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DIFFERENTIAL EFFECTS OF ACTIVE LABOUR MARKET PROGRAMMES IN THE EARLY STAGES OF YOUNG PEOPLE'S UNEMPLOYMENT

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ABSTRACT. This study evaluates the long-run effects of Finnish active labour market programmes in youth labour markets. The effectiveness of programmes is measured by a number of outcomes, including employment, unemployment, programme participation, education, being out of the labour force and annual earnings. A non-parametric propensity score matching approach adapted for the case of multiple programmes is applied to estimate the average programme effects. Our results point out distinct variation in the success of programmes, and indicate that job placement and labour market training are successful not only in promoting employment but also in increasing the earnings of participants. The largest of all programmes, youth practical training, is not found to have any impacts on young persons' labour market careers.

TIIVISTELMÄ. Tutkimuksessa arvioidaan aktiivisen työvoimapolitiikan pitkän aikavälin vaikutuksia nuorten työmarkkinoilla. Toimenpiteiden tuloksellisuutta mitataan työllisyyden, työttömyyden, tulojen, toistuvan osallistumisen, opiskelun ja työvoiman ulkopuolelle siirtymisen suhteen. Toimenpiteitten keskimääräiset yksilötason vaikutukset estimoidaan ns. propensity score matching –menetelmällä. Tulosten perusteella eri toimenpideryhmien vaikutuksissa on havaittavissa merkittäviä eroja. Työllistämistuki ja työvoimakoulutus edistävät nuorten työllistymistä ja parantavat heidän ansiotasoaan. Nuorten työmarkkinoilla yleisimmin käytetyllä työmarkkinatuella tapahtuvalla työharjoittelulla ei näiden tulosten valossa ole nuorten työttömien työmarkkina-asemaa parantavia vaikutuksia.

Esipuhe

Aktiivista työvoimapolitiikkaa kritisoidaan melko säännöllisin väliajoin. Tyypillisesti aktiiviset toimenpiteet esitetään temppuina, joiden avulla kaunistellaan työttömyystilastoja saavuttamatta varsinaisia työllisyysvaikutuksia. Vaihtoehtoisesti saatetaan kaivaa esille yksittäisiä kursseja, jotka ovat jostakin syystä epäonnistuneet. Kritiikki ei ole kuitenkaan lannistanut aktiivisten toimenpiteiden kannattajia, jotka näkevät toimenpidetason kasvattamisen yhtenä työttömyyden hoitokeinona. Suuri kysymys tässä keskustelussa on, missä määrin yksittäiset epäonnistumiset kertovat koko aktiivisen työvoimapolitiikan tehottomuudesta. Valitettavasti julkisen sektorin toimenpiteiden vaikuttavuustutkimus on Suomessa varsin vähäistä verrattuna useisiin muihin maihin. Harvalukuiset ja osaltaan ristiriitaiset tutkimustulokset eivät ole kyenneet vakuuttamaan aktiivisen työvoimapolitiikan vastustajia tai sen kannattajia. Keskustelun tueksi tarvitaankin kipeästi lisää vaikuttavuusarvioita. Käsillä oleva tutkimus paikkaa omalta osaltaan arviointitutkimuksen aukkokohtia.

Vaikuttavuusarvioinnin perimmäisenä tarkoituksena on verrata osallistujien toimenpiteiden jälkeistä työmarkkinauraa tilanteeseen, jossa he eivät olisikaan osallistuneet toimenpiteeseen. Tässä tutkimuksessa hypoteettisen tilan muodostamiseksi sovelletaan ensimmäistä kertaa suomalaiseen aineistoon maailmalla varsin yleisesti käytettyä ns. propensity score -menetelmää. Vertailtavien ryhmien muodostamisessa kiinnitetään erityistä huomiota yksilöiden aiempiin työmarkkinauriin, osallistujien ja ei-osallistujien vertailtavuuteen työttömyysjaksojen keston suhteen sekä siihen, että vertailtavat henkilöt sijoittuvat samoille työmarkkinoille. Kaikilla näillä tekijöillä on osoitettu olevan kiistaton yhteys arviointitulosten luotettavuuteen. Tutkimuksessa on pyritty myös arvioimaan erilaisten taustatekijöiden vaikutusta itse toimenpiteitä koskeviin tehokkuusarvioihin. Näiltä osin voidaankin sanoa tutkimuksen muodostuvan yhdeksi perusteellisimmista Suomessa tehdyistä aktiivisen työvoimapolitiikan arviointitutkimuksista.

