Ref.) | 0.87 | 0.33 | 0.82 | 0.38 | 0.95 | 0.23 |
| Missing employment status | 0.13 | 0.33 | 0.18 | 0.38 | 0.05 | 0.23 |
| Log hourly wage in year before birth (deflated, in €) | 2.37 | 1.35 | 2.68 | 0.92 | 2.35 | 1.46 |
| **Household Characteristics** | | | | | | |
| Number of children | 1.97 | 0.87 | 1.00 | 0.00 | 2.00 | 0.00 |
| Parental entitlement before 2007 | 0.78 | 0.41 | 0.72 | 0.45 | 0.87 | 0.33 |
| Parental entitlement after 2007 (Ref.) | 0.22 | 0.41 | 0.28 | 0.45 | 0.13 | 0.33 |
| Log household income (deflated, in €) | 6.53 | 2.54 | 5.93 | 2.89 | 6.76 | 2.37 |
| **Regional Indicators** | | | | | | |
| Unemployment rate | 12.91 | 3.17 | 13.59 | 3.54 | 12.67 | 2.77 |
| Female employment rate | 51.36 | 5.10 | 51.25 | 5.55 | 51.18 | 4.81 |
| Marriage rate | 5.14 | 1.60 | 5.21 | 1.82 | 5.04 | 1.50 |

Source: SOEP v31 linked with regional data on the county-level (2006-2014).

in West Germany. When individual and regional confounders are included (M2), the childcare coefficients are reduced, but still statistically significant. Although effect sizes are small, coefficients are generally comparable to individual and household controls (Appendix Table A3.2 and A3.3). The effects of these controls are in line with theoretical considerations and do not contradict other related studies. For East Germany, the effect of increased availability of low-cost, state-subsidised childcare is positive but statistically insignificant. Overall, this result provides support for our hypothesis H1 that an increased childcare availability reduces mothers' employment interruptions following childbirth, but only among West German mothers. Furthermore, although the East German sample is comparatively small, the results provide tentative evidence for our hypothesis H4B, which posits a higher potential for West German mothers to shorten their employment interruptions.

## 7.2 Return-to-work behaviour after first and second childbirth

When turning to the separate estimates for the employment interruption durations after a first or a second birth in Table 3.3 (M3-M6), it again becomes evident that considerable childcare ratio of above 23% is particularly important for West German mothers, especially after a second childbirth (M5-M6). For first births, estimates are positive but statistically insignificant, once we include individual and regional controls (M3-M4). This may suggests that West German mothers might perceive it as less beneficial to return to employment temporarily before having a second child. Again, for the much smaller sample of East German mothers, we find a positive although statistically insignificant effect.

## 7.3 Time-dependency of childcare availability on the duration of employment interruptions

To test, whether the effect of increased childcare availability is similar at each point during the employment interruption (H2), we interact the childcare measure with the time periods. We provide a graphical demonstration of our results only (full models are available on request). Figure 3.3 and 3.4 illustrate how different levels of childcare availability cause the predicted probability of returning to work to vary in the first year (0-11 months), second year (12-23 months), and beyond the third year (24 months and longer) after childbirth for both West and East German mothers. Including a time-dependent effect of childcare availability in the model indicates that childcare availability of more than 23 per cent increases West German mothers' probability of returning to employment in the second year after childbirth (Likelihood-Ration test: Chi-value 10.61,

Table 3.3: Childcare rate and the duration of employment interruptions following childbirth, piecewise-exponential models

| West Germany | All Births | | | | First Births | | | | Second Births | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M1 | | M2 | | M3 | | M4 | | M5 | | M6 | |
| | AME | SE | AME | SE | AME | SE | AME | SE | AME | SE | AME | SE |
| Childcare ratio < 15% (Ref.) | | | | | | | | | | | | |
| Childcare ratio 15% to < 23% | 0.009* | (0.004) | 0.006+ | (0.003) | 0.012+ | (0.007) | 0.011 | (0.007) | 0.010* | (0.005) | 0.007 | (0.005) |
| Childcare ratio >= 23% | 0.017** | (0.006) | 0.010* | (0.005) | 0.016+ | (0.009) | 0.015 | (0.010) | 0.027** | (0.008) | 0.014* | (0.007) |
| Period dummies | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | |
| Individual controls | | | ✓ | | | | ✓ | | | | ✓ | |
| Regional controls | | | ✓ | | | | ✓ | | | | ✓ | |
| | | | | | | | | | | | | |
| Events | 553 | | 553 | | 207 | | 207 | | 254 | | 254 | |
| Observations | 17726 | | 17726 | | 5374 | | 5374 | | 7759 | | 7759 | |
| AIC | 4904.62 | | 4544.58 | | 1755.77 | | 1718.51 | | 2223.29 | | 2047.21 | |
| BIC | 4982.44 | | 4746.93 | | 1821.67 | | 1883.25 | | 2292.85 | | 2221.12 | |
| Log Likelihood | −2442.31 | | −2246.29 | | −867.89 | | −834.26 | | −1101.64 | | −998.60 | |

| East Germany | All Births | | | | First Births | | | | Second Births | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M1 | | M2 | | M3 | | M4 | | M5 | | M6 | |
| | AME | SE | AME | SE | AME | SE | AME | SE | AME | SE | AME | SE |
| Childcare ratio < 42% (Ref.) | | | | | | | | | | | | |
| Childcare ratio 42% to < 50% | 0.003 | (0.007) | −0.000 | (0.007) | 0.008 | (0.014) | 0.022 | (0.014) | 0.005 | (0.013) | 0.009 | (0.012) |
| Childcare ratio >= 50% | 0.008 | (0.009) | 0.003 | (0.010) | 0.000 | (0.013) | 0.014 | (0.018) | 0.013 | (0.017) | 0.020 | (0.022) |
| Period dummies | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | |
| Individual controls | | | ✓ | | | | ✓ | | | | ✓ | |
| Regional controls | | | ✓ | | | | ✓ | | | | ✓ | |
| | | | | | | | | | | | | |
| Events | 166 | | 166 | | 59 | | 59 | | 77 | | 77 | |
| Observations | 4176 | | 4176 | | 1428 | | 1428 | | 1710 | | 1710 | |
| AIC | 1387.88 | | 1348.18 | | 503.31 | | 496.51 | | 625.75 | | 617.83 | |
| BIC | 1451.25 | | 1512.94 | | 555.95 | | 628.11 | | 680.19 | | 753.94 | |
| Log Likelihood | −683.94 | | −648.09 | | −241.65 | | −223.25 | | −302.88 | | −283.91 | |

Note: Full model include mother's age and education at birth, mother's employment status and log hourly wage before birth, migration background, marital status, log household income, number of children, year dummies, parental leave period, unemployment rate, female employment rate and marriage rate. + p < 0.10, * p < 0.05, ** p < 0.01, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006-2014).

p=0.005), providing support for H2. The time-dependency effect is neither statistically significant for the first year after childbirth nor for the third year and beyond (coefficients not shown). Once more, for the smaller sample of East German mothers, we do not find a statistically significant effect.

Figure 3.3: Time-dependency effects for state-subsidised childcare availability (West Germany, all births combined)
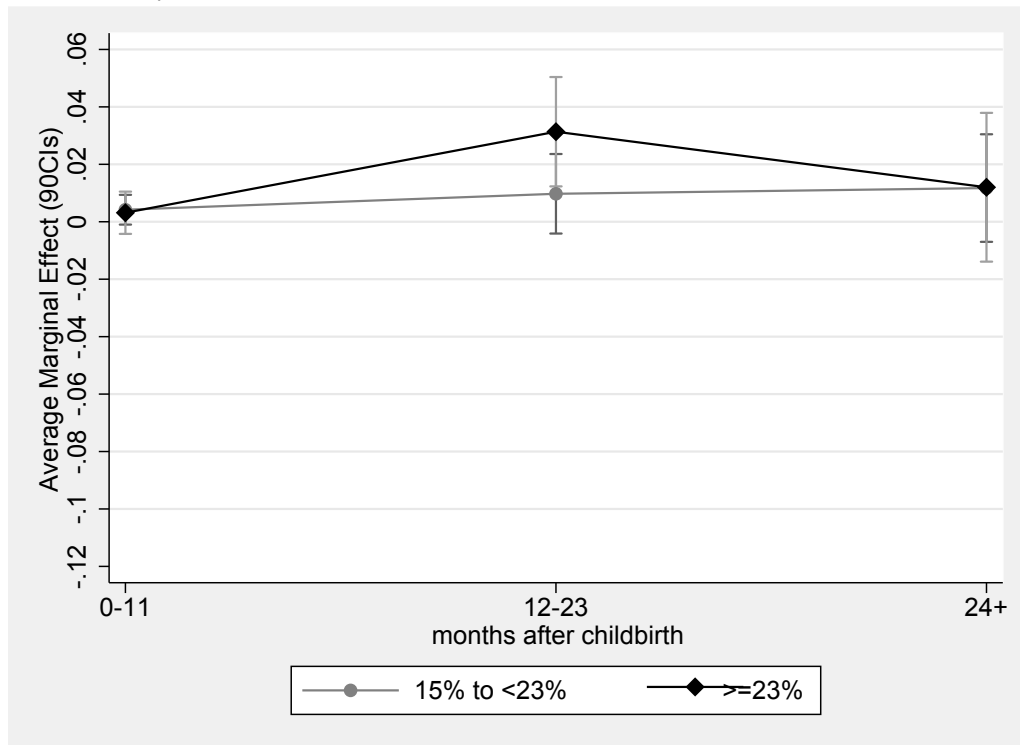


Note: Model includes mother's age and education at birth, mother's employment status and log hourly wage before birth, migration background, marital status, log household income, number of children, year dummies, parental leave period, unemployment rate, female employment rate and marriage rate. Source: SOEP v31 linked with regional data on the county-level (2006-2014).

## 7.4 Returns to substantial versus marginal employment

In a last step, we focus on the transition to full- and part-time employment, which we refer to as substantial employment, compared to a transition to marginal employment. Table 3.4 (M1 and M2) shows again a small and positive effect of increased childcare availability on the probability of returning to substantial employment only for West German mothers (full models in Appendix Table A3.4 and A3.5). The likelihood to return to marginal employment remains unaltered (M3 and M4). The childcare coefficients are of similar magnitude as in Table 3.3. The finding provides support for our initial assumption

Figure 3.4: Time-dependency effects for state-subsidised childcare availability (East Germany, all births combined)



Note: Model includes mother's age and education at birth, mother's employment status and log hourly wage before birth, migration background, marital status, log household income, number of children, year dummies, parental leave period, unemployment rate, female employment rate and marriage rate. Source: SOEP v31 linked with regional data on the county-level (2006-2014).

(H3) that increased childcare availability strengthens mothers' labour market attachment, since they return faster and work more hours, particularly for West German mothers.

Table 3.4: Childcare rate and the duration of employment interruptions following childbirth, competing risks models

| West Germany | Substantial Return | | | | Marginal Return | | | |
|---|---|---|---|---|---|---|---|---|
| | M1 | | M2 | | M3 | | M4 | |
| | AME | SE | AME | SE | AME | SE | AME | SE |
| Childcare ratio < 15% (Ref.) | | | | | | | | |
| Childcare ratio 15% to < 23% | 0.008** | (0.003) | 0.006* | (0.003) | 0.000 | (0.002) | 0.000 | (0.002) |
| Childcare ratio >= 23% | 0.016** | (0.004) | 0.008* | (0.004) | 0.002 | (0.003) | 0.002 | (0.003) |
| Period dummies | ✓ | | ✓ | | ✓ | | ✓ | |
| Individual controls | | | ✓ | | | | ✓ | |
| Regional controls | | | ✓ | | | | ✓ | |
| Events | 368 | | 368 | | 185 | | 185 | |
| Observations | 17070 | | 17070 | | 16881 | | 16881 | |
| AIC | 3562.24 | | 3230.23 | | 1997.47 | | 1918.62 | |
| BIC | 3639.69 | | 3431.61 | | 2074.81 | | 2119.70 | |
| Log Likelihood | −1771.12 | | −1589.12 | | −988.74 | | −933.31 | |

| East Germany | Substantial Return | | | | Marginal Return | | | |
|---|---|---|---|---|---|---|---|---|
| | M1 | | M2 | | M3 | | M4 | |
| | AME | SE | AME | SE | AME | SE | AME | SE |
| Childcare ratio < 42% (Ref.)) | | | | | | | | |
| Childcare ratio 42% to < 50% | 0.006 | (0.007) | 0.003 | (0.006) | −0.001 | (0.004) | −0.004 | (0.005) |
| Childcare ratio >= 50% | 0.011 | (0.008) | 0.007 | (0.010) | −0.002 | (0.004) | −0.006 | (0.005) |
| Period dummies | ✓ | | ✓ | | ✓ | | ✓ | |
| Individual controls | | | ✓ | | | | ✓ | |
| Regional controls | | | ✓ | | | | ✓ | |
| Events | 139 | | 139 | | 27 | | 27 | |
| Observations | 4013 | | 4013 | | 3898 | | 3898 | |
| AIC | 1218.88 | | 1169.94 | | 298.60 | | 316.42 | |
| BIC | 1281.85 | | 1333.67 | | 361.29 | | 479.39 | |
| Log Likelihood | −599.44 | | −558.97 | | −139.30 | | −132.21 | |

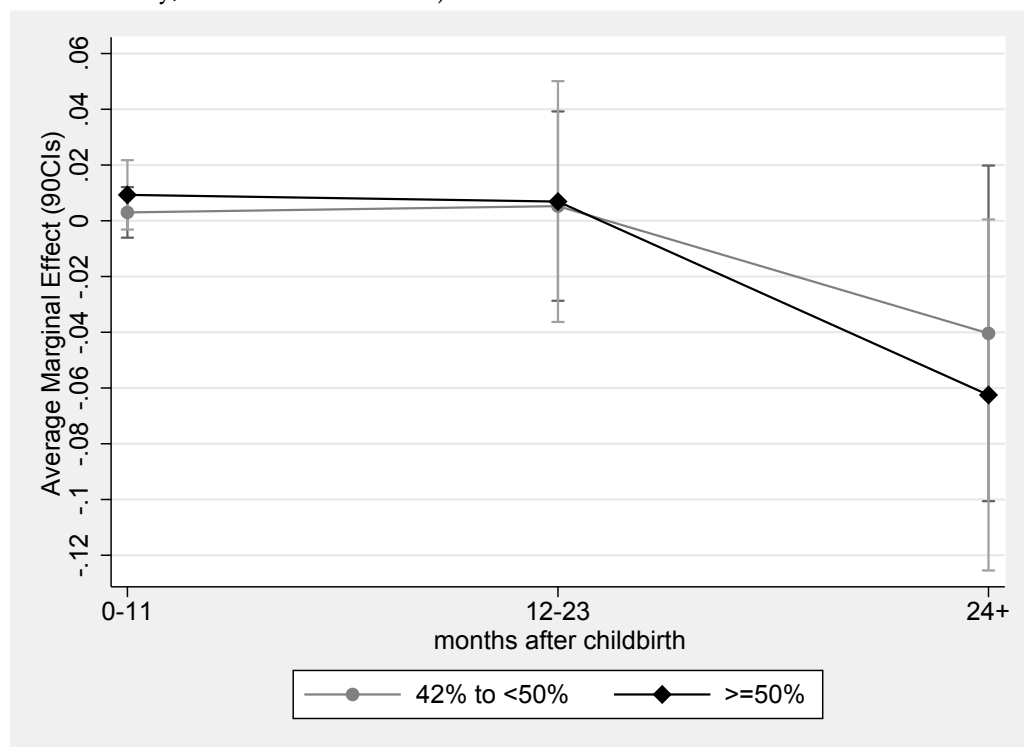Note: Full model include mother's age and education at birth, mother's employment status and log hourly wage before birth, migration background, marital status, log household income, number of children, year dummies, parental leave period, unemployment rate, female employment rate and marriage rate. $+ p < 0.10$, $* p < 0.05$, $** p < 0.01$, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006-2014).

