IAAEU
Institut für Arbeitsrecht
und Arbeitsbeziehungen
in der Europäischen Union

IAAEU Discussion Paper Series in Economics
No. 04/2013

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March 2013

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Abstract

Fixed-term contracts are often considered a key policy tool for increasing employment. As we show that contract limitation lowers job satisfaction using data from the German Socio-Economic Panel study, we detect a drawback of promoting temporary employment that has not been identified so far. We find that the "honeymoon-hangover" effect of a new job must be taken into account to reveal this result. We examine reasons why employees suffer from temporary contracts and analyse the "Flexicurity" idea of compensating workers with security. Our findings contribute to research on workers' well-being as well as to the debate on labour market flexibilisation.

JEL Classification: J28, J41

Keywords: labour market flexibilisation, job satisfaction, temporary contracts

Acknowledgements: The authors are grateful for comments by Marco Caliendo, Laszlo Goerke, Steffen Künn, Ronnie Schöb and Tobias Wolf as well as by participants of the FU Berlin Research Seminar in Economics, the Research Seminar of the Berlin Network of Labor Market Research, the Potsdam Workshop in Empirical Economics, the International SOEP User Conference 2012, the TIBER Conference 2012 and the Berlin Workshop on Public Economics 2012.

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1 Introduction

During the last decades, many countries tried to improve the employment prospects of involuntarily unemployed people by mitigating employment protection legislation. The recent economic crisis in Europe has also revitalized claims for such flexibilisation policies. In flexible labour markets, employers are able to adjust faster to demand changes than in regulated labour markets, which, for instance, foster permanent contracts and make it difficult to dismiss workers. The effects of flexible labour markets on (un-)employment are controversial among both policy makers and economists. Until now, labour market research has not come to an unambiguous assessment (e.g. OECD 2004, 2011).

One key element of labour market deregulation is the promotion of fixed-term contracts. Beyond its potential impact on unemployment, however, this measure may also affect the welfare of the employed. Many workers who would have a permanent contract in a regulated labour market may suffer from contract limitation in a flexible labour market. If true, this negative consequence of flexible labour markets has to be considered when comparing the cost and benefits of allowing temporary employment. When fixed-term contracts cause considerable welfare losses among the employed but do not help the unemployed to find jobs and, hence, do not increase their welfare, this flexibilisation measure is not recommendable. If, however, the unemployed benefit from a flexible labour market while no other group is affected negatively, the policy recommendation should be flexibilisation without hesitation.

In this study, we take a step towards an assessment of the welfare cost of employment contract limitation. Thereby, we follow the idea that job satisfaction constitutes a valid measure of on-the-job utility (e.g. Frey 2008). Previous empirical research on the relation of contract limitation and workers' well-being shows no clear pattern. Reviews characterise the evidence as "mixed" (Jahn et al. 2012, p. F116) or "inconsistent and inconclusive" (de Cuyper et al. 2008, p. 26). On this basis, promoting temporary employment legally seems to be recommendable, at least if the expectation of positive employment effects is correct. Based on data of the German Socio-Economic Panel study (SOEP), we argue that some important aspects have to be considered in order to detect the actual well-being effect of contract limitation. The importance of job changes for job satisfaction has to be taken into account as they create a "honeymoon-hangover" effect of a new job (Boswell et al. 2005) that biases the estimates of the effect of contract limitation on workers' well-being. Based on this insight, we find that having a temporary instead of a permanent contract decreases workers' well-being considerably.

In consequence, allowing contract limitation causes welfare cost that have to be taken into account when assessing this flexibilisation instrument, and policy makers should hesitate to promote temporary employment. As the impact of flexible labour markets on overall employment may depend on country-specific macroeconomic and structural circumstances (e.g. OECD 2004, 2011), the welfare cost of allowing contract limitation may indeed exceed its benefits in many cases.

Research in the context of "Flexicurity" policies analyses potential compensators for potential welfare costs of flexible labour markets (e.g. Origo and Pagani 2009). This concept implies that people are more likely to lose their jobs as employment protection legislation is very weak ("flexibility"), but, when they become unemployed, public assistance ("security") is particularly high (e.g. van Vliet and Nijboer 2012). This help consists of financial support (e.g. generous unemployment benefits) and active labour market policy. The latter is taken up by the European Union that recommends its members to combine flexible labour markets with measures supporting the employment prospects of unemployed people (e.g. Council of the EU 2008). When successful, such policies may make both the unemployed more optimistic to find a job and the employed less fearful of unemployment. Temporary employees in such a "flexicure" labour market would suffer less from their limited contract.

To test this supposition, we enlarge our empirical analysis of temporary employment by the aspect of perceived employment security. In contrast to individual job security that describes worrying about losing *one's current job*, perceived employment security is the self-assessed probability to be able to find *a new job* in case of a job loss. We find no clear evidence that good employment prospects affect job satisfaction positively. Thus, active labour market policies promoting the employment prospects of jobless people seem ineffective regarding the well-being of the employed. Finally, we analyse reasons why contract limitation lowers workers' satisfaction and find that the job security added by a permanent contract mainly explains this result. Thus, work-related well-being benefits much more from job security than from employment security.

The study proceeds as follows. In a first step, we develop a theoretical intuition of the impact of contract limitation on job satisfaction based on previous research (Section 2). Afterwards, we describe the data as well as the empirical identification strategy (Section 3), and present some descriptive statistics (Section 4). The results on how contract limitation affects job satisfaction are presented in Sections 5 and 6. Thereby, we apply regression models on cross-sectional data and check the robustness of the results with matching and panel estimation

techniques. In Section 7, we enlarge the regression model in order to examine whether the impact of a temporary contract on job satisfaction can be compensated by perceived employment security. Moreover, we reveal reasons for the negative effect of contract limitation on well-being. Finally, we conclude and discuss our findings (Section 8).

2 Theoretical Considerations and Previous Research

The most obvious difference between a temporary and a permanent contract is that the former needs to be replaced by a subsequent arrangement as the employer-employee relationship expires otherwise.[1] A permanent employee who does not want to move to another job can generally stay in the firm. Of course, this is not always the case, as events such as company closure or dismissal may occur. Nevertheless, at any given level of these risks, a permanent contract provides additional individual job security, which differs from the situation of those employees with a temporary contract. Indeed, Clark and Postel-Vinay (2009) show empirically that permanent workers feel more secure about their jobs than temporary workers.

The job security added by a permanent contract may influence workers' utility at least in two ways. Firstly, it enables them to avoid future unemployment. This may affect their well-being positively, as losing one's job has been identified as extremely detrimental to subjective well-being (e.g. Clark and Oswald 1994, Clark et al. 2008). Secondly, individual job security provided by a permanent job may constitute an option value by the opportunity to stay in the firm. Even if workers dispose of employment options apart from the present employer, the option to stay in the firm enlarges their set of choices. Assume that each additional option raises the feeling of autonomy, well-being may benefit, too, as it increases in autonomy (e.g. Deci and Ryan 2000). If this holds true, even people who can avoid unemployment when their limited contract ends would still prefer an unlimited contract.

This theoretical view on job security as a positive factor in workers' well-being is supported by previous empirical studies. The review of Sverke et al. (2002) as well as Knabe and Rätzel (2010) show that workers are the more satisfied the higher their job security. However, job security may not be the only transmission channel from contract limitation to job satisfaction. Previous research on temporary employment discusses how firms can use flexible working contracts in order to create an incentive scheme and sorting mechanism (e.g. Boockmann and Hagen 2008) and thus put more pressure on its temporary workers. Engellandt and Riphahn

[1] In this study, we use the terms 'limited contract' and 'fixed-term contract' as well as 'flexible working contract' synonymously for 'temporary contract'. Moreover, we use 'unlimited contract' alternatively for 'permanent contract'.

(2005) find that temporary employees work more overtime without payment when employers use fixed-term contracts as a tool to screen potential candidates for permanent jobs. They argue that striving for a permanent contract creates an incentive to do more overtime. Since overtime may affect satisfaction with work, it could explain why temporary workers may be less satisfied with their jobs than permanent workers. However, evidence provided by de Graaf-Zijl (2012) indicates that temporary workers are not less satisfied with working hours than permanent workers.

Since temporary workers can be expected to differ from their permanent colleagues with respect to tenure, the type of contract may also affect job satisfaction levels via internal relations, as another potential transmission channel. The shorter the contract duration, the weaker the incentives for the temporary worker to invest in good relations with others at the workplace. The same may apply to the investments of permanent workers in relations to their temporary colleagues. In consequence, limited contracts may affect the working climate in a negative way and thereby reduce satisfaction with work among (temporary) employees (Gallagher and McLean Parks 2001, de Cuyper et al. 2008). In consequence, we consider internal relations beyond job security and working overtime as a further potential transmission channel through which temporary employment could affect job satisfaction. We address these different links in Section 7.

The theoretical considerations lead to the expectation that temporary workers should be less satisfied with their jobs than permanent workers. However, several existing studies investigating empirically whether contract limitation lowers workers' well-being find no evidence for any significant impact from temporary contracts on job satisfaction (e.g. Booth et al. 2002, Bardasi and Francesconi 2004, Wooden and Warren 2004, Green et al. 2010, Green and Heywood 2011, de Graaf-Zijl 2012). Some of these studies show that inferior jobs, which are more often temporary than permanent, lower the well-being of employees compared to non-inferior jobs. However, these jobs entail a lot of characteristics that are neither preferred by workers in permanent nor in fixed-term contracts. Thus, it remains unclear whether contract limitation or other unwelcome characteristics explain the measured well-being difference between inferior and non-inferior jobs in these studies.

These inconsistencies between theoretical expectations and previous empirical findings raise some scepticism among researchers towards the usefulness of job satisfaction as outcome measure for potential welfare cost from flexible working contracts. Pouliakas and Theodossiou (2010), for instance, question the standard approach of using subjective

evaluations of individual well-being for such purposes after referring to the ambiguous results in previous studies. Green et al. (2010) find no significant differences between the job satisfaction of permanent and temporary employees but go on by including objective job factors in their comparative analysis. Based on a combined job quality index, they come to the conclusion that flexible contract workers are worse off. In contrast, we are confident that job satisfaction can indeed be used in order to measure workers' welfare as it explains their behaviour very well. This has been shown, inter alia, for job performance (e.g. Harter et al. 2010), quits (e.g. Clark et al. 1998) and absenteeism (e.g. Wegge et al. 2007).

