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## **ABSTRACT**

### **Non-Standard Employment Patterns in the Netherlands**

The Dutch labour market is the European leader in part-time employment. Both for men and women the incidence of part-time work is higher than in most other European countries. However, this does not imply that traditional employment – i.e. full-time jobs – have disappeared in the Netherlands. In fact, looking at aggregate figures masks the enormous heterogeneity in the incidence of atypical work across different occupations. This paper investigates trends in atypical work in the Netherlands in the period 1994-2008, where specific attention has been paid to differential trends across different occupations over time.

We find that there is a huge amount of variety in atypical work across Dutch occupations. To a certain extent this matches the preferences of employees and employers in the Dutch labour market. However, some workers – in particular low-skilled workers – suffer from job insecurity and a lack of career prospects due to their limited possibilities to move to better jobs. The current economic crisis and the rising unemployment rate make their situation even more uncertain.

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Keywords: atypical employment, labor market flexibility

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## 1. Introduction

The Netherlands is known as a country with a high share of atypical work, due to a high incidence of part-time workers. Over the last decades, the share of part-time jobs has substantially increased, and the Netherlands is now European leader in part-time work both for men and for women (CBS, 2009). However, the growth of part-time work during the last decades has varied substantially across occupations. Female-dominated occupations such as caring jobs are characterized by more part-time work than male-dominated occupations like construction jobs. Another important gender difference is that men usually work more hours in part-time than women (CBS, 2010).

The share of temporary work has also considerably increased over the past decades, from about 11 percent of the employees having a temporary contract in 1995 to 18.5 percent in 2010 (Houwing, 2010; Eurostat, 2011). This increase was much stronger than that in the EU as a whole where the share of temporary workers increased from about 12 percent in 1995 to 14 percent in 2010. Currently, only Spain, Portugal and Poland have a higher share of temporary workers than the Netherlands.

About 20 percent of total employment is low paid (less than two-third of median earnings), with a slight upward trend observable as of 1995 (Blázquez Cuesta and Salvarda, 2007). Low pay is most common among women, part-time jobs, workers aged 16-24 and temporary contracts. Low pay varies substantially between occupations with the highest incidence of low-paid jobs found among people in skilled agriculture and fishery workers, service workers, shop and market sales workers and those in elementary jobs (Blázquez Cuesta and Salverda, 2007).

In this paper we use the OSA Labour Supply data to describe the trends in atypical work in the Netherlands, and we pay particular attention to how these changes vary across occupations.<sup>1</sup>

## 2. Employment dynamics in The Netherlands

Figure 1 shows that there is a substantial degree of sectoral and occupational heterogeneity in the incidence of atypical work, defined as marginal part-time jobs, temporary jobs and self-employment.<sup>2</sup> Panel a shows that atypical employment is most commonly observed in trade, hotels and catering and least common in the government sector. In fact, the incidence of atypical work seems to be related to the wage level in an occupation, as panel b shows. The higher the incidence of low-paid jobs, the higher is also the incidence of atypical jobs in an occupation.<sup>3</sup> Some low-skilled occupations which pay low wages, such as elementary jobs in sales, services and agriculture (91 and 92), are also characterized by much more precarious work. In some medium skill occupations such as models, salespersons and demonstrators (52) and customer service clerks (42) we find about half of the workers in low pay and half of them in atypical employment. Among general managers (13), a high-skilled occupation, we find about one-fifth of them in atypical employment, but at decent wages.

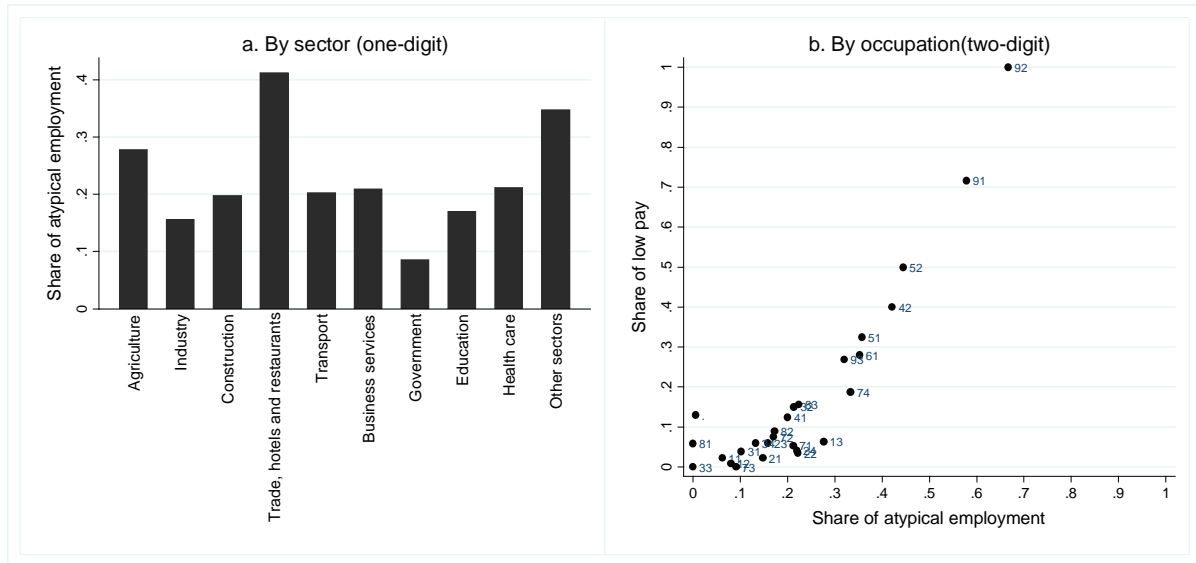
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<sup>1</sup> A description of the data is given in Appendix 1.

<sup>2</sup> An overview of the 2-digit ISCO-88 classification is provided in Appendix 2.

<sup>3</sup> The observed correlation is 0.55, significant on a 99%-confidence interval.

**Figure 1: Low-pay and atypical employment in the Netherlands by occupation (ISCO-88 2-digit), 2008**



Notes: *low-pay* =  $< 0.67 * \text{median}$ , *atypical* = fixed-term contract, marginal part-time, self-employed.

Source: OSA Labour Supply data.

Table 1 shows some more details with respect to indicators of atypical employment for the various occupations. More specifically, we can define two types of atypical work: on the one hand, there are types of non-traditional employment which are typically not in the advantage of the worker (e.g. fixed-term contracts, low-pay jobs, involuntary part-time jobs), and on the other hand, there are atypical jobs which might be beneficial to the worker in that they expand the opportunities to build their career (e.g. self-employment, occupational job changes). The table shows that the disadvantageous types of atypical work are mostly found among elementary and low-skilled jobs. In those jobs, the share of temporary employment and the incidence of low pay are highest, and the average tenure is shortest in these jobs (related to the number of temporary contracts). The table also shows that the share of part-time employment is also highest among these jobs, but that this seems to be according to workers' preference as the share of involuntary part-time work (i.e. those individuals who which to work more hours) among these part-time workers is not higher than in other types of jobs. In fact, involuntary part-time work is most prevalent among part-time workers in high skilled jobs. Finally, the table indicates that the shares of self-employment and occupational mobility are highest among high skilled jobs. These forms of atypical employment can be defined as the most "advantageous" ones, which workers can exploit to improve their career. Apparently, it seems that high-skilled workers have more employment possibilities to exploit these aspects of non-traditional work than low-skilled workers. The share of self-employment is also high among medium-skilled agricultural workers, which is due to the nature of the sector.

**Table 1: Indicators of atypical employment in the Netherlands by occupation (ISCO-88 1-digit), 2000-2008**

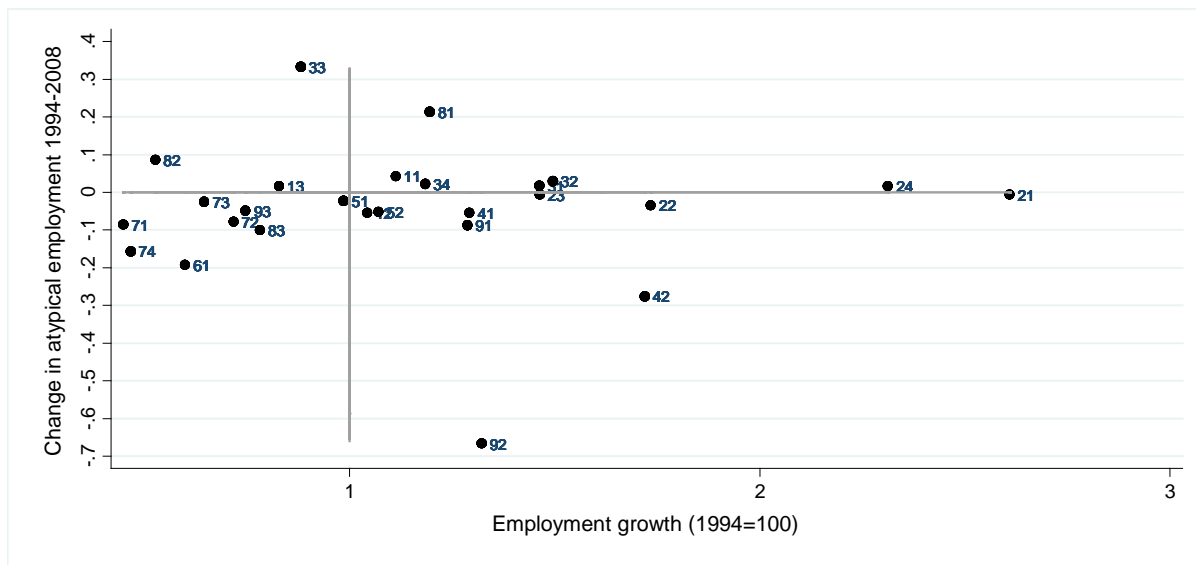
	Skill level	Share of temporary employment	Share of low pay	Average tenure	Share of part-time work	Share of involuntary part-time	Share of self-employment	Occupational mobility
1 Legislators, senior officials and managers	-	0.07	0.03	12.1	0.11	0.03	0.19	0.45
2 Professionals	4	0.11	0.03	10.3	0.27	0.05	0.09	0.25
3 Technicians and associate professionals	3	0.11	0.10	10.1	0.38	0.04	0.06	0.32
4 Clerks	2	0.18	0.21	9.4	0.50	0.03	0.01	0.35
5 Service workers and shop and market sales workers	2	0.21	0.42	7.0	0.60	0.04	0.06	0.28
6 Agricultural and fishery workers	2	0.21	0.24	10.0	0.28	0.00	0.21	0.39
7 Craft and related workers	2	0.12	0.05	10.6	0.06	0.02	0.07	0.20
8 Plant and machine operators and assemblers	2	0.14	0.10	10.9	0.11	0.07	0.03	0.24
9 Elementary occupations	1	0.26	0.55	7.0	0.63	0.01	0.02	0.29

Source: OSA Labour Supply data.

