

**The Transition from School to Work for High School Dropouts:  
The Effect of Temporary Help Agency Work  
Versus  
Active Labor Market Programs**

**by**

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**Abstract**

This paper investigates whether THA work may function as an active labor market program for young high school dropouts without previous labor market experience. Using the timing-of-events duration model, I analyze how THA work affects the probability of obtaining regular employment and the stability of the first employment spell relative to ordinary youth labor market programs. The results show that both THA and ALMP, with an exception of work practice programs, accelerate the school-to-work transition. However, only wage subsidy programs seem to prolong the subsequent regular employment spell.

Keywords: Active labor market programs; duration models; high school dropouts; school-to-work transition; temporary help agency work; treatment effect.

JEL Classification: J08; J13; J41; J64.

## 1. Introduction

This paper investigates the school-to-work transition for young individuals who have not completed high school education (dropouts). In specific, I analyze whether temporary work through a temporary help agency accelerates the school-to-work transition for this group. The results are compared with another commonly used strategy these individuals may have to enter the labor market – to participate in active labor market programs.

Education is one of the strongest predictors of labor market success. Youth unemployment is highest among the least educated, and worst off are high school dropouts. This group of young people is represented with higher unemployment rates and lower employment rates than high school graduates, and is more likely to be welfare receivers or be imprisoned (Falch et al 2010). Seen in connection with the relatively high dropout rates<sup>1</sup> from high school in Norway, measures to facilitate the school-to-work transition has been at the top of the political agenda the last decade. There exists a follow-up service for youth who are not in the education system or in the ordinary labor market, and youth are given priority in the assignment of active labor market programs.

The Norwegian labor market is strictly regulated, and may be difficult to enter for young school leavers. Strong employment protection makes employers reluctant to hire young people, as they often lack relevant work experience and networks. Education thus becomes an important signal of the young worker's human capital and productivity level. Moreover, low skilled workers in Norway face very strict productivity demands due to high minimum wages and a compressed wage distribution. As high school dropouts have the very lowest levels of formal skills, it may be especially challenging for this group to enter the labor market. Young workers are also more sensitive to business cycle fluctuations: They are often the first to be fired when firms are reducing their workforce and the last to be hired in times of increasing unemployment.

In addition to the problems of entering the labor market, young people are overrepresented among temporary workers. 26 percent of the workers under the age of 25 in Norway are currently employed on a temporary contract. For the older working population (25 years or older) the corresponding number is 5 percent (Statistics Norway, AKU). Temporary help agency work is a special type of temporary work which has experienced a tremendous growth

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<sup>1</sup> Around 30 percent of Norwegian high school students fail to complete high school within five years after entry.

across OECD countries the last decades, including Norway. Belonging to the labor market intermediaries, temporary help agencies assist in the process of how workers are matched to firms and help lower the marginal costs of hiring and firing (Autor, 2009). In this perspective, temporary help agency work may provide a bridge between non-employment and regular employment for workers who for different reasons have difficulties obtaining a direct-hire job, such as young high school dropouts. From the employer's point of view the risk of hiring the wrong person is reduced through an on-the-job screening for permanent positions. At the same time the temporary help agency worker gets the chance to accumulate human capital through work experience and social networks, which again may serve as a positive signal for prospective employers. As such, temporary help agency work may increase the chances of obtaining regular employment and may speed up the job-search process.

In Norway, as in many other European countries, active labor market programs are widely used in order to combat unemployment and prevent labor market exclusion. A recent meta-analysis (Card et al. 2010) concludes that the overall effectiveness of active labor market programs is rather limited, with youth programs distinguishing themselves as being particularly unsuccessful. Nevertheless, youth between the ages of 16 and 24 is a target group in the Norwegian active labor market policy and represent one third of program participants. There is however substantial heterogeneity in the types of programs offered, and programs involving real working experience seem to show more promising results than classroom-based programs. In this context, temporary help agencies may be a supplement to ordinary labor market programs. Not only do they provide work experience; they also help improve the matching process.

Yet there are factors pointing in the other direction. A distinguishing feature of temporary help agency work is its triangular nature: While the temporary help agency is the legal employer of the worker, the work tasks are the responsibility of the client firm. The worker thus has to respond to two different employers simultaneously, which may weaken their bargaining position. In addition, temporary help workers are not covered by any collective agreements and are less frequently organized. Concerns are also raised about the quality of the jobs offered through temporary help agencies and the working conditions characterizing such jobs. Temporary help workers often receive lower wages and less on-the-job training compared to regular workers in the same firm, and they are in less stable employment relations (ECON 2009).

With the use of register data covering the entire Norwegian population entering high school between 1996 and 2000, I investigate whether temporary help agency work (THA) may be an alternative to active labor market programs (ALMP) for young high school dropouts who have not yet entered the labor market. More precisely, I analyze how a transition to either THA or ALMP (*treatment*) affects the time until first job and the stability of this employment spell. The effects are evaluated using the timing-of-events approach (Abbring and van den Berg 2003), which utilizes information about the timing of the treatment and the outcome to distinguish treatment effects from pure selection effects. The results indicate that young dropouts may benefit from THA work, especially in comparison to the labor market programs mainly offered to youth – work practice programs.

This paper contributes to the literature in several ways. As far as I know, this is the first study to analyze the effect of THA work for young unskilled newcomers to the labor market. There exist some studies that investigate the role of temporary contracts in general for youth (Cockx and Picchio 2008; Göbel and Verhofstadt 2008), but none of these focus particularly on THA work or on high school dropouts. In light of the increasing extent of THA work and the problems unskilled youth face in the labor market, it is worthwhile that such an analysis is done. Furthermore, as the study considers the effect of both THA and ALMP, a measure of the effectiveness of THA relative to ordinary labor market programs is obtained. This may be of particular interest to policy makers, who may want to include THA work in the bundle of activation policies. Thirdly, there have been expressed concerns that THA workers are trapped within a secondary labor market where they alternate between short spells of employment and unemployment. Therefore this paper does not only analyze the effect of THA work and ALMP on the probability of obtaining work; the effect on the stability of the subsequent employment spell is also included in the evaluation.

The rest of the paper is outlined as follows: The next section provides information about institutional settings, while section 3 gives a brief overview of existing literature on the field. Section 4 presents the data used in the analysis, and section 5 describes the econometric approach. The results are presented in section 6, together with a discussion. Section 7 concludes.

## **2. Institutional Settings**

Education in Norway is compulsory from the age of 6 until the age of 16. After completed compulsory education, every student has a statutory right to attend at least three years of high school education. This right must be fully utilized during a period of five continuous years (six for some vocational programs), and within five years after completed compulsory school. The take-up rate is very large: 96 percent of those who complete compulsory school have a direct transition to high school education (Statistics Norway).

When applying for high school education, students may choose between 12 different programs: three general study programs which prepare for higher education, and nine vocational education programs<sup>2</sup>. Around half of the students opt for vocational programs, with an overweight of male students. While 56 percent of the students complete their program within standard period of time (three years for general programs, four years for vocational programs), around 30 percent fail to complete within five years. The dropout rate is largest among those who start a vocational program, and has been fairly stable the last two decades.

Youth 16-19 years who are neither in education nor in employment or training are assured participation in an active labor market program through the “youth guarantee”. The term guarantee may be misleading, as the arrangement is not legally binding but rather reflects a clearly stated policy ambition. From 1995-1998 the intensified efforts to provide ALMPs were extended to include long-term unemployed youth 20-24 years. This extended youth guarantee is evaluated by Hardoy et al. (2006), who find that the guarantee led to increased participation in programs as well as an increased transition rate from unemployment to employment. In 2009 the extended youth guarantee was reintroduced.