3 Data and Methodology

The following analysis shows how the selection of data and variables are essential in order to identify the impact of temporary employment on workers' satisfaction levels. We use data from the SOEP (Wagner et al. 2007) in order to address our research objectives. The SOEP is a representative survey of the population in Germany. Each year, about 20,000 individuals from 11,000 households are interviewed and provide information on their well-being, income, employment status, and much more. Many waves include questions on the workplace. To analyse temporary contracts and job satisfaction in equal legal conditions, we restrict our SOEP database to the waves from 2001 to 2010. In this period (and also afterwards), the German act on part-time work and fixed-term employment ("*Teilzeit- und Befristungsgesetz (TzBfG)*") regulates the utilisation of contract limitation in Germany. In general, it allows firms to employ workers in fixed-term contracts for two years (§14 TzBfG).[2] In addition, fixed-term contracts are generally possible if the firm can verify an objective reason for contract limitation (e.g. the firm needs the worker's service only for a certain time).

A key advantage of using German data is §4 of the TzBfG. According to this rule, any kind of discrimination of employees working under fixed-term contracts is prohibited. They have to be treated exactly the same as permanent employees with respect to pay and working conditions. In general, this also applies to employer-employee agreements over dismissal protection (Däubler 2011).

From a legal point of view, however, temporary workers are more protected compared to permanent workers as they cannot be dismissed "regularly" ("*ordentliche Kündigung*") when their work contract or the collective agreement applying to them does not address this aspect

[2] A time limit of four years is possible if the firm is not older than four years. Five years are allowed if the worker has been unemployed for at least four months and is at least 52 years old.

(§15(3) TzBfG). Dismissals in Germany are considered regular when they fulfil certain legal requirements, such as notice periods, and they are often followed by substantial severance payments. This considerably weakens the disadvantage of permanent workers that results from the rules on regular dismissals compared with temporary workers. Some impact of this legal drawback of permanent contracts may nevertheless remain. If true, the effect of contract limitation on job satisfaction that we estimate using our German data would be too positive compared with its true effect. As we find a negative pattern, this issue does not affect our qualitative results.

In addition, dismissals in Germany can be "extraordinary" (*außerordentlich*), for instance, when workers misbehave severely. This kind of dismissal does not have to fulfil the requirements of regular dismissals (notice period, severance payments). The German rules on extraordinary dismissals apply equally to temporary and permanent workers.

Identification strategy

To identify the impact of fixed-term contracts on job satisfaction, several aspects have to be considered as potentially relevant control variables in the multivariate analysis. Thereby, it is important to keep in mind that we seek to isolate the pure effect of contract limitation that refers to a national policy reform making permanent contracts temporary or vice versa. In other words, in this fictional setting workers cannot choose their contract type endogenously. However, as such a drastic reform has not taken place, we have to employ data that is sure to contain many workers who have chosen their contract voluntarily. Imagine only for the sake of the argument that some people in our sample opted for a temporary job as it was better paid than a permanent job they could also have chosen. If we do not control for the wage, this would bias our results as the estimated "effect" of the temporary contract would also reflect the higher wage of these people. In consequence, we have to hold wages constant as well as other valued job characteristics such as task variety and learning opportunities.[3]

In our investigation period, the 2001 SOEP wave offers the richest set of job characteristics, including information on task variety, learning opportunities, and many other aspects. Thus, the first step of our empirical analysis is based only on the SOEP wave of 2001 (Section 5). However, some job characteristics such as job security, working overtime and internal relations might reflect the impact of contract limitation on job satisfaction. Treating these aspects as controls would thus be inappropriate (cf. the discussion on "bad controls" by

[3] Feldman et al. (1995), Ellingson et al. (1998) as well as Green and Heywood (2011) argue in similar ways.

Angrist and Pischke 2009). We discuss these factors separately in Section 7, when we shed light on reasons for the effect of contract limitation on job satisfaction.

The fact that many people in our sample may have chosen their contract voluntarily influences our identification strategy in a further way that has not been considered by previous studies. A recent voluntary job change makes many people extraordinarily happy, but only for a short time. Boswell et al. (2005) name this pattern the "honeymoon-hangover" effect of a new job. Indeed, temporary workers in our sample are more likely to have changed the job recently compared with permanent workers (see Section 4). Thus, they are also more likely to still be pleased with the new job they have chosen voluntarily. Thus, we have to control for the experience of a recent job change in order to disentangle the effect of contract limitation from this joy of a recent voluntary job change. The same argument applies to the hangover after this honeymoon experience which could bias the effect of the permanent contract negatively. In consequence, we consider tenure as another important control variable in our research setting.

Our underlying econometric model explains the job satisfaction (JS_i) of a worker *i* by contract type (temporary: $TEMP_i = 1$, permanent: $TEMP_i = 0$) and a vector of other job characteristics (W_i), including recent job change, tenure and several (un-)popular work features. Beyond job characteristics, other differences between workers, such as personality traits, age or unemployment experience, are likely to explain both the decision to sign a fixed-term contract and the level of job satisfaction. Therefore, we include vectors with variables for personality (P_i) and socio-demographic characteristics (S_i) in the econometric model (ε_i is the error term):

$$JS_i = \beta TEMP_i + \gamma' W_i + \delta' P_i + \phi' S_i + \varepsilon_i \qquad (1)$$

In further steps of the empirical analysis, we check the robustness of the standard regression results (Section 6). Propensity score estimation techniques account for non-linear influences on the assessment of job satisfaction. A panel analysis estimates the effect of contract limitation on job satisfaction based on within worker variation. Herewith, all time-independent worker characteristics are held equal.

The underlying model modifies equation (1) as follows. It considers *t* as the year of the observation, a year fixed effect μ_t and an individual-specific fixed effect τ_i:

$$JS_{it} = \beta TEMP_{it} + \delta' S_{it} + \phi' W_{it} + \mu_t + \tau_i + \varepsilon_{it} \qquad (2)$$

Sample Restrictions

In order to compare employees whose contracts are either temporary or permanent, we consider only individuals who work for an employer, so that we exclude self-employed persons and those who are not employed. As we want to analyse the pure effect of contract limitation for people in regular employment, our sample selection differs from previous studies by excluding people who have "inferior jobs" such as agency workers, workers who take part in workfare schemes and workers with so-called "Mini-Jobs". We generally drop individuals reporting to work below 15 hours a week, apprentices and individuals in other forms of occupational education or retraining. We consider typical German working age people who are at least 20 years, but not older than 65 years. Some observations drop out since they do not provide all the characteristics we consider in the empirical analysis. Altogether, we receive a basic sample of 5,769 workers for the cross-sectional analysis based on the SOEP wave of 2001. 328 of them have a temporary contract and 5,441 have a permanent contract. The sample for the longitudinal analysis relies on the same restrictions. It includes 68,286 observations (4,179 fixed-term contracts, 64,107 unlimited contracts) from 15,080 persons. This number is significantly larger than the one of 2001, due to refreshments of the SOEP, additional household members and mobility across employment states, such as transitions from unemployment to employment.

Satisfaction, Contract Limitation and Security

The SOEP includes many questions on satisfaction with different life domains. One of them measures job satisfaction as follows: "Please answer by using the following scale: 0 means 'completely dissatisfied', 10 means 'completely satisfied'. How satisfied are you with your job?" We translate the answers directly into a variable ranging from zero to ten and we assume its cardinality in the empirical analysis. This is in line with previous investigations of well-being on the basis of SOEP data (e.g. Clark et al. 2008) and refers to the findings of Ferrer-i-Carbonell and Frijters (2004). Moreover, the questionnaire asks about the contract type of employed people (temporary or unlimited). We use this question to build a binary

variable which is one if the contract is temporary and which is zero if it is unlimited. Another question addresses the self-assessment of employment security: "If you lost your job today, would it be easy, difficult, or almost impossible for you to find a new position which is at least as good as your current one?" Our variable 'perceived employment security' is three if the respondent answers "easy", two if "difficult" and one if "impossible". We additionally shed light on individual job security. For this purpose, we use the question "Are you concerned about your job security?" The resulting variable takes the value one if people answer "very concerned", two if the answer is "somewhat concerned" and three if the answer is "not concerned at all". In both cases, we generate dummy variables based on the three answering options that are used later in the regression analysis.

Personality

In the following cross-sectional analysis with SOEP data from 2001, we account for self-selection into contract type due to personality traits. The "big five"-concept approximates someone's whole personality by five factors, namely extraversion, openness to experience, conscientiousness, neuroticism and agreeableness (e.g. McCrae and Costa 1987). In our investigation period, data on these five factors is available for 2005 and 2009. We assume that personality traits are stable over a four year period and transfer the big five measures from 2005 to 2001. This strategy relies on the research of Specht et al. (2011) as well as Lucas and Donnellan (2011), who compare the 2005 and 2009 big five outcomes in the SOEP. Their results indicate that the stability assumption especially holds true for the age group in our sample. Each big five trait is measured by three statements: Respondents assess how much the statement applies to themselves on a seven-point-scale (from 1 to 7).[4] We build the mean of the three answers linked to one trait as the trait's manifestation. Based on these scores, we develop dummy variables for relatively strong/middle/low manifestations of a trait.

Socio-Demographic Characteristics and Job Characteristics

Each SOEP wave includes a large body of information about life circumstances. We can make use of data on partnership status, education and other factors both in the cross-sectional analysis and in the panel analysis. This also applies to some job characteristics such as wage and firm size. However, others can be considered in the cross-section only: Task characteristics like task variety and independence in carrying out tasks, which are very important for job satisfaction (e.g. Warr 1999), are only available in the 2001 data. People

[4] Caliendo et al. (2011, p. 45, Table A1) provide a concise overview of the five traits in the SOEP and the corresponding questions.

who have a ‘new job’ experienced a job change not longer than approximately one year ago. ‘Tenure’ is defined as the length of time with the same employer.

4 Descriptive Statistics

In this section, we cast light on general differences between employees with limited contracts and unlimited contracts. Thereby, we refer to Table 1 providing descriptive statistics for the basic sample of 2001 as described in Section 3. In a second step, we address time-dependent changes in job satisfaction and compare those for temporary and permanent employees (Figure 1).

The average satisfaction scores in Table 1 confirm for our cross-sectional data that workers in temporary contracts are not significantly less satisfied with their jobs compared to permanent workers (7.16 to 7.19). This result seems to be in line with the conclusions drawn from the literature review. However, workers with fixed-term contracts state significantly lower job security and higher self-assessed employment security compared to workers with permanent contracts. The two groups also differ significantly with respect to two of the big five personality traits, as temporary employees are more open but less conscientious than permanent employees. Moreover, we find significant differences in socio-demographic characteristics, since permanently employed workers are older, more often cohabiting, less often female, less educated and they have been longer employed as well as shorter unemployed in their working life than temporary workers.

With regard to significantly different job characteristics between the two groups, we find that workers with unlimited contracts receive higher net wages, are in higher occupational positions, agreed by contract to work more hours and are longer employed within the firm, whereas temporary workers state that they are more likely to be promoted in the next time. Furthermore, larger shares of permanent employees than of temporary employees work in the construction industry, the manufacturing industry and in the financial sector. The opposite pattern occurs in the health and social services sector, the education sector as well as the agricultural sector. Finally, the work of temporary employees is more strictly monitored and there is less freedom of decision concerning task completion. At the same time, temporary employment is associated with better learning opportunities and less stress.