These occupational differences in atypical work have not always been like the situation shown in Table 1. Information about recent changes in the development of atypical work across occupations in relation to the employment growth in those occupations is presented in Figure 2. It appears that there has been a lot of divergence since 1994. Some high-skilled occupations experienced a relatively large employment growth since 1994, but hardly any change in the working conditions in terms of atypical employment at the same time (occupations 24, 21). A large group of heterogeneous occupations (in terms of skills) experienced medium employment growth and no change in atypical employment (occupations 22, 23, 32, 41, 91). Some occupations experienced medium employment growth since 1994, but the share of atypical work has reduced since 1994. This is especially true for the low-skilled jobs in agriculture and fishery (occupations 92), but also for medium-skilled customer service clerks (occupations 42).

Some occupations hardly experienced employment growth since 1994, but worse working conditions in terms of atypical employment. These occupations include skilled teaching associate professionals (occupations 33) but also lower-skilled stationary plant and related operators (occupations 81). Another group of occupations experienced a decline in employment but a small decline of atypical employment since 1994 (occupations 61, 71 and 74). These include medium-skilled craft and trades related jobs but also market-oriented skilled agricultural and fishery workers and extraction and building trades workers. For these occupations the labour market situation has worsened in all respects: not only is their less work, but also the jobs that are around have moved away from traditional employment and have become more disadvantageous in nature. This divergence displayed in Figure 2 shows that it is not true for all occupations that employment growth and a decline in the share of atypical jobs go hand in hand, nor can the opposite be said. We have to look into more details of the various occupations to see what is related to the growth of atypical employment.

**Figure 2: Atypical work and employment growth in the Netherlands by occupation (ISCO-88 2-digit), 1994-2008**



Source: OSA Labour Supply data.

In the remainder of this section we first discuss changes in the occupational distribution over time. Then, we look in more detail into the developments in precarious work. Table 2 shows that the incidence of high-skilled professional jobs has increased the most, especially among physical, mathematical and engineering science professionals, but also among other professionals. Also the share of medium-skilled customer service clerks has increased since 1994. This came at a cost of employment in medium-skilled occupations, mainly among craft and related trades workers and plant or machine operators and assemblers, but also among agricultural and fishery workers. There is also a decline in the share of legislators, senior officials and managers. The share of low-skilled elementary jobs remained fairly stable over time.

Possible explanations for these changes could be due to technological change and the increased use of computers, which has shifted the demand for labour from low-skilled workers to higher-skilled ones. Although this is a plausible explanation, the fact that the share of elementary jobs in the Dutch labour market has been rather stable over the years (de Beer, 2006; Salverda et al., 2008) suggests that it is more likely the case that the transition from an economy driven by traditional industry to an economy driven by the service sector has made many low-skilled jobs to disappear; especially in the traditional industrial sectors. At the same time has there been an increase in the number of low-skilled jobs in the service sector because firms now decided to outsource this work (de Beer, 2006). We can observe this shift in table 2. A second possible explanation is that, given that the average education level of the Dutch working population has increased over time, low-skilled jobs are crowded out by medium and high-skilled jobs. Evidence for this is found by Gesthuizen and Wolbers (2011), who show that (i) the increase in higher educated workers increased the transition from work to unemployment for lower secondary educated workers, and the transition from work to inactivity for primary educated workers; and (ii) the probabilities to find new employment (i.e. re-employment) have become lower.

**Table 2: Occupational distribution (ISCO-88 2-digit), 1994-2008**

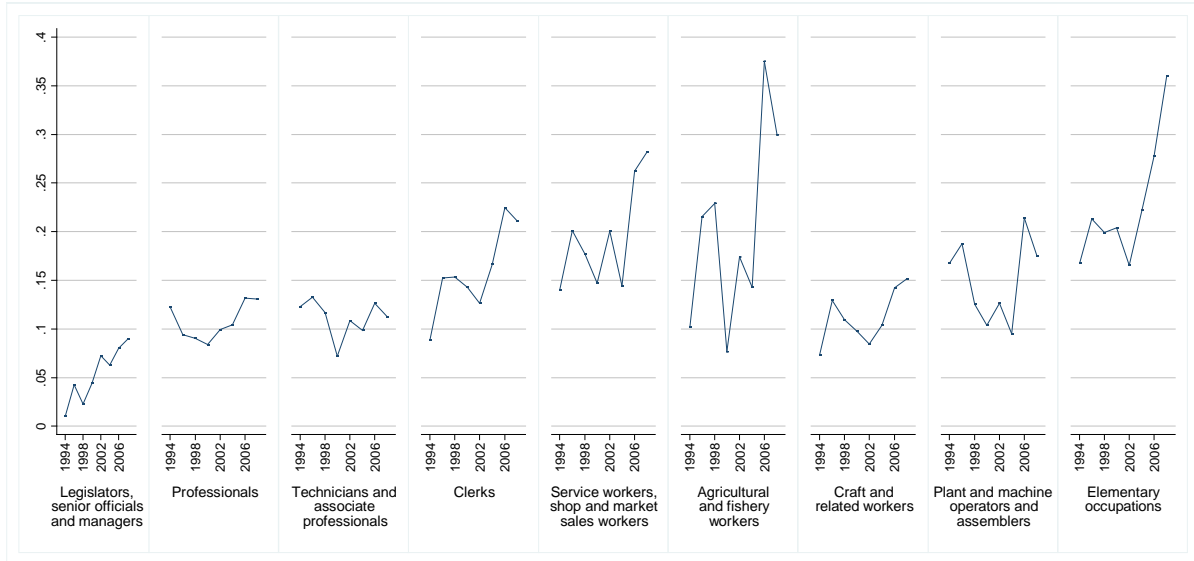
	Skill level	1994	1996	1998	2000	2002	2004	2006	2008	% change 94-08
11 Legislators and senior officials	-	1.3	1.0	1.4	0.7	0.5	0.6	0.4	1.2	-4.6
12 Corporate managers	-	6.9	6.2	6.9	4.5	1.8	5.2	4.0	6.1	-11.0
13 General managers	-	5.1	4.4	4.8	4.5	4.0	4.1	3.5	3.6	-29.4
21 Physical, mathematical and engineering science professionals	4	2.7	3.0	3.7	4.2	3.5	5.4	5.9	6.0	122.8
22 Life science and health professionals	4	1.1	1.1	1.3	1.1	1.2	1.6	1.6	1.6	47.3
23 Teaching professionals	4	5.9	5.5	6.8	5.8	7.4	7.3	6.4	7.3	24.9
24 Other professionals	4	4.9	6.3	6.2	7.5	7.4	9.6	8.0	9.7	97.2
31 Physical and engineering science associate professionals	3	3.4	4.0	4.2	4.0	4.4	4.8	4.4	4.3	24.8
32 Life science and health associate professionals	3	6.3	5.9	6.3	9.0	9.5	7.5	7.9	8.1	27.6
33 Teaching associate professionals	3	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	-20.0
34 Other associate professionals	3	8.9	9.9	9.0	8.5	10.3	11.7	9.0	8.9	1.0
41 Office clerks	2	9.9	10.4	8.3	11.5	12.1	9.4	13.2	10.9	10.3
42 Customer services clerks	2	2.1	2.4	2.7	2.2	2.6	3.2	3.9	3.1	46.5
51 Personal and protective services workers	2	8.4	7.7	7.7	7.9	9.0	7.3	8.5	7.1	-16.0
52 Models, salespersons and demonstrators	2	4.6	4.3	5.0	5.0	5.1	4.0	4.6	4.2	-8.6
61 Market-oriented skilled agricultural and fishery workers	2	1.7	1.8	1.5	1.1	1.0	0.8	0.9	0.9	-48.5
71 Extraction and building trades workers	2	5.7	4.9	4.5	4.0	3.6	2.7	2.4	2.2	-61.8
72 Metal, machinery and related trades workers	2	5.2	5.1	4.5	3.8	2.7	3.5	3.0	3.2	-38.8
73 Precision, handicraft, printing and related trades workers	2	0.5	0.4	0.5	0.4	0.3	0.4	0.5	0.3	-45.1
74 Other craft and related trades workers	2	1.2	1.5	1.1	1.1	0.7	0.5	0.6	0.5	-60.7
81 Stationary-plant and related operators	2	0.5	0.8	0.6	1.0	0.9	1.1	0.5	0.5	2.1
82 Machine operators and assemblers	2	3.3	2.9	2.4	2.0	1.2	1.1	1.4	1.5	-55.3
83 Drivers and mobile-plant operators	2	3.6	3.5	3.6	3.7	4.5	2.5	3.0	2.4	-33.5
91 Sales and services elementary occupations	1	4.5	4.8	4.9	4.7	4.8	3.9	4.8	4.9	9.9
92 Agricultural, fishery and related labourers	1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	14.3
93 Labourers in mining, construction, manufacturing and transport	1	2.0	2.2	2.1	1.7	1.5	1.6	1.5	1.3	-36.1

Source: OSA Labour Supply data.

