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**Working Paper**

## Gender gaps of the unemployed: What drives diverging labor market outcomes?

IAB-Discussion Paper, No. 27/2016

**Provided in Cooperation with:**

Institute for Employment Research (IAB)

*Suggested Citation:* Dauth, Christine Martina (2016) : Gender gaps of the unemployed: What drives diverging labor market outcomes?, IAB-Discussion Paper, No. 27/2016, Institut für Arbeitsmarkt- und Berufsforschung (IAB), Nürnberg

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# IAB-Discussion Paper

27/2016

Articles on labour market issues

## Gender gaps of the unemployed – What drives diverging labor market outcomes?

Christine Dauth

ISSN 2195-2663

# Gender gaps of the unemployed - What drives diverging labor market outcomes?

Christine Dauth (IAB)

Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

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## Abstract

Analyzing gender gaps of unemployed job-seekers, this study uniquely complements the broad literature focussing predominantly on gender gaps of employed workers. I consider a broad range of labor market outcomes, and disentangle the factors driving the labor market gaps of unemployed men and women. I show that unemployed women perform worse on the labor market due to earlier choices in occupations, their labor force attachment, and working time. By contrast, regional labor market disparities including differences of local employment offices, which are assigned to place unemployed job-seekers, are of minor importance. Married women and those with young children perform particularly bad compared to men. High unexplainable gender gaps for these groups suggest that family-related preferences, employer discrimination, and institutional settings matter for unemployment duration and the quality of reemployment.

## Zusammenfassung

Diese Studie untersucht Geschlechterunterschiede von arbeitslosen und arbeitssuchenden Personen. Sie ergänzt damit zahlreichen Studien, die sich mit der Geschlechterlohnlücke von Beschäftigten befassen. Ich untersuche den Arbeitsmarkterfolg anhand verschiedener Zielgrößen und identifiziere jeweils die Faktoren, die Geschlechterunterschiede von Arbeitslosen forcieren. Arbeitslose Frauen schneiden am Arbeitsmarkt vor allem wegen früherer Entscheidungen bezüglich ihrer Berufswahl, Teilzeitarbeit und ihrer Nähe zum Arbeitsmarkt schlechter ab. Regionale Disparitäten, unter anderem mögliche Vermittlungsunterschiede zwischen den lokalen Arbeitsagenturen, sind weniger wichtige Erklärungsfaktoren. Verheiratete Frauen und Frauen mit Kindern schneiden im Vergleich zu Männern besonders schlecht ab. Für diese Personengruppen gibt es relativ große nicht erklärbare Geschlechterunterschiede, was darauf hinweist, dass familienbezogene Präferenzen, Arbeitgeberdiskriminierung und institutionelle Rahmenbedingungen für sie besonders wichtig sind.

**JEL classification:** J16, J21, J64, J71

**Keywords:** gender, labor market discrimination, decomposition, unemployment

**Acknowledgements:** I am grateful for generous advice from Michael Fertig and Stefan Fuchs. I also thank Regina Riphahn, Gesine Stephan, and Wolfgang Dauth for helpful remarks. Special thanks goes to the ITM department of IAB for providing the data.

# 1 Introduction

Over the past decades the unemployment rates of men and women have converged and are now more or less identical in many countries (Belloc/Tilli, 2013; DeBoer/Seeborg, 1989). In 2015 Germany, for example, the share of unemployed workers in the labor force was approximately 5.0 percent for men and 4.2 percent for women. The pattern of lower unemployment rates for women pertains also for other countries such as the U.S. (5.4 percent unemployed men and 5.2 percent unemployed women).<sup>1</sup> Despite this apparently beneficial situation for women, this number conceals gender differences in the labor market. Men and women differ in labor force participation, the supply of working hours, income, but also in the dynamics (turnover and duration) of unemployment (Barrett/Morgenstern, 1974).

While the bulk of literature is predominantly concerned with the analysis of gender differences of *employed* workers, this study takes a unique approach and sheds light on gender gaps of *unemployed* job-seekers, accounting for a broad range of possible labor market outcomes. Besides socio-economic factors of the individual workers, I focus on the impact of the employment career, and intermediate differences between local employment offices. Applying decomposition methods, I unravel the mechanisms behind these gaps and assess to which extent they can be influenced by employment offices during the placement process.

Overall, the literature has shown that there is more frictional unemployment for women due to them moving more frequently in and out of the labor force and being unemployed longer between jobs (Barrett/Morgenstern, 1974; Niemi, 1974). Furthermore, women are regionally and occupationally less mobile, which indicates that they are more often affected by unemployment. By contrast, higher shares of men employed in industries affected by cyclical changes explain rising unemployment rates for men during recessions (Albanesi/Sahin, 2013; Peiró/Belaire-Franch/Gonzalo, 2012; Rives/Sosin, 2002; Niemi, 1974; Barrett/Morgenstern, 1974). Yet, gender gaps are relatively small in countries where women are strongly attached to the labor force as cross-country analyses have shown (Azmat/Güell/Manning, 2006; Queneau/Sen, 2009; Koutentakis, 2015).

In Germany, women are less likely to become unemployed, but once unemployed, they find it harder to leave unemployment for employment (Bundesagentur für Arbeit, 2015). Women are longer unemployed than men, irrespective of how closely they are attached to the labor market. In 2015, workers entering insured unemployment, i.e. workers rather closely attached to the labor market, had average unemployment durations of 31 weeks (men) and 40 weeks (women). The gap increases for unemployed workers in the welfare system. Here, women (209 weeks) are on average 18 weeks longer unemployed than men (191 weeks).<sup>2</sup>

Differing labor market prospects of men and women have been widely addressed in the economic and sociological literature. Most studies focus on the situation of employed men

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<sup>1</sup> Source: OECD (2016), Unemployment rate (indicator). doi:10.1787/997c8750-en (Accessed on 11 July 2016).

<sup>2</sup> Data warehouse statistics of the German Federal Employment Agency.

and women addressing gender gaps in pay (Altonji/Blank, 1999; Blau/Kahn, 2003). Seminal studies in this respect explain lower wages for women with differences in accumulated human capital and differences in the returns of such human capital (Oaxaca, 1973; Blinder, 1973). Later studies showed that the segregation of women into low-paid occupations, industries, as well as inter-firm wage differentials are further important determinants of gender differences (Bayard/Hellerstein/Neumark, 2003). While earlier studies were mainly interested in explaining differences in mean wages, more recent studies take gender differences over the entire wage distributions into consideration (Arulampalam/Booth/Bryan, 2007; Albrecht/Björklund/Vroman, 2003).<sup>3</sup> Experimental studies (lab and field experiments) allow exploring additional drivers of labor market differences such as employer discrimination and individual/ group characteristics such as competitiveness, ambition or motivation (Azmat/Petrongolo, 2014).