Table 1: Descriptive Statistics

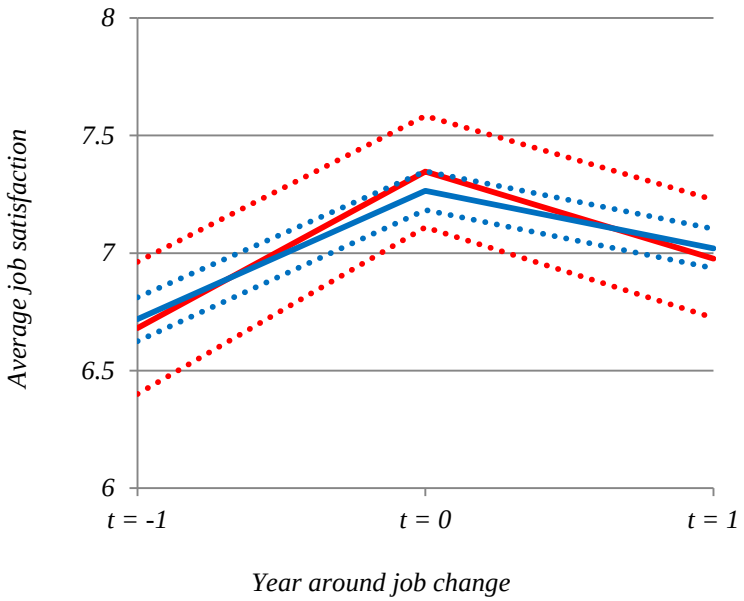
	Scale	*Temporary Contract*		*Permanent Contract*		*Difference*
Number of observations:		328		5,441		
		mean/ share	*standard deviation*	*mean/ share*	*standard deviation*	*temp-perm*
Well-being and security						
Job satisfaction (mean)	0 - 10	7.16	2.05	7.19	1.92	-0.03
Job security (mean)	1 - 3	2.05	0.75	2.39	0.67	-0.34***
Employment security (mean)	1 - 3	2.16	0.57	2.04	0.64	0.12***
Personality						
Openness to experiences (mean)	1 - 7	4.59	1.15	4.45	1.16	0.13**
Extraversion (mean)	1 - 7	4.89	1.14	4.81	1.10	0.08
Agreeableness (mean)	1 - 7	5.42	0.93	5.41	0.97	0.01
Neuroticism (mean)	1 - 7	3.92	1.16	3.87	1.17	0.05
Conscientiousness (mean)	1 - 7	5.92	0.91	6.06	0.83	-0.13***
Socio-demographic characteristics						
Cohabiting (share)		81.1%		85.8%		-4.73%***
Migration background (share)		17.4%		16.9%		0.50%
Women (share)		50.0%		43.1%		6.90%***
Handicap (share)		4.9%		5.7%		-0.78%
Educational level	1 - 3	2.28	0.61	2.19	0.62	0.09***
Age in years (mean)		35.60	10.17	41.56	9.96	-5.95***
Years of unemployment (mean)		0.96	1.75	0.38	1.05	0.58***
Years of employment (mean)		11.51	9.63	18.89	10.34	-7.35***
Job characteristics						
Promotion probability (mean)		0.22	0.29	0.18	0.25	0.04***
Monthly net wage in Euro (mean)		1220.53	556.13	1506.64	702.45	-286.1***
Weekly work hours (mean)		35.42	7.68	36.40	6.32	-0.98**
Overtime hours per week (mean)		4.27	6.65	3.88	5.59	0.39
Tenure in years (mean)		2.85	5.06	11.27	9.63	-8.42***
New job (share)		56.4%		12.5%		43.94%***
Company size (mean)	1 - 3	2.08	0.65	2.03	0.67	0.05
Level of occupational autonomy (mean)	1 - 5	2.54	1.09	2.68	1.02	-0.14**
Financial sector (share)		1.5%		4.5%		-2.94%***
Transport (share)		4.2%		5.2%		-0.93%
Trade (share)		11.3%		13.6%		-2.34%
Agriculture (share)		2.1%		1.0%		1.08%**
Energy (share)		0.0%		0.5%		0.50%
Mining (share)		0.9%		1.3%		0.37%
Manufacturing (share)		17.7%		22.2%		-4.56%**
Construction (share)		10.1%		15.2%		-5.10%***
Education sector (share)		14.3%		6.2%		8.09%***
Public administration (share)		12.8%		9.5%		3.32%*
Health and social services (share)		15.6%		10.4%		5.15%***
Other services (share)		9.5%		10.4%		-0.91%
Task variety (mean)	1 - 3	2.55	0.57	2.58	0.58	-0.03
Manual labour (mean)	1 - 3	1.71	0.76	1.65	0.74	0.06
Independence in carrying out tasks (mean)	1 - 3	2.14	0.71	2.22	0.69	-0.08**
Performance control (mean)	1 - 3	1.89	0.75	1.77	0.70	0.12***
Shift work (mean)	1 - 3	1.51	0.82	1.43	0.78	0.07*
Frequency of conflicts with superiors (mean)	1 - 3	1.28	0.52	1.29	0.51	-0.01
Quality of relations with colleagues (mean)	1 - 3	2.75	0.49	2.78	0.48	-0.03
Learning opportunities (mean)	1 - 3	2.33	0.73	2.19	0.71	0.14***
Environmental burden (mean)	1 - 3	1.56	0.75	1.59	0.77	-0.03
Stress at work (mean)	1 - 3	2.00	0.74	2.12	0.68	-0.12***
Risk at work (mean)	1 - 3	1.53	0.73	1.49	0.69	0.04

Source: SOEP 2001, 2005 (Personality)
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level.*

Moreover, workers in limited and unlimited contracts are different with respect to their tenure and, even more so, with respect to recent job mobility. In fact, more than half of the temporary employees report having a new job, which is a remarkably high share. To get an impression whether this affects the job satisfaction of temporary and permanent workers differently, we use all SOEP data waves within our investigation period from 2001 to 2010 and employ the same restrictions with respect to age and atypical employment as described in Section 3. We follow the same respondents as they move from one job to another. Around this event, we define three points in time: $t = -1$ as the last SOEP interview in the previous job, $t = 0$ as the first interview in the new job and $t = 1$ as the second interview in the new job. The time interval between two interviews is approximately one year.

We compare job satisfaction for two groups. The first group moves from any contract into a temporary one (251 observations). The second group changes from any contract into a permanent one (2,085 observations). The type of contract, whether it is a temporary or a permanent one, does not change between $t = 0$ and $t = 1$. The results are documented in Figure 1. As the diagram shows, a honeymoon-hangover effect (see Section 3) appears for both groups. This implies that not only in those cases in which individuals move into a new job with an unlimited contract but also when a temporary job is taken up, well-being increases considerably in comparison with the situation before. Afterwards, there is a strong decline from $t = 0$ to $t = 1$. For both groups, each of these changes is statistically highly significant. While at all three points in time job satisfaction of temporarily and permanently employed people differs slightly but not significantly, from both $t = -1$ to $t = 0$ and $t = 0$ to $t = 1$ the change in happiness seems to be stronger among temporary workers. In other words, the honeymoon effect and the hangover effect may be more intense for those with a fixed-term contract. In consequence, tenure and being new in a job appear as particularly important factors in the following econometric analysis.

Figure 1: Contract Limitation and the Honeymoon-Hangover-Effect of a New Job



Source: SOEP 2001-2010
Note: The red lines (blue lines) always denote temporarily (permanently) employed persons in t=0 and t=1. The dashed lines always label 95% confidence intervals.

5 Multivariate Analysis

In the following, we present the main results from our investigation of the 2001 data. This SOEP wave enables us to test both the effects of contract limitation on job satisfaction and the influence of important sets of control variables on this relation (personality, socio-demographic characteristics, job characteristics). The first step of our econometric analysis is an ordinary least squares (OLS) estimation of job satisfaction based on the whole sample of the 2001 SOEP wave as described above. The results are summarized in Table 2 and reported as a whole in the Appendix, Table A1.

We specify the model (equation (1)) in six steps. In its simplest form, it only includes a dummy variable for working in a temporary contract. Accordingly, working in a temporary contract is not related to someone's job satisfaction any differently than working in a permanent contract. The second specification adds personality traits and the third specification socio-demographic characteristics as controls. These steps do not change the regression coefficient of working in a temporary contract notably. Thus, self-selection due to personality traits and socio-demographic characteristics seems to be of minor importance for

the relation of contract limitation and job satisfaction. Table A1 reveals that the big five traits affect job satisfaction, as known from previous studies (e.g. Judge et al. 2002). This supports our strategy to use the big five measures of 2005 as personality proxies in 2001.

The regression coefficient of the temporary contract variable becomes much more negative when we enlarge the model by job characteristics (Specification 4). However, the effect remains insignificant. This finding provides some evidence that keeping job characteristics equal is important for identifying the pure effect of contract limitation on job satisfaction. The step from the third to the fourth specification increases the explanatory power of the model notably (R^2 increases from about 4% in the second and in the third specification to 15% in the fourth specification). This result confirms that job characteristics are very relevant determinants of job satisfaction.

The negative effect of contract limitation on job satisfaction becomes stronger once more when we take tenure as well as tenure squared into account (Specification 5). This estimation illustrates a relationship of tenure and job satisfaction that is u-shaped, as shown by Theodossiou and Zangelidis (2009). This indicates already that considering the honeymoon-hangover effect of a new job may be important in order to reveal the effect of contract limitation on job satisfaction. To take a further step in this direction, we add a binary variable for a recent job change (Specification 6). A new job appears to increase the well-being level, whereas the tenure-satisfaction relation loses most of its significance. The impact of temporary employment on job satisfaction turns out to be clearly negative on a significant level. As temporary workers are observed more often in the exceptionally happy period right after a job change, the honeymoon-hangover effect biases the coefficient of the temporary contract dummy in the first specifications. Revealing the impact of contract limitation on employees' individual welfare requires controlling for the experience of a recent job change.