Three categories of programs are mainly offered to youth: Work practice programs, qualification programs and wage subsidy programs. *Work practice programs* have the largest proportion of youth and provide mainly on-the-job training. The participant is placed in an ordinary firm, performing regular work tasks under supervision. Maximum duration of work practice programs is one year. *Qualification programs* consist of formal training courses (mainly classroom education) offered by the public employment services. The courses are of varying duration, but maximum duration is 10 months (can be extended to 16 months for young dropouts). In *wage subsidy programs* the participant work in an ordinary firm, but part of the wage is subsidized by the employment office. The program has a maximum duration of one year, and the primary intention is to establish a permanent work relation. Work practice

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<sup>2</sup> Before 2006, the total number of programs was 16: three general study programs and 12 vocational programs.

and qualification program participants are entitled to a weekly allowance, while wage subsidy participants receive ordinary wages.

Norwegian youth who have recently left the educational system are in general not entitled to unemployment benefits, as eligibility is conditioned on previous labor market income over a certain amount<sup>3</sup>. The incentives to register as unemployed are thus very low for most youth. The majority of non-employed youth are therefore classified as NEET rather than unemployed – they are Not in Education, Employment or Training. Unemployment registration is however a prerequisite for ALMP participation, but there are no requirements regarding the length of the unemployment period in order to qualify for a program. This means that many youth do not register as unemployed until they actually start a program. Youth who are not entitled to unemployment benefits and do not participate in ALMPs may receive social assistance. This is means tested and organized by the local authority.

## **2.1. Temporary Help Agency Work in Norway<sup>4</sup>**

THA work was generally banned in Norway until 2000, with an exception for providers of labor for office work. In 2000 there was a liberalization of the Work Environment Act regarding employers' use of temporary contracts, permitting THA work in situations where the law permits fixed-term contracts. The law was further revised in 2005, making it easier for firms to use temporary contracts in general and widening the opportunities for THA employment. As stated in the Work Environment Act §14-9<sup>5</sup>:

*(1) An employee shall be appointed permanently. Temporary employment may nevertheless be agreed upon:*

*a) when warranted by the nature of the work and the work differs from that which is ordinarily performed for the undertaking*

*b) for work as a temporary replacement for another person or persons.*

Although the main rule is open-ended contracts, fixed-term contracts (including THA work) may be used to adjust the size of the workforce in reply to fluctuations in demand and to temporarily replace permanent employees. Firms are in general allowed to hire out labor; restrictions are instead placed on companies which engage such labor. In 2009, a regulation

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<sup>3</sup> In 2010 the amounts were NOK 118824 during the preceding calendar year or NOK 237648 during the last three calendar years.

<sup>4</sup> This section builds on ECON, 2009.

<sup>5</sup> <http://www.arbeidstilsynet.no/>

introducing a registration requirement for THA firms was adopted. In order to provide THA employment the firms must satisfy certain financial and organizational requirements, and must submit regular details of their activities to a public register. THA workers are covered by standard labor laws; they enjoy the same employment benefits and have the same employment protection as temporary workers in general.

Since the early 1990s the THA industry in Norway has undergone an enormous growth. Although the sector employs only a small share of the working population in Norway (around 1.4% in 2006<sup>6</sup>), it has experienced a large increase both in terms of the number of employees, number of THA firms and overall economic value. In 1993 the industry consisted of 140 firms and 13,459 employees; in 2007 the corresponding quantities were 1,207 firms and 41,448 employees. This development is in line with findings for the rest of Europe (Arrowsmith, 2006). The composition of occupations has also changed drastically since the early 1990s. Until 2000 the industry was entirely dominated by office workers, as this was the only type of labor the THAs were allowed to provide. In 2010 the five largest occupations in the industry were construction (14.6 percent), office work (14.2 percent), transportation (14 percent), health care (9.43 percent) and manufacturing (9.09 percent)<sup>7</sup>.

Youth are overrepresented in the THA industry in Norway. 30 percent of the THA workers are less than 25 years; the corresponding share among all workers is 14 percent (Statistics Norway, AKU). The large share of students among THA workers may be one explanation for why youth are overrepresented (around 50 percent of THA workers less than 25 years are students). Another explanation may be that youth consider THA work as a way to enter the labor market. One fourth of all THA workers have less than 2 years of previous working experience when they start to work for the agency, and around 20 percent enter THA work directly from unemployment. Moreover, over 70 percent of Norwegian THA workers state that the main motivation for taking up work in a THA is to increase the chances of obtaining a permanent position.

### **3. Literature Review**

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<sup>6</sup> Nergaard and Svalund (2008), p. 20.

<sup>7</sup> NHO Service's (trade union) own figures.

A large part of the literature concerning high school dropout focuses on the determinants of dropout; fewer studies analyze how high school dropouts fare in the labor market. Human capital theory states that investments in education affect both labor market participation and productivity (Becker, 1964). Individuals invest in education today to produce income in the future. Studies investigating labor market outcomes of high school dropouts confirm this close link between education level and labor market success. High school dropouts have lower participation rates and poorer employment and wage outcomes compared to high school graduates, and a large share never seems to get a foothold in the labor market. Recent empirical evidence includes Baldfield and Levin (2007) for the United States, Campolieti et al. (2010) for Canada and Falch et al. (2010) for Norway.

Research on school-to-work transitions highlights the importance of a quick transition from education to working life<sup>8</sup>. There is a negative relationship between time since leaving school and the probability of finding work, particularly for low-educated youth (Bratberg and Nilsen, 2000; Nielsen et al., 2003; Vanoverberghe, 2008). Early unemployment experiences are shown to have long-lasting impacts on future labor market prospects (Nordström-Skans, 2004; Mroz and Savage, 2006), and youth spending much time in inactivity have higher risks of marginalization and social exclusion (Raaum et al., 2009). Reducing the length of transitions from school to work could thus yield significant economic and social benefits, and one strategy is to encourage youth to acquire work experience as soon as possible after leaving school by accepting any job available, even if it is temporary or low-paid.

Scherer (2004) analyzes the consequences of entering the labor market through either an “under-qualified” or a temporary job. While “under-qualified” jobs entail long-term negative effects on career advancement, she finds no harmful consequences of entering the labor market through a temporary contract. Cockx and Picchio (2008) investigate labor market trajectories for long-term unemployed school-leavers in Belgium, and conclude that youth who accept short-term jobs have higher probability of entering a long-term job. Göbel and Verhofstadt (2008) find evidence for the stepping stone hypothesis of fixed-term contracts for youth. Youth who enter the labor market through a fixed-term contract have higher transition rates to permanent employment compared to youth who stay unemployed until finding a permanent job.

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<sup>8</sup> See Ryan (2001) and Bradley and Nguyen (2004) for an overview of this literature

Concurrent with the rapid expansion of the THA industry, a growing literature concerning the stepping stone effect of THA work has emerged. As of today, such evaluations are available for Denmark (Jahn and Rosholm 2010), Germany (Kvasnicka 2009), Italy (Ichino et al. 2005), Norway (von Simson 2011), Spain (Amuedo-Dorantes et al. 2008) and the United States (Lane et al. 2003; Autor and Houseman 2005; Heinrich et al. 2009), among others. The conclusion from these studies is however far from unanimous. While the Scandinavian and Italian studies are in favor of the stepping stone hypothesis, no such evidence is found for Germany or Spain. The American studies display an equally mixed picture: Lane et al. (2003) and Heinrich et al. (2009) find that THA work improves the chances of obtaining permanent employment, while the analysis by Autor and Houseman (2005) concludes that THA work may hurt workers' labor market outcomes in the long run.

Existing analyses on the evaluation of active labor market policy also reach opposite conclusions regarding the effectiveness of ALMPs. Card et al (2010) gather some of the main lessons from these studies in their meta-analysis of ALMP evaluations, and point out three important sources for why the studies differ in their empirical findings: Outcome measure, estimation sample and evaluation methodology. For instance, they show that long-term evaluations generally provide more favorable results than short-term evaluations and that youth programs tend to be less successful than untargeted programs. The effect is also found to vary substantially across program type and country. Recent Norwegian evaluations conclude that the overall effect of ALMPs is positive, but small. Wage subsidy and qualification programs show the most promising results, and individuals with poor employment prospects seem to have the largest gains from participating (Zhang 2003; Hardoy et al. 2006; Røed and Raaum, 2006).

