

Gabriel Pons Rotger and Jacob Nielsen Arendt

## The Effect of a Wage Subsidy on Employment in the Subsidised Firm



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carries out and reports social science research of interest to the public sector and in particular to regions and local governments.

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## Preface

We are grateful for helpful comments from Eskil Heinesen, Lars Skipper, Jakob Roland Munch, Søren Leth-Petersen, Nicolai Kristensen, Genevieve Knight-Hierro and Jessica Goldberg. We acknowledge the suggestions from participants at meetings of Strategic Programme for Welfare Research at SFI 2008 and Aarhus School of Business 2009, Quantitative Methods AKF's meeting 2010, Policy Studies Institute, NCoE Workshop 2010, and 2<sup>nd</sup> Meeting of the Danish Micro-econometric Network. Financial support for this research was provided by the Strategic Programme for Welfare Research (SPV).

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## Summary

This working paper examines the magnitude of the employment effects of the Danish wage subsidy on small private firms in 2006. In 2006 about 40% of individuals employed with wage subsidy were employed on ordinary terms after the completion of the subsidised contract. In order to assess the contribution of wage subsidy to this apparent success, this study assesses the magnitude of deadweight loss, substitution effects and other relevant employment effects for these subsidised firms. We argue that due to the characteristics of firm selection into wage subsidy, and the availability of rich monthly employee-employer data including lagged outcomes, we can consistently estimate the magnitude of the direct employment effects by means of annual difference-in-difference matching estimator. We find no evidence of deadweight loss or substitution effects during most of the subsidised period. We find that subsidy increases regular hires of the subsidised firm upon the termination of the subsidised contract in .71 employees. However, the net employment effect is moderate, e.g. .26 employees because the subsidy also increases ordinary separations. These firm effects are strongly correlated with the completion of the subsidised period, and therefore we interpret them as the wage subsidy contributes to the employment of long-term individuals and other individuals at both existing jobs, but also at new positions, which would not have been created in the absence of a wage subsidy.

# 1 Introduction

From the 1970s, most OECD countries have addressed the problem of persistent unemployment with active labour-market policies (ALMP). During the 1980s and 1990s there was a renewed interest in wage subsidy programmes (see Richardson 1998), but during the 2000s, due to the suspicion that a subsidy scheme generates substantial displacement, many countries favoured training over subsidised employment (Kangasharju 2007).

However, the existing evidence on displacement is mainly based on employer surveys which might be affected by several types of bias. Due to scarcity of data on subsidised firms, evidence on the effects on labour demand is in a much less developed stage than labour supply side evidence, which tends to be rather positive about the effectiveness of this ALMP in enhancing the individual's employability (e.g. Kluge 2006; Calmfors, Forslund & Hemström 2001; Bloom et al. 1994).

We might distinguish between several types of labour-demand effects. The intended effect of the subsidy is directly increasing labour demand by reducing the cost of hiring long-term unemployed. However, the subsidy might also have important unintended effects on regular employment. The subsidy might produce a deadweight loss if the firm would have employed the individual without a subsidy. Moreover, an existing ordinary employee can be separated from the subsidised firm if the subsidised job substitutes rather than complements a regular one. Subsidy programmes might crowd out regular jobs through increasing relative wages of ineligible workers or by increasing taxes (see Calmfors & Forslund 1991; Calmfors & Nymoer 1990; Calmfors 1994). But a wage subsidy might also generate positive externalities. Richardson (1998) shows by means of a general equilibrium model that wage subsidies when inducing employers to employ long-term unemployed instead of the short-term unemployed or ordinary employees, increase the attractiveness of the remaining pool of unemployed to other firms, which will create more vacancies, many of them will be covered by short-term unemployed.

The motivation for this study is twofold. In Denmark, private wage subsidy is the most cost-effective in terms of facilitating employment to long-term unemployed (see Jespersen, Roland & Skipper 2008; the Economic Council 2007), and due to the lack of empirical evidence on its labour-demand effects, it is particularly relevant to quantify the magnitude of intended and unintended effects on regular jobs.

Most specific to our sample, in 2006, there were about 40% of long-term individuals who after the termination of the subsidised contract in small firms were employed on ordinary terms at the same workplace, and therefore it is particularly relevant to assess to what extent the wage subsidy programme contributed to this success.

The aim of this paper is to address several relevant questions related to labour-demand effects of wage subsidy. The Danish Wage Subsidy Scheme imposes several

restrictions which were strongly monitored in 2006, the period under study, which impede the substitution of ordinary employees in advance of the subsidised hiring. However, the law does not establish specific mechanisms to prevent displacement along the subsidised contract, which might give some employers incentives to replace ordinary jobs by cheaper subsidised ones. The main research question of this study is the assessment of whether subsidised employment at these firms leads to displacement of ordinary jobs which otherwise would have been created or maintained by the subsidised firms in absence of a subsidy. Employers might accept subsidised employment under uncertain labour needs. A second important question we address in the paper is to what extent wage subsidy contributed to net job creation at the subsidised firm. Finally, the Danish Wage Subsidy Scheme allows employers to replace completed subsidised jobs and other non-ordinary employees by new subsidised employees. As we can appreciate in our sample, there are about 39% of small subsidised firms in our sample that had employed subsidised individuals during the preceding year, which suggests that some employers might keep on employing subsidised individuals at the same position. Thus, our final question is, to what extent are subsidised jobs maintained after the completion of the subsidised contract, and in a similar way to what extent are jobs occupied by other non-ordinary employees affected by wage subsidised employment.

In order to answer these questions we estimate the effects of the Danish wage subsidy on hires and separations of different types of employment several months after the start of the subsidy in the subsidised firm. Most evaluation literature estimates deadweight loss and substitution effect on the basis of employer surveys. In many cases this evidence, which is quite heterogeneous, finds high levels of deadweight loss and substitution effect. For instance, Bishop & Montgomery (1993) reported for the US Targeted Job Tax Credits that in absence of the subsidy 70% of the employers had hired an employee on regular terms. There is one survey study on the Danish wage subsidy to both private and public workplaces in 2004. This analysis reports 17% deadweight loss and 7% substitution, and finds that about 20% of the subsidised employees were contracted on ordinary terms by the subsidised firm (see National Labour Market Authority 2005).

Survey studies are likely to be affected by response bias because the question concerning the number of ordinary employees realised if the firm had not hired a subsidised employee (the counterfactual outcome) can be difficult to assess for firms with unstable levels of employees, like for example new or seasonal firms. Moreover, employers have no incentives to reveal practices if these are not permitted by law.

There are, as far as we know, only two studies which estimate employment effects with register firm data. Hujer, Caliendo & Radic (2002) use West German data on firms subsidised in 1995. Using difference-in-difference matching they find no clear evidence on displacement. For Finnish firms in 1995-2002 Kangasharju (2007) finds that the subsidy increased the firm's payroll by more than the size of the subsidy.



This paper, like Hujer, Caliendo & Radic and Kangasharju, uses matching to estimate the causal effect. We argue that due to the fact that in most cases the authorities offer a wage subsidy to firms and given the availability of a wide range of the firm characteristics we can identify the average treatment effect for the treated under selection on observables. Due to the availability of longitudinal monthly firm data our study departs substantially from Hujer, Caliendo & Radic and Kangasharju. The availability of monthly data allows us to evaluate net employment effects for 1 to 7 months after a firm hires a new subsidised employee.<sup>1</sup> This allows us to distinguish the unintended effects from the intended ones (in case the subsidised individual is hired on regular terms by the subsidised firm). In addition, we estimate separately employment effects in terms of hires and separations since deadweight loss is associated with the ordinary hires of the subsidised firm, while the substitution effect is linked to ordinary separations. Hire and separation effects are also measured for subsidised employees and other non-ordinary employees.

However, an important confounding variable – firm’s cost of labour adjustment – is not directly observable. The cost of labour adjustment includes all costs that are inherent in the act of changing the level and the identity of the employees. The magnitude of these costs is rarely known by the employer, and only estimable for very simple functional forms (see Hamermesh & Pfann 1996). Firms with high adjustment costs present smooth labour dynamics (see Hamermesh & Pfann 1996). Generally, in the case of low paid workers, the type of workers typically eligible for wage subsidies, lumpy adjustment may be prevalent due to low hiring and training costs. In this study we consider small firms where the adjustment costs per employee are typically higher than for medium or large firms due to diseconomies of scale (see Welters & Muysken 2006).

The literature usually distinguishes between net and gross costs. Net costs are those of changing the number of employees including for example disruptions to production, while gross costs are those related to inflow and outflow of employees. These include searching costs, training costs, severance pay and the overhead cost of using part of the existing staff to deal with recruitment and outflows. As shown by Welters & Muysken (2006) net and gross adjustment costs might contribute differently to deadweight loss. In the case that the foregone productivity cost is high, the firms are less exigent in terms of screening job applicants, while in the case that assessment cost is high the firm is more likely not to consider applicants with a long unemployment spell record.

We address net and gross adjustment costs by controlling for up to 21 lags of hires and separations of the different groups of employees. Dynamic labour adjustment models predict that firms characterised by different adjustment costs present different patterns in terms of labour dynamics (see Hamermesh & Pfann 1996, figure 3 of

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<sup>1</sup> The most frequent duration of a subsidised contract was six months in the studied period.

p.1276).<sup>2+3</sup> In addition, lagged outcomes are by definition highly correlated with all confounding variables (see Card & Sullivan 1988; Dolton et al. 2008).<sup>4</sup> We perform the analysis separately for 10 treatment months comprised between February 2006 and November 2006. All in all we consider 2,780 treated firms and about 68,200 control firms on average for each treatment month.<sup>5</sup>

The remainder of the paper is organised as follows. Section 2 describes the wage subsidy scheme for private employers in Denmark in 2006. Section 3 describes the data used in this study. Section 4 discusses the identification and estimation of the parameter of interest. Section 5 presents the empirical results. Section 6 summarises and draws conclusions.

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<sup>2</sup> The full cost of labour adjustment is rarely available or even known by the employer, and in practice it is only estimable for very simple functional forms without distinguishing between net and gross cost of labour adjustment.

<sup>3</sup> See for example Card & Sullivan (1988) or Dolton et al. (2008) for evaluation literature using lagged outcomes to deal with both observables and unobservables.

<sup>4</sup> As is discussed in the data section, due to lack of overlap and workplace information, we restrict our study to one workplace firms which upon the start of the treatment month had at most 10 employees.

<sup>5</sup> Due to the lack of observations for Danish firms with several workplaces we restrict our analysis to one workplace firms.

## 2 Danish Wage Subsidy to Private Employment

The use of active labour-market programmes is extensive in Denmark compared to most countries. During the last couple of decades, and particularly after a reform of the labour market in 1994, there has been a gradual shift towards more intensive use of ALMPs in detriment of passive measures (the Economic Council 2007). In 2005 around 4% of the GDP was spent on labour-market policy measures, active measures constituting 40%. Among the active measures, one typically distinguishes between classroom training, job training and other programmes.

In this paper we focus on a specific type of job training, namely wage subsidies to LTU for employment in private firms. Similar to the United States, Norway, England or Canada (see Kangasharju 2007), Denmark has favoured training over wage subsidy.<sup>6</sup> The share of wage subsidy in 2006 was about 5.9% of the total spending on active labour-market programmes (see Finance Act 2009).

Labour authorities<sup>7</sup> might offer long-term unemployed individuals a subsidised employment at a private workplace.<sup>8+9</sup> Working conditions are agreed between authorities and employers and are formalised in a contract. The subsidy covers approximately 50% of the minimum wage and is constant along the subsidised period.<sup>10</sup> The maximum duration of a subsidised job is one year, but six months are the most frequent duration agreed upon (see National Audit Office 2007). The actual duration of the subsidised employment can be shorter than the stipulated one in the contract, because the subsidised individual finds a regular job during the activation period, or the employer might terminate unilaterally the agreement if the individual does not respect the working conditions.

The Act on an Active Employment Effort (2006) imposes certain restrictions on private firms in order to be eligible for a hire of a subsidised employee. The 'Employment Contribution' condition requires that the hiring of a subsidised employee implies a net increase of the firm's number of normal employees. Mainly, this requires that a new subsidised employee cannot replace an existing ordinary job, but it also stipulates that ordinary employment cannot be reduced in advance. The

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<sup>6</sup> Countries like Finland, France or the Netherlands spend around 30% of active programmes on the subsidy scheme.

<sup>7</sup> Danish Public Employment Service (AF) in case of insured unemployed or the municipality in case of uninsured unemployed.

<sup>8</sup> Firms from the shipbuilding industry and firms owned by LTU individual's partner are not eligible for wage subsidy (see Act on an Active Employment Effort 2006).

<sup>9</sup> Concretely, the Act on an Active Employment Effort establishes that insured unemployed people younger than 30 or older than 59 are eligible had they been unemployed at least six months whereas insured unemployed aged between 30 and 59 are eligible had they been 12 months unemployed.

<sup>10</sup> In spite of that the subsidy received by private employers could take one of three different rates, AF typically allowed in the case of private subsidised employment the maximum subsidy rate (see National Audit Office 2005).

normal employment is defined as the average of ordinary employment during the three months before subsidised hiring and the same three months of the previous year. In the case of firms which are only active some months, normal employment is the ordinary employment of the hiring month of the previous year.

The 'Employment Contribution' condition allows the substitution of an existing subsidised employee or another non-regular employee by a new subsidised employee. However, a firm cannot employ too many subsidised employees at the same time. This is regulated by the 'Reasonableness' condition, which states that firms with 1-5 employees (full or part-time employed) might employ at most 1 subsidised employee, firms with 6-50 employees might at most give employment to 1 subsidised employee for each 5 ordinary employees, and firms with more than 50 employees are allowed 1 subsidised employee per 10 ordinary employees.<sup>11</sup>

Subsidised employers in the period of study (February 2006 to November 2006) were monitored by the authorities before the start of the subsidised job. In the second half of 2005, the monitoring of the subsidy scheme was reinforced (see National Audit Office 2007). Employers had to send to the labour authorities the approval of the subsidy by the employees' representative and documentation supporting the eligibility of the firm.<sup>12,13</sup> This monitoring system precluded that subsidised employers laid out existing ordinary jobs before the new subsidy.

Eligibility conditions might be effective to preclude layoffs before the subsidised hiring, but such conditions could not avoid the presence of a deadweight loss if that was the case, especially in firms with unstable employment levels, and were not designed to impede displacement once the subsidised employee had started.

Especially after the reinforcement of monitoring, it was mostly the labour authority that contacted a potential firm proposing the possibility of a wage subsidy. In case the employer accepted the offer and could document eligibility then a new subsidised employee could start. Different motivations might underlie the employers' decision of hiring a long-term unemployed individual with a wage subsidy. In the case of small firms it is most likely that employers in case of uncertain labour needs might be interested in using the subsidised employee as a temporary workforce in order to facilitate the adjustment of employment (National Labour Market Authority 2005). Small firms are also characterised by higher labour adjustment costs than medium or big firms, and therefore it is also likely that employers might wish to reduce the direct labour costs; searching, hiring or training costs.

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<sup>11</sup> Employment Contribution condition corresponds to '*Merbeskæftigelse*' and the 'Reasonableness' condition to '*Rimelighedskrav*' in the Danish language.

<sup>12</sup> Authorities usually informed employers about the rules.

<sup>13</sup> A National Audit Office report on the AF's administration of the private employment with subsidy and the Ministry of Employment's supervision of AF's administration after 1 July 2003 pointed out that the authorities did not receive necessary documentation to guarantee among others features that the maximum proportion of subsidised employees and ordinary employees were respected by the firms (National Audit Office 2005).

### 3 Data

The data used in this study are merged administrative data registers which combine information at individual, workplace and firm level, giving longitudinal monthly employee-employer data. The data cover 100% of individuals, 100% of workplaces and 100% of firms active in Denmark in 2006.

Firm data include monthly information on the firm's stock, inflow and outflow of ordinary and non-ordinary employees, and extensive annual accounts information (covering the tax year May to April reported to tax authorities) on sales, input costs, investments, inventories, assets and liabilities. We further supply information on firm branch and the geographical location of the workplace. Unfortunately, we do not have the possibility to link employees to workplaces on a monthly basis, since the key register for doing so only reports this information from November. Another problem with workplace information concerns firms with multiple workplaces. Since a firm is defined by its juridical level and information from tax authorities is collected at this level only, some information from annual accounts is distributed across workplaces by Statistics Denmark according to a standard key and may thus be susceptible to measurement error.

Individual data comprise information on worked hours, start and stop dates for all non-ordinary contracts (including subsidised ones) and annual information on employees' education and unemployment record during the last two years preceding the treatment month.

We consider quite a selected sample in order to maximise overlap between the treatment and the control group. The sample frame is described in the following and is summarised in table 3.1. The sample is restricted to all private one workplace firms, at least 1 year old, operating in Denmark in the period February-November 2006 with 1-10 employees, which are eligible for a new subsidised employee in a month comprised between February and November 2006.

We only consider firms that upon the start of the treatment month have at most 10 employees and are eligible for a new wage subsidy, i.e. the firms do not – at the start of the treatment month – have any subsidised employees. The threshold of 10 employees is chosen to consider only employers who in the treatment month might hire at most 1 subsidised employee. Bigger firms might choose among 0, 1 or more than 1 subsidised employee, and therefore the effect of interest for these firms is composed by the effect for the subsidised firms of hiring 1 subsidised employee and by the effect of hiring 2 versus less than 1. Unfortunately, there are very few firms which hire more than 1 subsidised employee at a monthly basis.

Initially, the sample comprises 6,062 treated firms and 89,714 control firms on average for each subsample. We measure the effects in terms of annual differences and therefore we impose that no treated firm (or control firm) hires any subsidised employee in the same month as the treatment month of the previous year. This

reduces the treated group to 5,699. Because the eligibility of firms is checked by the authorities, we omit from the sample all those treated firms (or control firm) that are ineligible to the subsidy because they have already a subsidised employee at the start of the treatment month. After imposing such restriction, our treated group contains 5,087 firms. We only consider firms with a total number of employees not bigger than 10 at the start of the treatment month, because such firms might at most hire 1 subsidised employee. After this restriction the sample contains 2,998 treated firms. Finally, we exclude from our sample firms with monthly levels of employment greater than 20. By doing so, we are avoiding firms with very unstable employment patterns. The final sample includes 2,802 treated firms and 68,839 control firms on average for each subsample.

**Table 3.1 Selected sample**

Treatment month	1 workplace firms 1 new subsidised employee ≥1 year old		1 work- place firms 1 new sub- sidised employee ≥1 year old Diff-in-diff		1 work- place firms 1 new sub- sidised employee ≥1 year old Diff-in-diff Eligible		1 work- place firms 1 new sub- sidised employee ≥1 year old Diff-in-diff Eligible 1-10 em- ployees t=0		1 workplace firms 1 new subsidised employee ≥1 year old Diff-in-diff Eligible 1-10 employees t=0 No outliers	
	Treated firms	Control firms	Treated firms	Treated firms	Treated firms	Treated firms	Treated firms	Control firms		
Feb 06	603	85,752	560	486	311	293	66,211			
Mar 06	746	85,014	703	623	372	344	65,446			
Apr 06	627	86,988	573	513	289	274	67,183			
May 06	751	88,474	703	634	404	383	68,533			
Jun 06	729	89,769	688	614	341	323	69,223			
Jul 06	452	91,101	437	386	226	215	70,229			
Aug 06	608	91,459	567	507	292	267	70,252			
Sep 06	548	91,743	517	471	269	253	70,202			
Oct 06	509	93,163	489	430	262	237	70,610			
Nov 06	489	93,672	462	423	232	213	70,505			
Feb-Nov 06	6,062	89,714	5,699	5,087	2,998	2,802	68,839			
Number of control firms for treated firm	148						246			

We identify the treatment group of firms by linking the AMFORA register (official statistics for labour-market policy measures) to the MIA register (monthly report of main income). MIA files contain the identification number of the firm and the identification number for all individuals who receive main income from a Danish firm.<sup>14</sup> We

<sup>14</sup> The MIA register is composed by two registers, one including all employees with residence in Denmark, and another one which includes all employees with residence abroad. This is particularly relevant for Danish firms located in the Copenhagen area where a sizable part of the labour force has taken up residence in the Malmö area, Sweden. About 10% of Malmö's population, a city with about 230,000 inhabitants, work in Copenhagen.

are able to identify stock, hires and separations of ordinary, subsidised and other non-ordinary employees for each firm at a monthly basis. With this information we distinguish for each month comprised between February and November 2006 the treated from the control firms.<sup>15</sup>

Thus, we have many lags and several leads of the outcome variables available, this permitting to control for the dynamics of different groups of employees, and measuring the employment effects several months after the treatment. Concretely, for the February sample we have up to 12 lags and 10 leads of hires and separations, while for the November sample we observe up to 21 lags, but only 1 lead of the outcome variables.