Table 2: Summarized Results of the Cross-Section Analysis (Basic Sample, OLS Estimates)

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Temporary contract	-0.035	-0.006	-0.037	-0.122	-0.196*	-0.235**
	(0.116)	(0.115)	(0.117)	(0.114)	(0.116)	(0.117)
Tenure					-0.027***	-0.017*
					(0.009)	(0.010)
Tenure²					0.001**	0.000
					(0.000)	(0.000)
New job						0.184**
						(0.082)
Personality		yes	yes	yes	yes	yes
Socio-demographic characteristics			yes	yes	yes	yes
Job characteristics				yes	yes	yes
Constant	7.193***	7.180***	7.179***	6.552***	6.635***	6.546***
	(0.026)	(0.037)	(0.128)	(0.205)	(0.208)	(0.211)
Observations	5,769	5,769	5,769	5,769	5,769	5,769
Adjusted R^2	0.000	0.031	0.037	0.150	0.152	0.152

Source: SOEP 2001, 2005 (Personality)
*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction. Personality includes openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Socio-demographic characteristics include gender, age, migration background, single, educational levels, handicap, unemployment experience and employment experience. Job characteristics include firm size, occupational autonomy, industry sector, wage, working hours, promotion probability, task variety, hard manual labour, independence in carrying out tasks, performance control, shift work, learning opportunities and environmental burden. Complete results are presented in Table A1 in the Appendix.*

6 Robustness

The descriptive statistics (Section 4) reveal considerable worker differences related to the two contract types. Depending on age, personality or labour market experience, some permanent workers in our sample might be extremely unlikely to work in a limited contract. The same could apply vice versa to temporary employees. These individuals may not consider contract limitation when evaluating their job satisfaction. Having these people in the conceived treatment (temporary contract) or control group (permanent contract) can thus bias our results. The first econometric model (equation (1)) tries to capture this problem by taking different worker characteristics into account. However, the underlying linearity assumption regarding the relationship between satisfaction levels and its influencing factors is not necessarily appropriate in such a context. We therefore check our results by applying propensity score estimation techniques that make treatment and control group even more comparable.

We estimate the propensity score (q) of being in a fixed-term contract for each observation by a probit model based on the worker characteristics (big five personality traits and socio-demographic characteristics) that are determined before the contract type is chosen.[5] Following our previous insights, we apply this procedure to the basic sample as well as to a subsample of people who are not in the first year of a job (in the following: sample without novices). The results of these probit estimations are presented in Table A2 in the Appendix.

Sample Trimming and Matching

As a first check, we trim the basic sample by considering only those people who are at least one per cent likely to be in a fixed-term contract and at least one per cent likely to be permanently employed ($q > 0.01$ and $q < 0.99$). Thereby, we lose 6.1% of the entire population. Afterwards, we run the same regressions from the beginning of this section again. The results we present in Table A3 in the Appendix are in line with our previous findings: Contract limitation affects job satisfaction negatively as far as we control for personality, socio-demographic characteristics, job characteristics, tenure as well as being in the first year of a job. The findings from the basic sample with respect to other variables in the model can be shown again based on the trimmed sample.

As a further robustness check, we remove the linearity assumption completely when we apply Epanechnikov kernel matching (EKM), which is a widely used propensity score matching algorithm, in order to analyse the effect of contract limitation on job satisfaction.[6] EKM offers the opportunity to calculate bootstrapped standard errors in order to test the significance of the estimated effects. The algorithm compares the job satisfaction levels of workers in temporary contracts (treated units) with counterfactual outcomes that are constructed by using the propensity scores to weight permanent employees (untreated units). The weight of each untreated unit depends on the propensity score distance to the treated unit. Note that EKM requires that the sample provides permanent employees with similar propensity scores for each temporary employee ("overlap assumption"). As Figure A1 and Figure A2 in the Appendix illustrate, this condition is fulfilled in the regions of "common support" that are restricted samples (of both the basic sample and the sample without novices), including only

[5] Note that propensity score matching does not allow to include variables that are determined simultaneously with the treatment (such as job characteristics) as covariates in the propensity score estimation.

[6] Caliendo and Kopeinig (2008) provide a guide on propensity score matching that describes the different techniques in detail. EKM is applied inter alia by Böckerman and Ilmakunnas (2009) as well as by Caliendo and Künn (2011).

observations with $0.008 \leq q \leq 0.514$ (basic sample) and $0.004 \leq q \leq 0.244$ (sample without novices).

The average treatment effects on the treated are shown in Table A4 in the Appendix. For the basic sample, the EKM estimation leads to a relatively small negative effect of contract limitation on job satisfaction which is not statistically significant. This result is in line with the first few specifications of the OLS estimation that include similar sets of variables as the propensity score estimation. For the sample without novices, however, the effect appears to be strongly negative, indicating a considerable negative impact from temporary employment on well-being. Both findings are quite robust to the bandwidth selected. Thus, when applying EKM, we find a very similar pattern as in the above regressions: A significantly negative impact of contract limitation on job satisfaction is identified when the estimation procedure considers the honeymoon period of a new job.

Panel Analysis

In the cross-sectional analysis, we considered time-independent individual characteristics that are likely to influence both the decision to sign a temporary contract and job satisfaction in a direct way, via the available information on people's personality. The common way to deal with this issue, however, is to use panel estimation techniques wherever possible. Thanks to its panel structure, we can perform an additional robustness check on the basis of our SOEP data from 2001 to 2010. The composition of the unbalanced panel is described in Section 3.

We apply an OLS estimation with individual fixed effects based on equation (2). Since the estimated coefficients result from within person variation, all time-independent individual characteristics are held equal. The results are summarized in Table 3 and presented in detail in Table A5 in the Appendix. The first specification includes only the binary variable for working in a temporary contract. In three steps, year dummies (Specification 2), socio-demographic characteristics (Specification 3), the set of job characteristics that is available in each wave between 2001 and 2010 (Specification 4), tenure and tenure squared (Specification 5) are added. Thereby, similar patterns appear as in the cross-sectional analysis: The more characteristics are taken into account, the more negative contract limitation is related to job satisfaction. However, there is no considerable change in explanatory power as we enlarge the model with the set of job characteristics that is available in all waves. This confirms the important role of the rich set of job-related variables in the 2001 SOEP wave for explaining job satisfaction.

Table 3: Summarized Results of the Panel Analysis (OLS Fixed Effects Estimates)

Model Specification:	(1)	(2)	(3)	(4)	(5)	(6)
Temporary contract	0.125***	0.065	0.029	0.046	-0.065	-0.121***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Tenure					-0.093***	-0.076***
					(0.006)	(0.007)
Tenure²					0.001***	0.001***
					(0.000)	(0.000)
New job						0.243***
						(0.028)
Year dummies		yes	yes	yes	yes	yes
Socio-demographic characteristics			yes	yes	yes	yes
Job characteristics				yes	yes	yes
Constant	7.023***	7.358***	8.209***	7.955***	8.232***	8.009***
	(0.003)	(0.020)	(0.469)	(0.478)	(0.473)	(0.474)
Observations	68,286	68,286	68,286	68,286	68,286	68,286
Number of persons	15,080	15,080	15,080	15,080	15,080	15,080
Adjusted R^2	0.000	0.013	0.017	0.021	0.030	0.032

Source: SOEP 2001-2010
*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction. Socio-demographic characteristics include age, single, educational levels, handicap, unemployment experience and employment experience. Job characteristics include firm size, occupational autonomy, industry sector, wage and working hours. Complete results are presented in Table A5 in the Appendix.*

Similar to the cross-sectional analysis, when there is no variable in the model addressing a recent job change, a significantly negative effect of contract limitation on job satisfaction cannot be revealed. Specification 6, however, adds a binary variable for being in the first year of a new job. Here, the effect of contract limitation on job satisfaction is much more negative than in the previous specifications and turns out to be significant. Just like in the cross-sectional analysis, we can confirm that being in the first year of a new job enhances job satisfaction considerably.

Altogether, the panel analysis reveals the same results as the cross-sectional analysis. Our main findings from the sample of 2001 are robust against time-invariant unobserved worker characteristics. Since this wave enables us to take several additional job characteristics into account, we use this cross-sectional data again in the following section, where we shed light on reasons for the negative impact from contract limitation on job satisfaction and discuss the idea of compensating this effect with employment security.

7 Extensions

The results presented in the previous sections reveal that contract limitation reduces job satisfaction significantly. In the following, we exploit this finding for an assessment of the Flexicurity concept and complete our empirical investigation by analysing potential reasons why people suffer from contract limitation. Because of the availability of all variables required to answer the latter question, we again employ the cross-sectional approach from Section 5 on the rich data of the 2001 SOEP wave.

Flexicurity

As mentioned above, one variant of the Flexicurity concept recommends the compensation of flexibility-induced disutility by active labour market policies aimed at providing employment security. We can use the information about perceived employment security (the self-assessed ability to find a new job in case of job loss) to test whether this factor plays a role for on-the-job utility. The estimation procedure is based on the sixth specification presented in Table 2 to which we add binary variables that account for low self-assessed employment security and high perceived employment security (Specification 7, reference category is medium employment security). Table 4 presents the corresponding results.

According to the results for Specification 7, perceived employment security seems to affect workers' well-being. In particular, the outcome for low perceived employment security suggests strongly reduced satisfaction with the job. However, this finding may have multiple reasons that do not actually depend on the perceived probability to be able to find a similar job. Other aspects, such as job performance, may increase both job satisfaction and perceived employment security. To further investigate the role of perceived employment security, we therefore keep individual job security (the level of worrying about losing one's current job) constant in the eighth specification (binary variables for high job security and low job security, reference category is medium job security). Hereby, we attempt to better isolate the effect of perceived employment security from third influences that are related to the current job. The results of Specification 8 suggest that perceived employment security appears to be of minor relevance only for job satisfaction.

Surely, one may argue that the coefficients of individual job security and perceived employment security are biased, as both variables are highly correlated. However, leaving perceived employment security out of the regression, as shown in Specification 9, does not change the job security coefficients compared to the previous specification. This speaks in

favour of a strong and stable role of job security in workers' well-being that cannot be altered much by perceived employment security. The value of a current job (expressed in the impact of job security on job satisfaction) does not depend on the level of employment options elsewhere (i.e. perceived employment security). Hence, we find that these two kinds of self-assessed security are clearly different and that the idea of compensating one with the other does not seem promising, based on our empirical figures.

Transmission Channels

Adding the job security dummies to the regression in the eighth specification reveals that contract limitation mainly affects job satisfaction through its impact on job security. Holding job security constant leads to a much smaller and less significant coefficient of the temporary contract dummy. This confirms our theoretical explanation that the job security added by permanent contracts explains the difference in well-being compared to temporary employment.

To investigate the role of additional factors that may affect the impact of contract limitation on job satisfaction, we expand our set of variables by adding overtime as well as relations to colleagues and superiors in the final Specification 10.[7] The results show that the negative impact of temporary employment disappears completely as soon as all transmission channels discussed in Section 2 are considered in the model. One interpretation could indeed be that colleagues and superiors invest less in relations with temporary workers than with permanent workers, as the expected returns decrease in tenure. Of course, the same may apply vice versa to the temporary employees and their investments in relations with colleagues and superiors. Contrariwise, one can also argue that by controlling for job security, some of the impact from other transmission channels is already captured, so that these aspects are in fact more relevant than expressed by the outcomes of Specification 10. Hence, while there is good reason to not overestimate the role of internal relations and working overtime based on our results, we still consider it plausible to argue that temporary contracts may imply more than just job insecurity.

