

## **Differential Employment Prospects among Atypical Employees: Effects of Type of Contract or Worker Preference?**

By Jan Brülle\*

### **Abstract**

In this study we analyze transitions from atypical to regular employment in Germany, focusing on the effects of different types of atypical employment on the transition probability into full-time and long-term employment. The predictions are tested using discrete-time duration models with random effects. The empirical results confirm the importance of the type of work contract. Fixed-term employment shows the highest transition probabilities into regular employment, compared with agency work and regular part-time employment, while marginal employment yields the lowest chances of upward mobility. These effects can neither be explained by differences in the observed characteristics nor by the preferences for shorter working-hours by part-time employees.

*JEL Classifications: J22, J62, J68*

### **1. Introduction**

In Germany as well as in many other industrialized nations, so called atypical or nonstandard employment contracts are on the rise (Kalleberg, 2000; Barbieri, 2009). This development has led to a discussion about the disadvantages or merit of these types of contracts: Are they “stepping stones” or rather “dead ends” for employees (Booth et al., 2002)?

Against the backdrop of this debate, the present paper analyzes transitions from nonstandard to regular employment, focusing on the effect of various contract types. In contrast to regular employment involving full-time work, which

---

\* I would like to thank Hans-Jürgen Andreß, Markus Gangl, Marco Giesselmann, Katharina Lutz, Fabian Ochsenfeld, Evelyn Sthamer, Elisa Szulganik and the participants of the labor market session of the SOEP User Conference 2012 for helpful comments at different stages of the project. This contribution is a condensed version of Brülle (2013). The *Zeitschrift für Soziologie*’s permission to draw on that material for the present article is gratefully acknowledged.

has no fixed duration of contract, is subject to social security contributions and is performed under the employer's direction, four major types of nonstandard employment contracts can be distinguished: Fixed-term, part-time, marginal (referring to short-hour work that is not subject to social security contributions), and temporary agency work.

The heterogeneity of employees' employment chances associated with different types of contracts has been widely acknowledged (for a review of previous research on Germany see Lengfeld/Kleiner, 2009). Nevertheless a systematic comparison of their transitions to regular employment is still lacking. While there are good theoretical arguments for claiming a real effect of the type of contract on employment transitions, alternative selection-based explanations are also possible: Not only does the likelihood of holding different types of nonstandard contracts differ according to such personal characteristics as education and labor market experience, but a lot of part-time contracts are held by employees who are not interested in regular employment. To identify the effect of type of contract on employment chances we therefore have to control for the heterogeneity of employees and their self-selection into employment relationships through individual preferences. Theoretically, an actual effect of the type of contract can be expected due to the specific functions these contracts fulfill for employers (Kalleberg, 2000; Houseman, 2001): Fixed-term employment and temporary agency work both provide the employer with external flexibility and can be used to buffer demand shocks, bypassing the relatively strict lay-off protection of regular workers. However, fixed-term employment is also often used as a screening device for new employees and serves as a port of entry into internal labor markets, while this is rarely the case for temporary agency work in Germany (Kalleberg, 2000; Mitlacher, 2007; Hohendanner/Gerner, 2010).

Employment relationships with reduced weekly working hours give employers the opportunity to optimize staffing during the day or week, especially when business hours are unusual or vary (Allaart/Bellmann, 2007). Especially marginal part-time work is also used as a device for cutting labor costs and avoiding labor regulations (Allaart/Bellmann, 2007; Bäcker, 2007; Hohendanner/Bellmann, 2007). Furthermore, all atypical types of contract imply reduced incentives to invest in human capital, either because of the uncertain continuance in a position or because of reduced daily working hours (Brehmer/Seifert, 2008). Due to the very short working hours of marginal employees (usually below 15 hours per week), we assume that the consequences for the potential to accumulate human capital on-the-job or through employer investments are most severe. Marginal employees thus typically find themselves in situations more remote from the core sector of the labor market than regular part-time workers.