MIA information is linked to other individual information in order to obtain some important confounding variables which are rarely available at a monthly basis. We link highest education achieved by individuals to the MIA registers to construct the Frequency of Low Educated Employees of the firm. We connect the unemployment record to MIA to construct the Frequency of Employees of a firm who have been unemployed some time during the last two years, and the Frequency of Hires of the last quarter who have been unemployed some time the last two years.

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<sup>15</sup> At the start of this study MIA information was available from January 2005 to December 2006.

## 4 Evaluation Method

### 4.1 Parameter of Interest

We analyse the effect of a wage subsidy on the subsidised firm in the potential outcome framework (see Neyman 1923; Rubin 1974; Holland 1986). Since lags in employment adjustment can be fairly short we choose the month as the time unit for this study. The time interval allows us to differentiate firms with different employment dynamics in a more precise way than for instance quarterly data. Thus, we consider monthly time periods indexed by  $t = \dots, -2, -1, 0, 1, 2, \dots$ ; where  $t=0$  denotes the treatment month. Observation units  $i=1, \dots, N$  are firms which at the beginning of the treatment month ( $t=0$ ) are eligible for 1 new subsidised employee.

The treatment received by a firm eligible for wage subsidy is described by the random variable,  $D_{i0}$ , which can take two values, 1 in case the firm hires a subsidised employee and 0 otherwise. We assume the existence of two potential stocks of employees for firm  $i$ , denoted  $y_{it}(1)$  and  $y_{it}(0)$  for  $t > 0$  where the first corresponds to the treatment outcome (that realised given the firm hires a subsidised employee at  $t = 0$ ) and the second denotes the control outcome (that realised in case the firm does not hire a subsidised employee). The observable stock of employees can be written as follows:

$$y_{it} \equiv D_{i0}y_{it}(1) + (1 - D_{i0})y_{it}(0) \quad (1)$$

so that the firm net employment effect of a new subsidised employee reads

$$\beta_t = y_{it}(1) - y_{it}(0) \quad (2)$$

It is useful to decompose the stock of employees into those components which are observable upon the start of the treatment month and therefore not affected by the treatment, and those components which are potentially affected by treatment. From the identity relating stock and flows of employees  $y_{it} \equiv y_{it-1} - s_{it-1} + h_{it}$ , where  $s_{it-1}$  denotes employees separated from firm at month  $t-1$ , and  $h_{it}$  denotes the hires of firm during month  $t$ , we have

$$y_{it} = y_{i-1} - s_{i-1} + h_{i0} - S_{it-1} + H_{it}, \quad t = 0, 1, 2, \dots, \quad (3)$$

where  $S_{it-1} = \sum_{j=1}^t s_{it-j}$  denotes the cumulated separations from the treatment month and up to month  $t-1$ , and  $H_{it} = \sum_{j=1}^{t-1} h_{it-j}$  is the cumulated hires one month after the treatment month and up to month  $t$ . Unfortunately, we lack information on the exact start date for an ordinary hire, and therefore we do not know whether ordinary hires



occur before or after the start of the subsidy. This implies that we cannot measure the effect of the new subsidy on the hires on the treatment month. Instead we consider as outcome variable the cumulated ordinary hires occurring from the next month to the subsidised hiring month,  $H_{it}$ , a limitation that implies that the estimated effects on cumulated hires can be seen as lower bound for the effect of cumulated hires. However, due to the fact that we are using high frequency data we can take hires effect one month after the treatment month as a relatively close measure of the unobservable hiring effect of the treatment month.

If we use (1), (2) and (3) we can write the effect of a new subsidised employee on the subsidised firm's stock of employees as follows  $\beta_{it} = \beta_{it}^H - \beta_{it}^S$  where  $\beta_{it}^H = H_{it}(1) - H_{it}(0)$ , and  $\beta_{it}^S = S_{it-1}(1) - S_{it-1}(0)$ . Due to the missing information regarding the counterfactual outcome, we cannot identify individual effects  $\beta_{it}, \beta_{it}^H, \beta_{it}^S$ . Instead, the parameters of interest are taken to be the average treatment effect for the treated (ATT),  $\beta_t \equiv E(\beta_{it} | D_{i0} = 1)$ .

## 4.2 Identification

This section discusses the identification of the ATT. As a first step we use a difference-in-difference design and measure the outcome variable in terms of annual differences. This allows for some selection on unobservables in that the counterfactual outcome of control and treated firms may have unobservable fixed and annually varying characteristics. For the annual differences, the ATT is identified under the following conditions:

1.  $E(\Delta_{12}H_{it}(0) | \mathbf{x}_{i-1}, D_{i0}) = E(\Delta_{12}H_{it}(0) | \mathbf{x}_{i-1})$
2.  $E(\Delta_{12}S_{it-1}(0) | \mathbf{x}_{i-1}, D_{i0}) = E(\Delta_{12}S_{it-1}(0) | \mathbf{x}_{i-1})$
3.  $e(\mathbf{x}_{i-1}) \equiv (\Pr(D_{i0} = 1 | \mathbf{x}_{i-1}) < 1 \text{ for all } \mathbf{x}_{i-1})$
4. Stable Unit Treatment Value Assumption

where  $e(\mathbf{x}_{i-1})$  is the conditional probability of hiring a subsidised employee at month  $t=0$  given the set of covariates  $\mathbf{x}_{i-1}$ , the propensity score (see Rosenbaum & Rubin 1983).

The conditional mean independence assumption (1)-(2) implies that given we control for  $\mathbf{x}_{i-1}$ , firms in the treatment and control groups are equally likely to hire a subsidised employee at  $t=0$ . Under this assumption, the mean difference in the outcome variable can be interpreted as causal effect of hiring a subsidised employee. The assumption (3) implies that the support of  $\mathbf{x}_{i-1}$  for the treated firms is a subset of the support of  $\mathbf{x}_{i-1}$  for control firms. (1) (or (2)) together with (3) are a weaker version of the strong ignorability assumptions of Rosenbaum and Rubin (1983). Note that these assumptions allow for selection on unobservables through level (of  $H$  or  $S$ )

differences as already mentioned as well as for selection on  $\Delta_{12}H_{it}(1)$  or  $\Delta_{12}H_{it}(1) - \Delta_{12}H_{it}(0)$  (similarly for separations), but rules out selection on  $\Delta_{12}H_{it}(0)$ , after controlling for  $x_{i-1}$ .

In order to make assumption (3) realistic in our dataset, we have selected 1 workplace firms with at most 10 employees at the start of the treatment month which are eligible for one new subsidised employee at the treatment month. By doing so, we are reducing the treatment group substantially for each treatment month, but in a preliminary analysis that overlaps at the covariate set was not especially good for medium firms. This is not surprising given the high amount of control variables we introduce in the matching algorithm and the fact that Denmark has a relatively reduced number of medium and big firms where one can find suitable controls.

In addition, our setup and sample secure that we do not mix the effect of one subsidy with that of subsequent subsidies. As mentioned we only sample firms with at most 10 employees, which are eligible for their first subsidised employee. Eligibility was effectively checked after the reinforcement of monitoring (see National Audit Office 2007).<sup>16</sup>

The SUTVA assumption (see Holland 1986) requires that the treatment status of any firm is independent of potential outcomes for all other units, and that treatment is defined identically for all firms. SUTVA is a realistic assumption in our particular study since the Danish wage subsidy is a very small scale programme, where few individuals are allowed wage subsidies and few firms use subsidised employees, and therefore we do not expect the scheme to affect the potential outcomes of control firms through the relative wages that subsidised and unsubsidised firms are offering to eligible and ineligible individuals (see Heckman, Lalonde & Smith 1999).

The crucial identifying assumptions are assumption (1) for the effect on hires and (2) for the effect on separations, and the identification of the net effect, stating that we are able to control for selection by means of pretreatment variables.

We argue that these conditions are likely to hold as we include in the conditioning set a wide and quite unique range of annual firm characteristics commonly used in employment decision-making. They are obtained from the firm's annual accounts and other registers at plant level corresponding to 2004 and 2005. In addition, past monthly dynamics of hires and separations of ordinary, subsidised and other non-ordinary employees are controlled for, which are unguage highly correlated with hard-to-measure cost of labour adjustment. This is elaborated upon below.

We consider from the accounting sheet, variables reflecting the firm's performance, size, size variation, labour cost, and financial health. The firm's activity and success are controlled for by including annual turnover (for 2004 and 2005) and annual result (for 2004 and 2005). The size of the firm and its variation are controlled for by including material and financial fixed assets, stock variation, inflow of im-

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<sup>16</sup> We do not include firms with 11 employees in the treatment month. When a firm with 11 employees hires a subsidised employee its upper bounds increase from 1 to 2 subsidised employees.

movable property and inflow of machinery and equipment. Labour costs are captured with salary expenses (for 2004 and 2005), purchase of contracted and subcontracted employees and for expenses to temporary employment agency, which is the only labour adjustment cost directly observable. The financial health of the firm is controlled for by including from the firms' balance outstanding debt, securities and liquidity, long-term debt and short-term debt.

In tight labour markets, it is more difficult for employers to make instantaneous labour adjustments (Gorter, Hassing & Russo 2003). The tightness of labour might at the same time influence the decision to hire subsidised individuals because employers might view LTU as less undesirable in such conditions and consider them as a temporary workforce. Furthermore, Van Ours & Ridder (1992) show that at lower education levels (which compose the majority of LTU) the vacancy flow is more sensitive to labour-market conditions. In order to capture the firm's probability of filling low wage vacancies we construct measures including the local unemployment rate 1, 2 and 3 months before treatment; and the local unemployment rate of individuals who have been 0-3, 4-6 and more than 6 months unemployed.<sup>17</sup> In addition, we control for the Frequency of Low Educated Employees 1 and 13 months before treatment, in order to capture the firm's use of low paid workers and its possible change. We also control for the frequency of employees who have been unemployed for some time during the last 2 years, and the frequency of hires during the quarter immediately before treatment who have been unemployed for some time during the last 2 years. Since local labour conditions might vary across different industries, we add 15 dummy variables for firm industries.

Case workers from AF and municipalities have an active role in matching individuals entitled to subsidy with employers. It is likely that selection criteria might vary slightly geographically, due to regional variation of the risk of becoming long-term unemployed. Location of firms is a potential confounding characteristic due to the possible presence of location economies. Because we only consider one workplace firms, we are able to control for firm location through 16 dummy variables determining county of firm residence.

The age of the firm is controlled for as well. Employment patterns vary with the age of the firm and at the same time relatively new firms might be considered for wage subsidised employees as a valuable recruitment option in case of uncertain needs for labour.

The remaining unobservable characteristics like cost of labour adjustment, number of vacancies, average rate at which a vacancy is filled or number of job applicants are controlled for by conditioning on the monthly dynamics of the firm's stock, hires, and separations for different groups of employees. There are important reasons for doing so. First, as discussed in the introduction section, firms with different adjustment costs are characterised by different dynamic patterns of hires and sepa-

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<sup>17</sup> Local measures refer to variables measured at county level.

rations. Second, outcome variables are by definition highly correlated with unobservables (see Card & Sullivan 1988; Dolton et al. 2008). Finally, as is discussed in Heckman (1978) and Heckman & Robb (1982), the transitory components of the firm's employment can be serially correlated, but even if this is not the case, serial correlation can be artificially present in the outcome model due to seasonal difference transformation (see Ghysels & Osborn 2001). Due to monitoring of eligibility of firms by the authorities Ashenfelter-dip type of selection mechanisms is not likely in our data (see Ashenfelter & Card 1985).

### 4.3 Estimation

We perform separate estimations of ATT for 10 subsamples which are defined by different treatment month from February 2006 to November 2006, and then we pool subsample ATT into the overall ATT. There are several reasons to do so. First, since treatment is defined in terms of hiring subsidised employees in a particular month, it is possible that firms which belong to the treatment (control) group in a particular month belong to the control (treatment) group in other months. A second important reason is that annual covariates are measured, at the subsamples, at different time distances with respect to the treatment month and outcome.

Given the availability of a very large control group for each subsample, we choose the simplest matching method, the near neighbour propensity score matching without replacement, to estimate ATT. The standard error is estimated with the method proposed by Abadie & Imbens (2006).

## 5 Results

### 5.1 Propensity Score and Matching Quality

As can be seen in table 5.1 with most representative covariates, treated firms are quite different from control firms in some characteristics. Treated firms that have much more experience than control firms in employing subsidised individuals are relatively more active in terms of hiring employees, but at the same time more employees, who are separated from the treated firms, are smaller and younger than the control firms. In our particular sample firms are slightly underrepresented in the construction sector, but otherwise present quite similar sector distribution. In spite of these differences, treated and control firms are quite alike in terms of turnover, result, debt or geographical location.

The propensity score for treatment is estimated using a logit model. In order to avoid potential misspecification we introduce several interaction terms since this achieves the highest matching quality. In particular, in order to allow for certain diseconomies in adjustment costs we interact a dummy, indicating firms with at most five employees (at the beginning of the treatment month) with monthly lagged hires and separations. We control for lagged stock of employees by including the most distant stock of employees from the treatment month together with all lags of both hires and separations up to the month before treatment. We introduce in the propensity score lagged monthly hire rates. Tables A.1 to A.10 present the estimated coefficients of the propensity score for all subsamples.

The purpose of the matching method is to balance the covariate distribution between treated and control firms. We assess matching quality of the different matched samples used to estimate ATT by comparing the standardised difference in means before and after matching. If matching does a good job any significant differences will be reduced (see Rosenbaum & Rubin 1983). Normalised differences for all covariate sets are reported in table A.11 in the appendix. These imbalance indicators are presented for the smallest sample (Feb-May 2006) which is used to estimate employment effects seven months after treatment, for a medium sized sample (Feb-Aug 2006) which corresponds to effects four months after hiring a subsidised employee, and for the largest sample (Feb-Nov 2006) which is used to estimate impacts one month after the start of the subsidised job. The imbalance indicators show extremely small differences in the characteristics and their interactions between the firms which hired subsidised employees and the control firms selected by the matching method.

**Table 5.1 Selected imbalances**

Covariate	Mean of treated firms	Mean of control firms	%SDIF before matching	%SDIF after matching		
				Feb-May 06	Feb-Aug 06	Feb-Nov 06
Hires 1 month before	0.501	0.337	15.5	0.5	-1.4	-0.3
Hires 6 months before	0.680	0.356	26.2	1.1	1.9	1.1
Hires 12 months before	0.630	0.396	19.3	1.9	3.7	1.3
Separations 1 month before	0.478	0.384	8.9	0.8	1.4	0.0
Separations 6 months before	0.648	0.373	22	1.5	2.3	2.2
Separations 12 months before	0.564	0.394	14.2	2.9	5.2	4.7
Very small firm	0.737	0.820	-19.9	2.8	3.7	4.1
Experienced with subsidised employees	0.390	0.062	85.3	5.3	4.4	4.0
Turnover 2005	5611	5405	0.8	0.4	0.2	-0.5
Result 2005	360	847	-1.8	0.1	-0.5	-0.4
Payroll 2005	1088	854	18.8	-3.4	2.0	-1.5
Age of firm	10.367	12.966	-26.5	0.8	-1.0	-0.2
Freq. low educated employees 1 month before	0.325	0.308	4.9	-4.6	-4.1	-2.4
Freq. previously no unemployed employees 1 month before	0.684	0.735	-12.3	-2.8	-3.3	-2.8
Securities and liquidity	555	396	10.1	2.8	-0.9	-1.6
Long-term debt	898	1262	-4	1.9	-0.1	-0.6
Short-term debt	1818	1927	-0.7	0.9	-0.1	0.0
Construction	0.131	0.175	-12.2	-4.3	-3.2	-1.5
Wholesale trade (except vehicles)	0.130	0.110	6.3	-0.3	0.0	0.2
Retail trade; repairation (except vehicles)	0.167	0.159	2.3	4.7	-0.5	-1.3
Hotel; restaurant	0.100	0.088	4.1	3.5	2.7	0.6
Other business services	0.137	0.140	-0.9	1.7	3.3	3.3
Copenhagen Municipality	0.094	0.113	-6.2	0.0	1.7	1.9
Copenhagen County	0.104	0.117	-4.1	1.5	1.9	0.3
Funen County	0.102	0.081	7.4	-1.9	-1.3	-1.6
Århus County	0.145	0.118	7.7	2.3	1.4	1.6
North Jutland County	0.107	0.087	6.7	2.1	0.7	-0.6

Note: SDIF denotes the standardised difference in means between the treated and the control group of firms.

## 5.2 Average Treatment Effect for the Treated and Robustness

Table 5.2 shows the average impact of a subsidy on subsidised firms in terms of cumulated hires and separations. Estimates for all outcome measures are calculated over 7 different periods, from 1 to 7 months after the subsidised hiring, when most of the subsidised contracts are completed. In order to compare the contribution of separation and hiring effects to employment stock each month, separations in month  $j$  refer to number of employees who were employed in month  $j-1$ , but who were no longer employed in month  $j$ , while hires in month  $j$  refer to employees who start employment in month  $j$ .

The results in column 2 in table 5.2 indicate that, on average, the Danish wage subsidy to small private firms decreases hires by 0.016 employee one month after treatment and that this effect is very insignificant. This strongly suggests that there is no deadweight loss in the sense that subsidised firms would not have hired an individual on ordinary terms in absence of the subsidy. As discussed previously, our estimates of the hiring effect should be considered a lower bound because deadweight loss might occur immediately after the subsidy starts during the treatment month. However, finding a very small insignificant hiring effect 1 month after treatment suggests that a potential deadweight loss effect in the treatment month is likely to be of very reduced magnitude. We also appreciate that as time goes by the cumulated ordinary hiring effect increases. We find that already 4 months after the subsidy starts, the cumulated effect is positive and significant with an average hiring effect of .21 employees. This effect increases in a relatively constant pattern at 5 and 6 months after treatment, with .31 and .46, respectively, and increases substantially 7 months after treatment to .71. As was mentioned in the introduction, there we roughly 40% of the subsidised individuals who after the completion of a subsidised job were employed on ordinary terms at the subsidised firm. Therefore, this fact together with the estimated hiring effect suggest that wage subsidy contributes in some cases to employ subsidised individuals and in other instances to employ other individuals.

Column 3 shows, however, that existing ordinary employees are separated as well. In this case, the separation effect is first significant 5 months after treatment with .21, increases slightly to .25 6 months after treatment and goes up to .45 7 months after the subsidy started. Therefore, there are no immediate substitution effects, but the result suggests that ordinary employees are separated from subsidised firms when the subsidised contract terminates, which could indicate that the subsidy is partly used for cost shifting from subsidised workers to ordinary ones. Roughly, the subsidy contributes to the net creation of  $(.71-.45)=.26$  jobs per subsidised firm. We are not able to determine to what extent additional jobs are occupied by earlier subsidised individuals.