[7] The overtime variable is the natural logarithm of the positive differences between actual and agreed-upon working hours. Conflicts with superiors are represented by two binary variables (often having conflicts and difficulties with the boss: applies completely vs. not at all, reference category: it applies partly). In the same manner, the binary variables constituting relations with colleagues are generated (getting along well with colleagues: applies completely vs. not at all, reference category: it applies partly).

Table 4: Summarized Results of the Extended Analysis (OLS Estimates)

Model specification:	(6)	(7)	(8)	(9)	(10)
Temporary contract	-0.235**	-0.231**	-0.044	-0.039	0.000
	(0.117)	(0.117)	(0.116)	(0.116)	(0.108)
High employment security		0.106*	-0.073		
		(0.060)	(0.061)		
Low employment security		-0.194***	-0.130*		
		(0.075)	(0.074)		
High job security			0.497***	0.485***	0.398***
			(0.054)	(0.053)	(0.050)
Low job security			-0.680***	-0.690***	-0.661***
			(0.095)	(0.095)	(0.089)
Overtime (log)					-0.130***
					(0.026)
Good relations with colleagues					0.445***
					(0.064)
Bad relations with colleagues					0.163
					(0.171)
No conflicts with superiors					0.947***
					(0.060)
Often conflicts with superiors					-0.943***
					(0.186)
Tenure, Tenure², New job	yes	yes	yes	yes	yes
Personality	yes	yes	yes	yes	yes
Socio-demographic characteristics	yes	yes	yes	yes	yes
Job characteristics	yes	yes	yes	yes	yes
Constant	6.546***	6.503***	6.456***	6.453***	5.699***
	(0.211)	(0.211)	(0.208)	(0.208)	(0.208)
Observations	5,769	5,769	5,769	5,769	5,769
Adjusted R^2	0.152	0.154	0.184	0.184	0.258

Source: SOEP 2001, 2005 (Personality)
*Note: *denotes significance at the 10% level, **at the 5% level and ***at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction. Personality includes openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Socio-demographic characteristics include gender, age, migration background, single, educational levels, handicap, unemployment experience and employment experience. Job characteristics include firm size, occupational autonomy, industry sector, wage, working hours, promotion probability, task variety, hard manual labour, independence in carrying out tasks, performance control, shift work, learning opportunities and environmental burden. Complete results are presented in Table A6 in the Appendix.*

8 Discussion and Conclusion

Several studies have investigated the well-being effects of temporary contracts compared with permanent contracts, but could not establish a clear pattern. Of course, this ambiguity could be used to justify the legal promotion of limited contracts. However, it is interesting to note that researchers in the past have been very reluctant to interpret their findings in such a way. This scepticism may come from the contrast between theoretical expectation and empirical findings. The present study, however, is able to establish a clear pattern that allows drawing cautious policy implications.

In contrast to former research, we develop an identification strategy that explicitly accounts for the honeymoon-hangover effect of a new job. Based on this, we apply several empirical techniques to German panel data and find that temporary contracts lead to lower job satisfaction compared with permanent contracts. Since we can detect psychological costs from temporary contracts, our results reject previous findings on the impact of this flexibilisation measure. This key finding answers the question 'flexibilisation without hesitation?' that is raised based on the review of the existing literature with a clear 'no'.

With respect to labour market policy, our findings allow us to draw several conclusions. Even if labour market flexibilisation with respect to temporary employment would succeed in generating more jobs, the welfare losses among the employed must be considered as well. In developed countries, for instance, flexible labour markets seem neither to increase employment nor to reduce unemployment significantly (e.g. OECD 2011). Based on our findings, it is plausible to argue that in these countries the welfare cost of fostering limited contracts may predominate its benefits. This conclusion is additionally supported by evidence documenting that the life satisfaction of the average citizen in Western Europe is the higher the more employment is legally protected (Ochsen and Welsch 2012).

However, this conclusion is limited in several ways. Firstly, we compare employment effects of flexible labour markets with welfare effects of only one flexibilisation measure. It is possible that promoting temporary employment has different employment effects than other flexibilisation measures. Secondly, the focus on employed and unemployed people is not necessarily sufficient, as it is plausible that other aspects, such as the social security system, are affected by promoting temporary employment. In consequence, other groups that we do not consider might benefit or suffer from such a reform.

If policymakers nevertheless favour promoting contract limitation, our results confirm the underlying assumption of the "Flexicurity" concept that workers suffer from labour market flexibility, at least with respect to temporary contracts. In this context, we tested whether an effective active labour market policy that increases self-assessed employment security can serve as a plausible equaliser, as recommended by the Council of the EU (2008). We find that perceived employment security does not enhance job satisfaction in the way that job security does. Hence, our results suggest that perceived employment security is not able to compensate workers for the loss in individual job security. Moreover, the latter appears to be the main transmission channel through which temporary contracts affect workers' well-being.

This result is open to multiple interpretations. On the one hand, the prospect of staying in a current job may contribute more to subjective well-being than aspects that can be substituted more easily, such as employment status or income. Jahoda (1981) emphasises that, inter alia, social contracts and daily routines are general assets of working. With this in mind, the additional values of a current job might be stable social relations and habitual daily routines. On the other hand, our approach might not be able to capture the whole impact of employment security on individual welfare, as job satisfaction is not global enough to measure it. An alternative instrument would be life satisfaction.

Beyond these main results, our study confirms the importance of being new in a job for the determination of workers' well-being levels. If having to explain why researchers in the past could not confirm expectations of disutility effects from temporary contracts empirically, we can first and foremost point to the important influence of the so-called honeymoon-hangover effect of job changes on job satisfaction. Neglecting this phenomenon can be made responsible for the inconclusive assessment of the impact of temporary employment on workers' subjective well-being. Our analysis shows this pattern for both temporary and permanent employees, according to which, after an exceptionally happy first period in a new position, job satisfaction decreases considerably. Hence, our results confirm the findings of Boswell et al. (2005) for a sample of managers. Likewise, other researchers who analyse job satisfaction as an outcome or as a predictor of behaviour should be aware of this phenomenon. Regarding our main research objective, the honeymoon-hangover effect leads to an overestimation of the job satisfaction of people with fixed-term contracts. Correcting for this impact reveals the inferiority of temporary contracts which deprive workers of the most important certainty the labour market can offer: individual job security.

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Appendix

Figure A1: Overlap, basic sample

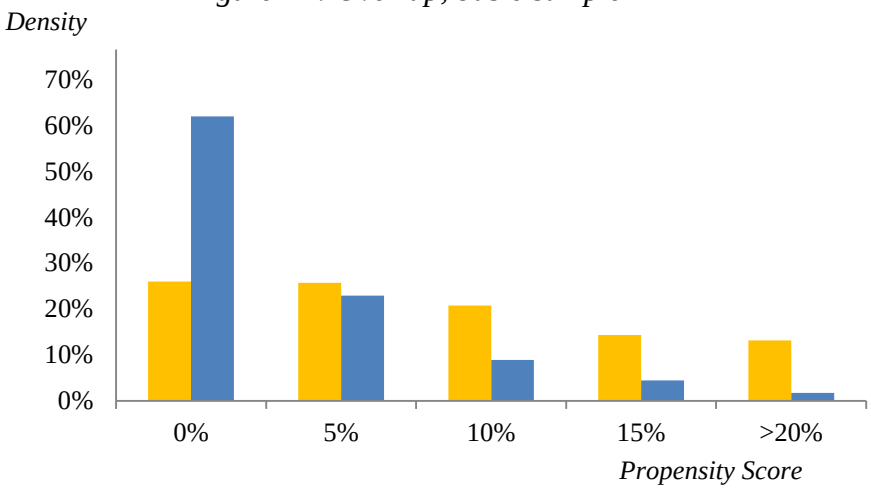
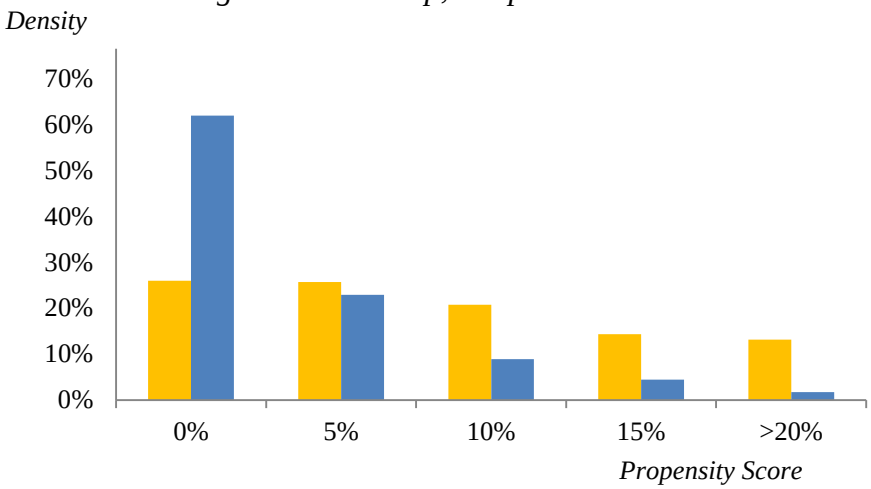


Figure A2: Overlap, sample without novices



Legend: orange - temporary contract, blue - permanent contract

Table A1: Results of the Linear Regression (Basic Sample, OLS Estimates)