## 7.5 Sensitivity checks

We run several sensitivity checks that reinforce our findings. First, we include the child's month of birth in our models to control for increased availability of low-cost,

state-subsidised childcare at beginning of the new school year in late August and early September. Second, we add different measures of mothers' work commitment to our models to ensure that our results are not driven by women with a stronger work or career orientation returning to work faster. Third, we re-estimated all models, without including the county-level marriage rate per 1000 adults to assess whether this control variable is driving our results. Fourth, we exclude births prior to the introduction of the shortened and income-related parental leave in 2007 to examine whether returns to work are driven by the new parental leave scheme. Similarly, we re-estimate all models excluding mothers with a child aged older than one year in August 2013 (144 mothers in West and 23 mothers in East Germany), to ensure that results were not driven by the introduction of the legal entitlement to a childcare place. In the same vein, we exclude the three states from our analysis that implemented a legal entitlement to childcare prior to 2013 (Rhineland Palatinate, Thuringia and Saxony Anhalt). Last, we test for the possibility of selective panel attrition. However, all sensitivity analyses show similar patterns and therefore confirm our previous findings (available on request).

# 8 Summary and conclusion

Focusing on a major public childcare expansion in Germany, this chapter provides first evidence that an increased availability of low-cost, state-subsidised childcare for under-three-year-olds shortens mothers' employment interruptions after childbirth. By exploiting exogenous temporal and regional variation in county-level childcare availability in East and West Germany, we find that increased availability of low-cost, state-subsidised childcare significantly shortens employment interruptions among West German mothers. As the pre-reform availability and acceptance of formal childcare and maternal employment were low and interruption durations were comparatively long, West German mothers had a significant potential to shorten their interruption duration. For the much smaller East German sample, we find a positive but statistically insignificant effect. The findings for East and West German mothers suggest that an expansion of low-cost, state-subsidised childcare is more likely to significantly reduce the interruption duration after childbirth in a relatively traditional context with previously exceptionally low childcare availability. In contrast, due to the already comparatively short interruptions prior to the expansion, the potential for even shorter interruptions may have been limited among East German mothers. Hence, our results lend support to previous studies, which either find a small or no employment effect of state-subsidised childcare expansions when pre-reform childcare availability is comparatively well-developed (e.g., Brilli et al., 2016; Havnes and Mogstad, 2011; Lundin et al., 2008). However, it is important to keep in mind that we base these

findings on a relatively small sample of East German mothers.

Beyond this, our findings suggest that the effect of increased availability of low-cost, state-subsidised childcare may be particularly pronounced for interruptions following a second birth. This might suggest that increased childcare availability does not significantly alter mothers' return-to-work behaviour if they still plan to have more children. Previous research supports this argument, showing that West German mothers have a tight spacing of two to four years between a first and second child (Kreyenfeld, 2008). It seems plausible that West German mothers, who plan to have a second child, perceive it as difficult to find short-term care arrangements for their first child and expect employers to be averse to a temporary return to employment. Hence, they may perceive a temporary return to work as less beneficial than a single but longer employment interruption. Therefore, formal childcare might become particularly important for faster labour market returns after family planning is likely to have been completed.

Furthermore, in line with previous research (Geyer et al., 2015; Haan and Wrohlich, 2011) our results provide additional support that increased availability of low-cost, state-subsidised childcare increases mothers' likelihood of returning to employment in the second year after childbirth when paid leave entitlements expire and childcare becomes important. The design of the parental leave scheme can serve as an additional explanation for why increased childcare availability may increase the likelihood of returning to employment in the second year particularly among West German mothers, compared to East German mothers. The nature of the paid parental leave entitlement does not make it necessarily beneficial to have interruption durations below 12 months and to return to work whilst still entitled to paid leave, as paid leave entitlements are reduced by labour income. This finding provides tentative evidence that the effect of increased availability of low-cost, state-subsidised childcare depends on other family policies, in particular the income-related parental leave entitlement. Future research should evaluate how childcare availability interacts with other policies, which foster the male-breadwinner model and whether heterogeneous policy effects exist among various social groups and labour market contexts.

Finally, our findings suggest that increased availability of low-cost, state-subsidised childcare plays a significant role in supporting mothers' returns to substantial employment (again only statistically significant for West German mothers), whereas the effect of childcare availability on returns to marginal employment remains unaltered. Differentiating between mothers with different employment histories and investigating whether more full-time childcare slots will lead to more full-time employment, particularly in West Germany, should be examined in further research.

A major limitation of this chapter is the small sample sizes, especially for East Ger-

many, which did not allow for further subsample analyses. By exploiting temporal and regional variation in county-level childcare availability and a wide range of individual, household and county-level controls, we try to account for unobserved heterogeneity. Yet, the risk of biased estimates remains due to other unobserved characteristics, such as formal childcare quality, which may correlate with the childcare expansion and maternal employment. Despite these limitations our findings align with previous studies highlighting the importance of formal childcare for maternal employment (Morrissey, 2016 for an overview) and provide additional evidence of how family policy reforms, in our case the increased county-level availability of low-cost, state-subsidised childcare, significantly encourages reductions in employment interruptions and enables mothers to return to more substantial employment (part-time or full-time). In the future, research may observe a larger impact on maternal employment as full-time childcare slots are increasingly becoming available due to the legal entitlement to childcare. From a general perspective, our findings emphasise that an institutional change, which strengthens the dual-earner model, profoundly impacts on mothers' employment trajectories.

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# 10 Appendix

Table A3.1: Distribution of childcare availability over the observation period

| West Germany | | Year of observation | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
| Childcare ratio < 15% | 97.27 | 89.79 | 80.07 | 65.09 | 42.28 | 20.01 | 14.02 | 4.87 | 0.00 | 100.00 |
| Childcare ratio 15% to < 23% | 2.73 | 10.21 | 19.93 | 31.45 | 45.94 | 56.93 | 50.03 | 47.10 | 16.38 | 100.00 |
| Childcare ratio >= 23% | 0.00 | 0.00 | 0.00 | 3.46 | 11.78 | 23.07 | 35.94 | 48.02 | 83.62 | 100.00 |
| **Total** | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

| East Germany | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Childcare ratio <42% | 67.42 | 44.05 | 41.77 | 53.00 | 40.39 | 8.60 | 2.33 | 0.00 | 0.00 | 100.00 |
| Childcare ratio 42% to < 50% | 21.12 | 40.08 | 40.53 | 21.66 | 27.72 | 42.83 | 40.31 | 46.93 | 41.67 | 100.00 |
| Childcare ratio >= 50% | 11.46 | 15.87 | 17.70 | 23.35 | 31.89 | 48.57 | 57.36 | 53.07 | 58.33 | 100.00 |
| **Total** | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Source: SOEP v31 linked with regional data on the county-level (2006–2014).

Table A3.2: Childcare availability and the duration of employment interruptions, full piecewise-exponential models (West Germany)

| West Germany | All births (M1) | | | First Births (M2) | | | Second Births (M3) | | |
|---|---|---|---|---|---|---|---|---|---|
| | AME | SE | CI | AME | SE | CI | AME | SE | CI |
| 0-11 months (Ref.) | | | | | | | | | |
| 12-23 months | 0.032** | (0.005) | [0.023, 0.041] | 0.034** | (0.009) | [0.015, 0.053] | 0.037** | (0.007) | [0.022, 0.051] |
| 24- months or longer | 0.041** | (0.007) | [0.028, 0.054] | 0.055** | (0.016) | [0.024, 0.085] | 0.036** | (0.010) | [0.017, 0.055] |
| Childcare ratio < 15% (Ref.) | | | | | | | | | |
| Childcare ratio 15% to < 23% | 0.006+ | (0.003) | [-0.000, 0.013] | 0.011 | (0.007) | [-0.003, 0.024] | 0.007 | (0.005) | [-0.002, 0.017] |
| Childcare ratio >= 23% | 0.010* | (0.005) | [0.000, 0.020] | 0.015 | (0.010) | [-0.005, 0.035] | 0.014* | (0.007) | [0.000, 0.029] |
| Number of Children | -0.001 | (0.002) | [-0.005, 0.003] | | | | | | |
| Mother's age at birth of child | -0.000 | (0.000) | [-0.001, 0.000] | -0.000 | (0.001) | [-0.002, 0.001] | -0.000 | (0.000) | [-0.001, 0.001] |
| No vocational degree (Ref.) | | | | | | | | | |
| Vocational degree | 0.008* | (0.004) | [0.000, 0.016] | -0.001 | (0.011) | [-0.022, 0.021] | 0.015** | (0.005) | [0.005, 0.025] |
| Tertiary degree | 0.019** | (0.005) | [0.009, 0.030] | 0.008 | (0.014) | [-0.018, 0.035] | 0.029** | (0.007) | [0.016, 0.042] |
| No employment (Ref.) | | | | | | | | | |
| Part-time Employment | 0.026** | (0.004) | [0.018, 0.034] | 0.022* | (0.011) | [0.001, 0.043] | 0.027** | (0.007) | [0.013, 0.041] |
| Full-time Employment | 0.027** | (0.005) | [0.017, 0.036] | 0.032** | (0.009) | [0.015, 0.049] | 0.029** | (0.010) | [0.008, 0.049] |
| Missing employment status (Ref.: non-missing) | 0.013* | (0.006) | [0.000, 0.026] | 0.028+ | (0.016) | [-0.003, 0.060] | 0.009 | (0.010) | [-0.011, 0.029] |
| Log hourly wage | 0.002 | (0.002) | [-0.001, 0.005] | 0.002 | (0.006) | [-0.011, 0.014] | -0.000 | (0.002) | [-0.004, 0.004] |
| Log household income | -0.007** | (0.001) | [-0.008, -0.006] | -0.006** | (0.001) | [-0.008, -0.004] | -0.008** | (0.001) | [-0.010, -0.006] |
| Married (Ref.) | | | | | | | | | |
| Cohabiting | -0.005 | (0.003) | [-0.012, 0.001] | -0.002 | (0.006) | [-0.013, 0.009] | -0.009 | (0.006) | [-0.021, 0.002] |
| Single Mother | -0.001 | (0.006) | [-0.012, 0.010] | 0.003 | (0.009) | [-0.014, 0.020] | -0.013 | (0.009) | [-0.030, 0.005] |
| Migration Background (Ref.: German) | -0.013** | (0.003) | [-0.019, -0.007] | -0.017** | (0.006) | [-0.029, -0.004] | -0.008 | (0.005) | [-0.017, 0.002] |
| Parental leave reform 2007 (Ref.: 2006) | -0.001 | (0.006) | [-0.013, 0.011] | -0.014 | (0.011) | [-0.036, 0.008] | 0.010 | (0.009) | [-0.007, 0.028] |
| Unemployment rate | -0.000 | (0.001) | [-0.001, 0.001] | 0.000 | (0.001) | [-0.002, 0.003] | 0.000 | (0.001) | [-0.002, 0.002] |
| Female employment rate | -0.000 | (0.001) | [-0.001, 0.001] | 0.000 | (0.001) | [-0.002, 0.002] | -0.000 | (0.001) | [-0.002, 0.001] |
| Marriage rate | 0.002 | (0.001) | [-0.000, 0.005] | 0.005+ | (0.003) | [-0.001, 0.010] | 0.000 | (0.002) | [-0.003, 0.004] |
| Events | 553 | | | 207 | | | 254 | | |
| Observations | 17726 | | | 5374 | | | 7759 | | |
| AIC | 4544.58 | | | 1718.51 | | | 2047.21 | | |
| BIC | 4746.93 | | | 1883.25 | | | 2221.12 | | |
| Log Likelihood | -2246.29 | | | -834.26 | | | -998.60 | | |

Note: + p < 0.10, * p < 0.05, ** p < 0.01, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006-2014).

Table A3.3: Childcare availability and the duration of employment interruptions, full piecewise-exponential models (East Germany)

| East Germany | All births | | | First Births | | | Second Births | | |
|---|---|---|---|---|---|---|---|---|---|
| | M1 | | | M2 | | | M3 | | |
| | AME | SE | CI | AME | SE | CI | AME | SE | CI |
| 0-11 months (Ref.) | | | | | | | | | |
| 12-23 months | 0.046** | (0.013) | [0.020, 0.071] | 0.058* | (0.023) | [0.012, 0.103] | 0.061** | (0.022) | [0.017, 0.105] |
| 24- months or longer | 0.075** | (0.020) | [0.036, 0.113] | 0.106** | (0.030) | [0.047, 0.165] | 0.093* | (0.038) | [0.017, 0.168] |
| Childcare ratio < 42% (Ref.) | | | | | | | | | |
| Childcare ratio 42% to < 50% | -0.000 | (0.007) | [-0.013, 0.013] | 0.022 | (0.014) | [-0.007, 0.050] | 0.009 | (0.012) | [-0.015, 0.032] |
| Childcare ratio >= 50% | 0.003 | (0.010) | [-0.017, 0.023] | 0.014 | (0.018) | [-0.022, 0.050] | 0.020 | (0.022) | [-0.022, 0.062] |
| Number of Children | -0.005 | (0.004) | [-0.014, 0.003] | | | | | | |
| Mother's age at birth of child | 0.001 | (0.001) | [-0.001, 0.003] | 0.002 | (0.001) | [-0.001, 0.004] | 0.000 | (0.002) | [-0.003, 0.004] |
| No vocational degree (Ref.) | | | | | | | | | |
| Vocational degree | 0.007 | (0.014) | [-0.020, 0.034] | 0.005 | (0.017) | [-0.029, 0.038] | -0.054 | (0.038) | [-0.129, 0.021] |
| Tertiary degree | 0.016 | (0.014) | [-0.011, 0.043] | 0.052* | (0.024) | [0.004, 0.100] | -0.056 | (0.035) | [-0.125, 0.012] |
| No employment (Ref.) | | | | | | | | | |
| Part-time Employment | 0.027** | (0.010) | [0.007, 0.047] | 0.031+ | (0.019) | [-0.005, 0.068] | 0.045* | (0.021) | [0.004, 0.085] |
| Full-time Employment | 0.021* | (0.011) | [0.000, 0.042] | 0.006 | (0.016) | [-0.024, 0.037] | 0.036+ | (0.019) | [-0.000, 0.072] |
| Missing employment status (Ref.: non-missing) | -0.022+ | (0.012) | [-0.046, 0.002] | -0.041 | (0.026) | [-0.093, 0.011] | 0.005 | (0.027) | [-0.048, 0.058] |
| Log hourly wage | 0.008** | (0.003) | [0.003, 0.014] | 0.007 | (0.007) | [-0.006, 0.020] | 0.011* | (0.005) | [0.002, 0.020] |
| Log household income | -0.003+ | (0.002) | [-0.006, 0.000] | -0.004 | (0.003) | [-0.009, 0.001] | -0.002 | (0.003) | [-0.008, 0.005] |
| Married (Ref.) | | | | | | | | | |
| Cohabiting | 0.021** | (0.008) | [0.005, 0.037] | 0.027 | (0.018) | [-0.008, 0.061] | 0.018+ | (0.010) | [-0.001, 0.037] |
| Single Mother | -0.016* | (0.007) | [-0.029, -0.003] | -0.022+ | (0.013) | [-0.047, 0.004] | -0.023 | (0.016) | [-0.054, 0.009] |
| Migration Background (Ref.: German) | 0.008 | (0.008) | [-0.008, 0.024] | 0.033* | (0.014) | [0.004, 0.061] | 0.024 | (0.021) | [-0.018, 0.066] |
| Parental leave reform 2007 (Ref.: 2006) | 0.017+ | (0.010) | [-0.003, 0.037] | 0.012 | (0.020) | [-0.027, 0.052] | 0.049** | (0.018) | [0.014, 0.084] |
| Unemployment rate | -0.000 | (0.002) | [-0.003, 0.003] | -0.001 | (0.003) | [-0.008, 0.005] | -0.003 | (0.003) | [-0.008, 0.002] |
| Female employment rate | -0.000 | (0.001) | [-0.002, 0.002] | -0.001 | (0.002) | [-0.005, 0.003] | 0.000 | (0.002) | [-0.004, 0.004] |
| Marriage rate | 0.003 | (0.002) | [-0.001, 0.006] | 0.005 | (0.003) | [-0.001, 0.012] | 0.003 | (0.003) | [-0.003, 0.009] |
| Events | 166 | | | 59 | | | 77 | | |
| Observations | 4176 | | | 1428 | | | 1710 | | |
| AIC | 1348.18 | | | 496.51 | | | 617.83 | | |
| BIC | 1512.94 | | | 628.11 | | | 753.94 | | |
| Log Likelihood | -648.09 | | | -223.25 | | | -283.91 | | |

Note: + p < 0.10, * p < 0.05, ** p < 0.01, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006-2014).

