Why Do Recent Graduates Enter into Flexible Jobs?

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Received: 18 April 2011 / Accepted: 22 December 2011 / Published online: 18 January 2012
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Abstract Flexible jobs make up a larger share of the Dutch labour market than in almost any other Western country. Recent graduates in the Netherlands are particularly likely to take flexible jobs. In this study we examine why recent graduates enter into temporary contracts and whether flexible jobs offer a poorer match for graduates' qualifications than permanent jobs. We find that recent graduates that enter into flexible jobs face large wage penalties, a worse job match and less training participation than graduates who take permanent jobs, even after correcting for differences in ability. When the labour market situation for a particular field of education deteriorates, more recent graduates are forced into flexible jobs, threatening their position on the labour market in the long run. Flexible work among recent graduates is unrelated to their willingness to take risks. Only for university graduates is there any indication that flexible jobs may provide a stepping stone to permanent employment.

Keywords Flexible work · Job characteristics · Job mismatch ·
Temporary contracts · Recent graduates · Willingness to take risks

JEL Classification J21 · J24 · J41 · M51

1 Introduction

Flexible work arrangements are generally regarded as good for employers. If companies are faced with declining demand for products or poorly performing employees, allowing fixed-term employees' labour contracts to expire is a cheap way to get rid of personnel since it is excluded from all redundancy procedures and severance pay

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obligations companies face when firing permanent workers. Moreover, temporary employment agencies supply workers on short notice, which makes it possible for companies to adjust their workforce quickly.

Finding a temporary job may also be good for the long-term labour market performance of the unemployed. The differences with respect to wage compensation (Addison and Surfield 2007) and employment continuity (Addison and Surfield 2009a,b) between the unemployed entering into either permanent or temporary jobs seem to dissipate in the long run. This implies that jobs of limited duration may serve as a stepping stone toward a permanent job (Booth et al. 2002; Zijl et al. 2004). This may be particularly true for recent graduates. When recent graduates find a temporary job with a large learning potential, these graduates can obtain relevant work experience, acquire essential competencies that make them more attractive to other employers, demonstrate their motivation and capacities and develop their informal network. Temporary jobs such as traineeships or PhD positions may yield particularly high rewards to graduates as their careers develop. These positions are generally open to high ability graduates with good grades. Indeed, Try (2004) finds evidence that recent graduates consider some flexible jobs (e.g., research fellowships) as a good investment opportunity.

However, according to dual labour market theory, flexible work¹ may be related to so-called 'bad jobs' in the secondary labour market segment (Doeringer and Piore 1971; Reich et al. 1973; Rebitzer and Taylor 1991). This is especially likely for groups that traditionally have a weak position in the labour market, including young people entering the labour market, immigrants, low-skilled workers and female workers. Individuals within these groups may move from one flexible job to another, interrupted by periods of unemployment or inactivity. For the medium and long term, the unemployed might even be better off investing in a lengthier job search to find a permanent job, as opposed to accepting a temporary job (Autor and Houseman 2005, 2010; Houseman and Polivka 2000). A high incidence of flexible jobs among recent graduates may be explained by the insider-outsider model (Bentolila and Dolado 1994; Lindbeck and Snower 2002). Permanent workers (insiders) dominate the labour unions and will make sure that their terms of employment are guaranteed as much as possible relative to the outsiders. These outsiders are the groups of people with a weak link to the labour market, including new entrants such as recent graduates. Young people must often accept temporary rather than permanent jobs when they are faced with high unemployment rates (Treu 1992). A high incidence of flexible employment in particular fields of study may therefore be a manifestation of low labour demand and a weak labour market position for those who graduated in these fields (De Grip et al. 1997). Apart from short job spells, other unfavourable aspects of the outsiders' flexible jobs may include low wages,² detrimental working conditions and lack of training opportunities (Houseman 2001; Zijl 2006).

¹ To indicate all jobs with short-term contracts we refer to flexible rather than atypical or non-standard jobs (see on this topic Dekker 2007, pp. 173–174).

² Compensation for temporary workers is indeed lower than for permanent workers with the same background characteristics and occupying the same kind of job (European Commission 2003). These so-called wage penalties vary from ca. 5% in France, Germany, Belgium and Austria to more than 15% in the Netherlands.

Since temporary employment is very common in the Netherlands³ this may give rise to some worries, particularly for recent graduates. Relative to older job seekers, recent graduates benefit more from a first job that carries broad access to new learning or training. Therefore, it is important to analyse to what extent recent graduates are exposed to either ‘bad’ or ‘good’ jobs, and for what reasons. In light of the empirical studies mentioned above, recent graduates are appealing to analyse because they are a relatively homogeneous group with minimal variation in labour market experience. Nevertheless, few studies⁴ have examined why recent graduates enter into temporary contracts and whether flexible jobs offer a poorer match for graduates’ qualifications than permanent jobs offer. This study seeks to rigorously analyse how well flexible jobs match the skills of recent graduates who enter into them.