Over the years there has not only been a change in the level of employment across occupations, but also in the characteristics of the jobs in each occupation. Figure 3 shows that elementary jobs have not only reduced in number, but also have become more of a temporary nature in recent years. This trend of an increasing incidence of temporary jobs is also found in medium-skilled occupations, such as agriculture and fishery works and to a smaller extent in most other occupations. Among high-skilled occupations such as professionals and associate professionals the share of temporary jobs has remained quite stable over time. Among legislators and managers it has increased, but it is still lowest.



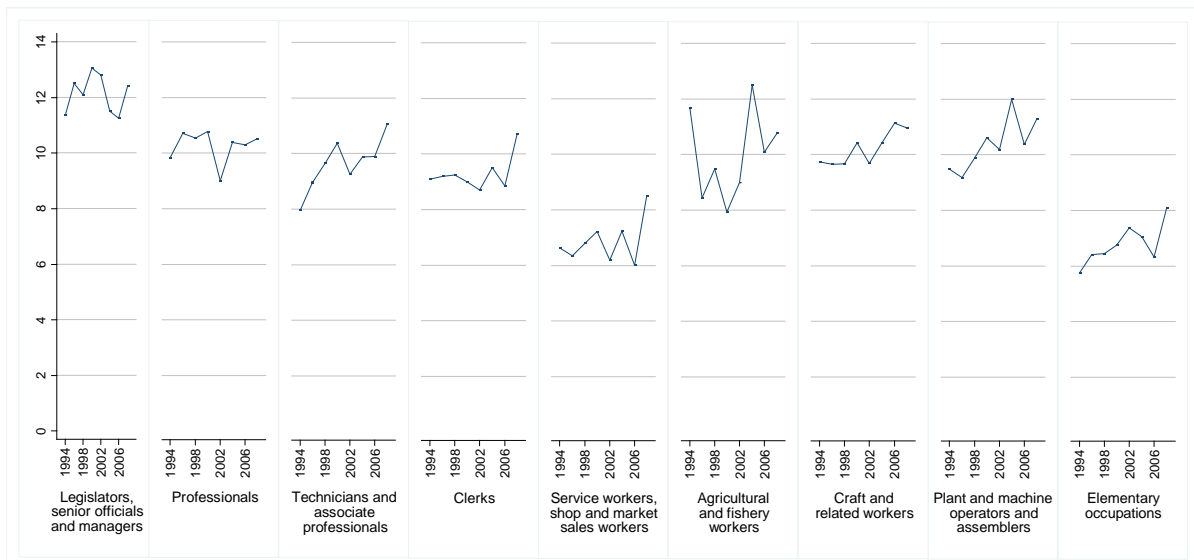
**Figure 3: Share of temporary jobs by occupation (ISCO-88 1-digit), 1994-2008**



Source: OSA Labour Supply data.

Figure 4 shows the average tenure of workers that are currently in a given occupation. The low-skilled jobs have the lowest average tenures, together with the medium-skilled service jobs. This is probably related to the temporary nature of many of those jobs. No real systematic patterns can be seen by looking at the average tenure over time for each occupation.

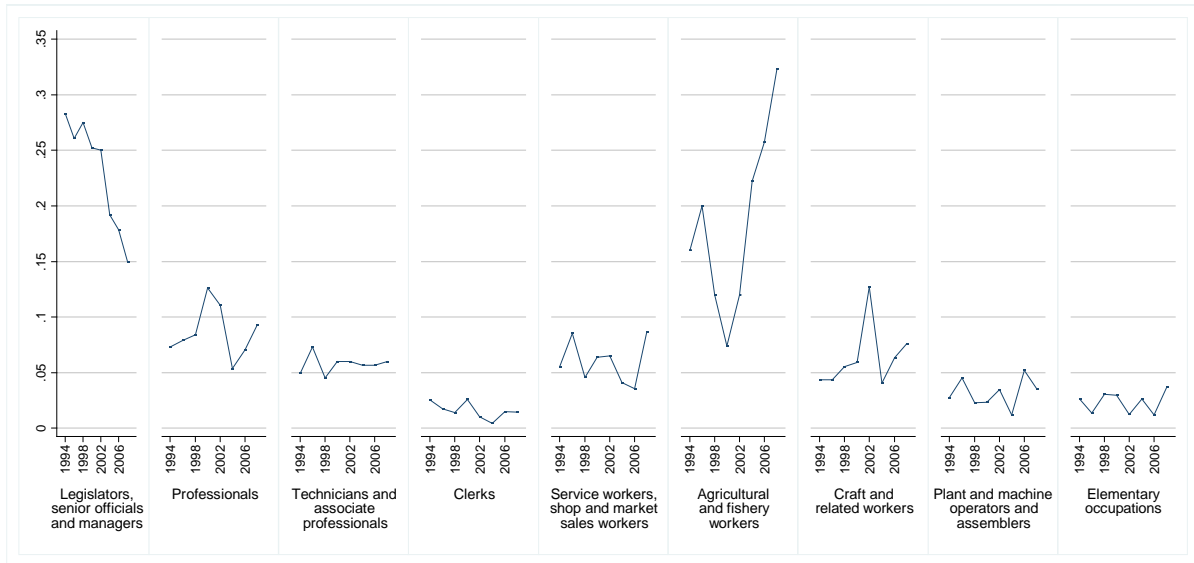
**Figure 4: Job tenure by occupation (ISCO-88 1-digit), 1994-2008**



Source: OSA Labour Supply data.

Possibly, the low incidence of temporary jobs among higher-skilled occupations has to do with better possibilities to become self-employed. Figure 5 shows that the incidence of self-employment is indeed highest among higher-skilled jobs and lowest among low-skilled jobs, except for medium-skilled jobs in agriculture and fishery. The incidence of self-employment seems declining among legislators and clerks, but among other occupations no clear patterns are visible.

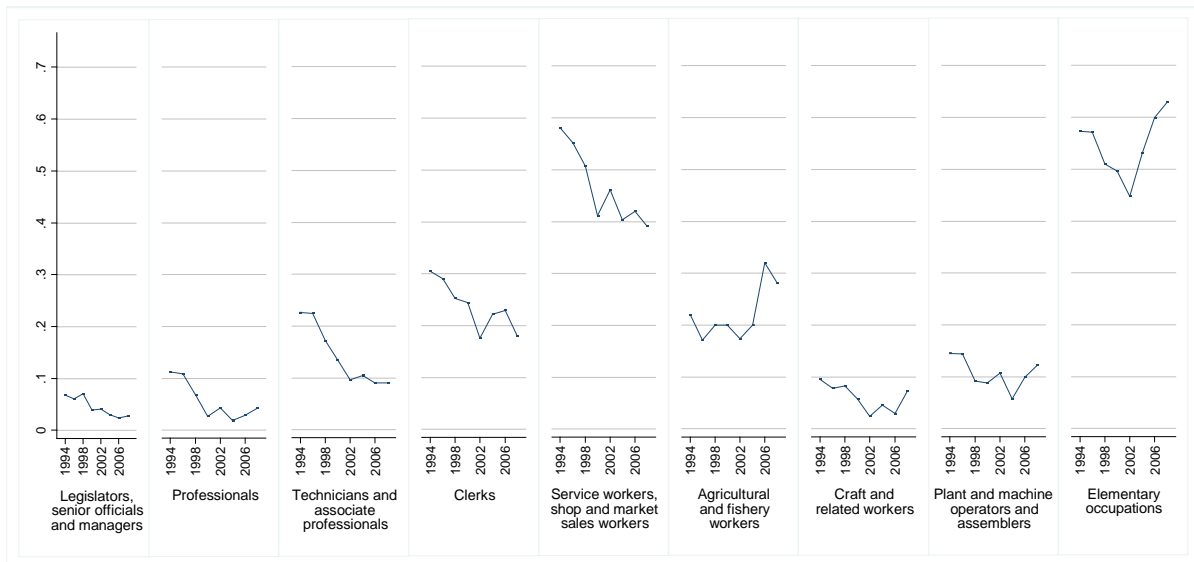
**Figure 5: Self-employment rates in the Netherlands by occupation (ISCO-88 1-digit), 1994-2008**



Source: OSA Labour Supply data.

Figure 6 shows the development of low pay in the various occupations in the given period. Except for the lowest-skilled jobs, the share of low pay (less than two third of the median income) has declined in all occupations over time. The share is highest among elementary jobs and medium-skilled service jobs. The decline in the share of low-paid jobs seems strongest among all types of service jobs, but also among high-skilled technical jobs.

**Figure 6: Low pay in the Netherlands by occupation (ISCO-88 1digit), 1994-2008**

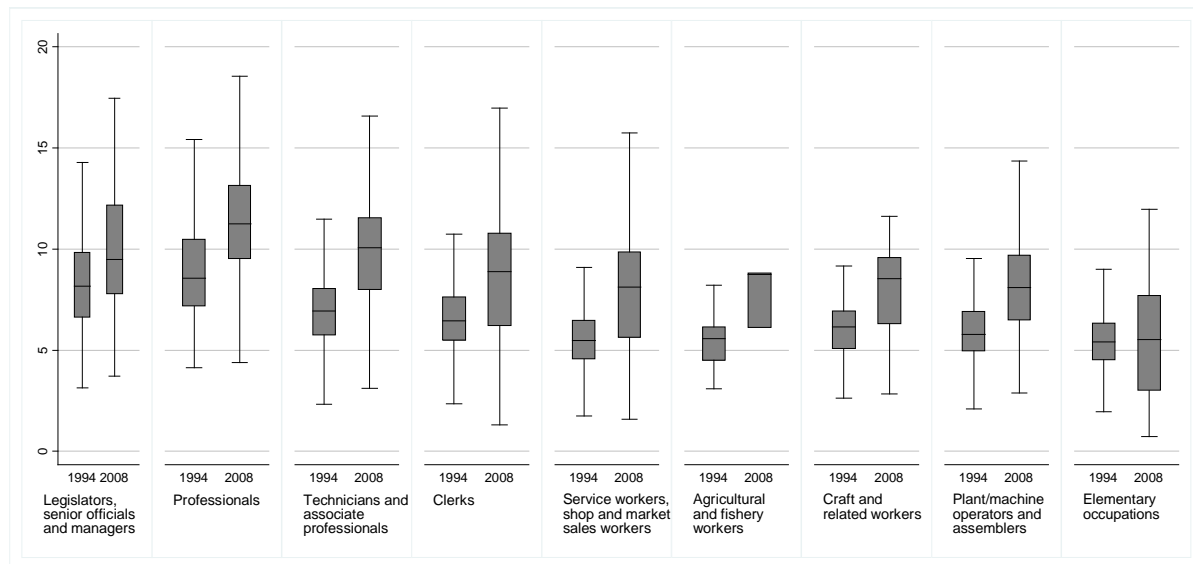


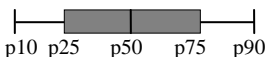
Source: OSA Labour Supply data.