Tarkasteltavana ovat nuorille suunnatut aktiiviset työvoimapoliittiset toimenpiteet. Intervention vaikutuksista luodaan aiempaa kattavampi kuva tutkimalla nuorten työmarkkinauraa työllisyyden lisäksi työttömyyden, opiskelun, työvoiman ulkopuolelle ajautumisen sekä ansiokehityksen näkökulmista. Samalla tarkasteluajanjaksoa pidennetään tyypillisestä yhdestä vuodesta aina viiteen vuoteen saakka. Tätä kautta saamme tietoa toimenpiteiden pitkän aikavälin vaikutuksista sekä siitä, miten toimenpiteet vertautuvat muihin vaihtoehtoisiin inhimillisen pääoman kartuttamisen tapoihin, joita nuoret saattavat valita työmarkkinauransa alkuvaiheissa.

Tutkimustulokset osoittavat julkisen vallan kykenevän auttamaan nuoria heidän työmarkkinauransa alkutaipaleella. Myönteiset vaikutukset osoittautuvat vieläpä hyvin pitkäkestoisiksi. Väitteitä ei voida kuitenkaan yleistää kaikkia toimenpitei-

tä koskeviksi. Toimenpiteiden todellisen vaikuttavuuden arvioimisen monimut-kaisuus yhdessä vaikutusten heterogeenisuuden kanssa asettavat poliittiset pää-töksentekijät vaikeaan asemaan. Erilaisten tutkimusten tuottamat tulokset riippuvat monista osista, joiden huomioiminen on ensiarvoisen tärkeää arvioita-essa tutkimustulosten luotettavuutta. Toivottavasti tämä tutkimus selventää osal-taan niitä tekijöitä, jotka olisi syytä huomioida arvioitaessa aktiivisen työvoimapolitiikan mahdollisuuksia.

Helsinki, joulukuussa 2004

Reino Hjerppe

Foreword

Active labour market policy faces critique on a fairly regular basis. Typically active measures are criticised as being tricks that merely reduce the unemployment figures with no actual employment effects. Alternatively, single unsuccessful programmes may be highlighted in order to question the functionality of the entire policy. The critique has, nevertheless, failed to discourage those in favour of active programmes, who see extensive active labour market policy as a mean to reduce unemployment. The major question in this discussion is whether single failures are indicative of the inefficiency of the whole ALMP system. Unfortunately, the evaluation studies of public programmes are quite rare in Finland. Few and often conflicting results have been able to convince neither the supporters nor the opponents of active labour market policy, highlighting the fact that more evaluation studies are urgently needed. The current research report aims to shed more light on the existing controversies.

The fundamental aim of evaluation studies is to find out what would have happened to the participants had they not participated in a treatment. For the first time in the Finnish context, this study adopts the propensity score matching method in forming this contrafactual state. In constructing the comparable groups particular attention is being paid to individuals' prior labour market careers, the comparability of participants and non-participants with respect to current unemployment duration and in terms of their residential areas. All these factors have been shown to have a large impact on the credibility of non-experimental evaluation results. In addition, this study discusses the effects that different control variables have on the results. Consequently, this study is one of the most comprehensive evaluations of active labour market policy in Finland.

The focus is set on active labour market programmes targeted to the young unemployed. The effects of various interventions are evaluated by examining individuals' labour market careers not only with respect to employment, but also unemployment, studying, non-participation and annual income. At the same time, the observation period is extended from the conventional one year to five years. Hence, information is obtained both on the long-term impacts of active programmes and on the comparability of these measures with the usual means of accumulating human capital that young people may choose in the early stages of their labour market careers.