With regard to the supply side of the labour market, it can be safely assumed that graduates will usually prefer permanent over flexible jobs. However, by accepting a temporary job instead of remaining unemployed graduates can signal motivation, ambition and ability (Spence 1973). Employers will be typically more willing to offer permanent slots to graduates who are above average. Because of this, a graduate’s final exam grade can be used as a predictor of a graduate’s likelihood of entering into flexible employment. Moreover, it may be expected that graduates who are less risk averse will require smaller compensation and will have a higher probability of ending up in flexible work (Dohmen et al. 2011). Our empirical analysis graduates’ willingness to take risks is used as an independent variable to explain the probability of accepting a flexible contract.

From a demand side perspective, employers may use temporary contracts as a way to screen graduates (Winkler 1987). If unemployment is high for graduates with particular degrees, employers have the luxury of screening recent graduates with these degrees more intensively by postponing a permanent contract offer. Employers might also require more screening if graduates have a degree in a field of study that is more loosely attached to a specific occupation. In our empirical analysis, we expect that graduates with a particular level and field of education will have an increased likelihood of accepting a flexible job as the unemployment rate in that field increases, and the field of study’s attachment to a particular occupation decreases. Furthermore, another important motive for employers to offer temporary contracts is the goal of minimizing adjustment costs in the workforce. From the theory of adjustment costs (Hamermesh and Pfann 1996) it can be inferred that employers are more likely to enter into temporary contracts with graduates educated in fields susceptible to large

³ Temporary employment contracts as a percentage of dependent employment has increased in the Netherlands from about 10% in 1995 to 18% in 2009. The percentage was in 2009 about 4–10% higher than in Denmark, France, Germany and the US (Cörvers et al. 2011, based on OECD figures). For a sample of 13 European countries, the Netherlands exhibits after Spain the highest share of temporary work among higher education graduates in their first job (Allen and Van der Velden 2007, Table 3.1). Based on Labour Force Survey data for 1999 with respect to reasons for working on a temporary contract (Eurostat 2000), one may conclude that relative to other countries many employed persons in the Netherlands do not want a permanent job, whereas in Spain they seem to be forced into temporary jobs because of a lack of permanent jobs.

⁴ For example, Wieling and Borghans (2001) and Try (2004) specifically analyse the less attractive aspects of temporary jobs among recent graduates in the Netherlands and Norway, respectively.

employment variations. These variations can stem from the business cycle as well as from other factors, such as changes in government budgets for health care or education. To account for business cycle and other variations in employment, we include an explanatory variable that measures employment variation for graduates with different educational backgrounds over time. It is expected that as employment variation increases for a particular level and field of education, graduates with that background will be more likely to accept flexible job.

In this study, two main categories of flexible jobs among recent graduates are distinguished: direct hire temporary jobs based on fixed-term contracts, and temporary jobs offered by temporary work agencies. Data on recent graduates from Dutch intermediate and higher education are used to analyse the impact that personal characteristics and labour market circumstances related to graduates' educational background have on both the job match and the probability of entering into temporary contracts. First, it is shown that recent graduates in flexible jobs are generally worse off than those in permanent jobs, even after correcting for differences in ability. This result is consistent across several job match indicators, including wage compensation, working in a job that matches educational level and field, participation in training and regret of study choice. Second, personal characteristics such as higher ability diminish the probability of entering into temporary contracts, but personal preferences regarding accepting a temporary job play an insignificant role. Recent graduates are more likely to accept flexible jobs when they face high unemployment, low attachment to occupations and high employment variation. Third, only at the university level is there any indication that the selection process is different from process at the lower education levels. Some university graduates receive fixed-term jobs that match their education better than university graduates in permanent jobs, and university graduates with higher grades are more likely to have fixed-term jobs.

The next section discusses the remarkably high incidence of flexible contracts among recent graduates in the Netherlands relative to the rest of the work force, as well as the variation over time and the differences between education levels. Section 3 demonstrates to the effect that working in fixed-term, temporary agency or permanent jobs has on several job match indicators such as wage compensation, training intensity and regret of study choice. Section 4 presents an empirical model that uses personal characteristics and labour market circumstances as explanatory factors in assessing the likelihood of a recent graduate receiving a temporary contract. Section 5 summarizes the findings and offers concluding remarks on the costs paid by recent graduates in temporary jobs in exchange for a Dutch labour market with high flexibility.

2 Flexible Work on the Dutch Labour Market

In this section, the incidence of temporary work among recent graduates is compared to that of the total group of employees in the Dutch labour force. Figure 1a shows the percentage of flexible workers by level of education for employees in the 1996–2008 period. We distinguish between upper secondary education (SE),⁵ higher professional

⁵ This includes upper secondary general (HAVO), pre-university general secondary (VWO) and upper secondary vocational education (MBO levels 2, 3 and 4).