Overall, we expect marginal employees to change to regular employment least often. Temporary agency work and regular part-time employment should

lead to regular employment more often, while there are no clear-cut theoretical arguments for better employment chances for part-time employees compared to agency workers or vice versa. The highest probability of a change to regular employment is expected for fixed-term employees.<sup>1</sup> In the following section we discuss the database and the method used in our analysis. Afterwards we present and discuss the results. The paper concludes with a brief review of the relevance of the results.

## 2. Data and Method

We estimate transitions from nonstandard to standard employment using a discrete-time duration model for yearly intervals<sup>2</sup> (Allison, 1982) and data from the German Socio-Economic Panel (SOEP) (Wagner et al., 2007). The model includes random effects for individuals because more than one episode of non-standard employment is possible for the participants.

Identifying the starting point of an employment relationship is necessary if one is to avoid bias through left-censored episodes. An episode is defined as beginning only if the respondents report the beginning of a new job. We have limited the sample to people between the ages of 16 and 65. Individuals not fully available to the labor market and the participants in job creation measures are also excluded. Because of the limited availability of key variables, only the years 2001 to 2009 could be used in the analysis. Right-censoring can occur when there is no interview in the next year or when the work episode ends with an event other than entry into regular employment.

Table 1 shows the precise definition of the characteristics of the employment contract. Note that the wording of the question concerning agency work and marginal employment has changed during the observation period. Furthermore, the question used to identify agency work involves the risk that people may confuse temporary agency work with fixed-term or part-time employment (Schäfer, 2012).<sup>3</sup>

Because more than one of these characteristics can apply to a particular employment relationship, five types of contract are defined as mutually exclusive

---

<sup>1</sup> For a more extensive discussion of the theoretical arguments and the existing literature, see Brülle (2013).

<sup>2</sup> Because of the yearly metric, very short spells of atypical employment are under-represented and some transitions to regular employment will be overlooked, if the new employment spell has already been completed before the next interview occurs.

<sup>3</sup> The partial solution proposed by Schäfer (2012) is already implemented in the analysis, because only respondents reporting a new job spell were used in the analysis.

Table 1

**Characteristics of employment contracts in the SOEP**

Characteristic	Waves	Wording (German Questionnaire)	Wording (English Questionnaire)	Remarks
Fixed-term	2001–2009	Haben Sie einen unbefristeten Arbeitsvertrag oder ein befristetes Arbeitsverhältnis?	Is your contract of employment for an unlimited or limited period?	“Not applicable/don’t have an employment contract” is set to missing
Part-time	2001–2009	Wie viele Wochenstunden beträgt Ihre vereinbarte Arbeitszeit ohne Überstunden?	How many hours are stipulated in your contract (excluding overtime)?	1-34.9: Part-time; 35-80: Full-time. When respondents state that their working hours are not set, information about actual working hours is used.
Temporary agency work	2001–2002	Handelt es sich um eine Zeitarbeitsfirma?	Is this an employment agency specializing in temporary help?	Only employees who work less than 30 hours are asked this question. Midi-Jobs are not coded as marginal employment.
	2003–2009	Handelt es sich dabei um ein Zeitarbeits- bzw. Leiharbeitsverhältnis	Is this work temporary or on a contractual basis?	
Marginal employment	2001	Ist das eine geringfügige Beschäftigung nach der 630-DM-Regelung?	Is that marginal employment according to the 630 DM regulations?	
	2002	Ist das eine geringfügige Beschäftigung nach der alten 630-DM-Regelung (jetzt 325 EURO)?	Is this part-time employment in accordance with the old 630-DM-regulation (now 325 EURO)?	
	2003	Ist das eine sogenannte „geringfügige Beschäftigung“?	Is that a so called “peripheral job”?	
	2004–2009	Ist das eine geringfügige Beschäftigung nach der 400- bzw. 800-Euro-Regelung (Mini- bzw. Midi-Job)?	Is it a marginal job in accordance with the 400/800 Euros Rule (mini-/midi-job)?	