The results of this research show that the public sector is capable of helping young people in the early stages of their labour market careers. The positive effects turn out to be quite long lasting. However, these findings can not be generalized for all programmes. The difficulties in constructing a non-experimental control group and the heterogeneity of the effects place decision-makers at a difficult position. The outcomes of different studies depend on several factors, con-

sideration of which is essential in assessing the credibility of the reported results. Hopefully, this study will clarify the issues that should be taken into account when judging the potential that active labour market policy has.

Helsinki, December 2004

Reino Hjerppe

Yhteenveto

Suomen taloutta 1990-luvulla kohdannut syvä lama toi mukanaan ennätyskorkean työttömyyden. Työttömyysaste kohosi muutamassa vuodessa 4 prosentista lähes 17 prosenttiin. Sittemmin työttömyys on saatu laskuun mutta aiempiin lukemiin ei ole ollut paluuta. Erityisen kaltoin korkea työttömyys kohteli ensimmäistä kertaa työmarkkinoille tulevia nuoria. Nuorimpien ikäluokkien työttömyysaste kohosi jopa 30–40 prosenttiin, jolta tasolta se on laskenut nykyiseen 15–30 prosenttiin.

Massiivisen työttömyyden päihittämiseksi aktiivista työvoimapolitiikkaa laajennettiin 1990-luvulla voimakkaasti. Laajimmillaan toimenpiteisiin osallistui jopa 4,5 prosenttia työvoimasta, mikä ylitti koko lamaa edeltäneen työttömyysasteen. Työvoimapolitiikka on myös ollut monien rakenteellisten muutosten kohteena. Työvoimakoulutuksen suhteellista osuutta on jatkuvasti lisätty ja samalla tukityöllistettyjen määrä on vähentynyt. Vuonna 1994 otettiin uutena toimenpiteenä käyttöön työharjoittelu tarveharkintaisella työmarkkinatuella. Tämä toimenpide oli suunnattu erityisesti nuorille, jotka eivät vielä täytä työttömyysturvan työssäoloehtoa. Työmarkkinatuella tapahtuva työharjoittelu kasvoi varsin nopeasti yleisimmäksi nuorille työttömille kohdennetuksi aktiivitoimeksi.

Aktiivisen työvoimapolitiikan jatkuvasta kehitystyöstä ja mittavasta yhteiskunnallisesta panostuksesta huolimatta tutkimustuloksia aktiivitoimien tehokkuudesta on valitettavan niukasti. Harvoissa aiemmissa tutkimuksissa tyypillinen havainto on yksityisen sektorin tukitöiden työllistymistä edistävä vaikutus. Julkisen sektorin tukitöiden vaikutus työllistymiseen on aiempien tutkimusten valossa negatiivinen ja työvoimakoulutuksen kohdalla työllisyysarviot vaihtelevat negatiivisesta positiiviseen. Tutkimustuloksia toimenpiteiden muista kuin työllisyysvaikutuksista ei juuri ole. Tarvetta perusteelliselle toimenpiteiden vaikutusarvioinnille tuntuisi siis olevan.

Tässä tutkimuksessa arvioidaan, parantavatko aktiiviset työvoimapoliittiset toimenpiteet nuorten, 16–30 -vuotiaiden työttömien työmarkkina-asemaa pidemmällä aikavälillä. Aiemmista tutkimuksista poiketen tarkastelun kohteena ovat työllisyysvaikutusten lisäksi myös toimenpiteiden vaikutukset osallistujien tuloihin, toistuvaan työttömyyteen ja toimenpiteille osallistumiseen sekä opiskeluun ja työvoiman ulkopuolelle siirtymiseen. Lisäksi eri toimenpideryhmiä – työllistämistuki, työvoimakoulutus ja työharjoittelu työmarkkinatuella – tarkastellaan erikseen, joten pystymme havaitsemaan myös mahdolliset vaikuttavuuserot toimenpiteiden välillä.