Not only the share of low-paid individuals varies across occupations, but also the overall wage distribution has changed differently across the various occupations. Figure 7 clearly shows that higher skilled occupations pay higher wages. This even holds over time. However, even though elementary jobs are paid a rather low wage on average, wage dispersion has increased substantially between 1994 and 2008. A similar trend is observed for all other occupations and in many occupations, except the elementary jobs, wages have increased over time. A possible explanation for the larger wage

dispersion and higher wages among medium-skilled jobs might be the fact that education levels of workers has increased, leading to an upward push on wages also in the low-skilled occupations (cf. Josten, 2010). It might also related to strong bargaining power of the unions or other factors, some of which we will discuss later.

**Figure 7: Wage dispersion in the Netherlands by occupation (ISCO-88 1-digit), 1994 and 2008**



Note:  p10 p25 p50 p75 p90

Source: OSA Labour Supply data.

All in all it is evident that aggregate changes in employment patterns mask important occupational differences. In sum we find that the share of low-skilled jobs has decreased over time, but also that the rise of “disadvantageous” types of atypical work, such as fixed-term contracts and low-paid work, is concentrated among low-skilled and elementary jobs. The more “advantageous” types of non-traditional work, such as self-employment, are more likely to be found among high-skilled and academic jobs. In the following section we will pay more attention to these occupational differences, and investigate which factors are responsible for this occupational heterogeneity in labour market changes.

### 3. Unmasking occupational differences in employment

Potential explanations for the different trends in precarious work across occupations are (i) labour supply and demand conditions, (ii) skill specificity, (iii) union power, and (iv) the institutional setting. Below, we will discuss each of these in detail.

#### *Labour supply and demand conditions*

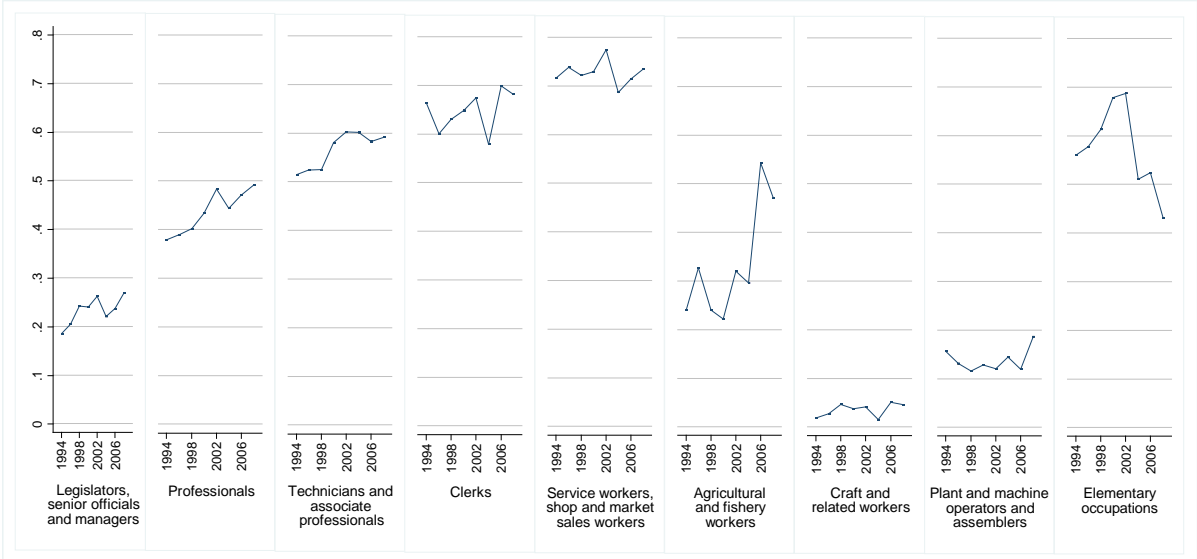
The early 1990s have been characterized by economic prosperity and continuous economic growth. In the early 2000s this growth has slowed down dramatically, and in 2008 the current economic crisis kicked in. This cyclical process might have influenced the changes in atypical work. For example, the dramatic increase in temporary jobs in elementary occupations as of 2002 can be explained by a change in labour demand. After the upturn period in the 1990s, the economic slowdown may have caused firms to adjust their workforce by hiring more temporary workers, since this will give them more flexibility to respond to cyclical fluctuations. In addition, firms may respond to lower market

demand by adjusting the wages. This might explain the increased wage dispersion among elementary occupations.

The demand for elementary workers has steadily grown in the last decades (average growth 1987-2008 of 2.1 percent), while that for low-skilled workers has somewhat decreased (average growth 1987-2008 of -0.3 percent). In contrast, the demand for medium and high-skilled workers has grown over the same period (2.4 and 3.0 percent respectively) (Josten, 2010). As we mentioned earlier, this has to do with the economy transiting from being industry driven to being driven by the service sector, and the fact that there has been an increase in the number of unskilled jobs in the service sector because firms decided to outsource this work (de Beer, 2006).

Labour supply has also changed over time. As Figure 13 shows, since 1994 more and more women have entered medium and high-skilled occupations. Their presence in elementary occupations has declined substantially. Next to the fact that education levels of women have increased over time, it can be argued that women who do decide to work, have on average higher education levels which might cause the sorting into the medium and high-skilled jobs. One might also argue that women have stronger preferences for part-time and temporary jobs because of high demand for flexibility which is required when combining work and child care responsibilities. One could expect that in sectors where more women are employed, we find a higher incidence of atypical employment. Note that causality can go both ways: either sorting of women in those sectors or changed structure of sector due to entrance of women.

**Figure 8: Share of women by occupation (2-digit), 1994-2008**



Source: OSA Labour Supply data.

The highest incidence of women is found in medium-skilled service jobs, followed by high-skilled jobs. Interestingly, the incidence of low pay in these occupations is highest among jobs of similar skill levels. In addition, the level of involuntary part-time workers (i.e. those part-time working people that would like to work full-time) is smallest in these occupations indicating that part-time work corresponds with workers’ preferences to work less than full-time.

Table 3 shows the change in some indicators of atypical work for men and women in the three occupations in which the share of female employment is largest between 1994/1996 and 2006/2008. The share of temporary jobs in medium-skilled service jobs has grown about equally for men and women than for men, while we find a decline in the share of females working in temporary jobs among clerks and higher-skilled (level 3) associate professionals. Possibly, higher-educated women have a stronger labour force attachment and work harder to build a career. As a result, they are more likely to end up in a permanent job than their lower educated counterparts. This also fits the predictions of human capital theory (Becker, 1962). The trend of increasing education levels of women and increased participation in the labour market is reflected in the changes in low pay. The decline in the share of low-paid women in these occupations has declined stronger than the share of men. This even increased slightly among clerks and medium-skilled service workers. The growth of part-time jobs in these occupations is higher for women than for men, except for medium-skilled service jobs. Additionally, the decline in the share of men working involuntary part-time in these occupations is larger than for women.

**Table 3: Atypical work by gender by occupation, change from 1994 to 2008 (%)**

<i>Occupation</i>	<i>Indicator</i>	<i>Men</i>	<i>Women</i>
Technicians and associate professionals (skill level 3)	Temporary job	2.3	-4.2
	Part-time job	2.7	11.3
	Involuntary part-time	-31.3	-5.0
	Low pay	-0.8	-27.1
Clerks (skill level 2)	Temporary job	9.9	-4.2
	Part-time job	10.3	20.3
	Involuntary part-time	-16.1	-4.1
	Low pay	4.8	-20.0
Service workers and shop and market sales workers (skill level 2)	Temporary job	10.4	10.0
	Part-time job	14.3	9.0
	Involuntary part-time	-35.6	-1.7
	Low pay	9.1	-25.0

Source: OSA Labour Supply data.

### *Skill specificity*

Differences in skill specificity can be another explanation for occupational heterogeneity in employment changes. For example, if workers are hard to replace, then firms might want to offer more favourable working conditions as to maintain the worker. Even though we do not have precise information about skill specificity, education level might serve as a reliable proxy. Higher-educated individuals have more specific information, and are therefore more difficult to replace, than lower-educated individuals. Table 4 shows that the growth of temporary jobs is most notable for people with low or medium education levels. The share of highly educated workers in temporary jobs has somewhat declined between 1994 and 2008. This could suggest that high-educated workers were offered more favourable working conditions to prevent them from leaving the firms or that higher educated workers nowadays sort more into jobs that offer more favourable conditions. This can explain the pattern as described in Figures 2, 3, 5 and 7. The share of involuntary part-time was high among high-educated workers in 1994, but has declined strongly up to 2008. With respect to self-employment, high-educated workers have been, and still are, more likely to become self-employed than low-educated workers. Given this good outside option for high-educated workers, firms have to offer good working conditions otherwise the worker might quit his/her job and start their own business. The incidence of low pay has increased for workers with the lowest education (primary school only), but decreased for all other types of education. This suggests a clear signalling function of education, i.e. those without education are marginalized with respect to pay.