By analyzing gender gaps in labor market outcomes of unemployed men and women, I contribute to the literature on gender gaps in unemployment in several ways. First, I present new evidence on gender differentials of unemployed rather than employed workers. Second, the study provides decompositions of outcomes that reflect almost the universe of outflow possibilities for the unemployed. Differentiating between these different states is particularly important as opposite to men, women predominantly choose other employment options than fulltime work (Johnson, 1983). Thirdly, separate analyses for subgroups allow differentiating between heterogeneous unemployed workers and variation in the role of structural and compositional differences. Furthermore, I provide detailed decompositions, which allow quantifying the importance of single factors in order to explain gender differences based on the standards set by Blinder (1973), and Oaxaca (1973). Finally, I apply rich and precise register data, which comprise all German unemployed, thus allowing to draw large samples.

The main findings of this study can be summarized as follows: in general, unemployed women experience disadvantages in the labor market. These are mostly due to a low labor market attachment, the choice of occupation, and fewer working hours before unemployment. Regional labor market conditions and institutional differences on the level of the local employment offices have only limited explanatory power. The main drivers of unemployment differences are choices made early in the employment career, which are therefore not manipulable by local employment offices. However, there remain unexplained differences, emphasizing that correlation patterns and unobservable factors are important for workers. In all cases observed, unemployment differences can only for men and women without little children be fully explained. Structural differences are particularly high for married women and mothers of young children and less pronounced for single women. These findings imply that a simple and generalized distinction between men and women neglects the impact of life-cycle circumstances on unemployment. This should be kept in mind by the local employment offices placing these workers with the aim to establish equal labor market opportunities for men and women.

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<sup>3</sup> Altonji/Blank (1999), Bertrand (2011), Blau/Kahn (2003), Weichselbaumer/Winter-Ebmer (2005) and Maier (2007) give a good overview on the most important contributions and newest developments in the international and German literature.

## 2 Theoretical considerations

Following the gender pay gap literature, one might expect that unemployed women are less successful in the labor market than unemployed men in terms of unemployment duration, re-employment, or earnings.

First, disadvantages for women might result from a lower labor force attachment and hence overall less human capital accumulation. If women expect interruptions in employment over the life cycle, this might induce them to invest less in education. Also, due to (expected) gaps in the employment history, women accumulate less training, work experience, and specific human capital. These gender differences will likely translate into more days in unemployment and lower re-employment earnings for unemployed women (Mincer/Polachek, 1974; Becker, 1985, 1971).

Second, differences in unemployment, re-employment, and earnings might be related to a selection of women into specific industries, occupations, or firms. For instance, women choose more flexible forms of employment—such as marginal or parttime work—due to domestic responsibilities, lower opportunity costs of work, or comparative advantages in home production. As a consequence, women experience fewer days of fulltime employment and lower earnings. This might yield a mismatch between the type of jobs offered by employers and the type of jobs women want, postpone re-employment, and hence reduce the number of cumulative overall employment.

Third, detrimental labor market outcomes for women might be the consequence of discrimination by employers. Statistical discrimination occurs if employers are reluctant to hire women, for example because they consider them likely to be absent in the near future due to family-related interruptions. Moreover, a general taste for the discrimination of women (Becker, 1971) or discrimination due to conservative attitudes (Algan/Cahuc, 2006) might also make employers reluctant to hire women. As a consequence, women accumulate more days of unemployment and they might be forced to accept employment associated with lower earnings.

Fourth, for some women the incentive to quickly leave unemployment is countervailed by German institutions. The tax splitting institution reduces the tax burden if the income gap between married couples increases. Thus, married women have an incentive to wait with re-employment, to rather exit unemployment into a low-wage job, or to fully withdraw from the labor market after the unemployment benefits have been exhausted. Furthermore, the unemployed partner can share the health insurance of the employed partner, which weakens the incentive to find a job. Finally, if unemployed women belong to a household receiving means-tested welfare benefits, this lowers the incentive to look for a fulltime job as higher earnings might imply the loss of welfare benefits. All these institutions will more likely result in the accumulation of more unemployment and less well-paid employment for women than for men because men are still the primary earner in Germany (Trappe/Pollmann-Schult/Schmitt, 2015).

Fifth, differing labor market chances for unemployed men and women might depend on differences between the local employment offices. First, the knowledge and understand-



ing of gender mainstreaming might differ regionally. Every local employment office has a so-called commissioner for equal opportunities on the labor market. The understanding and implementation of gender mainstreaming in the process of placing unemployed workers depends on the degree of collaboration between this commissioner and the single caseworkers and the employment office's executive board, respectively (Dengler et al., 2013). Collaboration differs because the task description for the commissioner is not explicitly defined and grants some flexibility. On top of that there might also be variation in the way caseworkers treat unemployed women and men within the local employment offices. Even though workers registering as unemployed with a local employment office are handled based on a concept for integration (for a description see Van den Berg et al., 2014), caseworkers have the freedom to account for the individual heterogeneity of an unemployed worker during the placement process. However, due to time constraints, caseworkers might rely on individual unspecific default strategies. Previous qualitative research suggests that many caseworkers have stereotypes and gender role attitudes that impact the re-employment strategy (Kopf/Zabel, 2014; Projektteam IAQ, FIA, and GendA, 2009). Thus, inter- as well as intra-agency-specific differences might foster systematic differences between unemployed men and women.

Summing up, the theoretical considerations suggest that driving factors for the gender gap are human capital accumulation, which is measured by the level of education and the labor market career, occupations, which account for the selection of women into low-paying jobs, as well as the placing of workers by employment offices. Furthermore, I expect that labor market disadvantages and the likelihood to accept low-paying jobs such as marginal or parttime employment are larger for married women or mothers of young children, who face domestic responsibilities.

### 3 Methodology

In order to unravel the factors that contribute to gender differences between the unemployed, I apply Blinder-Oaxaca decompositions (Blinder, 1973; Oaxaca, 1973), a common tool and often used for the analysis of wage gaps between gender or races.<sup>4</sup> Based on a regression analysis, I decompose the mean differences of the outcomes cumulative unemployment, employment, and earnings. The procedure's intuition is as follows: outcome differentials between men and women can be divided into an explained and an unexplained part. The explained differences are due to compositional differences in observable characteristics, also referred to as endowment or composition effects. The unexplained part represents a coefficient effect, that is, structural differences, due to differing returns of characteristics or correlation patterns and unobserved characteristics and discrimination.