Tutkimusongelma voidaan tiivistää kysymykseen, parantaako aktiivisiin työvoimapoliittisiin toimenpiteisiin osallistuminen työttömien asemaa ja jos näin on, niin olisiko tämä vaikutus havaittu myös ilman osallistumista. Tämän sinänsä

yksinkertaiselta vaikuttavan ongelman selvittäminen ei kuitenkaan ole kovinkaan helppo tehtävä. Perimmäisenä ongelmana on selvittää toimenpiteeseen osallistuneen henkilön myöhempi työmarkkinaura siinä tapauksessa, että hän ei olisikaan osallistunut toimenpiteelle.

Hypoteettisen työmarkkinauran luominen tapahtuu tässä tutkimuksessa ns. propensity score matching -menetelmän avulla, joka perustuu siihen, että toimenpiteisiin osallistuneita verrataan saman osallistumistodennäköisyyden omaaviin kontrollihenkilöihin. Menetelmän hienous on siinä, että se tasapainottaa samalla osallistuneiden ja ei-osallistuneiden ryhmät myös valikoitumisyhtälössä käytettävien taustamuuttujien suhteen. Menetelmä vaatii laajan yksityiskohtaisen aineiston, jonka avulla kyetään vakioimaan toimenpiteisiin osallistumista määrittävät tekijät. Suomalaiset kattavat yksilötason aineistot tarjoavat oivan mahdollisuuden hyödyntää tätä maailmalla varsin yleiseksi muodostunutta arviointikehikkoa.

Tulosten perusteella eri toimenpideryhmien vaikutuksissa on huomattavia eroja. Aktiivisilla työvoimapoliittisilla toimenpiteillä voidaan selvästi parantaa nuorten työttömien työmarkkina-asemaa, mutta kaikki toimenpiteet eivät suinkaan ole tehokkaita. Nuorten työmarkkinoilla yleisimmin käytetyllä työmarkkinatuella tapahtuvalla työharjoittelulla ei näiden tulosten valossa ole nuorten työttömien työmarkkina-asemaa parantavia vaikutuksia. Tämä tulos ei anna erityisen hyvää kuvaa nuorille kohdennettujen aktiivitoimien kokonaistuloksellisuudesta, sillä vuosina 1995–1996 peräti 60 prosenttia kaikista nuorten toimenpiteistä kanavoitiin työmarkkinatuella tapahtuvan työharjoittelun kautta.

Sen sijaan työllistämistuki ja työvoimakoulutus edistävät merkittävästi nuorten työllistymistä ja parantavat heidän ansiotasoaan. Nämä positiiviset vaikutukset ovat pitkäkestoisia ja havaittavissa vielä jopa neljäntenä osallistumisen jälkeisenä vuonna. Toimenpiteiden ulkopuolelle jäävät nuoret voivat parantaa työmarkkina-asemaansa omaehtoisesti mm. opiskelun keinoin, mutta koulutuksen kautta saavutetut hyödyt eivät ainakaan tämän tutkimuksen tarkasteluperiodilla riitä kuromaan kiinni työllistämistuen ja työvoimakoulutuksen kautta saavutettua etumatkaa.

Contents

1   Introduction

Finland experienced a severe economic crisis in the 1990s, during which time the unemployment rate shot up from 4 per cent to nearly 17 per cent. Since then the unemployment rate has been declining slowly but steadily, running currently, in 2004, at some 10 per cent. Young people were hit especially hard by the economic slump. It is of some concern that their unemployment rate has remained at a very high level, particularly among the youngest age groups (see Figure 1).