Fig. 1 Percentage of flexible workers among employees in the labour force (a) and recent graduates in paid employment (b) by level of education, 1996–2008. Sources: Statistics Netherlands Dutch Labour Force Survey and Research Centre for Education and the Labour Market graduates surveys (SIS) for (a) and (b), respectively. SE upper secondary education (excl. apprentices), HPE higher professional education, UE university education

education (HPE)⁶ and university education (UE). These data are drawn from the Dutch Labour Force Survey. Data in Fig. 1b are drawn from large-scale graduate surveys conducted annually in the Netherlands by the Research Centre for Education and the Labour Market 18 months after graduation. A sample of more than 200,000 graduates from 1995 to 2007 graduate cohorts working at least one hour per week remained, excluding apprentices (in SE) and a small group of on-call or self-employed workers.

Flexible work is much less common among employees than among recent graduates. This indicates that employees with several years of experience in the labour market

⁶ HPE-institutions classify themselves internationally as universities of applied sciences.

have a better labour market position in terms of job security. Figure 1a indicates that the percentage of flexible workers in the labour force diminishes with level of education. Note that this relationship with educational level does not hold for the percentage of flexible jobs among recent graduates shown in Fig. 1b. Of all employees with an HPE diploma, less than 6% had a temporary contract in 2008, and of those with a university degree, the percentage was even smaller (3.9%). The share of flexible workers among the entire population of employees decreased at all education levels after 1998, reaching the lowest level around 2003. Thereafter, the share rose again, in particular for SE and HPE graduates. During the last few years of the period studied, the share of flexible workers, particularly at the higher education levels, declined due to the recovery of the economy. The fluctuations in the percentage of flexible workers are much smaller among the total group of employees than among recent graduates. This indicates that graduates play a key role in allowing the labour market to cope with fluctuations in labour demand caused by the business cycle.

Figure 1b suggests that apart from UE graduates, the share of flexible work among recent graduates is cyclical. From 1996 to 2001, continuing economic growth, declining unemployment and a rising number of vacancies strengthened the bargaining position of recent graduates, resulting in a lower percentage of graduates accepting flexible work positions. When economic growth starts to decline or the economy contracts, it is cheap for employers to get rid of the flexible workforce first, resulting in an even lower share of graduates in flexible jobs. Since Dutch economic growth began to decline in 2001 and remained just above zero in 2002, we can explain the low percentage of flexible work in 2002. The labour market situation dramatically changed during 2002; unemployment rose sharply, peaking at about 6.5% in 2004/2005. For SE graduates, the percentage of flexible work reached a minimum in 2002, whereas for HPE graduates, the minimum was reached one year earlier.

The cyclical movement suggests that flexible work among recent graduates primarily functions as a buffer in the labour market that allows the workforce to adapt to changes in labour demand. Only for UE graduates did the percentage of flexible jobs remain at a high level—about 50%—during nearly all of the study period. This may indicate that UE graduates are often engaged in temporary contracts for other purposes, like screening employers and participating in traineeships. UE graduates may, in particular, hold trainee posts at hospitals, traineeships in banks or insurance companies or PhD positions at universities. The share of flexible jobs among UE graduates entering the labour market may be therefore less susceptible to business cycle fluctuations than is seen among graduates at the lower education levels.

3 The Nature of Flexible Work

In this section, we examine eight distinct aspects of graduates' jobs to compare the quality of the job match among graduates accepting flexible jobs to those accepting permanent jobs. We use the large-scale graduate surveys conducted annually by the Research Centre for Education and the Labour Market 18 months after graduation. The surveys include questions on many different aspects of the education-to-work transition. Extensive information is collected on the graduates' educational background as

well as their current job. The information on graduates' current job includes income, hours worked, type of contract and a variety of other indicators of the quality of the job match. To measure the match between education level and current job, the survey uses a self-rating method in which respondents are asked to indicate the education level required in their current job and the match between their field of study and their current job. Using logistic regression analyses, we estimate the marginal effect of having a temporary contract on (among others) the probability that graduates work outside their discipline, work part-time or are dissatisfied with their job. The effect of having a flexible contract on log gross hourly wage is estimated with an OLS regression. The analyses in this section are conducted separately for graduates with fixed-term contracts and graduates with temporary agency contracts. In both analyses, graduates with a permanent contract are the reference group. We conduct separate analyses for each job characteristic for recent SE graduates (excluding apprentices), HPE and UE for the period between 2002 and 2008.⁷ We control for gender, ethnicity, age, work region, survey year, qualification level (solely for SE) and graduate ability (using final exam result as a proxy). Before discussing the results, it should be noted that the marginal effects of temporary contracts on each of the job aspects are not necessarily causal.

