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## Active Labour Market Policies in Denmark : A Comparative Analysis of Post-Program Effects

Guillaume BLACHE

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# Active Labour Market Policies in Denmark: A Comparative Analysis of Post-Program Effects

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*Abstract:* The scope of the paper is to estimate post-program effects in fostering good transitions from unemployment to work. Such an issue implies that besides job finding rates, qualitative variables related to work have to be included as well. The evaluation is based on a comprehensive transversal dataset of Danes who ended an activation program in the year 2002, merged with individual characteristics and yearly information related to their labour market status until 2004. To control for unobserved heterogeneity treatment-effects models have been applied. As regards transitions to work and labour market integration, main results show fairly large positive effects for private sector employment programs. It is worthwhile to be aware that job opportunities for private sector employment participants are highly dependent on the business cycle. Besides, the “creaming effects” minimize the positive impact of this type of programs as unemployed with longer work experience benefit the most from the private sector. Smaller positive impacts are found for labour market training and intensive job seeking, whereas negative coefficients are assigned to public sector employment programs. Long-term effects on wages are the most positive for those who involved into labour market training.

*Keywords:* active labour market policies, treatment-effects models, individual trajectories, Denmark.

*Résumé :* L'objectif de ce papier est d'estimer les effets du passage par les dispositifs d'activation sur les transitions entre chômage et emploi. A côté du taux de retour à l'emploi, il est important d'intégrer des variables qualitatives telles que le niveau de salaire, le type de contrat de travail et les épisodes d'emploi. L'analyse s'appuie sur des données danoises transversales incluant l'ensemble des personnes qui ont achevé leur participation à un programme d'activation fin 2002. A côté des caractéristiques individuelles, nous disposons d'informations annuelles jusqu'en 2004 par rapport au statut occupé sur le marché du travail. Afin de contrôler l'hétérogénéité inobservable, nous avons eu recours aux modèles à effets de traitement. Nos résultats mettent en évidence que les programmes pour l'emploi dans le secteur privé enregistrent les meilleures performances quant au retour et au maintien dans l'emploi. Il convient de préciser que, pour les participants à ce type de programmes, les opportunités d'emploi après la période d'activation dépendent fortement de la situation conjoncturelle. Par ailleurs, l'impact positif des programmes pour l'emploi dans le secteur privé est atténué par « les effets d'écrémage », dans la mesure où ils profitent davantage aux personnes possédant une plus grande expérience professionnelle. L'analyse montre que les programmes renforcés d'aide aux chômeurs et les programmes de formation hors de l'emploi ont des effets positifs plus faibles sur les transitions vers l'emploi, tandis que les programmes pour l'emploi dans le secteur public ont des effets négatifs. Les effets de long terme des programmes de formation hors de l'emploi sont les plus positifs sur les niveaux de salaire.

*Mots clés :* politiques actives de l'emploi, modèles à effets de traitement, trajectoires individuelles.

*JEL classification :* C21; C52; J64

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## 1. INTRODUCTION

Since the well-known Rehn-Meidner model (developed in Sweden 1940-1960) which goes beyond the traditional Keynesian and neo-classical approaches by encompassing core features such as a restrictive fiscal policy, a "solidaristic" wage policy and an active labour market, ALMPs have rather stand the test of time. In the fight against the marginalisation process, ALMPs, whose aims are to maintain (or even increase) unemployed skills and overcome structural imbalances in the labour market by a better adjustment of labour supply to demand (Calmfors & Skedinger, 1995), have been widely used throughout the European Union (EU) and to a slight extent in the United States (US). ALMPs belong to the group of supply side policies and proactive measures to enhance employability, equity and growth while preventing long-term unemployment for those at risk in a more and more open economy. With the Luxembourg European Council meeting (20 and 21 November 1997) and the Treaty of Amsterdam's title on employment, it was decided that « employment guidelines » and multilateral monitoring of economic policies are ways of success through accelerating convergence towards the best performance while being respectful of the subsidiarity principle<sup>1</sup>. Taken over by EU (European Union) policies, it is used as an instrument for determining when the Union is allowed to act, and, in any federal system, to regulate material division of power<sup>2</sup>. To cope with this form of European governance, the "Europe 2020 integrated guidelines" are designed to enhance coordination of economic policies. ALMPs effort is listed among the current employment guidelines and deserves particular attention from the European policy makers and international observers.

Even though different activation strategies have prevailed in Scandinavia since years, Denmark becomes the front-runner in this field because of the wide-ranging reforms implemented during the 1990s. A renewed interest in the Danish ALMPs may emerge among scholars interested by Transitional Labour Markets (Schmid, & Gazier, 2002) because of i) the role played by employment policies to manage the process of job creation and destruction ii) the emphasis on employment security rather than on job security<sup>3</sup> to counterpart the "externalisation" of work careers implied by the erosion of internal labour markets in "post-fordist" economies, iii) the central part played by "social citizenship" in reforming the activation strategy, iv) the way these policies have been negotiated and co-financed by employees and employers.

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1. Subsidiarity must be understood as the principle according to which the next upper authority should have a subsidiary function, performing only those tasks that cannot be performed effectively at the current or any lower levels.

2. Constitutionalists distinguish a formal division of powers, the liberal one, according to the "form" of legal texts (acts, regulations...) and a material division of powers, the federal one according to the "matter" of decision (foreign policy, health, education...)

3. "Job security" aims at granting the continuation of the same job and thus does not imply any reallocation of work. This component of security is highly dependent of the different national employment protection legislation. "Employment security" main purpose is to enhance employability of the workforce to favour both transitions from unemployment to employment and between jobs. This component of security comes with a reallocation of the workforce and is more often linked to ALMPs and educational policies.

Besides, Denmark is often seen as a textbook case of how to better manage transitions between unemployment and employment because of the range of opportunities provided by public schemes (including not only "transitional employment" but also more active lines such as incentives and upgrading skills).

ALMPs' effects can be regarded as twofold: in a macroeconomic perspective they should theoretically improve the unemployment-inflation trade-off by lowering the unemployment rate while avoiding supply bottlenecks in the labour market.

In a microeconomic perspective, they are supposed to reduce the unemployment spell and thus increase the job finding rates via human capital improvement. To sum things up, what stand out from the literature is that even though positive effects can be expected from ALMPs they appear to be rather small and not that much cost-effective with sometimes adverse effects.

Nevertheless, only a limited number of evaluations have been carried out with respect to long-term effects on wages and type of working contracts. This article tries to fill the gap by carrying out an empirical analysis based on administrative register data from Denmark Statistics. According to current labour market policies orientations in Denmark, a new category will be distinguished as well: services and sanctions programs.

Section two addresses the topical issue of the institutional determinants of ALMPs development before to move into the adjustments and changes in the Danish « active line ». Then, the section presents the reader an overview of the microeconomic literature about ALMPs. Section three gives explanations of the different administrative records used to make the dataset. This section also provides an evaluation of the determinants of program participation through logistic regressions. The fourth section is designed for the empirical analysis on individual trajectories.

## 2. THE STAKES OF ALMPs IN DENMARK

### *2.1 ALMPs and employment security in the "flexicurity triangle"*

Today Denmark is the country with the highest spending on active expenditures (1,6 as a % of GDP, *OECD 2009*). Regarding passive expenditures, Denmark ranks 5 with 1,7 as a % of GDP, *OECD 2009*). It is rather misleading to separate the active part from the passive one because they are as one in the Scandinavian activation strategy. In Denmark these two labour market policies expenditures are fully integrated in the well-known "flexicurity" triangle based on social compromise<sup>4</sup>. In short, the first angle refers to labour market flexibility with high job mobility and a permissive legislation as regards job protection. The second angle refers to the generous welfare schemes through income security (high compensation rate and long benefit duration).

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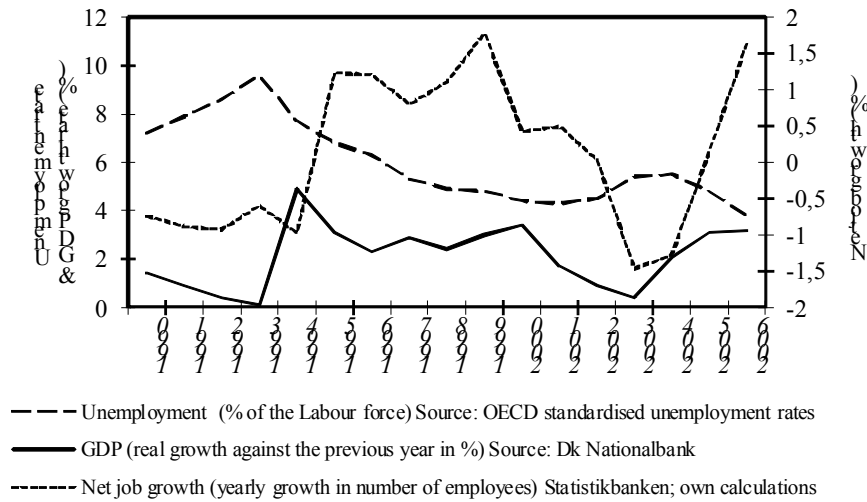
4. See P.K.Madsen, 2005 for further details about the "flexicurity" model, T.Bredgaard & al., 2007 (1) for a disaggregate study of the flexicurity model.

Labour market dynamics and income security form the basic flexicurity nexus. ALMPs, which represent the third angle, encompass elements of both social disciplining (incentives to take and seek jobs) and social integration (competencies and qualifications to achieve a job) according to the "right-and-duty" principle (Graversen & van Ours, 2005).

Concerning the functioning of the flexicurity triangle, ALMPs should ensure the junction between the two first angles. ALMPs remain one of the main spearheads for countries, such as Denmark, whose "flexicurity regimes" are based on the external security /external flexibility nexus (Bredgaard & al., 2007 (2)). The external numerical flexibility (i.e. high job transitions, low job security) is indeed offset by employment security with a reallocation of work (i.e. ALMPs, educational policies) undertaken by the state. Such configuration allows firms to adjust more freely to market changes compared to the internal flexibility/internal security nexus that bears upon firms' responsibility as regards job security. This conception of the Danish labour market based on the external security/external flexibility nexus is somewhat restrictive but sufficient to legitimate ALMPs in the functioning of the flexicurity triangle. Evaluations based on companies' level data can bring to the fore new insights about human resources strategies and flexicurity (Blache & al., 2008). Some companies, in line with the core-periphery model (Atkinson, 1984) can score high on both internal and external flexibility parameters with their employees. We should acknowledge that the development of ALMPs in the 90' happened in a period of strong economic upswing, which speeded up the fall in unemployment. Often left in abeyance, the significant decline in unemployment through a very short length of time has only been possible by overcoming economics circumstances that is the macroeconomic context. It required a great deal of precision as regards timing and coordination between macroeconomic and structural policies to avoid overheating (Blache, 2007 (1)).

Figure 1 shows that the increase of GDP growth is positively correlated with the fall in unemployment. Besides, the trend as regards job creation is quite sensitive to the GDP growth trend. The likelihood of transition from unemployment to employment is strongly pro-cyclical, that is when the GDP growth steps up the probability of finding job raises (Westergard, 2001). Besides, the way the process of job creation and job destruction is managed provides some explanations on the growth levels as well as on the unemployment levels in Europe (Cahuc & Zylberberg, 2006). In that respect, Denmark benefits from a very reactive labour market organization with great emphasis put on workforce mobility, employment policies and free choices of firms. ALMPs played an important role in ensuring a *trade-off* between inflation and unemployment by maintaining the size of the labour force in times of recessions during the 1990s while avoiding bottlenecks once the economic upswing was under way (see Layard & al. (1991) for theoretical assumptions).

Figure 1. The GDP growth – employment nexus



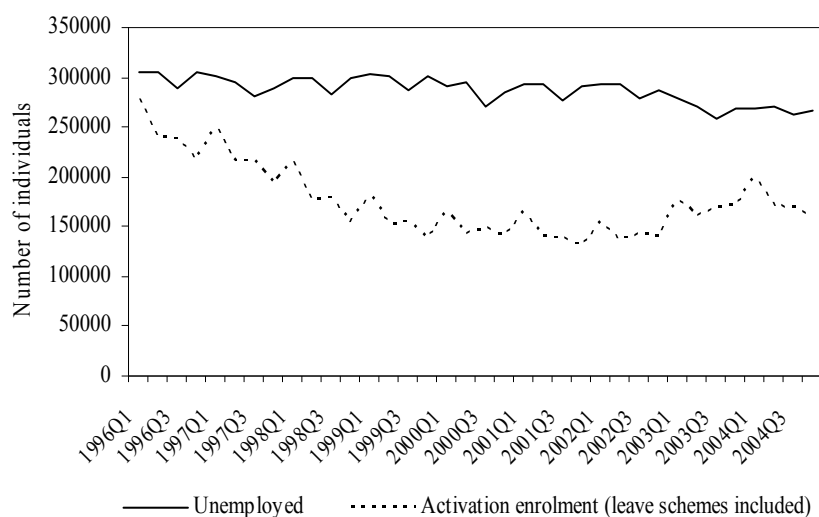
In the Danish flexicurity, the purpose of ALMPs in a more microeconomic perspective is twofold: i) activation aims at guaranteeing an incentive for job search in the unemployment insurance system. Just before the unemployment benefit period run out, unemployed lower their reservation wage and increase their job when they consider activation negatively in a perfect foresight model. This effect is better known as the *threat effect* or *motivational effect* of ALMPs (Geerdsen, 2002; Rosholm & Svarer, 2004). ii) Activation may display a *qualification effect* by enhancing the employability of unemployed and thus, improve their likelihood in finding a new job. ALMPs are a key element in the flexicurity for workforce development. Ongoing research about the Danish flexicurity model also refers to lifelong learning as a crucial linchpin with ALMPs to maintain employment security and to cope with structural changes.

One of the main reasons for ALMPs longevity in Denmark comes from the tripartite negotiation between the government, national employer’s associations and trade unions. The backing support of employers has been considered as a crucial linchpin in explaining the Danish success toward ALMPs developments (Martin & Swank, 2004; Martin, 2004). For the authors, the organization of business matters for social policy development and therefore as regards ALMPs spending effort. The more important is the degree of corporatism in employers’ organizations, the more important is ALMPs spending at the national level. The reason is that centralized employers’ organizations, encompassing groups are more likely to go beyond particular interest by focusing on collective concerns of their membership (Martin & Swank, 2004).

The partisanship model from D.Rueda (2006) shows that contrary to spread ideas according to which higher levels of ALMPs are assigned to social-democratic governments, the *insider-outsider* politics do matter the most. The argument starts from the social democratic parties’ dilemma because they have to cope both with *outsiders* demand for ALMPs and the fear from *insiders* as regards to the policies effects on taxes.

Therefore, *insiders* are being usually more unionized so that social-democratic parties should reduce ALMPs efforts. Indeed, what makes them to invest more in ALMPs comes from the closer interests of *insiders* and *outsiders*, and upstream, the decrease of employment protection and the instability of the unemployment rate. Therefore, the increasing vulnerability of *insiders* to unemployment makes them put pressure on governments to promote employment policies via collective bargaining. Several examples throughout the European Union show that the impulsion comes from *insiders* vulnerability vis-à-vis employment protection and not at all from the nature of government in itself (i.e.<sup>1</sup> "New Deal" and life-long learning at the end of the 1990s in Britain, i.e.<sup>2</sup> in Sweden ALMPs spending has been at its highest in the early 1990s when government was conservative, i.e.<sup>3</sup> In Denmark, even though the labour market reform has been implemented by a social democratic government, the liberal conservative government has been in continuation of the active line in the 1990s (see figure 2.) with even more spending on active expenditures and less on passive ones).