Figure 1. Youth unemployment rates (%) by age group in Finland
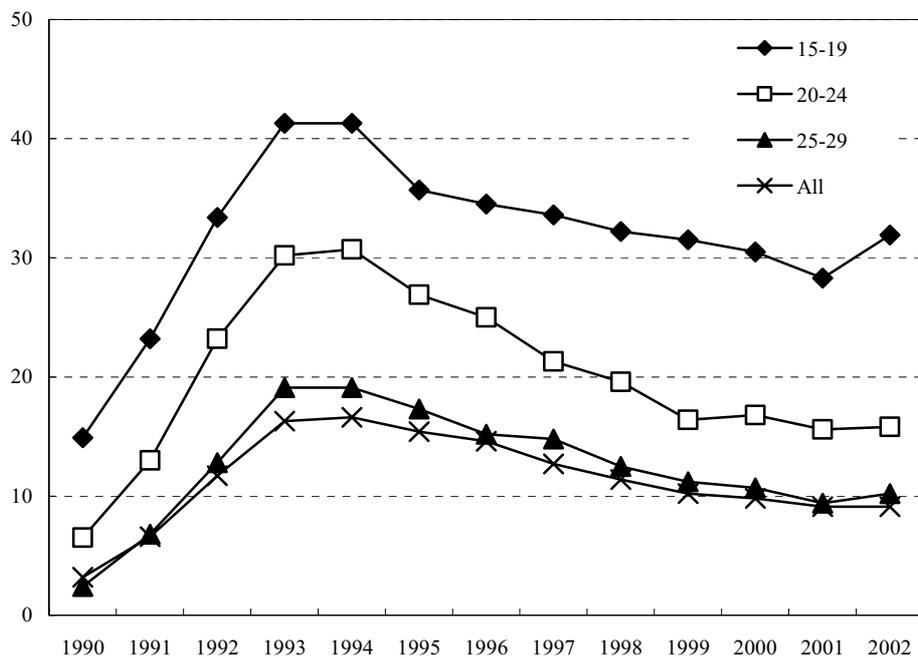
In response to the unemployment crisis, the Finnish government increased spending on active labour market programmes (ALMPs) in order to improve the chances of the unemployed to return to regular employment. In 1997 the proportion of participants in active programmes peaked at nearly 4.5 per cent of the labour force, a volume which exceeds the open unemployment rate of the late 1980s. Despite the massive spending in active labour market policy, its usefulness in improving the participants' labour market position has been in serious doubt.

In addition to changes in the level of active labour market policy, its composition has been altered. During the late 1990s the share of participants in labour market training increased, while the number of selective employment measures was reduced. A new feature was the introduction of means-tested labour market support which was aimed at individuals who had not fulfilled the time-at-work condition before becoming unemployed. Under this scheme it became possible to fund an

individual's practical training by an amount equalling the labour market support. For the young unemployed, placement in practical training (youth practical training) soon largely displaced the other forms of active programmes. As it happens, youth practical training is also the cheapest form of active measures, so it is worth examining how successful this relatively inexpensive programme is compared with older and more expensive programmes. At the same time, results concerning the effectiveness of different programmes give us some guidance as to whether the implemented changes in the composition of active labour market policy have been successful in terms of promoting young persons' labour market careers.

Previous microeconometric studies of active labour market programmes in the Nordic countries have not been particularly encouraging (see, for example, Ackum 1991, Korpi 1994, Regnér 1997, Larsson 2003, Sianesi 2003, Raaum et al. 2002, Jespersen & Munch, 2004). In particular, Swedish studies have found mainly negative or zero effects of the programmes on labour market outcomes. The only exception is formed by private sector job subsidies that are found to improve the participants' employment prospects. It is interesting to see how the Finnish evidence compares with the Swedish evidence, given that these two countries have fairly similar labour market institutions and welfare systems.

This study focuses on the average treatment effects on the treated, which are estimated by propensity score matching methods. Our approach departs from the existing ALMP evaluation literature in that whereas most of the studies cover only the immediate effects of a few (usually 1-3) outcome variables, our data enable us to evaluate the impact of programmes on a variety of outcome variables. By this means, we are able to provide a more thorough examination of the role that active labour market policy has in youth labour markets. In addition, the outcome period under examination covers up to five years after the start of a programme, so we are able to discuss both the short-run and the long-run impacts of active programmes. Since labour market programmes, and particularly labour market training, can be considered as public investments in human capital, the long-run effects are important in considering the effectiveness and social returns of these programmes. Finally, the estimations are carried out in a multiple programme framework that allows us to explore possible heterogeneities in the impacts of ALMPs.

The rest of this paper proceeds as follows. The next section outlines the structure of Finnish active labour market policy. The data is introduced in the third section, along with the determinants of programme participation. The fourth section introduces the propensity score matching framework and the evaluation results. Finally, section five concludes.