classes: fixed-term and full-time (referred to as fixed-term in the following); part-time (referring to employment of less than 35 hours per week); combined fixed-term and part-time; temporary agency work; and marginal employment.<sup>4</sup> We model duration dependence using the logarithm of the current job duration and allowing for different baseline hazards for the types of contract. Working time preferences are recorded according to the definition of part-time work: Respondents who want to work less than 35 hours are coded as having no preference for full-time work.<sup>5</sup> In the final sample with valid information for all

<sup>4</sup> Other possible combinations of these categories (e.g., marginal and fixed-term) could not be distinguished because of the small cell sizes. People who describe themselves as agency workers are always assigned to this category, while marginal employees are always coded as such if they are not agency workers at the same time.

variables, we observe 1498 Person-Years of fixed-term employment (23.7%), 2285 Person-Years of part-time employment (36.1%) and 1360 Person-Years of marginal employment (21.5%). Temporary agency work is less common in Germany (634 Person-Years; 10.0%), and the smallest share is simultaneously fixed-term and part-time employed (555 Person-Years; 8.8%). Because of the greater average duration of part-time and marginal employment, their share of episodes is smaller than their share of observations. However, the share of episodes is not reported because in some cases the type of contract can change during the job spell.

The empirical model includes additional control variables, which measure individual resources and restrictions, as well as the characteristics of the position and the establishment. Regional and period dummies are added in order to control for the effects of the labor market situation.

### 3. Empirical Results

How important is the type of contract in explaining atypical employees' transition to regular employment while controlling for worker and job characteristics as well as working time preferences? Table 2 records the estimates from the complete regression model. The logit coefficients for the type of contract dummies show statistically highly significant negative effects compared with fixed-term employment. Respondents in fixed-term employment have the highest probability of entering regular employment, followed by part-time employees, temporary agency workers, and workers who are both fixed-term and part-time employed. The lowest chances are observed for respondents in marginal employment. The difference, however, of the effects of marginal employment and temporary agency work is just above conventional levels of significance ( $X^2 = 3.73; p = 0.05$ ), while the difference between part-time work and marginal work is highly significant ( $X^2 = 8.57; p = 0.00$ ). Also statistically insignificant is the difference between the coefficients of part-time work and temporary agency work ( $X^2 = 2.24; p = 0.13$ ).

---

<sup>5</sup> Respondents are asked "If you could choose your own number of working hours, taking into account that your income would change according to the number of hours: How many hours would you want to work?"

Table 2

**Discrete-time duration model for transitions to regular work (Model 4)**

	Logit Coefficient	SE
Type of contract (Reference: Fixed-term)		
<i>Part-time</i>	-0.68***	(0.18)
<i>Temporary agency work</i>	-1.01***	(0.27)
<i>Part-time and fixed-term</i>	-1.24***	(0.29)
<i>Marginal Employment</i>	-1.63***	(0.16)
Elapsed time of the episode (logarithm)		
<i>Main effect</i>	0.22	(0.20)
<i>Part-time*Duration</i>	-0.27	(0.21)
<i>Agency work*Duration</i>	-0.01	(0.28)
<i>Part-time-fixed-term*Duration</i>	-0.31	(0.51)
<i>Marginal*Duration</i>	-1.05*	(0.49)
Preference for part-time employment		
<i>Main effect</i>	0.02	(0.19)
<i>Part-time*preference</i>	-1.30***	(0.26)
<i>Agency work*preference</i>	-0.61	(0.40)
<i>Part-time-fixed-term*preference</i>	-1.57***	(0.47)
<i>Marginal*preference</i>	-1.18**	(0.42)
Years of education	0.03	(0.02)
Full-time work experience	0.04***	(0.01)
Unemployment before current job spell	-0.49***	(0.12)
Subjective health: bad	-0.35*	(0.18)
Age	-0.04***	(0.01)
Sex: Female	-0.15	(0.14)
Children in household: Yes	0.17	(0.15)
Married	0.00	(0.16)
Female*Children	-0.58**	(0.20)
Female*Married	-0.29	(0.20)
Public sector	-0.42***	(0.12)
Region: East Germany	-0.20	(0.10)
Constant	-0.43	(0.23)
Observations (Persons)	6332 (2695)	
BIC	4352.3	
Intra-class correlation (p)	0.08	