#### **4. Data and sample selection**

The empirical analysis is based on an administrative micro database (FD-trygd) covering the entire Norwegian population aged 15 to 74 years from 1992 to 2007. The database consists of several labor market and welfare registers, as well as detailed education records. A unique identification key makes it possible to follow each individual as they move between different labor market statuses, for instance from education to work or from unemployment to active labor market programs. The data also contain a variety of socioeconomic background variables.

My starting point is all individuals who enter high school between 1996 and 2000 and who are between 15 and 18 years at the time of entry. The analysis is concerned about dropouts, here defined as those who leave high school education without completing within a period of five years after entering high school. If the individual completes high school within five years, he/she is removed from the sample. The same applies to individuals who are still in high school education after five years. This leaves me with 63 053 individuals.

Table 1 presents the labor market status of the individuals in the sample immediately after leaving high school.

	Number	Percentage
Health-related welfare recipient	4,122	6.49
Unemployed	3,705	5.84
Participant in ALMP	1,962	3.09
Employed	21,244	33.46
Education other than high school	957	1.5
Social assistance	1,870	3.2
Maternity leave or military service	1,492	2.35
Emigrated or dead	1,103	1.74
Not found in any official register	26,597	42.33

Almost 7 percent of the dropouts receive different health-related welfare benefits after leaving high school (disability pension, medical or vocational rehabilitation, occupationally disabled). These may be youth with chronic illnesses or disabilities which prevent them from being able to fully participate in the labor market. More than 30 percent are employed the month after leaving school. Some of these have probably left school because they obtained a job offer. Only 6 percent of the dropouts are registered as unemployed searching for a job. This does not necessarily reflect low unemployment rates among dropouts, but may be a consequence of the relatively strict eligibility conditions for receiving unemployment benefits in Norway. A substantial part of the dropouts are not found in any relevant labor market register after leaving school. While some of these may be missing in the registers simply due to traveling or vacation, others again may be actively searching for work but have no incentive to register as unemployed at the public employment office.

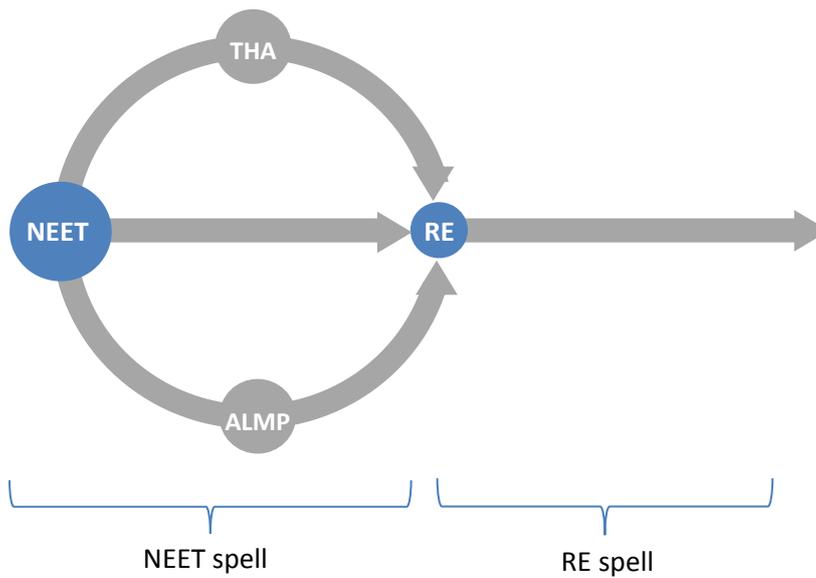
For the empirical analysis I select all dropouts who are not employed, not in education nor participating in active labor market programs – hereafter called NEET (not in employment, education or training) – for at least two consecutive months after leaving high school, and who are not excluded from the labor market due to health, birth, military service or emigration. According to the labor market statuses reported in table 1, these are individuals who are registered as unemployed, receiving social assistance or who are not found in any of the official registers. I then register the labor market status of these individuals on a monthly basis, and from this individual event histories are constructed.

Each event history may comprise up to three sets of transitions and two spells. The *NEET spell* starts running from the month the dropout enters the sample. Each month in NEET the individual is at risk of experiencing one of five events: a transition to THA work, a transition to one of the three categories of ALMPs mentioned in section 2 (work practice, qualification or wage subsidy programs) or a transition to regular employment (RE)<sup>9</sup>. If a transition to either THA or one of the ALMPs occurs, the NEET spell continues but now the only permitted transition is to RE. At least two consecutive months of employment is required in order for such a transition to be recorded. The subsequent *RE spell* is then monitored until the individual is no longer registered with a job and has returned to NEET, which ends the event history. I do not distinguish between different types of jobs or working hours. As such, the RE spell does not necessarily measure time spent at one workplace, but rather the employment stability. Figure 1 shows an overview of the transitions and spells in the event history.

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<sup>9</sup> A transition to THA work is defined as being registered in the employment register with industrial code (NACE) 74.502. RE is then defined as being registered with any other industrial code than 74.502.

**Figure 1. Transitions and spells in the event history**



All spells that are still running at the end of the time window (December 2007) are treated as censored. The same applies to spells that end with a transition to any other labor market status than the ones mentioned above. I only consider the effect of the *first* treatment the individual experiences. If the individual has a second transition to THA or an ALMP within the NEET-spell, the spell is censored. Although it would be both relevant and interesting to estimate the effect of multiple treatments, this requires a proper modeling of selection into later treatments and is beyond the scope of this paper.

Table 2 contains descriptive statistics of the spells, for the whole sample and conditioned on treatment status. The data consist of 28,033 individual NEET spells, and the average time spent in NEET is 16 months. Around 3 percent of the NEET spells contain THA work; the corresponding share for ALMP is 16 percent. While almost 50 percent of the THA workers eventually obtain regular employment, only 35 percent of the ALMP participants do. The majority of the employed dropouts return to NEET after terminated RE spell, but THA workers are less likely to reenter NEET than the rest of the sample. THA workers also have a larger proportion of ongoing RE spells when the observation window ends (December 2007).

<b>Table 2</b>				
<b>Descriptive statistics of the observed transitions in the sample</b>				
	<b>Whole sample</b>	<b>By treatment</b>		
		<b>THA</b>	<b>ALMP</b>	<b>No treatment</b>

<b>NEET spell:</b>				
Number of spells (individuals)	28,033	766	4,583	22,684
Mean duration of NEET-spell (months)	16.08	23.7	23.22	14.38
Share of spells ending in (percent)				
RE	49.03	47.39	34.19	51.9
Censoring due to				
- Transition to other labor market states	38.28	19.13	33.25	41.22
- End of observation window	6.8	5.87	7.43	6.9
- Multiple treatments	4.89	27.81	25.13	-
<b>RE spell:</b>				
Number of spells (individuals)	13,705	363	1,567	11,775
Mean duration of RE-spell (months)	15.36	15.27	14.17	15.53
Share of spells ending in (percent)				
NEET	70.22	62.54	69.63	70.54
Censoring due to				
- Transition to other labor market states	23.33	26.72	22.01	23.4
- End of observation window	6.45	10.74	8.36	6.06

Table 3 presents descriptive statistics of treated spells, conditioned on both type of treatment and type of labor market program. As explained in section 2, youth are mainly found in three different labor market programs: Work practice programs (WP), qualification program (QU) or wage subsidy programs (WS). The majority of the ALMP participants in the sample is found in work practice programs. Qualification programs constitute the second largest program type, while wage subsidy programs only occupy 6.26 percent of the ALMP participants. THA workers spend on average one month more in treatment than ALMP participants, but this number differs substantially across program type with qualification programs being shorter than the other programs. Mean duration spent in NEET before entering treatment is longer for spells with a transition to THA than to ALMP.