3.1 Graduates in Fixed-Term Jobs

Figure 2 shows the impact that a fixed-term contract has on the incidence of several job aspects for SE, HPE and UE graduates. SE graduates with a fixed-term contract work are significantly more likely to work in a job below their educational level or in a part-time job.⁸ They are more often dissatisfied with their job, experience a poorer transition between study and job, regret their choice of study more often and are trained less than SE graduates with permanent contracts. Moreover, the gross hourly wage of SE graduates with fixed-term contracts is 3.2% lower than that of SE graduates with permanent contracts. We find similar results regarding the impact that a fixed-term contract has on the job prospects of higher professional graduates (HPE). On average, gross hourly wage is 3.3% lower for HPE graduates with fixed-term rather than permanent contracts.

The results of the logistic regression analysis of UE graduates differ to some extent from the results obtained for SE and HPE graduates. For UE graduates, the labour market position occasionally seems to be better for employees with fixed-term contracts than those with permanent contracts. UE graduates with fixed-term contract are less likely to work outside their discipline, are less frequently overeducated for their position and experience a poor study to job transition less frequently than UE graduates with permanent contracts. This remarkable result may be explained by the fact that UE graduates often obtain jobs with substantial learning potential such as trainee posts (hospitals), traineeships (banks or insurers) or PhD positions (Try 2004). Employers may screen these graduates for ability, motivation and discipline. Moreover, for these

⁷ Prior to 2002, not all control variables were available.

⁸ Part-time work is another aspect of so-called 'atypical work' that may indicate a disadvantageous situation for the worker (De Grip et al. 1997).

Fig. 2 Impact of a fixed-term contract on graduates' job characteristics by level of education. Graduates with permanent jobs are the reference group; marginal effects are based on logistic regression analyses, 2002–2008. *Source:* Research Centre for Education and the Labour Market graduates surveys (SIS). *Notes:* *SE* upper secondary education (excl. apprentices), *HPE* higher professional education, *UE* university education. Almost all marginal effects in this figure and Fig. 3 are statistically significant at the 1% level. The remaining effects are significant at the 5 or 10% level. The following control variables are used in the analyses: gender, ethnicity, interaction gender $\times$ ethnicity, age, age squared, final exam result, level of the course (for SE only), work region and survey year

graduates, temporary positions may be a stepping stone to a permanent job. The unique aspects of temporary work obtained by UE graduates may explain why the share of temporary contracts among UE graduates exhibits almost no co-movement with the business cycle (see Fig. 1b). However, UE graduates remain worse off with a fixed-term contract than with a permanent position. UE graduates in temporary positions receive considerably less training and compensation than graduates in permanent jobs.

3.2 Graduates in Temporary Agency Jobs

We analyse temporary agency workers in the same way as fixed-term workers. Figure 3 presents the marginal effects of several job characteristics for graduates with temporary agency contracts, relative to those of graduates with permanent contracts. At the SE level, temporary agency work is significantly positively related to all unfavourable job characteristics. In addition, it can be concluded that SE graduates with temporary agency contracts are worse off in terms of their gross hourly wage, since they earn 14% less than SE graduates with permanent contracts. The gross hourly wage made by graduates with temporary agency contracts is also worse than that made by SE graduates with fixed-term contracts (see Fig. 2).

At the HPE level, graduates in temporary agency jobs are worse off than graduates in permanent jobs in terms of all eight job characteristics studied. This is similar to

Fig. 3 Impact of a temporary agency contract on graduates' job characteristics by level of education. Graduates with permanent jobs are the reference group; marginal effects based on logistic regression analyses, 2002–2008. *Source:* Research Centre for Education and the Labour Market graduates surveys (SIS). *Note:* see Fig. 2

the results for fixed-term workers. HPE graduates in temporary agency jobs are particularly more likely to work outside their discipline and below their education level, and are trained less often than permanent workers with the same level of education. In Fig. 3 this can be clearly seen in the high marginal effects (25, 21 and 15%, respectively). Moreover, HPE graduates in temporary agency jobs earn 18% less per month than HPE graduates in permanent jobs. HPE graduates in fixed-term jobs earn only 3% less than HPE graduates in permanent jobs (see Fig. 2).

For UE graduates, the job characteristics of individuals in temporary agency jobs are considerably worse than those of graduates in permanent and fixed-term jobs. Figure 3 shows that UE graduates in temporary agency jobs experience an even greater level of unfavourable job characteristics than do HPE graduates in temporary agency jobs. UE graduates in temporary agency jobs are significantly more likely than UE graduates in permanent jobs to work below their educational level. Finally, there is a vast difference between the gross hourly wages made by UE graduates in temporary agency jobs compared to those made in permanent jobs. The former pay 27% less per month than the latter. This wage penalty is considerably more than for temporary agency jobs at the HPE level and fixed-term jobs at the UE level (see Fig. 2).