The estimates listed in columns 4 and 5 of table 5.2 correspond to the employment effects in terms of subsidised employees. As seen in column 4 there is a slightly positive effect in terms of subsidised hires upon the termination of the current subsidised job, of about .17 employees, which appears to mean that some subsidised firms replace old subsidised employees by new ones. This interpretation is confirmed by the significant correlation between subsidised hiring effects and the termination of the old subsidised contract shown in column 4 of table 5.3. Column 5 of table 5.2 presents ATT for subsidised separations. The figures reflect that subsidised employees are leaving the subsidised employment to an increasing extent during the activation period. We appreciate that already 1 month after the start of the activation, the average subsidised separation effect is .21, while 7 months after almost all subsidised employees have left their subsidised status. The most probable explanation is that these individuals find an ordinary job outside the firm, because the effect in terms of

ordinary hires is insignificant from 1 to 3 months after treatment. At the same time we appreciate a positive and significant subsidised hiring effect already from month 3 of about 0.05 which grows at a slow decaying rate to reach .17 7 months after. This suggests that not all firms are able to replace already gone subsidised employees by new ones.

Finally, in columns 6 and 7 we report the estimated average employment effects for the group of other non-ordinary employees of the firm. As is highlighted in section 2, the Danish wage subsidy scheme permits the employer to replace non-ordinary employees of all kinds with subsidised ones. From column 6 we see that the subsidy has a very moderate effect on hires of this group of employees (0.06), but at the same time it has also a relatively higher effect on separations (0.09), leading to a very small negative effect on non-ordinary jobs. In this case, employment effects are not correlated with the termination of the subsidised period, and therefore seems to suggest that subsidies might displace few non-ordinary jobs.

The overall conclusion from the results presented in tables 5.2 and 5.3 is that the wage subsidy to small private firms in Denmark in the period 2006 contributed to help long-term unemployed individuals to find an ordinary job in the subsidised firm, but at the same time it also contributed to the employment of other individuals. Net job creation was moderate because the wage subsidy increased the separation of existing regular employees upon the termination of the subsidised job. Since the displacement of ordinary jobs seems to occur mainly when the subsidised job is completed, the tasks assigned to the subsidised employee can be seen as complementary to those assigned to existing ordinary employees. It is important to stress at this point that gains in terms of long-term unemployed individuals are not strictly comparable with losses of existing ordinary employees, since this latter group is more likely to leave unemployment than long-term unemployed (see Richardson 1998).

**Table 5.2 Average treatment effect on the new subsidised firm**

Months after new subsidy	Ordinary employees		Subsidised employees		Other non-ordinary employees		Sample	
	Hires	Separations	Hires	Separations	Hires	Separations	Treated firms	Treatment period
1	-0.016 (0.049)	-0.085 (0.066)	-0.012 (0.008)	0.206 (0.009)	0.001 (0.006)	0.056 (0.008)	2,780	Feb-Nov 06
2	0.010 (0.064)	-0.065 (0.066)	0.016 (0.011)	0.343 (0.012)	0.005 (0.008)	0.064 (0.010)	2,570	Feb-Oct 06
3	0.080 (0.083)	-0.040 (0.086)	0.046 (0.014)	0.501 (0.016)	0.017 (0.011)	0.065 (0.012)	2,338	Feb-Sep 06
4	0.213 (0.105)	0.033 (0.108)	0.093 (0.017)	0.603 (0.020)	0.015 (0.013)	0.067 (0.014)	2,090	Feb-Aug 06
5	0.314 (0.133)	0.211 (0.130)	0.134 (0.019)	0.686 (0.021)	0.018 (0.015)	0.066 (0.017)	1,823	Feb-Jul 06
6	0.459 (0.158)	0.249 (0.155)	0.164 (0.022)	0.858 (0.022)	0.027 (0.018)	0.074 (0.020)	1,609	Feb-Jun 06
7	0.711 (0.199)	0.448 (0.196)	0.172 (0.028)	0.988 (0.026)	0.057 (0.022)	0.093 (0.025)	1,287	Feb-May 06

Note: In parenthesis the estimated standard error with the method of Abadie & Imbens (2006).



**Table 5.3 Standardised regression coefficients of treatment effects on subsidised job completed**

Months after new subsidy	Ordinary employees		Subsidised employees		Other non-ordinary employees	
	Hires	Separations	Hires	Separations	Hires	Separations
2	0.065 (0.000)	0.092 (0.000)	0.172 (0.000)	0.556 (0.000)	0.001 (0.967)	0.016 (0.418)
3	0.065 (0.001)	0.088 (0.000)	0.193 (0.000)	0.558 (0.000)	0.033 (0.107)	0.026 (0.219)
4	0.089 (0.000)	0.089 (0.000)	0.184 (0.000)	0.570 (0.000)	0.040 (0.069)	0.037 (0.095)
5	0.076 (0.001)	0.083 (0.000)	0.138 (0.000)	0.550 (0.000)	0.026 (0.264)	0.031 (0.197)
6	0.053 (0.031)	0.097 (0.000)	0.127 (0.000)	0.420 (0.000)	0.014 (0.557)	0.023 (0.377)
7	0.056 (0.035)	0.077 (0.004)	0.114 (0.000)	0.319 (0.000)	0.019 (0.491)	0.036 (0.201)

Note: In parenthesis the p-values of t significance test.

The fact that the subsidy eligibility rules do not depend on the characteristics of the firms suggests that due to employer heterogeneity, we should expect heterogeneous employment effects across different types of employers. In addition, the geographical variation in the local labour-market conditions also suggests that we should expect heterogeneous impacts across different locations. We explore the direction and magnitude of differences in responses by regressing the estimated treatment effect on covariates.<sup>18</sup> These regressions fail to show any consistent evidence on geographical location or on firm size variation of employment effects. However, lagged monthly hires and separations present significant coefficients with both negative and positive signs. This appears to indicate that employment adjustment patterns of firms, which are intimately linked to adjustment costs, are likely to affect employment effects.

The definition of treatment employed in the paper, the sample frame and the availability of 100% information regarding firms imply that the size of the control group is much larger than the treated group, a situation that might affect the quality of matching. As is discussed in Imbens & Wooldridge (2009) matching on a matched sample is suited to improve the overlap in covariate distributions when the reservoir of control firms is quite large in comparison to the treated group. In such a sample, the distribution of the estimated propensity score for the control observations is typically more concentrated than the same distribution for the treatment group. Therefore, in case that the mean participation probability for the control and treatment groups is quite apart, for a given treated observation the identity of the nearest neighbour matched control can be very sensitive to the specification of the propensity score. However, we do not appreciate any significant changes in the estimated ATT when we apply this estimator, and therefore we conclude that the estimates presented are robust. A second relevant robustness check in our particular study concerns the use of lagged information. In the case of the subsample corresponding to February 2006, we only observe up to 12 lags for hires, and the 13<sup>th</sup> lag for stock of employees, while for

<sup>18</sup> Coefficients from OLS regressions of treatment effects on all covariates are available upon request.

the November subsample we can control for up to 21 lags for hires and the 22<sup>nd</sup> lag for stock of employees. We therefore repeat the analysis by only considering for all subsamples the maximum number of lags available for the February subsample. We do not find evidence on sensitivity of results to the widest set of lagged information.

Finally, the results are also robust to estimating the propensity score with a probit model, and to matching with replacement.<sup>19</sup>

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<sup>19</sup> Tables with alternative estimations for robustness check are available upon request.

## 6 Conclusion

In this study we investigate the possible presence of deadweight loss, substitution effects and other employment effects of wage subsidy to small private firms by means of difference-in-difference matching. We argue that identification is obtained due to the availability of an extensive amount of firm characteristics including longitudinal monthly lagged information on hires and separations, the small scale of the programme and by taking the selection mechanism for small firms into account.

The paper evaluated the effect on 2,780 Danish subsidised small firms which in 2006 hired a subsidised employee. The main result of the study is that wage subsidy on average produces no deadweight loss and substitution at firm level during most of the activation period, although some substitution of ordinary employees seems to take place upon the termination of the subsidised contract. We find that after the completion of the subsidised period, the subsidy contributes in 71% of the cases to increase ordinary hires, while in 45% of the firms this occurs at the cost of an existing ordinary employee, who is separated from the firm. Overall, the net employment effect is that a wage subsidy contributes moderately to job creation, so that in 26% of the firms the subsidy leads to a new ordinary job. The employment effect of subsidy is higher than the proportion of subsidised employees who got employed at the subsidised firm on ordinary terms, this suggesting that subsidy enhances the employment of other individuals as well.

The results are confirmed by the strong correlation between employment effects with completion of the subsidised job.

## References

- Abadie, A. & G.W. Imbens (2006): Large Sample Properties of Matching Estimators for Average Treatment Effects. *Econometrica*, 74: 235-267.
- Act on an Active Employment Effort (2006): *Bekendtgørelse om en aktiv beskæftigelsesindsats no. 1676 of 19. December 2006* (in Danish).
- Ashenfelter, O. & D. Card (1985): Using the Longitudinal Structure of Earnings to Estimate the Effects of Training Programs. *Review of Economics and Statistics*, 67: 648-660.
- Bishop, J.H. & M. Montgomery (1993): Does the Targeted Jobs Tax Credit Create Jobs at Subsidised Firms? *Industrial Relations*, 32: 289-298.
- Bloom, H.; L. Orr, G. Cave, S. Bell, F. Doolittle & W. Lin. (1994): *The National JTPA Study: Overview of Impacts, Benefits and Costs of Title 11-A*. Bethesda Maryland.
- Calmfors, L. (1994): Active Labour Market Policy and Unemployment – A Framework for the Analysis of Crucial Design Features. *OECD Economic Studies*, 22, Spring.
- Calmfors, L. & A. Forslund (1991): Real wage determination and labor market policies: The Swedish experience. *Economic Journal*, 101: 1130-1148.
- Calmfors L. & R. Nymoen (1990): Nordic employment. *Economic Policy*, 5: 397-448.
- Calmfors, L.; A. Forslund & M. Hemström (2001): Does active labour market policy work? Lessons from the Swedish experiences. *Swedish Economic Policy Review*, 8: 61-124.
- Card, D. & D. Sullivan (1988): Measuring the Effect of Subsidised Training Programs on Movements In and Out of Employment. *Econometrica*, 56: 497-530.
- Dolton, P.; & J.A. Smith & J.P. Azevedo (2008): *The Impact of the UK New Deal for Lone Parents on Benefit Receipt*. Manuscript.
- Finance Act* (2009): <http://www.oes-cs.dk/bevillingslove/> [In Danish]
- Ghysels, E. & D.R. Osborn (2001): *The Econometric Analysis of Seasonal Time Series*. Cambridge University Press.

- Gorter, C.; W.H.J. Hassing & G. Russo (2003): The structure of hiring and labour market tightness. *Economic Letters*, 80: 99-103.
- Hamermesh, D.S. & G.A. Pfann (1996): Adjustment Costs in Factor Demand. *Journal of Economic Literature*, 34(3): 1264-1292.
- Heckman, J.J. (1978): *The Longitudinal Analysis of Earnings*. Unpublished manuscript presented at the SSRC Conference on Longitudinal Studies of the Labor Market.
- Heckman, J.J. & R. Robb (1982): *The Longitudinal Analysis of Earnings*. Unpublished manuscript, University of Chicago.
- Heckman, J.J.; R. Lalonde & J. Smith (1999): The economics and econometrics of active labour market programmes. In O. Ashenfelter & D. Card (eds.): *Handbook of Labor Economics*, vol. 3. Amsterdam: Elsevier.
- Holland, P. (1986): Statistics and Causal Inference. *Journal of the American Statistical Association*, 81: 945-960.
- Hujer, R.; M. Caliendo & D. Radic (2002): *Estimating the effects of wage subsidies on the labour demand in West Germany using the IAB Establishment Panel*. Unpublished paper, Johann Wolfgang Goethe-University, Frankfurt/Main.
- Imbens, G.W. & J.M Wooldridge (2009): Recent Developments in the Econometrics of Program Evaluation. *Journal of Economic Literature*, 47: 5-86.
- Jespersen, S.; J. Roland & L. Skipper (2008): Costs and benefits of Danish active labour market programmes. *Labour Economics*, 15: 859-884.
- Kangasharju, A. (2007): Do Wage Subsidies Increase Employment in Subsidised Firms? *Economica*, 74: 51-67.
- Kluve, J. (2006): *The Effectiveness of European Active Labor Market Policy*. IZA Discussion Paper No. 2018.
- National Audit Office (2007): *Rigsrevisors notat af 3. august 2007 til 12/04*. [In Danish].
- National Labour Market Authority (2005): *Undersøgelse af mulig fortrængning af ordinært ansatte ved brug af aktivering med løntilskud*. Report prepared by Ramböll Management, Copenhagen [In Danish].
- Neyman, J. (1923): On the application of probability theory to agricultural experiments. Essay on principles. Section 9. *Statistical Science*, 5: 465-480.

- Richardson, J. (1998): *Do Wage Subsidies Enhance Employability? Evidence from Australian Youth*. Working Paper, LSE Centre for Economic Performance, London.
- Rosenbaum, P.R. & D.B. Rubin (1983): The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70(1): 41-55.
- Rubin, D. (1974): Estimating causal effects of treatments in randomized and nonrandomized studies. *Journal of Educational Psychology*, 66: 688-701.
- The Economic Council (2007): *Danish Economy, spring 2007*. Copenhagen.
- Van Ours, J.C. & G. Ridder (1992): Vacancies and the Recruitment of New Employees. *Journal of Labor Economics*, 10: 138-155.
- Welters, R. & J. Muysken (2006): *Recruiting long-term unemployed: lessons from wage subsidies*. CoffEE Working Paper No. 06-04.

# Dansk sammenfatning

Gabriel Pons Rotger and Jacob Nielsen Arendt

Fortrænger løntilskud ansatte i ordinære job?

I denne rapport undersøges:

- om ansatte i løntilskudsjob i private virksomheder fortrænger ansatte i ordinære job,
- om et løntilskudsjob fører til ordinær ansættelse i den virksomhed, hvor aktiveringen via løntilskudsjobbet fandt sted,
- om der ved afslutningen af et løntilskud ansættes en ny ledig med løntilskud.

## Baggrund

Private løntilskud er det mest effektive redskab i Danmark til at få langtidsledige i beskæftigelse (se Jespersen et al. 2008 i referencelisten). Men der er en bekymring for, at løntilskudsjob kan føre til afskedigelse af ansatte i ordinære stillinger eller kan fortrænge ordinære ansættelser. Udgangspunktet for denne undersøgelse er, at der ikke findes effektmålinger, der kan besvare de stillede spørgsmål. Der findes kun en spørgeskemaanalyse om lovens fortrængning på ansættelsestidspunktet (se Arbejdsmarkedsstyrelsen 2005 i referencelisten). Beskæftigelsesloven kræver af arbejdsgiveren, at løntilskudsjobbet skal medføre en nettoudvidelse af antallet af ansatte (merbeskæftigelseskrav) i forhold til virksomhedens normale antal ansatte. Samtidig skal der være et rimeligt forhold mellem antallet af ordinært ansatte og antallet af ansatte på løntilskud (rimelighedskrav). Disse betingelser sammen med den opstrammede myndighedskontrol i 2006 skulle forhindre, at tilskudsansættelse sker i en ledig stilling efter afskedigelse. Det kan dog alligevel ikke udelukkes, at der bliver ansat løntilskudspersoner i stillinger, der ellers ville være blevet besat med personer uden løntilskudsjob.

## Metode

Der udnyttes en omfattende række af oplysninger om virksomhederne fra Danmarks Statistiks Erhvervs- og Regnskabsregistre i avancerede statistiske analyser. Det er meget detaljerede data, der gør det muligt på månedsbasis at følge antallet af ansatte i henholdsvis løntilskudsjob og i ordinære job. Analyserne tager udgangspunkt i 2.780 små virksomheder, som i perioden februar-november 2006 ansatte en enkelt medarbejder i løntilskudsjob. Disse virksomheder sammenlignes så vidt muligt med identiske virksomheder, hvor der ikke blev ansat medarbejdere med løntilskud.<sup>20</sup> Udvik-

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<sup>20</sup> På grund af svag overlappning med kontrolgruppen af mellemstore og større virksomheder og virksomheder med filialer har vi været nødt til at begrænse populationen af arbejdsgivere til virksomheder med kun en arbejdsplads, som i starten af ansættelses måneden havde maksimum 10 medarbejdere og ikke noget løntilskud.

lingen i tilgang og afgang af ordinære job, løntilskudsjob og andre ikke-ordinære medarbejdere følges fra 1 til 7 måneder efter aktiveringsstart.

#### *Hovedeffekter for ordinært ansatte*

- Tilgangen af personer i ordinære job ændres ikke nævneværdigt i løntilskudsvirksomhederne de tre første måneder efter løntilskudsjobbets start. Fra 4. til 7. måned efter løntilskudsansættelsen kommer flere i ordinær beskæftigelse, og antallet stiger jævnt frem til 6. måned og springer i 7. måned. Rundt regnet 7 måneder efter løntilskudsstart er der kommet flere i ordinær beskæftigelse i godt 70% af virksomhederne.
- Afgangen af ordinært ansatte ændres ikke nævneværdigt i de første fire måneder efter ansættelse af personer med løntilskud. Fra 5. til 7. måned efter løntilskudsansættelsen øges afgang af folk i ordinære stillinger gradvis, således at 7 måneder efter løntilskudsansættelse er der sket et fald i antallet af ansatte i ordinære stillinger i 45% af virksomhederne.
- Tilgangen er større end afgang i hele løntilskudsperioden, og begge er især høje ved afslutningen af løntilskudsperioden. Det betyder bl.a., at der i mange tilfælde ansættes personer i ordinære stillinger til erstatning for løntilskudspersoner.

#### *Hovedeffekter for ansatte med løntilskud*

- Allerede fra en måned efter start af løntilskudsjobbet finder vi en afgang i antallet af ansatte med løntilskud i omkring 20% af virksomhederne. Afgang stiger gradvis i løbet af aktiveringsperioden og det kan muligvis afspejle, at en del løntilskudsansatte finder job i en anden virksomhed.
- 40% af de medarbejdere, der har været i løntilskudsjob, får efterfølgende en stilling på ordinære vilkår i samme virksomhed.

#### **Samlet effekt**

Mange af løntilskudspersonerne (40%) ansættes i ordinære job i de virksomheder, hvor de havde løntilskudsjobbet. Vores analyse bekræfter, at løntilskud bidrager til det, og samtidig fører ansættelse af løntilskudspersoner ikke i større omfang til, at personer i ordinære stillinger mister deres job. Når en løntilskudsperiode er ved at være slut, forlader flere ordinært ansatte dog virksomhederne som følge af løntilskuddet. Det er ikke oplagt at fortolke dette som, at løntilskudsjobbet er blevet etableret for at fortrænge allerede ansatte, når det sker i slutningen af løntilskudsperioden. Forklaringen kan mere sandsynligt være, at de personer, der har været i løntilskud, betragtes som mere kvalificerede end allerede ansatte. Det er også muligt, at en del af de ordinært ansatte forlader virksomhederne frivilligt, fordi de ønsker at arbejde et andet sted. I slutningen af 2006, der er analyseåret, var ledigheden meget lav, og der var generelt gode muligheder for at få et andet job.