ALMP participants are more likely to be registered unemployed the month before entering treatment compared to THA workers, and they are also more likely to be social assistance receivers. This is expected, as labor market programs have unemployment registration as a requirement before participating, and those receiving social assistance are a target group in the assignment of ALMP as well. Qualification programs have the largest share of individuals

who are registered unemployed before entering, which may indicate that the waiting time for these programs are longer than for wage subsidy or work practice programs. As shown in table 2, THA workers are more likely to obtain RE than ALMP participants, and they are also more likely to have transition to RE during treatment. However, there are considerable differences in the employment frequencies across program types. While 50 percent of the participants in wage subsidy programs eventually obtain RE, the corresponding share among the other program types is 30 percent. Wage subsidy participants also have the highest proportion entering RE while on treatment compared to both THA workers and participants in other labor market programs. The high employment frequency among wage subsidy participants is not surprising; the main objective of these programs is that the participant continues to work for the firm beyond the subsidy period.

**Table 3**  
**Descriptive statistics of spells containing treatment**

	THA	ALMP	Conditioned on type of ALMP		
			WP	QU	WS
Number of treated spells	766	4,583	2,724	1,572	287
Mean duration of treatment	5.45	4.19	4.88	2.81	5.11
Mean duration before entering treatment	12.36	10.63	11.21	10.71	11.31
Labor market status the month before entering treatment (percent)					
Registered unemployment	28.33	61.38	56.42	70.67	56.45
Social assistance	6.92	9.14	8.39	10.43	9.41
No registration	64.75	29.48	35.19	18.89	34.15
Number of treated spells ending in employment	363	1,567	906	513	146
During treatment	161	557	309	152	96
After treatment	202	1,008	597	361	50

Table 4 reports the distribution of individual characteristics in the sample, measured when entering the NEET. Men are overrepresented in the sample, especially among THA workers.

Almost 70 percent of the dropouts enter the sample from a vocational program, and these are more likely to participate in a labor market program. ALMP participants are also more likely to be registered as unemployed or receiving social assistance while in NEET. Due to the young age composition of the sample, only a small share of the sample is married or has children; but among those who have a family, the probability of treatment is higher. As the majority of THAs are situated in the area around the capital city (Oslo), individuals living in this area are overrepresented among THA workers. THA workers also have the largest proportion of non-western immigrants, and they have the highest educated parents.

**Table 4**

**Individual characteristics (percent unless otherwise stated)**

	Whole sample	By treatment		
		THA	ALMP	No treatment
Female	42.18	39.82	42.46	42.21
Age (years)	18.77	18.86	18.61	18.79
Married	0.64	1.57	0.92	0.70
Children under 6 years	9.31	10.84	11.54	9.11
Vocational track	68.33	64.75	78.42	66.41
Immigrant:				
- non-western origin	8.12	11.36	9.51	7.73
- western origin	1.30	0.91	0.65	1.44
Living in a big city	21.84	28.59	19.90	22.07
Residency:				
- Østlandet	44.21	68.28	39.12	44.47
- Sørlandet	5.92	4.57	7.83	5.58
- Vestlandet	26.28	14.62	26.73	26.61
- Midt-Norge	8.69	4.05	10.87	8.42
- Nord-Norge	14.90	8.49	15.45	14.93
Low educated parents*	27.71	26.60	33.24	27.68
Registered unemployed	10.92	11.62	18.07	9.46
Receiving social assistance	5.94	4.83	8.18	5.52

\* Compulsory school only

There may be given several reasons for the observed differences across transitions and treatments. As shown in table 4, there is a selection into the different treatment groups based on observed characteristics. If these characteristics are correlated with the probability of obtaining work and the subsequent employment stability, the well-known selection problem arises (Heckman et al. 1999). People may self-select (or be selected) into treatment based on their employment prospects. In addition to selection on observed characteristics, unobserved factors such as health and motivation are likely to influence the treatment frequency as well as the employment frequency. For instance, poor health may be correlated with ALMP participation, as some programs are directly aimed at those with physical or mental health issues. THA work, on the other hand, may attract individuals who are more determined to obtain regular work in the first place. If such selection on observed and unobserved characteristics is present but not handled correctly, the estimated treatment effect becomes biased. A more elaborate discussion of the selection problem is given in the next section, where the model is presented and identification of the treatment effect is provided.

## **5. Econometric Modeling**

I use the timing-of-events duration model (Abbring and van den Berg 2003) to evaluate the effect of THA and ALMP (treatment) on the probability of obtaining regular work and on the stability of the subsequent RE-spell. As pointed out in the previous section, a fundamental problem in all treatment evaluation studies on observational data is to distinguish treatment effects from selection effects. Those who receive treatment may have some observed or unobserved characteristics which may influence the probability of receiving treatment as well as the outcome of treatment. Failure to control for such heterogeneity in the form of self-selection into treatment would lead to biased estimates of the treatment effect. The timing-of-events approach utilizes information about the timing of treatment and the timing of outcome to identify the treatment effect in a duration model framework. Assignment to treatment is modeled as a competing risks hazard rate, which by definition is a transition probability. In addition, the model approach explicitly controls for unobserved heterogeneity. By allowing the unobserved component associated with different transitions to be correlated, the same unobserved components may determine both the selection into treatment and the outcome of treatment. Abbring and van den Berg (2003) show that under some regularity conditions the treatment effect is non-parametrically identified within this duration model framework.

The model under consideration is a mixed multivariate proportional hazards model. Let  $T_{TREAT}$  and  $T_{RE}$  be stochastic variables denoting duration until treatment (THA, ALMP) and duration until regular employment respectively, with realizations  $t_{TREAT}$  and  $t_{RE}$ . If  $t \leq t_{TREAT}$  the individual is at risk of entering three different states: THA, ALMP or RE. If  $t > t_{TREAT}$  a transition to one of the treatments has occurred and the only exit state of interest is RE. The subsequent RE spell duration is modeled as a separate hazard rate. All hazard rates depend on elapsed spell duration ( $d$ ), calendar time ( $c$ ), observed characteristics ( $x$ ) and unobserved heterogeneity ( $v$ ). The proportionality assumption implies that elapsed duration and the explanatory variables act multiplicatively on the hazard.

The underlying continuous hazard rates are assumed to be constant within each month, such that the distribution of the spell durations for each destination state takes the Exponential form. The monthly integrated hazard rate to destination state  $k$  for individual  $i$  in month  $t$  is expressed by equations (1)-(3) below:

$$(1) \quad \theta_{kit} = \exp(\alpha_k d_{it} + \beta_k x_{it} + \gamma_k c_{it} + v_{ki}), \quad k = THA, WS, WP, QU$$

$$(2) \quad \theta_{kit} = \exp(\alpha_k d_{it} + \beta_k x_{it} + \delta_k o_{ijt} + \phi_k a_{ijt} + \gamma_k c_{it} + v_{ki}), \quad k = RE, \quad j = THA, WS, WP, QU$$

$$(3) \quad \phi_{kit} = \exp(\alpha_k d_{it} + \beta_k x_{it} + \phi_k a_{ij} + \gamma_k c_{it} + v_{ki}), \quad k = NEET$$

The transition rates from NEET into treatment (THA or one of the ALMPs) and into RE is explained by equation (1), *the selection equation*, and equation (2), *the outcome equation*, respectively. The duration of the subsequent RE-spell is explained by equation (3), which denotes the *employment termination rate*. Spell duration  $d_{it}$  is assumed to follow a piecewise constant specification. The intervals included are twelve two-month intervals until 24 months and an open-ended interval after 25 months (selection equation (1) and employment termination rate (3)) / two five-month intervals from 25-35 months and an open-ended interval after 36 months (outcome equation (2)).