Table A3.4: Competing risks model, full models (West Germany)

| West Germany | Substantial Return | | | Marginal Return | | |
| --- | --- | --- | --- | --- | --- | --- |
| | M1 | | | M2 | | |
| | AME | SE | CI | AME | SE | CI |
| 0-11 months (Ref.) | | | | | | |
| 12-23 months | 0.023** | (0.004) | [0.014, 0.031] | 0.011** | (0.003) | [0.006, 0.017] |
| 24 months or longer | 0.033** | (0.007) | [0.020, 0.046] | 0.012** | (0.004) | [0.005, 0.020] |
| Childcare ratio < 15% (Ref.) | | | | | | |
| Childcare ratio 15% to < 23% | 0.006* | (0.003) | [0.000, 0.011] | 0.000 | (0.002) | [-0.004, 0.005] |
| Childcare ratio >= 23% | 0.008* | (0.004) | [0.000, 0.016] | 0.002 | (0.003) | [-0.004, 0.009] |
| Number of Children | -0.002 | (0.002) | [-0.006, 0.001] | 0.001 | (0.001) | [-0.001, 0.003] |
| Mother's age at birth of child | 0.000 | (0.000) | [-0.000, 0.001] | -0.001** | (0.000) | [-0.001,-0.000] |
| No vocational degree (Ref.) | | | | | | |
| Vocational degree | 0.006+ | (0.003) | [-0.000, 0.013] | 0.003 | (0.002) | [-0.002, 0.008] |
| Tertiary degree | 0.020** | (0.005) | [0.010, 0.029] | 0.000 | (0.003) | [-0.005, 0.006] |
| No employment (Ref.) | | | | | | |
| Part-time Employment | 0.022** | (0.004) | [0.015, 0.030] | 0.007* | (0.003) | [0.001, 0.014] |
| Full-time Employment | 0.025** | (0.004) | [0.017, 0.033] | 0.003 | (0.003) | [-0.003, 0.009] |
| Missing employment status (Ref.: non-missing) | 0.015* | (0.006) | [0.003, 0.027] | 0.002 | (0.004) | [-0.006, 0.010] |
| Log hourly wage | 0.002 | (0.002) | [-0.001, 0.005] | 0.000 | (0.001) | [-0.001, 0.002] |
| Log household income | -0.005** | (0.001) | [-0.006,-0.004] | -0.003** | (0.000) | [-0.003,-0.002] |
| Married and cohabiting (Ref.) | | | | | | |
| Cohabiting | 0.001 | (0.003) | [-0.005, 0.007] | -0.006** | (0.002) | [-0.010,-0.003] |
| Single Mother | 0.005 | (0.006) | [-0.007, 0.017] | -0.005 | (0.003) | [-0.010, 0.001] |
| Migration Background (Ref.: German) | -0.008** | (0.003) | [-0.014,-0.003] | -0.005* | (0.002) | [-0.009,-0.001] |
| Parental leave reform 2007 (Ref.: 2006) | -0.003 | (0.005) | [-0.014, 0.008] | 0.000 | (0.004) | [-0.008, 0.008] |
| Unemployment rate | 0.000 | (0.001) | [-0.001, 0.001] | -0.000 | (0.000) | [-0.001, 0.000] |
| Female employment rate | -0.000 | (0.000) | [-0.001, 0.001] | 0.000 | (0.000) | [-0.001, 0.001] |
| Marriage rate | 0.002 | (0.001) | [-0.001, 0.004] | 0.000 | (0.001) | [-0.001, 0.002] |
| | | | | | | |
| Events | 368 | | | 185 | | |
| Observations | 17070 | | | 16881 | | |
| AIC | 3230.23 | | | 1918.62 | | |
| BIC | 3431.61 | | | 2119.70 | | |
| Log Likelihood | -1589.12 | | | -933.31 | | |

Note: + p < 0.10, * p < 0.05, ** p < 0.01, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006-2014).

Table A3.5: Competing risks model, full models (East Germany)

| East Germany | Substantial Return M1 | | | Marginal Return M2 | | |
|---|---|---|---|---|---|---|
| | AME | SE | CI | AME | SE | CI |
| 0-11 months (Ref.) | | | | | | |
| 12-23 months | 0.042** | (0.013) | [0.016, 0.067] | 0.006* | (0.003) | [0.000, 0.011] |
| 24 months or longer | 0.052** | (0.019) | [0.015, 0.090] | 0.021* | (0.008) | [0.005, 0.038] |
| Childcare ratio < 42% (Ref.) | | | | | | |
| Childcare ratio 42% to < 50% | 0.003 | (0.006) | [-0.009, 0.015] | -0.004 | (0.005) | [-0.013, 0.006] |
| Childcare ratio >= 50% | 0.007 | (0.010) | [-0.012, 0.027] | -0.006 | (0.005) | [-0.017, 0.004] |
| Number of Children | -0.006 | (0.004) | [-0.015, 0.002] | 0.000 | (0.001) | [-0.002, 0.002] |
| Mother's age at birth of child | 0.001 | (0.001) | [-0.001, 0.002] | 0.000 | (0.000) | [-0.000, 0.001] |
| No vocational degree (Ref.) | | | | | | |
| Vocational degree | 0.023* | (0.009) | [0.005, 0.042] | -0.018 | (0.017) | [-0.051, 0.014] |
| Tertiary degree | 0.027** | (0.008) | [0.012, 0.042] | -0.015 | (0.018) | [-0.049, 0.020] |
| No employment (Ref.) | | | | | | |
| Part-time Employment | 0.037** | (0.012) | [0.014, 0.061] | -0.006 | (0.005) | [-0.015, 0.004] |
| Full-time Employment | 0.023* | (0.011) | [0.001, 0.045] | -0.002 | (0.006) | [-0.013, 0.009] |
| Missing employment status (Ref.: non-missing) | -0.016 | (0.014) | [-0.043, 0.012] | -0.003 | (0.006) | [-0.015, 0.009] |
| Log hourly wage | 0.008* | (0.004) | [0.001, 0.015] | 0.001 | (0.003) | [-0.004, 0.006] |
| Log household income | -0.003+ | (0.002) | [-0.006, 0.000] | -0.000 | (0.001) | [-0.002, 0.001] |
| Married and cohabiting (Ref.) | | | | | | |
| Cohabiting | 0.018* | (0.007) | [0.004, 0.033] | 0.002 | (0.004) | [-0.006, 0.011] |
| Single Mother | -0.013+ | (0.008) | [-0.029, 0.002] | 0.002 | (0.004) | [-0.006, 0.010] |
| Migration Background (Ref.: German) | 0.006 | (0.011) | [-0.016, 0.028] | 0.003 | (0.008) | [-0.013, 0.019] |
| Parental leave reform 2007 (Ref.: 2006) | 0.013 | (0.012) | [-0.011, 0.038] | 0.000 | (0.007) | [-0.013, 0.014] |
| Unemployment rate | -0.002 | (0.001) | [-0.004, 0.001] | 0.002* | (0.001) | [0.000, 0.003] |
| Female employment rate | -0.001 | (0.001) | [-0.002, 0.001] | 0.000 | (0.000) | [-0.001, 0.001] |
| Marriage rate | 0.004+ | (0.002) | [-0.000, 0.007] | 0.000 | (0.001) | [-0.002, 0.002] |
| | | | | | | |
| Events | 139 | | | 27 | | |
| Observations | 4013 | | | 3898 | | |
| AIC | 1169.94 | | | 316.42 | | |
| BIC | 1333.67 | | | 479.39 | | |
| Log Likelihood | -558.97 | | | -132.21 | | |

Note: + p < 0.10, * p < 0.05, ** p < 0.01, robust standard errors in parentheses.
Source: SOEP v31 linked with regional data on the county-level (2006–2014).

# 4 Beeinflussen berufstypische Arbeitszeitmerkmale die Unterbrechungsdauer von Frauen? Eine längsschnittliche Analyse der Bedeutung beruflicher Merkmale für die Berufsrückkehr von Müttern in Deutschland

## 1 Zusammenfassung

Der Beitrag geht der Frage nach, ob berufstypische Arbeitszeitmerkmale die Erwerbsunterbrechungsdauer von Frauen nach der Familiengründung beeinflussen und welche Bedeutung berufstypische Arbeitszeitmerkmale für Frauen mit unterschiedlichem Bildungsniveau haben. Dazu wurden die Längsschnittdaten der Erwachsenenkohorte des Nationalen Bildungspanels über ein Daten-Linkage mit aggregierten Berufsdaten aus dem Mikrozensus angereichert. Die Ergebnisse der empirischen Analysen zeigen, dass sich berufstypische Arbeitszeiten neben Individualmerkmalen signifikant auf die Berufsrückkehr von Müttern auswirken. Für hochqualifizierte Frauen erwiesen sich lediglich die für einen Beruf typischen Überstunden als einflussreich. Dieses Ergebnis deutet darauf hin, dass die Rückkehr von Akademikerinnen aufgrund von höheren Opportunitätskosten und womöglich auch einer höhere Erwerbsneigung durch die arbeitszeitlichen Gegebenheiten im Austrittberuf kaum tangiert ist. Für mittel- und insbesondere geringqualifizierte Frauen sind jedoch andere Faktoren, nämlich die Arbeitszeitlänge, die Verbreitung von

Heimarbeit und – für beruflich nicht qualifizierte Frauen – auch die Verbreitung von Nacht- und Wochenendarbeit relevant. Insgesamt legen unsere Ergebnisse nahe, dass berufstypische Arbeitszeiten insbesondere für die Unterbrechungsdauer von geringgebildeten Müttern eine bedeutende Rolle spielt.

Schlüsselwörter: Arbeitszeiten; Berufe; Berufsmerkmale; Ereignisdatenanalyse; Erwerbsunterbrechung; Frauenerwerbstätigkeit; NEPS; Wiedereinstieg

# 2 Einleitung

Die Vereinbarkeit von Familie und Beruf ist seit geraumer Zeit ein Thema von besonderer Aktualität in der familienpolitischen Debatte in Deutschland. Die Schwierigkeiten und Herausforderungen, denen Frauen mit Kindern ausgesetzt sind, stellen offensichtlich einen brisanten und politisch relevanten Diskussionsgegenstand dar. In einer aktuellen Umfrage geben 74% der Mütter und Väter an, dass die Verbesserung der Vereinbarkeit von Familie und Beruf ein wichtiges Ziel der Familienpolitik sein müsse (Institut für Demoskopie, 2013). Internationale Studien zeigen: Im Vergleich zu anderen Ländern nehmen Mütter in Deutschland den Konflikt zwischen Familie und Beruf als besonders gravierend wahr (Stier et al., 2012).

Es überrascht deshalb nicht, dass sich die soziologische Forschung in Deutschland in den vergangenen Jahren intensiv mit der Frage auseinandergesetzt hat, welche konkreten Faktoren die Erwerbsunterbrechungsdauer von Frauen nach einer Familienphase beeinflussen und begünstigen (z.B. Drasch, 2013; Frodermann et al., 2013; Grunow et al., 2011; Ziefle und Gangl, 2014). Unbestritten haben diese Forschungsbeiträge wichtige Erkenntnisse zur Erwerbsrückkehr nach der Familiengründung geliefert. Auffällig ist jedoch, dass der Fokus in der deutschen Forschung bisher überwiegend auf mikro- und makrostrukturellen Faktoren lag, d.h. auf dem Einfluss individueller Merkmale sowie dem Einfluss familienpolitischer Regelungen.

Für Deutschland bislang weitgehend unerforscht ist dagegen die Frage, ob und inwiefern berufstypische Merkmale die Dauer der Erwerbsunterbrechung von Frauen nach der Familiengründung beeinflussen. Dass aber nicht nur individuelle und institutionelle Faktoren, sondern auch berufstypische Faktoren die Unterbrechungsdauer von Müttern beeinflussen, erscheint durchaus plausibel. Relevant für die Rückkehr von Frauen in die Erwerbstätigkeit sind zudem die unterschiedlichen Rahmenbedingungen bestimmter Berufe. Insbesondere vor dem Hintergrund der hohen berufsfachlichen Orientierung des deutschen Arbeitsmarktes liegt es nahe, dass der Beruf eine stark strukturierende Wirkung auf den gesamten Lebensverlauf – und damit auch auf die Vereinbarkeit von Familie und die Dauer der Erwerbsunterbrechung – hat (Konietzka, 1999).

Das Ziel des vorliegenden Kapitels besteht darin, an die wenigen für diesen Bereich in Deutschland bisher existierenden Forschungsarbeiten anzuknüpfen und zu klären, ob und inwieweit sich berufliche Merkmale – nämlich die für einen Beruf typischen Arbeitszeiten – darauf auswirken, wie lange Frauen in Deutschland nach der Geburt eines Kindes benötigen, um in ihren ursprünglichen Beruf zurückzukehren. Dazu werden wir neu verfügbare längsschnittliche Individualdaten[1] des Nationalen Bildungspanels mit aggregierten Berufsdaten des Mikrozensus verlinken. Ein besonderes Augenmerk der Analyse liegt auch darauf, ob sich der Einfluss berufstypischer Arbeitszeiten für Frauen nach ihrem Bildungsniveau unterscheidet. Im Rahmen dieses Kapitels werden dabei die Einflüsse verschiedener berufstypischer Arbeitszeitmerkmale, wie die Wochenarbeitszeit, die arbeitszeitliche Flexibilität, die Möglichkeit, Arbeitszeit von zu Hause zu verrichten (Heimarbeit), die Überstunden, die Nachtarbeit sowie die Wochenendarbeit analysiert. Obwohl auch weitere berufstypische Merkmale[2] die Berufsrückkehr von Frauen beeinflussen können, konzentrieren wir uns bewusst auf die Analyse berufstypischer Arbeitszeitmerkmale, da diese im Zentrum sowohl des wissenschaftlichen als auch des politischen und gesellschaftlichen Diskurses zur Vereinbarkeit von Familie und Beruf stehen (BMfFSFJ, 2012; Krüger et al., 1989; Stuth et al., 2009; Stuth und Hennig, 2014).