Figure 2. The enrolment into activation programs



Data source: Statistics Denmark

## 2.2 From economic compensation rights to economic participation rights

Since the labour market reform in 1994, several changes have been made with respect to the unemployment insurance/ALMPs nexus leading to a new equilibrium between *re-commodification* and *decommodification*<sup>5</sup>. Activation reforms in the 1990s are to be found in the redistributive conflicts and the evolution of the social citizenship (Kvist, 2003).

5. *Re-commodification* refers to the ability with which individuals can enter or re-enter the labour market. The process is usually attributed to ALMPs. *Decommodification* refers to the more or less dependency towards the market (Kvist, 2003).



The underlying objectives of the reform were to i) improve the employment prospects of the unemployed by strengthening ALMPs programs, ii) reduce *moral hazard* through greater incentives, iii) to figure out activation as a counterpart to legitimate generous unemployment benefits (maximum replacement rate of 90% of the previous income with ceiling).

At the beginning of the 1990s, the unemployed could renew their eligibility for benefits each time they achieve their participation into one of the activation programs.

In 1994, the reform put an end to this rule; the unemployed who have exhausted their unemployment benefit period and did not find a job rely on social assistance and have to follow an active social program (ASP) to reduce the length of welfare spells. With the reform, claimant's obligations are reflected by a shortening in his benefits period, tougher sanctions and to a slight extent cuts in benefit levels.

Since 1994, the benefit period was divided into two periods. The first 4-year period, was called the *contact period* (or passive period) during which the unemployed might search for a job or participate in an activation program. During the second period, a 3-year one, which was called the *activation period*, the unemployed had the right and the obligation to accept activation offers (75% of his time).

The start of the activation period has gradually been brought forward then; since July 1996, the *contact period* was reduced from 4 to 3 years, then from 3 years to 2 after January 1998. Eligibility to unemployment insurance required at least 12 months (initially 6 months before June 1996) membership in an unemployment insurance fund (taking over by unions) and 12 months employment during the last 3 years. Since 1994, claimants can be excluded for their second refusal job, or second activation offer. Note that such an orientation in Denmark did not provide high risks of displacement among unemployed because of the high arrival rate of job offers (Albæk et al., 2002) and the effectiveness of its profiling system. Tighter obligations have also been set up as regards mobility requirements, both occupational and geographical.

In 2000, the *activation period* starts after one year of unemployment spell. During these successive changes, the *activation period* duration remained constant. Finally, from 2002 onwards, the distinction between the two periods was abolished, and unemployed are indeed required to accept activation offers at any time during their unemployment spell (in practice after 6-9 months of unemployment).

To cope with the high level of unemployment in the early 1990s, besides the *activation path* Denmark pursued a *citizen's income path* during the 1990s through various leave schemes and retirement labour market programs. Leave schemes will not be included in the analysis because they are not used any more since 2000 with the return of full employment and the risk of wage pressure. The reduction of early retirement schemes has also been a key objective by the present government and will not be included in the analysis as they maintain people out of the labour market.

Activation is still a priority in Denmark as regards the high level of ALMPs expenditures. Nevertheless, new orientations have been conducted by the liberal-conservative government (*Venstre og Konservative*). Since the year 2002 with the reform "more

people to work", work incentives (i.e. tax deduction) with more emphasis on social welfare recipients (i.e. ceiling on social assistance deposits) became more relevant. Besides, efforts have been done in immigration/integration policies through various programs such as "new law on immigration" (2002) and "a new chance for all" (2005) mainly consisting of a tighter follow-up and stronger obligations for this target group. In short, because of the relative low level of structural unemployment and the persistence of social exclusion (about one quarter of the population depend on welfare scheme and are therefore outside the labour market), policy priorities and targeting groups have changed. Raising labour supply is a crucial linchpin to safeguard welfare and anticipate the growing share of retired population in the future.

For the time period used in our analysis, activation offers for insured unemployed were usually made by the local employment agency. The 14 local labour market councils (in each counties, *Amter*) can decide to target programs to specific groups when needed. Despite the decentralisation process, the labour market councils are based on corporatist principles with centrally formulated goals by both employers and employees. From now on, with the administrative *strukturel reform* (2007) and the removal of counties, the implementation of active labour market programs is under the competence of municipalities. The government has also made a few institutional changes as regards the administrative organisation of the public employment system.

Without going more into details, we still have to mention recent additional reforms such as the inclusion of private providers and the creation of a one-string system (*eng-strengt system*) for more flexibility and efficiency in the monitoring of both unemployment benefit recipients and welfare benefit recipients. In spite of the decrease in the level of compensation, the maximum of four years unemployment benefits (UB) has remained unchanged until very recently (Beskæftigelsesministeriet, 2009). Since 2010, the UB maximum duration was cut from 4 to 2 years. In return, dismissal payments have been introduced by collective agreements in 2010 for those with job tenure of more than three years. Henceforth, participation in activation starts after 3-6 months of unemployment according to age. Last but not least, the use of ordinary education has steadily decreased from 2001 to 2011 with greater emphasis put on incentives programs. Thus, these types of programs will be included as well in our analysis. Four heading categories of active labour market programs will be distinguished (cf. box n°1).

### Box n°1. A classification of active labour market programs in Denmark

\*Private sector employment programs: generally last between 6 and 9 months. These programs mainly refer to subsidized as *private job training* during which the unemployed is offered an employment with a private employer. During the activation period, a wage subsidy is paid to the employer. The aim of *private job training* is to provide the unemployed a real work experience before to be integrated into regular employment. *Adult apprenticeship support* also belongs to "private sector employment programs". *Adult apprenticeship support* fits situation when there is a shortage of persons with a specific education within a specific area. The third program who belongs to the "private sector employment programs" category is *labour trainee* that aims at increasing skills through working into a private company. No wage subsidy is paid to private employers.

\*Public sector employment programs: more often last between 6 months and one year and encompass either subsidized employment or direct job creation both in the public sector. *Public job training* has been included in the category. This program is exactly the same as private job training described above except from the sector differentiation. *Individual job training* that provides hard-to-place unemployed a temporary job also belongs to this category. The job can take place either in an association or in the public sector but cannot take the form of an ordinary employment with a private employer. As regards direct job creation and temporary job in the public sector, *services jobs* and *pool jobs* have been integrated. *Services jobs* aim at improving the employability of long-time unemployed through direct jobs creation in the public sector. *Pool jobs* consist of temporary jobs within the public sector while participants continue to receive unemployment benefit. *Voluntary not paid activities* of community interest have been integrated as well in the category.

\*Education/training programs (or labour market training programs): consist of all types of classroom training and last a few months. It can take the form of various measures: *adult education subsidies*, *education with training allowance*, *specially adapted educational activities* and *adult further education*. This category aims at enhancing unemployed employability and takes place either in the ordinary education/training system or in special tailor-made programs. During participation in such programs, the unemployed can receive a training allowance which corresponds to the unemployment benefit that the person concerned would otherwise has been entitled to.

\*Services and sanctions programs: as regards today labour market policy orientation in Denmark, it is preferable to integrate services and sanctions rather than a category called "other programs" which is more often too heterogeneous and does not prove anything. Two complementary programs are integrated into this category: *intensive job seeking* and *advisory/introductory activation* that are preventive measures based on vocational guidance and individual action plan.

Note that in our dataset, we initially had targeted programs such as measures for the disabled (*flex-jobs* and *light-job*) and measures focusing on immigrants (*course in understanding of the society*, *Danish lessons* and *adapted activation*). These programs will not be compared with the four heading programs because of their peculiarities.

*Source: adapted from Kluge (2006) and ECOTEC (2004)*

### 2.3 ALMPs and individual trajectories: some results from the literature

The evidence put forward by the literature is that individual trajectories are highly affected: i) before participation, by the *threat effect* (or pre-program effect) which significantly increases the job search activity just before participating in programs often perceived as being too restrictive (Black & al., 2003; Lalive & al. 2002), ii) during participation, by the *locking-in effect* which reduces the job search activity owing to the lack of time when individuals have to complete an ongoing skill-enhancing activity, iii) after participation, by the *post-program effect* (or treatment effect), normally supposed to enhance employability and thus, increases the chance of getting unemployed back to work (Van Ours, 2004; Richardson & Van den Berg, 2001; Lalive & al., 2002).

The *post-program effects* are more often measured through employment probabilities, employment spells and individual earnings<sup>6</sup>. Even though there is an extensive and growing empirical literature about ALMPs, *post-program effects* at the individual level constitute one of the main controversial issues. The content of programs, the selection process, the business cycle and the estimating models as well differ across the studies (Raaum & al., 2002). Nevertheless, some evidence can be underscored from international cross-country surveys (Heckman & al., 1999; Martin & Grubb, 2001; Kluve & Schmidt, 2002; Kluve, 2006).

Main results show that private employment subsidies are associated with a higher probability of yielding positive *post-program effects*. Training programs are the most expensive and widely used active measures in Europe and appear to be positive on single mothers but have rather poor effects on other vulnerable groups such as youth and older workers with low initial education. Job creations in the public sector provide no real benefits in the long-term. Besides, they convey low marginal product and are often seen as hiding the real level of unemployment. Regarding services and sanctions, which are the least costly measures their effects are rather non-conclusive. The positive impact of job-search assistance depends on the quality of employment services and monitoring control. Only a few studies have been conducted about sanctions programs even though a well-balanced system including job search assistance, claimants' obligations (with sanctions in case of default leading in some cases to partial suspensions of unemployment benefits) and training has proved to be more efficient. Concerning youth measures, they usually show a negative picture despite a few national successful programs when they come with wage subsidies.

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6. If these three effects can obviously induce the matching process (Edin & Holmlund, 1991) microeconomic analyses are also important as regards: i) ALMPs indirect effects on "non-treated" people (i.e., *displacement effect* when individuals in subsidised programs are hired at the expense of others due to relative costs changes, *deadweight effect* referring to the situation where participants beneficiaries would have also been hired in the absence of the program (Calmfors & al., 1995; Forslund & Krueger, 1993), deposit) and expectation effect in reducing welfare-loss from being out of work (Korpi, 1994, Raaum & al. 2002), iii) *windfall effects* and *creaming effects* can be observed as regards to the selectivity of recruitment in ALMPs programs.

Because of the extensive use of active labour programs, which are particularly costly in Denmark, it is quite obvious that investigations had been conducted to assess *post-program effects*. Based on fixed effect estimation, K.Langager (1997) shows that the effects are the most positive and significant for private job training participants, while being small as regards to public job training beneficiaries, and with even adverse effects for those engaged into education schemes. On the government side, the Ministry of Social Affairs shows the same results (*Arbejdsministeriet, 2000*). Based on different foresight expectation models as regards to the shortenings in the passive unemployment insurance period in the 1990s, a first breakthrough by Geerdsen (2002, 2006) tackled the presence of an important *threat effect* prior to activation (net increase in the overall hazard rate after the activation plan which precedes full time participation into one of the compulsory activation programs).

Even though *pre-program effects* are beyond the scope of the paper, we must keep in mind that when the threat effect is not included in the analysis *post-program effects* are downward biased (Rosholm & Svarer, 2004). Nevertheless, the *threat effect* depicted by Rosholm & Svarer (2004) does not affect *post-program effects* in comparison between programs: in both situations (threat effect included or not) private sector employment programs have the most positive *post-program effects* on the job finding rate. *Post-program effects* are close to zero for public employment programs and education/training measures while being negative for the other programs' category.

With respect to the flexicurity triangle, ALMPs' motivational effects (*pre-program effects*) have therefore proved to be more effective than qualification effects (*post-program effects*) in reducing the duration of unemployment. Treatment effects have mainly been investigated in terms of employability and transitions to work. Within the scope of the European Employment Strategy, further analyses are needed about ALMPs long-term effects on qualitative variables such as wages, employment duration and extent of working time. There is little compelling evidence that ALMPs in Europe have had a positive impact on participants' wages (Heckman & al., 1999). Results stated in the literature remain controversial compared to the effects on employment probabilities. Consistent and positive effects have been found in Norway (Raaum & Torp, 2002).

As for Denmark and Sweden results are very sensitive to the time period used and the methodology applied. Using fixed effects models, Jensen & al. (1993) find small wage effects as regards labour market training programs whereas Westergaard and Nielsen (1993), based on a bigger cohort of participants found positive impacts. As regards labour market histories, common findings show that the duration of subsequent employment spells after participation increase for private job training, decrease for public job training while classroom training has no effect (Bonnal, 1997; Ham & Lalonde, 1996; Eberwin & al., 1997, Munch & Skipper, 2008).

Recent evaluations using well advanced models tried to estimate jointly the transitions out of unemployment, the duration of employment and the wage impacts (Gerfin & al., 2005; Lechner & al., 2004; Munch & Skipper, 2008). Using an indicator of job quality (continuously employed for at least 3 months with earnings of at least 90% of those in the last job), Gerfin & al. (2005) find that subsidized temporary employment program is the most efficient ALM programs in Switzerland. Based on the same multiple treatments

model, Lechner & al., (2004) investigate the impact of public sector sponsored training programs in Germany. Negative short-term effects and positive long-term effects have been outlined by Lechner & al., (2004). Based on an extended multivariate duration model, Munch & Skipper (2008) find longer spells of employment at the cost of a lower hourly wage rate for private and as well as ordinary classroom training. The effects of public job training are negative for all variables of interest (Munch & Skipper, 2008).

Our article contributes to the international literature in two ways: Firstly, the evaluation can be seen as a possible extension of previous research because of the emphasis put on new qualitative variables. Even though the main purpose of ALMPs' is to get unemployed back to work, the extent of working time is an important matter if we consider the potential long-term effects of non-permanent work on the quality of working life, employee's overall labour market position and prospects (Gimeno & al. 2004; Scheele, 2002; Virtanen, 2006). This paper evaluates the impacts of ALMPs on the job finding rates but also on qualitative indicators such as the extent of working time and the wage level. Besides, the use of transversal data will give an overview of the employment dynamics.

Secondly, by the methodology applied and the use of updated data, the paper sheds new lights on the effects of Danish programs. At the time of our analysis, no evaluation has been run on the baseline year 2002 (that is when the passive period has been theoretically removed). Most previous studies have been conducted on longitudinal data covering the period 1995-2000. The programs' classification used and the inclusion of a « services and sanctions » category should also bring new insights as regards today employment policy in Denmark.

### 3. THE SELECTIVITY OF ALMPs PROGRAMS

#### 3.1 Data

The data made available by Statistics Denmark include different administrative registers. In Denmark, every resident is assigned a personal identification number (CPR), and all lifelong this number is logged in encounters with most private and public systems. Thanks to the existence of such a unique identification system, Statistics Denmark can use it to create a wide spectre of merged data sets, which describe the entire population. Tightly framed by the law, research institutions have only access to an anonymous version of the file. Everything about activation enrolment is collected by the AMFORA (*Register on Labour Market Measures*). This register provides information on the average number of people participating in labour market policy programs, and various variables such as: type of measures, date of commencement and cessation for the measure, hours per week for the measure and type of subsidy/placement. The year 2002 has been chosen as baseline, such as the sample includes all people who ended a program in the end of November 2002. The year 2002 was preferred in order to have sufficient retrospective interviews to follow people over time.

Background variables (age, sex, gender...) as well as the ones about the last job (sector of industry, occupation, and work experience) have been taken from the IDA register (*Integretet Database for Arbejdsmarkedsforskning*). IDA contains information from various statistical registers at Statistics Denmark. The variable «highest completed education» comes from a register called «Education and employment of the population» and the information on origin comes from a register called «immigrants and their descendants».

To follow people over time, the socio-economic status of individuals is another variable drawn from the register called RAS (Register-based Labour Force Statistics). Following the guidelines set by the ILO (International Labour organisation) as regards the identified statuses, RAS statistics contains information on the Danish population's attachment to the labour market at the end of November each year (Statistics Denmark). Based on the classification described in previous section, a categorical variable have been made for participation into one of the activation programs. Modalities focusing on target groups (immigrant and disabled) have of course been dropped out when performing multi-treatment analyses. We will come back later on the models applied.