2 Active Labour Market Policy in Finland

Unlike the case in many other countries, the active labour market policy in Finland has a strong emphasis towards selective employment measures. Figure 2 shows that the number of participants in selective employment measures more than doubled in the early 1990s. Since the increase in labour market trainees remained quite modest, the relative importance of selective employment measures peaked in 1994. During that year 2.7 per cent of the labour force was placed in selective employment measures.

Figure 2. The number of participants in different programmes
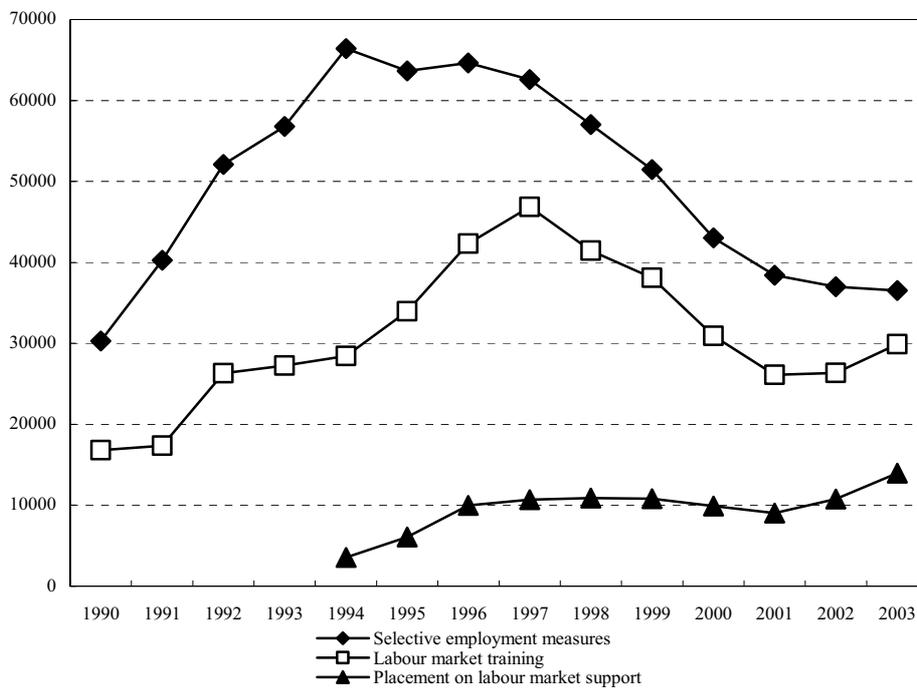
A change in the implementation of active labour market policy coincided with the reform of the unemployment compensation system in 1994. At the beginning of that year means-tested labour market support was introduced. It was targeted at unemployed persons who had not fulfilled the time-at-work condition before becoming unemployed. It soon turned out that the exit rate out of unemployment was much lower among individuals receiving labour market support than among those receiving other forms of unemployment compensation. As a result, the activating part of labour market support, according to which unemployed persons may participate in practical training or coaching for working life while receiving labour market support, was strengthened. By the year 2003 the number of participants in these measures climbed up to 15 000 (placement on labour market support). Figure 2 implies that this increase has partially been compensated by a reduction in selective employment measures. This, together with a recent in-

crease in labour market trainees, has sharply reduced the gap between selective employment measures and labour market training.

A standard employment subsidy paid to an employer varies among sectors, covering all wage costs in central government and equalling the unemployment allowance in local government and in the private sector. The employment subsidy can be increased by the maximum of 80 per cent under certain conditions; under these conditions it equalled 770 euros per month in 2003 for the local government and private sectors. During the placement period a participant receives the prevailing market wage set in collective agreements. In addition to the amount of a subsidy, job contracts also vary across sectors. Job placements in central and local government are typically on fixed-term bases, offering an unemployed individual a temporary job for 6 months. This falls short of fulfilling the 10 months' time-at-work condition that is the prerequisite for receiving earnings-related unemployment benefits. In contrast, job placements in the private sector require a job contract between a participant and an employer that is expected to continue after completion of the job placement. However, in practice this requirement does not seem to be binding, as some of the participants in private sector job placements return to unemployment straight after completing the job placement.