Der vorliegende Beitrag ist wie folgt aufgebaut: Zunächst stellen wir im zweiten Teil den Forschungsstand dar und arbeiten unser Forschungsinteresse heraus. Anschließend werden im dritten Teil der theoretische Hintergrund und die unsere Analysen leitenden Hypothesen präsentiert. Im vierten Teil stellen wir die Daten, das methodische Vorgehen sowie die Variablen und Operationalisierungen vor. Schließlich stellen wir im fünften Teil die Ergebnisse unserer längsschnittlichen Analysen zum Einfluss berufstypischer Arbeitszeiten auf die Unterbrechungsdauer und die Berufsrückkehr von Frauen vor. Abschließend werden die Ergebnisse zusammengefasst und diskutiert.

## 3 Forschungsstand und Forschungsinteresse

In Deutschland hat sich die soziologische Forschung bisher vor allem mit der Frage auseinandergesetzt, inwieweit individuelle und institutionelle Faktoren die Erwerbsunterbrechungsdauer von Frauen beeinflussen. Eine Vielzahl empirischer Arbeiten konnte

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[1]Diese Arbeit nutzt Daten des Nationalen Bildungspanels (NEPS) Startkohorte 6 (Erwachsene), doi:10.5157/NEPS:SC6:3.0.1. Die Daten des NEPS wurden von 2008 bis 2013 als Teil des Rahmenprogramms zur Förderung der empirischen Bildungsforschung erhoben, welches vom Bundesministerium für Bildung und Forschung (BMBF) finanziert wurde. Seit 2014 wird NEPS vom Leibniz-Institut für Bildungsverläufe e.V. (LIfBi) an der Otto-Friedrich-Universität Bamberg in Kooperation mit einem deutschlandweiten Netzwerk weitergeführt.

[2]Wie z.B. Aufstiegsmöglichkeiten oder die Häufigkeit von befristeten Arbeitsverträgen in einem Beruf.

dabei zeigen, dass sowohl individuelle Faktoren, wie z.B. das Bildungsniveau von Frauen (Bredtmann et al., 2013; Drasch, 2013; Grunow et al., 2011), die Zahl der Kinder (Drasch, 2011; Grunow und Aisenbrey, 2011; Ziefle, 2009), das Haushaltseinkommen (Weber, 2004), die Berufserfahrung (Ziefle, 2009) als auch institutionelle Faktoren, wie gesetzliche Regelungen (Ziefle und Gangl, 2014; Schönberg und Ludsteck, 2014; Falk und Schaeper, 2001) und die Verfügbarkeit von Kinderbetreuungsplätzen (Grunow und Müller, 2012) die Erwerbsunterbrechung und die Berufsrückkehr von Frauen in Deutschland systematisch prägen. Ebenso ist gut dokumentiert, dass sich diesbezüglich – trotz einer schrittweisen Annäherung – deutliche Unterschiede zwischen den neuen und den alten Bundesländern zeigen (Ziefle und Gangl, 2014; Drasch 2011; Falk und Schaeper, 2001).

Die Frage, inwieweit sich berufstypische Arbeitszeitmerkmale auf die Unterbrechungsdauer von Frauen auswirken, wurde von der deutschen Forschung dagegen bisher eher unzureichend behandelt. Auch in anderen Ländern fand dieses Thema bisher vergleichsweise wenig Aufmerksamkeit, von einigen US-amerikanischen Studien abgesehen. So konnten Desai und Waite (1991) mit einem ereignisanalytischen Design zeigen, dass berufliche Kontextfaktoren einen wichtigen Einfluss auf die Rückkehrbereitschaft von Müttern ausüben. Als besonders relevant erwies sich die Möglichkeit, die Arbeitszeit zu reduzieren. Glass und Riley (1998) zeigten, dass flexible Arbeitszeiten, die Möglichkeit, die Arbeit auch von zu Hause zu erledigen und das Verständnis des Vorgesetzten für familiäre Verpflichtungen ebenfalls einen positiven Einfluss auf die Bleibewahrscheinlichkeit von Müttern beim bisherigen Arbeitgeber haben und die Wahrscheinlichkeit eines Arbeitsplatzwechsels deutlich reduzieren. Auch neuere Forschungsergebnisse aus dem Bereich Work-Life-Balance verweisen auf die Wichtigkeit berufstypischer Arbeitszeitmerkmale für die Wahrnehmung der Vereinbarkeit von Familie und Beruf. Insbesondere Überstunden und sehr lange Arbeitszeiten erweisen sich als äußerst hinderliche Faktoren (Stier et al., 2012; van der Lippe et al., 2006; Maume und Houston, 2001; Smith Major et al., 2002).

Lediglich die Studien von Busch (2013), Krüger et al. (1989), Stuth et al. (2009) sowie Stuth und Hennig (2014) widmen sich für Deutschland dieser Thematik und setzen sich mit der Fragestellung auseinander, wie berufliche Merkmale den weiblichen Erwerbsverlauf beeinflussen können. Krüger et al. (1989) untersuchten Ende der 1950er Jahre für die fünf häufigsten Ausbildungsberufe den Einfluss auf das Erwerbsverhalten von Frauen. Sie konnten in einer Lebenslaufperspektive zeigen, dass Frauen häufiger in Berufe mit der Möglichkeit zur Teilzeitbeschäftigung und zu flexibleren Arbeitszeiten zurückkehren. Eine umfangreichere Berufsanalyse für Deutschland bieten die Studien von Stuth et al. (2009) und Stuth und Hennig (2014). In beiden Studien wurde mit Mikrozensusdaten auf aggregierter Berufsebene der Einfluss beruflicher Merkmale auf die Erwerbsunterbrechungsdauer von Frauen untersucht. So zeigen Stuth et al. (2009), dass Berufe mit

hohen Wochenarbeitszeiten im Schnitt zu einer Verlängerung familiär bedingter Unterbrechungen führen und Berufe mit flexibleren Arbeitszeitmodellen im Schnitt die Rückkehr von Frauen ins Arbeitsleben beschleunigen. Zudem zeigen sie auf: Frauen aus Berufen, für die Wochenendarbeit typisch ist, unterbrechen im Schnitt ihre Erwerbstätigkeit kürzer. Die Autoren begründen dieses Ergebnis damit, dass Wochenendarbeit die Planungsautonomie von Frauen erhöhen kann, da sich am Wochenende die Betreuung von Kindern durch ansonsten erwerbstätige Familienmitglieder besser organisieren lässt. In der Untersuchung von Stuth und Hennig (2014) wurde ebenfalls dokumentiert, wie sich unterschiedliche Berufe auf die Dauer der Erwerbsunterbrechung von Frauen auswirken können. Die Studie geht jedoch nicht darauf ein, inwieweit berufstypische Arbeitszeitmerkmale die Unterbrechungsdauer von Frauen beeinflussen, sondern betrachtet vorrangig, welche Bedeutung die berufliche Schließung, die Signalfunktion von Berufen und die Einbindung von Berufen in strukturierte und unstrukturierte Teilarbeitsmärkte für die Erwerbsunterbrechungsdauer besitzen. Auch wenn in der Arbeit von Busch (2013) das Thema der geschlechtsspezifischen Arbeitsmarktsegregation in den Mittelpunkt gestellt wurde, verweist die Autorin darauf, dass Frauen lange Arbeitszeiten als belastend für die Vereinbarkeit wahrnehmen. Zudem beeinflusst dieser Faktor die Bleibewahrscheinlichkeit von Frauen in einem Beruf entscheidend.

Unbestritten haben diese Studien wichtige Hinweise dahingehend geliefert, auf welche Weise auch in Deutschland berufstypische Merkmale die Erwerbsbiographie von Frauen beeinflussen. Nichtsdestotrotz sind in der bisherigen Forschung noch Defizite erkennbar. Die wenigen existierenden Beiträge für Deutschland konzentrieren sich auf eine nur kleine Gruppe Berufe älterer Kohorten (Krüger et al., 1989) und können deshalb ein nur eingeschränktes Bild zeichnen. So beziehen sie nur wenige Untersuchungsjahre ein, beruhen auf Querschnittdaten und betrachten lediglich den Einfluss *aggregierter* Berufsmerkmale – ohne gleichzeitig für individuelle Merkmale zu kontrollieren (Stuth et al., 2009) – und können deshalb die Dynamik weiblicher Erwerbsverläufe auf Individualebene nicht angemessen modellieren. Die Studie von Busch (2013) nutzt zwar ein längsschnittliches Individual-Forschungsdesign, im Mittelpunkt ihrer Analyse steht jedoch das Thema Geschlechtersegregation und sie geht nicht der Frage nach, wie berufstypische Arbeitszeiten die Unterbrechungsdauer und Berufsrückkehr von Familie und Beruf nach der Geburt eines Kindes beeinflussen. Somit bleibt ungeklärt, inwieweit die Berufsrückkehr von Frauen von berufsspezifischen Arbeitszeitmerkmalen geleitet wird.

Ziel unserer Analysen ist es deshalb, *erstens* ein breiteres und systematischeres Verständnis zum Einfluss berufstypischer Arbeitszeitmerkmale auf die Unterbrechungsdauer und Berufsrückkehr von Frauen zu schaffen, wobei *zweitens* neben aggregierten Berufsmerkmalen für individuelle und weitere Merkmale kontrolliert wird. Dazu wird *drittens*

explizit ein längsschnittliches ereignisanalytisches Forschungsdesign angewandt, um der Dynamik weiblicher Erwerbsunterbrechungsmuster auf Individualebene methodisch gerecht zu werden. Ein weiterer Beitrag unserer Analyse besteht *viertens* darin, explizit den Einfluss *verschiedener* berufstypischer Arbeitszeitmerkmale zu untersuchen: den Einfluss der Wochenarbeitszeit, den Einfluss der Flexibilität der Arbeitszeitgestaltung, der Heimarbeit und der Bedeutung von Überstunden, Nachtarbeit sowie Wochenendarbeit. Nur so kann ein differenziertes Bild zur Wirkung von beruflichen Arbeitszeitmerkmalen gezeichnet werden. *Fünftens* werden wir den Einfluss berufstypischer Arbeitszeitmerkmale getrennt für Frauen mit unterschiedlichem Humankapital (operationalisiert über deren Bildungsniveau) untersuchen, da eine unserer theoriegeleiteten Annahmen (siehe nachfolgender Abschnitt) darin besteht, dass diese die Erwerbsunterbrechungsdauer für Frauen nicht gleichermaßen prägen. Dieser Aspekt wurde von existierenden Studien bisher vernachlässigt.

# 4 Theoretische Überlegungen und Hypothesen

Ausgangspunkt unserer und vergleichbarer Analysen ist die Vorstellung, dass neben individuellen und institutionellen Faktoren auch die für einen Beruf typischen Arbeitszeitmerkmale die Vereinbarkeit von Familie und Beruf und somit die Erwerbsunterbrechungsdauer von Müttern beeinflussen. Bei der Betrachtung der Unterbrechungsdauer spielen die Überlegungen des Institutionenansatzes der Geschlechterforschung und die der ökonomischen Theorie des Arbeitsangebotes eine zentrale Rolle. Diese werden im Folgenden erläutert und unsere Hypothesen daraus abgeleitet. Anschließend betrachten wir den Einfluss der berufstypischen Arbeitszeitmerkmale differenziert für verschiedene Bildungsgruppen.

Auf Basis des Institutionenansatzes der Geschlechterforschung (Krüger, 2003; Born und Krüger, 2001; Krüger und Levy, 2000; Krüger, 1995) lässt sich folgern, dass die Unterbrechungsdauer von Müttern durch berufstypische Arbeitszeitmerkmale beeinflusst wird. Im ausgeprägten berufsspezifischen Ausbildungssystem in Deutschland stellen Berufe eine zentrale Strukturdimension des Arbeitsmarktes dar (Abraham et al., 2011) und reglementieren den Erwerbsverlauf von Individuen systematisch (Krüger, 2003).[3] Die Rückkehr einer Frau in den Beruf ist deshalb nicht ausschließlich eine „freie persönliche Entscheidung", sondern auch eng geknüpft an den ausgeübten Beruf und an die jeweiligen Berufsmerkmale, wozu sich auch berufstypische Arbeitszeitmerkmale zählen lassen (Krüger und Levy, 2001). Die arbeitszeitliche Vereinbarkeit eines Berufes mit

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[3]So ist beispielsweise die berufliche Mobilität am deutschen Arbeitsmarkt durch die enge Verknüpfung von Ausbildung und Beruf (Konietzka, 1999) eher gering (Allmendinger, 1989).

dem Familienalltag kann also ein zentraler, nicht-monetärer Vorteil sein, der es Frauen ermöglicht, schneller in die Erwerbstätigkeit zurückzukehren.

Zu ähnlichen Schlüssen kommt auch die ökonomische Theorie des Arbeitsangebotes, die beschreibt, wie und warum Individuen entscheiden, wie viel ihrer verfügbaren Zeit sie in den Arbeitsmarkt oder außerhalb des Arbeitsmarktes, wie z.B. in die Familienarbeit investieren (Blau et al., 2014; Kaufman und Hotchkiss, 2006). Familienfreundliche bzw. familienunfreundliche Arbeitszeiten können in diesem Modell Faktoren sein, die es für Frauen einfacher oder schwerer machen, Familienarbeit und Erwerbsarbeit in Einklang zu bringen, und sie wirken sich somit direkt auf die Länge der Erwerbsunterbrechung von Frauen aus. Wie sich die einzelnen berufstypischen Arbeitszeitmerkmale konkret auf die Erwerbsunterbrechungsdauer auswirken wird im Folgenden genauer betrachtet.

In der wissenschaftlichen Literatur gelten kürzere Arbeitszeiten, Teilzeitstellen sowie Flexibilität bei der Aufteilung und Einteilung der Arbeitszeit gemeinhin als familienfreundlich (Krüger et al., 1989; Stuth et al., 2009). So zeigen z.B. Drobnic et al. (1999), Kreyenfeld und Geisler (2006) und Glass und Riley (1998), dass Frauen nach der Geburt eines Kindes ihren Erwerbsumfang häufig reduzieren und Tätigkeiten bevorzugen, in denen sich ihre Arbeitszeit einfacher mit der Familie vereinbaren lässt. Kürzere Arbeitszeiten und Flexibilität bei der Arbeitszeiteinteilung stellen somit, insbesondere angesichts des in Deutschland in den meisten Bundesländern traditionell eher geringen öffentlichen Angebots an ganztägiger (Klein-)Kinderbetreuung (Ziefle, 2009; Kreyenfeld und Geisler, 2006), wichtige Faktoren für Frauen dar. Daraus folgt (H1a): *Je kürzer die Arbeitszeiten bzw. je flexibler die Arbeitszeitregelungen (auch bezüglich Heimarbeit) in einem Beruf, desto schneller kehren Mütter aus der Erwerbsunterbrechung in den Beruf zurück.*

Für die berufstypischen Überstunden erwarten wir einen nicht-linearen Zusammenhang. So lässt sich argumentieren, dass auch Überstunden – ähnlich wie bei langen Arbeitszeiten, unflexiblen Arbeitszeitregelungen sowie einer mangelnden Verbreitung von Heimarbeit –die Berufsrückkehr von Frauen verlangsamen, da durch sie die Vereinbarkeit von Familie und Beruf erschwert wird. Ein solches Ergebnis berichtet auch Cha (2013), wenngleich dieses die USA betrifft und mit Blick auf die Wahrscheinlichkeit den ausgeübten Beruf zu verlassen. Busch (2013) argumentiert jedoch, dass Überstunden nicht *per se* hinderlich für die Berufstätigkeit einer Frau sein müssen, da Berufe, für die besonders viele Überstunden typisch sind, gegebenenfalls auch spezifische Anreize bieten, beispielsweise in Form von aussichtsreicheren Aufstiegsmöglichkeiten. Anreize dieser Art würden eine schnelle Rückkehr von Frauen in den Beruf unterstützen. Zusammengenommen würde dies bedeuten, dass Überstunden im mittleren Bereich am hinderlichsten für eine schnelle Rückkehr von Frauen in den Beruf sind. Mit Blick auf die für einen Beruf typischen Überstunden vermuten wir deshalb einen u-förmigen Zusammenhang (H1b):

*Zunächst soll die Berufsrückkehr von Müttern bei steigenden Überstunden verlangsamt werden. Wenn die Überstunden in einem Beruf jedoch ein gewisses Niveau überschreiten und besonders viele Überstunden anfallen, dann ist, wie bei wenigen Überstunden, eine schnelle Rückkehr von Müttern in den Beruf zu erwarten.*

Der Einfluss von Wochenend- und Nachtarbeit ist empirisch noch nicht eindeutig geklärt. Während Stuth et al. (2009) von einem positiven Einfluss atypischer Arbeitszeiten, wie Wochenend- und Nachtarbeit, auf die Unterbrechungsdauer ausgehen, halten van der Lippe et al. (2006) fest, dass atypische Arbeitszeiten von Frauen als negativ für die Vereinbarkeit von Familie und Beruf wahrgenommen werden. Auch Jurczyk (1993) argumentiert, der Einfluss atypischer Arbeitszeiten sei unklar. Einerseits können diese die Erwerbstätigkeit von Müttern unterstützen, da sie eine gewisse Flexibilität bei der Arbeitszeitgestaltung zulassen, andererseits lassen sie sich nur schwer mit den Öffnungszeiten von Kinderbetreuungseinrichtungen und Schulen vereinbaren. Da der Einfluss atypischer Arbeitszeiten somit a priori nicht eindeutig ist, verzichten wir auf die Formulierung einer entsprechenden Hypothese und untersuchen die Richtung des Effektes stattdessen empirisch.