Table 1. Description of the sample. Baseline: year 2002

	observations	%	val. %	cum. %
Private sector employment	16018	7,1	8,4	8,4
Public sector employment	47644	21,1	25,1	33,5
Education and training	60417	26,8	31,8	65,3
Services and sanctions	28928	12,8	15,2	80,5
Integration programs	32317	14,3	17,0	97,5
Measures for the disabled	4834	2,1	2,5	100,00
Total programs	190158	84,2	100,00	
Missing values	35594	15,8		
Individuals in the dataset	225752	100,00		

80,5% of the total sample is represented by the four main groups of programs defined in previous section. Within the private sector employment programs' category, the highest frequency participation is observed for private job training followed by Adult Apprenticeship and Labour trainee. Public individual job training represents the highest share of persons in the public sector employment programs' category followed by public job training, service jobs, voluntary not paid activities and pool jobs which a non significant number of people. The Education/training programs' category was widely used and concerns 26,8% of the entire sample. The most important measure in this category is education with training allowance and specially adapted educational activities. The distribution of people in services and sanctions is slightly the same between intensive job seeking and advisory/introductory activation. In line with the Danish *Venstre og Konservative* governments' policy, we can note that a fairly amount of individuals has been enrolled in an integration program (14,3% of the entire sample). Measures for the disabled represent only 2,1% of the entire sample. Nevertheless, it remains one of the Danish labour market's

peculiarities when in most of European countries only passive expenditures are implemented as regards this group of people.

Three variables of interest have been identified: i) transitions to work at the end of November 2003 and 2004, ii) transitions to full-time job at the end of November 2003 and 2004 (these variables are made from two categorical variables related to the "socio economic statuses" and "extent of working"), iii) Wage level (continuous variable) at the end of November 2003 and 2004. Note that we dispose of the same information for the last job occupied by those who were wage earners one year before. Transversal data will allow us to depict the dynamics of employment (cf. Appendix A10).

Various explanatory variables have been included in the analyses. We can classify them in three categories:

The first category refers to background variables that may have an impact on work supply. We have a set of categorical variables related to i) age, ii) gender, iii) family type, iv) level of education attainment, v) origin. In the evaluation, we use traditional background variables such as age, gender, level of education attainment and add "family type" and "origin" variables. The "family type" can have an impact on the job finding rate and the extent of working time but also on the selection process at entry as single parents may prefer short training period to cope with family responsibilities. The "origin" variable has been included as well because immigrants can find difficulties compared to natives or descendants in terms of employment and/or wages.

The second category refers to information about the last job occupied (for those who were employed one year before) and include variables such as: i) types of industry, ii) types of occupation, iii) work experience. Employment history and pre-program variables notably as regards "work experience" have been included because these indicators influence both the variables of interest and the selection process. Unemployed with less labour market attachment provide bad signals to the employment agencies and be then victims of *creaming effects*. The "types of industry" tell us whether unemployed worked in expanding sectors or not. This variable may influence the likelihood of finding a job.

The third category encompasses instrumental variables ( $Z$ ), which help to identify the treatment's effect and make the estimates more robust. These instrumental variables must fulfil two conditions i) be correlated with the program's entrance ( $Y_1$ ):  $\text{corr}(Z, \zeta) \neq 0$  (null hypothesis rejected, the correlation coefficient is strictly different from zero), ii) be exogenous (not correlated with the variable of interest or more precisely with the error terms ( $\zeta$ ) of the second step equation):  $\text{corr}(Z, \zeta) = 0$  (null hypothesis is not rejected, the correlation coefficient may be equal to zero). A first instrumental dummy variable about being insured or not has been included. This variable is highly correlated with the selection process but still has an impact on some variables of interest (i.e. the job finding rate because of skills bias). Therefore, another instrument variable has also been added. This last one refers to counties (*Amter*) unemployed belong to and is well justified for the period used because of the decentralisation process of ALMPs implementation to the 14 labour market councils. This variable shows more significant results for both conditions.



### 3.2 Selectivity and targeting

In order to address the sample selection or endogeneity problem, an evaluation of the determinants of program participation has to be made. If our sample fulfils the eligibility rules, the selection decisions of caseworkers are indeed influenced by the economic situation of unemployed as well as the political orientation formulated by the labour market councils. Employment history and the state of the local economy matter to understand how unemployed end up in different programs (Heckman & Smith, 2004). In the same way, unemployed according to their motivation and ability may prefer to join short time programs, which do not affect too much their leisure time (Lechner & al, 2004). We can also expect that participation declines markedly with age.

As regards the empirical determinants of program participation, we should wonder whether there are *creaming effects* or not. « Creaming » among participants happens when the most likely to succeed without any treatments are selected instead of unemployed who should benefit the most from the program (highest social return on the investment in activation). This situation occurs mainly when the performance of programs is measured primarily by job placement rates. An efficient profiling system can help to counter ingrained behaviour (Bell & Orr, 2002). It matters to consider this issue because such a situation leads both to inefficient allocation of public resources and biased effects as regards ALMPs (Andersen & al., 1993). Besides, this analysis will allow us to identify who benefits from activation and evaluate how the target groups of the ALMPs programs differ from each other. Thus, it will partly solve the issue of what happens to the general considerations regarding the different corners of the "flexicurity triangle" when the analysis is broken down into various sub-groups.

The selectivity of recruitment in the selected activation programs has been analysed via logistic regressions (log-odds):

$$\text{Ln}\left(\frac{\theta(x)}{1-\theta(x)}\right) = \alpha + \beta_1 \cdot x_1 + \beta_2 \cdot x_2 + \dots + \beta_i \cdot x_i = \alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i \quad (1.1)$$

From the set of explanatory variables described in previous sub-section, the logistic regression allows us to predict discrete outcomes related to participation in a given programs' category with a probability of success  $\theta(x) = \theta(d_i=1)$  and a probability of failure  $1-\theta(x) = \theta(d_i=0)$ . After isolating  $\theta(x)$  from the logistic equation, we obtain the "probability" of entering (1.2) and not entering (1.3) in one of the selected type of programs:

$$\theta(x) = \theta(x)(d_i = 1) = \frac{e^{\alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i}}{1 + e^{\alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i}} = \frac{1}{1 + e^{-\alpha - \sum_{i=1}^{\theta} \beta_i \cdot x_i}} \quad (1.2)$$

$$1 - \theta(x) = \theta(x)(d_i = 0) = \frac{e^{\alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i}}{1 + e^{\alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i}} = \frac{1}{1 + e^{\alpha + \sum_{i=1}^{\theta} \beta_i \cdot x_i}} \quad (1.3)$$

$\alpha$  represents the constant and  $\beta_i$  the coefficients of the predictors that is the individual characteristics ( $x$ ) of people. By getting rid of the log, the odd ratio ( $exp \beta$ ) is easier to interpret than the logits ( $log odds, \beta$ ). It refers to the estimated change in the log odds of the dependent variable per unit change in the predictor variable.

Because explanatory variables have been defined as categorical in our model, coefficients reported in table 2 can be interpreted as marginal effects of an independent variable category compared with a reference category ( $exp \beta = 1$ ).

Table 2 points out that unemployed participating in the four categories of programs slightly differ as regards background and pre-program variables. Public sector employment programs which are theoretically designed for the less able focus much more on the youth, unemployed with less work experience and with a relatively short education.

If we look at background variables, individuals with lower education level attainment (ISCED (International Standard Classification of Education), i.e. basic school)) have better chance to be involved for both private and public employment programs. As regards gender, female are more likely to participate to education/training programs. This result is consistent with recent analyses (see Hansen, 2007). If integration programs are removed, immigrants and descendants have greater odds in entering into training and education programs.

The participation declines with age for employment programs and education/training programs. We may suppose that the amortization period of the human capital investment shrinks for the eldest group of unemployed. These results are in concomitance with the high number of people in retirement schemes at this time. The sector of employment and the type of job don't affect that much the selection process.

What is important to note is that we have a *creaming effect* as regards private sector employment programs. For those with more than 10 years' work experience, the odds in entering into this type of programs are about 2 times better than the reference group.

Even though services and sanctions programs should in principle focus on the most vulnerable groups, those who were employed at the upper level appear to enjoy a better access. The reason may come from the underlying "work first" strategy of these programs, which are more profitable for the most resourceful unemployed. We can also suppose that because this group of unemployed benefits from social network they are more able to find a job quickly, thus making public intervention unnecessary. This *dead-weight effect* can be better evaluated through qualitative investigations.

The different modalities within the tow instrument variables (unemployment insurance and counties) appear to have significant results as regards the selection process. People with no insurance have greater odds in entering into public employment sector programs. The decentralisation of ALMPs implementation brings to the fore clear evidence about counties autonomy with respect to the local labour market context.

Table 2. The odds of being involved in one of the selected programs

Ind. variables/type of activation programs	Private emp sector	Public emp sector	Education /training	Services /sanctions
	<i>exp β</i>	<i>exp β</i>	<i>exp β</i>	<i>exp β</i>
<i>Age</i>				
([18-25])	(1,00)	(1,00)	(1,00)	(1,00)
[26-30]	1,091	0,726***	1,389***	0,917*
[31-35]	1,105	0,745***	1,343***	1,044
[36-40]	1,033	0,730***	1,279***	1,065
[41-45]	0,917	0,769***	1,255***	1,124**
[46-50]	0,867*	0,852***	1,230***	1,125**
[51+]	0,614***	1,232***	0,998	1,283***
<i>Gender</i>				
(Male)	(1,00)	(1,00)	(1,00)	(1,00)
Female	0,698***	0,893***	1,165***	1,135***
<i>Family type</i>				
(Couples with children)	(1,00)	(1,00)	(1,00)	(1,00)
Couples without children	1,032	1,005	0,881***	1,041
Singles with children	0,930	1,164***	0,943	0,992
Singles without children	0,901*	1,195***	0,837***	1,073**
<i>Highest education completed</i>				
(Basic school/preparatory)	(1,00)	(1,00)	(1,00)	(1,00)
General upper secondary	0,820***	0,856***	1,008	1,209***
Vocational training and edu.	1,127***	0,811***	1,067***	1,134***
Short-cycle higher edu.	0,978	0,600***	1,210***	1,379***
Medium-cycle higher edu.	0,756***	0,667***	1,325***	1,082
Bachelor edu.	0,896	0,509***	1,491***	0,909
Long cycle higher edu.	0,869	0,647***	1,549***	1,070
<i>Origin</i>				
(Danish)	(1,00)	(1,00)	(1,00)	(1,00)
Immigrant western country	1,174	0,819**	1,162**	0,849**
Immigrant non-western country	0,919	0,610***	1,801***	0,577***
Descendant western country	0,747	1,047	1,141	0,899
Descendant non-western country	0,772	0,745	1,191	1,025
<i>Sector of employment (last job)</i>				
(Agriculture, fishing, quarrying)	(1,00)	(1,00)	(1,00)	(1,00)
Manufacturing	1,110	0,860**	1,021	1,055
Electricity, gas and water supply	0,952	0,716***	1,251***	0,954
Construction	1,140	0,964	0,881**	1,144**
Retail trade, hotel and restaurants	1,372	0,897**	0,872***	1,089*
Transport, post and telecom	1,150	0,883*	0,975	1,067
Finance and business activities	0,883	1,373***	0,807***	0,959
Public and personal service	0,460	1,501***	0,950	0,917*
<i>Type of job (last job)</i>				
(Self-employed)	(1,00)	(1,00)	(1,00)	(1,00)
Top manager	0,833	0,736	0,931	1,328
Employees upper level	1,113	0,729***	0,987	1,208***
Employees medium level	1,052	0,777***	0,973	1,033

Employees basic level	1,114	1,298***	0,919*	0,887**
Other employees	1,200**	1,623***	0,786***	0,803***
<i>Work experience (last job)</i>				
(No work experience)	(1,00)	(1,00)	(1,00)	(1,00)
Up to 5 years' experience	1,873***	1,144	0,774***	1,094
Between 6 years and 10 years	1766***	0,999	0,967	1,096
More than 11 years' experience	1,999***	0,800**	1,100	1,003
<i>Unemployment insurance</i>				
(Not insured)	(1,00)	(1,00)	(1,00)	(1,00)
Insured	1,264***	0,306***	6,923***	2,897***
<i>Counties Amter</i>				
(Københavns)	(1,00)	(1,00)	(1,00)	(1,00)
Frederiksberg	1,987***	2,681***	1,599***	2,026***
Københavns Amt	1,978***	4,637***	1,433***	1,853***
Frederiksborg Amt	3,335***	7,072***	0,965	1,906***
Roskilde Amt	2,492***	8,375***	1,904***	0,919
Vestjællands Amt	2,724***	5,184***	3,636***	0,362***
Storstrøms Amt	2,683***	9,278***	1,178***	1,234***
Bornholms region	1,943***	5,846***	2,233***	0,844
Fyns Amt	2,454***	3,256***	1,786***	0,772***
Sønderjyllands Amt	3,755***	9,085***	1,885***	0,580***
Ribe Amt	3,406***	9,013***	2,433***	0,192***
Vejle Amt	3,679***	7,088***	1,189***	1,266***
Ringkøbing Amt	4,719***	8,467***	1,519***	0,623***
Århus Amt	2,332***	6,152***	1,422***	1,715***
Viborg Amt	3,165***	7,122***	1,325***	1,106*
Nordjyllands Amt	3,368***	7,203***	2,867***	0,307***
*significance at the 10% level ( $\alpha = 0,1$ ) **sign. at the 5% level ( $\alpha = 0,05$ ) ***sign.at the 1% level ( $\alpha = 0,01$ )				

In brackets are the reference categories for each qualitative variable. The unemployment insurance and counties variables represent the instrument variables used for a robust identification of the effects in the sample selection models.

## 4. AN ECONOMETRIC ANALYSIS OF POST-PROGRAMS EFFECTS

### 4.1 Methodological choices

This section aims at providing explanations about the methodology applied to the identification of treatment effects and how selection bias in ALM programs is controlled for. One of the main difficulties in evaluating ALMPs is to take into account counterfactuals that refer to "possible outcomes in different hypothetical states of the world" (Heckman, 2008). In other words counterfactuals have to do with the potential outcomes if individuals had not been treated. Therefore, the main issue is how to obtain the treatment effect of those treated compared to a state, where they were not treated.

Since participation in a program is compulsory for unemployed in Denmark it has been difficult to determine a "control group" (unemployed who did not enter into an activation program). Previous analyses on the Danish labour market underscored that because unemployed have to participate in an ALM program at some point in time, those who stay unemployed long enough are few (Munch & Skipper, 2008). Recourse to internal "control groups" composed of those who quit activation programs could have been a solution. They may represent interesting "control groups" because they fulfil the requirements for participating in ALM programs. Nevertheless, such a strategy can be subject to important bias as long as individuals may leave either because they are less motivated or they find jobs by themselves during their participation in the programs (most resourceful group of unemployed).

One of the most advanced methods to build up counterfactuals for compulsory programs is to apply the *timing-of-events* model from Abbring & Van den Berg (2003). The basic idea is that the starting dates of program participation vary among individuals during the unemployment spells. Therefore, unemployed who are not yet participating in ALMPs are used as a comparison group over this time interval that is until they enter in one of the program (Lalive & al., 2008; Munch & Skipper, 2008). Even though this kind of model is relevant in many aspects, we can expect that the degree of variation over time until entry is shrinking due to the removal of the passive period since the year 2002. Besides, the assumption is based on hazard functions and thus implies the use of weekly longitudinal data. Unfortunately, when making the analyses, we did not have such data at our disposal.