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Temporary contract	-0.035	-0.006	-0.037	-0.122	-0.196*	-0.235**
	(0.116)	(0.115)	(0.117)	(0.114)	(0.116)	(0.117)
High openness to experience		0.169**	0.179**	0.106	0.102	0.099
		(0.081)	(0.081)	(0.077)	(0.077)	(0.077)
Low openness to experience		-0.011	-0.004	0.131*	0.133*	0.137*
		(0.078)	(0.077)	(0.073)	(0.073)	(0.073)
High neuroticism		-0.498***	-0.461***	-0.313***	-0.323***	-0.326***
		(0.109)	(0.109)	(0.102)	(0.102)	(0.101)
Low neuroticism		0.558***	0.534***	0.379***	0.382***	0.380***
		(0.072)	(0.072)	(0.070)	(0.070)	(0.070)
High agreeableness		0.197**	0.210***	0.219***	0.226***	0.222***
		(0.078)	(0.077)	(0.074)	(0.074)	(0.074)
Low agreeableness		-0.258***	-0.275***	-0.244***	-0.246***	-0.245***
		(0.087)	(0.087)	(0.082)	(0.082)	(0.082)
High conscientiousness		0.207***	0.224***	0.201***	0.195***	0.198***
		(0.067)	(0.067)	(0.063)	(0.063)	(0.063)
Low conscientiousness		-0.284***	-0.277***	-0.244***	-0.238***	-0.237***
		(0.091)	(0.091)	(0.087)	(0.087)	(0.087)
High extraversion		-0.150*	-0.155*	-0.121	-0.121	-0.123
		(0.084)	(0.085)	(0.078)	(0.078)	(0.078)
Low extraversion		-0.287***	-0.277***	-0.252***	-0.247***	-0.250***
		(0.085)	(0.085)	(0.081)	(0.081)	(0.081)
Education, primary level			-0.212**	-0.067	-0.058	-0.059
			(0.088)	(0.087)	(0.087)	(0.087)
Education, tertiary level			0.006	-0.238***	-0.258***	-0.256***
			(0.058)	(0.066)	(0.066)	(0.066)
Handicap			-0.448***	-0.411***	-0.403***	-0.401***
			(0.130)	(0.121)	(0.121)	(0.121)
Single			-0.010	0.004	0.011	0.006
			(0.075)	(0.071)	(0.071)	(0.071)
Migration background			0.122*	0.254***	0.252***	0.254***
			(0.070)	(0.071)	(0.071)	(0.071)
Female			-0.066	-0.000	0.006	0.006
			(0.053)	(0.065)	(0.065)	(0.065)
Age, difference to 40 years			-0.010	-0.015**	-0.014**	-0.014**
			(0.006)	(0.006)	(0.006)	(0.006)
Age, difference to 40 years, squared			0.000	0.000	0.000	0.000
			(0.000)	(0.000)	(0.000)	(0.000)
Years of unemployment			-0.037*	0.001	-0.014	-0.015
			(0.022)	(0.021)	(0.021)	(0.021)
Years of employment			0.003	0.010*	0.014**	0.014**
			(0.006)	(0.006)	(0.006)	(0.006)
Promotion probability 0%				-0.157**	-0.142**	-0.130*
				(0.071)	(0.071)	(0.071)
Promotion prob. >0% but ≤ 30%				-0.150**	-0.143**	-0.137**
				(0.069)	(0.069)	(0.069)
Promotion probability ≥70%				0.268***	0.264***	0.266***
				(0.100)	(0.100)	(0.100)
Small company				0.065	0.046	0.043
				(0.067)	(0.067)	(0.067)
Big company				0.004	0.022	0.020
				(0.060)	(0.060)	(0.060)
Occupational autonomy, level 2				-0.007	0.005	0.010
				(0.092)	(0.092)	(0.092)
Occupational autonomy, level 3				-0.172*	-0.152	-0.149
				(0.104)	(0.105)	(0.105)
Occupational autonomy, level 4				-0.088	-0.073	-0.070
				(0.120)	(0.121)	(0.121)
Occupational autonomy, level 5				-0.012	0.007	0.021
				(0.195)	(0.195)	(0.195)
log net wage				0.186**	0.228***	0.224***
				(0.082)	(0.083)	(0.084)

To be continued on the next page!

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Work hours, difference to 40				-0.005	-0.006	-0.006
				(0.005)	(0.005)	(0.005)
Banking and insurance				-0.131	-0.099	-0.099
				(0.137)	(0.138)	(0.138)
Transport				0.154	0.171	0.168
				(0.140)	(0.139)	(0.139)
Trade				-0.159	-0.155	-0.155
				(0.106)	(0.106)	(0.106)
Agriculture				0.532**	0.560**	0.567**
				(0.235)	(0.237)	(0.237)
Mining				0.050	0.094	0.091
				(0.225)	(0.225)	(0.226)
Energy				-0.190	-0.122	-0.132
				(0.420)	(0.422)	(0.422)
Manufacturing				0.169*	0.185*	0.184*
				(0.096)	(0.097)	(0.097)
Construction				0.169*	0.181*	0.183*
				(0.101)	(0.101)	(0.101)
Education				0.312**	0.351***	0.346***
				(0.122)	(0.122)	(0.122)
Public administration				0.271**	0.312***	0.311***
				(0.109)	(0.110)	(0.110)
Health and social services				0.212*	0.243**	0.246**
				(0.113)	(0.113)	(0.113)
High task variety				0.529***	0.520***	0.517***
				(0.057)	(0.057)	(0.057)
Low task variety				-0.533***	-0.537***	-0.538***
				(0.159)	(0.158)	(0.159)
Very hard manual labour				-0.386***	-0.394***	-0.393***
				(0.083)	(0.083)	(0.083)
No hard manual labour				0.013	0.007	0.005
				(0.065)	(0.065)	(0.065)
High independence				0.310***	0.311***	0.311***
				(0.053)	(0.053)	(0.053)
Low independence				0.218***	0.210**	0.209**
				(0.084)	(0.084)	(0.084)
Strong performance control				-0.200***	-0.200***	-0.204***
				(0.077)	(0.077)	(0.077)
Weak performance control				0.183***	0.188***	0.188***
				(0.053)	(0.053)	(0.053)
Often shift work				0.034	0.043	0.042
				(0.108)	(0.108)	(0.108)
No shift work				-0.049	-0.045	-0.044
				(0.095)	(0.095)	(0.095)
Good learning opportunities				0.416***	0.408***	0.405***
				(0.054)	(0.054)	(0.054)
Bad learning opportunities				-0.364***	-0.362***	-0.362***
				(0.084)	(0.084)	(0.084)
High environmental burden at work				-0.127	-0.126	-0.129
				(0.087)	(0.087)	(0.087)
No environmental burden at work				0.189***	0.182***	0.178***
				(0.068)	(0.068)	(0.068)
Very annoying tasks				-0.547***	-0.541***	-0.538***
				(0.060)	(0.060)	(0.060)
Not annoying tasks				0.366***	0.363***	0.357***
				(0.068)	(0.068)	(0.068)
Very risk at work				-0.006	-0.003	-0.004
				(0.101)	(0.101)	(0.100)
No risk at work				-0.013	-0.013	-0.012
				(0.069)	(0.069)	(0.068)

To be continued on the next page!

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Tenure					-0.027***	-0.017*
					(0.009)	(0.010)
Tenure²					0.001**	0.000
					(0.000)	(0.000)
New job						0.184**
						(0.082)
Constant	7.193***	7.180***	7.179***	6.552***	6.635***	6.546***
	(0.026)	(0.037)	(0.128)	(0.205)	(0.208)	(0.211)
Observations	5,769	5,769	5,769	5,769	5,769	5,769
Adjusted R^2	0.000	0.031	0.037	0.150	0.152	0.152

Source: SOEP 2001, 2005 (Personality)
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction.*

Table A2: Propensity Score Estimations (Probit)

Sample:	basic		no novices	
	coefficient	standard error	coefficient	standard error
High openness to experience	0.099	(0.087)	0.038	(0.124)
Low openness to experience	-0.092	(0.094)	-0.055	(0.122)
High neuroticism	0.035	(0.102)	-0.057	(0.151)
Low neuroticism	-0.170*	(0.096)	-0.153	(0.132)
High agreeableness	0.051	(0.087)	-0.203	(0.138)
Low agreeableness	-0.160	(0.102)	-0.166	(0.138)
High conscientiousness	-0.062	(0.080)	-0.116	(0.114)
Low conscientiousness	0.135	(0.095)	-0.014	(0.131)
High extraversion	0.101	(0.086)	0.054	(0.125)
Low extraversion	0.025	(0.093)	0.147	(0.118)
Years of unemployment	0.150***	(0.020)	0.073**	(0.034)
Years of employment	-0.038***	(0.007)	-0.035***	(0.010)
Education, primary level	-0.155	(0.105)	-0.278*	(0.167)
Education, tertiary level	0.153**	(0.065)	0.217**	(0.087)
Handicap	0.137	(0.132)	0.312**	(0.159)
Single	-0.012	(0.078)	0.081	(0.104)
Migration background	-0.090	(0.078)	-0.203*	(0.116)
Female	0.041	(0.059)	0.041	(0.080)
Age, difference to 40	0.002	(0.007)	-0.003	(0.010)
Age, difference to 40, squared	0.001***	(0.000)	0.002***	(0.000)
Constant	-1.248***	(0.144)	-1.525***	(0.199)
Observations	5,769		4,906	

Source: SOEP 2001, 2005 (Personality)
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. Standard errors are in parentheses. The dependent variable is a dummy which is one if the contract is temporary and zero otherwise.*

Table A3: Complete Results of the Linear Regression (Trimmed Sample, OLS Estimates)

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Temporary contract	-0.031	-0.007	-0.041	-0.124	-0.201*	-0.240**
	(0.116)	(0.115)	(0.117)	(0.115)	(0.117)	(0.118)
High openness to experience		0.160*	0.171**	0.085	0.081	0.078
		(0.083)	(0.083)	(0.077)	(0.078)	(0.077)
Low openness to experience		0.017	0.018	0.161**	0.165**	0.169**
		(0.083)	(0.083)	(0.078)	(0.078)	(0.078)
High neuroticism		-0.502***	-0.464***	-0.313***	-0.324***	-0.327***
		(0.113)	(0.113)	(0.105)	(0.105)	(0.105)
Low neuroticism		0.509***	0.476***	0.327***	0.330***	0.327***
		(0.077)	(0.077)	(0.073)	(0.073)	(0.073)
High agreeableness		0.191**	0.208**	0.205***	0.212***	0.208***
		(0.081)	(0.081)	(0.077)	(0.077)	(0.077)
Low agreeableness		-0.263***	-0.290***	-0.253***	-0.255***	-0.254***
		(0.093)	(0.093)	(0.087)	(0.087)	(0.087)
High conscientiousness		0.218***	0.237***	0.239***	0.235***	0.237***
		(0.070)	(0.070)	(0.066)	(0.066)	(0.066)
Low conscientiousness		-0.273***	-0.258***	-0.229**	-0.224**	-0.223**
		(0.093)	(0.093)	(0.089)	(0.089)	(0.089)
High extraversion		-0.132	-0.137	-0.111	-0.108	-0.111
		(0.086)	(0.087)	(0.079)	(0.079)	(0.079)
Low extraversion		-0.312***	-0.301***	-0.267***	-0.262***	-0.265***
		(0.090)	(0.090)	(0.085)	(0.085)	(0.085)
Education, primary level			-0.209**	-0.055	-0.049	-0.050
			(0.099)	(0.097)	(0.097)	(0.097)
Education, tertiary level			0.023	-0.219***	-0.239***	-0.236***
			(0.058)	(0.067)	(0.067)	(0.067)
Handicap			-0.401***	-0.375***	-0.372***	-0.369***
			(0.134)	(0.125)	(0.125)	(0.125)
Single			-0.025	-0.009	-0.003	-0.007
			(0.077)	(0.074)	(0.073)	(0.073)
Migration background			0.141*	0.256***	0.255***	0.258***
			(0.075)	(0.074)	(0.074)	(0.074)
Female			-0.062	-0.008	-0.002	-0.002
			(0.054)	(0.066)	(0.066)	(0.066)
Age, difference to 40 years			-0.010	-0.014**	-0.014**	-0.014**
			(0.007)	(0.006)	(0.006)	(0.006)
Age, difference to 40 years, squared			0.000	0.000	0.000	0.000
			(0.000)	(0.000)	(0.000)	(0.000)
Years of unemployment			-0.040*	-0.001	-0.016	-0.017
			(0.022)	(0.021)	(0.021)	(0.021)
Years of employment			0.001	0.009	0.012*	0.012*
			(0.006)	(0.006)	(0.006)	(0.006)
Promotion probability 0%				-0.148**	-0.132*	-0.120*
				(0.073)	(0.073)	(0.073)
Promotion prob. >0% but ≤ 30%				-0.153**	-0.146**	-0.139**
				(0.071)	(0.071)	(0.071)
Promotion probability ≥70%				0.243**	0.240**	0.242**
				(0.102)	(0.102)	(0.101)
Small company				0.058	0.037	0.034
				(0.069)	(0.069)	(0.069)
Big company				0.016	0.035	0.033
				(0.062)	(0.062)	(0.062)
Occupational autonomy, level 2				-0.020	-0.010	-0.004
				(0.097)	(0.097)	(0.097)
Occupational autonomy, level 3				-0.171	-0.153	-0.150
				(0.109)	(0.109)	(0.109)
Occupational autonomy, level 4				-0.144	-0.133	-0.130
				(0.126)	(0.126)	(0.126)
Occupational autonomy, level 5				-0.083	-0.070	-0.055
				(0.199)	(0.200)	(0.200)

To be continued on the next page!