**Table 4: Atypical work by education level, 1994 and 2008**

	Temporary job (%)	Involuntary part-time (%)	Self-employment (%)	Low pay (%)	Tenure
1994					
Primary school only	7.8	8.8	4.3	29.0	11.8
Lower vocational	9.3	10.6	5.4	28.0	9.3
Medium vocational	13.4	12.1	5.2	23.3	7.4
Higher vocational or academic	9.7	16.5	6.6	11.5	8.8
2008					
Primary school only	43.6	0	2.6	57.3	9.8
Lower vocational	17.1	5.9	5.2	21.3	12.5
Medium vocational	18.0	3.5	4.7	18.0	10.4
Higher vocational or academic	12.4	4.3	5.9	5.1	10.6

Source: OSA Labour Supply data.

To get a deeper insight into the skill level of the worker's job, we use information about on-the-job training that the worker followed in the past two years. For all education levels, the share of temporary workers among those who participated in on-the-job training is higher than those who do not participate in training. Differences are largest for the low-educated. It might be that workers on temporary contracts are in the beginning of their careers and therefore need the training, to get acquainted with the job. When the training is unsuccessful, the temporary contract is not transformed into a permanent one. Except for the lowest educated, the share of involuntary part-time is somewhat higher among those that take training courses compared to those without training. This might also point to the fact that the worker is still in the beginning of his career, and he has to work more hours to get the experience. The share of self-employed under those who are trained on the job is lower compared to those without training. Self-employment and on-the-job training are not a common combination. The share of low-paid workers among those in training is generally lower than those not in training. The training might be a way to get a higher wages. For the lowest educated the reverse is found, it could well be that the training is needed to keep the low-paid job in the first place, since education is very low and general.

**Table 5: Atypical work by education level and on-the-job training, 2002-2008**

		Temporary job (%)	Involuntary part-time (%)	Self-employment (%)	Lowpay (%)	Tenure
Primary school only	No training	18.7	3.2	3.5	32.8	11.6
	Training	40.6	0.0	1.7	50.7	7.5
Lower vocational	No training	13.0	2.4	5.3	24.6	11.5
	Training	18.2	5.3	3.7	18.7	10.3
Medium vocational	No training	14.5	3.8	5.4	17.7	9.3
	Training	16.0	4.2	3.2	16.1	8.9
Higher vocational or academic	No training	11.8	4.0	7.2	5.2	10.5
	Training	12.1	4.4	5.2	3.8	8.9

Note: training information is available from 2000, but involuntary part-time not available in 2000, therefore the period between 2002 and 2008 is taken. To avoid low number of observations, we now take the average over the period, changes over this time were small.

Source: OSA Labour Supply data.

Finally, it is of interest to see differences in the type of training: general or specific. To get an idea of the specificity of the skills acquired with the training, we use information on who paid for the training. It is generally believed that the more specific the training is, the higher the share paid by the employer (Becker, 1962). Table 6 shows the share of atypical employment for those in training according to who

paid for the training, by initial education level. The share of temporary workers is highest among those workers who paid for the training themselves, which could be an indicator of signalling to the employer that they are good workers. The share of temporary workers is also relatively high for those workers for whom an external party paid for the training, which could be the temporary work agency or reintegration institution. The share of involuntary employment is generally low when the worker himself or the employer paid for the training, which might be an indicator for investing in the job. The share of involuntary employment is generally highest when others paid for the training, which could be an indicator for a compulsory training. As for the share of low paid jobs, this is generally lowest when the employer pays for the training, especially for the higher educated, which can be taken as a signal of investments of the employer in the worker, both in terms of wages and in terms of training.

**Table 6: Atypical work by education level and payment of training taken , 2002-2008**

		Temporary job (%)	Involuntary part-time (%)	Low pay (%)
Primary school only	Worker	60.0	0.0	28.6
	Employer	10.7	0.0	7.5
	Both	0.0	0.0	0.0
	Other	90.0	0.0	77.8
Lower vocational	Worker	37.5	4.5	36.5
	Employer	8.6	5.1	8.4
	Both	0.0	0.0	14.3
	Other	44.0	11.1	35.0
Medium vocational	Worker	36.9	6.1	32.0
	Employer	7.5	4.1	6.5
	Both	26.3	0.0	5.9
	Other	43.4	11.1	55.2
Higher vocational or academic	Worker	24.1	0.0	10.5
	Employer	8.2	2.0	1.7
	Both	11.1	16.7	2.7
	Other	36.1	7.7	15.8

Note: training information is available from 2000, but involuntary part-time not available in 2000, therefore the period between 2002 and 2008 is taken. To avoid low number of observations, we now take the average over the period, changes over this time were small.

Source: OSA Labour Supply data.

### *Union power*

Another explanation for occupational heterogeneity is union power. Unions bargain for decent working conditions, i.e. low incidence of low pay and share of temporary jobs. We find indeed that lower percentages of union density are related to higher levels of temporary jobs, especially in 2006. This could be related to the changes in collective bargaining that took place after 1999, and that increased the scope for flexible working agreements in collective agreements (cf. Schils and Houwing, 2010). Lower union density is also related to higher levels of low pay, as expected, and higher incidence of self-employment. The latter could be explained by the existence of better working conditions in sectors with high union density that prevents workers from moving into self-employment. However, again sorting behaviour can also be the case here. Hence, Table 7 illustrates that changes in union power over time may have contributed to the differential growth of atypical employment across occupations.

**Table 7: Atypical work by union density, 2000-2006**

Union density	2000				2006			
	Temporary job (%)	Self-employment (%)	Low pay (%)	Tenure	Temporary job (%)	Self-employment (%)	Low pay (%)	Tenure
Lower than 20%	12.1	9.5	18.9	7.4	23.5	6.7	22.0	7.3
20 – 29 %	11.8	9.9	25.6	9.6	15.6	8.3	19.6	9.2
30 – 39%	10.4	4.1	8.8	11.5	15.3	3.8	8.8	11.0
40% or more	6.4	2.5	5.7	12.1	8.8	0.0	2.4	12.2

Note: Union density is not available for 2008.

Sources: CBS Statline (2011), OSA Labour Supply Data.

### *Institutional setting*

Institutional differences can explain occupational heterogeneity in employment dynamics, since they restrict the possibilities of firms to offer certain contracts. For example, the public sector serves as a role model and therefore offers relatively good working conditions. For example, low wages are relatively rare as can be seen from Table 8.<sup>4</sup> Furthermore, the public sector is covered by a collective wage agreement, whereas private sector firms usually are much more flexible in their wage setting policies. Hence, occupations in the public sector will have less wage dispersion than occupations in the private sector. Furthermore, Table 8 illustrates that the use of temporary jobs was quite comparable across public and private sector jobs in 1994, but in 2008 the private sector is characterized by much more temporary jobs. This is likely to be due to the fact that private sector firms are more sensitive to business cycle fluctuations, therefore hiring temporary workers provides them with more flexibility and lower costs (since they can save on firing costs).

**Table 8: Atypical work by sector, 1994-2008**

	1994				2008			
	Temporary job (%)	Self-employment (%)	Low pay (%)	Tenure	Temporary job (%)	Self-employment (%)	Lowpay (%)	Tenure
Private sector	10.6	9.3	25.9	9.9	18.1	8.4	17.2	11.6
Public sector	10.1	1.2	14.3	12.8	12.0	2.2	5.2	13.8

Source: OSA Labour Supply Data.

In the Netherlands, a complex system of law governing atypical employment and working hours has developed. An important feature of Dutch labour law is that the legal framework is largely defined at the national level, but details and actual implementation is arranged in sectoral and company-level labour agreements. The existence of collective agreements is an important institutional feature in the Netherlands, especially for atypical employment. As in many other countries, the scope of the unions' bargaining power in the Netherlands is wider than membership figures (Visser, 2006). When an employer is a negotiating partner for a specific collective agreement, the outcome applies to all workers, regardless whether these are union members. In addition, some collective agreements are legally extended to all workers in a given sector, regardless whether their employer is a negotiating party. Together, these factors contribute to a collective agreement coverage of about 85 percent. Finally, and perhaps most important, provisions laid down in collective agreements on certain issues, including atypical employment, overrule national legislation as stated in the so-called Flexwet of 1999 (cf. Houwing and Schils, 2010).

<sup>4</sup> But this is also due to the fact that the public sector is characterized by a large share of high educated workers.



Table 9 provides information on the incidence of atypical employment related to whether the worker is covered by a collective agreement or not<sup>5</sup>. The table does not show any systematic relation between collective agreement coverage and the incidence of atypical employment. One possible reason for this is that the content of collective agreements varies greatly among them and looking more inside the collective agreements might shed more light on the relation between collective agreements and atypical employment.