Labour market training (LMT) consists of two parts. Adult, non-basic vocational training, which may involve also practical training, is mainly offered to persons over 20 years of age, but in some cases younger persons are also eligible. The average duration of a vocational training period is slightly less than five months. Preparatory training differs from vocational training in two respects. It is of shorter duration and is aimed at offering basic skills required in the labour market. Participation in a labour market training programme is free for the participants. During participation they receive a sum equalling their unemployment compensation together with a daily allowance for maintenance and possibly for accommodation. Labour market training is organised by vocational adult education centres or other suppliers of training services. The suppliers are selected by regional authorities or local employment agencies on the basis of offers sent to the invitations for tenders.

Placement on labour market support forms the activating part of the unemployment compensation system. It offers an opportunity for an unemployed person under the age of 25 to participate in practical training and for an unemployed person over 25 years of age to participate in coaching for work life. It is also possible for local employment agencies to place individuals on labour market support in practical training/coaching. These schemes are financed by labour market support payments so that a participant receives an amount equalling labour market support (500 euros per month in 2003). Labour market support is paid to a participant even if he/she is not entitled to unemployment benefits. Participants in these programmes do not have any formal job contract with an employer dur-

ing the participation period, which may last for a maximum of 18 months. Since there is no formal job contract, this period does not add to the time-at-work condition. Since 1998 onwards it has also been possible to combine labour market support to an employment subsidy if an employer hires a person who has been unemployed for over 500 days. From 2002 onwards this programme may last for two years. During the first year an employer receives both subsidies and the employment subsidy is dropped after the first year, i.e. the level of subsidy equals labour market support during the second year. If an unemployed person is hired under this combined scheme, he/she receives the prevailing market wage just as in standard selective employment measures.

The aims and target groups differ across different programmes. Young persons are among the target groups in selective employment measures, placements on labour market support and preparatory labour market training. Long-term unemployment is tackled with selective employment measures and with combined employment subsidy when the period of unemployment exceeds 500 days. Vocational labour market training is mainly targeted at individuals over 20 years of age. As to the goals of these measures, labour market training is given structurally oriented goals that aim at preventing labour shortages and facilitating economic growth. More individually oriented goals of LMT consist of stabilising the unemployed persons' work career and preventing the threat of unemployment. Selective employment measures and placements on labour market support share these individual level goals; additional targets consist of improving individuals' employment possibilities and preventing displacement from the labour market. An additional goal set for young people is to help young, unemployed individuals in getting formal education and, in general, connecting them to the labour market.

An interesting issue in the evolution of Finnish active labour market policy is that placements on labour market support (practical training and coaching for work life) are mainly targeted at young people and this measure has, to a large extent, displaced other forms of programmes. This is especially evident among unemployed persons under 20 years of age. At the end of the 1990s around three-fourths of all active measures targeted at this age group were organised through practical training. What makes this issue especially interesting is that this kind of youth practical training is a relatively inexpensive way in which to organise active measures. Its cost per participant is around 5 900 euros, while the costs in selective employment measures are 8 900 euros (ranging from 7 800 euros in local government and in the private sector to 18 400 euros in central government) and in labour market training 13 800 euros per participant[1]. The effect of this

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[1] The figures are collected from the 2002 budget proposal published by the Ministry of Labour and they correspond to the yearly averages of programme participants. The figures do not include combined subsidies or enterprise allowances. The costs of labour market training include labour market support paid to trainees, whereas costs not directly connected to labour market training (e.g. job-seeking allowances) are excluded.

shift to less expensive programmes on youth labour markets is one of the main issues of interest in this study.

3 Data and Programme Participation

3.1 Sample

The analyses in this study are based on panel data originating from the 1997 population census. The data set consists of a 10 per cent random sample of individuals who were 12-75 years of age on December 31, 1997 (around 350 000 observations). Statistics Finland has expanded the census data by collecting information on these individuals from various registers including, for example, tax registers, pension and benefit registers, student registers and, most importantly, the register of unemployed job seekers maintained by the labour administration. The resulting register-based data set covers the years 1988-2000 and includes a wide range of information on individual demographic and socio-economic characteristics, details of unemployment and involvement in active labour market programmes etc. Altogether, almost 200 variables are available.