In order to control for selection on observable characteristics, a large set of observed regressors are included in the model. These include both time-invariant and time-varying individual-specific characteristics: Age (3 dummies: 16-19 years, 20-24 years, 25-29 years), children under the age of 6 (dummy), married (dummy), living in a big city (dummy), place of residence (5 dummies: East, South, West, Middle or North of Norway), sex (dummy), immigrant status (3 dummies: native, non-western or western origin), and following a vocational track in high school (dummy). All variables, except for the three last, are time-varying. In equation (1) and (2) I also control for labor market status during NEET (three

dummies: no registration, registered unemployed or receiving social assistance). The following family background variables are all time-invariant: Parents' highest education level (4 dummies: compulsory school, high school, university level or unknown education level) and parents' income level (a weighted average of both parents' income from the individual was 7-16 years old, normalized to 2000-NOK). Business cycle and calendar time variables  $c_{it}$  included are local unemployment rate (the quarterly unemployment rate in the county of residence) and year (10 dummies: 1996-2007, where 1996, 1997 and 1998 are collapsed into one dummy due to little variation).

The treatment effect is divided into two terms: an on-treatment effect ( $\delta$ ) during treatment and an after-treatment effect ( $\phi$ ) after ended treatment. The on-treatment effect captures the potential lock-in effect of treatment; while in treatment the individual has less time available for job-searching activities. The on-treatment effect is only included in the outcome equation. The after-treatment effect may reflect the increase in human capital the individual has gained from treatment, or it may be a measure of the signaling effect of treatment. As I only consider the effect of the first treatment, the effect of THA and ALMP is not included in the selection equation.

Unobserved heterogeneity plays two roles in the above model. A common problem in duration analyses is the "weeding out" effect. Some individuals may have certain unobserved characteristics which make them more likely to leave the origin state faster than others; hence individuals with long durations may be a selected subsample of the original population. This may lead to an underestimation of the duration dependence parameters and of the proportionate response of the hazard to variations in a characteristic. Moreover, individuals who receive treatment may have unobserved abilities that influence the treatment assignment as well as the employment probability and the length of the subsequent RE spell, which would lead to biased estimates of the treatment effect if not accounted for. In order to solve these problems, a set of time-invariant individual unobserved characteristics which are allowed to be correlated across transitions is included in the model. As recommended by Heckman and Singer (1984), the unobserved heterogeneity is assumed to follow a discrete distribution with an a priori unknown number of mass points.

The timing-of-events results of Abbring and van den Berg (2003) ensure that the above model is non-parametrically identified without the need of exclusion restrictions or conditional independence assumptions. More specifically, identification is based on the timing of events,

i.e. how quickly treatment is followed by the outcome. Irrespective of the number of months spent in NEET before treatment, if the individual makes a transition to RE shortly after entering treatment this is evidence of a positive causal treatment effect. With single spell data identification hinges strongly on the proportional hazard assumption, which may be a difficult assumption to satisfy (see for instance van den Berg (2001) for a discussion of the proportionality assumption in a job-search setting). McCall (1994) and Brinch (2007) shows that the use of time-varying covariates helps identify hazard rate models with unobserved heterogeneity. The empirical model includes a large number of time-varying business cycle and calendar time variables, and the proportionality assumption may be relaxed.

A necessary assumption for identification of the treatment effect is the no-anticipation assumption. The treatment can only affect the outcome hazard from the moment of treatment and onwards, and not before. There must be some randomness in the way treatment is assigned; else the estimates of the current hazard rates are determined by future events. For instance, if the individuals know the exact date at which treatment is assigned, they may choose to reduce their search for regular work while waiting for the treatment to start. If this is not accounted for in the empirical analysis, the effect of treatment may be over-estimated. The magnitude of the bias, however, depends on the time span between the moment at which the individual is informed about the possibility of receiving treatment and the actual start of treatment. As long as this time span is not too long, the no-anticipation assumption becomes less important. Furthermore, the assumption does not rule out that individuals may have knowledge about the determinants of the stochastic process of treatment assignment and act on this information (*ex ante* effects).

In the case of THA work, the no-anticipation assumption is hardly a problem. The process of obtaining a THA job resembles a regular job search; there must be a match between the THA worker and the client firm, and there is no guarantee that an individual who register at the THA actually would be hired out. Moreover, the THA worker is often notified very short in advance about an available job; it is not unusual to be called in the same morning as the job begins. The no-anticipation may seem more troublesome in the case of ALMP, as youth are ensured participation through the “youth guarantee”. However, a report by ECON (2008) shows that the waiting period from registering at the public employment office until program participation for youth is far from predetermined: after two years, 42 percent of the youth had still not participated in an ALMP. The exact starting date of programs is also usually not known long in advance, especially for youth who are prioritized in the assignment of ALMP.

An exception are programs offered through the ordinary education system, but these are only available to persons 26 years or older.

The probability that individual  $i$  makes a transition to state  $k$  during month  $t$  can be expressed as follows:

$$(4) \quad p_{kit} = \left( 1 - \exp \left( - \sum_{k \in K_{it}} \theta_{kit} \right) \right) \frac{\theta_{kit}}{\sum_{k \in K_{it}} \theta_{kit}}$$

$K_{it}$  denotes the set of feasible transitions for individual  $i$  during month  $t$ . Before entering treatment  $K_{it} = \{THA, WP, QU, WS, RE\}$ , while during and after treatment  $K_{it} = \{RE\}$ . The only permitted exit state from the subsequent employment spell is NEET ( $K_{it} = \{NEET\}$ ).  $\theta_{kit}$  is the hazard rates defined in equation (1)-(3) above. The model presented above is the same as that found in Gaure et al (2007). They show, using Monte Carlo simulations, that this model is very well suited to separate causal effects from selection effects. Let  $c_{kit}$  be an outcome indicator variable which is equal to 1 if individual  $i$  has a transition to state  $k$  in month  $t$ , zero otherwise, and let  $C_i$  denote the complete set of outcome indicators available for individual  $i$ . The conditional likelihood contribution by individual  $i$  can then be formulated as

$$(5) \quad L_i(v_i) = \prod_{c_{kit} \in C_i} \left[ \prod_{k \in K_{it}} \left[ \left( 1 - \exp \left( - \sum_{k \in K_{it}} \theta_{kit} \right) \right) \frac{\theta_{kit}}{\sum_{k \in K_{it}} \theta_{kit}} \right]^{c_{kit}} \right] \times \left[ \exp \left( - \sum_{k \in K_{it}} \theta_{kit} \right) \right]^{1 - \sum_{k \in K_{it}} c_{kit}}$$

The distribution of the unobserved heterogeneity  $v_i$  is approximated in a nonparametric way by means of a discrete distribution (Heckman and Singer 1984). The number of mass points in the distribution is not pre-specified, but is determined endogenously in the estimation process together with the other parameters<sup>10</sup>. As the unobserved heterogeneity terms are unknown to the researcher, they have to be integrated out of the likelihood function.

Equation (6) presents the likelihood function in terms of observed variables (see p. ? in Gaure et al (2007)):

$$(6) \quad L = \prod_{i=1}^N E[L_i(v_i)] = \prod_{i=1}^N \sum_{m=1}^M q_m L_i(v_m), \quad \sum_{m=1}^M q_m = 1,$$

<sup>10</sup> Gaure et al (2007) shows that pre-specifying a (too low) number of mass points can seriously bias the estimated parameters.

where  $Q$  is the number of (finite) mass points in the distribution, and  $\{v_m, q_m\}$  are the associated location vectors and their probabilities. The model is estimated by maximum likelihood, where the estimation procedure starts out with one mass point and then more points are added until the likelihood can no longer be improved<sup>11</sup>. A more thorough presentation of the optimization algorithm in use is found in Gaure et al (2007).