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
log net wage				0.210**	0.248***	0.244***
				(0.085)	(0.086)	(0.087)
Work hours, difference to 40				-0.006	-0.007	-0.007
				(0.005)	(0.005)	(0.005)
Banking and insurance				-0.138	-0.110	-0.110
				(0.139)	(0.139)	(0.139)
Transport				0.187	0.202	0.197
				(0.144)	(0.144)	(0.144)
Trade				-0.129	-0.127	-0.126
				(0.109)	(0.109)	(0.109)
Agriculture				0.494*	0.508*	0.518*
				(0.263)	(0.265)	(0.266)
Mining				0.185	0.224	0.221
				(0.225)	(0.225)	(0.225)
Energy				-0.150	-0.092	-0.102
				(0.429)	(0.431)	(0.431)
Manufacturing				0.187*	0.200**	0.199**
				(0.100)	(0.101)	(0.101)
Construction				0.181*	0.190*	0.192*
				(0.106)	(0.106)	(0.106)
Education				0.349***	0.383***	0.378***
				(0.124)	(0.125)	(0.125)
Public administration				0.309***	0.347***	0.347***
				(0.113)	(0.113)	(0.113)
Health and social services				0.244**	0.275**	0.278**
				(0.115)	(0.115)	(0.115)
High task variety				0.558***	0.549***	0.546***
				(0.058)	(0.058)	(0.058)
Low task variety				-0.506***	-0.513***	-0.514***
				(0.166)	(0.166)	(0.166)
Very hard manual labour				-0.408***	-0.416***	-0.415***
				(0.087)	(0.087)	(0.087)
No hard manual labour				0.018	0.011	0.009
				(0.067)	(0.067)	(0.067)
High independence				0.315***	0.316***	0.316***
				(0.055)	(0.055)	(0.055)
Low independence				0.227**	0.220**	0.219**
				(0.088)	(0.088)	(0.088)
Strong performance control				-0.197**	-0.199**	-0.203**
				(0.081)	(0.080)	(0.080)
Weak performance control				0.159***	0.165***	0.165***
				(0.054)	(0.054)	(0.054)
Often shift work				0.027	0.037	0.035
				(0.113)	(0.113)	(0.113)
No shift work				-0.022	-0.015	-0.015
				(0.100)	(0.100)	(0.100)
Good learning opportunities				0.437***	0.428***	0.426***
				(0.055)	(0.055)	(0.055)
Bad learning opportunities				-0.364***	-0.363***	-0.363***
				(0.088)	(0.089)	(0.089)
High environmental burden at work				-0.119	-0.117	-0.121
				(0.092)	(0.092)	(0.092)
No environmental burden at work				0.187***	0.179**	0.175**
				(0.070)	(0.070)	(0.070)
Very annoying tasks				-0.579***	-0.574***	-0.571***
				(0.062)	(0.062)	(0.062)
Not annoying tasks				0.347***	0.341***	0.336***
				(0.072)	(0.072)	(0.072)
Very risk at work				0.024	0.027	0.025
				(0.106)	(0.106)	(0.106)
No risk at work				0.009	0.008	0.009
				(0.071)	(0.071)	(0.071)

To be continued on the next page!

Model specification:	(1)	(2)	(3)	(4)	(5)	(6)
Tenure					-0.030***	-0.019*
					(0.009)	(0.010)
Tenure²					0.001***	0.000
					(0.000)	(0.000)
New job						0.191**
						(0.083)
Constant	7.187***	7.182***	7.199***	6.507***	6.610***	6.515***
	(0.027)	(0.038)	(0.134)	(0.213)	(0.216)	(0.220)
Observations	5,367	5,367	5,367	5,367	5,367	5,367
Adjusted R^2	0.000	0.028	0.034	0.152	0.154	0.154

Source: SOEP 2001, 2005 (Personality)
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction.*

Table A4: Average Treatment Effects on the Treated (Kernel Matching)

Outcome variable: Job satisfaction

	Basic sample	*Sample without novices*
Treated (temporary contract)	[n = 328]	[n = 143]
Controls (permanent contract)	[n = 5,219]	[n = 4,348]
Epanechnikov kernel,	-0.031	-0.350
bandwidth 0.06	(0.114)	(0.163)
Epanechnikov kernel,	-0.049	-0.346
alternative bandwidth 0.03	(0.121)	(0.169)
Epanechnikov kernel,	-0.057	-0.334
alternative bandwidth 0.01	(0.120)	(0.181)

Source: SOEP 2001, 2005 (Personality)
Notes: Average treatment effects on the treated show differences in job satisfaction levels between temporary and permanent workers. Bootstrapped standard errors are based on 150 replications and are in round brackets.

Table A5: Complete Results of the Panel Analysis (OLS Fixed Effects Estimates)

Model Specification:	(1)	(2)	(3)	(4)	(5)	(6)
Temporary contract	0.125***	0.065	0.029	0.046	-0.065	-0.121***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Year 2002		-0.147***	-0.094**	-0.098**	-0.091**	-0.096**
		(0.024)	(0.038)	(0.038)	(0.038)	(0.038)
Year 2003		-0.167***	-0.060	-0.064	-0.043	-0.052
		(0.025)	(0.065)	(0.065)	(0.065)	(0.065)
Year 2004		-0.291***	-0.129	-0.133	-0.099	-0.116
		(0.027)	(0.093)	(0.094)	(0.093)	(0.093)
Year 2005		-0.349***	-0.133	-0.140	-0.088	-0.112
		(0.028)	(0.123)	(0.124)	(0.123)	(0.123)
Year 2006		-0.406***	-0.134	-0.138	-0.068	-0.099
		(0.029)	(0.152)	(0.153)	(0.152)	(0.152)
Year 2007		-0.453***	-0.125	-0.129	-0.047	-0.090
		(0.029)	(0.181)	(0.182)	(0.181)	(0.181)
Year 2008		-0.484***	-0.098	-0.105	-0.018	-0.068
		(0.030)	(0.212)	(0.213)	(0.212)	(0.212)
Year 2009		-0.561***	-0.120	-0.130	-0.034	-0.091
		(0.032)	(0.241)	(0.243)	(0.241)	(0.241)
Year 2010		-0.592***	-0.094	-0.111	-0.004	-0.061
		(0.033)	(0.272)	(0.274)	(0.272)	(0.272)
Education, primary level			-0.427*	-0.363	-0.360	-0.355
			(0.226)	(0.223)	(0.225)	(0.225)
Education, tertiary level			-0.075	-0.154	-0.187*	-0.201*
			(0.104)	(0.102)	(0.104)	(0.104)
Handicap			-0.201***	-0.198***	-0.194***	-0.195***
			(0.066)	(0.065)	(0.065)	(0.065)
Single			0.155***	0.158***	0.158***	0.155***
			(0.037)	(0.037)	(0.036)	(0.036)
Age, difference to 40, squared			-0.000	0.000	-0.000**	-0.000**
			(0.000)	(0.000)	(0.000)	(0.000)
Years of unemployment			0.325***	0.345***	0.132**	0.138**
			(0.065)	(0.064)	(0.065)	(0.064)
Years of employment			-0.059**	-0.070**	-0.042	-0.037
			(0.030)	(0.030)	(0.030)	(0.030)
Banking and insurance				0.155	0.193	0.189
				(0.130)	(0.130)	(0.130)
Transport				0.016	0.029	0.030
				(0.097)	(0.096)	(0.095)
Trade				-0.161**	-0.118*	-0.116*
				(0.072)	(0.070)	(0.070)
Agriculture				0.248	0.215	0.208
				(0.171)	(0.171)	(0.171)
Mining				0.322**	0.347**	0.348**
				(0.158)	(0.156)	(0.156)
Energy				-0.079	-0.083	-0.091
				(0.291)	(0.288)	(0.290)
Manufacturing				-0.012	0.016	0.016
				(0.064)	(0.063)	(0.063)
Construction				-0.044	-0.002	-0.004
				(0.068)	(0.067)	(0.067)
Education Sector				0.277***	0.287***	0.287***
				(0.101)	(0.098)	(0.098)
Public administration				0.179**	0.184**	0.186**
				(0.080)	(0.078)	(0.078)
Health and social services				0.129	0.131	0.132
				(0.085)	(0.084)	(0.084)

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Model Specification:	(1)	(2)	(3)	(4)	(5)	(6)
Small company				-0.127***	-0.143***	-0.150***
				(0.044)	(0.043)	(0.043)
Big company				0.071**	0.083**	0.086***
				(0.033)	(0.032)	(0.032)
Occupational autonomy, level 2				0.175***	0.193***	0.193***
				(0.046)	(0.046)	(0.046)
Occupational autonomy, level 3				0.339***	0.361***	0.362***
				(0.054)	(0.054)	(0.053)
Occupational autonomy, level 4				0.460***	0.492***	0.489***
				(0.061)	(0.061)	(0.061)
Occupational autonomy, level 5				0.655***	0.686***	0.682***
				(0.082)	(0.081)	(0.081)
log net wage				0.352***	0.371***	0.379***
				(0.044)	(0.044)	(0.044)
Work hours, difference to 40				-0.007**	-0.007**	-0.007**
				(0.003)	(0.003)	(0.003)
Tenure					-0.093***	-0.076***
					(0.006)	(0.007)
Tenure²					0.001***	0.001***
					(0.000)	(0.000)
New Job						0.243***
						(0.028)
Constant	7.023***	7.358***	8.209***	7.955***	8.232***	8.009***
	(0.003)	(0.020)	(0.469)	(0.478)	(0.473)	(0.474)
Observations	68,286	68,286	68,286	68,286	68,286	68,286
Number of persons	15,080	15,080	15,080	15,080	15,080	15,080
Adjusted R^2	0.000	0.013	0.017	0.021	0.030	0.032