## Bilag A: Bilagstabeller

Table A.1. Logit Estimates for Firms Eligible to New Wage Subsidy in February 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.15	0.16	Very small firm*Hires 11 months before	0.12	0.12
Ordinary Hires 2 months before	-0.26 *	0.14	Very small firm*Hires 12 months before	0.14	0.14
Ordinary Hires 3 months before	-0.06	0.13	Very small firm*Separations0 month before	-0.43 *	0.14
Ordinary Hires 4 months before	-0.08	0.14	Very small firm*Separations 1 months before	0.13	0.12
Ordinary Hires 5 months before	-0.11	0.12	Very small firm*Separations 2 months before	0.31 *	0.19
Ordinary Hires 6 months before	0.17	0.13	Very small firm*Separations 3 months before	-0.11	0.13
Ordinary Hires 7 months before	0.06	0.13	Very small firm*Separations 4 months before	-0.16	0.12
Ordinary Hires 8 months before	0.01	0.13	Very small firm*Separations 5 months before	-0.21	0.15
Ordinary Hires 9 months before	-0.29 *	0.15	Very small firm*Separations 6 months before	-0.28 *	0.14
Ordinary Hires 10 months before	0.02	0.12	Very small firm*Separations 7 months before	0.00	0.15
Ordinary Hires 11 months before	0.07	0.11	Very small firm*Separations 8 months before	-0.23 *	0.13
Ordinary Hires 12 months before	-0.12	0.14	Very small firm*Separations 9 months before	0.10	0.15
Total number of employees 13 months before	0.07	0.06	Very small firm*Separations 10 months before	-0.22	0.14
Hire rate 1 month before	-0.50	0.66	Very small firm*Separations 11 months before	-0.14	0.13
Hire rate 2 months before	0.25	0.44	Very small firm*Separations 12 months before	-0.01	0.12
Hire rate 3 months before	0.35	0.33	Experienced with Subsidised Employees	0.96 *	0.19
Hire rate 4 months before	0.38	0.44	Subsidised Hires 1 month before	0.80	0.93
Hire rate 5 months before	0.09	0.38	Subsidised Separations 1 month before	2.04 *	0.52
Hire rate 6 months before	0.23	0.34	Subsidised Separations 2 months before	0.35	0.63
Hire rate 7 months before	-0.19	0.42	Subsidised Hires 2 months before	0.81	0.54
Hire rate 8 months before	0.03	0.31	Subsidised Separations 3 months before	0.67	0.65
Hire rate 9 months before	0.41	0.35	Subsidised Hires 3 months before	0.51	0.52
Hire rate 10 months before	0.46	0.35	Subsidised Employees 4 months before	0.07	0.56
Hire rate 11 months before	0.17	0.29	Other Non Ordinary Separations 1 month before	0.01	0.35
Hire rate 12 months before	-0.11	0.31	Other Non Ordinary Hires 1 month before	0.57	0.43
Separations 1 month before	0.12	0.13	Other Non Ordinary Separations 2 months before	-0.42	0.63
Separations 2 months before	-0.06	0.12	Other Non Ordinary Hires 2 months before	-0.57	0.82
Separations 3 months before	-0.32 *	0.18	Other Non Ordinary Separations 3 months before	-0.60	0.63
Separations 4 months before	0.11	0.12	Other Non Ordinary Hires 3 months before	0.25	0.38
Separations 5 months before	0.07	0.11	Other Non Ordinary Employees 4 months before	0.30 *	0.17
Separations 6 months before	0.05	0.13	Local Unemployment Rate 1 month before	8.25 *	2.17
Separations 7 months before	0.11	0.12	Local Unemployment Rate 2 months before	-10.28	17.09
Separations 8 months before	-0.12	0.12	Local Unemployment Rate 3 months before	1.37	15.45
Separations 9 months before	0.10	0.12	Local Unemployment Rate of Very Short-term	-2.41	1.63
Separations 10 months before	-0.11	0.15	Local Unemployment Rate of Short-term	2.02	2.31
Separations 11 months before	0.08	0.13	Local Unemployment Rate of Long-term	-4.49	3.69
Separations 12 months before	0.08	0.12	Turnover 2004	0.00	0.00
Separations 13 months before	-0.04	0.11	Turnover 2005	0.00	0.00
Very small firm	-0.19	0.36	Result 2004	0.00	0.00
Very small firm*Hires 1 month before	0.13	0.20	Result 2005	0.00	0.00
Very small firm*Hires 2 months before	0.27 *	0.16	Very small firm*Turnover 2004	0.00	0.00
Very small firm*Hires 3 months before	0.10	0.14	Very small firm*Turnover 2005	0.00	0.00
Very small firm*Hires 4 months before	0.01	0.17	Very small firm*Result 2004	0.00	0.00
Very small firm*Hires 5 months before	0.22 *	0.14	Payroll	0.00 *	0.00
Very small firm*Hires 6 months before	-0.01	0.15	Age of firm	-0.04 *	0.01
Very small firm*Hires 7 months before	0.07	0.14	Frequency of Low Educated Employees 13	-0.34	0.23
Very small firm*Hires 8 months before	0.13	0.14	Frequency of Low Educated Employees 1	0.58 *	0.26
Very small firm*Hires 9 months before	0.33 *	0.15	Frequency of Previously No Unemployed	-0.19	0.24
Very small firm*Hires 10 months before	-0.02	0.14	Frequency of Previously No Unemployed	-0.47 *	0.23

Continues

Table A.1.- *Continued*

Covariates	Coef.	SE.
Frequency of Previously No Unemployed Employees 1	-0.48 *	0.23
nFrequency of Previously No Unemployed Employees q1	0.22	0.18
Stock Variation	0.00	0.00
Material fixed Assets	0.00	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00	0.00
Total Outstanding Debt	0.00	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00	0.00
Purchase of contracted and subcontracted Employees	0.00	0.00
Temporary Employment Agency	0.00	0.00
Food; Beverage Industry	1.00 *	0.57
Textile; Clothing; Leather Industry 19	1.60 *	0.66
Wooden; Paper; Graphic Industry	1.07 *	0.46
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	1.17 *	0.57
Iron; Metal; Machine Industry	1.27 *	0.33
Electronic Industry	0.92 *	0.56
Vehicle; Furniture; Other Industry	0.64	0.71
Vehicle Trade	0.86 *	0.34
Wholesale Trade (except Vehicles)	1.31 *	0.28
Retail Trade; Reparation (except Vehicles)	0.54 *	0.28
Hotel; Restaurant	0.44	0.33
Transport	0.57 *	0.33
Real State; Vehicle. Machines & Equip Renting	0.84 *	0.38
IT; Research; Development	0.95 *	0.36
Other Business Services	0.95 *	0.27
Frederiksberg Municipality	0.69	1.17
Copenhagen County	-1.67 *	0.55
Frederiksborg County	-4.53 *	1.44
Roskilde County	-3.64 *	1.41
West Zealand County	-2.97	3.33
Storstrøm County	-8.77	7.72
Bornholm County	1.47	9.50
Funen County	-0.53	1.78
Southern Denmark County	-3.66 *	1.62
Ribe County	-5.13	4.57
Vejle County	-2.97	2.27
Ringkøbing County	-4.91 *	1.72
Århus County	0.76	1.05
Viborg County	-5.48 *	2.49
North Jutland County	0.78	2.84
Constant	7.92	7.94
Number of treated firms	293	
Number of control firms	66,211	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in February 2006.

\*significant at the 10 per cent level.

Table A.2. Logit Estimates for Firms Eligible to New Wage Subsidy in March 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.00	0.13	Very small firm*Hires 9	0.05	0.12
Ordinary Hires 2 months before	-0.13	0.15	Very small firm*Hires 10	0.31 *	0.13
Ordinary Hires 3 months before	0.04	0.12	Very small firm*Hires 11	0.31 *	0.10
Ordinary Hires 4 months before	0.02	0.12	Very small firm*Hires 12	0.04	0.11
Ordinary Hires 5 months before	0.01	0.13	Very small firm*Separations0	-0.27 *	0.13
Ordinary Hires 6 months before	-0.12	0.13	Very small firm*Separations 1	0.05	0.10
Ordinary Hires 7 months before	0.07	0.10	Very small firm*Separations 2	0.00	0.12
Ordinary Hires 8 months before	-0.01	0.11	Very small firm*Separations 3	-0.27 *	0.13
Ordinary Hires 9 months before	0.10	0.11	Very small firm*Separations 4	-0.39 *	0.14
Ordinary Hires 10 months before	-0.02	0.13	Very small firm*Separations 5	-0.15	0.12
Ordinary Hires 11 months before	-0.08	0.09	Very small firm*Separations 6	-0.12	0.14
Ordinary Hires 12 months before	0.08	0.11	Very small firm*Separations 7	-0.11	0.14
Ordinary Hires 13 months before	0.16 *	0.07	Very small firm*Separations 8	0.05	0.15
Total number of employees 14 months before	0.11 *	0.05	Very small firm*Separations 9	-0.06	0.12
Hire rate 1 month before	0.13	0.47	Very small firm*Separations 10	-0.13	0.12
Hire rate 2 months before	0.90 *	0.41	Very small firm*Separations 11	-0.38 *	0.13
Hire rate 3 months before	0.69 *	0.37	Very small firm*Separations 12	-0.32 *	0.11
Hire rate 4 months before	0.18	0.31	Experienced with Subsidised Employees	1.20 *	0.17
Hire rate 5 months before	0.57 *	0.33	Subsidised Hires 1	1.12 *	0.61
Hire rate 6 months before	0.49 *	0.30	Subsidised Separations 1	2.34 *	0.46
Hire rate 7 months before	0.13	0.28	Subsidised Separations 2	0.26	0.51
Hire rate 8 months before	0.00	0.30	Subsidised Hires 2	0.35	0.57
Hire rate 9 months before	0.33	0.32	Subsidised Separations 3	0.00	0.59
Hire rate 10 months before	0.28	0.34	Subsidised Hires 3	0.81	0.53
Hire rate 11 months before	0.32	0.28	Subsidised Employees 4	0.07	0.45
Hire rate 12 months before	0.42	0.32	Other Non Ordinary Separations 1	0.32	0.29
Separations 1 month before	0.13	0.12	Other Non Ordinary Hires 1	0.57	0.43
Separations 2 months before	0.02	0.11	Other Non Ordinary Separations 2	-0.50	0.51
Separations 3 months before	-0.06	0.11	Other Non Ordinary Hires 2	0.22	0.44
Separations 4 months before	0.20 *	0.11	Other Non Ordinary Separations 3	-0.12	0.50
Separations 5 months before	0.03	0.12	Other Non Ordinary Hires 3	0.28	0.43
Separations 6 months before	-0.03	0.11	Other Non Ordinary Employees 4	0.13	0.20
Separations 7 months before	-0.13	0.12	Local Unemployment 1	8.62 *	4.50
Separations 8 months before	-0.06	0.13	Local Unemployment 2	-7.83 *	4.05
Separations 9 months before	-0.23 *	0.14	Local Unemployment 3	0.76	1.73
Separations 10 months before	-0.11	0.11	Local Unemploy. Very Short-term Unemployed q1	-0.42	0.55
Separations 11 months before	-0.05	0.11	Local Unemploy. of Short-term Unemployed q1	0.08	0.67
Separations 12 months before	0.07	0.11	Local Unemploy. of Long-term Unemployed q1	-0.83	1.03
Separations 13 months before	0.09	0.09	Turnover 2004	0.00	0.00
Separations 14 months before	-0.18 *	0.07	Turnover 2005	0.00	0.00
Very small firm	-0.05	0.33	Result 2004	0.00	0.00
Very small firm*Hires 1	0.07	0.16	Result 2005	0.00	0.00
Very small firm*Hires 2	0.02	0.17	Very small firm*Turnover 2004	0.00	0.00
Very small firm*Hires 3	0.11	0.13	Very small firm*Turnover 2005	0.00	0.00
Very small firm*Hires 4	0.09	0.13	Very small firm*Result 2004	0.00	0.00
Very small firm*Hires 5	0.11	0.15	lgag	0.00 *	0.00
Very small firm*Hires 6	0.31 *	0.14	Payroll	0.00	0.00
Very small firm*Hires 7	0.15	0.12	Age of firm	-0.01 *	0.01
Very small firm*Hires 8	0.27 *	0.12	Frequency of Low Educated Employees 13	-0.01	0.20

Continues

Table A.2.- *Continued*

Covariates	Coef.	SE.
Frequency of Low Educated Employees 1	0.08	0.23
Frequency of Previously No Unemployed Employees 13	-0.22	0.24
Frequency of Previously No Unemployed Employees 1	-0.52 *	0.20
nFrequency of Previously No Unemployed Employees q1	-0.07	0.17
Stock Variation	0.00 *	0.00
Material fixed Assets	0.00	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00	0.00
Total Outstanding Debt	0.00	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00 *	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00	0.00
Purchase of contracted and subcontracted Employees	0.00	0.00
Temporary Employment Agency	0.00	0.00
Food; Beverage Industry	0.66	0.57
Textile; Clothing; Leather Industry	-0.25	1.08
Wooden; Paper; Graphic Industry	0.77 *	0.41
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	0.30	0.74
Iron; Metal; Machine Industry	0.74 *	0.32
Electronic Industry	-0.07	0.74
Vehicle; Furniture; Other Industry	0.30	0.51
Vehicle Trade	0.72 *	0.29
Wholesale Trade (except Vehicles)	0.64 *	0.26
Retail Trade; Reparation (except Vehicles)	0.61 *	0.22
Hotel; Restaurant	0.16	0.28
Transport	0.16	0.29
Real State; Vehicle. Machines & Equip Renting	0.52	0.35
IT; Research; Development	0.47	0.33
Other Business Services	0.36	0.24
Frederiksberg Municipality	-0.12	0.71
Copenhagen County	-1.92 *	0.69
Frederiksborg County	-0.61	0.56
Roskilde County	-0.14	0.50
West Zealand County	-3.86 *	2.03
Storstrøm County	-2.81	2.56
Bornholm County	-2.73	2.19
Funen County	1.29 *	0.60
Southern Denmark County	1.25 *	0.54
Ribe County	-0.53	1.11
Vejle County	0.81	0.61
Ringkøbing County	0.90	0.59
Århus County	0.28	0.54
Viborg County	-1.01	1.19
North Jutland County	-0.99	1.40
Constant	-4.84 *	1.95
Number of treated firms	344	
Number of control firms	65,446	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in March 2006.  
 \*significant at the 10 per cent level.

Table A.3. Logit Estimates for Firms Eligible to New Wage Subsidy in April 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.10	0.11	Very small firm*Hires 7	0.05	0.13
Ordinary Hires 2 months before	0.08	0.14	Very small firm*Hires 8	0.34 *	0.11
Ordinary Hires 3 months before	0.04	0.12	Very small firm*Hires 9	0.20 *	0.12
Ordinary Hires 4 months before	0.12	0.15	Very small firm*Hires 10	0.37 *	0.13
Ordinary Hires 5 months before	-0.10	0.12	Very small firm*Hires 11	0.24 *	0.14
Ordinary Hires 6 months before	-0.04	0.14	Very small firm*Hires 12	0.11	0.09
Ordinary Hires 7 months before	0.08	0.11	Very small firm*Separations 0	-0.36 *	0.13
Ordinary Hires 8 months before	-0.06	0.11	Very small firm*Separations 1	0.33 *	0.18
Ordinary Hires 9 months before	-0.01	0.11	Very small firm*Separations 2	0.03	0.14
Ordinary Hires 10 months before	0.09	0.11	Very small firm*Separations 3	0.09	0.15
Ordinary Hires 11 months before	0.08	0.12	Very small firm*Separations 4	-0.04	0.15
Ordinary Hires 12 months before	0.29 *	0.10	Very small firm*Separations 5	0.01	0.12
Ordinary Hires 13 months before	0.09	0.07	Very small firm*Separations 6	-0.02	0.13
Ordinary Hires 14 months before	0.16 *	0.07	Very small firm*Separations 7	-0.26 *	0.14
Total number of employees 15 months before	0.20 *	0.05	Very small firm*Separations 8	-0.20 *	0.12
Hire rate 1 month before	0.39	0.43	Very small firm*Separations 9	-0.54 *	0.12
Hire rate 2 months before	0.27	0.40	Very small firm*Separations 10	-0.11	0.14
Hire rate 3 months before	0.53	0.46	Very small firm*Separations 11	-0.26 *	0.13
Hire rate 4 months before	-0.44	0.49	Very small firm*Separations 12	0.04	0.15
Hire rate 5 months before	0.70 *	0.33	Experienced with Subsidised Employees	1.35 *	0.17
Hire rate 6 months before	1.18 *	0.33	Subsidised Hires 1	0.58	0.80
Hire rate 7 months before	-0.02	0.41	Subsidised Separations 1	1.86 *	0.57
Hire rate 8 months before	-0.13	0.36	Subsidised Separations 2	0.26	0.74
Hire rate 9 months before	0.10	0.37	Subsidised Hires 2	0.64	0.50
Hire rate 10 months before	-0.20	0.38	Subsidised Separations 3	0.87	0.68
Hire rate 11 months before	0.28	0.37	Subsidised Hires 3	0.43	0.65
Hire rate 12 months before	-0.06	0.35	Subsidised Employees 4	-0.29	0.61
Separations 1 month before	0.08	0.12	Other Non Ordinary Separations 1	-0.51	0.64
Separations 2 months before	-0.31 *	0.18	Other Non Ordinary Hires 1	-0.26	0.68
Separations 3 months before	-0.09	0.14	Other Non Ordinary Separations 2	-0.18	0.65
Separations 4 months before	-0.29 *	0.15	Other Non Ordinary Hires 2	0.23	0.54
Separations 5 months before	-0.02	0.13	Other Non Ordinary Separations 3	0.68	0.45
Separations 6 months before	-0.10	0.11	Other Non Ordinary Hires 3	0.23	0.44
Separations 7 months before	-0.13	0.11	Other Non Ordinary Employees 4	0.12	0.22
Separations 8 months before	0.01	0.12	Local Unemployment Rate 1	0.50	2.87
Separations 9 months before	0.08	0.10	Local Unemployment Rate 2	6.88	6.80
Separations 10 months before	0.18 *	0.10	Local Unemployment Rate 3	-5.98	5.13
Separations 11 months before	-0.08	0.13	Local Unemployment Rate of Very Short-term	1.83 *	0.77
Separations 12 months before	-0.17	0.11	Local Unemployment Rate of Short-term	-1.23 *	0.50
Separations 13 months before	-0.23	0.14	Local Unemployment Rate of Long-term	0.14	0.82
Separations 14 months before	-0.30 *	0.08	Turnover 2004	0.00 *	0.00
Separations 15 months before	-0.14 *	0.06	Turnover 2005	0.00	0.00
Very small firm	-0.13	0.38	Result 2004	0.00 *	0.00
Very small firm*Hires 1	-0.13	0.15	Result 2005	0.00	0.00
Very small firm*Hires 2	0.07	0.15	Very small firm*Turnover 2004	0.00	0.00
Very small firm*Hires 3	-0.08	0.15	Very small firm*Turnover 2005	0.00	0.00
Very small firm*Hires 4	0.17	0.16	Very small firm*Result 2004	0.00	0.00
Very small firm*Hires 5	0.14	0.13	lgag	0.00	0.00
Very small firm*Hires 6	0.14	0.15	Payroll	0.00	0.00

Continues

Table A.3.- *Continued*

Covariates	Coef.	SE.
Age of firm	-0.02 *	0.01
Frequency of Low Educated Employees 13	0.04	0.24
Frequency of Low Educated Employees 1	0.24	0.26
Frequency of Previously No Unemployed Employees 13	-0.07	0.28
Frequency of Previously No Unemployed Employees 1	-0.05	0.26
nFrequency of Previously No Unemployed Employees q1	0.06	0.19
Stock Variation	0.00	0.00
Material fixed Assets	0.00	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00 *	0.00
Total Outstanding Debt	0.00	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00 *	0.00
Purchase of contracted and subcontracted Employees	0.00 *	0.00
Temporary Employment Agency	0.00	0.00
Food; Beverage Industry	0.46	0.49
Textile; Clothing; Leather Industry 19	0.86	0.57
Wooden; Paper; Graphic Industry	0.22	0.46
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	1.36 *	0.44
Iron; Metal; Machine Industry	-0.71	0.52
Electronic Industry	-1.01	1.09
Vehicle; Furniture; Other Industry	0.11	0.60
Vehicle Trade	0.67 *	0.27
Wholesale Trade (except Vehicles)	0.58 *	0.24
Retail Trade; Reparation (except Vehicles)	0.10	0.22
Hotel; Restaurant	-0.50 *	0.29
Transport	-0.43	0.33
Real State; Vehicle. Machines & Equip Renting	-0.32	0.48
IT; Research; Development	0.56	0.35
Other Business Services	-0.04	0.25
Frederiksberg Municipality	1.25	0.92
Copenhagen County	0.59	1.14
Frederiksborg County	0.31	0.76
Roskilde County	1.09	0.93
West Zealand County	-2.35	2.14
Storstrøm County	-0.41	1.88
Bornholm County	0.57	3.07
Funen County	-0.69	0.69
Southern Denmark County	-0.35	0.72
Ribe County	-0.90	1.01
Vejle County	-1.06	1.13
Ringkøbing County	-0.65	1.15
Århus County	-0.32	0.65
Viborg County	-2.15	1.12
North Jutland County	-1.29	1.88
Constant	-13.17 *	2.95
Number of treated firms	274	
Number of control firms	67,183	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in April 2006.