Data: SOEP 2001–2009, own calculations. \*:  $p < 0.05$ ; \*\*:  $p < 0.01$ ; \*\*\*:  $p < 0.001$ .

The model also controls for migration background, year at start of job spell, establishment size and EGP-class

Interpreting these results, we find a specific effect of the type of contract on employment chances, controlling for preferences and other predictors. Logit coefficients, however, are not suited for assessing the practical significance of results on an intuitive scale and for comparing coefficients between models (Wooldridge 2008). As a result, Table 3 records the predicted probabilities for fixed-term employees and the average marginal effects of the other types of

contract for different models. Groups of variables are added step-wise to assess their contribution in explaining the differential employment prospects of atypical workers.

*Table 3*  
**Average Marginal Effects of type of contract on transitions  
into regular employment (Models 0–4; N=6332)**

	Model 0	Model 1	Model 2	Model 3	Model 4
<i>Reference: Fixed-term (predicted probabilities)</i>	<i>0.39</i>	<i>0.39</i>	<i>0.31</i>	<i>0.29</i>	<i>0.30</i>
Part-time	–0.30	–0.18	–0.12	–0.10	–0.11
Temporary agency work	–0.22	–0.20	–0.17	–0.15	–0.15
Part-time-fixed-term	–0.32	–0.25	–0.19	–0.17	–0.18
Marginal employment	–0.35	–0.31	–0.23	–0.20	–0.21
BIC	4403.9	4305.7	4287.3	4283.7	4352.3

Effects assuming first year of a job-spell and preference for full-time employment.

Included Variables:

Modell 0: Duration (log) including interactions;

Modell 1: + working-time preferences including interactions;

Modell 2: + Sex, children in household, married (both with interactions with gender);

Modell 3: + Years of education, labor market experience, unemployment before current job spell, subjective health, migration background, age;

Modell 4: + Period at start of episode, size of establishment, EGP-Class, region, public sector.

*Data:* SOEP 2001–2009, own calculations.

Model 0 includes only the type of contract and the employment spell duration as predictors of transitions to regular employment (also included are the interaction effects between the type of contract and job duration in accounting for differences in baseline hazards). The predicted marginal probability of entering regular employment is 39% for fixed-term employees. In other words, assuming all respondents in the sample were fixed-term employed, the average predicted probability is estimated to be 39%. Being employed as an agency worker rather than on a fixed-term basis would reduce the probability of entering regular employment by 22 percentage points on average. The strongest effect is estimated to be 34 percentage points for marginal employment. These results reveal very substantial differences between employment contracts. How do the results change when we include additional variables? Models 1 and 2 add the working-time preferences (again also including interaction effects with the type of contract) and the variables for gender and household context, respectively. Both models lead to a reduction of the marginal effects of the type of contract when compared with fixed-term employment, especially for those types of contract involving reduced working hours. By contrast, Models 3 and 4, which include additional predictors, show only slightly different marginal effects for the type of contract. While employees' preferences as well as the

restrictions on labor market participation because of the household situation go a long way toward explaining the different employment prospects of atypical employees, this is not true of employee resources or the characteristics of the job and the business establishment.