Source: SOEP 2001-2010
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction.*

Table A6: Complete Results of the Extended Analysis (OLS Estimates)

Model specification:	(6)	(7)	(8)	(9)	(10)
Temporary contract	-0.235**	-0.231**	-0.044	-0.039	0.000
	(0.117)	(0.117)	(0.116)	(0.116)	(0.108)
High openness to experience	0.099	0.099	0.098	0.098	0.117
	(0.077)	(0.076)	(0.076)	(0.076)	(0.072)
Low openness to experience	0.137*	0.141*	0.139*	0.135*	0.077
	(0.073)	(0.073)	(0.071)	(0.071)	(0.069)
High neuroticism	-0.326***	-0.312***	-0.306***	-0.308***	-0.215**
	(0.101)	(0.101)	(0.098)	(0.099)	(0.092)
Low neuroticism	0.380***	0.366***	0.302***	0.305***	0.217***
	(0.070)	(0.070)	(0.070)	(0.070)	(0.066)
High agreeableness	0.222***	0.224***	0.227***	0.230***	0.186***
	(0.074)	(0.074)	(0.073)	(0.073)	(0.069)
Low agreeableness	-0.245***	-0.243***	-0.237***	-0.236***	-0.117
	(0.082)	(0.082)	(0.079)	(0.079)	(0.076)
High conscientiousness	0.198***	0.195***	0.185***	0.187***	0.148**
	(0.063)	(0.063)	(0.062)	(0.062)	(0.058)
Low conscientiousness	-0.237***	-0.230***	-0.231***	-0.233***	-0.179**
	(0.087)	(0.087)	(0.085)	(0.085)	(0.082)
High extraversion	-0.123	-0.126	-0.148*	-0.152**	-0.133*
	(0.078)	(0.078)	(0.077)	(0.077)	(0.073)
Low extraversion	-0.250***	-0.244***	-0.234***	-0.232***	-0.227***
	(0.081)	(0.081)	(0.080)	(0.080)	(0.076)
Education, primary level	-0.059	-0.060	-0.083	-0.086	-0.072
	(0.087)	(0.087)	(0.085)	(0.085)	(0.081)
Education, tertiary level	-0.256***	-0.252***	-0.198***	-0.201***	-0.136**
	(0.066)	(0.066)	(0.065)	(0.065)	(0.062)
Handicap	-0.401***	-0.379***	-0.385***	-0.399***	-0.345***
	(0.121)	(0.121)	(0.118)	(0.118)	(0.113)
Single	0.006	0.009	-0.023	-0.021	-0.002
	(0.071)	(0.071)	(0.070)	(0.070)	(0.066)
Migration background	0.254***	0.244***	0.260***	0.260***	0.160**
	(0.071)	(0.070)	(0.069)	(0.069)	(0.066)
Female	0.006	0.010	0.000	0.001	-0.052
	(0.065)	(0.065)	(0.063)	(0.063)	(0.060)
Age, difference to 40 years	-0.014**	-0.012*	-0.015**	-0.015**	-0.017***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Age, difference to 40 years, squared	0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Years of unemployment	-0.015	-0.013	-0.004	-0.003	-0.011
	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)
Years of employment	0.014**	0.015**	0.016***	0.016***	0.014**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Promotion probability 0%	-0.130*	-0.117	-0.112	-0.117*	-0.093
	(0.071)	(0.071)	(0.070)	(0.069)	(0.067)
Promotion prob. >0% but ≤ 30%	-0.137**	-0.134*	-0.132**	-0.131*	-0.106
	(0.069)	(0.069)	(0.067)	(0.068)	(0.065)
Promotion probability ≥70%	0.266***	0.262***	0.188*	0.178*	0.164*
	(0.100)	(0.100)	(0.099)	(0.099)	(0.095)
Small company	0.043	0.045	0.048	0.048	0.027
	(0.067)	(0.067)	(0.065)	(0.065)	(0.062)
Big company	0.020	0.031	0.003	-0.000	0.001
	(0.060)	(0.060)	(0.059)	(0.059)	(0.056)
Occupational autonomy, level 2	0.010	0.000	-0.013	-0.014	0.014
	(0.092)	(0.092)	(0.090)	(0.090)	(0.086)
Occupational autonomy, level 3	-0.149	-0.155	-0.197*	-0.200*	-0.083
	(0.105)	(0.105)	(0.102)	(0.103)	(0.097)
Occupational autonomy, level 4	-0.070	-0.082	-0.138	-0.136	0.043
	(0.121)	(0.121)	(0.119)	(0.119)	(0.114)
Occupational autonomy, level 5	0.021	0.005	-0.078	-0.085	0.185
	(0.195)	(0.195)	(0.189)	(0.189)	(0.176)

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Model specification:	(6)	(7)	(8)	(9)	(10)
log net wage	0.224***	0.217***	0.117	0.114	0.137*
	(0.084)	(0.083)	(0.082)	(0.082)	(0.077)
Work hours, difference to 40	-0.006	-0.005	0.001	0.001	0.000
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)
Banking and insurance	-0.099	-0.119	-0.068	-0.063	-0.046
	(0.138)	(0.138)	(0.136)	(0.136)	(0.128)
Transport	0.168	0.167	0.245*	0.246*	0.216*
	(0.139)	(0.139)	(0.133)	(0.133)	(0.123)
Trade	-0.155	-0.159	-0.075	-0.071	-0.013
	(0.106)	(0.105)	(0.104)	(0.104)	(0.098)
Agriculture	0.567**	0.582**	0.650***	0.662***	0.567***
	(0.237)	(0.237)	(0.223)	(0.223)	(0.207)
Mining	-0.132	-0.086	0.159	0.151	0.119
	(0.422)	(0.425)	(0.412)	(0.409)	(0.370)
Energy	0.091	0.129	0.290	0.282	0.174
	(0.226)	(0.226)	(0.225)	(0.224)	(0.215)
Manufacturing	0.184*	0.188*	0.267***	0.272***	0.274***
	(0.097)	(0.097)	(0.095)	(0.095)	(0.089)
Construction	0.183*	0.190*	0.280***	0.285***	0.295***
	(0.101)	(0.101)	(0.100)	(0.100)	(0.094)
Education	0.346***	0.362***	0.357***	0.362***	0.292**
	(0.122)	(0.122)	(0.121)	(0.121)	(0.116)
Public administration	0.311***	0.340***	0.257**	0.255**	0.220**
	(0.110)	(0.110)	(0.108)	(0.108)	(0.103)
Health and social services	0.246**	0.243**	0.231**	0.235**	0.228**
	(0.113)	(0.113)	(0.112)	(0.112)	(0.105)
High task variety	0.517***	0.519***	0.481***	0.480***	0.413***
	(0.057)	(0.057)	(0.056)	(0.056)	(0.053)
Low task variety	-0.538***	-0.537***	-0.507***	-0.509***	-0.468***
	(0.159)	(0.158)	(0.154)	(0.155)	(0.146)
Very hard manual labour	-0.393***	-0.399***	-0.304***	-0.306***	-0.297***
	(0.083)	(0.083)	(0.083)	(0.083)	(0.079)
No hard manual labour	0.005	0.011	0.016	0.014	-0.027
	(0.065)	(0.065)	(0.064)	(0.064)	(0.061)
High independence	0.311***	0.314***	0.301***	0.297***	0.263***
	(0.053)	(0.053)	(0.052)	(0.052)	(0.050)
Low independence	0.209**	0.208**	0.193**	0.194**	0.118
	(0.084)	(0.084)	(0.083)	(0.083)	(0.078)
Strong performance control	-0.204***	-0.202***	-0.136*	-0.136*	-0.089
	(0.077)	(0.077)	(0.076)	(0.076)	(0.073)
Weak performance control	0.188***	0.179***	0.100*	0.098*	0.002
	(0.053)	(0.053)	(0.052)	(0.052)	(0.050)
Often shift work	0.042	0.053	-0.002	-0.008	-0.008
	(0.108)	(0.108)	(0.106)	(0.106)	(0.102)
No shift work	-0.044	-0.043	-0.081	-0.082	-0.121
	(0.095)	(0.095)	(0.093)	(0.093)	(0.090)
Good learning opportunities	0.405***	0.396***	0.421***	0.419***	0.356***
	(0.054)	(0.054)	(0.053)	(0.053)	(0.050)
Bad learning opportunities	-0.362***	-0.365***	-0.361***	-0.363***	-0.334***
	(0.084)	(0.084)	(0.083)	(0.083)	(0.079)
High environmental burden at work	-0.129	-0.131	-0.128	-0.127	-0.058
	(0.087)	(0.087)	(0.085)	(0.086)	(0.081)
No environmental burden at work	0.178***	0.173**	0.162**	0.163**	0.147**
	(0.068)	(0.068)	(0.067)	(0.067)	(0.064)
Very annoying tasks	-0.538***	-0.536***	-0.468***	-0.472***	-0.312***
	(0.060)	(0.060)	(0.059)	(0.059)	(0.057)
Not annoying tasks	0.357***	0.352***	0.306***	0.308***	0.181***
	(0.068)	(0.068)	(0.067)	(0.068)	(0.065)
Very risk at work	-0.004	-0.005	-0.020	-0.021	0.012
	(0.100)	(0.100)	(0.098)	(0.099)	(0.094)
No risk at work	-0.012	-0.012	-0.021	-0.021	-0.076
	(0.068)	(0.068)	(0.067)	(0.067)	(0.064)

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Model specification:	(6)	(7)	(8)	(9)	(10)
Tenure	-0.017*	-0.015	-0.013	-0.014	-0.013
	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)
Tenure²	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
New job	0.184**	0.185**	0.209***	0.206**	0.142*
	(0.082)	(0.082)	(0.081)	(0.081)	(0.076)
High job security			0.497***	0.485***	0.398***
			(0.054)	(0.053)	(0.050)
Low job security			-0.680***	-0.690***	-0.661***
			(0.095)	(0.095)	(0.089)
Overtime (log)					-0.130***
					(0.026)
Good relations with colleagues					0.445***
					(0.064)
Bad relations with colleagues					0.163
					(0.171)
No conflicts with superiors					0.947***
					(0.060)
Often conflicts with superiors					-0.943***
					(0.186)
High employment security		0.106*	-0.073		
		(0.060)	(0.061)		
Low employment security		-0.194***	-0.130*		
		(0.075)	(0.074)		
Constant	6.546***	6.503***	6.456***	6.453***	5.699***
	(0.211)	(0.211)	(0.208)	(0.208)	(0.208)
Observations	5,769	5,769	5,769	5,769	5,769
R^2	0.152	0.154	0.184	0.184	0.258

Source: SOEP 2001, 2005 (Personality)
*Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are in parentheses. The dependent variable is job satisfaction.*

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