## 6. Results

Due to the nonparametric specifications of the transition rates, the model contains a large number of unknown parameters (the selected model returned 429 estimated parameters). For expositional reasons this section therefore focuses on some key parameters of interest. I first present the duration baselines for transitions from NEET to the different treatments and to regular employment, and for the employment termination rate. Then I look at some of the factors determining selection into treatment and regular employment by examining the estimated coefficients. Finally, the treatment effects are reported, together with some stylized figures that illustrate the effect over the NEET spell and the subsequent regular employment spell for a representative person. The selected model contains 16 mass points in the heterogeneity distribution. The likelihood increased from -123117.329 (1 mass point) to -122985.704 (16 mass points), an improvement of 131.625. A complete list of the estimated parameters is found in the Appendix.

### 6.1 Duration Dependence

Figure 2 present the estimated baseline hazards for transitions to treatment and to RE as well as for the employment termination rate, together with 95% confidence intervals. The baseline hazards show the isolated effect of elapsed time, and are normalized to the observed transition rate in the first duration month as no selection has taken place at this point. Point estimates of the baseline hazard with standard errors are found in table A1 in the Appendix.

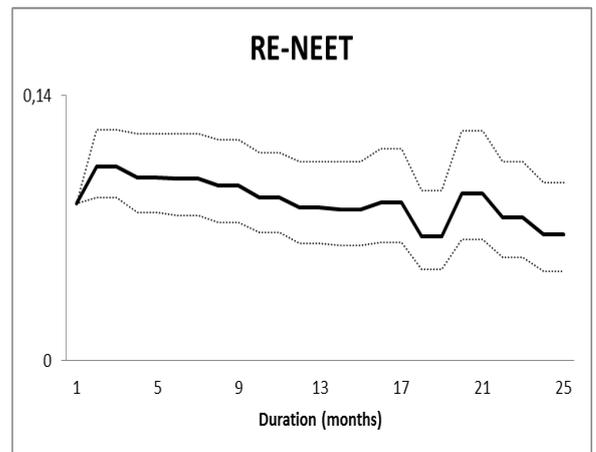
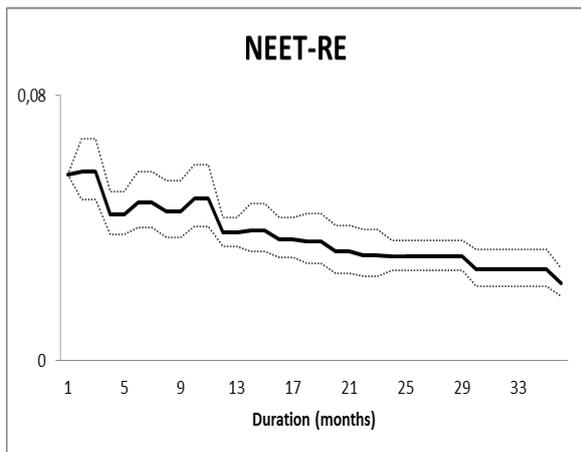
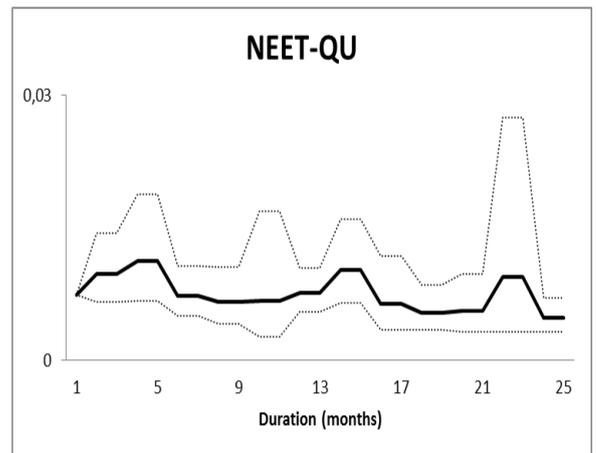
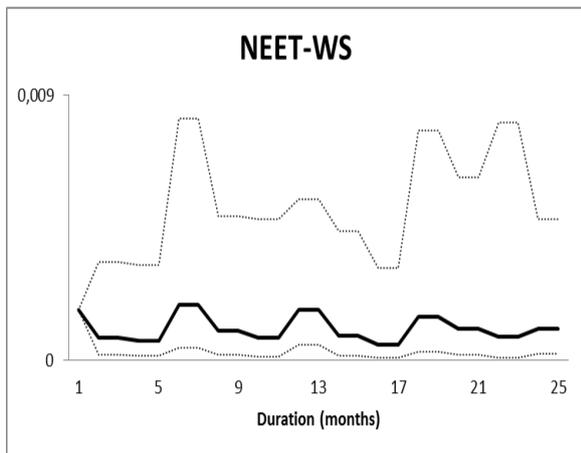
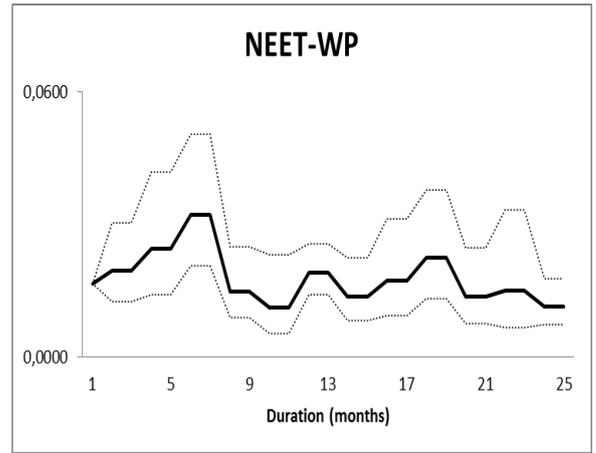
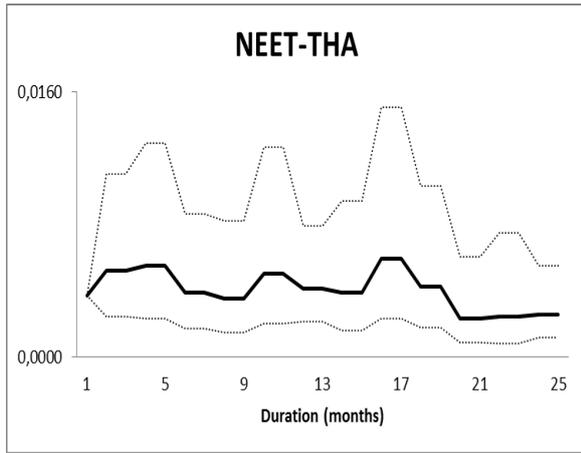
I do not find evidence of particular duration dependence for transitions to any of the treatments, as none of the estimated baseline coefficients are statistically significant. An

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<sup>11</sup> This is considered to be the case when the the log-likelihood increases by less than 0.01.

exception is transitions to work practice programs; around 7 months after entering NEET the baseline hazard to work practice programs almost doubles, after which it drops substantially and stays relatively flat. Transitions to RE have a negative duration dependence, a result that is generally found in studies on school to work transitions (see discussion in section 3) as well as in studies on labor market dynamics (see, e.g., Røed and Raaum, 2003). This may indicate depreciation of human capital or a stigmatization effect. For the employment termination rate, the hazard rate increases with around 20 percent the first 4 months. This may be a result of firms' extensive usage of a probationary period when they hire new employees. After this peak the baseline hazard slowly falls until it reaches the level of the observed transition rate in the first duration month.

Figure 2. Estimated baseline hazards.



Note: The baseline hazards are normalized to the observed hazard rate the first duration month.

## 6.2 The Effect of Observed Covariates on the Selection into Treatment and RE

Table 5 presents estimates of selected observed covariates for transitions to treatment and to RE, and reveals considerable selection with respect to individual characteristics on the transitions to the different destination states. A quick glance at the estimates show that transitions to regular employment and THA work share many of the same determinants, while the covariates associated with program participation in general have the opposite signs compared to those governing transitions to work.