**Table 9: Atypical work by collective agreement coverage, 2004-2008**

	2004			2008		
	Temporary job (%)	Low pay (%)	Tenure	Temporary job (%)	Low pay (%)	Tenure
Not covered by CA	11.1	10.2	8.1	14.5	13.0	8.3
Covered by CA	9.0	11.6	11.1	13.4	10.9	11.9

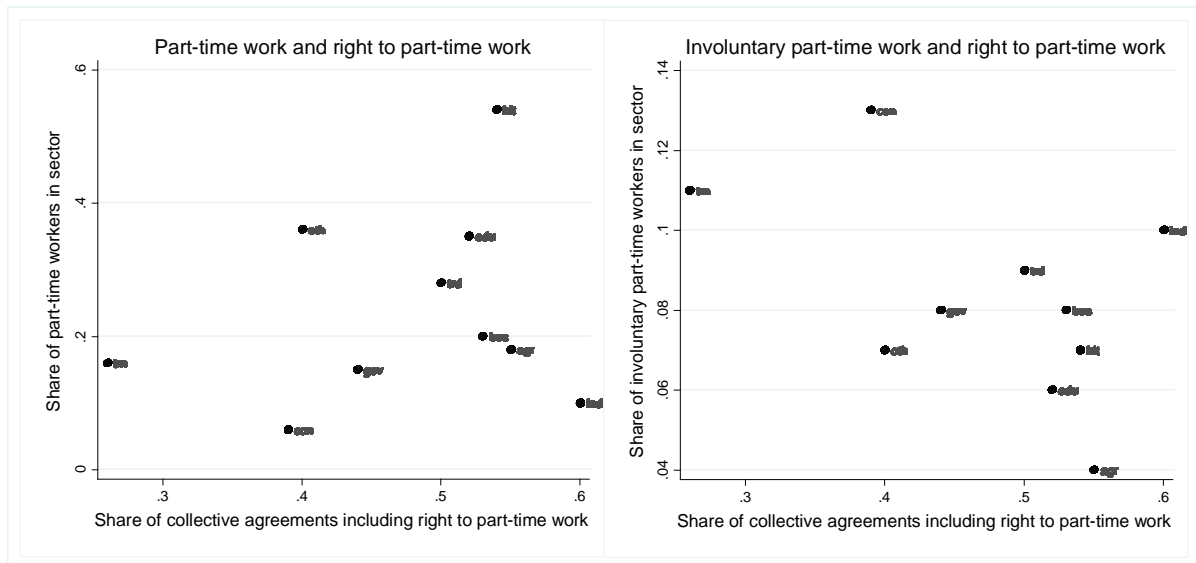
Source: OSA Labour Supply Data.

There is quite some variation in the arrangements on atypical employment (e.g. working hours and flexible employment) between the collective agreements. To see this variation, we use the Dutch Collective Agreements Database and Monitor (Ducadam), provided by the largest trade union in the Netherlands (FNV). This database consists of all collective agreements made in agreement with this trade union, which is about 92 percent of all collective agreements in the Netherlands (Schreuder and Tjzens, 2004). This database contains information on the ingredients of the collective agreements, including working time arrangements and regulation on fixed-term contracts and temporary agency work. The data allow us to show the variation on a one-digit sectoral level.

First, we look at arrangements in collective agreements concerning part-time work. On average 39 percent of the collective agreements yield workers the right to work part-time. This percentage is lowest in transport (26%), average in construction (39%) and highest in industry (60%). In addition, some collective agreements grant freedom to the worker to decide himself whether to work part-time. In hotels, restaurants and catering, education and health care this is true for 40 percent or more of the collective agreements, while in the other sectors this freedom is much less common. Figure 9 shows the relation between the share of collective agreements in a sector that give workers the right to part-time work and (a) the share of part-time workers in the sector and (b) the share of involuntary part-time workers in the sector. There is only a weak correlation between the right to work part-time in a sector and the percentage of workers actually working part-time, yet there is a negative correlation between the right to work part-time and the share of workers that involuntarily works part-time.

<sup>5</sup> Unfortunately, data on union coverage are only available from 2004 onwards.

**Figure 9: The right to work part-time in collective agreements and the incidence of part-time work, by sector**

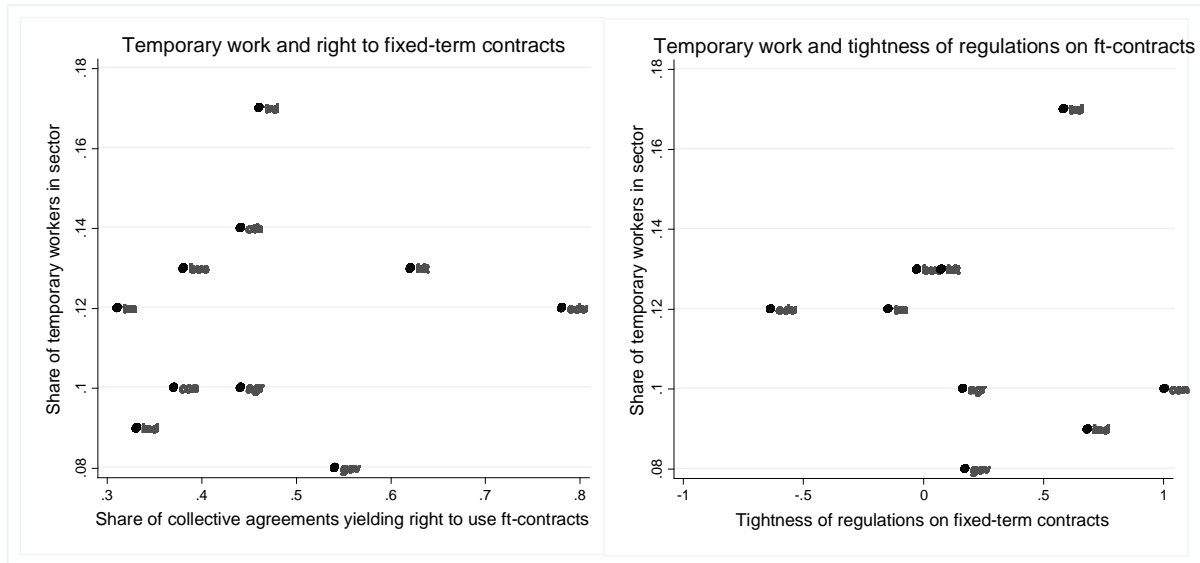


Note: agr = agricultural sector, ind = industrial sector, con = construction, trd = trade, hotels and restaurants, trn = transport, bus = business services, gov = government sector, edu = education, hlt = health care sector, oth = other sectors.

Source: Ducadam Database 2010.

Second, we look at arrangements on the use of temporary employment in collective agreements. On average, about 35 percent of the collective agreements allows the use of fixed-term contracts. It is lowest in transport (30%) and industry (32%) and highest in education (78%) and health care (62). Naturally, the results laid down in collective agreements are strongly related to the type of workers in a given sector as they are represented by the unions. As for the exact use of fixed-term contracts, national law states that a maximum of three consecutive fixed-term contracts with a total duration of 36 months is allowed. After this, a permanent contract has to be granted if the employer want to continue the relationship with the worker. However, as mentioned collective agreements can overrule this. Weaker provisions with respect to the total number of fixed-term contracts (allowing more than three consecutive contracts) are mainly observed for workers in manufacturing, transport and financial services. For workers in construction and other commercial services, conversely, the number of fixed-term contracts is most restricted. Additionally, the total duration of a series of fixed-term contracts is longest for workers in utilities, whereas it is most restricted for workers in construction, commerce and other commercial services (Schils and Houwing, 2010). Figure 10 shows that there is hardly any correlation between the regulations on the use of fixed-term contracts and the share of temporary workers in the sector.

**Figure 10: Regulations on the use of fixed-term contracts and the incidence of temporary work, by sector<sup>1</sup>**



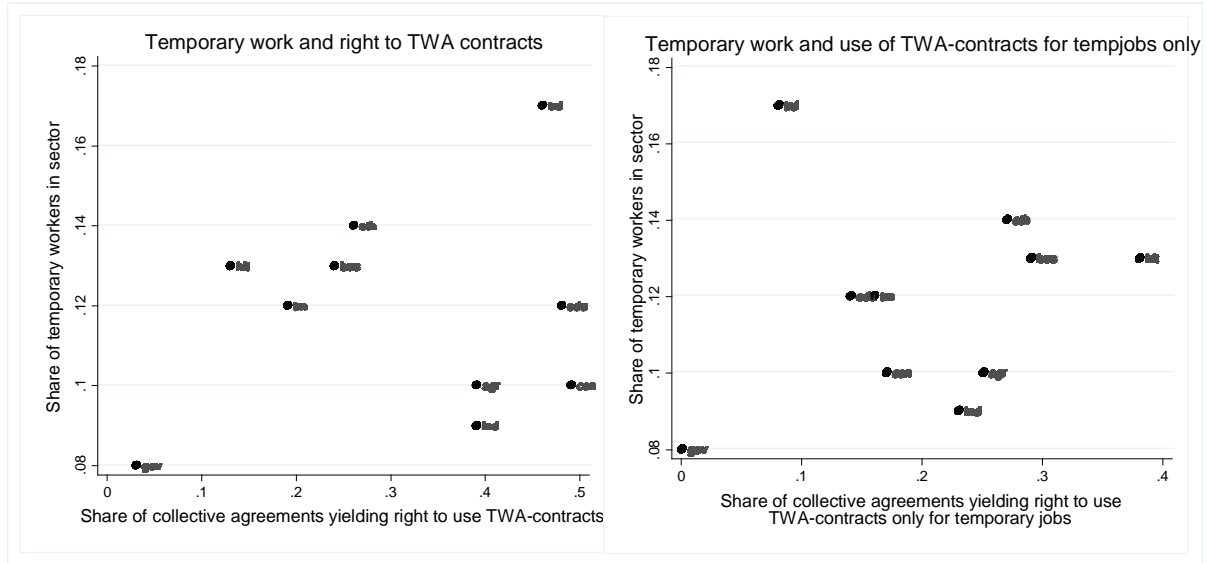
<sup>1</sup>Note: The tightness of regulations on fixed-term contracts is 0 if no deviations from statutory law are arranged in the sector, larger than zero if more strict regulations apply in the sector and less than zero if less strict regulations apply.

agr = agricultural sector, ind = industrial sector, con = construction, trd = trade, hotels and restaurants, tm = transport, bus = business services, gov = government sector, edu = education, hlt = health care sector, oth = other sectors.

Source: Ducadam Database 2010, Osa Labour Supply Data.