To overcome this problem, each program category is considered in its turn as "treatment group" when value 1 is assigned to them. All other program categories set up the "comparison group" taking the value 0. Therefore, program categories compete among one another. At some point, counterfactuals correspond to the potential outcomes when individuals participate in programs other than the one investigated. In our paper, effects are forward-looking which means that a baseline forecast is required. The baseline simulation was generated for two consecutive years knowing that participants ended their activation period at the end of the year 2002. Because some measures last for a short time and others for several months, when analysing *post-program effects*, it is more accurate to follow participants whose activation program is over rather than those who just started one.

Individuals participating in an activation program (treatment group) should theoretically be similar to those who did not participate except for the treatment status, which can influence the dependent variables. Only the participation in programs varies among individuals. Such an assumption cannot easily be checked because of selection bias or omitted variable bias (Heckman, 1979). In our analysis, selection bias arises when participants in an activation program may differ from other participants on both observed and unobserved characteristics. Unobserved characteristics refer to variables that are difficult to measure (i.e. ability, motivation, state of mind, social network) or cannot be observed. Besides self-selection, participants are also subjected to non-random selection process by the employment services and employers. Statistically speaking, selection bias occurs when observed and unobserved factors, which influence the odds of being involved in one program, also influence the impact of the program. Therefore, simple regression estimates of programs' effects may be statistically biased when factors that impact participation decisions are correlated with outcome measures. Whereas observed characteristics are easy to control, the inclusion of unobserved heterogeneity implies the use of specific econometric.

In our analysis, Treatment Effects Models have been used to provide unbiased estimates of programs' impacts. These extensions of the Heckman's two-step procedure or sample selection model (1979) are based on a simultaneous estimation of two regression functions: the first one analysis the selection process at entry while the second one provides unbiased estimates of the impact of program participation on outcomes. More details about the procedure are given throughout the section. Note that Treatment Effects Models may vary according to the nature of the dependent variables. Among procedures for addressing selection bias<sup>7</sup>, the two-step adjustment has the advantage of providing an estimate of the specification error while modelling the selection process<sup>8</sup>. Because of the dichotomous nature of the dependent variables "transition to work" and "transition to full-time job", a seemingly unrelated bivariate probit with endogeneity (Maddala,1983; Fabbri & al., 2004) has been estimated first. The model takes the following form with two probit regressions:

$$Y^*_{1i} = \beta_1 X_{1i} + \zeta \quad (2.1)$$

$$Y^*_{2i} = \delta_1 Y_{1i} + \delta_2 X_{2i} + \xi \quad (2.2)$$

$Y^*_{1i}$  and  $Y^*_{2i}$  are latent variables measuring i) selection to one specific programs category and ii) the transitions to work and/or full-time job:  $Y_{1i} = 1$  ( $Y_{1i}$  is observed) if  $Y^*_{1i} > 0$  and  $Y_{2i} = 1$  ( $Y_{2i}$  is observed) if  $Y^*_{2i} > 0$ .  $X_{1i}$  and  $X_{2i}$  refer to the observed determinants (or vector of covariates),  $\beta_1$  and  $\delta_2$  to the associated parameters. In the second equation (2.2),  $Y_{1i}$  is a binary treatment dummy whose unbiased effect  $\delta_1$  is the object of interest.

7. Besides the Heckman two-step procedure, instrumental variable (IV) and longitudinal methods (i.e. "fixed effects" and differences-in-differences estimators) can be performed as well depending of the dataset.

8. In order to shorten the presentation, results from the first step equation have not been reported in the appendix. One can refer to the previous section for an overview of the selection process at entry. All results are still available upon request.

Among the explanatory variables  $X_{1i}$  in the first-step selection equation (2.1), we must identify at least one instrument variable ( $Z$ ) which fits the following conditions:  $corr(Z, \zeta) \neq 0$  and  $corr(Z, \xi) = 0$ . The error terms (or random disturbance) of the two equations  $\zeta$  and  $\xi$  are dependent and distributed as a bivariate normal so that:  $E(\zeta) = E(\xi) = 0$ ,  $var(\zeta) = var(\xi) = 1$ ) and  $\rho = cov(\zeta, \xi)$ . In other terms,  $\rho$  aims at testing the error terms correlation. The Wald test provides evidence on the correlation between the unobserved variables of the two equations. If  $\rho$  is significantly different from zero, then the null correlation between the error terms is rejected. It means that  $Y_1$  is endogenous for the second equation.

Therefore, the two equations are dependent and the effects of programs can be subjected to selection bias. Conversely, when  $\rho = 0$ , then  $Y_1$  is exogenous for the second equation and the use of sample selection models are not justified. Assuming that error terms are jointly normally distributed, the simultaneously estimate of the two probit regressions is based on the maximum likelihood. As for the variable “wage level”, because of its continuous nature, an endogenous treatment effects model has been used (Ashenfelter, 1978; Heckman & Robb, 1985):

$$Y_{1i}^* = \beta_1 X_{1i} + \zeta \quad (2.3)$$

$$Y_{2i} = \delta_1 Y_{1i} + \delta_2 X_{2i} + \delta_3 \lambda + \xi \quad (2.4)$$

With  $\zeta$  following a normal law of  $N(0; 1)$  and  $\xi$  a normal law of  $N(0; \sigma_\xi)$ . The terms in the first step equation (2.3) are similar to those in the seemingly unrelated bivariate probit. The aim is to estimate the causal effects of a binary variable  $Y_{1i}$  (participation or not to one of the programs category) on wage level  $Y_{2i}$  after participating in an activation program.

A probit model estimates the first equation (2.3) whereas the second one (2.4) is estimated by an ordinary least squares (OLS) because of the continuous nature of the dependent variable. Assuming that error terms taken jointly are normally distributed, the simultaneous estimate of the two regressions is based on the maximum likelihood. The inverse Mills' ratio or selection hazard: standard normal probability density function over standard cumulative function) extracted from the probit model is integrated as an additional regressor ( $\lambda$ ) in the second-step to take account of the selection bias.

The parameter of the Mills' ratio ( $\delta_3$ ) provides an estimate of the selection bias. Note that the computation of the inverse Mills' ratio does not appear in the biprobit model because the estimation can only be performed by the Full Information Maximum Likelihood (FMIL) on most statistical softwares. The inverse Mills' ratio is computed in the second-step only if the treatment effects model is performed by using the two-step maximum likelihood rather than the Full Information Maximum Likelihood (FMIL) (in case of nonconvergence).

Therefore, when using the two-step estimation in treatment effects models, instead of  $\rho$  estimation, the relevance of the treatment effects model is based on the significance of the non selection hazard coefficient. The interpretation of the significance is the same than  $\rho$  described for the bivariate probit model. It gives an idea of the two equations dependency and the relevance of the sample selection model compared to one simple linear regression.

Contrary to models described above, when selection is among a large number of exclusive choices, the multinomial logit specification (Mc Fadden, 1973) exposed in details by Bourguignon, Fournier and Gurgand (2004) should be preferred. If we look at the 6 activation categories designed in section (3.1), at least 4 of them are in principle targeted towards every unemployed. In actual fact, there are substantial differences between programs' categories that do not fully justify the use of multi-treatment analysis for the first-step equation. Although individuals are not eligible for all programs' categories, multitreatment could provide supplementary information as regards effects on different groups. Because of their peculiarities, targeted programs towards immigrants and disabled have been removed. The dependent variable in the selection equation contains four modalities whereas the dependent in the outcome equation is only observed for one modality (or one programs' category). When using multi-treatment models, the form taken by the dependent variables slightly differ from univariate or binary models. In this kind of models, the dependent in the selection equation is a multiple choices one. Besides, the outcome variable is observed for only one modality of the categorical variable about activation programs (see Bourguignon & al., 2004). The rest of the sample is therefore censored in the second-step equation. Note that this kind of models does not fit with impact evaluations because no coefficient ( $\delta_i$ ) is assigned to the programs' effect in the second equation. Nevertheless, the use of censored data in the second equation allows us to compare  $\delta_2$  coefficients between programs (see Appendix A5 to A8). The covariances between residuals  $m_x$  from the multinomial logistic regression and the second step regression provide tests for endogeneity.

Three caveats have to be taken into account: firstly, it has not been possible to take into account counterfactuals so that the analysis has been made in a comparative perspective between programs' categories. Since participation in a program is compulsory for unemployed in Denmark it is difficult to determine a real "control group". Even though new insights have been depicted by the use of qualitative variables, monthly information about the duration of employment spells after activation can bring to the fore new lights as regards labour market integration. Secondly, once the employment security guaranteed, the question is whether previously unemployed keep regular jobs over time or not, when transitions to work occurred after ending an activation period. This issue has been partly resolved by using post-program annual data on labour market attachment (see Annexe A9). Thirdly, interactions between variables could have also been taken into account to focus on target groups who deserve particular interests in today labour market policies in Denmark (i.e. immigrants).

#### *4.2 Employment effects of Danish ALMPs programs: an estimation*

Results from the first-step equation as well as targeted programs have not been included in order not to complicate the presentation. All results are still available upon request. Each coefficient reported in tables A1 to A8 in Appendix can be interpreted as a probability conditional on the other observables which belong to the same initial categorical variable.  $\rho$  and the hazard  $\lambda$  are significantly different from zero (except for private



employment sector as regards the wage level variable). Thus, the hypothesis of endogeneity between the selection equation and the outcome equation is verified.

After taking due account of the observed and unobserved heterogeneity, private job training has a significant positive effect ( $\delta_I=1,25$ ) as regards transitions to work in the retrospective two years after participation (cf. Tables 3 and A1). This positive post-program effect confirms previous empirical evidence (see Rosholm & Svarer, 2004).

The private sector employment category gets the highest score as regards job finding rates. The conditional probability that private sector beneficiaries stay in employment two years after, given that they successfully managed to find a job one year after is 80,2% (cf. Table A9). The employment rate increases in the highest proportion ( $\Delta Y_i = 35,3$ ) for participants to this type of programs (cf. Table A10). The difference in comparison with the other type of programs is the most important as well ( $\beta^{did} = 29,1$ ). Let's notice that, for all programs participants who were wage earners before the baseline, the employment rate fairly improves. The relative evolution of the employment rate is negative only for previous wage earners who ended a public sector employment program. The outcome regression depicts a significant negative coefficient ( $\delta_I = -0,64$ ) for this type of programs which means that participants are less likely to find a job (cf. Tables 3 and A2).

The well-known argument is that private job training beneficiaries are generally more skilled than those in public job training and can be hired afterwards if they fit employers' needs (Langager, 1997). In our analysis, the large positive effect of the private sector employment programs' category is not the result of skills bias (cf. Table 2) but may be attributed to the greater work experience of participants. Besides, jobs provided by this type of programs are closer to the "ordinary" labour market. Such a situation leads to "contact effect". That is private job training creates contact between employers and marginalized groups who can be hired afterwards in the firm where the activation has been completed. As regards recruitment, we must acknowledge that the number of available jobs (thus job opportunities for private sector employment participants) is highly depending on the business cycle (Raaum & al., 2002). Let's notice that for the retrospective years used in the analysis, the economic conjuncture was favourable after an economic downswing between 2001 and the mid-2003 (for further details, see figure 1).

Education/training programs' category have rather small positive impacts ( $\delta_I = 0,55$ ) (cf. Tables 3 and A3). Results obtained for this type of programs are in line with previous studies. Nevertheless, this group of programs is very heterogeneous if we look at the job finding rates (cf. Table A9). Some programs perform better than others when they come with a subsidy. 62,7% of participants in Adult education subsidies find a job while 94,4% of them manage to keep their job after the first year in employment.

As regards services/sanctions programs, when the much-used category "other type of activation programs" is narrowed to intensive job seeking and advisory activation, the post-program effects on transitions to work are slightly positive ( $\delta_I = 0,44$ ) (cf. Tables 3 and A4). This result is consistent with recent micro econometrical evaluations. Taking into counterfactuals through an experimental study Graversen & van Ours (2005) show that *Post-program effects* on the job finding rate for a two weeks intensive job seeking is higher in the treatment group than in the control group (those who do not participate to the

program). This significant positive effect and the lower cost of this type of programs should deserve particular interest as regards today labour market policy orientation in Denmark. All things being equal, these positive results can be attributed to *dead-weight effects* depicted in the selection equation. The argument that “services and sanctions” programs are more efficient for individuals with higher skilled is not verified in our analysis. The multinomial logistic regression estimates show that participants to intensive job seeking may expect positive transitions to work whatever their educational level attainment (cf. Tables A5 to A8). The same goes for the other type of programs even though the results are not always significant.

The use of censored data in the second equation for multinomial logit models allows us to yield some disparities between programs among sub-groups. Public sector employment and education/training appear to be more effective when targeting to less skilled people (cf. Tables A6 and A7). Despite the type of programs, some groups appear to have better labour market prospects than others. If we look at other observed factors, the origin-geographical interactions suggest that immigrants from non-western countries are less likely to find a job compared to unemployed with Danish origin, immigrants and descendants from western countries (cf. Tables A5 to A8). The employment probability of immigrants compared to natives is one of the lowest in Europe (Causa & Jean, 2007).

Another discriminating aspect of the Danish labour market is that unemployed who are more than 50 years old are less likely to find a job than those who belong to other age brackets. The youth are the most positively associated with the job finding rates. Until now, the strategy concerning the eldest unemployed has been to keep them outside the labour market through early retirement schemes. Indeed, a substantial part of the population (27%) remains outside the labour market and thus, depends on the various welfare programs. Let's notice that the « unemployed » represents only a small proportion (14%) of the "did not work" category that mostly comprises those "out of the work force" (Blache, 2007 (1)). The eldest has proved to be the first victims of the Danish flexible labour market (Jensen, 2007).

Nowadays, employment and welfare systems in Denmark but also in most European countries are faced to new stakes notably due to demographical changes. Raising labour supply is a crucial linchpin to safeguard welfare and anticipate the growing share of retired population in the future. Expanding the range of employment opportunities for the eldest as well as the tightening of fiscal should become one of the priorities of the Danish government. The June 2006 agreement has given recommendations to that end by developing age management (Jensen, 2007). The set of determinants as regards the last job occupied is relevant too: those with a greater work experience and who were upper level employees are more likely to find a job (cf. Table A5 to A8).

Gender does not affect transitions to work while singles with children show more difficulties to find a job. The reason may come from the lower flexibility of this group in the labour market as regards spatial and temporal mobility (Soidre, 2004). Even though the Danish public day care system is recognized for the quality of its services (Hansen, 2007), tuition costs for full-time care are too high for single parents with lower attachment to the labour market. Even though Denmark performs best in terms of empowerment from a life-

at-work perspective (Blache, 2007 (2)), single parents which are mainly women have more difficulties than other to cope with both work and family life. The likelihood of the unemployed lone mother to find a job has long been constrained by discrimination. Danish local authorities frequently asked for a disposable income as regards day care fees, thus priorities full-time working parents (Slotz, 1997).

#### *4.3 Impacts on qualitative variables*

As regards qualitative outcomes all programs positively influence the transitions to full time job except for public employment programs ( $\delta_l = -1,37$ ). The reason might be the missing helping hand qualification so that beneficiaries have to narrow their job search to part-time low productive activities.

The observed characteristics show that flexibility is mainly applied to young workers, immigrants and those with less work experience. Individuals from the retail trade, hotel and restaurants sector and those who were selfemployed are also more exposed to part time job. It is also stated that the extent of working time is not affected by the family type and the education level attainment.

We must acknowledge that the permissive legislation as regards employment protection and the retraining requirements in a more egalitarian perspective make the insider-outsider labour market in Denmark less rigid than in most European countries. One of the Danish peculiarities is that internal numerical flexibility based on the extent of working time creates a type-of-contract segmentation among high-skilled workers on flexible employment relationships.