In unserer Argumentation blieb bisher der Aspekt unbeachtet, dass sich Frauen hinsichtlich ihres Humankapitals und hinsichtlich ihrer Bildungsinvestitionen unterscheiden. Dabei liegt die Vermutung nahe: Berufstypische Arbeitszeitmerkmale wirken sich nicht gleichermaßen auf *alle* Frauen aus, sondern *variieren* aufgrund unterschiedlicher *individueller* Opportunitätskosten und Kosten-Nutzen-Kalkulationen nach dem jeweiligen Bildungsgrad der Frau. Es ist hinlänglich untersucht, dass die Berufsrückkehr von Frauen stark von ihren Bildungsinvestitionen beeinflusst wird. Eine Vielzahl empirischer Studien (siehe z.B. Grunow et al., 2011; Drasch, 2013; Bredtmann et al., 2009) haben gezeigt, dass Frauen mit einem höheren Bildungsniveau schneller in den Arbeitsmarkt zurückkehren. Erklärt wird dies im Rahmen der Humankapitaltheorie (Becker, 1993; Mincer, 1974; Mincer und Ofek, 1982) wie folgt: Je höher die individuellen Bildungsinvestitionen, desto höher fallen die Opportunitätskosten für eine Erwerbsunterbrechung aus und desto schneller erfolgt die Rückkehr in den Beruf. So zeigen beispielsweise Kreyenfeld et al. (2007) und Frodermann et al. (2013), dass hochqualifizierte Frauen am ehesten in der Lage sind, trotz der ungünstigen familienpolitischen Rahmenbedingungen für die Vereinbarkeit in der BRD, in eine Vollzeitbeschäftigung zurückzukehren. Im Vergleich dazu kehren geringer qualifizierte Frauen langsamer (Grunow et al., 2011; Drasch, 2013) und häufiger mit einem geringeren Stundenumfang auf den Arbeitsmarkt zurück (Kreyenfeld et al., 2007; Frodermann et al., 2013). Eine langsamere Rückkehr von Frauen mit einer geringeren Qualifikation lässt sich nicht nur durch geringere Opportunitätskosten einer familienbedingten Erwerbsunterbrechung erklären, sondern auch durch geringere

Einkommensausfälle und durch eine gleichzeitig langsamere Entwertung ihres weniger spezifischen Humankapitals (Mincer und Ofek, 1982). Deshalb erwarten wir, dass familienfreundliche Arbeitszeitmerkmale insbesondere für geringer qualifizierte Frauen von größerer Bedeutung sind, schneller in den Beruf zurückzukehren. Besser qualifizierte Frauen kehren aufgrund der höheren Opportunitätskosten ohnehin schneller zurück und bleiben von den beruflichen Arbeitszeiten in ihrem Austrittsberuf, so die Vermutung, weitestgehend unbeeinflusst. Auf Basis dieser Überlegungen leiten wir deshalb die folgende Hypothese (H2) ab: *Insbesondere für geringer qualifizierte Frauen besitzen familienfreundliche Arbeitszeiten einen größeren Einfluss und führen zu einer schnelleren Rückkehr in den Beruf nach Geburt eines Kindes, während diese für besser ausgebildete Frauen einen eher geringen Einfluss besitzen.*

# 5 Forschungsdesign

## 5.1 Daten und methodisches Vorgehen

Datengrundlage der nachfolgenden längsschnittlichen Individualanalysen ist die Erwachsenenkohorte des Nationalen Bildungspanels (Blossfeld et al., 2011). Neben der regelmäßigen Befragung im Rahmen des Panels wurde diese Kohorte im Rahmen des Erstinterviews ausführlich retroperspektiv befragt. Dadurch lässt sich die Erwerbsgeschichte der befragten Personen monatsgenau rekonstruieren. Wir beziehen in unsere Analysen Frauen ein, die zwischen 1992 und 2007[4] ihr erstes Kind bekommen haben. Nur so ist es möglich, Erwerbsunterbrechungen unter konstanten familienpolitischen Rahmenbedingungen zu modellieren, da für diesen Zeitraum die Elternzeit gesetzlich auf drei Jahre bei gleichzeitiger Beschäftigungsgarantie festgelegt war und auch die Transferzahlungen vergleichbar waren (BMfFSFJ, 2004).[5] Unsere Stichprobe umfasst Frauen, die zwischen 1955 und 1985

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[4]2007 trat das Bundeselterngeldgesetz in Kraft, das neue Rahmenbedingungen und für Mütter deutliche Anreize einer kürzeren Erwerbsunterbrechungsdauer setzte. Deshalb werden Geburten nach 2007 nicht berücksichtigt.

[5]Zwischen 1992 und 2000 wurde 24 Monate lang ein Erziehungsgeld von 600 DM gezahlt. 2001 wurde das Erziehungsgeld modifiziert, da eine zweite Möglichkeit hinzukam: Eltern konnten sich zwischen einem 24-monatigen Regelbetrag von €300 oder einem 12-monatigen Elterngeld von monatlich bis zu €450 entscheiden. Hinzu kam, dass Elternzeitnehmerinnen die Möglichkeit einer Teilzeitbeschäftigung von wöchentlich bis zu 30 Stunden eingeräumt wurde. Für die Jahre zuvor durfte die Erwerbstätigkeit eine Grenze von 19 Wochenstunden nicht überschreiten (Ziefle, 2009). Empirische Befunde zeigen, dass westdeutsche Mütter ihr Rückkehrverhalten nicht an die Gesetzesänderung von 2001 angepasst haben. Für ostdeutsche Mütter war eine höhere Rückkehrbereitschaft nach 12 Monaten zu beobachten (Ziefle und Gangl, 2014). Um diese Änderung abzubilden, wird eine Kontrollvariable in die Modelle aufgenommen.

geboren wurden, die deutsche Staatsbürgerschaft[6] besitzen und vor der Erstgeburt einer abhängigen Beschäftigung[7] [8] nachgingen. D.h. Selbstständige, Arbeitslose und Frauen in Aus- und Weiterbildung werden nicht einbezogen.

Um den Einfluss berufstypischer Arbeitszeitmerkmale auf die Vereinbarkeit von Familie und Beruf zu untersuchen, nutzen wir ereignisanalytische Analyseverfahren (Blossfeld et al., 2007; Singer und Willett, 2003). Konkret analysieren wir die Dauer bis zur Berufsrückkehr in Monaten nach der Geburt eines Kindes. In unserer Analyse nutzen wir das diskrete periodenspezifisch-konstante Modell. Die Hazardfunktion ($h(t_{ij}) = Pr[T_i = j | T_i \geq j]$) wird dabei als zeitdiskretes Übergangsratenmodell geschätzt. Da für die festgelegten Prozessintervalle eine konstante Ratenfunktion angenommen wird, gleicht dieses Modell dem periodenspezifischen Exponentialmodell (Windzio 2013). Der Hazard wird dabei wie folgt berechnet:

$$\text{logit } h(t_{ij}) = \alpha_j t_j + \beta_1(\text{berufstypische Arbeitszeiten}) + \beta_2(\text{Kontrollvariablen}) + \epsilon_{it}$$

Die Logit-Hazardraten $h(t_{ij})$ für die Berufsrückkehr werden aus den Baseline-Hazards, welche durch die periodenspezifischen Konstanten[9] $\alpha_j$ abgebildet werden, und durch die Prädiktoren vorhergesagt.[10] Diese Modellspezifizierung erlaubt die Schätzung der diskreten Hazardfunktion durch ein logistisches Regressionsmodell mittels des Maximum-Likelihood Schätzers (Allison, 1982). In allen Regressionsmodellen berichten wir robuste Standardfehler.

## 5.2 Definition der Episode

Die Episode, die im Fokus unserer Analysen steht, ist die Dauer der Erwerbsunterbrechung von Frauen nach der Geburt ihres Kindes. Eine Erwerbsunterbrechung kann dabei entweder durch eine Rückkehr in den Austrittsberuf oder durch einen Eintritt in einen

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[6]Um kulturelle Einflüsse beim Fertilitäts- und Erwerbsverhalten ausschließen zu können (Bujard et al., 2012), werden Personen mit Migrationshintergrund nicht berücksichtigt.

[7]Die Erwerbstätigkeit wird dabei 10 Monate vor der Kindesgeburt bestimmt um zu verhindern, dass Frauen mit schwierigen Schwangerschaften, die den Arbeitsmarkt früher verlassen, ausgeschlossen werden.

[8]81 Prozent aller Frauen in unserem Sample, die zwischen 1992 und 2007 ihr erstes Kind bekommen, gingen einer abhängigen Erwerbstätigkeit nach und dies mehrheitlich auf Vollzeitbasis.

[9]Die periodenspezifischen Konstanten werden anhand der gesetzlichen Elternzeitregelungen ausgewählt und unterteilen die Unterbrechungsdauer in vier Intervalle. Die ersten drei Zeitintervalle bilden den Zeitraum der Elternzeit bis zum Auslaufen der Arbeitsplatzgarantie ab; das vierte Zeitintervall bildet die Übergangsrate über den 36. Monat und die gesetzliche Elternzeit sowie Arbeitsplatzgarantie hinausgehend ab.

[10]Zusätzliche Analysen haben gezeigt, dass eine andere Spezifikation der Übergangsrate (wie z.B. ein flexibles Cox-Modell) vergleichbare Ergebnisse liefert.

neuen Beruf beendet werden. Erwerbsunterbrechungen, die durch einen Wiedereinstieg in die Erwerbstätigkeit in einen neuen Beruf beendet werden, wurden für die Analyse rechtszensiert.

Die Erwerbsunterbrechung beginnt mit dem gesetzlichen Mutterschutz, also sechs Wochen vor der Geburt des Kindes.[11] Eine Erwerbsunterbrechung besteht auch dann, wenn Frauen während der Familienphase angeben, sich in Aus- oder Weiterbildung zu befinden oder arbeitslos zu sein. Auch Befragungslücken wurden aufgefüllt. Findet während der Erwerbsunterbrechung eine weitere Geburt statt, wird die Erwerbsunterbrechung rechtszensiert und eine neue Unterbrechungsepisode beginnt.[12]

Basierend auf diesen Definitionen umfasst unser Analysesample 1.431 Unterbrechungsepisoden (mit 43.970 Personenmonaten). Diese Episoden verteilen sich auf 1.048 Frauen. 666 dieser Episoden enden mit einem Ereignis (also einer Berufsrückkehr); 765 Episoden sind rechtszensiert, davon 383 durch eine weitere Geburt und 191 durch einen Berufswechsel. Die verbleibenden 191 Episoden sind rechtszensiert, da bis zur letzten Befragung kein Ereignis eingetreten ist.[13]

## 5.3  Operationalisierung der unabhängigen Variablen

Um den Einfluss berufstypischer Arbeitszeitmerkmale auf die Berufsrückkehr von Frauen untersuchen zu können, musste ein Linkage der reichen Individualdaten des NEPS mit repräsentativen Daten zu Berufen erfolgen. Dafür haben wir auf die Mikrozensusdaten

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[11]Da die NEPS-Daten auf Monatsbasis erhoben wurden, wurde der Mutterschutz auf zwei Monate vor Geburt des Kindes hochgesetzt. Einige Mütter geben an, während des gesetzlichen Mutterschutzes gearbeitet zu haben. Um auch diesen Umstand zu berücksichtigen, wurde eine Erwerbsunterbrechung anhand der gesetzlichen Mutterschutzregelungen rekonstruiert. Somit haben alle Frauen des Samples, die ein Kind geboren haben, eine Unterbrechungsdauer von mindestens vier Monaten. Da für bestimmte Berufe (z.B. Ärztin) die Mutterschutzfristen bereits früher greifen, wurde für Frauen in diesen Berufen die Unterbrechungsdauer ebenfalls angepasst.

[12]375 Frauen (37%) bekommen während der ersten Erwerbsunterbrechung ein weiteres Kind. Um diese Mütter nicht auszuschließen, wurden sie in Hinblick auf mehrere Faktoren mit den Müttern verglichen, die nach der ersten Geburt in die Erwerbstätigkeit zurückkehren. Dabei hat sich gezeigt, dass beide Mütter-Populationen – sowohl die mit nur einer Geburt als auch die mit einer weiteren Geburt – einander sehr gleichen, z.B. in Hinblick auf Bildung, Arbeitsmarkterfahrung und Berufsprestige. Da sich keine sinnvollen Annahmen treffen lassen, ob sich Faktoren wie die Erwerbsmotivation auch im Spacing von Geburten niederschlagen (Kreyenfeldn 2002), werden beide Populationen ins Modell aufgenommen. Insbesondere da oftmals ein Ausschluss aller weiteren Unterbrechungsepisoden von Frauen, die während der ersten Unterbrechung ein weiteres Kind bekommen, nicht dem tatsächlichen Fertilitätsverhalten entspricht. Eine Rechtszensierung weiterer Geburten wurde bereits von Drasch (2011) und Bredtmann et al. (2013) angewendet. Eine solche Rechtszensierung wurde auch in der vorliegenden Analyse vorgenommen, wobei zusätzliche Analysen gezeigt haben, dass die Ergebnisse robust sind und es zu keiner großen Veränderung kommt.

[13]Um die Robustheit der Ergebnisse sicherzustellen wurden Spells, die noch nicht durch einen Übergang in den Arbeitsmarkt beendet wurden, zu verschiedenen Zeitpunkten rechtszensiert. Unterschiedliche Grenzwerte führen nicht zu einer Veränderung der Ergebnisse.

aus den Jahren 1993 bis 2006 zurückgegriffen. Der Mikrozensus ist eine repräsentative Haushaltsbefragung, die u.a. umfangreiche Informationen zu den Arbeitsbedingungen beinhaltet (Destatis, 2013).