4 On the Determinants of Entering into Flexible Jobs

Based on our review of the literature in the introductory section, we identify two main 'supply side' factors and three main 'demand side' factors in the labour market that

can explain the probability of recent graduates entering into flexible jobs.⁹ First, there are supply or ‘push’ factors, based on several personal characteristics of graduates in our logistic regression analyses. The final exam result and the willingness to take risks are the two main explanatory variables used as proxies for each graduate’s ability and preference, respectively. Gender, ethnicity, age and level of education are merely control variables. It is to be expected that the likelihood of obtaining a permanent job positively depends on ability and level of risk aversion.

Second, there are demand or ‘pull’ factors, based mainly on labour market circumstances. We include explanatory variables on labour market circumstances to analyse to what extent recent graduates are more or less forced into flexible jobs. The most important factor is the unemployment rate of the labour force, differentiated by education level and field of study. The two other explanatory variables with respect to labour market circumstances are the labour market dispersion and the employment variation faced by graduates in a given education level and field of study. These three factors are measured for each of the more than 85 types of upper secondary and higher education¹⁰. Higher labour market dispersion may indicate that an educational background has lower attachment to a particular occupational domain. It is expected this dynamic results in more screening by employers and therefore a higher share of recent graduates working on a temporary basis. Moreover, we expect that higher variation in employment increases the incentives for employers to offer graduates temporary contracts. We also include the work region of graduates and the survey year to correct for regional differences or general changes in the labour market position of graduates over time. Table 1 shows the summary statistics of the data set used in this section.

Table 2 presents the marginal effects that the explanatory variables have on the probability of working in a fixed-term or a temporary agency job. The marginal effects have been estimated with logistic regression analyses. The reference group consists of recent graduates with a permanent contract. There are, of course, sensible alternative estimation models. In addition to the model presented in this paper, we have estimated the regressions using multinomial and ordered logit models. Intuitively, it would make sense to order the outcomes from permanent via fixed-term job to temporary agency job, with unemployment as an additional worst alternative. While this might suggest a logical order in the different job options ranging from a permanent job to being unemployed, the estimation results of the ordered logit model suggest that this assumption is flawed. One alternative is a multinomial logit analysis that uses using unordered end-nodes. Given that the estimates are very similar to those obtained by the simple logit model, which can be seen as robustness checks, we present only estimates from the latter. In addition, UE graduates have a higher probability of accepting a fixed-term job (as compared to a permanent job), which seems to follow its own time trend (see Fig. 1b). The reason for this is that UE graduates are more likely to obtain fixed-term contracts like trainee posts or PhD positions. The analyses in Table 2 have also been performed using interaction effects between UE and year dummies, which resulted in almost equal estimates.

⁹ The “Appendix” includes more details on how the five factors are measured.

¹⁰ See ROA (2009) for an overview of these educational types.

Table 1 Summary statistics of the variables used in the empirical analyses in Sect. 4

	Mean	Min	Max
<i>Variables</i>			
Permanent contract	0.584	0	1
Flexible contract	0.416	0	1
Final exam result	7.273	6	8.5
Willingness to take risks (2008)	6.134	0	10
Upper secondary education (SE)	0.206	0	1
Higher professional education (HPE)	0.501	0	1
University education (UE)	0.293	0	1
Female	0.561	0	1
Immigrant	0.093	0	1
Age	24.523	15	39
Unemployment rate	3.522	0	20.73
Labour market dispersion	9.575	1.22	37.39
Employment variation	1.033	0.51	1.68
<i>Work region</i>			
North	0.093	0	1
East	0.181	0	1
West	0.516	0	1
South	0.210	0	1
<i>Year dummies</i>			
2002	0.152	0	1
2003	0.120	0	1
2004	0.144	0	1
2005	0.148	0	1
2006	0.146	0	1
2007	0.152	0	1
2008	0.138	0	1

Source: Research Centre for Education and the Labour Market graduates surveys (SIS), 2002–2008

Table 2 presents three regression analyses. In column (1), we include as the main explanatory variables the final exam result and unemployment rate by graduates' educational type. The other variables are considered as control variables. The final exam result has a significantly negative effect on the probability of accepting either fixed-term or temporary agency contracts. For HPE graduates, the final exam result exhibits no additional effects. This indicates that higher grades decrease the probability of SE and HPE graduates accepting a flexible job. The same holds for UE graduates in temporary agency jobs. In general, these findings confirm our expectations. However, for UE graduates in fixed-term jobs, the marginal effect of final exam results is significantly positive, indicating that UE graduates with higher grades are more likely to engage in certain types of fixed-term work.