\*significant at the 10 per cent level.

Table A.4. Logit Estimates for Firms Eligible to New Wage Subsidy in May 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.07	0.11	Very small firm*Hires 5	0.24 *	0.15
Ordinary Hires 2 months before	-0.16	0.11	Very small firm*Hires 6	0.25 *	0.12
Ordinary Hires 3 months before	-0.08	0.10	Very small firm*Hires 7	0.14	0.13
Ordinary Hires 4 months before	0.15	0.11	Very small firm*Hires 8	0.05	0.11
Ordinary Hires 5 months before	-0.15	0.13	Very small firm*Hires 9	0.05	0.12
Ordinary Hires 6 months before	-0.16	0.12	Very small firm*Hires 10	-0.02	0.11
Ordinary Hires 7 months before	0.20 *	0.12	Very small firm*Hires 11	-0.13	0.12
Ordinary Hires 8 months before	-0.02	0.10	Very small firm*Hires 12	-0.06	0.10
Ordinary Hires 9 months before	0.11	0.11	Very small firm*Separations0	-0.11	0.14
Ordinary Hires 10 months before	0.16 *	0.09	Very small firm*Separations 1	0.05	0.10
Ordinary Hires 11 months before	0.16	0.10	Very small firm*Separations 2	0.04	0.15
Ordinary Hires 12 months before	0.29 *	0.10	Very small firm*Separations 3	-0.38 *	0.13
Ordinary Hires 13 months before	0.17 *	0.06	Very small firm*Separations 4	-0.42 *	0.10
Ordinary Hires 14 months before	0.00	0.07	Very small firm*Separations 5	0.18	0.16
Ordinary Hires 15 months before	0.20 *	0.05	Very small firm*Separations 6	-0.12	0.11
Total number of employees 16 months before	0.09 *	0.04	Very small firm*Separations 7	0.00	0.09
Hire rate 1 month before	-0.28	0.38	Very small firm*Separations 8	-0.01	0.15
Hire rate 2 months before	0.63 *	0.29	Very small firm*Separations 9	-0.10	0.11
Hire rate 3 months before	0.00	0.32	Very small firm*Separations 10	-0.05	0.12
Hire rate 4 months before	0.36	0.37	Very small firm*Separations 11	-0.02	0.11
Hire rate 5 months before	-0.01	0.38	Very small firm*Separations 12	0.08	0.12
Hire rate 6 months before	0.02	0.29	Experienced with Subsidised Employees	1.60 *	0.15
Hire rate 7 months before	-0.49	0.36	Subsidised Separations 1	1.57 *	0.32
Hire rate 8 months before	0.21	0.29	Subsidised Separations 2	0.37	0.41
Hire rate 9 months before	-0.06	0.28	Subsidised Hires 2	0.82 *	0.40
Hire rate 10 months before	0.33	0.27	Subsidised Separations 3	0.22	0.48
Hire rate 11 months before	0.72 *	0.29	Subsidised Hires 3	1.43 *	0.35
Hire rate 12 months before	-0.24	0.31	Subsidised Employees 4	0.24	0.33
Separations 1 month before	-0.12	0.13	Other Non Ordinary Separations 1	-0.24	0.21
Separations 2 months before	0.02	0.10	Other Non Ordinary Hires 1	0.55	0.37
Separations 3 months before	-0.15	0.13	Other Non Ordinary Separations 2	-1.04	0.67
Separations 4 months before	0.12	0.12	Other Non Ordinary Hires 2	0.02	0.43
Separations 5 months before	0.17 *	0.09	Other Non Ordinary Separations 3	0.13	0.45
Separations 6 months before	-0.25 *	0.14	Other Non Ordinary Hires 3	0.50	0.34
Separations 7 months before	-0.01	0.10	Other Non Ordinary Employees 4	0.35 *	0.15
Separations 8 months before	0.01	0.08	Local Unemployment Rate 1	-3.45	3.74
Separations 9 months before	-0.20	0.14	Local Unemployment Rate 2	9.57 *	5.58
Separations 10 months before	0.06	0.10	Local Unemployment Rate 3	-5.30 *	2.04
Separations 11 months before	-0.10	0.11	Local Unemployment Rate of Very Short-term	0.15	0.98
Separations 12 months before	-0.11	0.10	Local Unemployment Rate of Short-term	0.12	1.00
Separations 13 months before	-0.22 *	0.10	Local Unemployment Rate of Long-term	-0.21	1.23
Separations 14 months before	-0.16 *	0.07	Turnover 2004	0.00	0.00
Separations 15 months before	-0.22 *	0.07	Turnover 2005	0.00	0.00
Separations 16 month before	-0.09	0.06	Result 2004	0.00	0.00
Very small firm	0.27	0.29	Result 2005	0.00	0.00
Very small firm*Hires 1	0.35 *	0.13	Very small firm*Turnover 2004	0.00	0.00
Very small firm*Hires 2	0.22 *	0.11	Very small firm*Turnover 2005	0.00	0.00
Very small firm*Hires 3	0.22 *	0.11	Very small firm*Result 2004	0.00	0.00
Very small firm*Hires 4	-0.12	0.14	lgag	0.00 *	0.00

*Continues*



Table A.4.- *Continued*

Covariates	Coef.	SE.
Payroll	0.00	0.00
Age of firm	-0.02 *	0.01
Frequency of Low Educated Employees 13	0.15	0.20
Frequency of Low Educated Employees 1	0.00	0.23
Frequency of Previously No Unemployed Employees 13	-0.07	0.22
Frequency of Previously No Unemployed Employees 1	-0.38 *	0.21
nFrequency of Previously No Unemployed Employees q1	0.36 *	0.16
Stock Variation	0.00	0.00
Material fixed Assets	0.00	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00	0.00
Total Outstanding Debt	0.00	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00	0.00
Purchase of contracted and subcontracted Employees	0.00	0.00
Temporary Employment Agency	0.00 *	0.00
Food; Beverage Industry	0.04	0.53
Textile; Clothing; Leather Industry 19	0.78	0.56
Wooden; Paper; Graphic Industry	0.66 *	0.34
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	0.23	0.63
Iron; Metal; Machine Industry	0.25	0.32
Electronic Industry	0.47	0.48
Vehicle; Furniture; Other Industry	0.25	0.49
Vehicle Trade	0.54 *	0.26
Wholesale Trade (except Vehicles)	0.39 *	0.22
Retail Trade; Reparation (except Vehicles)	-0.06	0.22
Hotel; Restaurant	-0.12	0.26
Transport	0.01	0.26
Real State; Vehicle. Machines & Equip Renting	-0.02	0.32
IT; Research; Development	0.41	0.30
Other Business Services	0.05	0.22
Frederiksberg Municipality	-0.93	0.83
Copenhagen County	-0.61	0.83
Frederiksborg County	0.27	1.16
Roskilde County	-0.12	1.08
West Zealand County	-0.55	0.86
Storstrøm County	-1.55	1.62
Bornholm County	-5.25	5.95
Funen County	-2.72	2.24
Southern Denmark County	-1.79	1.28
Ribe County	-0.18	1.25
Vejle County	0.64	1.31
Ringkøbing County	0.71	1.25
Århus County	-0.11	0.88
Viborg County	-1.61	1.41
North Jutland County	-6.05	5.28
Constant	-9.05 *	4.27
Number of treated firms	383	
Number of control firms	68,533	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in May 2006.

\*significant at the 10 per cent level.

Table A.5. Logit Estimates for Firms Eligible to New Wage Subsidy in June 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	-0.06	0.10	Very small firm*Hires 3	0.21 *	0.12
Ordinary Hires 2 months before	-0.27 *	0.13	Very small firm*Hires 4	0.39 *	0.14
Ordinary Hires 3 months before	-0.06	0.11	Very small firm*Hires 5	0.28 *	0.13
Ordinary Hires 4 months before	-0.29 *	0.13	Very small firm*Hires 6	0.12	0.11
Ordinary Hires 5 months before	0.02	0.11	Very small firm*Hires 7	0.20 *	0.12
Ordinary Hires 6 months before	0.03	0.09	Very small firm*Hires 8	-0.16	0.14
Ordinary Hires 7 months before	0.04	0.09	Very small firm*Hires 9	0.12	0.15
Ordinary Hires 8 months before	0.09	0.10	Very small firm*Hires 10	0.14	0.11
Ordinary Hires 9 months before	-0.11	0.14	Very small firm*Hires 11	0.18	0.13
Ordinary Hires 10 months before	0.17 *	0.09	Very small firm*Hires 12	-0.24 *	0.11
Ordinary Hires 11 months before	-0.02	0.12	Very small firm*Separations0	-0.27 *	0.12
Ordinary Hires 12 months before	0.23 *	0.10	Very small firm*Separations 1	-0.13	0.11
Ordinary Hires 13 months before	0.03	0.08	Very small firm*Separations 2	-0.11	0.13
Ordinary Hires 14 months before	0.02	0.07	Very small firm*Separations 3	-0.31 *	0.15
Ordinary Hires 15 months before	-0.05	0.07	Very small firm*Separations 4	-0.25 *	0.14
Ordinary Hires 16 months before	0.04	0.07	Very small firm*Separations 5	0.03	0.11
Total number of employees 17 months before	0.07	0.05	Very small firm*Separations 6	-0.24 *	0.13
Hire rate 1 month before	-0.01	0.44	Very small firm*Separations 7	-0.17	0.11
Hire rate 2 months before	0.56	0.39	Very small firm*Separations 8	-0.20 *	0.11
Hire rate 3 months before	0.20	0.32	Very small firm*Separations 9	0.06	0.11
Hire rate 4 months before	0.55 *	0.28	Very small firm*Separations 10	-0.07	0.13
Hire rate 5 months before	-0.24	0.36	Very small firm*Separations 11	-0.04	0.11
Hire rate 6 months before	-0.03	0.36	Very small firm*Separations 12	-0.18	0.12
Hire rate 7 months before	-0.29	0.35	Experienced with Subsidised Employees	1.55 *	0.16
Hire rate 8 months before	0.28	0.37	Subsidised Separations 1	2.12 *	0.47
Hire rate 9 months before	0.38	0.32	Subsidised Separations 2	0.58	0.53
Hire rate 10 months before	-0.31	0.28	Subsidised Hires 2	-0.20	0.52
Hire rate 11 months before	-0.38	0.37	Subsidised Separations 3	0.40	0.68
Hire rate 12 months before	0.41	0.34	Subsidised Hires 3	0.69	0.47
Separations 1 month before	0.18	0.11	Subsidised Employees 4	-0.27	0.51
Separations 2 months before	0.21 *	0.11	Other Non Ordinary Separations 1	-0.43	0.45
Separations 3 months before	-0.07	0.11	Other Non Ordinary Hires 1	0.11	0.51
Separations 4 months before	0.16	0.12	Other Non Ordinary Separations 2	-0.33	0.40
Separations 5 months before	0.07	0.11	Other Non Ordinary Hires 2	0.48	0.33
Separations 6 months before	-0.06	0.11	Other Non Ordinary Separations 3	-0.24	0.46
Separations 7 months before	0.04	0.10	Other Non Ordinary Hires 3	0.14	0.42
Separations 8 months before	0.09	0.09	Other Non Ordinary Employees 4	0.28 *	0.17
Separations 9 months before	0.08	0.09	Local Unemployment Rate 1	-34.11 *	8.35
Separations 10 months before	-0.17 *	0.10	Local Unemployment Rate 2	33.10 *	9.71
Separations 11 months before	0.03	0.13	Local Unemployment Rate 3	-4.09	3.68
Separations 12 months before	-0.16 *	0.09	Local Unemployment Rate of Very Short-term	3.40 *	1.13
Separations 13 months before	0.03	0.11	Local Unemployment Rate of Short-term	-2.06 *	0.64
Separations 14 months before	-0.15 *	0.09	Local Unemployment Rate of Long-term	0.37	0.76
Separations 15 months before	-0.08	0.08	Turnover 2004	0.00	0.00
Separations 16 month before	-0.04	0.07	Turnover 2005	0.00	0.00
Separations 17 month before	-0.03	0.05	Result 2004	0.00	0.00
Very small firm	-0.25	0.31	Result 2005	0.00	0.00
Very small firm*Hires 1	0.27 *	0.14	Very small firm*Turnover 2004	0.00	0.00
Very small firm*Hires 2	0.35 *	0.15	Very small firm*Turnover 2005	0.00	0.00

Continues

Table A.5.- *Continued*

Covariates	Coef.	SE.
Very small firm*Result 2004	0.00	0.00
lgag	0.00	0.00
Payroll	0.00	0.00
Age of firm	-0.01 *	0.01
Frequency of Low Educated Employees 13	-0.16	0.22
Frequency of Low Educated Employees 1	0.58 *	0.24
Frequency of Previously No Unemployed Employees 13	0.05	0.23
Frequency of Previously No Unemployed Employees 1	-0.52 *	0.22
nFrequency of Previously No Unemployed Employees q1	0.07	0.17
Stock Variation	0.00	0.00
Material fixed Assets	0.00 *	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00 *	0.00
Total Outstanding Debt	0.00 *	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00 *	0.00
Purchase of contracted and subcontracted Employees	0.00	0.00
Temporary Employment Agency	0.00	0.00
Food; Beverage Industry	-0.77	0.77
Textile; Clothing; Leather Industry 19	0.25	0.61
Wooden; Paper; Graphic Industry	-1.26 *	0.70
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	-1.83	1.19
Iron; Metal; Machine Industry	-0.19	0.33
Electronic Industry	-1.17	1.00
Vehicle; Furniture; Other Industry	0.23	0.45
Vehicle Trade	-0.08	0.27
Wholesale Trade (except Vehicles)	-0.29	0.24
Retail Trade; Reparation (except Vehicles)	-0.03	0.20
Hotel; Restaurant	0.03	0.24
Transport	-0.28	0.26
Real State; Vehicle. Machines & Equip Renting	-0.30	0.40
IT; Research; Development	0.37	0.31
Other Business Services	0.07	0.21
Frederiksberg Municipality	1.86 *	0.83
Copenhagen County	1.13	1.16
Frederiksborg County	-6.46 *	1.13
Roskilde County	-5.53 *	1.11
West Zealand County	-2.83 *	1.37
Storstrøm County	-10.35 *	3.33
Bornholm County	-15.31 *	8.84
Funen County	-9.38 *	2.57
Southern Denmark County	-6.09 *	1.71
Ribe County	-17.80 *	3.26
Vejle County	-10.74 *	2.22
Ringkøbing County	-15.07 *	2.65
Århus County	-2.74 *	0.91
Viborg County	-12.65 *	2.56
North Jutland County	-2.46	4.06
Constant	-1.95	3.22
Number of treated firms	323	
Number of control firms	69,223	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in June 2006.

\*significant at the 10 per cent level.

**Table A.6. Logit Estimates for Firms Eligible to New Wage Subsidy in July 2006**

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	-0.09	0.12	Very small firm*Hires 1	0.15	0.18
Ordinary Hires 2 months before	-0.13	0.14	Very small firm*Hires 2	-0.05	0.15
Ordinary Hires 3 months before	0.01	0.14	Very small firm*Hires 3	-0.16	0.22
Ordinary Hires 4 months before	0.10	0.13	Very small firm*Hires 4	0.10	0.13
Ordinary Hires 5 months before	-0.15	0.12	Very small firm*Hires 5	0.32 *	0.15
Ordinary Hires 6 months before	-0.13	0.20	Very small firm*Hires 6	0.21	0.21
Ordinary Hires 7 months before	0.02	0.13	Very small firm*Hires 7	0.30 *	0.15
Ordinary Hires 8 months before	0.06	0.12	Very small firm*Hires 8	0.19	0.15
Ordinary Hires 9 months before	-0.07	0.14	Very small firm*Hires 9	0.17	0.17
Ordinary Hires 10 months before	-0.05	0.12	Very small firm*Hires 10	0.20	0.18
Ordinary Hires 11 months before	0.00	0.12	Very small firm*Hires 11	0.28 *	0.14
Ordinary Hires 12 months before	0.03	0.15	Very small firm*Hires 12	0.34 *	0.17
Ordinary Hires 13 months before	0.14 *	0.09	Very small firm*Separations0	-0.40 *	0.14
Ordinary Hires 14 months before	0.18 *	0.09	Very small firm*Separations 1	-0.09	0.14
Ordinary Hires 15 months before	0.16 *	0.09	Very small firm*Separations 2	0.04	0.12
Ordinary Hires 16 months before	0.04	0.09	Very small firm*Separations 3	0.21	0.15
Ordinary Hires 17 months before	0.23 *	0.08	Very small firm*Separations 4	0.00	0.22
Total number of employees 18 months before	0.14 *	0.06	Very small firm*Separations 5	-0.13	0.15
Hire rate 1 month before	0.73	0.52	Very small firm*Separations 6	-0.41 *	0.14
Hire rate 2 months before	1.05 *	0.39	Very small firm*Separations 7	-0.25	0.21
Hire rate 3 months before	0.48	0.51	Very small firm*Separations 8	-0.28 *	0.14
Hire rate 4 months before	-0.64	0.42	Very small firm*Separations 9	-0.14	0.15
Hire rate 5 months before	0.70 *	0.33	Very small firm*Separations 10	-0.31 *	0.15
Hire rate 6 months before	0.64	0.42	Very small firm*Separations 11	-0.25	0.19
Hire rate 7 months before	-0.03	0.39	Very small firm*Separations 12	0.13	0.15
Hire rate 8 months before	-0.12	0.42	Experienced with Subsidised Employees	1.60 *	0.18
Hire rate 9 months before	0.45	0.46	Subsidised Separations 1	1.25 *	0.48
Hire rate 10 months before	0.40	0.45	Subsidised Separations 2	-0.09	0.64
Hire rate 11 months before	-0.05	0.38	Subsidised Hires 2	0.87	0.55
Hire rate 12 months before	-0.48	0.52	Subsidised Separations 3	0.06	0.55
Separations 1 month before	0.11	0.12	Subsidised Hires 3	1.20 *	0.52
Separations 2 months before	0.10	0.14	Subsidised Employees 4	0.23	0.45
Separations 3 months before	-0.05	0.12	Other Non Ordinary Separations 1	-0.15	0.32
Separations 4 months before	-0.19	0.15	Other Non Ordinary Hires 1	-0.10	0.67
Separations 5 months before	-0.14	0.20	Other Non Ordinary Separations 2	-0.15	0.68
Separations 6 months before	0.05	0.14	Other Non Ordinary Hires 2	0.48	0.44
Separations 7 months before	0.11	0.12	Other Non Ordinary Separations 3	-1.10 *	0.56
Separations 8 months before	-0.01	0.17	Other Non Ordinary Hires 3	0.05	0.70
Separations 9 months before	0.16	0.11	Other Non Ordinary Employees 4	0.46 *	0.17
Separations 10 months before	-0.05	0.12	Local Unemployment Rate 1	-34.24 *	10.83
Separations 11 months before	0.10	0.13	Local Unemployment Rate 2	61.35 *	17.05
Separations 12 months before	-0.13	0.14	Local Unemployment Rate 3	-26.37 *	5.92
Separations 13 months before	-0.29 *	0.14	Local Unemployment Rate of Very Short-term	-0.66	1.56
Separations 14 months before	-0.44 *	0.13	Local Unemployment Rate of Short-term	1.91	1.40
Separations 15 months before	-0.16 *	0.09	Local Unemployment Rate of Long-term	-1.97 *	0.87
Separations 16 month before	-0.09	0.08	Turnover 2004	0.00	0.00
Separations 17 month before	-0.14 *	0.09	Turnover 2005	0.00	0.00
Separations 18 month before	-0.09	0.07	Result 2004	0.00	0.00
Very small firm	-0.42	0.38	Result 2005	0.00	0.00