Für die Variablenauswahl der berufstypischen Arbeitszeiten haben wir auf den bisherigen Forschungsstand zu Arbeitszeitmerkmalen (Busch, 2013; Krüger et al., 1989; Stuth et al., 2009) und zur Work-Life-Balance (Stier et al., 2012; van der Lippe et al., 2006; Maume und Houston, 2001; Smith Major et al., 2002) zurückgegriffen. Die Operationalisierung erfolgt in Anlehnung an die existierende methodische Umsetzung, wie z.B. bei Busch (2013) oder Stuth et al. (2009). Die Operationalisierung der nachfolgenden berufstypischen Arbeitszeitmerkmale erfolgt zeitvariabel auf Basis der Individualangaben aus den Mikrozensusdaten, die über die Berufe aggregiert wurden: (a) wöchentliche Arbeitszeit, (b) Flexibilität[14] (d.h. die Möglichkeit, die Arbeitszeit flexibel und an familiäre Belange anzupassen), (c) Heimarbeit, (d) wöchentliche Überstunden (e) Nachtarbeit und (f) Wochenendarbeit. Somit liegen für die Variable (a) und (d) durchschnittliche Wochenstunden und für die Variablen (b), (c), (e) und (f) Anteilswerte zwischen 0 und 1 vor, die abbilden, wie hoch der Anteil von Beschäftigten in einem Beruf mit einem bestimmten Arbeitszeitmerkmal ist. Die beruflichen Aggregatmerkmale wurden auf Basis des Dreistellers der Klassifikation der Berufe (KldB) von 1992 erstellt. Insgesamt sind die meisten Arbeitszeitmerkmale nicht sehr hoch miteinander korreliert (r=0,004 bis r=-0,43). Eine Ausnahme stellen jedoch Nachtarbeit und Wochenendarbeit dar, die den höchsten Korrelationswert von r=0,85 (p=0,00) aufweisen, weswegen Vorsicht bei der Interpretation dieser Variablen geboten ist.[15] Insgesamt liegen nach dem Daten-Linkage für 132 Berufe Informationen zu berufstypischen Arbeitszeitmerkmalen vor. In die ereignisanalytischen Modelle fließen diese einzelnen berufstypischen Arbeitszeitmerkmale als metrische Variablen ein und werden zur Anschaulichkeit in Dezilen bzw. in zehn Stunden pro Woche angegeben. Um unserer Hypothese H1b Rechnung zu tragen, fließt die Variable für Überstunden auch in quadrierter Form in die Analyse ein.

Eine der theoretisch abgeleiteten Annahmen unserer Untersuchung besteht darin, dass der Einfluss berufstypischer Arbeitszeiten abhängig ist vom Humankapital der Frauen (H2). Um Unterschiede im Humankapital der untersuchten Frauen zu operationalisieren, greifen wir auf das erreichte und im NEPS selbst berichtete berufliche Bildungsniveau der Mütter zurück und unterscheiden zwischen Frauen (a) mit Fachhochschul- oder Uni-

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[14]Da diese Frage nur in der Mikrozensuserhebung aus dem Jahr 2005 gestellt wurde, haben wir diese Variable über den Beobachtungszeitraum konstant gehalten.

[15]Eine ähnlich hohe Korrelation (r=-0,76, p=0,00) liegt auch zwischen dem Frauenanteil und der Wochenarbeitszeit in einem Beruf vor. Unsere Ergebnisse bleiben jedoch bei Hinzunahme oder Ausschluss des Frauenanteils sowie der Nacht- und Wochenendarbeit unverändert. Auch die berechneten VIF Werte von unter 5 deuten darauf hin, dass eine Multikollinearität eher unproblematisch ist. Lediglich Nacht- und Wochenendarbeit weisen einen VIF Wert von 5,05 bzw. 5,07 auf.

versitätsabschluss, (b) mit beruflicher Ausbildung und (c) ohne berufliche Ausbildung.[16]

Um den möglichen Einfluss der oben genannten berufsspezifischen Arbeitszeitmerkmale sauber identifizieren und von anderen möglichen Einflussfaktoren abgrenzen zu können, werden zusätzlich Kontrollvariablen in die multivariaten Analysen aufgenommen. Für die Auswahl geeigneter Kontrollvariablen haben wir auf bisher existierende Forschungsergebnisse zurückgegriffen (siehe Abschnitt 3). Diese Kontrollvariablen basieren in weiten Teilen auf den personenspezifischen Angaben der untersuchten Mütter in der NEPS-Befragung. Konkret handelt es sich um folgende Kontrollvariablen: Das (a) Alter der Frau bei der Erstgeburt und (b) die gewichtete Arbeitsmarkterfahrung[17] in Monaten vor der Geburt fließen ebenfalls in die Analysen ein, da beide Variablen einen Indikator für die Opportunitätskosten für eine Erwerbsunterbrechung darstellen (vgl. z.B. Ziefle, 2009). Da sich Erwerbsverläufe in Ost- und Westdeutschland immer noch stark unterscheiden (z.B. Ziefle und Gangl, 2014; Falk und Schaeper, 2001) und die Verfügbarkeit öffentlicher Kinderbetreuung in beiden Landesteilen sehr unterschiedlich ist (Grunow und Müller, 2012), wird in der Analyse (c) für die Herkunft aus Ost- oder Westdeutschland kontrolliert. Um dem möglichen Einfluss von Haushaltsmerkmalen gerecht zu werden, fließt (d) der Familienstand (zur Modellierung der Verfügbarkeit einer alternativen Einkommensquelle, vgl. Ziefle (2009)) sowie (e) die Anzahl der Geburten im Laufe der Unterbrechung ein, da bei mehreren Kindern im Haushalt der Betreuungsaufwand zunimmt. Zusätzlich werden folgende Merkmale der letzten ausgeübten Beschäftigung kontrolliert: (f) Beschäftigung im öffentlichen Dienst, da Beschäftigte im öffentlichen Dienst andere Arbeitsbedingungen vorfinden als Beschäftigte in der Privatwirtschaft sowie (g) Beschäftigung in einer Führungsposition und (h) das Berufsprestige gemessen anhand SIOPS-88, da diese Variablen zum einen einen Indikator für die Karriereneigung der Frau und zum anderen einen Indikator für die Höhe des Verdienstausfalls darstellen.[18] Da die geschlechtsspezifische Segregation oftmals mit ungleichen Arbeitsmarktchancen und -bedingungen in Verbindung gebracht wird (Busch, 2013; Falk, 2005), wurde zusätzlich

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[16]Informationen zum zeitgenauen Einkommen liegen für die NEPS-Erwachsenenkohorte nicht vor, da diese Information retrospektiv nicht verlässlich zu erheben ist. Weiterführende Analysen, in welchen wir die Frauen nicht auf Basis ihres Bildungsniveaus unterschieden haben, sondern – unter Rückgriff auf die Daten des „OccPan 1976-2010"-Berufspanels des IAB – auf Basis des (zeitveränderlichen) berufstypischen durchschnittlichen Tageslohns in Terzile gruppiert haben, liefern vergleichbare Ergebnisse. Eine Unterscheidung auf Basis der *individuellen* Angaben zum Bildungsniveau erscheint uns konzeptionell und methodisch für die durchgeführten längsschnittlichen *Individual*analysen überzeugender als eine Gruppierung der Frauen auf Basis *aggregierter* Berufsinformationen zum Einkommen. Der durchschnittliche Tageslohn wird jedoch als zusätzliche Kontrollvariable in die Modelle aufgenommen.

[17]Es fließen nur Beschäftigungsmonate außerhalb einer Berufsausbildung ein. Die Gewichtung erfolgt nach einer Beschäftigung in Teil- und Vollzeitbeschäftigung.

[18]Mit den NEPS-Daten lässt sich das individuelle Einkommen leider nicht abbilden, da dies im Retrospektivdesign nicht erhoben wurde.

(i) der relative Anteil von Frauen zu Männern in einem Beruf auf Basis des Mikrozensus ermittelt und anschließend dem Analysesample zugespielt. Schließlich fließt (j) der durchschnittliche Tageslohn der Vollzeitbeschäftigten in einem Beruf in die Analysen ein, um neben dem Bildungsniveau den möglichen Nutzen einer Berufstätigkeit noch genauer zu erfassen. Diese Variable wurde auf Basis des OccPan-Berufspanels 1976-2010 gebildet. Auf eine Interpretation dieser Effekte wird jedoch verzichtet, da diese Variablen lediglich der Kontrolle dienen.

Tabelle 4.1 zeigt die Verteilung der unabhängigen Variablen für alle Frauen unseres Datensatzes. Zusätzlich ist für die typischen Arbeitszeitmerkmale die Häufigkeitsverteilung getrennt nach Bildungsniveau der Frauen dargestellt. Diese gruppenspezifische Darstellung macht deutlich, dass sich vor allem in puncto Heimarbeit sowie Wochenend- und Nachtarbeit Unterschiede zeigen: Heimarbeit ist in den Berufen, in denen hochqualifizierte Frauen vor der Geburt gearbeitet haben, deutlich verbreiteter; Wochenend- und Nachtarbeit sind dagegen vor allem in den Berufen geringqualifizierter Frauen üblich(er).

# 6 Ergebnisse

Im Fokus dieser Arbeit stehen folgende Fragen: Welchen Einfluss haben berufstypische Arbeitszeitmerkmale darauf, wie schnell Frauen nach der Geburt eines Kindes in ihren ursprünglichen Beruf zurückkehren? Sind diesbezüglich Unterschiede für verschiedene Bildungsgruppen erkennbar? In Tabelle 4.2 werden die Befunde unserer multivariaten ereignisanalytischen Modelle präsentiert. Modell 1 zeigt die Ergebnisse für alle Frauen unseres Samples (H1a und H1b), die Modelle 2 bis 4 zeigen die Ergebnisse für Frauen mit unterschiedlichem Ausbildungsniveau (H2). Um die Koeffizienten zwischen den einzelnen Modellen vergleichen zu können, berichten wir anstatt von logarithmierten Chancenverhältnissen durchschnittliche Marginaleffekte (Best und Wolf, 2012).

Zunächst ist festzuhalten, dass sich in den multivariaten Analysen in Tabelle 4.2 signifikante Ergebnisse für die verschiedenen berufstypischen Arbeitszeitmerkmale zeigen.[19] Das heißt: Neben individuellen Faktoren und auch bei Kontrolle zusätzlicher berufstypischer Faktoren (Berufseinkommen und Frauenanteil in einem Beruf) üben berufstypische Arbeitszeitmerkmale einen signifikanten Einfluss auf die Unterbrechungsdauer von Müttern in Deutschland aus.[20] Weiterführende Analysen zeigen, dass sich die Passung des Modells durch die Aufnahme von berufstypischen Arbeitszeitmerkmalen signifikant

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[19]Die Robustheit dieses Ergebnisses bleibt auch bestehen, wenn einzelne, häufige Berufe aus dem Modell herausgenommen werden. Die Signifikanz der Arbeitszeitmerkmale ist damit nicht auf einzelne wenige, aber häufig besetzte Berufe zurückzuführen.

[20]Die Ergebnisse bleiben unverändert, wenn die berufstypischen Arbeitszeitmerkmale schrittweise bzw. einzeln in das Modell einfließen.

Table 4.1: Verteilung der Variablen auf Personenbasis

| | Mittelwert | SD | Min | Max |
|---|---|---|---|---|
| **UNTERBRECHUNGSDAUER (in Monaten)** | | | | |
| **Gesamtsample** | 32,10 | 23,46 | 1,00 | 217,00 |
| Frauen mit (Fach-) Hochschulabschluss | 25,60 | 21,56 | 1,00 | 170,00 |
| Frauen mit Berufsausbildung | 32,01 | 21,70 | 1,00 | 197,00 |
| Frauen ohne Berufsausbildung | 35,24 | 33,19 | 1,00 | 217,00 |
| **TYPISCHE ARBEITSZEITMERKMALE DES BERUFES** | | | | |
| **Gesamtsample** | | | | |
| Wochenarbeitszeit (in Stunden pro Woche) | 36,12 | 4,47 | 19,75 | 58,60 |
| Anteil von Beschäftigten mit arbeitszeitlicher Flexibilität (in %) | 59,23 | 14,97 | 0,00 | 100,00 |
| Anteil von Beschäftigten mit Heimarbeit (in %) | 16,62 | 22,04 | 0,00 | 81,65 |
| Überstunden (in Stunden pro Woche) | 9,68 | 2,80 | 2,10 | 30,05 |
| Anteil von Beschäftigten mit Nachtarbeit (in %) | 11,41 | 1,52 | 0,00 | 68,73 |
| Anteil der Beschäftigten mit Wochenendarbeit (in %) | 30,97 | 22,07 | 2,37 | 92,70 |
| **Frauen mit (Fach-) Hochschulabschluss** | | | | |
| Wochenarbeitszeit (in Stunden pro Woche) | 38,53 | 5,26 | 23,15 | 50,08 |
| Anteil von Beschäftigten mit arbeitszeitlicher Flexibilität (in %) | 61,81 | 18,01 | 27,23 | 100,00 |
| Anteil von Beschäftigten mit Heimarbeit (in %) | 34,34 | 22,18 | 2,27 | 81,65 |
| Überstunden (in Stunden pro Woche) | 9,47 | 3,17 | 2,23 | 26,99 |
| Anteil von Beschäftigten mit Nachtarbeit (in %) | 10,62 | 13,15 | 0,00 | 60,26 |
| Anteil der Beschäftigten mit Wochenendarbeit (in %) | 32,80 | 18,07 | 5,26 | 88,38 |
| **Frauen mit Berufsausbildung** | | | | |
| Wochenarbeitszeit (in Stunden pro Woche) | 35,51 | 3,98 | 21,95 | 58,60 |
| Anteil von Beschäftigten mit arbeitszeitlicher Flexibilität (in %) | 59,18 | 13,77 | 0,00 | 100,00 |
| Anteil von Beschäftigten mit Heimarbeit (in %) | 11,75 | 10,34 | 2,27 | 74,49 |
| Überstunden (in Stunden pro Woche) | 9,69 | 2,68 | 2,10 | 30,05 |
| Anteil von Beschäftigten mit Nachtarbeit (in %) | 10,54 | 14,62 | 0,00 | 68,73 |
| Anteil der Beschäftigten mit Wochenendarbeit (in%) | 29,21 | 21,99 | 2,37 | 92,70 |
| **Frauen ohne Berufsausbildung** | | | | |
| Wochenarbeitszeit(in Stunden pro Woche) | 35,18 | 4,06 | 19,75 | 47,44 |
| Anteil von Beschäftigten mit arbeitszeitlicher Flexibilität (in %) | 54,92 | 14,52 | 27,23 | 87,50 |
| Anteil von Beschäftigten mit Heimarbeit (in %) | 12,12 | 13,68 | 0,00 | 74,49 |
| Überstunden (in Stunden pro Woche) | 10,07 | 2,73 | 5,08 | 21,92 |
| Anteil von Beschäftigten mit Nachtarbeit (in %) | 17,65 | 19,76 | 0,00 | 66,82 |
| Anteil der Beschäftigten mit Wochenendarbeit (in%) | 37,52 | 27,14 | 5,86 | 87,71 |
| **AUSBILDUNGSABSCHLUSS (vor Geburt des Kindes)** | | | | |
| Ohne Berufsausbildung (in %) | 12,02 | | 0,00 | 100,00 |
| Berufsausbildung (in %) * | 66,60 | | 0,00 | 100,00 |
| Hochschulabschluss (in %) | 21,37 | | 0,00 | 100,00 |
| **KONTROLLVARIABLEN** | | | | |
| Durchschnittlicher Tageslohn des Berufes | 111,53 | 39,84 | 41,05 | 246,81 |
| < 26 Jahre bei Geburt (in %) | 26,52 | | 0,00 | 100,00 |
| 26-32 Jahre bei Geburt (in %)* | 52,19 | | 0,00 | 100,00 |
| > 32 Jahre bei Geburt (in %) | 21,28 | | 0,00 | 100,00 |
| Arbeitsmarkterfahrung (in Monaten) | 89,74 | 49,75 | 0,50 | 267,00 |
| Ostdeutschland (in %) | 13,93 | | 0,00 | 1,00 |
| Westdeutschland (in %)* | 86,07 | | 0,00 | 1,00 |
| Alleinerziehend (in %) | 14,89 | | 0,00 | 1,00 |
| Verheiratet bzw. mit Partner (in %)* | 85,11 | | 0,00 | 1,00 |
| Weitere Geburten während der Erwerbsunterbrechung (in %) | 32,82 | | 0,00 | 1,00 |
| Nur eine Geburt während der Erwerbsunterbrechung (in %)* | 67,18 | | 0,00 | 1,00 |
| Geburt nach 2001 (in %) | 29,68 | | 0,00 | 1,00 |
| Geburt vor 2001 (in %)* | 70,32 | | 0,00 | 1,00 |
| Beschäftigung im öffentlichen Dienst vor der Geburt (in %) | 36,07 | | 0,00 | 1,00 |
| Beschäftigung in der Privatwirtschaft vor der Geburt (in %)* | 63,93 | | 0,00 | 1,00 |
| Beschäftigung in einer Führungsposition vor der Geburt (in %) | 30,82 | | 0,00 | 1,00 |
| Keine Führungsposition vor der Geburt (in %)* | 69,18 | | 0,00 | 1,00 |
| Prestige des Austrittsberufs (zentriert) | -0,32 | 11,36 | -30,40 | 30,60 |
| Frauenanteil im Austrittsberuf (in %) | 61,67 | 24,81 | 0,00 | 98,94 |

Anmerkungen: * Referenzgruppe in den multivariaten Analysen.