While UE graduates in several fields of study have a rather low probability of accepting a temporary agency contract, the same cannot be said for the likelihood

Table 2 The impact that personal and labour market characteristics have on graduates' probability of accepting a fixed-term or temporary agency job; marginal effects after logistic regressions, 2002–2008

Type of contract: (permanent is ref.)	Column (1)		Column (2): Column (1) plus labour market dispersion and employment variation		Column (3): Column (2) plus willingness to take risks (2008 data only)	
	Fixed-term coef.	Temp. agency coef.	Fixed-term coef.	Temp. agency coef.	Fixed-term coef.	Temp. agency coef.
<i>Personal characteristics</i>						
Female	0.047***	0.014***	0.040***	0.020***	0.062***	0.012
Immigrant	0.043***	0.042***	0.044***	0.043***	0.015	0.104*
Female × immigrant	−0.000***	0.022**	0.000	0.019**	0.076	0.007
Age	0.035***	−0.024***	0.036***	−0.017***	0.045	−0.037
Age × Age	−0.001***	0.000***	−0.001***	0.000**	−0.001	0.001
HPE	0.024	−0.001	0.208***	0.148***	0.498**	0.182
UE	0.013	−0.055***	0.530***	0.435***	0.510**	0.239
Final exam result	−0.017**	−0.023***	−0.004	−0.014***	0.051	0.009
× HPE	0.004***	−0.000	0.000	−0.003	−0.026	−0.007
× UE	0.040	0.001	0.033***	−0.005	0.031	−0.009
Willingness to take risks (2008)					−0.020*	−0.003
× HPE					0.014	0.003
× UE					0.017	0.004
<i>Labour market characteristics</i>						
Work region						
North	0.085***	0.078***	0.080***	0.075***	0.050	0.077**
East	0.034***	0.010***	0.030***	0.009**	0.001	0.008
West	−0.024***	−0.015***	−0.025***	−0.016***	−0.085***	−0.013
Year dummies (2002 = ref.)						
2003	0.177***	0.065***	0.182***	0.069***		
2004	0.183***	0.098***	0.191***	0.108***		
2005	0.210***	0.124***	0.216***	0.131***		
2006	0.232***	0.137***	0.235***	0.136***		
2007	0.210***	0.106***	0.212***	0.104***		
2008	0.224***	0.105***	0.224	0.100***		
Unemployment rate	0.014***	0.008***	0.010***	0.004***	−0.006	−0.009
HPE	0.002	0.002	0.003	0.005***	0.016	0.016
UE	0.008***	0.013***	0.013***	0.012***	0.029	0.053
Labour market dispersion			0.004	0.003***	0.007*	0.004
HPE			0.003***	−0.001	−0.003	−0.003
UE			−0.006***	−0.002***	−0.003	−0.001

Table 2 Continued

Type of contract: (permanent is ref.)	Column (1)		Column (2): Column (1) plus labour market dispersion and employment variation		Column (3): Column (2) plus willingness to take risks (2008 data only)	
	Fixed-term coef.	Temp. agency coef.	Fixed-term coef.	Temp. agency coef.	Fixed-term coef.	Temp. agency coef.
Employment variation			0.186***	0.175***	0.319	0.200
× HPE			−0.212***	−0.152***	−0.591**	−0.220
× UE			−0.453***	−0.283***	−0.660**	−0.349*
Number of Obs.	89,342	60,506	89,342	60,506	3,203	2,120
Pseudo R^2	0.027	0.047	0.035	0.054	0.045	0.072

Reference group for the dependent variable consists of recent graduates with a permanent contract

Reference groups for the explanatory variables are male, native, SE, South and 2002

SE upper secondary education (excl. apprentices), HPE higher professional education, UE university education

*** 1% level of significance; ** 5% level of significance; * 10% level of significance

with which UE graduates in those same fields of study accept fixed-term contracts. Additional analyses (not included in the table) show that UE graduates in almost all fields of study are relatively likely to accept a fixed-term contract. This is especially true for those obtaining a degree in medical science. Only UE graduates with a degree in economics or law have a relatively small probability of accepting a fixed-term contract. Fixed-term contracts might be highly prevalent among recent UE graduates not because these graduates face a poor labour market situation, but rather because they pursue positions that are more likely to include fixed-term contracts, like trainee posts (hospitals) or PhD positions (universities).¹¹

In terms of the remaining personal characteristics, Table 2 shows that female graduates and graduates from minority groups have a higher probability of engaging in fixed-term and temporary agency work. As pointed out earlier, both types of flexible work generally point to a disadvantageous labour market situation, since such positions carry several negative job characteristics and graduates usually prefer permanent jobs over temporary jobs. For females and minority groups, this confirms the result often reported in empirical studies that the labour market position for these groups is relatively weak.

To account for differences in the labour market position of graduates of different educational programs, we also include the unemployment rates of the educational types for the years between 2002 and 2008 as explanatory variables for the incidence of flexible work among graduates. As expected, graduates in educational programs exposed to high unemployment have a higher probability of engaging in both types of flexible work. This dynamic is even more prevalent among UE graduates. UE graduates are thus less likely to obtain a permanent contract when they face a poor labour market situation than SE graduates.