In the full Model 4, the marginal effects range from 11 percentage points for part-time employment to 21 percentage points for marginal employment. With respect to the predicted marginal probability of a transition for fixed-term employees, the chances for employees in other types of contract are estimated to be between one-third and two-thirds lower, thus indicating that the results are not only statistically but also substantially significant. Interestingly enough, the results show no duration dependence except in the case of marginal employment (Table 2). This could either point to unobserved heterogeneity between marginal employees that remains unaccounted for by the predictors or it could suggest processes of human-capital devaluation or the stigmatization of people working in marginal employment for longer periods.

It becomes clear from these numbers that the differences between contracts should not be overlooked when analyzing transitions to regular work, but naturally there are other important predictors, as is shown in Table 2. The results underline the importance of including predictors pertaining to the individual respondent as well as to the establishment and economy level. The previous employment career of the participant is especially important in determining their transition probability, as this is reflected in the positive coefficient for work experience as well as the negative effect of previous unemployment experience. Poor subjective health and advanced age lower the probability of transitions to regular employment. The presence of children in the household also hampers the entry into regular employment, but this applies only to women, as is shown by the interaction effect. In addition to the effects of individual-level variables, there is a negative effect of being employed in the public sector. Further analysis explores the heterogeneous effects of employee resources and work context. For example, because the negative effect for the public sector is only found among fixed-term employees, differences between the types of contract are not found in the case of public employment. For a discussion of heterogeneous effects as far as they involve the sector as well as the qualification level, see Brülle (2013).

#### 4. Conclusion

Labor market careers and opportunities are shaped by individual characteristics and preferences as well as by organizational and industrial factors. The type of contract plays an important role, since it influences the opportunity structure employees face when seeking a better job. The differences between the transition probabilities of atypical employees can only partially be explained by



working-time preferences and by the gender-specific effects of the household context. Fixed-term employees undergo successful transitions to regular employment more frequently than employees working under other types of contracts, even when we control for other factors. From a theoretical standpoint this can best be explained by reference to the specific role of fixed-term contracts as screening devices for employers and the resulting proximity of these employment relationships to an organization's core. Part-time employees as well as temporary agency workers have significantly lower chances of regular employment. Least probable are transitions for marginal employees, who are assumed to be filling positions at the periphery of the labor market and thus lack contact with the primary labor market segment.

Random effects, however, do not address the problem of the correlated but unobserved predictors that might explain this relationship. Therefore, the replication of this analysis using models which take into account fixed effects would be a promising direction for future research. Also, we were only able to assess the probability of an individual's entering regular employment, while the consequences of different types of contract may be quite different for other outcome variables, such as, for example, the risks of unemployment (Giesecke, 2009).

Because our analysis focused on the structural effects of particular types of contracts in contrast to those explanations which focus on the specific preferences of employees, the results are very significant as far as further research on employment transitions as well as social policy are concerned. Atypical employment relationships are shaped by political action, which influences their rate of occurrence in the labor market. Our results underscore the need for taking a closer look at the characteristics and functions of different types of employee contracts in order to assess the merits and drawbacks of atypical employment relationships.

## References

- Allaart, P./Bellmann, L. (2007): Reasons for part-time work: an empirical analysis for Germany and the Netherlands, *International Journal of Manpower* 28, 557–570.
- Allison, P. D. (1982): Discrete-time methods for the analysis of event histories, *Sociological Methodology* 13, 61–98.
- Bäcker, G. (2007): Was heißt hier 'geringfügig'? Minijobs als wachsendes Segment prekärer Beschäftigung, in: B. Keller/H. Seifert (eds.), *Atypische Beschäftigung – Flexibilisierung und soziale Risiken*, 107–126. Berlin.
- Barbieri, P. (2009): Flexible Employment and Inequality in Europe, *European Sociological Review* 25, 621–628.