Female dropouts have a slightly higher probability of obtaining regular employment than men (around 14 percent<sup>12</sup>), while they have a lower chance of having a transition to THA work. Very young dropouts are less likely to find regular employment; the same applies for those over 25. Responsibility for young children affects the hazard rate to regular employment negatively, probably due to reduced search intensity. Youth registered as unemployed find both THA work and regular employment faster than youth who are not recorded in any public register, and the effect is largest for transitions to THA work. As most youth are not eligible for unemployment benefits, the incentives to register are few. Those who do register may thus be a selected group who are more eager to work and thus search more actively. Furthermore, registered unemployed are entitled to job search assistance and guidance at the local employment office, which in turn may influence the employment probability. On the other hand, youth receiving social assistance may belong to a particularly disadvantaged group and have thus lower job prospects.

As expected, it is harder to find work in times of high local unemployment. The effect is largest for transitions to THA work, indicating that THA work is more sensitive to business cycle fluctuations than regular employment<sup>13</sup>. There are also large regional variations; dropouts living in urban areas and in the eastern part of Norway are more likely to obtain both THA work and regular employment, and this pattern is more pronounced for transitions to THA work. As most THAs are situated in big cities and above all nearby the capital city (Oslo) in the eastern part of Norway, this may explain the higher hazard rates to THA work for residents in these areas. Family background has a significant impact on the probability of obtaining both regular and THA work. The higher the income of the parents, the better the job prospects of the dropout. Surprisingly, youth with university educated parents have lower exit

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<sup>12</sup> Calculated as  $\exp(0.131)-1$

<sup>13</sup> de Graaf-Zijl and Berkhout (2007) show that THA work is a leading indicator of future GDP.

rates to regular employment than youth with low educated parents. Although this may seem counterintuitive, a similar result is found by Raaum et al. (2009) in their analysis of marginalization and social exclusion among Norwegian youth. While youth with favorable prospects in general face lower risks of marginalization, once marginalized they experience more adverse consequences.

**Table 5**  
**Observed covariates**

	From NEET to...					From RE to... NEET
	THA	WS	WP	QU	RE	
Female	-0.234***	-1.224***	0.100**	-0.199***	0.131***	-0.084***
Age (20-24 ref.):						
Under 20 years	-0.051	0.247	0.846***	-0.430***	-0.105***	0.086**
Over 25 years	-0.531	0.307	-0.286	-0.395	-0.301***	-0.108
Married	-0.137	-1.121	-0.987***	-0.127	0.055	-0.143*
Children	-0.176	-0.202	-0.282***	0.002	-0.301***	0.028
Immigrant origin	0.050	0.139	-0.039	0.266***	-0.042	0.016
Vocational track	-0.103	0.383*	0.345***	-0.012	0.027	0.060*
Living in a big city	0.387***	-0.289	-0.181***	-0.265***	-0.020	0.005
Residency (Eastern Norway ref.):						
Southern Norway	-0.787***	0.464	0.003	0.145	-0.417***	0.075
Western Norway	-1.162***	0.314	0.143**	-0.034	-0.195***	-0.041
Middle Norway	-1.283***	0.240	0.361***	0.121	-0.267***	0.049
Northern Norway	-0.850***	0.709***	0.055	0.121	-0.096***	0.164***
Parents' income <sup>a</sup>	0.116***	0.007	-0.030**	-0.041**	0.064***	-0.049***
Parents' education level (compulsory school only ref.):						
High school	-0.052	-0.186	-0.025	-0.020	0.034	-0.051
University level	-0.032	-0.353	-0.014	0.011	-0.124***	0.059
Unknown education	-0.435	-0.565	-0.161	0.186	-0.399***	-0.034
Local unemployment rate	-0.158***	-0.089	0.065***	-0.015	-0.043***	0.023**
Labor market status during NEET (no registration ref.):						
Registered unemployed	1.119***	2.183***	2.343***	3.032***	0.379***	-
Receiving social assistance	-0.036	0.835***	0.864***	1.349***	-0.675***	-

<sup>a</sup> Weighted yearly mean of both parents' income from the individual was 7 to 16 years.

- indicates that the variable is not used in the estimation.

\*\*\* indicates significance at 1 percent level, \*\* at 5 percent level and \* at 10 percent level.

I now turn to the determinants of transitions to ALMP. Female dropouts are less likely than male to participate in ALMPs, except for work practice programs. The effect is most prominent for transitions to wage subsidy programs, in which women are over 70 percent less likely to participate. Dropouts 16-19 years are less prone to participate in qualification programs; they are however much more likely to have a transition to work practice programs. This is probably a result of targeting, as work practice programs are mainly aimed at youth less than 20 years. Participants in work practice programs are also less likely to be married and have young children. Dropouts with an immigrant background have larger chances of participating in qualification programs. As some of these programs may include language training, the higher hazard rate for immigrants may be a result of this.

Dropouts living in urban areas or in the eastern part of Norway are less likely to participate in ALMPs than those living in other parts of Norway. The probability of participating in work practice programs is somewhat higher when unemployment is rising, while the local unemployment rate has no significant effect on the transition rates to wage subsidy or qualification programs. Youth registered as unemployed are much more likely to participate in ALMPs. This is expected, as unemployment registration is a requirement for ALMP participation. Social assistance receivers are targeted in the assignment of ALMPs, which is reflected in higher hazard rates to all programs for this group.

Male dropouts and have higher hazard rates from RE to NEET; in other words they have shorter employment spells compared to women. The same applies to youth less than 20 years and dropouts who have been following a vocational program in high school. Married individuals have more stable employment spells than unmarried, possibly due to family responsibilities. The local unemployment rate has a negative effect on the stability of the subsequent employment spell, and there are some regional variations with youth living in Northern Norway having higher employment termination rates. Family background has a slight influence on the employment termination rate; youth coming from high income families are less likely to leave employment for NEET.

### **6.3 Treatment Effects**

The on-treatment and after-treatment effects on the transition rate to regular employment are presented in table 6.

	<b>THA</b>	<b>WS</b>	<b>WP</b>	<b>QU</b>
On-treatment effect	-0,021	0,499**	-0,421***	0,336**
After-treatment effect	0,292***	-0,054	-0,042	0,358***
Subsequent RE spell	0,045	-0,917***	0,623***	0,437*