*Continues*

Table A.6.- *Continued*

Covariates	Coef.	SE.
Very small firm*Turnover 2004	0.00	0.00
Very small firm*Turnover 2005	0.00	0.00
Very small firm*Result 2004	0.00	0.00
lgag	0.00	0.00
Payroll	0.00	0.00
Age of firm	-0.03 *	0.01
Frequency of Low Educated Employees 13	0.43	0.29
Frequency of Low Educated Employees 1	-0.35	0.31
Frequency of Previously No Unemployed Employees 13	-0.24	0.28
Frequency of Previously No Unemployed Employees 1	-0.34	0.28
nFrequency of Previously No Unemployed Employees q1	0.18	0.20
Stock Variation	0.00	0.00
Material fixed Assets	0.00 *	0.00
Financial fixed Assets	0.00	0.00
Securities and Liquidity	0.00 *	0.00
Total Outstanding Debt	0.00	0.00
Long-term Debt	0.00	0.00
Short-term Debt	0.00	0.00
Inflow of Immovable Property	0.00	0.00
Inflow of Machinery and Equipment	0.00	0.00
Purchase of contracted and subcontracted Employees	0.00	0.00
Temporary Employment Agency	0.00	0.00
Food; Beverage Industry	-0.37	0.95
Textile; Clothing; Leather Industry 19	1.70 *	0.59
Wooden; Paper; Graphic Industry	-0.04	0.58
Iron; Metal; Machine Industry	0.39	0.44
Electronic Industry	-0.45	1.02
Vehicle; Furniture; Other Industry	0.22	0.61
Vehicle Trade	0.84 *	0.34
Wholesale Trade (except Vehicles)	0.36	0.32
Retail Trade; Reparation (except Vehicles)	0.20	0.28
Hotel; Restaurant	0.47	0.31
Transport	0.52	0.34
Real State; Vehicle. Machines & Equip Renting	0.74 *	0.38
IT; Research; Development	0.52	0.44
Other Business Services	0.62 *	0.28
Frederiksberg Municipality	-0.80	0.89
Copenhagen County	-3.70 *	1.32
Frederiksborg County	0.74	0.92
Roskilde County	-2.63 *	1.46
West Zealand County	-4.85 *	1.25
Storstrøm County	0.04	1.94
Funen County	1.32	0.99
Southern Denmark County	-6.15 *	2.27
Ribe County	-1.65	1.40
Vejle County	-2.85 *	1.76
Ringkøbing County	0.95	1.57
Århus County	-2.85 *	1.04
Viborg County	-0.33	1.21
North Jutland County	1.88 *	1.09
Constant	-4.14	3.99
Number of treated firms	215	
Number of control firms	70,229	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in July 2006.

\*significant at the 10 per cent level.

**Table A.7. Logit Estimates for Firms Eligible to New Wage Subsidy in August 2006**

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	-0.17	0.19	Separations 19 month before	-0.06	0.07
Ordinary Hires 2 months before	-0.19	0.14	Very small firm	0.16	0.37
Ordinary Hires 3 months before	-0.02	0.14	Very small firm*Hires 1	0.38	0.25
Ordinary Hires 4 months before	0.04	0.16	Very small firm*Hires 2	0.42 *	0.15
Ordinary Hires 5 months before	-0.04	0.15	Very small firm*Hires 3	0.16	0.15
Ordinary Hires 6 months before	0.21 *	0.11	Very small firm*Hires 4	0.23	0.17
Ordinary Hires 7 months before	0.26 *	0.12	Very small firm*Hires 5	0.35 *	0.16
Ordinary Hires 8 months before	-0.10	0.17	Very small firm*Hires 6	-0.03	0.13
Ordinary Hires 9 months before	0.25 *	0.13	Very small firm*Hires 7	-0.09	0.16
Ordinary Hires 10 months before	-0.06	0.15	Very small firm*Hires 8	0.27	0.19
Ordinary Hires 11 months before	-0.05	0.12	Very small firm*Hires 9	0.04	0.15
Ordinary Hires 12 months before	0.11	0.12	Very small firm*Hires 10	0.25	0.16
Ordinary Hires 13 months before	0.15 *	0.08	Very small firm*Hires 11	0.45 *	0.13
Ordinary Hires 14 months before	0.17 *	0.07	Very small firm*Hires 12	0.15	0.12
Ordinary Hires 15 months before	0.05	0.08	Very small firm*Separations 0	-0.42 *	0.18
Ordinary Hires 16 months before	0.10	0.08	Very small firm*Separations 1	-0.14	0.11
Ordinary Hires 17 months before	0.06	0.07	Very small firm*Separations 2	-0.22	0.18
Ordinary Hires 18 months before	0.17 *	0.07	Very small firm*Separations 3	-0.44 *	0.16
Total number of employees 19 months before	0.11 *	0.05	Very small firm*Separations 4	-0.13	0.19
Hire rate 1 month before	0.89 *	0.54	Very small firm*Separations 5	-0.21	0.16
Hire rate 2 months before	0.48	0.39	Very small firm*Separations 6	0.02	0.16
Hire rate 3 months before	0.46	0.35	Very small firm*Separations 7	-0.05	0.13
Hire rate 4 months before	-0.21	0.38	Very small firm*Separations 8	-0.21	0.19
Hire rate 5 months before	0.07	0.30	Very small firm*Separations 9	-0.07	0.13
Hire rate 6 months before	0.41	0.32	Very small firm*Separations 10	-0.31 *	0.13
Hire rate 7 months before	0.43	0.47	Very small firm*Separations 11	-0.01	0.14
Hire rate 8 months before	-0.26	0.39	Very small firm*Separations 12	-0.44 *	0.13
Hire rate 9 months before	0.15	0.34	Experienced with Subsidised Employees	1.48 *	0.20
Hire rate 10 months before	-0.20	0.40	Subsidised Hires 1	-0.10	0.80
Hire rate 11 months before	-0.02	0.31	Subsidised Separations 1	1.86 *	0.35
Hire rate 12 months before	-0.48	0.34	Subsidised Separations 2	-0.05	0.47
Separations 1 month before	0.18	0.15	Subsidised Hires 2	0.66	0.50
Separations 2 months before	0.10	0.11	Subsidised Separations 3	-0.34	0.53
Separations 3 months before	-0.03	0.16	Subsidised Hires 3	1.07 *	0.45
Separations 4 months before	0.05	0.14	Subsidised Employees 4	0.78 *	0.36
Separations 5 months before	-0.15	0.16	Other Non Ordinary Separations 1	-0.71	0.55
Separations 6 months before	0.00	0.14	Other Non Ordinary Hires 1	0.42	0.51
Separations 7 months before	-0.12	0.15	Other Non Ordinary Separations 2	-0.50	0.60
Separations 8 months before	-0.16	0.12	Other Non Ordinary Hires 2	0.73	0.46
Separations 9 months before	-0.18	0.14	Other Non Ordinary Separations 3	0.18	0.49
Separations 10 months before	-0.09	0.12	Other Non Ordinary Hires 3	1.14 *	0.33
Separations 11 months before	-0.14	0.11	Other Non Ordinary Employees 4	0.23	0.22
Separations 12 months before	-0.08	0.13	Local Unemployment Rate 1	-8.29	8.64
Separations 13 months before	0.13	0.12	Local Unemployment Rate 2	5.54	20.51
Separations 14 months before	-0.09	0.07	Local Unemployment Rate 3	5.93	10.60
Separations 15 months before	-0.11	0.07	Local Unemployment Rate of Very Short-term	-2.30 *	1.28
Separations 16 month before	-0.08	0.06	Local Unemployment Rate of Short-term	2.13	1.58
Separations 17 month before	-0.08	0.07	Local Unemployment Rate of Long-term	-2.31	2.26
Separations 18 month before	-0.10	0.06	Turnover 2004	0.00 *	0.00

*Continues*

Table A.7.- *Continued*

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Turnover 2005	0.00 *	0.00	Ribe County	-1.00	1.05
Result 2004	0.00	0.00	Vejle County	1.25 *	0.70
Result 2005	0.00	0.00	Ringkøbing County	1.46 *	0.67
Very small firm*Turnover 2004	0.00 *	0.00	Århus County	-0.82	0.62
Very small firm*Turnover 2005	0.00 *	0.00	Viborg County	-1.48	1.67
Very small firm*Result 2004	0.00	0.00	North Jutland County	-7.33 *	3.61
lgag	0.00	0.00	Constant	-8.92 *	4.24
Payroll	0.00	0.00			
Age of firm	-0.02 *	0.01			
Frequency of Low Educated Employees 13	0.37	0.23			
Frequency of Low Educated Employees 1	-0.28	0.28			
Frequency of Previously No Unemployed	-0.21	0.24			
Frequency of Previously No Unemployed	-0.25	0.25			
nFrequency of Previously No Unemployed	-0.11	0.19			
Stock Variation	0.00	0.00			
Material fixed Assets	0.00 *	0.00			
Financial fixed Assets	0.00	0.00			
Securities and Liquidity	0.00	0.00			
Total Outstanding Debt	0.00	0.00			
Long-term Debt	0.00	0.00			
Short-term Debt	0.00	0.00			
Inflow of Immovable Property	0.00	0.00			
Inflow of Machinery and Equipment	0.00 *	0.00			
Purchase of contracted and subcontracted	0.00	0.00			
Temporary Employment Agency	0.00 *	0.00			
Food; Beverage Industry	-0.06	0.62			
Textile; Clothing; Leather Industry 19	0.19	1.04			
Wooden; Paper; Graphic Industry	1.10 *	0.35			
Chemical; Rubber; Plastic; Stone; Clay; Glass	1.27 *	0.57			
Iron; Metal; Machine Industry	-0.02	0.46			
Electronic Industry	0.73	0.68			
Vehicle; Furniture; Other Industry	0.56	0.58			
Vehicle Trade	0.52	0.33			
Wholesale Trade (except Vehicles)	0.80 *	0.26			
Retail Trade; Reparation (except Vehicles)	0.23	0.25			
Hotel; Restaurant	-0.42	0.35			
Transport	0.10	0.32			
Real State; Vehicle. Machines & Equip Renting	-0.50	0.52			
IT; Research; Development	0.54	0.38			
Other Business Services	0.51 *	0.25			
Frederiksberg Municipality	-3.21	3.55			
Copenhagen County	-3.48	3.49			
Frederiksborg County	-0.46	2.34			
Roskilde County	-0.85	2.04			
West Zealand County	-5.86 *	2.86			
Storstrøm County	-8.70 *	4.20			
Bornholm County	-20.11 *	6.33			
Funen County	-1.92 *	1.02			
Southern Denmark County	-2.56 *	1.38			
Number of treated firms				267	
Number of control firms				70,252	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in August 2006. \*significant at the 10 per cent level.

**Table A.8. Logit Estimates for Firms Eligible to New Wage Subsidy in September 2006**

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.05	0.12	Separations 18 month before	-0.06	0.07
Ordinary Hires 2 months before	0.07	0.12	Separations 19 month before	-0.24 *	0.08
Ordinary Hires 3 months before	0.18	0.12	Separations 20 month before	-0.15 *	0.08
Ordinary Hires 4 months before	0.07	0.11	Very small firm	-0.03	0.36
Ordinary Hires 5 months before	-0.04	0.14	Very small firm*Hires 1	-0.23	0.16
Ordinary Hires 6 months before	0.03	0.15	Very small firm*Hires 2	-0.08	0.13
Ordinary Hires 7 months before	0.14	0.11	Very small firm*Hires 3	-0.12	0.13
Ordinary Hires 8 months before	0.13	0.11	Very small firm*Hires 4	0.16	0.11
Ordinary Hires 9 months before	-0.14	0.15	Very small firm*Hires 5	0.22	0.17
Ordinary Hires 10 months before	0.00	0.13	Very small firm*Hires 6	0.11	0.16
Ordinary Hires 11 months before	0.12	0.13	Very small firm*Hires 7	0.00	0.13
Ordinary Hires 12 months before	0.06	0.12	Very small firm*Hires 8	-0.07	0.15
Ordinary Hires 13 months before	0.04	0.07	Very small firm*Hires 9	0.24	0.15
Ordinary Hires 14 months before	0.13	0.08	Very small firm*Hires 10	0.21	0.14
Ordinary Hires 15 months before	0.11	0.09	Very small firm*Hires 11	-0.06	0.16
Ordinary Hires 16 months before	0.03	0.09	Very small firm*Hires 12	0.03	0.13
Ordinary Hires 17 months before	0.20 *	0.07	Very small firm*Separations0	-0.20	0.14
Ordinary Hires 18 months before	0.14	0.09	Very small firm*Separations 1	0.02	0.11
Ordinary Hires 19 months before	0.16 *	0.07	Very small firm*Separations 2	0.12	0.13
Total number of employees 20 months before	0.11 *	0.05	Very small firm*Separations 3	-0.06	0.13
Hire rate 1 month before	0.58	0.51	Very small firm*Separations 4	0.10	0.15
Hire rate 2 months before	0.56	0.39	Very small firm*Separations 5	-0.06	0.13
Hire rate 3 months before	0.25	0.34	Very small firm*Separations 6	0.00	0.15
Hire rate 4 months before	0.47 *	0.27	Very small firm*Separations 7	0.19	0.14
Hire rate 5 months before	-0.02	0.42	Very small firm*Separations 8	0.00	0.11
Hire rate 6 months before	-0.14	0.35	Very small firm*Separations 9	-0.18	0.14
Hire rate 7 months before	0.24	0.34	Very small firm*Separations 10	-0.18	0.12
Hire rate 8 months before	0.16	0.44	Very small firm*Separations 11	-0.07	0.15
Hire rate 9 months before	0.16	0.44	Very small firm*Separations 12	-0.07	0.14
Hire rate 10 months before	-0.01	0.32	Experienced with Subsidised Employees	1.48 *	0.20
Hire rate 11 months before	0.48	0.42	Subsidised Hires 1	0.34	0.82
Hire rate 12 months before	-0.29	0.41	Subsidised Separations 1	1.46 *	0.55
Separations 1 month before	0.05	0.13	Subsidised Separations 2	0.66	0.59
Separations 2 months before	0.05	0.11	Subsidised Hires 2	0.85	0.62
Separations 3 months before	-0.13	0.12	Subsidised Separations 3	0.15	0.71
Separations 4 months before	0.00	0.13	Subsidised Hires 3	1.26 *	0.56
Separations 5 months before	-0.18	0.13	Subsidised Employees 4	0.09	0.57
Separations 6 months before	-0.11	0.11	Other Non Ordinary Separations 1	0.42	0.40
Separations 7 months before	-0.02	0.13	Other Non Ordinary Hires 1	0.73	0.53
Separations 8 months before	-0.15	0.13	Other Non Ordinary Separations 2	-0.26	0.65
Separations 9 months before	-0.07	0.10	Other Non Ordinary Hires 2	-1.11	0.76
Separations 10 months before	-0.03	0.11	Other Non Ordinary Separations 3	0.23	0.54
Separations 11 months before	0.04	0.10	Other Non Ordinary Hires 3	0.40	0.52
Separations 12 months before	-0.07	0.13	Other Non Ordinary Employees 4	0.14	0.20
Separations 13 months before	-0.14	0.13	Local Unemployment Rate 1	13.63 *	3.48
Separations 14 months before	-0.18 *	0.09	Local Unemployment Rate 2	-21.67 *	6.45
Separations 15 months before	-0.05	0.06	Local Unemployment Rate 3	5.66 *	3.48
Separations 16 month before	-0.08	0.06	Local Unemployment Rate of Very Short-term	-2.13 *	1.07
Separations 17 month before	-0.12	0.08	Local Unemployment Rate of Short-term	1.67	1.15

*Continues*



Table A.8.- *Continued*

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Local Unemployment Rate of Long-term	-0.76	1.17	Vejle County	-2.23 *	0.76
Turnover 2004	0.00	0.00	Ringkøbing County	-3.01 *	0.95
Turnover 2005	0.00	0.00	Viborg County	-3.99 *	0.97
Result 2004	0.00	0.00	North Jutland County	2.57 *	1.21
Result 2005	0.00	0.00	Constant	7.77 *	3.27
Very small firm*Turnover 2004	0.00	0.00			
Very small firm*Turnover 2005	0.00	0.00			
Very small firm*Result 2004	0.00	0.00			
lgag	0.00	0.00			
Payroll	0.00	0.00			
Age of firm	-0.01	0.01			
Frequency of Low Educated Employees 13	0.06	0.27			
Frequency of Low Educated Employees 1	-0.24	0.30			
Frequency of Previously No Unemployed	-0.27	0.25			
Frequency of Previously No Unemployed	0.17	0.26			
nFrequency of Previously No Unemployed	-0.10	0.19			
Stock Variation	0.00	0.00			
Material fixed Assets	0.00	0.00			
Financial fixed Assets	0.00	0.00			
Securities and Liquidity	0.00	0.00			
Total Outstanding Debt	0.00	0.00			
Long-term Debt	0.00	0.00			
Short-term Debt	0.00	0.00			
Inflow of Immovable Property	0.00	0.00			
Inflow of Machinery and Equipment	0.00	0.00			
Purchase of contracted and subcontracted	0.00 *	0.00			
Temporary Employment Agency	0.00	0.00			
Wooden; Paper; Graphic Industry	0.71 *	0.44			
Chemical; Rubber; Plastic; Stone; Clay; Glass	0.50	0.67			
Iron; Metal; Machine Industry	0.90 *	0.32			
Electronic Industry	0.76	0.53			
Vehicle; Furniture; Other Industry	1.24 *	0.45			
Vehicle Trade	0.61 *	0.31			
Wholesale Trade (except Vehicles)	0.77 *	0.27			
Retail Trade; Reparation (except Vehicles)	0.22	0.27			
Hotel; Restaurant	0.10	0.32			
Transport	0.23	0.31			
Real State; Vehicle. Machines & Equip Renting	-0.02	0.41			
IT; Research; Development	0.31	0.40			
Other Business Services	0.28	0.27			
Frederiksberg Municipality	-0.83	0.59			
Copenhagen County	-2.76 *	0.66			
Frederiksborg County	-2.88 *	0.61			
Roskilde County	-2.36 *	0.55			
West Zealand County	-1.60 *	0.54			
Storstrøm County	-2.92 *	1.77			
Funen County	1.29 *	0.33			
Southern Denmark County	-2.66 *	0.73			
Ribe County	-6.07 *	1.37			
Number of treated firms				253	
Number of control firms				70,202	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in September 2006. \*significant at the 10 per cent level.