The aggregate decomposition of the gender difference  $\Delta$  is as follows:

$$\begin{aligned}\Delta &= E(Y_M) - E(Y_F) \\ &= E(X_M)' \beta_M - E(X_F)' \beta_F\end{aligned}$$

<sup>4</sup> I use the command *oaxaca* in Stata as described by Jann (2008), which is based on OLS.

$$= \{E(X_M) - E(X_F)\}'\beta^* + E(X_M)'(\beta_M - \beta^*) + E(X_F)'(\beta^* - \beta_F). \quad (1)$$

$E(Y)$  is the expected outcome variable for males (denoted with subscript M) or females (subscript F). The difference can be rewritten by a linear prediction replacing  $E(Y)$  with a vector of explanatory variables  $X$  plus constant, and  $\beta$ , the corresponding coefficients (Jann, 2008).<sup>5</sup> While the first term in the last equation represents compositional differences between men and women, the last two terms represent structural differences.<sup>6</sup>

As the aggregate decomposition is the sum of the contribution of each single covariate  $k$ , it is possible to assess the impact of each covariate on the composition and structure effect in a detailed decomposition. This becomes more evident when rewriting Equation 1 as

$$\begin{aligned} \Delta = & \sum_{k=1}^K \{E(X_{Mk}) - E(X_{Fk})\}'\beta_k^* + \\ & + \sum_{k=1}^K E(X_{Mk})'(\beta_{Mk} - \beta_k^*) + \sum_{k=1}^K E(X_{Fk})'(\beta_k^* - \beta_{Fk}) \end{aligned} \quad (2)$$

for each covariate  $k=1, \dots, K$ .

As is commonly known, the results of the decomposition depend on the chosen reference group (Fortin/Lemieux/Firpo, 2011). Taking the endowments of men as reference will yield different results than when comparing to female endowments if there are differing returns to the same characteristics. Given that women are more likely to suffer from labor market discrimination, choosing male coefficients as the reference provides the more meaningful counterfactual in our setting (for a discussion see Fortin/Lemieux/Firpo, 2011). However, there is no evidence that male coefficients might not be affected by discrimination. In order to tackle this problem to some extent, I follow propositions from the literature in order to estimate  $\beta^*$  (see for example Neumark, 1988; Cotton, 1988; Reimers, 1983). Neumark (1988) and Oaxaca/Ransom (1994) propose to estimate  $\beta^*$  as average returns from a pooled sample of men and women.<sup>7</sup> As in particular the contribution of characteristics to the coefficients effect depends on the choice of  $\beta^*$ , I only report disaggregate contributions of variables for the compositional difference. Table A.2 depicts the baseline decomposition when choosing males and females as reference, respectively. The results with the pooled coefficients are very similar to choosing men as the reference group. The differences are, however, larger when comparing to the structure of women.

<sup>5</sup> The respective error terms  $\epsilon_M$  or  $\epsilon_F$  cancel out, since the expected values of  $\epsilon$  are by definition zero (see for instance Angrist/Pischke, 2009).

<sup>6</sup> Assuming that we do not neglect relevant characteristics in the regressions (see Jann, 2008).

<sup>7</sup> Following Jann (2008) I include a dummy variable for gender in the pooled regression for the estimation of  $\beta^*$  in order to reduce the omitted variable bias.

## 4 Data and variables

### 4.1 Data

The analysis is based on the integrated employment biographies (IEB) provided by the Institute for Employment Research (IAB) (for more details see Dorner et al., 2010). The IEB data are process-produced and therefore highly reliable. They combine information on employment episodes, periods of unemployment (UE) benefit receipt, job-search, as well as participation in active labor market policies (ALMP) from different sources. These individual features can be matched with information on establishments. The IEB contain all individuals covered by the statutory retirement insurance, that is, about 80 percent of the German labor force, as well as persons registered with the FEA.

I draw a 25 percent random sample of all individuals who registered as unemployed and job-seeking during the second half of the year 2010 and who had not been registered as unemployed within the four weeks preceding the job search period. I focus on workers in the unemployment insurance system: this implies that I exclude unemployed workers in the welfare system, at least for the initial unemployment spell considered. Workers in the sample may, however, enter the welfare system over time. I restrict the sample to workers aged 25 to 65 years and drop observations without information on the status of education. This yields observations of approximately 242 000 individuals, 139 000 males and 103 000 females. I utilize labor market information starting in the year 2000 until the end of the observation window, December 31, 2011. The data additionally comprise the marital status, the existence of young children (<7 years old), health limitations, and disabilities of the unemployed. Furthermore, I merge information on the firm characteristics of the last job liable to social security before unemployment from the IAB Establishment History Panel (EHP) (Hethey-Maier/Seth, 2009).

### 4.2 Dependent variables

In order to reflect the labor market choices of men and women as good as possible, I use a variety of cumulative outcome variables. All variables refer to a time frame of 360 days after becoming unemployed. The initial state of all individuals in my sample is *unemployed and job-seeking*. This variable sums up days registered as unemployed and job-seeking regardless of receiving benefits. All other outcomes refer to different exit states after unemployment. *Employment* refers to employment liable to social security (not marginal employment), neglecting episodes of job-creation schemes as well as jobs with hiring subsidies. Employment can further be divided in *parttime employment* and *fulltime employment*.<sup>8</sup> *Marginal employment* refers to jobs that are not liable to social security and involve wages of a maximum of 400 Euros per month. Additionally, *cumulative earnings* is an indi-

<sup>8</sup> Analyses by Bertat et al. (2013) suggest that parttime work has been underreported by approximately 4.5 percent because employers neglected to update changes in working time in their reports. Yet, the problem of underreporting should be of minor importance here because I look at newly established employment relationships. This implies that the employer provides information on the employment status to the social security system for the first time and does not rely on old and perhaps outdated notifications.

cator for job quality and is calculated as the sum of days in employment multiplied by the corresponding daily wage.<sup>9</sup>

The main reason for distinguishing between these different types of employment is to approximate the labor market choices of men and women. Focussing only on days in employment and unemployment would give an incomplete picture of the available labor market outcomes for men and women since women are more likely to use flexible working hours schemes than men. Overall, employment of men is dominated by fulltime employment while parttime work is dominated by women.<sup>10</sup>

The gender differences in Table 1 show that women have detrimental labor market outcomes. Men have a higher probability to become employed within one year (65 vs. 57 percent), while women are more likely to be employed parttime (22 vs. 6 percent) and marginally (28 vs. 21 percent). Within 360 days after entering unemployment they are approximately two weeks ( $\approx 9$  percent) more unemployed, and about three weeks ( $\approx 16$  percent) less employed. Looking at fulltime employment only, this difference increases to more than one month ( $\approx 39$  percent). By contrast, women select into more flexible forms of employment: compared to men, re-entry in marginal and parttime employment exceeds the average duration of men by three to four weeks ( $\approx 63$  to 375 percent).<sup>11</sup> Consistently with the findings of the gender pay literature, re-entry earnings are about 3.600 Euros ( $\approx 35$  percent) lower for women than for men. The difference in earnings is likely highly correlated with employment duration and might also reflect a higher share of parttime work for women because wage information is measured by day and not by hour. Moreover, this is larger than the wage gap of 21 percent that is reported by the Federal Statistical Office for 2015 (Bundesamt, 2016) or by other pay gap studies for Germany that report a difference of about 20 to 25 percent (Heinze, 2010). In line with findings by Arrazola/de Hevia (2016) who analyse not only observed, but also offered wages, the larger gap is likely related to a different composition and pay information of the underlying sample. Pay gap studies look at hourly wages of employed workers, while I consider a sample of unemployed workers and compare the cumulated income within one year.