A group of academically-qualified workers accepts insecure and atypical employment in order not to lose their attachment to the labour market whereas others are well-paid « free agents » (Jørgensen, 2000). The situation of the first category of workers concerns the economic sectors where the competition and the level of unemployment are the highest. In a theoretical perspective it can suggest a new interpretation of the implicit contract theory to control adverse risk (Azariadis, 1975). In the longer run, the extent of working time should matter in the analyses of individual trajectories because it can affect prospects and working life regardless the legislation settings. Compared to some European countries, casual work in Denmark is independent from employment history and is submitted to the Salaried Employees Act when the employment contract lasts more than three months. As for the legal protection related to dismissal, compensation differs according to the duration of the employment. Training opportunities are also more important for full-time workers. The extent of working time is therefore submitted to both elements of de-commodification and segmentation.

The wage level variable shows a different picture of programs' effects. Education/training programs perform best compared to other programs ( $\delta_l = 19,25$ ). In line with the human capital theory (Becker, 1964), unemployed who participate in labour market training programs can expect an increase of their productivity in the long-term and thus apply for a higher wage (Dearden & Van Reenen, 2005). Referring to job search models (Mortensen, 1977) unemployed increase their reservation wage and thus may also extend

the unemployment duration. The multinomial logit models show that the less skilled unemployed have greater opportunities in terms of wage levels when participating into education/training programs (cf. Table A7). Besides, individual characteristics highly influence the wage level whichever the program is. Unemployed with medium-or long-cycle higher education and with longer labour market attachment can expect greater salary. The segmentation is more obvious as regards wage in comparison with the other variables of interest. Let's notice that in Denmark the spread of the salary range remains small with a Gini coefficient of 0,22.

Coefficients are negative but no significant for public and private sector employment programs. These results are consistent with recent evaluations (Munch & Skipper, 2008). Following Becker's distinction between "specific" and "general" capital, employment programs provide skills that cannot be used effectively outside the firms where the training period has been completed. Therefore, participants cannot apply for a higher wage outside the firm where skills were acquired. A stigmatization effect can also be put forward. Subsidized programs could indeed be perceived by employers as to be a signal of lower-than-average productivity (Munch & Skipper, 2008).

When looking at background characteristics, the education level attainment, the labour market attachment and the type of occupation as regards last jobs occupied matter in the wage level structure. Besides, unemployed youth get more difficulties in getting a high paid job after ending an activation period. The same remark can be formulated for gender. Strong disparities are depicted between female and male when looking at the wage level.

Table 3. Summary of the main Post-program effects<sup>+</sup>

Programs/var.of interest	Job finding rate (1) Transitions to work	Extent of working time (1)		Ind. earning (2) Wage levels
		Full-time work	Part-time work	
Private sector employment	1,2494*** (0,1015)	1,3709*** (0,0247)	-1,6431*** (0,0273)	-9,3215 (6,6621)
Public sector employment	-0,6396*** (0,0447)	-1,3709*** (0,0390)	1,3722*** (0,0442)	-36,0249 (3,0808)
Education/training	0,5480*** (0,0324)	1,5813*** (0,0238)	-1,7910*** (0,0275)	19,2522*** (2,2501)
Services and sanctions	0,4439*** (0,0500)	1,3960*** (0,0217)	-1,5332*** (0,0236)	12,7363*** (3,0047)

Asymptotic standard errors appear in parentheses, \*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )

(1) Seemingly unrelated bivariate probit. Method of adjustment: Full Information Maximum Likelihood.

(2) Treatment effects. Method of adjustment: Two-step Maximum Likelihood.

<sup>+</sup> Observed characteristics, multinomial logit estimates and test of endogeneity are reported in Appendix. Note that only results for the year 2003 have been reported. Post-program effects after two years are available upon request. Results in a longer period do not differ that much despite a slight increase over time.

## 5. CONCLUSION

After reviewing the main breakthroughs in the evaluation of ALMPs in Denmark, we came back to the intrinsic reasons of the Danish employment success. These are the favourable macroeconomic context and the corporatist agreements on designing labour market policies. Then, based on Danish micro-data, the paper dealt with ALMPs post-program effects on various quantitative and qualitative outcome variables. We accounted for potential unobserved heterogeneity issues by using treatment effects with sample selection.

The main findings about transitions to work are consistent with previous analyses. It is worth noticing that private sector employment programs perform best in terms of getting unemployed back to work. Though, "creaming effects" minimize the positive effect of this type of programs as unemployed with longer work experience benefit the most from the private sector. New lights have been yielded as well: firstly, the analysis provides suggestive evidence that services and sanctions programs have rather positive effects for each variable of interests. The good results obtained for these programs justify the concern that more incentives and tailor made programs could be developed in order to fulfil the Danish right wing motto "getting more people into work". Nevertheless, all things being equal, this kind of programs may be subjected to "dead-weight effects". Secondly, the long-term effects of education and training programs are significantly positive. In line with human capital theory, unemployed who participate into labour market training programs are more prone to increase their productivity in the long-term and thus apply for a higher wage. Good signals (in the sense of M. Spence, 1975) may as well be emitted to employers when the activation program comes with an education. In that perspective, adult apprenticeship support can be a good example of how to combine education and wage subsidies. Obviously, further analyses based on employers' interviews are needed in this field. Besides, because job opportunities after activation are depending on the business cycle (especially for private sector employment programs), comparisons of the effects during economic upswing and economic downswing could also bring to the fore new insights.

Since the 2008 global crisis, recent labour market development and reforms have been recently conducted in Denmark. When looking at the lowest rate of unemployment in Europe, Denmark fell from position 1 to 5. Although the Danish unemployment remains low when looking at the rest of Europe, its unemployment rate went from 2,6% to 6,6% between 2008 and 2009 (Eurostat, 2010). Tighter deadlines for mandatory interviews with the job-centres and the obligation to take part in activation programs earlier have been implemented. Those who are under 30 years old have the right and duty to participate in an activation measure after 3 months of unemployment. For unemployed over 30 years old, the activation period starts after 6 months. Based on political agreements driven by social partners, incremental changes were enforced in the contents of activation measures. Two "packages" have been targeted towards youth and long-term unemployed during 2009 and the first part of 2010 (Jørgensen, 2011; Madsen, 2010).

The cut from 4 to 2 years in the UB maximum duration, the stress laid on the "work first" strategy during the liberal-conservative government (2001-2011)<sup>9</sup> and the lack of corporatist concertation imply that Denmark tends to move away from the initial flexicurity model that prevailed during the 90s (Klindt, 2011). Nevertheless, the political responses to the economic crisis are consistent with the flexicurity rationale, which aims at stabilizing employment and fostering growth (Jørgensen, 2011). Despite incremental changes, Nordic countries still differ from other countries because of its encompassing welfare states and invasive tax systems, which act as stabilizers (Jochem, 2011). Likewise, flexicurity in itself has proved not to be a frozen concept. On that respect, short time working arrangements could be considered as a new form of activation when providing at the same time training to workers (Wilthagen, 2010). Indeed, the United Federation of Danish Workers (*Fagligt Fælles Forbund*) proposed that work-sharers should be offered further training during the period of work-sharing. Although internal flexibility can mitigate unemployment flows during economic slowdowns, ALMPs aim at fostering and facilitating the transitions on the labour market.

Thus, one might well wonder how ALMPs should be used in time of economic upturns and economic slowdowns in a European policy perspective. First and foremost, when the economic growth is sufficiently employment-intensive, employment policies can be used to ease placement of workers during retraining schemes or to face up to labour shortage in some sectors. In that case, education and training as well as intensive job seeking are the most effective measures to cope with labour shortage.

During a slowdown in global growth employment policies should act differently and be run at their utmost. ALMPs can play an important role to sustain labour demand and improve employment prospects for unemployed. From a macroeconomic perspective, labour market policies are used for stabilisation purposes. Besides guaranteeing passive expenditures and upgrading unemployed skills through labour market training programs, it is necessary to push down recruitment decisions through subsidised employment programs, and thus reducing the cost of labour. Wage subsidies can either take the form of fiscal exemptions (i.e. reductions in social contributions when hiring low-wage workers) or direct financial incentives to firms. Employment policies can also act on job vacancies through direct creation of jobs in the public sector.

When public debt reduction stays one of governments' priorities, this solution has proved to be inefficient and inconsistent. Some countries are lacking the financial capacity to carry out demand-oriented policies for economic stabilization. Even though the Danish public budget turned from a surplus of 3.4% in 2008 to a deficit of 2.7% of GDP in 2009 (Eurostat, 2010), Denmark has more scope than most of European countries for making decisions. ALMPs programs with wage subsidies can thus be financially more effective when targeted to vulnerable groups (young workers, low skilled workers, ...). The reason is that taking into account "dead-weight effects" may help governments to better allocate subsidies and save on those who could have been hired anyway. This implies an effective profiling system at program's entrance that is hard to settle in the end.

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9. A left coalition led by the social democrats (*socialdemokraterne*) and the socialist people's party (*Socialistisk Folkeparti*) has won the Danish parliamentary election of 2011.

Besides European countries have different institutions that may imply structural adjustments to better adapt to economic downturns. As we have seen, ALMPs are closely embedded to other institutional settings in Denmark. While controlling the cost of high passive expenditures, ALMPs have often played first fiddle in the management of job creation and job destruction whatever the economic context.

All in all, concrete evidence show that impacts vary noticeably among activation programs in Denmark, whereas further investigations are needed as regards resources and capabilities of vulnerable groups. According to economic circumstances, the European governments should stress first and foremost on specific programs.

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APPENDIX Table A1. Post-Program effects of private employment programs

Ind. variables/Dep.var.	Job finding rate (1)		Extent of working time (1)				Individual earning (2)	
	Transitions to work		Transitions to full-time		Transitions to part-time		Wage levels	
	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>
<b>Effects of private sec.emp.</b>	<b>1,2494***</b>	<b>(0,1015)</b>	<b>1,7235***</b>	<b>(0,0247)</b>	<b>-1,6431***</b>	<b>(0,0273)</b>	<b>-9,3215</b>	<b>(6,6621)</b>
[18-25]	0,3406***	(0,0262)	-0,2509***	(0,0423)	0,3821***	(0,0467)	-8,5384***	(1,5091)
[26-30]	0,1648***	(0,0252)	-0,0197	(0,0415)	0,1288***	(0,0460)	4,4229***	(1,4192)
[31-35]	0,1216***	(0,0246)	-0,0126	(0,0407)	0,0994**	(0,0454)	4,603***	(1,3616)
[36-40]	0,0564**	(0,0241)	-0,0229	(0,0404)	0,0678	(0,0456)	2,5982*	(1,3442)
[41-45]	0,0748***	(0,0250)	-0,0274	(0,0404)	0,0987**	(0,0470)	3,1383**	(1,3822)
[51+]	-0,4129***	(0,0231)	0,0117	(0,0409)	-0,0372	(0,0464)	1,4189	(1,3699)
Female	0,0503***	(0,0126)	0,1632***	(0,0199)	-0,0961***	(0,0215)	-16,8801***	(0,7417)
Couples with children	0,1394***	(0,0154)	0,0814***	(0,0246)	-0,1509***	(0,0272)	0,1873	(0,8856)
Couples without children	0,1107***	(0,0150)	0,0283	(0,0237)	-0,0384	(0,0253)	0,5121	(0,8778)
Singles with children	-0,8732***	(0,0235)	0,0566	(0,0410)	-0,1347***	(0,0451)	-2,1652	(1,3906)
Basic school/preparatory	0,0186	(0,0332)	0,0727	(0,0538)	-0,0497	(0,0583)	-4,9026**	(2,0904)
General upper secondary	0,2873***	(0,0371)	-0,1704***	(0,0580)	0,1565**	(0,0625)	-4,086*	(2,3284)
Vocational train. edu.	0,1544***	(0,0339)	0,1697***	(0,0549)	-0,1607***	(0,0596)	1,2953	(2,1111)
Short-cycle higher edu.	0,2570***	(0,0440)	0,1956***	(0,0710)	-0,2680***	(0,0798)	9,2560***	(2,6465)
Med.-cycle higheredu.	0,2924***	(0,0410)	0,3563***	(0,0687)	-0,4056***	(0,0772)	16,1781***	(2,5010)
Bachelor edu.	0,2909***	(0,0748)	0,4210***	(0,1257)	-0,3704***	(0,1344)	18,1516***	(4,2868)
Long-cycle higher edu.	0,3425***	(0,0461)	0,4895***	(0,0771)	-0,5568***	(0,0881)	30,3324***	(2,7894)
Immig. western country	-0,0047	(0,0349)	-0,0995*	(0,0559)	0,1227**	(0,0601)	-3,0913	(2,1098)
Immig. non-west country	-0,0538	(0,0194)	-0,0256	(0,0303)	-0,1048***	(0,0336)	2,1265*	(1,1860)
Descendant west country	0,1421	(0,1050)	0,0177	(0,1574)	-0,0010	(0,1698)	5,2739	(5,9780)
Desc.non-west country	0,0649	(0,5931)	0,0462	(0,0830)	-0,1296	(0,0870)	4,2219	(3,5503)
Agr., fishing, quarr.	-0,0422	(0,0294)	-0,1061**	(0,0476)	0,1586***	(0,0520)	-0,7215	(1,7460)
Manufacturing	-0,0704**	(0,0307)	-0,1061**	(0,0592)	0,1319**	(0,0552)	6,2231***	(1,8025)
Electricity, gas and water	-0,081**	(0,0382)	0,0231	(0,0662)	0,0249	(0,0721)	2,0375	(2,1437)
Construction	-0,0047	(0,0319)	-0,1146**	(0,0513)	0,0724	(0,0560)	11,3130***	(1,8463)
Rtrade, hotel a restaurants	0,0096	(0,0265)	-0,2980***	(0,0422)	0,2849***	(0,0458)	-2,0162	(1,6142)
Transport, post, telecom	0,0443	(0,0324)	-0,1605***	(0,0518)	0,2146***	(0,0554)	5,9659***	(1,8947)
Finance and business	-0,0921***	(0,0254)	-0,1185***	(0,0425)	0,1332***	(0,0461)	0,6771	(1,5299)
Public and pers. service	0,0453*	(0,0259)	0,0832*	(0,0439)	-0,0492	(0,0476)	-6,6911***	(1,5523)
Self-employed	0,0843***	(0,0253)	-0,4758***	(0,0370)	-0,1779***	(0,0447)	6,5090***	(1,6786)
Top manager	0,0992	(0,0967)	0,3391**	(0,1720)	-0,2818	(0,1868)	44,5841***	(5,0981)
Employees upper level	0,1497***	(0,0314)	0,1875***	(0,0531)	-0,2172***	(0,0604)	21,2610***	(1,8557)
Employees medium level	0,0680**	(0,0267)	0,1908***	(0,0450)	-0,2428***	(0,0510)	10,9061***	(1,4767)
Employees basic level	0,0261**	(0,0128)	0,1426***	(0,0205)	-0,1323***	(0,0217)	1,5153**	(0,7398)
No work experience	-0,0857*	(0,0457)	-0,1517**	(0,0686)	0,0027	(0,0769)	-8,5413**	(3,5583)
From 6 years to 10 years	0,1246***	(0,0161)	0,1886***	(0,0265)	-0,1606***	(0,0288)	6,6961***	(0,9349)
More than 11 years	0,2242***	(0,0187)	0,2588***	(0,0314)	-0,2193***	(0,0350)	10,3901***	(1,0844)
Hazard Lambda	-	-	-	-	-	-	4,2072	(3,5599)
Athrho	-0,5230***	(0,0716)	-2,2488***	(0,1149)	2,4792***	(0,0970)	-	-
LR test of rho=0	Prob> chi2= 0.0000	Prob> chi2= 0.0000	Prob> chi2= 0.0000	Prob> chi2= 0.0000				

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )

(1) Seemingly unrelated bivariate probit. Method of adjustment: Full Information Maximum Likelihood.