¹¹ See also Try (2004) on this point.

For the other labour market variables, Table 2 shows that the incidence of flexible work is low in the Western part of the Netherlands, and particularly high in the North. This result can be explained by the fact that the labour market is loosest in the North (the most rural area), and tightest in the West (the most urbanized area). The estimated effects for the year dummies suggest that the business cycle does affect graduates' probability of accepting flexible work.

Two additional labour market characteristics appear in column (2): labour market dispersion and employment variation. Apart from unemployment, high labour market dispersion is another indicator that recent graduates from particular fields of education occupy a weak labour market position. Column (2) shows that the effect of labour market dispersion on the share of fixed-term contracts is significantly positive. Thus, as the occupations for graduates of a particular type of education grow more dispersed on the labour market, the probability that such graduates will accept a fixed-term contract increases. The more dispersed occupations on the labour market are for graduates of a particular type of education, the higher the probability is that this type of graduates will accept a fixed-term contract. Graduates' opportunity to choose from a wider range of alternative occupations comes at the cost of lower job security. For HPE graduates with fixed-term contracts, this effect is even stronger. Since for UE graduates with fixed-term contracts the interaction effect is significantly negative, the net effect is close to zero. For temporary agency contracts, we find positive effects at all three levels.

Employers may be more inclined to enter into temporary contracts when uncertainties regarding production volume and labour demand are larger. The variation in employment by graduates' educational type is dependent on the employment changes (including business cycle effects) of both industries and occupations in which those educational types are most relevant. Apart from the indicator for employment variation by educational type, we include year dummies as the usual control variable for cyclical employment variations. Column (2) shows that if SE graduates have a diploma in a field of study that is more subject to employment variations, they are significantly more likely to have either a fixed-term or a temporary agency contract. For HPE and UE graduates, the interaction effect of employment variations on the probability of entering into flexible contracts is significantly negative. The net effect is significantly negative for UE. From these results, it can be concluded that employers primarily appoint SE graduates on a flexible basis to adapt to cyclical changes in labour demand.

Finally, column (3) shows the regression analysis when including graduates' willingness to take risks as an additional personal characteristic. This variable is only available for a subset of graduates in the 2008 survey. It may be expected that recent graduates who are more willing to take risks are also more likely to have a temporary contract. We do not find empirical evidence for the expected relationship. Rather, we find that willingness to take risks has a small negative effect (only marginally significant) on the probability of accepting a fixed-term contract. This indicates that graduates who are more prone to take risks are less likely to have a fixed-term contract rather than a permanent contract.¹² Graduates' willingness to take risks does not seem

¹² Even using alternative risk measures (see the "Appendix"), a willingness to take risks still has a negligible effect. This also holds for regression analyses that exclude other explanatory factors or include only graduates' willingness to take risks.

to play a significant role in their selection of contract type as graduates enter the labour market.

5 Conclusions

This paper shows that recent graduates in the Netherlands are very likely to accept a fixed-term or temporary agency job, but that this does not reflect their own preferences. Graduates with a greater dislike for taking risks have at least as high a probability of accepting a temporary contract as other graduates. Temporary work seems to be perceived as a less attractive job characteristic that many recent graduates must accept out of necessity when the labour market situation deteriorates. Flexible work is strongly associated with several other unfavourable job characteristics; relative to graduates in permanent jobs, graduates in temporary positions often face lower wages, work below their educational level (i.e., they are overeducated) or outside their occupational domain, and are more likely to regret their choice of study. We show that recent graduates, when compared to the entire population of employees, are often used by firms as a buffer for dealing with fluctuations in the demand for personnel.

In this paper, we discuss reasons for a high incidence of flexible work among graduates in various fields of study. Our explanatory model reveals that graduates who—due to their educational background—face higher unemployment or lower attachment to occupations have a higher probability of entering into a flexible job. Employers will take more time to screen graduates in fields of study with higher unemployment rates or with a loose attachment to the occupation that is specific to their companies. Moreover, SE graduates in fields of study that are more heavily subject to employment variations are significantly more likely to engage in fixed-term or temporary agency work. This suggests that employers are reluctant to enter into permanent contracts when product demand is low and uncertainty in labour demand is high. We find evidence that the personal characteristics of graduates matter to some extent; graduates with higher average grades get a permanent contract more often than graduates with lower grades. Employers can use final exam grades as a screening instrument for permanent job offers to reduce the risk of a bad job match and to achieve high firm productivity.

Only at the university level our findings differ to some extent. For UE graduates higher grades result into a greater likelihood of getting a fixed-term job instead of a permanent job. Moreover, our analyses show that with respect to the job match, UE graduates are better off with fixed-term rather than permanent contracts when entering the labour market, and that UE graduates' acceptance of temporary jobs is less dependent on the business cycle than graduates at lower levels of education. These findings indicate that fixed-term jobs at the academic level, such as trainee posts in hospitals or PhD positions at universities, may offer a stepping stone for a UE graduate's career.