Overall, the results are in line with the literature that reports lower transition rates from employment to unemployment and vice versa for women (Azmat/Güell/Manning, 2006), which implies lower transition rates to re-employment and results in longer unemployment and shorter employment periods for women.

[Table 1 about here.]

Note that in this study, I face a type of bias that is common among studies of the gender wage gap literature that focus on the wages of employed workers (Altonji/Blank, 1999). This

<sup>9</sup> I also conduct the analysis with daily wages. The results are qualitatively similar.

<sup>10</sup> Wanger (2015) shows that approximately 58 percent of all women (20 percent of all men) were parttime employed in 2014; a share of 15 percent involuntarily because they could not find a fulltime job.

<sup>11</sup> Even though labor market withdrawal seems to be relevant when looking at gender differences of the unemployed, I do not consider it as a separate outcome variable here. The reason is that for *labor market withdrawal*, which includes cumulated days without any labor market activity, the difference between men and women is negligibly small in this sample and therefore the decompositions lead to inconclusive results.

bias is due to a selection of workers into employment or, like here, unemployment exit. As a result, I can observe non-zero employment and earnings only for workers leaving unemployment within the first year. Given that there is a higher share of less productive women than men or that less productive women need more time to become re-employed, the analyzed earnings and employment gaps are likely a lower bound. As the literature reports a negative correlation between gender wage and employment gaps (Olivetti/Petrongolo, 2008), additionally accounting for selection, for example using an adequate instrument or bounds, should further increase the gap between men and women.

### 4.3 Independent variables

To explain variation in the outcome variables, I account for a variety of socio-demographic, labor market-, firm- and job-specific characteristics. The *socio-demographic characteristics* include gender, age, nationality, educational attainment, the existence of children under seven years in the household, marital status, as well as the existence of disabilities. These variables are important as they determine an individual's work effort, labor supply decision, and productivity, which again influence employability and wages. Furthermore, age, the family status, and the existence of children might be important determinants for statistical or employer discrimination. Finally, the marital status determines how likely unemployed women react to institutional incentives such as tax splitting or shared health insurance with the employed partner.

Moreover, I include the *employment history* within the three years prior to unemployment. I distinguish between cumulative and time-fixed labor market variables. The first category comprises the number of employment, unemployment benefit, welfare benefit, and nonparticipation spells. These variables are indicators for the individuals' labor market flexibility and are chosen to predict differences in job finding chances and future labor market stability. Furthermore, I include the cumulative duration in employment, unemployment, and welfare benefit receipt, as well as times of non-participation. These variables characterize the general labor market attachment in the past and reflect human capital accumulation due to work experience and training investments (see Section 2). I additionally include indicator variables that present an individual's (disjunct) state at every quarter for the past three years prior to unemployment (see Table A.1).

Workers register as unemployed and job-seeking coming from very different states in the labor market. Böheim/Taylor (2002) show that the labor market status prior to employment has critical effects on job tenure. As this might also apply to pre-unemployment states, I include the *labor market state 15 days prior to unemployment registration*. I distinguish between employment, subsidized employment, unemployed without benefits, receiving welfare or unemployment benefits, as well as nonparticipation.<sup>12</sup>

Furthermore, I control for *characteristics of the last job*. This comprises any job that might have ended after January 2000. Similarly to the employment history, recalls to the last em-

<sup>12</sup> Note that because spells of different labor market states overlap during this period, I have to introduce a hierarchy in order to identify disjunct groups. Therefore, employment is dominated by welfare benefits, and unemployment benefits. Second, job search without benefits is dominated by employment, welfare and unemployment benefits.

ployer, seniority, as well as the last daily wage predict the re-employment chances of the unemployed as job experience expresses accumulated job- and firm-specific human capital. Recalls to a firm point to jobs which are affected by seasonal fluctuations. Moreover, I control for fulltime (which is further divided into blue or white collar jobs) and parttime employment, as well as occupations, since I want to account for the fact that men and women are differently distributed across fields of occupation (Altonji/Blank, 1999). *Characteristics of the last job* are good descriptors for the selection of women into specific industries, occupations, and firms, as well as flexible working schemes in the past affecting the future labor market success of unemployed workers.

In order to account for the impact of differences in the placement process between the 156 local employment offices, I account for employment office-fixed effects in the regressions. By construction, these covariates automatically control for differences in regional labor market conditions. Any impact of these variables is therefore a joint impact of local employment offices and regional disparities.

Table 2 displays the distributional means for men and women. While socio-demographic characteristics such as age, nationality, and educational attainment are evenly distributed among men and women (there is a slight tendency that women are in general a bit better educated), about twice as many women (15 percent) than men live with a child younger than seven years. Furthermore, we observe that the composition of the sample according to family status varies strongly between men and women: the share of married and single parents is significantly higher among unemployed women than men.

Employment career variables indicate that women are less mobile in the labor market and that there is less of a "switching" between employment and unemployment for women than for men. However, once they become unemployed, women are more likely to withdraw from the labor market rather than to stay unemployed. Furthermore, there are compositional differences regarding the last job position: approximately 40 percent of all women had been employed parttime, while this was only the case for 15 percent of all men. Among the fulltime employed, males were three times more frequently in the blue collar sector while approximately one third of the women working fulltime were blue collar and two thirds of them white collar workers.

[Table 2 about here.]

## 5 Results

### 5.1 Baseline decompositions

Table 3 presents the decomposition results for the aggregate sample. For each outcome variable the first line displays the absolute differences in days or Euros between women and men. The second line displays the percentage of this difference that can be explained by compositional differences between men and women and the third line shows the percentage of the gap that is due to structural differences.

Concerning the decomposition of all outcomes, the difference between men and women is always bigger than predicted as the gender gaps can never be fully explained. There is variation regarding the degree of how well differences can be explained between the outcomes. Women would average 18 percent fewer days in unemployment than men if women were given the average characteristics of unemployed workers. For overall employment there remains an unexplained gap of nearly 12 percent, which increases to 40 percent when focussing only on fulltime re-employment. These structural differences are even more important with unexplained shares of 50 percent for parttime employment which is usually dominated by females. In comparison, differences in marginal employment can be relatively well explained with only 20 percent of the difference unexplained. With respect to the gender earnings gap upon re-employment, the unexplained share of lower earnings for women amounts to approximately 47 percent. This implies a larger unadjusted pay gap than the adjusted wage differential of 7 percent reported by the German Federal Statistical Office (Bundesamt, 2016). This is not surprising, as conventional gender pay gap studies base their analyzes on a selection of employed women (thereby renownedly underestimating the gender gap), whereas I capture also non-employed women in my sample.