(2) Treatment effects. Method of adjustment: Two-step Maximum Likelihood.

Table A2. Post-Program effects of public employment programs

Ind. variables/Dep.var.	Job finding rate (1)		Extent of working time (1)				Individual earning (2)	
	Transitions to work		Transitions to full-time		Transitions to part-time		Wage levels	
	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coeff.</i>	<i>Std.Err.</i>
<b>Effects of public sec.emp.</b>	<b>-0,6396***</b>	<b>(0,0447)</b>	<b>-1,3709***</b>	<b>(0,0390)</b>	<b>1,3722***</b>	<b>(0,0442)</b>	<b>-36,0249</b>	<b>(3,0808)</b>
[18-25]	0,4139***	(0,0263)	-0,1370***	(0,0469)	0,3378***	(0,0574)	-5,2853***	(1,5760)
[26-30]	0,1680***	(0,0252)	0,0016	(0,0460)	0,1667***	(0,0570)	3,6020**	(1,4593)
[31-35]	0,1243***	(0,0246)	0,0074	(0,0456)	0,1370**	(0,0573)	3,6310**	(1,4012)
[36-40]	0,0559**	(0,0242)	-0,0338	(0,0455)	0,1243**	(0,0580)	1,8915	(1,3831)
[41-45]	0,0696***	(0,0251)	-0,0105	(0,0477)	0,1373**	(0,0604)	2,3546*	(1,4218)
[51+]	-0,4105***	(0,0230)	-0,0202	(0,0462)	-0,0098	(0,0600)	2,4856*	(1,4095)
Female	0,01162	(0,0125)	0,1164***	(0,0215)	-0,0410*	(0,0246)	-17,2094***	(0,7415)
Couples with children	0,1478***	(0,0153)	0,1897***	(0,0271)	-0,3531***	(0,0325)	-0,8305	(0,8856)
Couples without children	0,1102***	(0,0150)	0,0849***	(0,0255)	-0,1201***	(0,0285)	-0,8469	(0,8882)
Singles with children	-0,0745***	(0,0236)	0,1423***	(0,0445)	-0,2679***	(0,0523)	-1,6601	(1,4256)
Basic school/preparatory	0,0376	(0,0333)	0,1030*	(0,0573)	-0,0657	(0,0662)	-2,4582	(2,1551)
General upper secondary	0,2575***	(0,0372)	-0,2519***	(0,0614)	0,2658***	(0,0701)	-2,4574	(2,3826)
Vocational train.edu.	0,1529***	(0,0340)	0,2159***	(0,0588)	-0,2228***	(0,0684)	1,9461	(2,1707)
Short-cycle higher edu.	0,2119***	(0,0443)	0,1468*	(0,0775)	-0,2914***	(0,0966)	8,7532***	(2,7152)
Med.-cycle higher edu.	0,2368***	(0,0413)	0,2480***	(0,0743)	-0,3256***	(0,0916)	15,7465***	(2,5474)
Bachelor edu.	0,2119***	(0,0753)	0,3228**	(0,1378)	-0,2751*	(0,1567)	16,6568***	(4,3946)
Long-cycle higher edu.	0,2715***	(0,0465)	0,4135***	(0,0845)	-0,5974***	(0,1103)	28,9744***	(2,8515)
Immig. western country	-0,0285	(0,0351)	-0,1379**	(0,0603)	0,1742**	(0,0688)	-4,2816**	(2,1681)
Immig. non-western country	-0,1451***	(0,0199)	-0,1789***	(0,0323)	0,0005	(0,0384)	-0,9507	(1,2476)
Descendant western country	0,0983	(0,1054)	-0,1597	(0,1618)	0,2234	(0,1782)	5,5486	(6,1442)
Desc. non-western country	-0,0759	(0,0597)	-0,2848***	(0,0858)	0,1920**	(0,0917)	-0,9383	(3,6665)
Agr., fishing, quarr.	-0,0116	(0,0293)	0,1016**	(0,0512)	-0,0700	(0,0594)	-0,7637	(1,7734)
Manufacturing	-0,03882	(0,0306)	0,1290**	(0,0563)	-0,1410**	(0,0649)	5,1547***	(1,8103)
Electricity, gas and water	-0,0822**	(0,0384)	0,1674**	(0,0754)	-0,1103	(0,0858)	-0,0476	(2,1976)
Construction	0,0182	(0,0318)	0,0023	(0,0555)	-0,0882	(0,0649)	10,9907***	(1,8867)
Rtrade, hotel and restaurants	0,0440*	(0,0262)	-0,1397***	(0,0415)	0,1077**	(0,0517)	-3,4236**	(1,5864)
Transport, post and telecom	0,0481	(0,0325)	-0,0428	(0,0560)	0,0925	(0,0634)	4,9436**	(1,9182)
Finance and business	-0,0750***	(0,0255)	-0,0417	-0,0455	0,0565	(0,0521)	1,5470	(1,5707)
Public and personal service	0,0354	(0,0259)	0,0337	-0,0469	0,0203	(0,0539)	-4,7501***	(1,5886)
Self-employed	0,0131	(0,0256)	-0,7417***	-0,0386	-0,0005	(0,0506)	3,9452**	(1,7378)
Top manager	-0,0026	(0,0970)	0,2089	-0,1996	-0,1377	(0,2373)	43,0359***	(5,2375)
Employees upper level	0,0711**	(0,0320)	0,1216**	-0,0586	-0,1920***	(0,0736)	18,4719***	(1,9214)
Employees medium level	-0,0066	(0,0272)	0,0939*	-0,0507	-0,1542**	(0,0618)	7,9732***	(1,5388)
Employees basic level	-0,003	(0,0130)	0,1228**	-0,0222	-0,1245***	(0,0246)	-0,0885	(0,7730)
No work experience	-0,1163**	(0,0456)	-0,1928***	-0,0696	0,0966	(0,0801)	-7,4378**	(3,6297)
From 6 years to 10 years	0,1068***	(0,0162)	0,2131***	-0,0289	-0,2117	(0,0339)	5,5379***	(0,9659)
More than 11 years	0,1973***	(0,0189)	0,3764***	-0,0349	-0,4141***	(0,0431)	8,2489***	(1,1237)
Hazard Lambda	-	-	-	-	-	-	17,2510***	(1,7879)
Athrho	0,3305***	(0,0303)	0,9361***	(0,0397)	-0,8532***	(0,0407)	-	-
LR test of rho=0	Prob > chi2=	0.0000	Prob > chi2=	0.0000	Prob > chi2=	0.0000		

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign. at the 1% level ( $\alpha = 0,01$ )

(1) Seemingly unrelated bivariate probit. Method of adjustment: Full Information Maximum Likelihood.

(2) Treatment effects. Method of adjustment: Two-step Maximum Likelihood.

Table A3. Post-Program effects of education/training programs

Ind. variables/Dep. variables	Job finding rate (1)		Extent of working time (1)				Individual earning (2)	
	Transitions to work		Transitions to full-time		Transitions to part-time		Wage levels	
	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>
<b>Effects of training</b>	<b>0,5480***</b>	<b>(0,0324)</b>	<b>1,5813***</b>	<b>(0,0238)</b>	<b>-1,7910***</b>	<b>(0,0275)</b>	<b>19,2522***</b>	<b>(2,2501)</b>
[18-25]	0,4143***	(0,0261)	-0,0123	(0,0427)	0,1283***	(0,0493)	-6,5627***	(1,5381)
[26-30]	0,1870***	(0,0250)	0,0941**	(0,0415)	-0,0049	(0,0488)	4,5756***	(1,4294)
[31-35]	0,1437***	(0,0244)	0,0873**	(0,0408)	-0,0072	(0,0483)	4,7688***	(1,3717)
[36-40]	0,0769***	(0,0240)	0,0580	(0,0405)	-0,0456	(0,0492)	2,9738**	(1,3549)
[41-45]	0,0821***	(0,0249)	0,0586	(0,0422)	0,0105	(0,0504)	3,3755**	(1,3928)
[51+]	-0,4192***	(0,0227)	-0,0408	(0,0404)	0,0247	(0,0487)	1,8887	(1,3799)
Female	-0,0098	(0,0126)	0,0199	(0,0201)	0,0679***	(0,0225)	-17,5854***	(0,7338)
Couples with children	0,1057***	(0,0156)	-0,0049	(0,0251)	-0,0861***	(0,0291)	-1,7093*	(0,8859)
Couples without children	0,1023***	(0,0149)	0,0244	(0,0239)	-0,0425	(0,0261)	-0,6018	(0,8716)
Singles with children	-0,0988***	(0,0235)	0,0677	(0,0412)	-0,1706***	(0,0475)	-2,6281*	(1,3967)
Basic school/preparatory	0,0304	(0,0331)	0,0702	(0,0540)	-0,0572	(0,0601)	-4,4987**	(2,1040)
General upper secondary	0,2875***	(0,0370)	-0,1591***	(0,0583)	0,1386**	(0,0643)	-2,8131	(2,3356)
Vocational train. edu.	0,1520***	(0,0338)	0,1163**	(0,0553)	-0,1148*	(0,0617)	0,8014	(2,1281)
Short-cycle higher edu.	0,2181***	(0,0440)	0,0277	(0,0708)	-0,1294	(0,0841)	7,9689***	(2,6670)
Med.-cycle higher edu.	0,2274***	(0,0410)	0,0509	(0,0675)	-0,0990	(0,0793)	14,6011***	(2,5075)
Bachelor edu.	0,2164***	(0,0740)	0,1694	(0,1252)	-0,1040	(0,1368)	16,7125***	(4,3106)
Long cycle higher edu.	0,2548***	(0,0462)	0,0839	(0,0758)	-0,1692*	(0,0927)	27,9760***	(2,8104)
Immig. western country	-0,0021	(0,0348)	-0,0729	(0,0558)	0,1017*	(0,0616)	-2,9160	(2,1239)
Immig. non-western country	-0,1332***	(0,0195)	-0,2262***	(0,0302)	0,0762**	(0,0350)	0,5139	(1,2102)
Descendant western country	0,1116	(0,1046)	-0,1227	(0,1567)	0,1631	(0,1732)	4,2494	(6,0246)
Desc. non-western country	0,0059	(0,0591)	-0,1612*	(0,0825)	0,0835	(0,0871)	3,6880	(3,5652)
Agr., fishing, quarr.	-0,0258	(0,0292)	0,0379	(0,0474)	0,0050	(0,0535)	-1,5105	(1,7389)
Manufacturing	-0,0398	(0,0304)	0,0410	(0,0515)	-0,0381	(0,0580)	5,2268***	(1,7748)
Electricity, gas and water	-0,0952**	(0,0381)	-0,0004	(0,0686)	0,0775	(0,0762)	-0,3820	(2,1632)
Construction	0,0397	(0,0316)	0,0199	(0,0513)	-0,0925	(0,0581)	11,5254***	(1,8503)
Rtrade, hotel and restaurants	0,0748***	(0,0259)	-0,0540	(0,0418)	0,0065	(0,0467)	-1,6734	(1,5530)
Transport, post and telecom	0,0770**	(0,0322)	0,0276	(0,0518)	0,0138	(0,0571)	6,5191***	(1,8836)
Finance and business	-0,0673***	(0,0254)	0,0088	(0,0419)	-0,0052	(0,0469)	1,5670	(1,5422)
Public and personal service	0,0090	(0,0258)	-0,0480	(0,0429)	0,1100**	(0,0478)	-6,7599***	(1,5516)
Self-employed	0,0502**	(0,0253)	-0,6040***	(0,0369)	-0,0700	(0,0464)	6,3977***	(1,6907)
Top manager	0,0444	(0,0961)	0,1939	(0,1723)	-0,1398	(0,1995)	44,5148***	(5,1319)
Employees upper level	0,1080***	(0,0313)	0,0746	(0,0512)	-0,0918	(0,0608)	20,3059***	(1,8725)
Employees medium level	0,0258	(0,0267)	0,0529	(0,0448)	-0,1224**	(0,0541)	10,0338***	(1,4914)
Employees basic level	-0,0070***	(0,0129)	0,0494**	(0,0209)	-0,0398*	(0,0227)	0,2923	(0,7595)
No work experience	-0,1240***	(0,0455)	-0,2186***	(0,0675)	0,1193	(0,0765)	-7,7099**	(3,5579)
From 6 years to 10 years	0,0821***	(0,0163)	0,0572**	(0,0268)	-0,0333	(0,0305)	4,9337***	(0,9638)
More than 11 years	0,1751***	(0,0190)	0,1270***	(0,0321)	-0,1151***	(0,0376)	7,7716***	(1,1267)
Hazard Lambda	-	-	-	-	-	-	-9,0882***	(1,4205)
Athrho	-0,3864***	(0,0237)	-1,4480***	(0,0085)	1,5915***	(0,0429)	-	-
LR test of rho=0	Prob > chi2= 0.0000		Prob > chi2= 0.0000		Prob > chi2= 0.000			

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign. at the 1% level ( $\alpha = 0,01$ )

(1) Seemingly unrelated bivariate probit. Method of adjustment: Full Information Maximum Likelihood.

(2) Treatment effects. Method of adjustment: Two-step Maximum Likelihood.