Quelle: Eigene ungewichtete Berechnungen auf Basis der NEPS Erwachsenenkohorte (Release: 3.0.1).

verbessert.[21]

Zunächst widmen wir uns der Interpretation des Gesamtmodells (Modell 1). In der Hypothese H1a haben wir die Vermutung aufgestellt, dass eine kurze Arbeitszeit sowie flexible Arbeitszeitregelungen (Heimarbeit und arbeitszeitliche Flexibilität) zu einer schnelleren Rückkehr von Müttern in den Beruf führen. Diese Vermutung lässt sich für die Heimarbeit und die Wochenarbeitszeit bestätigen, nicht jedoch bezüglich der arbeitszeitlichen Flexibilität. Bei einem um 10% höheren Heimarbeitsanteil, steigt die durchschnittliche Rückkehrwahrscheinlichkeit um 14 Prozentpunkte an. Für die berufstypische Wochenarbeitszeit finden wir folgenden Einfluss: Je geringer die in einem Beruf typische Arbeitszeit ist, desto schneller kehren Frauen nach der Geburt eines Kindes in ihren Beruf zurück.

Für die berufstypischen Überstunden ist der Zusammenhang nicht linear, sondern entsprechend unseren Erwartungen aus Hypothese H1b, u-förmig: Insbesondere kehren Frauen aus Berufen, in denen typischerweise kaum Überstunden anfallen, besonders schnell wieder in ihren Beruf zurück. Eine schnelle Rückkehr ist jedoch auch bei sehr vielen Überstunden sichtbar. Liegen die Überstunden im mittleren Bereich, unterbrechen Frauen ihre Berufstätigkeit länger. Die Abbildung A4.1 im Anhang, in der die durchschnittliche Rückkehrwahrscheinlichkeit für verschiedene berufstypische Überstunden dargestellt sind, zeigt, dass Frauen insbesondere dann ihre Berufstätigkeit kürzer unterbrechen, wenn typischerweise kaum Überstunden im Beruf anfallen oder aber mehr als 20 Überstunden pro Woche üblich sind. Die Dauer bis zur Rückkehr in den Beruf ist dagegen dann länger, wenn die Überstunden im mittleren Bereich liegen; sie ist am längsten bei 15 Überstunden pro Woche. Somit kann die Hypothese H1b bestätigt werden. Ein ähnliches Ergebnis wurde auch bereits von Busch (2013) berichtet.

Obschon sich auf theoretischer Basis für Nacht- und Wochenendarbeit keine spezifische Hypothese ableiten ließ, zeigt Modell 1 einen signifikant positiven Einfluss von Nachtarbeit in einem Beruf. Steigt der Beschäftigtenanteil in einem Beruf, bei dem die Arbeitszeit zwischen 23 Uhr und 6 Uhr liegt, um 10%, beschleunigt sich die Rückkehr von Müttern um durchschnittlich 19 Prozentpunkte. Dieser Befund unterstützt die Annahme von Stuth et al. (2009), dass Nachtarbeit womöglich eine gewisse Flexibilität bei der Arbeitszeitgestaltung zulässt, die die Berufstätigkeit von Müttern positiv beeinflusst. Keinerlei signifikante Effekte zeigen sich im Modell 1 für die Bedeutung von Wochenendarbeit in einem Beruf. Da Wochenend- und Nachtarbeit wie im vierten Kapitel angemerkt hoch miteinander korrelieren, wurden die beiden Variablen in weiterführenden Analysen

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[21]Der Likelihood Ratio Test zwischen einem Modell, welches nur die Individualmerkmale enthält und einem Modell, welches zusätzlich auch die berufstypischen Arbeitszeitmerkmale enthält, zeigt eine signifikante Verbesserung des Modellfits:($chi^2 = 19, 77; p = 0, 0030$). Die Berechnungen sind auf Anfrage bei den Autorinnen erhältlich.

einzeln in das Modell aufgenommen. Die voran berichteten Ergebnisse erwiesen sich dabei als robust.

In den Modellen 2 bis 4 der Tabelle 4.2 unterscheiden wir nun die untersuchten Frauen nach ihrem beruflichen Bildungsniveau. Unsere theoriegeleitete Annahme (H2) beruhte darauf, dass berufstypische Arbeitszeitmerkmale insbesondere für die Unterbrechungs- dauer geringer qualifizierter Frauen von Bedeutung sind. In der Tat sind die Effekte im Modell für beruflich geringqualifizierte Mütter (Modell 4) deutlich größer, wie der direkte Vergleich der Marginaleffekte zeigt. Die höhere Bedeutung berufstypischer Arbeitszeit- merkmale für geringer gebildete Frauen wird auch daran deutlich, dass für Akademik- erinnen lediglich die für einen Beruf typischen Überstunden einen signifikanten Effekt auf die Unterbrechungsdauer haben, während sich für die beiden geringer gebildeten Gruppen weitere signifikante Effekte finden lassen. Weiterhin weisen die Modelle 2 bis 4 auf eine differenzierte Wirkung berufstypischer Arbeitszeitmerkmale hin, die abhängig vom Bildungsniveau der Frauen ist. Das heißt: Berufstypische Arbeitszeitmerkmale haben nicht für Frauen jeden Bildungsniveaus die gleiche Bedeutung. So beeinflussen Überstunden lediglich die Unterbrechungsdauer von tertiär gebildeten Frauen und Frauen mit Berufsausbildung, nicht jedoch von Frauen ohne berufliche Ausbildung. Für mittel- und geringqualifizierte Frauen zeigt sich dagegen ein Einfluss der Wochenarbeitszeit und der Heimarbeit; für die Unterbrechungsdauer von Frauen ohne berufliche Qualifikation ist zudem die Verbreitung von Wochenend- und Nachtarbeit in einem Beruf bedeutsam.

Konkret bedeutet dies: Für tertiär gebildete Frauen (Modell 2) ist lediglich das beruf- stypische Ausmaß an Überstunden signifikant und nur für sie zeigt sich ein u-förmiger Einfluss der Überstunden. Dies impliziert eine sinkende Rückkehrwahrscheinlichkeit mit steigender Überstundenzahl, bis sie bei mehr als 20 Überstunden pro Woche erneut ansteigt (siehe Abbildung A4.1 unten). Alle anderen berufstypischen Arbeitszeitmerkmale weisen keinen signifikanten Effekt für die Unterbrechungsdauer von hochqualifizierten Frauen auf. Bei der Betrachtung von Heimarbeit ist jedoch festzustellen, dass diese ins- besondere in Berufen von hochqualifizierten Frauen sehr verbreitet ist (siehe Tabelle 4.1).

Für Frauen mit einer abgeschlossenen Berufsausbildung zeigt sich zwar auch ein sig- nifikanter Einfluss der berufstypischen Überstunden (Modell 3). Dieser ist jedoch im Gegensatz zu Akademikerinnen nicht u-förmig. Für die Gruppe der Frauen mit Berufsaus- bildung gilt folglich: Je mehr Überstunden im jeweiligen Beruf üblich sind, desto länger wird nach der Geburt eines Kindes die Erwerbstätigkeit unterbrochen. Daneben erweist sich auch die für einen Beruf typische Wochenarbeitszeit als bedeutsam für die Unter- brechungsdauer von Müttern mit Berufsausbildung. Wie bereits bei der Betrachtung der Überstunden gilt auch hier: Je mehr Wochenstunden im Austrittsberuf üblich sind, desto langsamer kehren diese Frauen aus ihrer Erwerbsunterbrechung zurück. Dies trifft auch

auf geringqualifizierte Frauen ohne berufliche Ausbildung zu (siehe Modell 4). Dass reduzierte Arbeitszeiten, insbesondere in Form von Teilzeitbeschäftigung, einen wichtigen Einfluss auf die Unterbrechungsdauer deutscher Mütter ausüben, ist ein etablierter Befund (z.B. Frodermann et al., 2013; Kreyenfeld et al., 2007). Unsere Ergebnisse legen jedoch nahe, dass kürzere Arbeitszeiten insbesondere für Frauen mit mittlerer oder geringer Bildung von Bedeutung sind, weniger jedoch für Akademikerinnen. Wie der direkte Vergleich der Marginaleffekte zudem zeigt, scheint die Bedeutung der berufstypischen Wochenarbeitszeit für geringqualifizierte Frauen stärker ausgeprägt zu sein als für Frauen mit beruflicher Ausbildung.

Daneben erweist sich für Frauen mit und ohne berufliche Ausbildung die berufstypische Verbreitung von Heimarbeit als signifikant (Modelle 3 und 4): Je verbreiteter Heimarbeit im zuvor ausgeübten Beruf ist, desto schneller kehren diese Frauen aus der Unterbrechung in ihren Beruf zurück. So steigt die Rückkehrwahrscheinlichkeit um durchschnittlich 16 Prozentpunkte für Frauen mit Berufsausbildung und um durchschnittlich 32 Prozentpunkte für Frauen ohne Berufsausbildung, wenn im Austrittsberuf der Anteil der Personen mit der Möglichkeit von Heimarbeit um 10% höher ist.

Die Verbreitung von Nacht- und Wochenendarbeit beeinflusst dagegen nur die Unterbrechungsdauer von Frauen ohne berufliche Qualifikation. Einen besonders großen Einfluss hat Nachtarbeit: Ist der Anteil in einem Beruf mit Nachtarbeit um 10% höher, dann erhöht sich die Rückkehrwahrscheinlichkeit für Frauen ohne berufliche Ausbildung um 76 Prozentpunkte. Für die Verbreitung von Wochenendarbeit beläuft sich dieser Wert auf 49 Prozentpunkte, wenngleich zu beachten ist, dass dieser Effekt nur schwach signifikant ist.

Im Vergleich zu mittel- und hochqualifizierten Frauen spielt die arbeitszeitliche Vereinbarkeit für geringgebildete Frauen die bedeutendste Rolle und dies auch bei gleichzeitiger Kontrolle des Berufseinkommens. Dies bestätigt die Hypothese H2. Als ein möglicher Grund für die größere Bedeutung von familienfreundlichen Arbeitszeiten für geringer qualifizierte Frauen können die geringeren Opportunitätskosten und die langsamere Entwertung ihres weniger spezifischen Humankapitals gedeutet werden. Dieser Umstand führt dazu, dass Berufe durch familienfreundliche Arbeitszeiten attraktiv gestaltet sein müssen, um geringer Qualifizierte zu einer kürzeren Unterbrechungsdauer zu motivieren. Im Gegensatz dazu ist die Unterbrechungsdauer und Rückkehrbereitschaft von hochqualifizierten Frauen weitestgehend unbeeinflusst von der Familienfreundlichkeit der Arbeitszeit (lediglich die Überstunden spielen eine Rolle). Durch ihre höheren Opportunitätskosten und womöglich auch bedingt durch eine höhere Erwerbsneigung tangieren die arbeitszeitlichen Gegebenheiten im Austrittberuf ihre Rückkehr kaum.

Table 4.2: Diskrete Ereignisdatenmodelle für die Berufsrückkehr von Müttern

| | Gesamtmodell | Nach Ausbildungsabschluss der Frau | | |
| | | (Fach-) Hochschule | Berufsausbildung | keine Berufsausbildung |
| | Modell 1 | Modell 2 | Modell 3 | Modell 4 |
|---|---|---|---|---|
| **Zeitintervalle (Ref.: 37 Monate und länger)** | | | | |
| 0 bis 12 Monate | −0,021*** (0,008) | −0,038*** (0,049) | −0,022*** (0,014) | −0,024*** (0,012) |
| 13 bis 24 Monate | −0,019*** (0,008) | −0,035*** (0,049) | −0,020*** (0,014) | −0,021*** (0,013) |
| 25 bis 36 Monate | −0,010*** (0,008) | −0,025*** (0,049) | −0,010*** (0,014) | −0,008* (0,011) |
| **Typische Arbeitszeitmerkmale des Berufes** | | | | |
| Wochenarbeitszeit (in 10 Stunden pro Woche) | −0,008*** (0,002) | −0,007 (0,011) | −0,005* (0,003) | −0,015*** (0,005) |
| Anteil von Beschäftigten mit arbeitszeitlicher Flexibilität (in 10%) | −0,004 (0,053) | −0,295 (0,245) | 0,013 (0,071) | 0,142 (0,208) |
| Anteil von Beschäftigten mit Möglichkeit zur Heimarbeit (in 10%) | 0,137*** (0,053) | 0,052 (0,223) | 0,163* (0,095) | 0,322* (0,156) |
| Überstunden (in 10 Stunden pro Woche) | −0,018*** (0,006) | −0,053*** (0,020) | −0,017** (0,008) | 0,008 (0,035) |
| Überstunden quadriert (in 10 Stunden pro Woche) | 0,005** (0,002) | 0,022*** (0,008) | 0,005 (0,003) | −0,005 (0,015) |
| Anteil von Beschäftigten mit Nachtarbeit (in 10%) | 0,193** (0,098) | 0,420 (0,460) | 0,025 (0,106) | 0,759** (0,357) |
| Anteil von Beschäftigten mit Wochenendarbeit (in 10%) | −0,073 (0,061) | −0,430 (0,359) | 0,044 (0,069) | −0,485* (0,251) |
| **Ausbildungsabschluss (Ref.: Berufsausbildung)** | | | | |
| Keine Berufsausbildung | −0,006*** (0,002) | | | |
| (Fach-) Hochschule | 0,003 (0,002) | | | |
| **Kontrollvariablen** | | | | |
| Durchschnittlicher Tageslohn des Berufes (in 10€) | 0,001*** (0,000) | 0,000 (0,001) | 0,001* (0,000) | 0,003*** (0,001) |
| 19-26 Jahre bei Geburt (Ref.: 27-32 Jahre bei der Geburt) | −0,002 (0,000) | 0,002 (0,011) | −0,001 (0,000) | −0,003 (0,006) |
| > 32 Jahre bei Geburt | −0,003* (0,002) | −0,002 (0,005) | −0,005* (0,002) | −0,011** (0,006) |
| Arbeitsmarkterfahrung (in Monaten) | −0,000 (0,002) | −0,000 (0,005) | 0,000 (0,002) | −0,000** (0,006) |
| Ostdeutschland | 0,003* (0,000) | −0,000 (0,000) | 0,000 (0,000) | 0,008 (0,000) |
| Alleinerziehend | 0,004** (0,002) | −0,000 (0,006) | 0,004* (0,002) | −0,004 (0,008) |
| Weitere Geburt während der Erwerbsunterbrechung | −0,027*** (0,002) | −0,048*** (0,006) | −0,024*** (0,002) | −0,033*** (0,007) |
| Geburt nach 2001 | 0,003** (0,001) | 0,013*** (0,007) | 0,001 (0,002) | 0,004 (0,004) |
| Beschäftigung im öffentlichen Dienst vor der Geburt | 0,002 (0,001) | −0,005 (0,005) | 0,004*** (0,002) | −0,000 (0,004) |
| Beschäftigung in einer Führungsposition vor der Geburt | −0,002 (0,001) | −0,002 (0,005) | −0,002 (0,002) | 0,001 (0,005) |
| Prestige des Austrittsberufs (zentriert) | 0,000 (0,000) | 0,000 (0,000) | 0,000 (0,000) | −0,000 (0,000) |
| Frauenanteil im Austrittsberuf | 0,001 (0,004) | −0,022 (0,016) | 0,004 (0,006) | 0,016 (0,013) |
| Beobachtungen (Personenmonate) | 43970 | 7183 | 31022 | 5765 |
| Episoden | 1431 | 284 | 982 | 165 |
| Ereignisse | 666 | 165 | 423 | 78 |
| AIC | 6308,42 | 1453,98 | 4089,82 | 762,45 |
| BIC | 6525,71 | 1612,20 | 4281,70 | 915,62 |
| LogLikelihood | −3129,21 | −703,99 | −2021,91 | −358,22 |