Across all outcome variables, there remains the same pattern: women experience detrimental labor market outcomes, which are always larger than one would predict based on a huge list of control variables. Such remaining unexplained gaps might be related to unevenly distributed unobserved characteristics between men and women, for example unobservable preferences for flexible work, the behavior of potential employers or varying job propositions by caseworkers who are assigned to place the unemployed. These factors influence the probability to leave unemployment, and thus also cumulative unemployment duration.

[Table 3 about here.]

## 5.2 Detailed decompositions

This section focusses on the explainable share of labor market gender differences, disentangling their drivers through detailed decompositions (see the lower Panel of Table 3). The overall explained percentage consists of the sum of explained shares that every single variable contributes to the gap. The explained share of one variable is the mean difference of that variable between men and women weighted with the estimated coefficient for the pooled sample and then divided by the gender difference. The detailed decompositions quantify to which degree each variable contributes to explain the gender gaps.<sup>13</sup> As the number of control variables in the regressions is quite large, I group the variables in the following categories: *age*, *family* (nationality, family status, existence of young children, existence of disabilities), *education*, cumulative (*CumLMHistory*) and time-fixed labor market history (*FixLMHistory*), and prior unemployed job search (both as described in Section 4), *job experience* (recalls, tenure, last daily wage), *last job status* (fulltime employment–white

<sup>13</sup> The numbers are expressed in percent of the absolute explained difference (not the overall gender gap). Therefore, the single shares add up to 100 percent.

collar, unskilled blue collar, skilled blue collar job—parttime employment), *last occupation* (38 dummies), and *employment office* (156 dummies) (Table 2, Section 4).

Disadvantages in labor market outcomes for women—more unemployment and less overall and fulltime employment, lower earnings—are mostly due to the chosen occupation (makes  $\approx$  35-40 percent of the explained difference) and a less favorable labor market attachment. The latter is reflected in the employment history (makes  $\approx$  45-54 percent), and the job status prior to unemployment ( $\approx$  10-16 percent). Thus, labor market segregation by gender (Levanon/England/Allison, 2009) and the employment history (Beblo/Wolf, 2003) appear not only to be an important determinant for differences in the remuneration between men and women, but also an important determinant for unemployment duration as well as duration and the type of re-employment. Moreover, part- or fulltime work prior to unemployment is an important determinant regarding the transition to fulltime and parttime employment. A reduction in working hours prior to unemployment conflicts with the traditional career path (long working hours and continuous employment) that is predominantly chosen by men (Valcour/Ladge, 2008). Apparently, this previous difference in the career decision continues also after the unemployment period, explaining why men and women select differently into part- and fulltime employment after unemployment. For earnings, job experience is another relatively important factor to explain gender differences ( $\approx$  18 percent), which is in line with the literature on the relationship between job experience, seniority, and rising wages (Lazear, 1979; Altonji/Shakatko, 1987).

Education contributes little to explaining differential labor market outcomes, if anything, a differential distribution benefits women. This is in line with the literature that confirms converging levels of educational attainment between men and women (Altonji/Blank, 1999). Age and family-related information add little to the compositional part of the gender gaps, even though the share of single parents and young children is higher among unemployed women. However, as the marital status and the existence of children in the household affects the labor market choices of men and women differently (Petrongolo, 2004) these factors must matter in the structural part of the decomposition. Therefore, I will more specifically look into these factors in the next section. Inter-agency differences regarding the placement of unemployed men and women as well as regional differences play only a minor role in explaining gender differences. This implies that varying gender knowledge between the local employment offices adds little to the explained part of the gender unemployment gap. It does not exclude that unobserved intra-agency-specific knowledge on gender issues might be reflected in the structural part of the decomposition. This coincides also with the finding by Arntz/Wilke (2009) who show that it is a worker's individual work history that defines unemployment duration and not regional factors. Overall, the findings suggest that local employment offices as institutions to place unemployed workers impact the re-employment chances and potential gender differences very little.

### 5.3 Decompositions by subgroups

In order to illustrate the effect of family ties in the labor market chances of men and women, I next present results for different subgroups. Age, children, and the marital status are important determinants for the labor supply decisions, the job search intensity, and preferred



components of employment arrangements (Petrongolo, 2004). In the following, I therefore distinguish between these groups in order to learn if there is important variation in the relevance of structural and compositional components. For a clear arrangement of the results, I focus on the most important outcomes unemployment, employment, and earnings.

Table 4 shows that the cumulated duration of unemployment and the differences between men and women vary strongly between the subgroups. The overall unemployment duration is highest for the oldest age group.<sup>14</sup> The gender gap of 2.5 weeks more unemployment for women remains quite stable across age groups older than 35 years. This indicates similar age patterns in unemployment for both men and women older than 35 years. The gender gap can by trend be better explained with rising age: while only 60-70 percent of the unemployment gap can be explained for workers younger than 45 years, for older workers approximately 90 percent of the gap are explainable.

At the same time, employment and re-employment earnings decrease with age, and by tendency also the corresponding gender gaps. On the one hand, this pattern might be related to lower re-employment probabilities with age and thus fewer employment days (Chan/Stevens, 2001). On the other hand, lower earnings with age might also be related to a cohort effect as well as to a negative correlation of age and fulltime working hours, as I only have data on daily, but not hourly wages. Discrimination, unobservable factors, and diverse correlation patterns seem to be more important for the youngest group—especially in terms of employment. For all other age groups, the gender differences in employment can be quite well explained. This pattern holds also for earnings, even though—in line with the overall decomposition—differences in re-employment earnings of unemployed workers cannot be as well explained as for employment. The results suggest that unobservable characteristics such as preferences or caseworker attitudes affect in particular workers in the age range 25 to 35 years.

The importance of family ties for the labor market chances of unemployed men and women can be more profoundly analyzed distinguishing between workers with and without young children as well as married and single workers. The difference in unemployment, employment and earnings is highest for women with young children and married women, and substantially smaller for workers without young children and singles. Table 4 shows that for unemployed married women and mothers approximately 50 to 60 percent of the disadvantage in unemployment is due to structural differences, i.e. not explainable with observable characteristics. For employment, the pattern is quite similar with unexplained shares of 27 to 42 percent of the gender gaps, which increase further to 42 to 53 percent for earnings. Hence, differences in observable characteristics between men and women facing domestic responsibilities—which overlap largely with workers aged 25 to 35 years—are less and structural differences more relevant in order to explain differing labor market outcomes. As this group is the most likely confronted with family-related employment decisions, it is most likely that preferences regarding the distribution of child care and house work within

<sup>14</sup> Due to the German institutional unemployment benefits design, the probability of leaving unemployment decreases with age and the entitlement to unemployment benefits increases with age and can be used as a form of early retirement (people above 55 years are entitled to 18 months and above 58 years to 24 months of benefits). Therefore, this group has a lower incentive to quit unemployment, resulting in a relatively high share of longterm unemployed (Fitzenberger/Wilke, 2010).

the household drive the large unexplained part of the gender differences. Moreover, employer discrimination might be most relevant for these groups as employers are hesitant to hire women where family-driven employment interruptions are the likeliest. On top of that, the unexplained part of the decomposition might contain differences in the way caseworkers place women with restricted labor supply due to stereotypes and gender role attitudes (Kopf/Zabel, 2014; Projektteam IAQ, FIA, and GendA, 2009).