However, fixed-term contracts are only one part of temporary work. A large share of temporary work is arranged through temporary agency work. In about 30 percent of the collective agreements regulations on the use of temporary agency work are found. This is most common in construction, hotels and restaurants and education, and least common in government and health care. In addition, one-fifth of the collective agreements states that temporary agency work can only be used for temporary jobs. This is most common in health care. In the majority of collective agreements it is stated that temporary agency workers can also be used to do permanent jobs within companies, most commonly in the government sector. Figure 11 shows that there is a weak correlation with the right to use temporary agency work in the sector and the actual use, and no correlation between the use of such workers only for temporary jobs and the actual share of temporary workers.

**Figure 11: Regulations on the use of TWA-contracts and the incidence of temporary work, by sector**



Note: agr = agricultural sector, ind = industrial sector, con = construction, trd = trade, hotels and restaurants, trn = transport, bus = business services, gov = government sector, edu = education, hlt = health care sector, oth = other sectors.

Source: Ducadam Database 2010, Osa Labour Supply Data.

#### 4. Factors explaining atypical employment

This section investigates what factors explain atypical employment and the possibilities for someone to leave atypical employment and find a better job. The panel structure of our data allows us to follow changes in one's employment status from one year to the next. We estimate the probability of being in an atypical job using a logit model, and the results are presented in column 1 of Table 10. The results show that workers aged 16 to 24 and women with children are most likely to have an atypical job. Also, elementary jobs in small firms often are atypical in nature. Finally, atypical employment is more often found in times of economic downturn when unemployment rates are higher.

In order to improve our understanding of the factors explaining atypical employment, columns 2 to 5 shows the results of separate logit models each estimating the probability of being in a atypical job with a particular characteristics. In column 2, the odd ratios for being in a part-time job (i.e. less than 32 hours) are presented. Not surprisingly, women and older workers are most likely to have a part-time job. This is probably due to their own preference of working less than fulltime.

According to column 3, low-paid jobs are most likely to be taken by young workers and women with children. The same is true for temporary jobs (column 4). It is striking though that temporary jobs are also mostly present among higher-educated workers. However, in academia, where most of these higher-educated workers find a job, temporary jobs have become very common in recent years. When workers feel uncomfortable working in an atypical job, for example because they wish to work more hours or because they wish to have higher earnings, they may opt to start their own business. According to column 5, this is most likely to happen among older individuals and women. The former may want to exploit their skills and experience for their own benefit, whereas self-employment may provide women with more flexibility in combining work and child care obligations.

Having an atypical job may not be too bad as long as the possibilities for finding a better job over time are sufficient. Table 11 investigates the transitions from atypical to standard employment. The first column shows the results for the transition probabilities for moving out of a temporary job to a permanent job. Prime-age workers are most likely to use temporary contracts as a stepping stone to permanent employment. Note that such a transition is more likely to happen when unemployment is low. In economic downturns when unemployment is high, the bargaining power of workers is reduced due to the threat of many other available candidates. Also, firms are less willing to commit when the economic situation is uncertain. As a result, workers are more likely to end up in a temporary contract when unemployment is high. Column 2 presents the results for the transition from a low-paid job to a better paid job. Older and higher educated men are most likely to have a high-paid job. Furthermore, moving up to a better paid job is more likely to occur during economic booms with low unemployment rates, because labor is scarcer and hence workers can negotiate higher wages. Finally, the last column presents the results for moving from a part-time to a fulltime job. This transition is mostly made by young end prime-age workers. Possibly, older workers in a part-time job may actually prefer to work less than fulltime, and therefore to not pursue having a fulltime job.

All in all, it seems that transitions out of an atypical job are to a large extent related to demographic characteristics, which are likely to affect one's preferences for certain job attributes. However, the possibilities to move out of an atypical are also hugely affected by the business cycle: the higher unemployment, the smaller is the probability of leaving atypical employment. Hence, building a career not only depends on one's own skills and investments, but also on a bit of "luck".

**Table 10: Probability of being in a certain type of atypical job (odds ratios presented)**

	Atypical job (1)	Parttime job ( < 32 hours) (2)	Lowpay job (3)	Temporary job (4)	Self- Employed <sup>1</sup> (5)
<b>Age(ref. 45-64)</b>					
16-24	5.73 **	1.21 *	13.80 **	7.18 **	0.08 **
25-34	1.20 **	0.72 **	1.61 **	2.49 **	0.39 **
35-44	0.98	0.89 *	1.22 **	1.51 **	0.76
55-63	1.90 **	2.38 **	1.86 **	0.72 **	1.17
<b>Gender (ref. man)</b>					
Women without children	3.50 **	5.98 **	6.09 **	1.12 **	1.11
Women with children	28.17 **	41.59 **	33.54 **	2.01 **	1.00
<b>Marital status (ref. married)</b>					
Cohabiting	0.87 *	0.60 **	0.44 **	1.37 **	1.69 *
Single	1.12 **	0.64 **	1.01	2.01 **	1.40 *
<b>Education (ref. lo)</b>					
Lbo/mavo	1.00	0.85 *	0.77 **	0.93	0.83
Mbo/havo	0.83 *	0.79 **	0.45 **	0.96	0.85
Hbo	0.98	0.89	0.34 **	1.09	1.03
Wo	1.35 **	1.03	0.18 **	1.76 **	1.46
<b>Industry (ref. manufacturing)</b>					
Agriculture	2.27 **	1.81 **	1.72 **	1.12	23.33 **
Construction	1.11	0.75 *	1.10	1.21	3.7 **
Trade, hotels, and restaurants	1.53 **	1.87 **	1.78 **	1.37 *	2.01 *
Transport	1.25 **	1.35 **	1.27 *	1.50 **	0.47
Business services	1.17 *	1.02	1.04	1.52 **	3.23 *
Government	1.09	1.24 *	0.85	1.14	0.08 *
Education	1.92 **	2.56 **	1.47 **	1.46 **	0.49
Health care	2.57 **	3.23 **	2.05 **	1.31 **	1.17
Other sectors	1.80 **	1.93 **	2.02 **	1.50 **	5.58 **
<b>Occupation (ISCO-88 1dig, ref. elementary jobs)</b>					
1 Legislators, senior officials, managers	0.19 **	0.12 **	0.09 **	0.41 **	
2 Professionals	0.36 **	0.29 **	0.11 **	0.65 **	
3 Technicians, associate professionals	0.38 **	0.33 **	0.15 **	0.62 **	
4 Clerks	0.54 **	0.53 **	0.29 **	0.83 *	
5 Service workers	0.71 **	0.56 **	0.54 **	0.83 *	
6 Agricultural workers	0.43 **	0.30 **	0.31 **	1.11	
7 Craft workers	0.43 **	0.27 **	0.32 **	0.64 **	
8 Plant/machine operators	0.48 **	0.28 **	0.30 **	1.07	
<b>Firm size (ref. 0-9)</b>					
10-49	0.55 **	0.70 **	0.57 **	1.08	
50-99	0.57 **	0.76 **	0.46 **	1.05	
100-499	0.48 **	0.60 **	0.46 **	1.00	
500+	0.35 **	0.47 **	0.38 **	0.77 **	
Unemployment rate	0.97 *	0.85 **	1.42 **	0.93 **	1.79 **
GDP growth	0.97 *	0.92 **	1.08 **	0.99	1.32 **
N	26526	26526	26526	26526	26526

<sup>1</sup>Refers to self-employed with no other employees. \* denotes significance on 95% confidence level and \*\*on 99%-confidence level.

**Table 11: Transition probability from atypical work to standard work** (odds ratios presented)

	Temporary job ↓ Permanent job [ref. remain in temporary job]	Low-paid job ↓ High-paid job [ref. remain in low pay]	Part-time job ↓ Fulltime job [ref. remain in Part-time job]
<b>Age(ref. 45-64)</b>			
16-24	1.26	1.18	3.18 **
25-34	1.37	1.14	1.50 *
35-44	1.51 *	1.14	1.9 **
55-63	0.56	0.49 **	0.31 **
<b>Gender (ref. man)</b>			
Women without children	1.02	0.45 **	0.38 **
Women with children	0.63 *	0.22 **	0.19 **
<b>Marital status (ref. married)</b>			
Cohabiting	1.06	1.57 *	1.25 **
Single	0.67 *	1.63 **	1.74 **
<b>Education (ref. lo)</b>			
Lbo/mavo	1.71 *	1.15	1.00
Mbo/havo	1.46	1.79 **	0.91
Hbo	1.51	1.66 *	1.19
Wo	1.34	3.83 **	1.09
<b>Industry (ref. manufacturing)</b>			
Agriculture	1.37	0.85	0.35
Construction	1.05	0.84	1.38
Trade, hotels, and restaurants	0.72	0.88	0.64
Transport	1.23	0.98	0.50
Business services	0.62	0.85	0.95
Government	1.14	0.91	0.80
Education	1.04	0.76	0.97
Health care	0.78	0.84	0.57 *
Other sectors	0.57	0.66	1.05
<b>Occupation (ISCO-88 1dig, ref. elementary jobs)</b>			
1 Legislators, senior officials, managers	0.82	2.59 **	3.20 **
2 Professionals	0.76	2.24 **	1.45
3 Technicians, associate professionals	1.62	2.04 **	1.23
4 Clerks	1.25	2.15 **	1.22
5 Service workers	1.04	0.96	1.35
6 Agricultural workers	0.49	1.42	3.08
7 Craft workers	1.14	1.41	1.71
8 Plant/machine operators	0.88	1.17	2.27 *
<b>Firm size (ref. 0-9)</b>			
10-49	1.32	1.34 **	1.17
50-99	1.13 *	1.91 **	0.95
100-499	0.98	1.42 *	1.06
500+	0.84	1.40 *	1.17
Unemployment	1.13 **	0.74 **	1.12 *
GDP growth	2.39	1.16 **	1.11 *
N	1398	2656	4176

## 5. Case studies

In this section we briefly look at a number of case studies with respect to the incidence of atypical employment. These case studies are subgroups of the more generally discussed occupations in this paper. The chosen case studies are a mix of high and low-skilled jobs in male and female dominated industries. The five case studies are the following:

- White-collar workers in business services<sup>6</sup>
- Teachers
- Technicians working in industry and construction
- Manufacturing workers in industry
- Cleaners

Table 12 gives an overview of some descriptive statistics for the four groups.