Table A4. Post-Program effects of services/sanctions programs

Ind. variables/Dep. variables	Job finding rate (1)		Extent of working time (1)				Individual earnings (2)	
	Transitions to work		Transitions to full-time		Transitions to part-time		Wage level	
	<i>Coef.</i>	<i>Std Err.</i>	<i>Coef.</i>	<i>Std Err.</i>	<i>Coef.</i>	<i>Std Err.</i>	<i>Coef.</i>	<i>Std Err.</i>
<b>Effects of services/sanc.</b>	<b>0,4439***</b>	<b>(0,0500)</b>	<b>1,3960***</b>	<b>(0,0217)</b>	<b>-1,5332***</b>	<b>(0,0236)</b>	<b>12,7363***</b>	<b>(3,0047)</b>
[18-25]	0,3791***	(0,0262)	-0,1027**	(0,0418)	0,2419***	(0,0475)	-7,5728***	(1,5332)
[26-30]	0,1998***	(0,0252)	0,12054***	(0,0408)	-0,0074	(0,0468)	5,0328***	(1,4342)
[31-35]	0,1473***	(0,0246)	0,0741*	(0,0399)	0,0199	(0,0463)	4,8320***	(1,3692)
[36-40]	0,0748***	(0,0242)	0,0118	(0,0396)	0,0405	(0,0466)	2,8072**	(1,3511)
[41-45]	0,0801***	(0,0251)	0,0183	(0,0413)	0,0655	(0,0483)	3,1277**	(1,3885)
[51+]	-0,4589***	(0,0228)	-0,0993**	(0,0397)	0,1171**	(0,0468)	1,1384	(1,3779)
Female	0,012	(0,0126)	0,0205	(0,0198)	0,0617***	(0,0215)	-17,1722***	(0,7344)
Couples with children	0,1623***	(0,0152)	0,1482***	(0,0244)	-0,2410***	(0,0274)	-0,0910	(0,8636)
Couples without children	0,1286***	(0,0149)	0,0873***	(0,0233)	-0,1043***	(0,0250)	0,2939	(0,8633)
Singles with children	-0,0734***	(0,0236)	0,1108***	(0,0398)	-0,1988***	(0,0439)	-2,1648	(1,3929)
Basic school/preparatory	0,0191	(0,0333)	0,0434	(0,0538)	-0,0144	(0,0590)	-4,7142**	(2,0978)
General upper secondary	0,2538***	(0,0373)	-0,2767***	(0,0579)	0,2808***	(0,0630)	-3,8561*	(2,3266)
Vocational train. edu.	0,1552***	(0,0341)	0,0922*	(0,0550)	-0,0773	(0,0604)	0,8687	(2,1241)
Short-cycle higher edu.	0,2194***	(0,0445)	-0,0241	(0,0702)	-0,0296	(0,0802)	8,4993***	(2,6640)
Med.-cycle higher edu.	0,2591***	(0,0413)	0,1286*	(0,0668)	-0,1613**	(0,0765)	16,3545***	(2,4899)
Bachelor edu.	0,2685***	(0,0751)	0,2501**	(0,1214)	-0,1919	(0,1325)	18,5247***	(4,2926)
Long cycle higher edu.	0,2963***	(0,0466)	0,2167***	(0,0748)	-0,2726***	(0,0881)	30,0199***	(2,7892)
Immig. western country	0,0075	(0,0351)	0,0256	(0,0553)	0,0013	(0,0595)	-2,6468	(2,1221)
Immig. non-western country	-0,0585***	(0,0195)	0,0236	(0,0300)	-0,1615***	(0,0336)	2,8340**	(1,2027)
Descendant western country	0,1114	(0,1054)	-0,0112	(0,1519)	0,0392	(0,1661)	5,9289	(6,0071)
Desc. non-western country	-0,0021	(0,0594)	-0,1227	(0,0810)	0,0665	(0,0838)	4,3086	(3,5543)
Agr., fishing, quarr.	0,0108	(0,0294)	0,1352***	(0,0465)	-0,1200**	(0,0512)	-0,7971	(1,7348)
Manufacturing	-0,0157	(0,0306)	0,1757***	(0,0504)	-0,1816***	(0,0553)	5,8876***	(1,7697)
Electricity, gas and water	-0,034	(0,0383)	0,2327***	(0,0663)	-0,1815**	(0,0716)	2,0396	(2,1442)
Construction	0,0371	(0,0319)	0,0150	(0,0502)	-0,0740	(0,0551)	10,8368***	(1,8448)
Rtrade, hotel and restaurants	0,0709***	(0,0261)	-0,0762*	(0,0408)	0,0388	(0,0444)	-2,7113*	(1,5495)
Transport, post and telecom	0,0813**	(0,0324)	0,0115	(0,0507)	0,0237	(0,0548)	5,6127***	(1,8747)
Finance and business	-0,0756***	(0,0256)	-0,0106	(0,0409)	0,0139	(0,0446)	0,5497	(1,5329)
Public and personal service	0,0318	(0,0260)	0,0657	(0,0418)	-0,0226	(0,0455)	-6,0557***	(1,5489)
Self-employed	0,0424*	(0,0255)	-0,6165***	(0,0366)	0,0102	(0,0440)	6,0338***	(1,6886)
Top manager	0,0108	(0,0970)	0,0049	(0,1646)	0,1086	(0,1774)	43,4000***	(5,1298)
Employees upper level	0,0988***	(0,0320)	-0,0115	(0,0500)	-0,0380	(0,0588)	20,3505***	(1,8751)
Employees medium level	0,0357	(0,0269)	0,0621	(0,0433)	-0,1021**	(0,0440)	10,5170***	(1,4870)
Employees basic level	0,0149	(0,0129)	0,1148***	(0,0204)	-0,1091***	(0,0217)	1,3986*	(0,7439)
No work experience	-0,1079**	(0,0458)	-0,1211*	(0,0670)	0,0056	(0,0748)	-7,9482**	(3,5478)
From 6 years to 10 years	0,1235***	(0,0162)	0,1857***	(0,0260)	-0,1645***	(0,0286)	6,7327***	(0,9394)
More than 11 years	0,2368***	(0,0186)	0,3499***	(0,0309)	-0,3523***	(0,0352)	10,5764***	(1,0881)
Hazard Lambda	-	-	-	-	-	-	-7,4075***	(1,7792)
Athrho	-0,2567***	(0,0318)	-1,6127***	(0,0556)	1,8214***	(0,0533)	-	-
LR test of rho=0	Prob> chi2= 0.0000	Prob> chi2= 0.0000	Prob> chi2= 0.0000	Prob> chi2= 0.0000				

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )

(1) Seemingly unrelated bivariate probit. Method of adjustment: Full Information Maximum Likelihood.

(2) Treatment effects. Method of adjustment: Two-step Maximum Likelihood.

Table A5. Multinomial logit with selection for private sector employment programs

Ind. variables/Dep.var.	Job finding rate		Extent of working time				Individual earning	
	Transitions to work		Transitions to full-time		Trans. to part-time		Wage levels	
	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>
[18-25]	0,1669***	(0,0360)	-0,0287	(0,0286)	0,0639***	(0,0242)	-0,1636	(3,9062)
[26-30]	0,0360	(0,0347)	-0,0212	(0,0272)	0,0466**	(0,0230)	2,8505	(3,674)
[31-35]	-0,0003	(0,0340)	-0,0367	(0,0265)	0,0366	(0,0224)	5,7053	(3,5607)
[36-40]	-0,0435	(0,0335)	-0,0175	(0,0264)	0,0238	(0,0223)	1,1382	(3,5677)
[41-45]	0,0599*	(0,0345)	-0,0086	(0,0262)	0,0144	(0,0222)	6,4695*	(3,5291)
[51+]	-0,0861**	(0,0361)	0,0267	(0,0294)	-0,0299	(0,0249)	7,3067*	(3,9890)
Female	0,0405**	(0,0205)	-0,0318*	(0,0161)	0,0311**	(0,0137)	-15,8155***	(2,2237)
Couples with children	0,0672***	(0,0214)	-0,0091	(0,0161)	-0,0004	(0,0143)	-0,2098	(2,3135)
Couples without children	0,0490**	(0,0214)	-0,0055	(0,0170)	0,0019	(0,0144)	-3,0179	(2,3349)
Singles with children	-0,0043	(0,0341)	0,0268	(0,0280)	-0,0267	(0,0237)	0,0889	(3,8468)
Basic school/preparatory	-0,0657	(0,0453)	0,0168	(0,0347)	-0,0171	(0,0294)	3,2878	(4,8331)
General upper secondary	0,0404	(0,0531)	-0,0281	(0,0403)	0,0180	(0,0341)	1,8333	(5,6879)
Vocational train. edu.	-0,0678	(0,0462)	-0,0001	(0,0354)	-0,0072	(0,0299)	2,475	(4,9185)
Short-cycle higher edu.	-0,0309	(0,0614)	-0,0127	(0,0471)	0,0390	(0,0398)	-2,0663	(6,6010)
Med.-cycle higher edu.	-0,0658	(0,0633)	0,0222	(0,0499)	-0,0006	(0,0423)	7,5589	(7,0481)
Bachelor edu.	-0,0563	(0,1143)	-0,0647	(0,0887)	0,0892	(0,0751)	24,3257*	(13,2650)
Long cycle higher edu.	-0,1066	(0,0728)	0,0218	(0,0585)	0,0015	(0,0495)	12,6798	(7,9160)
Imm.western country	0,0266	(0,0481)	-0,0766**	(0,0380)	0,0522	(0,0322)	-2,7854	(5,3037)
Immig. non-west country	0,0139	(0,0282)	-0,1106***	(0,0222)	0,0755***	(0,0188)	-3,5702	(3,1292)
Descendant west country	0,1345	(0,1821)	0,1794	(0,1314)	-0,1460	(0,1112)	-14,838	(16,4099)
Desc.non-west country	0,0173	(0,0994)	-0,036	(0,0769)	-0,0083	(0,0651)	-7,0751	(11,7373)
Agr., fishing, quarr.	0,0599	(0,0440)	-0,0608*	(0,0361)	0,0326	(0,0305)	-0,4021	(4,9592)
Manufacturing	0,0027	(0,0470)	-0,1099***	(0,0385)	0,0739**	(0,0326)	-1,6497	(5,2784)
Electricity, gas and water	-0,0475	(0,0540)	-0,1212***	(0,0445)	0,0940**	(0,0377)	-3,7884	(6,0173)
Construction	-0,0077	(0,0474)	-0,0720*	(0,0395)	0,0416	(0,0334)	1,4215	(5,4195)
Rtrade, hotel a restaurants	0,0429	(0,0468)	-0,1346***	(0,0383)	0,0994***	(0,0324)	-6,8135	(5,2922)
Transport, post, telecom	0,0444	(0,0492)	-0,0873**	(0,0400)	0,0332	(0,0338)	6,9395	(5,4201)
Finance and business	0,0185	(0,0389)	-0,0057	(0,0327)	-0,0194	(0,0277)	0,8670	(4,4692)
Public and personal service	0,1002**	(0,0458)	0,0570	(0,0376)	-0,0628**	(0,0318)	6,2642	(5,1487)
Self-employed	-0,1057	(0,0354)	-0,0705	(0,0279)	0,0109	(0,0236)	-5,0187	(3,9252)
Top manager	-0,0226	(0,1459)	0,0306	(0,1116)	-0,0173	(0,0945)	11,4294	(13,9413)
Employees upper level	0,0432	(0,0564)	-0,0926**	(0,0439)	0,0556	(0,0371)	11,7272*	(6,1000)
Employees medium level	-0,0540	(0,0408)	-0,0762	(0,0321)	0,0587**	(0,0271)	5,3697	(4,3088)
Employees basic level	-0,0169	(0,0174)	-0,0011	(0,0137)	0,0110	(0,0116)	-3,6035*	(1,9019)
No work experience	-0,0446	(0,0667)	-0,1203	(0,0770)	-0,0997	(0,0652)	-13,3026	(13,3138)
From 6 years to 10 years	0,0601***	(0,0217)	-0,0139	(0,0177)	0,0267*	(0,0149)	2,2012	(2,4370)
More than 11 years	0,1030***	(0,0256)	-0,0461**	(0,0206)	0,0621***	(0,0174)	2,4830	(2,8259)
m1	-0,1576**	(0,0667)	-0,1499***	(0,0529)	0,1769***	(0,0448)	-5,6034	(7,2297)
m2	0,5676*	(0,3101)	1,0788***	(0,2515)	-0,7747***	(0,2129)	119,716***	(35,4267)
m3	0,1077	(0,3017)	0,2622	(0,2449)	-0,0591	(0,2074)	81,0641**	(34,4748)

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )



Table A6. Multinomial logit with selection for public sector employment programs

Ind. variables/Dep.var.	Job finding rate		Extent of working time				Individual earning	
	Transitions to work		Transitions to full-time		Trans. to part-time		Wage levels	
	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>
[18-25]	0,1661***	(0,0233)	0,0238	(0,0296)	0,0233	(0,0276)	-8,9199**	(3,5331)
[26-30]	0,0539**	(0,0240)	0,0075	(0,0296)	0,0162	(0,0276)	3,8998	(3,5152)
[31-35]	0,0262	(0,0241)	-0,0164	(0,0294)	0,0432	(0,0274)	6,8981**	(3,4518)
[36-40]	0,0247	(0,0236)	-0,0393	(0,0287)	0,0556**	(0,0267)	4,1376	(3,3486)
[41-45]	0,0177	(0,0239)	-0,0167	(0,0290)	0,0219	(0,0270)	1,5442	(3,3769)
[51+]	-0,1638***	(0,0221)	0,0781***	(0,0290)	-0,0618**	(0,0270)	6,2402*	(3,3960)
Female	0,0262**	(0,0127)	-0,0108	(0,0156)	0,0348**	(0,0146)	-15,4157***	(1,9013)
Couples with children	0,0268*	(0,0141)	0,00008	(0,0174)	-0,0226	(0,0162)	-1,9559	(2,0560)
Couples without children	0,0205	(0,0133)	-0,0143	(0,0163)	0,0038	(0,0152)	-5,2300***	(1,9668)
Singles with children	-0,0453**	(0,0198)	0,0592**	(0,0256)	-0,0639***	(0,0238)	-5,1914*	(2,9727)
Basic school/preparatory	0,0553*	(0,0287)	0,1107***	(0,0404)	-0,0848**	(0,0377)	-6,5344	(5,2786)
General upper secondary	0,1848***	(0,0322)	0,0132	(0,0435)	0,0075	(0,0406)	-13,6006**	(5,7235)
Vocational train.edu.	0,0958***	(0,0298)	0,0811*	(0,0415)	-0,0533	(0,0387)	-3,0500	(5,3793)
Short-cycle higher edu.	0,0878*	(0,0454)	0,0577	(0,0579)	-0,0509	(0,0540)	0,2272	(7,1626)
Med.-cycle higher edu.	0,1056**	(0,0409)	0,0909*	(0,0536)	-0,0332	(0,0500)	7,6085	(6,6866)
Bachelor edu.	0,1873**	(0,0928)	0,0107	(0,1019)	0,0486	(0,0950)	0,7905	(13,0829)
Long cycle higher edu.	0,1056**	(0,0521)	0,0944	(0,0653)	-0,0319	(0,0609)	24,0475***	(7,9994)
Immig. western country	-0,0020	(0,0033)	-0,0171	(0,0430)	-0,0010	(0,0401)	-3,6289	(5,2052)
Immig. non-western country	-0,0289	(0,0198)	-0,1031***	(0,0247)	0,0372	(0,0230)	-3,7911	(3,1259)
Descendant western country	-0,0400	(0,0928)	0,0500	(0,1223)	0,0316	(0,1141)	-3,2529	(13,2398)
Desc. non-western country	-0,1127**	(0,0555)	-0,0615	(0,0736)	0,0077	(0,0686)	2,9952	(9,1736)
Agriculture, fishing, quarr.	0,0544**	(0,0259)	-0,1115***	(0,0330)	0,1035***	(0,0307)	-2,3399	(4,0219)
Manufacturing	0,0006	(0,0294)	-0,1125***	(0,0376)	0,1027***	(0,0351)	3,2725	(4,4897)
Electricity, gas and water	-0,0661*	(0,0368)	-0,1348***	(0,0482)	0,1327***	(0,0449)	4,4301	(5,6318)
Construction	0,0252	(0,0288)	-0,0592	(0,0373)	0,0518	(0,0348)	6,183	(4,4137)
Rtrade, hotel and restaurants	0,0244	(0,0279)	-0,1745***	(0,0356)	0,1552***	(0,0332)	-5,6884	(4,3380)
Transport, post and telecom	0,0811***	(0,0308)	-0,1429***	(0,0382)	0,1322***	(0,0356)	2,2708	(4,6162)
Finance and business	0,0132	(0,0208)	-0,0345	(0,0283)	0,0248	(0,0263)	3,2452	(3,3815)
Public and personal service	0,0633***	(0,0228)	-0,0159	(0,0306)	0,0035	(0,0283)	2,6531	(3,6211)
Self-employed	-0,0011	(0,0241)	-0,2501***	(0,0295)	0,0233	(0,0275)	8,2841*	(4,3006)
Top manager	0,1144	(0,1241)	-0,0738	(0,1286)	0,0936	(0,1199)	3,4404	(14,0006)
Employees upper level	-0,001	(0,0402)	-0,1131**	(0,0460)	0,0250	(0,0429)	2,2859	(5,5480)
Employees medium level	-0,0022	(0,0309)	-0,0178	(0,0368)	-0,0111	(0,0343)	2,3203	(4,2135)
Employees basic level	-0,0074	(0,0103)	0,0120	(0,0127)	-0,0174	(0,0119)	-2,0683	(1,5441)
No work experience	-0,0081	(0,0394)	-0,0054	(0,0488)	0,0596	(0,0455)	-3,4198	(7,3533)
From 6 years to 10 years	0,0535***	(0,0146)	0,0324*	(0,0185)	-0,0193	(0,0173)	4,4533**	(2,2519)
More than 11 years	0,0662***	(0,0175)	0,0462**	(0,0226)	-0,0112	(0,0211)	3,9096	(2,7181)
m1	-0,1864	(0,1710)	-0,8546***	(0,2054)	0,7831***	(0,1915)	-56,1796**	(24,5607)
m2	0,2650***	(0,0524)	0,1520**	(0,0627)	-0,1748***	(0,0585)	6,9423	(7,7222)
m3	0,2526**	(0,1190)	-0,5724***	(0,1441)	0,3975***	(0,1343)	-6,8302	(17,6018)
m4	0,2948***	(0,0811)	-0,2452**	(0,0959)	0,1489	(0,0894)	-9,1349	(11,9364)