- Booth, A. L./Francesconi, M./Frank, J. (2002):* Temporary jobs: Stepping stones or dead ends? *Economic Journal* 112, 189–213.
- Brehmer, W./Seifert, H. (2008):* Sind atypische Beschäftigungsverhältnisse prekär? Eine empirische Analyse sozialer Risiken, *Zeitschrift für Arbeitsmarktforschung* 4, 501–531.
- Brülle, J. (2013):* Unterschiede in den Arbeitsmarktchancen von atypisch Beschäftigten. Effekte von Beschäftigungsformen oder Erwerbspräferenzen?, *Zeitschrift für Soziologie* 42, 157–179.
- Giesecke, J. (2009):* Socio-economic Risks of Atypical Employment Relationships: Evidence from the German Labour Market, *European Sociological Review* 25, 629–646.
- Hohendanner, C./Bellmann, L. (2007):* Atypische Beschäftigung und betrieblicher Flexibilisierungsbedarf, in: B. Keller/H. Seifert (eds.), *Atypische Beschäftigung – Flexibilisierung und soziale Risiken* 27–43, Berlin.
- Hohendanner, C./Gerner, H.-D. (2010):* Die Übernahme befristet Beschäftigter im Kontext betrieblicher Personalpolitik, *Soziale Welt* 61, 27–50.
- Houseman, S. N. (2001):* Why Employers Use Flexible Staffing Arrangements: Evidence from an Establishment Survey, *Industrial & Labor Relations Review* 55, 149–170.
- Kalleberg, A. L. (2000):* Nonstandard Employment Relations: Part-time, Temporary and Contract Work, *Annual Review of Sociology* 26, 341–365.
- Lengfeld, H./Kleiner, T.-M. (2009):* Flexible Beschäftigung und soziale Ungleichheit – Eine Synthese des Stands der Forschung, *Arbeit* 46–62.
- Mitlacher, L. W. (2007):* The Role of Temporary Agency Work in Different Industrial Relations Systems – a Comparison between Germany and the USA, *British Journal of Industrial Relations* 45, 581–606.
- Schäfer, H. (2012):* Temporary agency work in the SOEP: Coping with data quality problems, *SOEPpapers*.
- Wagner, G. G./Frick, J. R./Schupp, J. (2007):* The German Socio-Economic Panel Study (SOEP): Scope, Evolution and Enhancements, *Schmollers Jahrbuch* 127 (1), 139–170.
- Wooldridge, J. M. (2008):* *Introductory Econometrics*, International ed. of 4th rev. ed.

## Appendix

Table A1

### Description of selected variables

	Mean	%	SD	Min	Max	Skew- ness	% miss- ing
Regular employed in t+1 (Event)	—	14.04	—	0.00	1.00	—	18.33
Elapsed time of episode	1.99	—	1.56	1.00	9.00	2.00	0.00
Type of contract:							
<i>fixed-term</i>		23.30		0.00	1.00		0.00
<i>part-time</i>		34.21		0.00	1.00		0.00
<i>part-time and fixed-term</i>		8.53		0.00	1.00		0.00
<i>marginal</i>		22.72		0.00	1.00		0.00
<i>temporary agency</i>		11.24		0.00	1.00		0.00
Part-time preference	—	56.69	—	0.00	1.00	—	1.70
Years of education	12.33	—	2.61	7.00	18.00	0.92	3.84
Full-time work experience	7.68	—	7.94	0.00	44.20	1.46	0.90
Sex: Female	—	75.10	—	0.00	1.00	—	0.00
Age	37.13	—	9.99	16.00	65.00	0.19	0.00
Subjective health: bad	—	9.12	—	0.00	1.00	—	0.04
Unemployed before job spell	—	18.06	—	0.00	1.00	—	8.33
Region: East Germany	—	22.04	—	0.00	1.00	—	0.00
Public sector	—	24.98	—	0.00	1.00	—	3.30
Married	—	58.97	—	0.00	1.00	—	0.00
Children in household: yes	—	54.50	—	0.00	1.00	—	0.00

Data: SOEP 2001–2009, own calculations.