**Table A.9. Logit Estimates for Firms Eligible to New Wage Subsidy in October 2006**

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	-0.10	0.12	Separations 17 month before	-0.22 *	0.10
Ordinary Hires 2 months before	-0.25 *	0.13	Separations 18 months before	-0.03	0.06
Ordinary Hires 3 months before	-0.24	0.17	Separations 19 months before	-0.06	0.07
Ordinary Hires 4 months before	-0.08	0.14	Separations 20 months before	-0.02	0.09
Ordinary Hires 5 months before	0.02	0.11	Separations 21 months before	-0.09	0.07
Ordinary Hires 6 months before	-0.18	0.15	Very small firm	0.16	0.39
Ordinary Hires 7 months before	-0.24 *	0.13	Very small firm*Hires 1	0.08	0.17
Ordinary Hires 8 months before	-0.12	0.15	Very small firm*Hires 2	0.42 *	0.14
Ordinary Hires 9 months before	-0.05	0.13	Very small firm*Hires 3	0.24	0.17
Ordinary Hires 10 months before	0.19	0.12	Very small firm*Hires 4	0.13	0.15
Ordinary Hires 11 months before	0.04	0.14	Very small firm*Hires 5	0.11	0.12
Ordinary Hires 12 months before	0.23 *	0.12	Very small firm*Hires 6	0.40 *	0.16
Ordinary Hires 13 months before	0.24 *	0.09	Very small firm*Hires 7	0.32 *	0.15
Ordinary Hires 14 months before	0.18 *	0.07	Very small firm*Hires 8	0.25	0.16
Ordinary Hires 15 months before	0.14 *	0.08	Very small firm*Hires 9	-0.04	0.17
Ordinary Hires 16 months before	0.09	0.07	Very small firm*Hires 10	-0.14	0.16
Ordinary Hires 17 months before	0.07	0.08	Very small firm*Hires 11	0.18	0.13
Ordinary Hires 18 months before	0.02	0.09	Very small firm*Hires 12	-0.06	0.16
Ordinary Hires 19 months before	0.12	0.08	Very small firm*Separations0	-0.29 *	0.13
Ordinary Hires 20 months before	0.11	0.08	Very small firm*Separations 1	-0.27 *	0.12
Total number of employees 21 months before	0.12 *	0.06	Very small firm*Separations 2	-0.32 *	0.13
Hire rate 1 month before	0.77	0.50	Very small firm*Separations 3	-0.25 *	0.15
Hire rate 2 months before	0.09	0.35	Very small firm*Separations 4	-0.18	0.15
Hire rate 3 months before	0.04	0.42	Very small firm*Separations 5	-0.03	0.14
Hire rate 4 months before	0.58 *	0.36	Very small firm*Separations 6	-0.20	0.14
Hire rate 5 months before	0.09	0.36	Very small firm*Separations 7	-0.26	0.17
Hire rate 6 months before	0.06	0.35	Very small firm*Separations 8	-0.19	0.15
Hire rate 7 months before	0.00	0.37	Very small firm*Separations 9	-0.09	0.11
Hire rate 8 months before	0.26	0.29	Very small firm*Separations 10	0.06	0.15
Hire rate 9 months before	1.29 *	0.39	Very small firm*Separations 11	-0.03	0.15
Hire rate 10 months before	0.19	0.38	Very small firm*Separations 12	-0.04	0.14
Hire rate 11 months before	0.42	0.31	Experienced with Subsidised Employees	1.39 *	0.19
Hire rate 12 months before	-0.17	0.47	Subsidised Hires 1	0.79	0.72
Separations 1 month before	0.10	0.12	Subsidised Separations 1	1.63 *	0.50
Separations 2 months before	0.30 *	0.13	Subsidised Separations 2	0.61	0.57
Separations 3 months before	0.21 *	0.12	Subsidised Hires 2	0.02	0.63
Separations 4 months before	0.05	0.14	Subsidised Separations 3	-0.24	0.68
Separations 5 months before	0.08	0.14	Subsidised Hires 3	-0.14	0.66
Separations 6 months before	0.01	0.14	Subsidised Employees 4	0.10	0.49
Separations 7 months before	0.02	0.12	Other Non Ordinary Separations 1	0.35	0.37
Separations 8 months before	0.09	0.14	Other Non Ordinary Hires 1	0.12	0.38
Separations 9 months before	0.03	0.11	Other Non Ordinary Separations 2	0.63 *	0.37
Separations 10 months before	0.01	0.10	Other Non Ordinary Hires 2	0.15	0.57
Separations 11 months before	-0.21	0.14	Other Non Ordinary Separations 3	0.19	0.48
Separations 12 months before	-0.11	0.11	Other Non Ordinary Hires 3	0.06	0.49
Separations 13 months before	-0.18	0.14	Other Non Ordinary Employees 4	0.13	0.20
Separations 14 months before	-0.14 *	0.08	Local Unemployment Rate 1	-7.52	5.86
Separations 15 months before	-0.17 *	0.08	Local Unemployment Rate 2	11.05	11.71
Separations 16 month before	-0.17 *	0.08	Local Unemployment Rate 3	-5.23	8.12

*Continues*

Table A.9.- *Continued*

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Local Unemployment Rate of Very Short-term	-0.73	2.81	Funen County	-0.12	1.96
Local Unemployment Rate of Short-term	0.59	1.84	Southern Denmark County	1.07	2.57
Local Unemployment Rate of Long-term	-0.15	1.07	Ribe County	-1.51	1.65
Turnover 2004	0.00	0.00	Vejle County	-1.35	1.98
Turnover 2005	0.00	0.00	Ringkøbing County	-1.93	1.57
Result 2004	0.00 *	0.00	Århus County	-1.02	0.72
Result 2005	0.00	0.00	Viborg County	-0.55	2.73
Very small firm*Turnover 2004	0.00	0.00	North Jutland County	3.12	2.59
Very small firm*Turnover 2005	0.00	0.00	Constant	-3.54	9.00
Very small firm*Result 2004	0.00	0.00			
lgag	0.00 *	0.00			
Payroll	0.00	0.00			
Age of firm	-0.01 *	0.01			
Frequency of Low Educated Employees 13	-0.10	0.23			
Frequency of Low Educated Employees 1	0.13	0.27			
Frequency of Previously No Unemployed	-0.02	0.25			
Frequency of Previously No Unemployed	-0.42 *	0.26			
nFrequency of Previously No Unemployed	0.24	0.20			
Stock Variation	0.00	0.00			
Material fixed Assets	0.00	0.00			
Financial fixed Assets	0.00	0.00			
Securities and Liquidity	0.00	0.00			
Total Outstanding Debt	0.00	0.00			
Long-term Debt	0.00	0.00			
Short-term Debt	0.00	0.00			
Inflow of Immovable Property	0.00	0.00			
Inflow of Machinery and Equipment	0.00 *	0.00			
Purchase of contracted and subcontracted	0.00 *	0.00			
Temporary Employment Agency	0.00	0.00			
Food; Beverage Industry	0.18	0.69			
Wooden; Paper; Graphic Industry	0.33	0.51			
Chemical; Rubber; Plastic; Stone; Clay; Glass	1.53 *	0.41			
Iron; Metal; Machine Industry	-0.12	0.43			
Electronic Industry	0.01	0.68			
Vehicle; Furniture; Other Industry	-1.03	1.05			
Vehicle Trade	0.24	0.35			
Wholesale Trade (except Vehicles)	0.46 *	0.27			
Retail Trade; Reparation (except Vehicles)	0.28	0.23			
Hotel; Restaurant	-0.07	0.29			
Transport	-0.37	0.35			
Real State; Vehicle. Machines & Equip Renting	0.66 *	0.33			
IT; Research; Development	0.33	0.39			
Other Business Services	-0.05	0.26			
Frederiksberg Municipality	-0.34	2.30			
Copenhagen County	0.11	1.75			
Frederiksborg County	-0.16	0.93			
Roskilde County	1.19	0.97			
West Zealand County	-0.31	0.91			
Storstrøm County	0.36	1.59			
Number of treated firms				237	
Number of control firms				70,610	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in October 2006. \*significant at the 10 per cent level.

Table A.10. Logit Estimates for Firms Eligible to New Wage Subsidy in November 2006

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Ordinary Hires 1 month before	0.09	0.15	Separations 16 months before	-0.07	0.09
Ordinary Hires 2 months before	-0.25 *	0.14	Separations 17 months before	-0.04	0.07
Ordinary Hires 3 months before	-0.08	0.14	Separations 18 months before	-0.03	0.09
Ordinary Hires 4 months before	-0.05	0.13	Separations 19 months before	0.03	0.07
Ordinary Hires 5 months before	-0.14	0.16	Separations 20 months before	0.05	0.08
Ordinary Hires 6 months before	0.01	0.13	Separations 21 months before	0.00	0.09
Ordinary Hires 7 months before	0.12	0.13	Separations 22 months before	-0.08	0.11
Ordinary Hires 8 months before	-0.18	0.16	Very small firm	-0.63	0.41
Ordinary Hires 9 months before	0.11	0.14	Very small firm*Hires 1	0.06	0.18
Ordinary Hires 10 months before	-0.18	0.25	Very small firm*Hires 2	0.11	0.16
Ordinary Hires 11 months before	0.55 *	0.11	Very small firm*Hires 3	0.20	0.15
Ordinary Hires 12 months before	0.10	0.16	Very small firm*Hires 4	0.02	0.15
Ordinary Hires 13 months before	0.16 *	0.10	Very small firm*Hires 5	0.21	0.18
Ordinary Hires 14 months before	0.02	0.09	Very small firm*Hires 6	0.07	0.15
Ordinary Hires 15 months before	0.03	0.08	Very small firm*Hires 7	-0.06	0.17
Ordinary Hires 16 months before	0.05	0.09	Very small firm*Hires 8	0.47 *	0.17
Ordinary Hires 17 months before	0.02	0.09	Very small firm*Hires 9	0.01	0.15
Ordinary Hires 18 months before	0.13	0.09	Very small firm*Hires 10	0.24	0.26
Ordinary Hires 19 months before	-0.04	0.09	Very small firm*Hires 11	-0.23 *	0.13
Ordinary Hires 20 months before	-0.07	0.09	Very small firm*Hires 12	0.21	0.14
Ordinary Hires 21 months before	0.06	0.08	Very small firm*Separations0	-0.21	0.18
Total number of employees 22 months before	0.04	0.06	Very small firm*Separations 1	-0.15	0.13
Hire rate 1 month before	-0.27	0.52	Very small firm*Separations 2	-0.09	0.16
Hire rate 2 months before	0.75 *	0.37	Very small firm*Separations 3	-0.12	0.14
Hire rate 3 months before	-0.06	0.35	Very small firm*Separations 4	-0.10	0.20
Hire rate 4 months before	0.57 *	0.35	Very small firm*Separations 5	-0.24	0.15
Hire rate 5 months before	0.39	0.38	Very small firm*Separations 6	-0.12	0.18
Hire rate 6 months before	0.46	0.33	Very small firm*Separations 7	-0.15	0.16
Hire rate 7 months before	0.28	0.46	Very small firm*Separations 8	-0.11	0.19
Hire rate 8 months before	0.18	0.30	Very small firm*Separations 9	-0.02	0.16
Hire rate 9 months before	0.42	0.35	Very small firm*Separations 10	0.67 *	0.21
Hire rate 10 months before	0.73 *	0.34	Very small firm*Separations 11	-0.27	0.26
Hire rate 11 months before	-0.63	0.42	Very small firm*Separations 12	0.11	0.17
Hire rate 12 months before	-0.16	0.34	Experienced with Subsidised Employees	1.44 *	0.22
Separations 1 month before	0.01	0.18	Subsidised Hires 1	1.25 *	0.65
Separations 2 months before	0.26 *	0.13	Subsidised Separations 1	2.06 *	0.47
Separations 3 months before	0.02	0.15	Subsidised Separations 2	0.95 *	0.57
Separations 4 months before	0.12	0.13	Subsidised Hires 2	0.62	0.55
Separations 5 months before	-0.02	0.19	Subsidised Separations 3	0.81	0.60
Separations 6 months before	0.12	0.12	Subsidised Hires 3	0.81	0.52
Separations 7 months before	0.06	0.17	Subsidised Employees 4	-0.48	0.50
Separations 8 months before	0.00	0.13	Other Non Ordinary Separations 1	-0.16	0.45
Separations 9 months before	-0.08	0.16	Other Non Ordinary Hires 1	0.73	0.59
Separations 10 months before	-0.15	0.14	Other Non Ordinary Separations 2	-1.36 *	0.78
Separations 11 months before	-0.80 *	0.21	Other Non Ordinary Hires 2	-0.69	0.67
Separations 12 months before	-0.09	0.24	Other Non Ordinary Separations 3	0.40	0.47
Separations 13 months before	-0.36 *	0.13	Other Non Ordinary Hires 3	0.41	0.58
Separations 14 months before	-0.09	0.08	Other Non Ordinary Employees 4	0.54 *	0.15
Separations 15 months before	-0.11	0.09	Local Unemployment Rate 1	-18.1 *	4.14

*Continues*

Table A.10.- *Continued*

Covariates	Coef.	SE.	Covariates	Coef.	SE.
Local Unemployment Rate 2	35.43 *	7.73	Storstrøm County	0.17	0.72
Local Unemployment Rate 3	-23.5 *	4.96	Funen County	-5.54 *	1.36
Local Unemployment Rate of Very Short-term	3.11 *	0.87	Southern Denmark County	-5.43 *	1.09
Local Unemployment Rate of Short-term	-2.38 *	0.70	Vejle County	0.11	0.34
Local Unemployment Rate of Long-term	11.43 *	2.26	Ringkøbing County	-2.35 *	0.66
Turnover 2004	0.00 *	0.00	Viborg County	-2.76 *	0.75
Turnover 2005	0.00 *	0.00	North Jutland County	-7.67 *	1.70
Result 2004	0.00 *	0.00	Constant	-7.87 *	2.46
Result 2005	0.00 *	0.00			
Very small firm*Turnover 2004	0.00	0.00			
Very small firm*Turnover 2005	0.00	0.00			
Very small firm*Result 2004	0.00	0.00			
lgag	0.00 *	0.00			
Payroll	0.00	0.00			
Age of firm	-0.02 *	0.01			
Frequency of Low Educated Employees 13	0.14	0.30			
Frequency of Low Educated Employees 1	-0.40	0.35			
Frequency of Previously No Unemployed	-0.19	0.28			
Frequency of Previously No Unemployed	-0.04	0.27			
nFrequency of Previously No Unemployed	0.45 *	0.22			
Stock Variation	0.00	0.00			
Material fixed Assets	0.00	0.00			
Financial fixed Assets	0.00 *	0.00			
Securities and Liquidity	0.00	0.00			
Total Outstanding Debt	0.00	0.00			
Long-term Debt	0.00 *	0.00			
Short-term Debt	0.00	0.00			
Inflow of Immovable Property	0.00 *	0.00			
Inflow of Machinery and Equipment	0.00	0.00			
Purchase of contracted and subcontracted	0.00 *	0.00			
Temporary Employment Agency	0.00	0.00			
Textile; Clothing; Leather Industry 19	1.38 *	0.64			
Wooden; Paper; Graphic Industry	0.30	0.68			
Iron; Metal; Machine Industry	0.83 *	0.38			
Electronic Industry	-0.38	1.03			
Vehicle; Furniture; Other Industry	0.92	0.67			
Vehicle Trade	0.76 *	0.33			
Wholesale Trade (except Vehicles)	0.70 *	0.31			
Retail Trade; Reparation (except Vehicles)	0.30	0.29			
Hotel; Restaurant	0.59 *	0.32			
Transport	0.33	0.36			
Real State; Vehicle. Machines & Equip Renting	0.37	0.43			
IT; Research; Development	0.66 *	0.36			
Other Business Services	0.30	0.29			
Frederiksberg Municipality	-3.68 *	1.00			
Copenhagen County	-3.33 *	0.72			
Frederiksborg County	-3.41 *	0.72			
Roskilde County	-8.34 *	1.72			
West Zealand County	0.28	0.44			
Number of treated firms				213	
Number of control firms				70,505	

Note: The dependent variable takes the value 1 if the firm hires a subsidised employee in November 2006. \*significant at the 10 per cent level.

**Table A.11. Imbalances**

Covariate	Mean of treated firms	Mean of control firms	%SDIF before matching	%SDIF after matching		
				Feb-May 06	Feb-Aug 06	Feb-Nov 06
Ordinary Hires 1 month before	0.475	0.328	14.3	0.9	-1.1	-0.1
Ordinary Hires 2 months before	0.575	0.333	21.8	-2.1	-1.0	0.1
Ordinary Hires 3 months before	0.581	0.334	21.8	1.3	1.9	0.0
Ordinary Hires 4 months before	0.559	0.324	20.8	0.8	2.6	1.8
Ordinary Hires 5 months before	0.523	0.338	17.3	-1.5	-0.2	-2.5
Ordinary Hires 6 months before	0.613	0.344	22.7	0.2	1.4	1.2
Ordinary Hires 7 months before	0.579	0.336	20.8	3.1	3.7	1.6
Ordinary Hires 8 months before	0.576	0.349	19.8	-2.3	-0.7	-1.8
Ordinary Hires 9 months before	0.552	0.346	18.1	0.2	2.7	0.4
Ordinary Hires 10 months before	0.600	0.354	20.7	3.2	4.2	3.2
Ordinary Hires 11 months before	0.651	0.378	21.4	3.8	2.5	0.5
Ordinary Hires 12 months before	0.613	0.389	18.8	1.6	3.3	0.9
Hires 1 month before	0.501	0.337	15.5	0.5	-1.4	-0.3
Hires 2 months before	0.653	0.342	26.6	-1.5	-0.3	0.5
Hires 3 months before	0.662	0.343	26.6	0.5	1.6	-0.2
Hires 4 months before	0.620	0.335	24.3	-0.4	1.8	1.9
Hires 5 months before	0.599	0.349	22	-0.4	1.5	-1.2
Hires 6 months before	0.680	0.356	26.2	1.1	1.9	1.1
Hires 7 months before	0.633	0.348	23.6	2.6	3.3	1.2
Hires 8 months before	0.631	0.362	22.7	-2.9	-1.6	-2.4
Hires 9 months before	0.615	0.358	21.8	0.6	3.8	1.1
Hires 10 months before	0.661	0.367	23.9	5.4	5.9	4.6
Hires 11 months before	0.718	0.392	24.4	5.4	4.0	1.4
Hires 12 months before	0.630	0.396	19.3	1.9	3.7	1.3
Hire rate 1 month before	0.108	0.085	10.3	2.0	-0.2	0.9
Hire rate 2 months before	0.136	0.085	20.7	0.3	-0.7	1.0
Hire rate 3 months before	0.130	0.085	18.5	-1.2	-0.5	-0.1
Hire rate 4 months before	0.121	0.083	16.3	0.1	2.0	2.9
Hire rate 5 months before	0.119	0.086	13.8	-2.8	-1.7	-2.8
Hire rate 6 months before	0.134	0.089	18.7	1.3	2.5	1.6
Hire rate 7 months before	0.122	0.087	14.7	0.6	0.8	-0.1
Hire rate 8 months before	0.124	0.090	14.5	-4.0	-3.9	-1.9
Hire rate 9 months before	0.123	0.088	14.5	-0.7	1.7	0.0
Hire rate 10 months before	0.124	0.090	14.6	-1.6	2.1	3.0
Hire rate 11 months before	0.140	0.096	17.6	3.6	1.4	0.4
Hire rate 12 months before	0.124	0.099	10.6	0.7	2.0	2.1
Separations 1 month before	0.478	0.384	8.9	0.8	1.4	0.0
Separations 2 months before	1.367	0.403	49	1.6	2.7	0.3
Separations 3 months before	0.594	0.375	18.4	-2.1	0.3	0.4
Separations 4 months before	0.620	0.374	20.3	-1.8	0.0	-0.5
Separations 5 months before	0.637	0.382	20.4	3.9	3.8	1.9
Separations 6 months before	0.648	0.373	22	1.5	2.3	2.2
Separations 7 months before	0.599	0.384	17.9	-1.2	-2.1	-4.7
Separations 8 months before	0.691	0.404	21.5	0.7	2.0	0.6
Separations 9 months before	0.637	0.397	18.6	2.3	3.9	2.6
Separations 10 months before	0.662	0.412	19.7	1.5	1.9	0.2
Separations 11 months before	0.608	0.413	15.8	0.7	2.6	-1.0
Separations 12 months before	0.564	0.394	14.2	2.9	5.2	4.7
Separations 13 months before	0.618	0.425	14.7	3.2	2.5	1.3