The pattern for workers without young children and singles is quite different from the rest. Single women perform the best among all types of women compared to single men. Differences in unemployment and employment can be fully explained by the model. The gender differences are substantially smaller and the decompositions therefore not fully conclusive for unemployment and reemployment. If anything, they suggest that structural differences benefit these women as one would have expected larger detrimental gaps based on observables.

Overall, the results suggest that in order to disentangle the labor market success of workers, it is important to look into heterogeneous labor market effects between men and women, as well as within people of the same gender (Petrongolo, 2004).

[Table 4 about here.]

## 6 Summary and conclusion

The objective of this paper is to study the heterogeneity of labor market chances of unemployed women and men. The underlying data come from German register data that comprise the universe of employees and unemployed workers. The sample used consists of a 25 percent random sample of individuals who registered unemployed and searching for jobs with the local employment offices in the second half of 2010. I study gender gaps in cumulative unemployment, as well as in cumulative re-employment, distinguishing between parttime, fulltime, and marginal employment, and average re-employment earnings. Given that the relevant literature so far decomposed mainly labor market gender differences of employed workers, the findings of this work complement those of earlier studies.

I find that unemployed women have detrimental labor market chances compared to men. They accumulate more unemployment, less fulltime employment, and more flexible employment upon unemployment exit, such as marginal or parttime employment, which contributes to lower re-employment earnings for women. Structural gender differences, that is, differences in correlation patterns, unobservable factors, and discrimination are quite important for the re-employment outcomes despite a large number of observable characteristics.

The results of the detailed decompositions suggest that disadvantages for women in the labor market in general result from less favorable choices in occupations, the labor market attachment, and working hours prior to unemployment. The level of education and the family status have little power in explaining gender differences for all unemployed. Yet, structural differences are in particular important for workers below 35 years, married, or with

young children. This suggests that family-related preferences or role models by workers, employers, and caseworkers in employment offices are important for the re-employment prospects of these women. This result is in line with analyses by Ollikainen (2006) and Nilsen/Risa/Torstensen (2000), who find that the labor market chances of females depend on the family background.

For the placement efforts of local employment offices this implies that the simple distinction between men and women is insufficient in order to account for the circumstances that determine the labor market chances. Hence, a successful placement of unemployed workers necessitates adequately considering an individual's situation in life as this might importantly determine the workers' propensity and preferences for labor supply. As the choice in occupations is usually made early in the employment career it is, however, not manipulable by the employment office. This suggests that in order to establish equal labor market outcomes for men and women institutions such as tax splitting, career counseling, the access to child care facilities, or the availability of family-friendly workplaces needs to be reconsidered.

The generalizability of these results is subject to certain limitations. For instance, even if gender gaps can be fully explained by compositional differences this does not imply that perfectly equal labor market opportunities for both women and men indeed exist. Gender differences in endowments might be the result of earlier barriers in the labor market for women. For example, women often select into occupations with low levels of deduction or flexible working hours. Blinder-Oaxaca decompositions cannot account for this type of gender inequality of opportunity in the labor market.

## Tables

Table 1: Sample statistics of the outcome variables

Outcomes	Men		Women		Difference
	Mean	Share	Mean	Share	
Unemployment (days)	160.73 (117.10)	1.00	175.25 (122.09)	1.00	-14.52***
Employment (days)	145.25 (131.66)	0.65	122.29 (130.55)	0.57	22.96***
Earnings (Euros)	10,417.16 (11,441.09)	0.65	6,805.30 (9,186.98)	0.57	3,611.87***
Fulltime (days)	108.88 (126.39)	0.54	66.67 (110.46)	0.35	42.21***
Parttime(days)	8.52 (42.98)	0.06	40.39 (90.65)	0.22	-31.87***
Marginal (days)	29.82 (78.09)	0.21	49.17 (101.75)	0.28	-19.36***
N	138,628		103,556		

Source: IEB V10.00.00 - 121012. Own calculations. Significance level: \*\*\* 1%, \*\* 5%, \* 10%.

Notes: The shares for workers going into fulltime employment and parttime employment do not fully add up to 1 because the parttime variable contains some missings.

Table 2: Sample averages of the independent variables

	Men	Women	Difference
25-34 years	0.32	0.33	-0.00
35-44 years	0.25	0.26	-0.01***
45-54 years	0.26	0.27	-0.01***
55-64 years	0.17	0.15	0.02***
Foreign	0.13	0.11	0.02***
Single	0.43	0.31	0.12***
Relationship	0.09	0.08	0.00***
Single parent	0.01	0.09	-0.08***
Married	0.47	0.52	-0.05***
Unknown family status	0.00	0.00	0.00**
Foreign* <35 years	0.05	0.04	0.00***
Foreign* married	0.08	0.07	0.01***
Foreign* child	0.02	0.02	0.00
Child <7 in household	0.09	0.15	-0.06***
Disabled	0.05	0.04	0.00***
No degree	0.16	0.14	0.02***
Apprenticeship	0.62	0.55	0.07***
A-levels with or w/o apprenticeship	0.11	0.15	-0.04***
(Technical) university	0.11	0.16	-0.05***
Benefits at UE entry (dummy)	0.83	0.78	0.04***
<b>Labor market history of the previous 3 years (cumulative)</b>			
Average daily benefit	15.12	8.94	6.18***
# Employment spells	2.33	2.09	0.24***
# UE benefit spells	1.10	0.76	0.33***
# Basic care spells	0.21	0.17	0.04***
# LM withdrawal spells	0.59	0.66	-0.07***
Days employed/100	62.49	56.29	6.20***
Days employed/100 squared	7.16	6.53	0.62***
Days UE benefits/100	1.18	0.92	0.25***
Days UE benefits/100 squared	3.41	2.77	0.64***
Days welfare benefits/100	0.33	0.32	0.01**
Days welfare benefits/100 squared	1.34	1.51	-0.18***
Days LM withdrawal/100	7.82	10.19	-2.37***
Days LM withdrawal/100 squared	1.34	1.69	-0.36***
<b>State prior to unemployment</b>			
Employment	0.63	0.58	0.06***
Welfare and UE benefits	0.01	0.01	0.00***
UE, no benefits	0.12	0.13	-0.01***
ALMP participation	0.06	0.08	-0.02***
Subsidized employment	0.07	0.09	-0.02***
Non-participation	0.11	0.11	-0.00
<b>Characteristics of the last job</b>			
Recalls	0.09	0.07	0.02***
Days seniority/100	1.41	1.45	-0.03***
Days seniority/100 squared	9.95	10.49	-0.53***
Last daily wage	63.55	44.32	19.24***
Apprentice	0.01	0.02	-0.00***
Unskilled blue collar worker	0.31	0.14	0.17***
Skilled blue collar worker	0.30	0.07	0.23***

Continued on next page...