Our main conclusion is that the allocation of recent graduates into either permanent or flexible jobs occurs primarily on the demand side of the labour market; that is, choices are made by employers rather than by graduates. This may raise several worries. In difficult economic times, the share of flexible jobs becomes higher, which leads to less human capital investments in young people, who have a long career ahead. This may also lead to scarring effects for these people. Recently, the Dutch government

loosened legal restrictions on employers, allowing them to offer people under the age of 27 up to four consecutive temporary contracts (up from three). The government expects from this policy measure that young workers can build up more labour market experience, so that they will have more chances to get a permanent contract afterwards. Furthermore, as in many other European countries, there is a consensus in the Netherlands that more flexibility in the labour market is urgently needed. Our paper highlights the risk posed by underinvestment in human capital if temporary contracts become a substitute for permanent contracts. On the other hand, without flexible jobs, unemployment might be even higher, since many companies are reluctant to offer permanent contracts during uncertain economic circumstances. Moreover, our findings indicate that some temporary jobs might match graduates' competencies and ambitions better than permanent jobs. Therefore, both employer associations and labour unions should analyse whether flexible jobs, in particular those for recent graduates, offer enough incentives to invest in training on the job. If not, several measures could be taken by social partners when negotiating collective labour agreements, including finding better use of the available training funds at the industry level, in particular for recent graduates. Furthermore, social partners could extend the maximum duration period of the labour contracts for young people beyond the legal period of three years or agree on a minimum period for the duration of particular short-term labour contracts to increase the incentives for investing in training.

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Appendix: Overview of the Measurement of the Main Explanatory Factors

A.1 Final Exam Result

The final exam result of a graduate is the average grade in the exam year of secondary or tertiary education. A higher grade indicates better performance.

A.2 Willingness to Take Risks

Willingness to take risks is measured by graduates' response to, 'How willing are you to take risks, in general?' (for more information, see [Dohmen et al. 2011](#)). Respondents rate their willingness to take risks on a scale from 0 to 10. In addition to the question on willingness to take risks 'in general', responses to questions on willingness to take risks concerning financial matters and career were also used to perform some robustness checks.

A.3 Unemployment Rate

Unemployment rate for each educational type is calculated as the percentage of unemployed individuals for this educational type divided by the total number of people with

the respective educational background in the labour force. Data come from the Labour Force Survey of Statistics Netherlands. The unemployment rates for educational types are separately calculated for each year.

A.4 Labour Market Dispersion

Labour market dispersion is an indicator of the spread of the types of education across occupations. The indicator is similar to the Gini–Hirshman index (Cörvers et al. 2010). If all graduates of a particular educational type work in one occupation, the index is equal to 1. The higher the indicator, the more an educational type is dispersed across different occupations. A larger dispersion points to a weaker position in a specific occupational domain, although the labour market risk is also more spread out amongst different occupations (Borghans and Heijke 1998). Since labour market dispersion of educational types does not show much variation over time, it has been calculated for the last available year.

A.5 Employment Variation

Employment variation across educational types is measured in three steps. First, the extent to which employment in industry sectors varies from year to year is estimated. Time series data from 1987 to 2008 are used. Second, the sensitivity of employment in occupations to employment variations per industry is measured. Third, the variation indicators for occupations are weighted by the shares of employment of these occupations in total employment of each educational type. The average value of employment variation is normalized to 1. A higher value indicates greater variation in employment (Table 1).

The indicator for employment variation (which includes cyclical sensitivity) is determined over a period of 20 years, using the Labor Force Surveys from 1987 to 2008. This indicator describes the occupation- and sector-specific responses of employment to business cycle fluctuations, budget changes by the government and other economic shocks. It is computed for 127 occupational groups. We use the occupation-specific indicator that captures the variation by sector, weighted by the importance of the sector for the occupation and the fluctuation of the occupation within a sector. The indicator is determined as follows (Cörvers et al. 2010):

$$EV_{ot} = \sum_s \frac{E_{ost}}{E_{st}} \alpha_{ost} EV_{st}$$

EV_{ot} , Employment variation of occupation o at time t

E_{ost} , Number of persons employed in occupation o in sector s at time t

E_{st} , Number of persons employed in sector s at time t

α_{os} , Extent to which employment in occupation varies with changes in employment in sector s

EV_{st} , Sectoral employment variation

where,

$$EV_{st} = 100 * \sum_t \frac{|E_{st} - \bar{E}_{st}|}{E_{st}}$$

$$\bar{E}_{st} = \frac{E_{st-1} + E_{st+1}}{2}$$

EV_{st} is estimated from Labour force employment data from 1987 to 2008

EV_{ot} is estimated from Labour Force Survey data from 1996 to 2008

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