Anmerkungen: Durchschnittliche Marginaleffekte (AME), robuste Standardfehler in Klammern. * p<0,10, ** p<0,05, *** p<0,01. Quelle: NEPS Erwachsenenkohorte (Release: 3.0.1), Mikrozensusdaten (1993-2006) und OccPan, eigene Berechnungen.

# 7 Zusammenfassung und Diskussion

Ziel dieses Beitrages ist es, der Fragestellung nachzugehen ob und inwieweit sich berufliche Merkmale – nämlich die für einen Beruf typischen Arbeitszeiten – darauf auswirken, wie lange Frauen in Deutschland nach der Geburt eines Kindes benötigen, um in ihren ursprünglichen Beruf zurückzukehren. Während sich die Forschung in Deutschland bisher ausführlich mit der Frage auseinandergesetzt hat, wie individuelle und institutionelle Faktoren die Erwerbsunterbrechungsdauer beeinflussen, fand der mögliche Einfluss berufstypischer Merkmale bisher eher wenig Beachtung. Mit dem vorliegenden empirischen Beitrag wollen wir an die bislang in diesem Bereich existierende Forschung (Busch, 2013; Krüger et al., 1989; Stuth et al., 2009; Stuth und Hennig, 2014) anknüpfen und zu einem breiteren Verständnis in Hinblick auf die Wirkung verschiedener berufstypischer Arbeitszeitmerkmale auf die Erwerbsunterbrechungsdauer und die Berufsrückkehr beitragen. Um der Dynamik weiblicher Erwerbsverläufe in der Modellierung analytisch gerecht zu werden, nutzen wir neu verfügbare Längsschnittdaten des NEPS, und verlinken sie mit aggregierten Berufsdaten des Mikrozensus.

In der Tat zeigen unsere längsschnittlichen Analysen, dass berufstypische Arbeitszeitmerkmale die Erwerbsunterbrechungsdauer und Berufsrückkehr von Müttern in Deutschland entscheidend beeinflussen. In unseren Analysen konnte eine signifikante Wirkung der berufstypischen Wochenarbeitszeit, der berufstypischen Überstunden sowie der berufstypischen Verbreitung von Heim- und Nachtarbeit auf die Unterbrechungsdauer von Müttern herausgearbeitet werden. Wie unsere Analysen jedoch auch zeigen, muss die Wirkung berufstypischer Arbeitszeitmerkmale einer differenzierten Betrachtung unterzogen werden. So wirken sich berufstypische Arbeitszeitmerkmale nicht gleichermaßen auf die Unterbrechungsdauer aller Frauen aus. Das individuelle Bildungsniveau ist hier ein einflussreicher Moderator.

So wird deutlich, dass für hochqualifizierte Frauen lediglich die berufstypischen Überstunden von Bedeutung sind. Die Unterbrechungsdauer von Frauen mit mittlerem Bildungsniveau wird zudem von der Verbreitung von Heimarbeit und kürzeren Arbeitszeiten in einem Beruf beeinflusst. Neben diesen beiden Arbeitszeitmerkmalen ist für geringgebildete Frauen auch die berufliche Verbreitung von Nacht- und Wochenendarbeit entscheidend. Dies deutet darauf hin, dass Faktoren wie atypische Arbeitszeiten und Heimarbeit die Erwerbstätigkeit von geringgebildeten Müttern unterstützen. Sie gewähren offensichtlich eine ausreichende Flexibilität bei der Arbeitszeitgestaltung bezüglich des Ortes und der Tageszeit und unterstützen die innerfamiliäre Organisation wie die Betreuung von Kindern bzw. Kleinkindern.

Unsere Ergebnisse legen nahe, dass arbeitszeitliche Berufsmerkmale insbesondere

für die Unterbrechungsdauer von geringgebildeten Frauen eine bedeutende Rolle spielen. Dies steht in Einklang mit der von uns formulierten Annahme, dass familienfreundliche Arbeitszeiten dazu dienen können, die traditionell niedrigen Anreize einer Erwerbsrückkehr für geringqualifizierte Frauen zu erhöhen. Im Gegensatz dazu ist die Unterbrechungsdauer von Akademikerinnen aufgrund ihrer traditionell bereits größeren Rückkehrbereitschaft und ihrer höheren Opportunitätskosten weitestgehend unbeeinflusst von der Familienfreundlichkeit berufstypischer Arbeitszeiten (ausgenommen Überstunden).

Was aber kann nun der von uns vorgelegte wissenschaftliche Beitrag zur in Deutschland existierenden Debatte zur Vereinbarkeit von Familie und Beruf beitragen? Die Analysen konnten zeigen, dass nicht nur institutionelle und individuelle Faktoren die Berufsrückkehr von Frauen beeinflussen, sondern auch berufliche Arbeitszeitfaktoren. Das heißt: Für eine bessere Vereinbarkeit von Familie und Beruf können neben dem Gesetzgeber, dem unbestritten eine wichtige Funktion zukommt, auch die weiteren Akteure wie Berufsverbände, Gewerkschaften und Arbeitgeber Einfluss auf eine schnellere Rückkehr von Frauen in den Beruf nehmen, indem sie bei den arbeitszeitlichen Vereinbarungen die Belange von Frauen stärker berücksichtigen. Weiterhin zeigen unsere Analysen, dass es zu kurz gedacht wäre, sich für eine familienfreundliche Ausgestaltung beruflicher Arbeitszeiten allein auf die Ermöglichung und Ausweitung von Teilzeitarbeit bzw. verkürzten Arbeitszeiten zu beziehen. Dies ist nur *ein* berufsspezifischer Faktor, der die Rückkehr von Frauen in den Beruf nach der Geburt eines Kindes beeinflusst. Die Möglichkeit der Teilzeitarbeit spricht nur einen bestimmten Teil von Frauen an, nämlich die Frauen mit und ohne Berufsausbildung. Akademikerinnen, so zeigen unsere Analysen, scheinen dagegen nicht von der beruflichen Verbreitung verkürzter Arbeitszeiten zu profitieren.

Welche beruflichen Arbeitszeitmerkmale als hilfreich für eine schnelle Berufsrückkehr wahrgenommen werden, hängt wesentlich vom Bildungsniveau und somit vom Humankapital von Frauen ab. Es gibt also kein „Allheilmittel" für *alle* Gruppen von Frauen. Das bedeutet: Wenn der Gesetzgeber und die Arbeitsmarktakteure über die arbeitszeitliche Gestaltung eines Berufes Einfluss auf die Berufsrückkehr von Frauen nehmen, dann sollten sie dies auf unterschiedliche Art und Weise tun und auf die verschiedenen Bildungsgruppen möglichst passgenau „zuschneiden". Ihnen sollte allerdings bewusst sein, dass vor allem mittel- und geringgebildete Frauen über die Ausgestaltung beruflicher Arbeitszeiten erreicht werden können, weniger jedoch Akademikerinnen. Den Arbeitgebern kommt hierbei ebenfalls eine wesentliche Schlüsselrolle zu. Auch sie können Arbeitszeiten maßgebend mitgestalten. Angesichts des Fachkräftemangels und der langen Erwerbsunterbrechung von Arbeitnehmerinnen in Zeiten einer sich schnell

verändernden Arbeitswelt, sollte es auch in ihrem Interesse liegen, gut ausgebildete Arbeitskräfte möglichst schnell wieder einzusetzen.

Auch wenn die vorgelegte empirische Untersuchung das Verständnis zur Vereinbarkeit von Familie und Beruf um eine wichtige Dimension erweitern konnte, so unterliegt sie doch verschiedenen Limitationen, die sich vor allem aus Beschränkungen der verfügbaren Daten ergeben. Die genutzten Daten erlauben es nicht, Haushaltsinformationen (wie Bildungsstand und Beruf des Partners oder Haushaltseinkommen) zu berücksichtigen. Bisherige Untersuchungen machten jedoch deutlich, dass diese einen Einfluss auf die Erwerbsrückkehr von Frauen ausüben (Weber, 2004; Ziefle, 2009). Auch der Einfluss unterschiedlicher Lebenseinstellungen und -entwürfe, die zur Selbstselektion in bestimmte Berufe mit verschiedenen Arbeitszeitmodellen führen, konnte nicht modelliert werden. Zudem untersuchen wir in unseren Analysen nur einen Teil möglicher berufsspezifischer Einflussfaktoren, nämlich den Einfluss berufstypischer Arbeitszeitmerkmale. Die Frage der arbeitszeitlichen Vereinbarkeit dominiert zwar den wissenschaftlichen, öffentlichen und politischen Diskurs, jedoch können auch weitere Berufsmerkmale die Dauer der Erwerbsunterbrechung von Frauen bedeutsam prägen. Gewinnbringend wäre es zudem, wenn künftige Forschung, neben der strukturierenden Wirkung von Berufen, auch den möglichen Einfluss von betrieblicher Arbeitsorganisation untersuchen würde.

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# 9 Anhang

Figure A4.1: Predicitve Margins eines Wiedereinstiegs für verschiedene Überstunden
(oben für alle Befragten und unten für Akademikerinnen)



Wahrscheinlichkeit eines Wiedereinstiegs
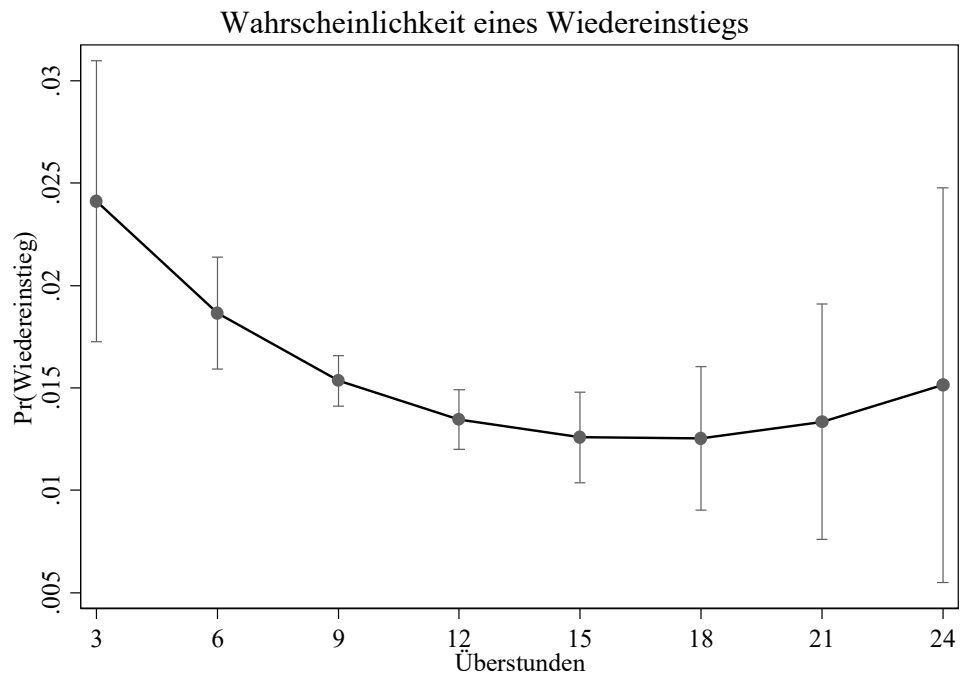


Wahrscheinlichkeit eines Wiedereinstiegs für Frauen mit (Fach-)Hochschule
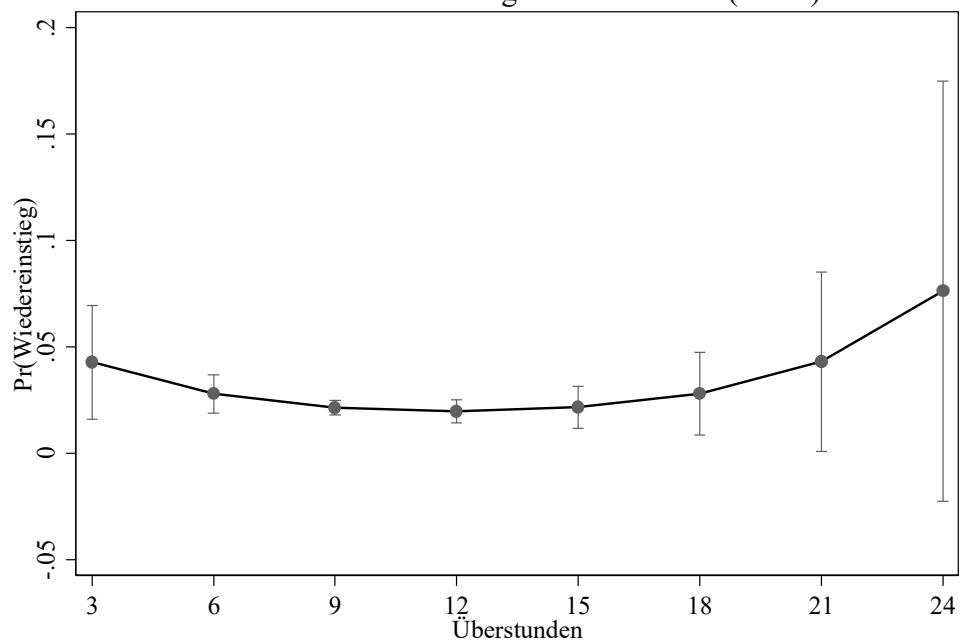
Quelle: Eigene Berechnungen auf Basis der NEPS Erwachsenenkohorte (Release: 3.0.1).