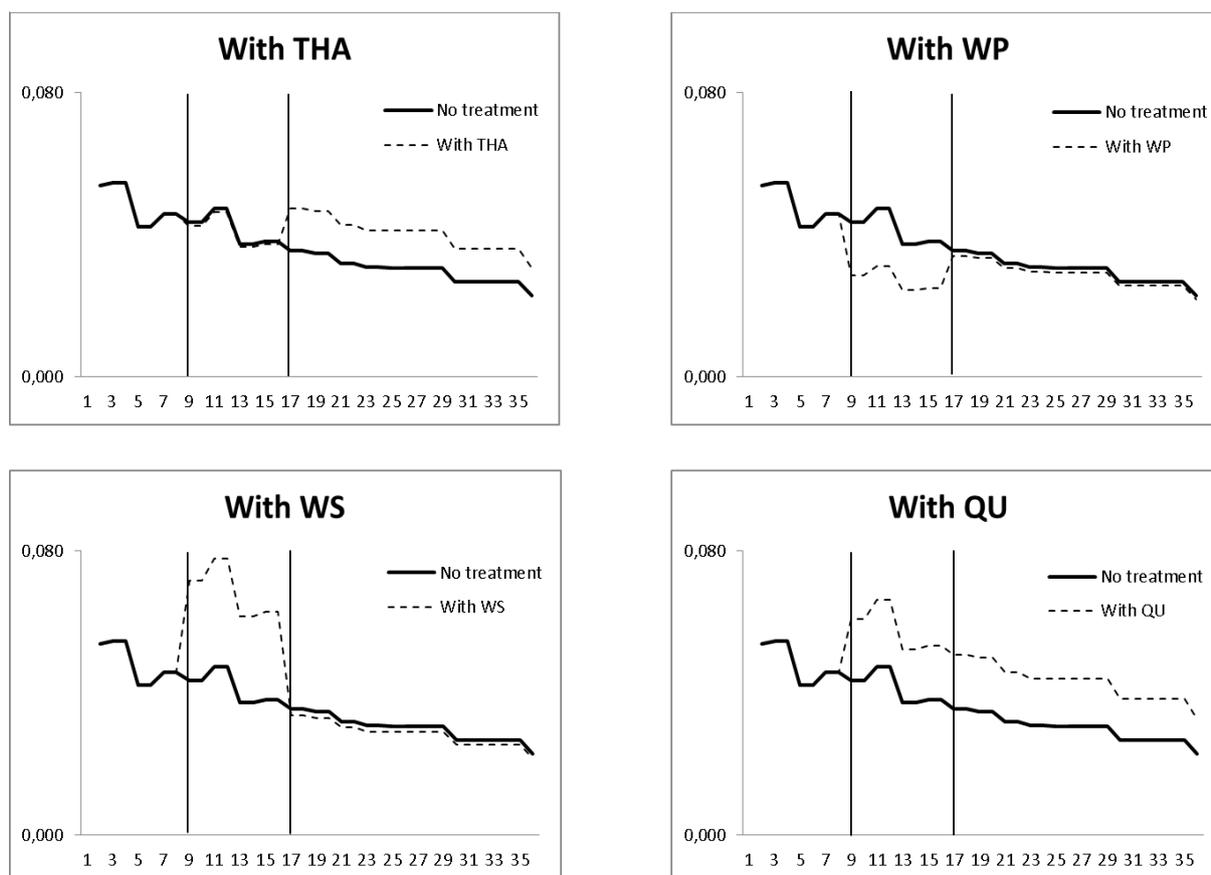
\*\*\* indicates significance at 1 percent level, \*\* at 5 percent level and \* at 10 percent level.

A negative on-treatment effect may represent a lock-in effect of treatment, reflecting that treatment is taking up time that otherwise could have been used to job search activities. Work practice programs are the only type of treatment that is associated with such a lock-in effect; during participation the hazard rate to employment decreases with 34 percent. I find no signs of a lock-in effect for THA work, while qualification and wage subsidy programs actually have positive on-treatment effects on the employment hazard. Participation in these programs increases the transition rate to regular employment with 65 percent and 40 percent respectively.

While there are no significant effects on the hazard rate to regular employment after participating in work practice or wage subsidy programs, THA work and qualification programs raise the hazard rate after ended treatment with 34 percent and 40 percent respectively. This may reflect an increase in human capital as well as signaling effects. Treatment also has significant impacts on the subsequent regular employment spell. Wage subsidy programs are the only type of treatment which actually prolongs the subsequent employment spell, while work practice and qualification programs increase the employment termination rate with 83 percent and 55 percent respectively.

To illustrate how the treatments influence employability, I predict the hazard rate to regular employment for a representative dropout with mean values of all covariates over a 36 months period using equation (4) for a non-participant (bold line in the graph). I assume that at the start of the 9<sup>th</sup> month, the individual has a transition to one of the treatments. The treatment is set to last 8 months, after which the individual returns to NEET. The estimated treatment effects are added to the hazard rate formulation and used to predict on-treatment and after-treatment hazard rates for the same representative dropout (stippled line in the graph).

**Figure 3. The on-treatment and after-treatment effects on the hazard rate to regular employment.**



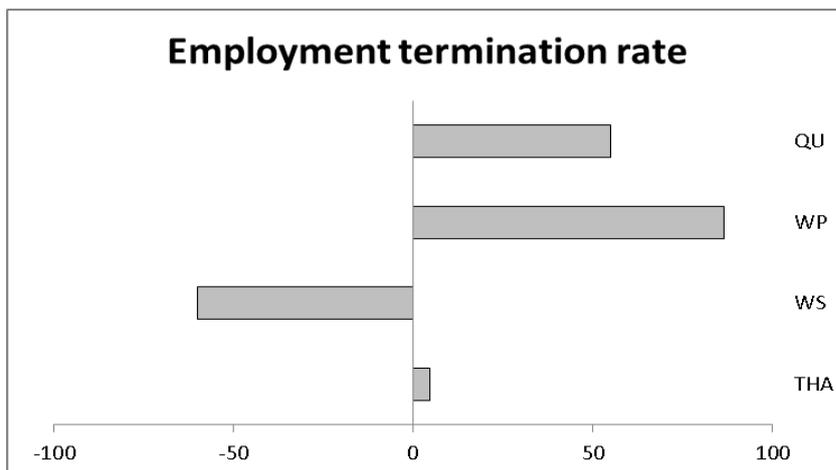
Note: The hazard rates are calculated for an individual with mean values of all covariates.

In sum, all treatments seem to increase the hazard rate to regular employment, with an exception of work practice programs. The absence of a lock-in effect of THA is shared by Jahn and Rosholm (2010) in their evaluation of THA work for Danish unemployed. This study also finds considerable positive after-treatment effects of THA work, a result that is shared by von Simson (2011). The large positive on-treatment effect of wage subsidy programs is in line with the literature (see, e.g., Zhang (2003) and Westlie (2008) for Norwegian evidence, and Kluve (2010) for international evidence). One of the main goals of these programs is that the individual continues to work for the firm when the subsidy period ends. However, Martin (1998) raises the concern that the positive effect of wage subsidy programs is a result of firms applying for such subsidy for candidates they would have hired anyway. The absence of an after-treatment effect for wage subsidy programs in my study supports this criticism.

The negative effect of work practice programs is also well documented in the literature. Hardoy (2005) evaluates the effect of ALMPs for Norwegian youth in the early 1990s, and concludes that work practice programs are counterproductive for youth less than 20 years. Nonetheless, this is the type of program most frequently offered to youth, especially to the youngest age group. The positive on-treatment effect of qualification programs is somewhat more surprising and contradicts previous findings. For instance, Zhang (2003) finds considerable lock-in effects of such programs in his analysis of ALMPs for Norwegian adults. Many qualification programs directed towards newcomers in the labor market, however, have a special focus on job search related measures, such as how to apply for a job, job interview training and network building. During the course the individual is encouraged to apply for real jobs and seek out potential employers, which may explain both the positive on-treatment and the positive after-treatment effect. Furthermore, young high school dropouts have very low formal skills, and may thus have particularly large gains from qualification enhancing measures.

Figure 4 illustrates how the employment termination rate is affected by the different treatments. The effects are calculated relative to no treatment (represented by the vertical zero line).

**Figure 4. The effect of treatment on the employment termination rate.**



Note: The effects are calculated as the percentage change in the employment termination rate relative to no treatment.

Wage subsidy programs and THA work are the only type of treatments which have no detrimental effects on the subsequent employment stability. Work practice programs have the

largest negative effect on the employment stability. That is, not only do work practice programs decrease the hazard rate to regular employment; such programs also lead to more unstable jobs. Qualification programs have favorable effects on the employment hazard both during and after participation. However, the positive effect of these programs disappears once the individual actually obtains a job.

## 7. Conclusion

The main purpose of this paper is to investigate whether THA work may function as an active labor market program for young high school dropouts without previous labor market experience. Using the timing-of-events duration model, I investigate how THA work affect the probability of obtaining regular employment and the stability of the first employment spell relative to ordinary youth labor market programs. The results show that both THA and ALMP, with an exception of work practice programs, have positive effects on the hazard rate to regular employment. However, only wage subsidy programs seem to prolong the subsequent regular employment spell.

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