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign. at the 1% level ( $\alpha = 0,01$ )

Table A7. Multinomial logit with selection for education/training programs

Ind. variables/Dep. variables	Job finding rate		Extent of working time				Individual earning	
	Transitions to work		Transitions to full-time		Trans. to part-time		Wage levels	
	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>
[18-25]	0,1088***	(0,0191)	0,0313**	(0,0147)	0,0071	(0,0095)	1,8929	(2,8007)
[26-30]	0,0251	(0,0164)	0,0060	(0,0125)	0,0167**	(0,0081)	4,2708*	(2,3659)
[31-35]	0,0253	(0,0157)	-0,0014	(0,0118)	0,0122	(0,0077)	2,0739	(2,2363)
[36-40]	-0,0075	(0,0152)	-0,0112	(0,0114)	0,0158**	(0,0074)	2,7391	(2,1621)
[41-45]	0,0065	(0,0152)	0,0027	(0,0114)	0,0079	(0,0074)	4,1712*	(2,1430)
[51+]	-0,1379***	(0,0155)	0,0217*	(0,0123)	-0,0166	(0,0080)	3,816	(2,3766)
Female	-0,0065	(0,0098)	0,0218***	(0,0076)	0,0043	(0,0050)	-19,9087***	(1,4555)
Couples with children	0,0476***	(0,0102)	-0,0195**	(0,0079)	0,0052	(0,0051)	-2,3446	(1,4949)
Couples without children	0,0230**	(0,0104)	-0,0190**	(0,0083)	0,0103*	(0,0054)	-0,8866	(1,5792)
Singles with children	-0,0327**	(0,0152)	-0,0207*	(0,0123)	-0,0053	(0,0080)	-4,8621**	(2,3198)
Basic school/preparatory	0,0247	(0,0220)	0,0317*	(0,0187)	-0,0100	(0,0122)	-3,9141	(3,6246)
General upper secondary	0,0453*	(0,0258)	-0,0263	(0,0215)	0,0397***	(0,0149)	0,2588	(4,2277)
Vocational train. edu.	0,0493**	(0,0224)	0,0141	(0,0189)	-0,0008	(0,0123)	1,4063	(3,6661)
Short-cycle higher edu.	0,0700**	(0,0281)	-0,0143	(0,0229)	0,0123	(0,0149)	7,3393*	(4,4306)
Med.-cycle higher edu.	0,1008***	(0,0260)	0,0963	(0,0212)	0,0047	(0,0138)	15,6679***	(4,1033)
Bachelor edu.	0,0489	(0,0457)	0,0316	(0,0357)	0,0126	(0,0232)	20,3571***	(6,9156)
Long cycle higher edu.	0,1199***	(0,0290)	0,0029	(0,0232)	0,0114	(0,0150)	32,8998***	(4,5663)
Immig. western country	-0,0198	(0,0231)	-0,0423**	(0,0183)	0,0401***	(0,0119)	-13,0934***	(3,6503)
Immig. non-western country	-0,0653***	(0,0137)	-0,1036***	(0,0111)	0,0309***	(0,0072)	1,8524	(2,1748)
Descendant western country	0,1550**	(0,0725)	0,0395	(0,0491)	-0,0155	(0,0320)	18,9305*	(9,6679)
Desc. non-western country	0,0525	(0,0512)	-0,1259***	(0,0371)	0,0885***	(0,0241)	5,8481	(7,3373)
Agr., fishing, quarr.	-0,0558***	(0,0204)	-0,0004	(0,0160)	0,0111	(0,0104)	-1,5317	(3,0704)
Manufacturing	-0,0473**	(0,0224)	-0,0151	(0,0174)	0,0197*	(0,0113)	5,7075*	(3,2943)
Electricity, gas and water	-0,0354	(0,0252)	-0,0184	(0,0194)	0,0266**	(0,0126)	-0,1660	(3,5622)
Construction	-0,0214	(0,0221)	-0,0538***	(0,0187)	0,0362***	(0,0121)	15,0392***	(3,5419)
Rtrade, hotel and restaurants	-0,0447**	(0,0221)	-0,0593***	(0,0172)	0,0319***	(0,0112)	-4,1844	(3,3233)
Transport, post and telecom	-0,0546**	(0,0238)	-0,0396**	(0,0187)	0,0458***	(0,0121)	2,8968	(3,5719)
Finance and business	-0,0570***	(0,0172)	-0,0003	(0,0136)	-0,0030	(0,0088)	0,2629	(2,6200)
Public and personal service	0,0465**	(0,0180)	0,0137	(0,0139)	-0,0036	(0,0091)	-5,6043	(2,6993)
Self-employed	0,0355**	(0,0172)	-0,2980***	(0,0137)	-0,0058	(0,0089)	3,6957	(3,0301)
Top manager	0,0018	(0,0589)	0,0160	(0,0441)	-0,0067	(0,0287)	54,8616***	(8,1702)
Employees upper level	0,0296	(0,0201)	-0,0092	(0,0150)	0,0068	(0,0098)	26,4278***	(3,0177)
Employees medium level	0,0032	(0,0173)	-0,0210	(0,0132)	0,0174**	(0,0086)	10,7030***	(2,5018)
Employees basic level	0,0025	(0,0090)	0,0047	(0,0071)	0,0015	(0,0046)	1,0187	(1,3426)
No work experience	-0,0084	(0,0338)	-0,1569***	(0,0292)	-0,0157	(0,0190)	0,4994	(7,3859)
From 6 years to 10 years	0,0377***	(0,0104)	0,0076	(0,0082)	-0,0020	(0,0053)	6,3196***	(1,5750)
More than 11 years	0,0768***	(0,0123)	0,0131	(0,0097)	-0,0013	(0,0063)	10,3190***	(1,8582)
m1	-0,4408***	(0,1362)	-0,4652***	(0,1041)	0,4217***	(0,0677)	-22,8460	(19,6813)
m2	0,3730***	(0,1394)	0,0783	(0,1107)	0,0397	(0,0720)	-3,9506	(21,2973)
m3	0,0620	(0,0583)	-0,3223***	(0,0469)	0,3125***	(0,0305)	-14,4426	(9,0789)
m4	0,1017	(0,0867)	-0,3545***	(0,0686)	0,3858***	(0,0446)	-18,2823	(13,1576)

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )

Table A8. Multinomial logit with selection for services/sanctions programs

Ind. variables/Dep. variables	Job finding rate		Extent of workig time				Individual earning	
	Transitions to work		Transitions to full-time		Trans. to part-time		Wage levels	
	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>Coef.</i>	<i>Std.Err.</i>
[18-25]	0,1417***	(0,0244)	0,0077	(0,0230)	0,0428**	(0,0167)	-5,3246	(3,8161)
[26-30]	0,0404*	(0,0218)	0,0074	(0,0204)	0,0093	(0,0148)	2,2436	(3,3701)
[31-35]	0,0335	(0,0210)	0,0089	(0,0195)	0,0089	(0,0142)	1,0010	(3,2149)
[36-40]	0,0165	(0,0204)	0,0012	(0,0190)	-0,0027	(0,0138)	0,6430	(3,1335)
[41-45]	0,0288	(0,0205)	0,0126	(0,0190)	0,0088	(0,0138)	-0,0953	(3,1093)
[51+]	-0,1691***	(0,0192)	0,0415**	(0,0191)	-0,0491***	(0,0139)	1,3207	(3,2187)
Female	0,0390***	(0,0120)	0,0201*	(0,0117)	0,0019	(0,0085)	-15,9837***	(1,9770)
Couples with children	0,0716***	(0,0134)	-0,0188	(0,0127)	0,0016	(0,0092)	-2,245	(2,0942)
Couples without children	0,0479***	(0,0127)	-0,0232*	(0,0124)	0,0105	(0,0090)	-0,8303	(2,0840)
Singles with children	-0,0058	(0,0203)	0,0192	(0,0196)	-0,0303**	(0,0143)	0,9350	(3,2218)
Basic school/preparatory	-0,0141	(0,0321)	0,0595*	(0,0324)	-0,0735***	(0,0236)	-1,0912	(5,4707)
General upper secondary	0,0628*	(0,0356)	-0,0393	(0,0354)	0,0085	(0,0257)	4,6252	(6,0852)
Vocational train. edu.	0,0329	(0,0328)	0,0380	(0,0331)	-0,0532**	(0,0240)	-1,4825	(5,5499)
Short-cycle higher edu.	0,0675*	(0,0386)	0,0187	(0,0382)	-0,0376	(0,0277)	10,0751	(6,4311)
Med.-cycle higher edu.	0,0690*	(0,0369)	0,0170	(0,0366)	-0,0516*	(0,0266)	18,3002***	(6,2083)
Bachelor edu.	0,0592	(0,0631)	0,0112	(0,0582)	-0,0014	(0,0423)	18,1795*	(10,0884)
Long cycle higher edu.	0,0723*	(0,0396)	0,0292	(0,0388)	-0,0559**	(0,0282)	25,2783***	(6,6485)
Immig. western country	-0,0662**	(0,0288)	-0,0471	(0,0299)	0,0575***	(0,0217)	3,0959	(5,1518)
Immig. non-western country	-0,0380*	(0,0194)	-0,1288***	(0,0187)	0,0562***	(0,0136)	-2,1459	(3,2946)
Descendant western country	-0,0267	(0,0867)	0,0687	(0,0813)	-0,0422	(0,0591)	-8,3820	(14,9796)
Desc. non-western country	-0,0374	(0,0522)	-0,1424***	(0,0479)	0,1540***	(0,0348)	-10,3627	(8,6617)
Agr., fishing, quarr.	-0,0228	(0,0262)	-0,0099	(0,0249)	0,0452**	(0,0181)	-4,7716	(4,2536)
Manufacturing	-0,0891***	(0,0275)	-0,0346	(0,0270)	0,0609***	(0,0196)	-1,0879	(4,5001)
Electricity, gas and water	-0,0477	(0,0341)	-0,0329	(0,0329)	0,0555**	(0,0239)	-8,8757*	(5,2788)
Construction	-0,0068	(0,0287)	-0,0599**	(0,0271)	0,0363*	(0,0197)	6,1300	(4,5497)
Rtrade, hotel and restaurants	-0,0016	(0,0261)	-0,0654	(0,0246)	0,0674***	(0,0179)	-11,0798***	(4,2604)
Transport, post and telecom	-0,0237	(0,0285)	-0,0563**	(0,0274)	0,0845***	(0,0199)	-0,8046	(4,6204)
Finance and business	-0,0552***	(0,0208)	0,0115	(0,0200)	0,0163	(0,0145)	0,5351	(3,4993)
Public and personal service	0,0015	(0,0221)	0,0542**	(0,0211)	-0,0163	(0,0153)	-6,9907*	(3,7261)
Self-employed	0,0430*	(0,0219)	-0,2811***	(0,0208)	-0,0070	(0,0151)	3,1522	(3,9142)
Top manager	0,0483	(0,0646)	0,0594	(0,0617)	-0,0207	(0,0449)	36,0830***	(9,6172)
Employees upper level	0,0426*	(0,0247)	-0,2103	(0,0231)	0,0522***	(0,0168)	1,8802	(4,1893)
Employees medium level	-0,0068	(0,0216)	-0,0296	(0,0206)	0,0210	(0,0150)	1,4688	(3,4207)
Employees basic level	-0,0091	(0,0115)	0,0097	(0,0111)	-0,0052	(0,0080)	1,6992	(1,8358)
No work experience	-0,0676	(0,0444)	-0,0224	(0,0462)	0,0160	(0,0336)	-16,6530*	(8,7493)
From 6 years to 10 years	0,0173	(0,0136)	0,0220*	(0,0129)	-0,0019	(0,0093)	4,4861**	(2,1513)
More than 11 years	0,0297*	(0,0155)	0,0066	(0,0151)	0,0165	(0,0109)	7,1671***	(2,5187)
m1	-0,4643***	(0,1711)	-0,8133***	(0,1600)	0,6853***	(0,1163)	17,6112	(26,5145)
m2	-0,0960	(0,1738)	0,1514	(0,1712)	-0,2372*	(0,1245)	95,5652***	(28,4773)
m3	-0,1960	(0,1764)	-0,6883***	(0,1751)	0,5332***	(0,1273)	60,6412**	(29,0914)
m4	-0,0868*	(0,0477)	-0,1515***	(0,0465)	0,1345***	(0,0338)	8,9383	(7,6556)

\*significance at the 10% level ( $\alpha = 0,1$ ) \*\*sign. at the 5% level ( $\alpha = 0,05$ ) \*\*\*sign.at the 1% level ( $\alpha = 0,01$ )

Table A9. Labour market integration

	Job finding rate: $p(A)$	$p(B A)$
Private sector employment	61,3%	80,2%
<i>Private job training</i>	57,2%	76,9%
<i>Adult Apprenticeship support</i>	77%	90%
<i>Labour trainee</i>	57,6%	76%
Public sector employment	30,7%	69,9%
<i>Public job training</i>	35,3%	70,4%
<i>Individual job training</i>	28,4%	69,3%
<i>Pool jobs</i>	17,6%	100%
<i>Service jobs</i>	44,2%	80,1%
<i>Voluntary not paid activities</i>	21,5%	67,9%
Education and training	39,5%	75,7%
<i>Education with training allowance</i>	43,1%	75,9%
<i>Adult education subsidies</i>	62,7%	94,4%
<i>Specially adapted education</i>	20,7%	70,6%
<i>Adult and further education</i>	35,9%	83%
Services and sanctions	39,9%	72,6%
<i>Intensive job seeking</i>	41,8%	72,9%
<i>Advisory activation</i>	37,9%	72,2%

In a first experience  $E_t$ , let  $A$  be the event that beneficiaries find a job one year later  $t+1$  with  $p(A)$  the probability of the event  $A$  (with  $Abar$ , the opposite event of  $A$ ,  $p(Abar)=1-p(A)$ ). To model the second experience  $E_{t+2}$ , let  $B$  be the event that beneficiaries transit to work at time  $t+2$  with  $p(B)$ , the probability of event or evidence  $B$ . For all event  $B$ , we call  $P(B|A)$  the conditional probability that beneficiaries stay in employment in  $t+2$ , given that they successfully managed to find a job one year after participating into one of the selected schemes  $t+1$ .

Table A10. Differences-in-differences estimates: employment rates

	Before ( $n-1$ ): $Y_i^{Be}$	After ( $n+1$ ): $Y_i^{Af}$	Evolution (first difference): $\Delta Y_i$	Rel. evolution (sec. diff.): $\beta^{did}$
Participants to private sector emp.	26%	61,3%	35,3	29,1
<i>Participants to other programs</i>	28%	34,2%	6,2	
Participants to public sector emp.	22,8%	30,7%	7,9	-1
<i>Participants to other programs</i>	29,5%	38,4%	8,9	
Participants to Education and training	30,6%	39,5%	8,9	0,4
<i>Participants to other programs</i>	26,5%	35%	8,5	
Participants to services and sanctions	39,9%	43,2%	3,3	0,4
<i>Participants to other programs</i>	35,8%	38,7%	2,9	

$Y_i^{Be}$ : employment rate for participants before activation.  $Y_i^{Af}$ : employment rate for participants after activation. Let's notice that participants to other programs form the "control group".  $\Delta Y_i = Y_i^{Af} - Y_i^{Be}$ : Change within the activation experience.  $\beta^{did} = \hat{\gamma}(\text{participants to a specific type of programs, Af} - (\text{participants to a specific type program, Be}) - \hat{\gamma}(\text{participants to other programs, Af} - (\text{participants to other programs, Be}))$ .