**Table 12: Indicators of atypical employment in the Netherlands for selected occupations, 2000-2008**

	Overall average	White-collar workers in business services	Teachers	Technicians in industry and construction	Manufacturing workers in industry	Cleaners
Skill level	-	4	3	3	2	1
Share of temporary employment	0.14	0.11	0.11	0.08	0.10	0.22
Share of low pay	0.14	0.03	0.03	0.02	0.04	0.64
Share of part time work	0.34	0.09	0.41	0.04	0.06	0.78
Share of involuntary part-time work	0.04	0.05	0.04	0.00	0.05	0.01
Share of self-employment	0.05	0.16	0.02	0.03	0.03	0.01
Occupational mobility	0.30	0.37	0.05	0.47	0.27	0.21
Share of female employment	0.52	0.28	0.62	0.07	0.09	0.78
Change in atypical employment 1994-2008	-0.02	-0.00	-0.01	-0.02	-0.01	-0.09
Change in employment 1994-2008	1.25	2.04	1.46	0.99	0.65	1.29
Share of collective agreements yielding right to part-time work	0.38	0.53	0.52	0.54	0.60	0.47
Share of collective agreements yielding right to use fixed-term contracts	0.36	0.38	0.78	0.62	0.33	0.50
Tightness of regulations on fixed-term contracts <sup>1</sup>	0.41	-0.03	-0.64	0.07	0.68	0.17
Share of collective agreements yielding right to use temporary agency workers	0.31	0.24	0.48	0.13	0.39	0.28
Share of collective agreements yielding right to use temporary agency workers only for temporary jobs	0.21	0.29	0.14	0.38	0.23	0.26

<sup>1</sup>The tightness of regulations on fixed-term contracts is 0 if no deviations from statutory law are arranged in the sector, larger than zero if more strict regulations apply in the sector and less than zero if less strict regulations apply

Among the white-collar workers in business (mainly finance and insurance) we find a below average incidence of atypical employment, mainly with respect to part-time work. This might be related to the male-domination of this job. Hardly any low-paid jobs are found and occupational mobility is just

<sup>6</sup> Or more specific: workers on ISCO skill levels 1 and 2 in business services.



above average. Self-employment is more common than in the average job. Employment growth was clearly above average in this sector in the period 2000-2008, yet recently this has changed with the growth of internet banking and the bank closures. There was no change in the use of atypical employment in the same period. The use of fixed-term contracts is restricted in collective agreements governing this occupation in terms of number and duration of fixed-term contracts.

Teachers are more commonly found in part-time jobs with just less than half of them working part-time. Though this is mostly voluntary. This might be related to the fact that about 60 percent of workers in this profession is female. Occupational mobility is quite low, which might in turn also be related to the relatively large share of part-time jobs. While employment growth was just above average, the use of atypical employment has hardly changed in the same period. As for regulations in the teaching profession, the number of collective agreements allowing for fixed-term or temporary work is relatively high and restrictions are very low on the use of fixed-term contracts. This means that teachers can have more fixed-term contracts in a row for a longer period of time, before a permanent contract is granted. This relates to the low level of occupational mobility.

When looking at manufacturing jobs, we took both a highly-skilled occupation (technicians) and a lower-skilled occupation (manufacturers). Both occupations typically tend to be taken by males. The share of atypical employment is somewhat higher among the latter, as is the share of low-paid jobs. Occupational mobility is lower among the lower-skilled jobs. Changes in employment or atypical employment between 1994 and 2008 are comparable between the jobs, and employment growth has lagged behind the average growth of the economy. Interestingly, for the lower-skilled jobs in industry fewer possibilities exist to work on a fixed-term contract compared to the technicians in the same sector. Temporary work seems to be more commonly arranged through temporary agency work, rather than with fixed-term contracts within the company.

Looking at cleaners, finally, we find that this elementary job has the worst conditions. It has a very high incidence of atypical employment, especially part-time work and low-paid jobs are very common. Much worse than the low-skilled manufacturing jobs. Yet, the share of involuntary part-time work is lower than average. It is a female-dominated occupation. However, while employment growth between 1994 and 2008 has been average, the use of atypical employment has declined more than average in the same period. What the exact mechanism is behind this development is not clear. Collective agreements in this occupation tend to allow the use of both fixed-term and temporary agency contracts.

## **6. Conclusion**

The Dutch labour market is the European leader in part-time employment. Both for men and women the incidence of part-time work is higher than in most other European countries. However, this does not imply that traditional employment – i.e. full-time jobs – have disappeared in the Netherlands. In fact, looking at aggregate figures masks the enormous heterogeneity in the incidence of atypical work across different occupations. This paper investigates trends in atypical work in the Netherlands in the period 1994-2008, where specific attention has been paid to differential trends across different occupations over time.

Atypical employment can have very distinct characteristics. On the one hand, there are types of non-traditional employment (e.g. fixed-term contracts, low-paid jobs, involuntary part-time work) that are

typically not in the advantage of the worker. These types are typically found among elementary and low-skilled jobs. In these jobs, e.g. cleaners, the share of temporary and low-paid jobs is much higher than in other jobs. However, involuntary part-time jobs are more prevalent among high-skilled jobs, though involuntary part-time jobs are very low in the Netherlands. On the other hand, there are types of non-traditional employment that are beneficial to the worker for building a career, such as self-employment and occupational job changes. These types are mostly found among high-skilled jobs, such as white-collar workers in business services. This paper has shown that these patterns are far from stable. In the last two decades, low-skilled jobs not only have reduced in number but have also experienced a rise in the “disadvantageous” types of non-traditional employment, whereas high skilled jobs have increased in number and have not experienced an increase in disadvantageous work types.

The differential development of atypical work across occupations can have various causes. First, differences in skill specificity across occupations may reinforce the differences in atypical work, as workers with high-skilled jobs may have better opportunities for self-employment, and may use this outside option to bargain for good working conditions. Second, the power to negotiate good working conditions is also affected by the presence of unions. Occupations with low union density are characterized by higher shares of temporary work and low pay, and a higher incidence of self-employment. Third, collective agreements – a typical institutional feature in the Dutch labour market – in which provisions on atypical employment are specified, vary substantially across sectors and allow deviation from national agreements. Finally, the economic crisis and moving from a more industry to a more service-oriented economy have led to an increased demand for temporary and low-skilled work.

Although it might seem that the development of atypical work is mostly driven by market aspects that are given to the worker, this is not entirely true. Part of the changes in atypical work reflect the preferences of the workers themselves. For example, the increased labour market participation of women has led to an increasing supply of part-time labour, since many women want to combine paid employment with family responsibilities. Alternatively, self-employment is a attractive possibility for many individuals who want to further build their careers. Whether the observed changes are caused by sorting of workers into jobs or by market forces is difficult to disentangle and not possible with the data at hand.

All in all, we can conclude that there is a huge amount of variety in atypical work across Dutch occupations. To a certain extent this matches the preferences of employees and employers in the Dutch labour market. However, some workers - in particular low-skilled workers - suffer from job insecurity and a lack of career prospects due to their limited possibilities to move to better jobs. The current economic crisis and the rising unemployment rate make their situation even more uncertain. Therefore, the Dutch government currently aims to improve job security for workers in temporary jobs as is specified in their "social agreement 2013". In this way, atypical jobs can continue to be used in the Dutch labour market to accommodate the wishes and needs of firms and some workers, without this coming at a cost of low job security for other workers.

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## **Appendix 1: Data description**

The OSA Labor Supply Panel is a biennial panel survey among a random sample of the Dutch population. The representativeness of the sample is guaranteed by selecting households through a stratified sampling design. The selection criteria in this design are region, household size, and gender and age of the household head. The data collection started in 1985, and s of 1986 data are collected every other year among some 4,500 persons in more than 2,000 households. If panel members of the original sample were no longer willing or able to participate in later waves, they were replaced by newly selected respondents and/or households who correspond as closely as possible to the original participants in terms of characteristics as age, gender, household size and geographical region. In this paper, we use eight waves of the panel covering the period 1994–2008.

Household members between 16 and 64 years old are asked a series of questions about their demographics, labour market situation, and their income. For example, the demographic part contains information on gender, age and marital status. Information about the contains, among other things, sector of activity, type of contract, and duration in the job. Also, the data set has detailed information about human capital indicators, such as education level and health status. In addition to this, detailed information about their job at the time of the interview, individuals are also asked retrospectively about (at maximum eight) labour force changes between their last and the current interview.

In this paper we focus on individuals who are of working age (16-64). In addition to the standard demographics, we will concentrate in our analyses on the various job characteristics that are informative about the incidence of atypical employment (e.g. agency work, fixed-term contracts, number of hours worked, and wage information).

## **Appendix 2: ISCO-88 Occupational classification**

- 11 Legislators and senior officials
- 12 Corporate managers
- 13 General managers
- 21 Physical, mathematical and engineering science professionals
- 22 Life science and health professionals
- 23 Teaching professionals
- 24 Other professionals
- 31 Physical and engineering science associate professionals
- 32 Life science and health associate professionals
- 33 Teaching associate professionals
- 34 Other associate professionals
- 41 Office clerks
- 42 Customer services clerks
- 51 Personal and protective services workers
- 52 Models, salespersons and demonstrators
- 61 Market-oriented skilled agricultural and fishery workers
- 62 Subsistence agricultural and fishery workers
- 71 Extraction and building trades workers
- 72 Metal, machinery and related trades workers
- 73 Precision, handicraft, printing and related trades workers
- 74 Other craft and related trades workers
- 81 Stationary-plant and related operators
- 82 Machine operators and assemblers
- 83 Drivers and mobile-plant operators
- 91 Sales and services elementary occupations
- 92 Agricultural, fishery and related labourers
- 93 Labourers in mining, construction, manufacturing and transport