... table 2 continued

	<b>Men</b>	<b>Women</b>	<b>Difference</b>
White collar worker	0.22	0.34	-0.12***
Parttime worker	0.15	0.43	-0.27***
No job status info	0.01	0.01	-0.00***
Occupation dummies	YES	YES	
<b>Employment office dummies</b>	YES	YES	
N	138,628	103,556	

Source: IEB V10.00.00 - 121012. Own calculations.

Significance level: \*\*\* 1%, \*\* 5%, \* 10%.

Table 3: Detailed decompositions of cumulative outcomes during the first 360 days after entering unemployment

	Unemployment	Employment	Earnings	Fulltime	Parttime	Marginal
	Employment	Employment	Earnings	Employment	Employment	Employment
Difference	-14.52***	22.96***	3,611.87***	42.21***	-31.87***	-19.36***
Explained	82.39%***	87.94%***	52.87%***	60.29%***	49.66%***	78.19%***
Unexplained	17.61%***	12.06%***	47.13%***	39.71%***	50.34%***	21.81%***
<i>Explained detailed:</i>						
Age	-10.66%***	-5.92%***	-4.45%***	-3.26%***	1.11%***	-0.48%***
Family	0.61%	0.33%	1.45%**	4.66%***	8.26%***	3.10%***
Education	-11.08%***	-2.57%***	-11.16%***	-2.78%***	0.53%*	-5.31%***
CumLMHistory	16.36%***	31.35%***	32.87%***	19.96%***	2.52%**	18.17%***
FixLMHistory	37.27%***	19.64%***	13.95%***	8.56%***	-3.20%***	1.36%*
Prior to UE	4.64%***	3.61%***	3.00%***	1.81%***	-0.83%***	1.48%*
Job experience	8.17%	1.84%**	18.26%*	3.86%*	4.74%	3.37%*
Last job status	13.32%***	15.60%***	9.73%***	31.35%***	41.57%***	87.09%***
Last occupation	41.13%***	35.96%***	38.62%***	36.22%***	44.11%***	-8.74%***
Employment office	0.23%	0.18%	-2.27%***	-0.39%	1.19%***	-0.04%
Total	100%	100%	100%	100%	100%	100%

Source: IEB V10.00.00 - 121012. Own calculations.

Notes: Difference =  $E(Y_M) - E(Y_F)$ ; Explained =  $\frac{E(X_M)\beta^* - E(X_F)\beta^*}{\text{Difference}}$ ; Unexplained =  $\frac{E(X_M)(\beta_M - \beta^*) + E(X_F)(\beta^* - \beta_F)}{\text{Difference}}$

The detailed analyses report the importance of specific categories, which comprise the following variables: Age: 4 dummies; family: nationality, family status (6 dummies), young children (dummy), disabilities (dummy); CumLMHistory is the worker's labor market history comprising aggregate variables as in Table 2, Section "Labor market history for the previous 3 years (continuous)"; FixLMHistory is the worker's stationary labor market history comprising values at cut-off dates as in Table A.1; Prior to UE contains the state in the two weeks prior to unemployment (employment, welfare benefits, unemployment, ALMP participation, subsidized employment, non-participation); Job experience contains the number of recalls, cumulative days of tenure without interruption, and the average last daily wage over the past three years at the last firm; Last job status controls for the status apprentice, unskilled blue collar worker, skilled blue collar worker, white collar worker, parttime worker, and a category for missing information of that variable; Last occupation contains 38 categories for occupations; Employment office contains dummy variables for 156 local employment offices. Significance level: \*\*\* 1%, \*\* 5%, \* 10%.

Table 4: Aggregate decompositions of cumulative outcomes during the first 360 days after entering unemployment for subgroups

	(All)	(25-35)	(35-45)	(45-55)	(55-65)	(No children <7 years)	(Children <7 years)	(Married)	(Singles)
<b>Unemployment</b>									
Men	160.73	137.47	148.71	162.78	221.38	162.97	139.14	165.48	158.34
Difference	-14.52***	-9.06***	-19.11***	-19.27***	-18.87***	-11.40***	-41.04***	-20.21***	-3.91***
Explained	82.39%***	70.63%***	61.32%***	87.59%***	90.42%***	105.91%***	40.36%***	49.23%***	233.30%***
Unexplained	17.61%***	29.37%***	38.68%***	12.41%	9.58%	-5.91%	59.64%***	50.77%***	-133.30%***
<b>Employment</b>									
Men	145.25	164.46	158.48	147.05	84.65	142.70	169.82	141.32	146.29
Difference	22.96***	24.41***	27.93***	22.53***	21.06***	17.29***	65.02***	34.59***	7.25***
Explained	87.94%***	61.45%***	94.44%***	106.91%***	91.30%***	100.52%***	57.82%***	73.50%***	186.28%***
Unexplained	12.06%***	38.55%***	5.56%	-6.91%	8.70%	-0.52%	42.18%***	26.50%***	-86.28%***
<b>Earnings</b>									
Men	10,417.16	11,457.99	11,925.27	10,637.49	5,734.68	10,159.25	12,903.49	10,543.37	10,192.68
Difference	3,611.87***	2,859.50***	4,791.62***	4,259.66***	2,737.62***	3,013.15***	8,004.55***	5,348.97***	1,015.73***
Explained	52.87%***	30.37%***	48.57%***	69.35%***	79.04%***	55.09%***	46.87%***	57.94%***	37.33%***
Unexplained	47.13%***	69.63%***	51.43%***	30.65%***	20.96%***	44.91%***	53.13%***	42.06%***	62.67%***

Source: IEB V10.00.00 - 121012. Own calculations.  
 Difference =  $E(Y_M) - E(Y_F)$ ; Explained =  $\{[E(X_M) - E(X_F)]\beta^* / \text{Difference}\}$ ; Unexplained =  $[E(X_M) - E(X_F)](\beta^* - \beta_F) / \text{Difference}$   
 Significance level: \*\*\* 1%, \*\* 5%, \* 10%.