*Continues*

Table A.11.- *Continued*

Covariate	Mean of treated	Mean of control firms	%SDIF before matching	%SDIF after matching		
				Feb-May 06	Feb-Aug 06	Feb-Nov 06
Very small firm	0.737	0.820	-19.9	2.8	3.7	4.1
Very small firm*Hires 1 month before	0.248	0.204	6.2	3.5	2.4	2.6
Very small firm*Hires 2 months before	0.436	0.218	22.9	0.7	2.4	1.9
Very small firm*Hires 3 months before	0.423	0.221	20.5	-0.6	3.1	1.2
Very small firm*Hires 4 months before	0.402	0.217	19.3	-0.6	1.7	1.5
Very small firm*Hires 5 months before	0.395	0.230	17.2	-1.6	1.4	-1.2
Very small firm*Hires 6 months before	0.461	0.237	21.3	-0.7	1.1	0.0
Very small firm*Hires 7 months before	0.396	0.233	16.7	1.6	2.5	0.8
Very small firm*Hires 8 months before	0.436	0.244	18.9	-4.3	-3.3	-2.4
Very small firm*Hires 9 months before	0.393	0.245	15.4	0.4	2.7	0.4
Very small firm*Hires 10 months before	0.426	0.251	17	2.5	5.1	4.1
Very small firm*Hires 11 months before	0.481	0.272	18.6	5.1	3.4	1.4
Very small firm*Hires 12 months before	0.411	0.276	13.4	2.5	4.1	0.9
Very small firm*Separations 1 month before	0.263	0.287	-2.6	3.1	3.8	2.7
Very small firm*Separations 2 months before	1.157	0.305	43.8	2.7	3.1	0.3
Very small firm*Separations 3 months before	0.389	0.260	13	-3.9	-0.3	-0.7
Very small firm*Separations 4 months before	0.410	0.263	14.4	3.3	3.8	1.7
Very small firm*Separations 5 months before	0.414	0.270	13.6	2.5	4.2	2.5
Very small firm*Separations 6 months before	0.449	0.264	17	-1.0	0.7	1.1
Very small firm*Separations 7 months before	0.396	0.272	12	-3.7	-2.0	-4.9
Very small firm*Separations 8 months before	0.482	0.289	16.3	1.5	1.5	-0.1
Very small firm*Separations 9 months before	0.404	0.284	11.2	1.0	3.1	2.4
Very small firm*Separations 10 months before	0.450	0.296	13.9	3.8	2.8	2.3
Very small firm*Separations 11 months before	0.398	0.299	9.5	1.5	2.7	-0.9
Very small firm*Separations 12 months before	0.361	0.285	7.6	2.6	5.7	4.9
Very small firm*Separations 13 months before	0.413	0.313	8.8	4.2	3.5	2.9
Experienced with Subsidised Employees	0.390	0.062	85.3	5.3	4.4	4.0
Subsidised Hires 1 month before	0.006	0.001	8.9	0.0	-2.3	-2.4
Subsidised Separations 1 month before	0.177	0.004	61.3	3.9	1.4	1.9
Subsidised Separations 2 months before	0.042	0.005	24.4	-3.0	-0.6	-0.9
Subsidised Hires 2 months before	0.053	0.001	31.9	3.4	3.0	3.1
Subsidised Separations 3 months before	0.043	0.005	24.5	-6.0	-5.0	-5.1
Subsidised Hires 3 months before	0.057	0.002	31.8	-2.2	-0.5	0.2
Subsidised Employees 4 months before	0.179	0.015	53.8	-1.0	-0.8	-1.1
Other Non Ordinary Separations 1 month before	0.046	0.008	19.8	-0.4	1.5	-0.8
Other Non Ordinary Hires 1 month before	0.019	0.008	9.3	-3.3	-2.1	-0.3
Other Non Ordinary Separations 2 months before	0.015	0.007	7	2.1	0.9	-0.7
Other Non Ordinary Hires 2 months before	0.025	0.008	12.3	0.0	1.4	-0.3
Other Non Ordinary Separations 3 months before	0.023	0.007	11.2	0.6	0.7	-0.8
Other Non Ordinary Hires 3 months before	0.024	0.008	11.8	-3.4	-1.0	-2.1
Other Non Ordinary Employees 4 months before	0.154	0.077	20.1	0.4	-2.0	-1.7
Local Unemployment Rate 1 month before	4.666	4.500	12.9	0.2	1.2	0.1
Local Unemployment Rate 2 months before	4.762	4.591	13.4	-0.3	0.7	-0.4
Local Unemployment Rate 3 months before	4.829	4.691	11	0.2	0.8	-0.5
Local Unemployment Rate of Very Short-term Unemployed	6.699	6.623	7.2	-1.8	-2.5	-1.6
Local Unemployment Rate of Short-term Unemployed 1	8.352	8.159	12.1	-1.5	-1.0	-1.3
Local Unemployment Rate of Long-term Unemployed 1	3.878	3.760	11.6	0.1	1.1	-0.6
Turnover 2004	4807	4739	0.4	1.1	1.4	0.5
Turnover 2005	5611	5405	0.8	0.4	0.2	-0.5
Result 2004	305	779	-1.6	0.0	0.0	0.0
Result 2005	360	847	-1.8	0.1	-0.5	-0.4
Very small firm*Turnover 2004	2780	3117	-2.5	1.3	0.9	0.8
Very small firm*Turnover 2005	3390	3511	-0.6	1.1	0.4	-0.1
Very small firm*Result 2004	215	620	-1.4	-0.1	-0.1	0.0

*Continues*

Table A.11.- *Continued*

Covariate	Mean of treated firms	Mean of control firms	%SDIF before matching	%SDIF after matching		
				Feb-May 06	Feb-Aug 06	Feb-Nov 06
Payroll 2005	1088	854	18.8	-3.4	2.0	-1.5
Payroll 2004	957	812	10.4	-3.1	-1.7	-3.3
Age of firm	10.367	12.966	-26.5	0.8	-1.0	-0.2
Freq. Low Educated Employees 1 year before	0.385	0.367	5.1	-3.9	-2.0	-0.5
Freq. Low Educated Employees 1 month before	0.325	0.308	4.9	-4.6	-4.1	-2.4
Freq. Previously No Unemployed Employees 1 year before	0.802	0.844	-13.6	1.0	2.5	0.3
Freq. Previously No Unemployed Employees 1 month	0.684	0.735	-12.3	-2.8	-3.3	-2.8
Freq. Hires Previously No Unemployed 1 quarter before	0.535	0.388	31.3	2.0	0.4	0.6
Stock Variation	99.154	51.516	6	3.1	3.2	2.2
Material fixed Assets	1538	2153	-5	2.2	-3.5	-2.0
Financial fixed Assets	381	2756	-1.5	0.0	0.0	0.0
Securities and Liquidity	555	396	10.1	2.8	-0.9	-1.6
Total Outstanding Debt	1042	1323	-2.1	0.3	-0.1	-1.2
Long-term Debt	898	1262	-4	1.9	-0.1	-0.6
Short-term Debt	1818	1927	-0.7	0.9	-0.1	0.0
Inflow of Immovable Property	69.299	112.070	-3.5	1.1	-3.1	-2.3
Inflow of Machinery and Equipment	157.420	138.880	2	0.5	2.0	1.8
Purchase of contracted and subcontracted Employees	72.719	72.430	0	-1.1	0.8	0.3
Temporary Employment Agency	13.095	12.978	0.1	-4.0	-0.6	-0.1
Food; Beverage Industry	0.010	0.008	2.2	2.5	2.0	-0.4
Textile; Clothing; Leather Industry	0.008	0.006	2.9	-2.8	-1.1	-2.1
Wooden; Paper; Graphic Industry	0.025	0.018	5.2	1.1	2.0	0.3
Chemical; Rubber; Plastic; Stone; Clay; Glass Industry	0.012	0.008	4.2	-2.2	-2.3	-1.7
Iron; Metal; Machine Industry	0.041	0.034	3.8	-7.4	-5.1	-3.8
Electronic Industry	0.009	0.011	-1.4	4.0	1.5	-0.3
Vehicle; Furniture; Other Industry	0.014	0.010	3.5	2.8	0.5	0.4
Construction	0.131	0.175	-12.2	-4.3	-3.2	-1.5
Vehicle Trade	0.069	0.056	5.4	-1.6	-1.6	0.0
Wholesale Trade (except Vehicles)	0.130	0.110	6.3	-0.3	0.0	0.2
Retail Trade; Reparation (except Vehicles)	0.167	0.159	2.3	4.7	-0.5	-1.3
Hotel; Restaurant	0.100	0.088	4.1	3.5	2.7	0.6
Transport	0.065	0.085	-7.4	1.2	2.4	1.2
Real State; Vehicle. Machines & Equip Renting	0.035	0.062	-12.3	2.6	1.8	1.5
IT; Research; Development	0.045	0.032	6.7	-0.8	0.7	0.6
Other Business Services	0.137	0.140	-0.9	1.7	3.3	3.3
Copenhagen Municipality	0.094	0.113	-6.2	0.0	1.7	1.9
Frederiksberg Municipality	0.016	0.017	-1.3	1.3	2.3	0.6
Copenhagen County	0.104	0.117	-4.1	1.5	1.9	0.3
Frederiksborg County	0.060	0.076	-6.3	2.8	1.3	1.1
Roskilde County	0.052	0.046	3.1	-4.7	-2.4	-0.7
West Zealand County	0.051	0.053	-0.8	1.7	1.5	0.8
Storstrøm County	0.050	0.043	3.1	-1.9	-1.3	-0.6
Bornholm County	0.006	0.008	-1.4	2.1	-1.3	0.8
Funen County	0.102	0.081	7.4	-1.9	-1.3	-1.6
Southern Denmark County	0.038	0.044	-3	-4.7	-2.6	-3.3
Ribe County	0.041	0.042	-0.9	2.1	0.7	1.6
Vejle County	0.078	0.068	4.1	-2.3	-4.1	-2.5
Ringkøbing County	0.036	0.051	-7.5	1.5	-0.2	0.4
Århus County	0.145	0.118	7.7	2.3	1.4	1.6
Viborg County	0.033	0.045	-6.5	2.8	1.7	1.7
North Jutland County	0.107	0.087	6.7	2.1	0.7	-0.6

Note: SDIF denotes the standardised difference in means between the treated and the control group of firms.



Table A.12. Average Treatment Effect on the Subsidised Firm


Months after new subsidy	Ordinary employees		Subsidised employees		Other non ordinary employees		Treatment period
	Hires	Separations	Hires	Separations	Hires	Separations	
1	-0.016(0.049)	-0.085(0.066)	-0.012(0.008)	0.206(0.009)	0.001(0.006)	0.056(0.008)	Feb-Nov 2006
	-0.092(0.152)	-0.229(0.179)	-0.038(0.021)	0.161(0.023)	-0.003(0.018)	0.041(0.023)	Feb 2006
	-0.164(0.210)	0.106(0.172)	0.000(0.040)	0.229(0.026)	-0.035(0.024)	0.038(0.040)	Mar 2006
	0.172(0.126)	-0.117(0.118)	-0.022(0.019)	0.168(0.028)	0.007(0.015)	0.088(0.020)	Apr 2006
	0.016(0.129)	-0.084(0.103)	-0.026(0.019)	0.205(0.027)	0.003(0.017)	0.045(0.020)	May 2006
	0.065(0.108)	-0.171(0.140)	-0.016(0.014)	0.193(0.025)	0.003(0.014)	0.031(0.020)	Jun 2006
	-0.089(0.173)	0.075(0.132)	-0.005(0.018)	0.229(0.031)	0.023(0.016)	0.042(0.017)	Jul 2006
	-0.120(0.147)	-0.052(0.130)	-0.026(0.024)	0.236(0.039)	-0.011(0.018)	0.075(0.033)	Aug 2006
	0.077(0.131)	-0.323(0.271)	0.024(0.016)	0.210(0.030)	0.036(0.019)	0.073(0.020)	Sep 2006
	0.056(0.142)	-0.056(0.143)	-0.022(0.022)	0.211(0.029)	0.000(0.027)	0.069(0.024)	Oct 2006
-0.076(0.185)	0.019(0.147)	0.024(0.019)	0.233(0.032)	0.010(0.020)	0.086(0.028)	Nov 2006	
2	0.010(0.064)	-0.065(0.066)	0.016(0.011)	0.343(0.012)	0.005(0.008)	0.064(0.010)	Feb-Oct 2006
	-0.017(0.204)	-0.086(0.221)	-0.024(0.032)	0.301(0.034)	0.017(0.023)	0.086(0.032)	Feb 2006
	-0.088(0.197)	0.100(0.190)	0.050(0.046)	0.361(0.031)	-0.041(0.027)	0.026(0.043)	Mar 2006
	0.198(0.175)	-0.139(0.173)	0.004(0.030)	0.278(0.035)	0.040(0.023)	0.103(0.025)	Apr 2006
	-0.052(0.169)	0.163(0.184)	-0.008(0.027)	0.381(0.035)	-0.008(0.019)	0.055(0.021)	May 2006
	0.047(0.173)	-0.130(0.176)	0.012(0.024)	0.329(0.033)	-0.006(0.023)	0.031(0.023)	Jun 2006
	0.009(0.211)	0.107(0.231)	0.023(0.033)	0.393(0.038)	0.000(0.025)	0.061(0.022)	Jul 2006
	-0.154(0.182)	-0.169(0.176)	0.037(0.035)	0.360(0.046)	0.004(0.025)	0.060(0.036)	Aug 2006
	0.020(0.204)	-0.294(0.242)	0.032(0.027)	0.351(0.041)	0.052(0.024)	0.085(0.025)	Sep 2006
	0.198(0.209)	-0.267(0.177)	0.026(0.030)	0.328(0.034)	0.009(0.030)	0.095(0.033)	Oct 2006
3	0.080(0.083)	-0.040(0.086)	0.046(0.014)	0.501(0.016)	0.017(0.011)	0.065(0.012)	Feb-Sep 2006
	0.123(0.251)	-0.089(0.300)	0.055(0.041)	0.421(0.039)	0.051(0.032)	0.07(0.038)	Feb 2006
	-0.120(0.222)	0.188(0.242)	0.100(0.051)	0.525(0.045)	-0.023(0.031)	0.018(0.045)	Mar 2006
	0.366(0.221)	-0.150(0.221)	0.044(0.032)	0.425(0.041)	0.040(0.027)	0.125(0.032)	Apr 2006
	0.236(0.241)	0.273(0.221)	0.031(0.036)	0.538(0.039)	0.021(0.026)	0.063(0.025)	May 2006
	-0.071(0.214)	-0.186(0.207)	0.022(0.029)	0.509(0.037)	-0.019(0.027)	0.037(0.031)	Jun 2006
	0.042(0.259)	0.084(0.248)	0.019(0.040)	0.621(0.046)	0.028(0.031)	0.065(0.031)	Jul 2006
	-0.019(0.231)	-0.288(0.206)	0.045(0.047)	0.476(0.065)	0.015(0.039)	0.075(0.029)	Aug 2006
	0.081(0.232)	-0.306(0.279)	0.040(0.036)	0.500(0.045)	0.040(0.025)	0.085(0.027)	Sep 2006
4	0.213(0.105)	0.033(0.108)	0.093(0.017)	0.603(0.020)	0.015(0.013)	0.067(0.014)	Feb-Aug 2006
	0.158(0.298)	-0.099(0.335)	0.137(0.049)	0.517(0.047)	0.045(0.037)	0.110(0.042)	Feb 2006
	0.050(0.270)	0.205(0.295)	0.114(0.055)	0.639(0.054)	-0.018(0.033)	0.038(0.048)	Mar 2006
	0.524(0.262)	-0.029(0.271)	0.088(0.039)	0.546(0.047)	0.051(0.030)	0.117(0.038)	Apr 2006
	0.530(0.281)	0.234(0.276)	0.068(0.040)	0.612(0.042)	0.034(0.031)	0.058(0.029)	May 2006
	-0.022(0.237)	-0.084(0.237)	0.112(0.033)	0.624(0.039)	-0.031(0.030)	0.016(0.034)	Jun 2006
	0.093(0.324)	0.159(0.315)	0.061(0.043)	0.706(0.055)	0.014(0.036)	0.061(0.037)	Jul 2006
	0.090(0.273)	-0.221(0.254)	0.064(0.052)	0.592(0.087)	0.019(0.043)	0.082(0.034)	Aug 2006

*Continues*

Table A.12.- *Continued*

Months after new subsidy	Ordinary employees		Subsidised employees		Other non ordinary employees		Treatment period
	Hires	Separations	Hires	Separations	Hires	Separations	
5	0.314(0.133)	0.211(0.130)	0.134(0.019)	0.686(0.021)	0.018(0.015)	0.066(0.017)	Feb-Jul 2006
	0.188(0.344)	0.051(0.386)	0.151(0.050)	0.627(0.051)	0.065(0.038)	0.099(0.041)	Feb 2006
	0.170(0.312)	0.252(0.316)	0.220(0.060)	0.733(0.057)	-0.009(0.041)	0.038(0.049)	Mar 2006
	0.641(0.303)	0.095(0.293)	0.106(0.040)	0.579(0.051)	0.062(0.033)	0.132(0.043)	Apr 2006
	0.667(0.316)	0.504(0.302)	0.073(0.041)	0.667(0.046)	0.031(0.034)	0.071(0.036)	May 2006
	-0.016(0.281)	0.037(0.256)	0.149(0.036)	0.711(0.043)	-0.043(0.035)	0.009(0.037)	Jun 2006
	0.168(0.403)	0.248(0.355)	0.098(0.050)	0.822(0.058)	0.005(0.039)	0.056(0.039)	Jul 2006
6	0.459(0.158)	0.249(0.155)	0.164(0.022)	0.858(0.022)	0.027(0.018)	0.074(0.020)	Feb-Jun 2006
	0.284(0.385)	0.072(0.428)	0.216(0.055)	0.825(0.054)	0.068(0.040)	0.120(0.042)	Feb 2006
	0.182(0.380)	0.340(0.335)	0.220(0.064)	0.944(0.051)	0.018(0.046)	0.038(0.051)	Mar 2006
	0.777(0.333)	0.267(0.360)	0.139(0.043)	0.769(0.057)	0.051(0.040)	0.128(0.045)	Apr 2006
	0.879(0.346)	0.530(0.340)	0.094(0.043)	0.887(0.047)	0.026(0.039)	0.094(0.039)	May 2006
	0.143(0.305)	-0.037(0.260)	0.161(0.039)	0.839(0.044)	-0.022(0.038)	0.000(0.040)	Jun 2006
7	0.711(0.199)	0.448(0.196)	0.172(0.028)	0.988(0.026)	0.057(0.022)	0.093(0.025)	Feb-May 2006
	0.432(0.438)	0.312(0.462)	0.229(0.057)	0.966(0.055)	0.089(0.040)	0.116(0.051)	Feb 2006
	0.431(0.426)	0.537(0.365)	0.223(0.064)	1.059(0.052)	0.047(0.053)	0.035(0.057)	Mar 2006
	0.934(0.369)	0.293(0.383)	0.147(0.050)	0.930(0.056)	0.044(0.043)	0.099(0.049)	Apr 2006
	1.016(0.350)	0.585(0.363)	0.100(0.049)	0.982(0.048)	0.050(0.040)	0.123(0.042)	May 2006

Note: In parenthesis the estimated standard error with the method of Abadie & Imbens (2006).



## The Effect of a Wage Subsidy on Employment in the Subsidised Firm

This working paper examines the magnitude of the employment effects of the Danish wage subsidy on small private firms in 2006. In 2006 about 40% of individuals employed with wage subsidy were employed on ordinary terms after the completion of the subsidised contract. In order to assess the contribution of wage subsidy to this apparent success, this study assesses the magnitude of deadweight loss, substitution effects and other relevant employment effects for these subsidised firms.