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## Appendix

Table A.1: Sample statistics for additional labor market history

	Men Mean	Women Mean	Difference
<b>Labor market history of the previous 1 to 3 years (time-fixed)</b>			
Employment (90 days before)	0.67	0.61	0.06***
UE benefits (90 days before)	0.09	0.10	-0.02***
Welfare benefits (90 days before)	0.00	0.00	-0.00
UE, no benefits (90 days before)	0.06	0.09	-0.03***
LM withdrawal (90 days before)	0.18	0.20	-0.01***
Employment (180 days before)	0.67	0.61	0.06***
UE benefits (180 days before)	0.10	0.12	-0.01***
Welfare benefits (180 days before)	0.00	0.01	-0.00***
UE, no benefits (180 days before)	0.05	0.08	-0.03***
LM withdrawal (180 days before)	0.17	0.20	-0.02***
Employment (270 days before)	0.66	0.60	0.06***
UE benefits (270 days before)	0.12	0.13	-0.00***
Welfare benefits (270 days before)	0.01	0.01	-0.00***
UE, no benefits (270 days before)	0.04	0.07	-0.03***
LM withdrawal (270 days before)	0.17	0.20	-0.03***
Employment (360 days before)	0.65	0.60	0.05***
UE benefits (360 days before)	0.13	0.13	0.01***
Welfare benefits (360 days before)	0.01	0.01	-0.00**
UE, no benefits (360 days before)	0.03	0.06	-0.02***
LM withdrawal (360 days before)	0.17	0.21	-0.04***
Employment (450 days before)	0.65	0.60	0.05***
UE benefits (450 days before)	0.14	0.13	0.01***
Welfare benefits (450 days before)	0.01	0.01	-0.00
UE, no benefits (450 days before)	0.03	0.05	-0.02***
LM withdrawal (450 days before)	0.17	0.21	-0.04***
Employment (540 days before)	0.64	0.60	0.04***
UE benefits (540 days before)	0.15	0.13	0.02***
Welfare benefits (540 days before)	0.01	0.01	0.00
UE, no benefits (540 days before)	0.03	0.05	-0.02***
LM withdrawal (540 days before)	0.16	0.21	-0.04***
Employment (630 days before)	0.63	0.59	0.04***
UE benefits (630 days before)	0.16	0.13	0.03***
Welfare benefits (630 days before)	0.01	0.01	0.00**
UE, no benefits (630 days before)	0.04	0.05	-0.02***
LM withdrawal (630 days before)	0.16	0.21	-0.05***
Employment (720 days before)	0.61	0.58	0.03***
UE benefits (720 days before)	0.17	0.13	0.04***
Welfare benefits (720 days before)	0.02	0.02	0.00***
UE, no benefits (720 days before)	0.04	0.05	-0.02***
LM withdrawal (720 days before)	0.17	0.22	-0.05***
Employment (810 days before)	0.58	0.57	0.01***
UE benefits (810 days before)	0.20	0.13	0.07***
Welfare benefits (810 days before)	0.02	0.02	0.00***
UE, no benefits (810 days before)	0.04	0.05	-0.02***

*Continued on next page...*

... table A.1 continued

	<b>Men</b>	<b>Women</b>	
	Mean	Mean	Difference
LM withdrawal (810 days before)	0.17	0.23	-0.06***
Employment (900 days before)	0.56	0.56	-0.01***
UE benefits (900 days before)	0.22	0.13	0.09***
Welfare benefits (900 days before)	0.02	0.02	0.00***
UE, no benefits (900 days before)	0.03	0.05	-0.02***
LM withdrawal (900 days before)	0.17	0.23	-0.07***
Employment (990 days before)	0.57	0.56	0.01***
UE benefits (990 days before)	0.21	0.13	0.08***
Welfare benefits (990 days before)	0.02	0.02	0.00
UE, no benefits (990 days before)	0.04	0.05	-0.02***
LM withdrawal (990 days before)	0.17	0.24	-0.07***
Employment (1080 days before)	0.61	0.57	0.04***
UE benefits (1080 days before)	0.17	0.12	0.05***
Welfare benefits (1080 days before)	0.02	0.02	-0.00**
UE, no benefits (1080 days before)	0.04	0.05	-0.02***
LM withdrawal (1080 days before)	0.17	0.24	-0.07***
<b>N</b>	<b>138,628</b>	<b>103,556</b>	

Source: IEB V10.00.00 - 121012. Own calculations.

Notes: All variables are dummies, taking the value 1 if a worker has a certain state on the respective reference day. UE: unemployment, LM withdrawal: labor market withdrawal.

Significance level: \*\*\* 1%, \*\* 5%, \* 10%.

Table A.2: Aggregate decompositions of cumulative outcomes during the first 360 days after entering unemployment

	Unemployment	Employment	Earnings	Fulltime Employment	Parttime Employment	Marginal Employment
Men	160.7*** (0.314)	145.2*** (0.354)	10417.2*** (30.73)	108.9*** (0.339)	8.521*** (0.115)	29.82*** (0.210)
Women	175.3*** (0.379)	122.3*** (0.406)	6805.3*** (28.55)	66.67*** (0.343)	40.39*** (0.282)	49.17*** (0.316)
Difference	-14.52*** (0.493)	22.96*** (0.538)	3611.9*** (41.94)	42.21*** (0.483)	-31.87*** (0.304)	-19.36*** (0.379)
<b>Reference: pooled</b>						
Explained	-11.97*** (0.578)	20.19*** (0.479)	1909.6*** (137.0)	25.45*** (0.554)	-15.83*** (0.388)	-15.14*** (0.373)
Unexplained	-2.557*** (0.713)	2.769*** (0.649)	1702.2*** (140.9)	16.76*** (0.699)	-16.04*** (0.462)	-4.221*** (0.481)
<b>Reference: men</b>						
Explained	-10.90*** (0.696)	19.84*** (0.667)	1748.6*** (150.4)	19.05*** (0.666)	-10.44*** (0.365)	-16.98*** (0.440)
Unexplained	-3.622*** (0.819)	3.120*** (0.805)	1863.2*** (152.7)	23.16*** (0.779)	-21.43*** (0.499)	-2.380*** (0.577)
<b>Reference: women</b>						
Explained	-4.465** (1.383)	9.646*** (1.465)	1142.8*** (113.8)	24.90*** (1.285)	-19.41*** (0.900)	-12.07*** (1.138)
Unexplained	-10.06*** (1.436)	13.32*** (1.524)	2469.1*** (120.3)	17.31*** (1.366)	-12.46*** (0.908)	-7.286*** (1.167)
N	242184	242184	242184	242184	242184	242184

Source: IEB V10.00.00 - 121012. Own calculations.

Significance level: \*\*\* 1%, \*\* 5%, \* 10%.

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## **Imprint**

**IAB-Discussion Paper 27/2016**

24 August 2016

### **Editorial address**

Institute for Employment Research  
of the Federal Employment Agency  
Regensburger Str. 104  
D-90478 Nuremberg

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ISSN 2195-2663

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