A series of sample selection rules were employed in constructing the final sample employed in the analyses. First, we selected all individuals who had registered as job seekers during 1995 or 1996. The size of this sample was some 50 000 individuals. Second, we restricted the sample to young persons of 16-30 years of age on their first unemployment spell. The reason for focusing on the first period of unemployment is that it offers a way to control both for previous unemployment experience and multiple programme participation. By this means, individuals in the sample have exactly the same unemployment experience and there are no re-participants who have not benefited from previous programmes. This selection rule also sets the focus of this study on young persons in the early stages of their labour market careers. The upper limit of age restriction ensures that university graduates, whose average graduating age is close to 28 years, are also included in the analyses. At this point, the sample consisted of some 10 000 individuals, of whom 2 290 ended their first period of unemployment by participating in an active programme within two years after entering unemployment[2].

Finally, the last selection rule was constructed to control for the impact of the duration of unemployment on the selection process. It is evident that the duration of a period of unemployment influences both the probability of participation and further labour market outcomes. This means that the duration of unemployment needs to be included among the characteristics explaining the participation process. Furthermore, the dependence between the selection process and the duration

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[2] We employed the 7-day rule in deciding whether a person participated in a programme directly from unemployment. This takes into account potential differences in programme starting dates and unemployment ending dates arising from administrative reasons, such as a period of unemployment being registered as ending on a Friday if a programme starts on a Monday etc.

of an ongoing period of unemployment means that active programmes are not an alternative for all unemployed persons, especially for those who manage to get a job immediately after registering at an employment agency. It is intuitive that meaningful evaluations of active programmes require that the individuals in the no-programme group have, at least, the possibility to participate in an active programme.

Before controlling for the duration of an ongoing period of unemployment in the selection process, the variable needs to be created. The problem with this is that we do not observe any non-participant actually participating in a programme. Following Lechner (1999) we randomly draw a hypothetical programme starting date for the non-participants from the sampling distribution of the participants' starting dates. To control for potential differences in durations of unemployment across periods of unemployment starting at different periods of time, the sample was split into monthly intervals according to the starting date of the unemployment period. Within these intervals a hypothetical starting date was constructed for each non-participant. To ensure that all non-participants had the opportunity to participate in a programme, those non-participants whose actual duration of unemployment was shorter than the simulated duration of unemployment were excluded from the analyses. This resulted in the final sample consisting of 6 493 observations, out of which 2 290 participated in an active programme within the observation period. Out of the participants 492 participated in selective employment measures, 1 377 in youth practical training and 421 in labour market training.

3.2 Modelling Participation in Programmes

Microeconometric evaluations try to provide an answer to the question as to whether participants in active labour market programmes have experienced improvements in their labour market position and whether this outcome would have been observed even without participation. The main problem arises from missing data, since we do not observe the outcome under the counterfactual state of non-participation. The construction of this counterfactual state requires the modelling of the selection process that places individuals in different programme categories. In experimental research design this is solved by randomly assigning the unemployed in different programmes, in which case the outcome and the participation decision are independent of each other through the research design. Social experiments are typically thought of creating such reliable results of the impact of programmes on labour market outcomes that experimental findings are employed as benchmarks in testing the reliability of the results provided by non-experimental evaluations, see, for example, LaLonde (1986), Heckman et al (1997), Dehejia and Wahba (1999).

Experimental research designs are rare in Nordic labour markets, so researchers have to turn to non-experimental evaluations and an analyst needs a comparison group, which is thought of representing the counterfactual outcome for programme participants. This creates an additional problem, since data is generated by individuals who make choices about belonging to one of possibly many groups. If the choice process depends on factors that also affect the outcome, the data generating process is one of those that include selection bias, and this must be taken into account in constructing the non-experimental evaluation estimator. In this case, the identification of the programme effect requires some underlying assumptions that cannot be tested, and their relevance must be judged against the origin of selection bias and the available data set.

The solution to the selection bias depends on whether it arises, in Heckman and Hotz's (1989) terminology, as selection on observables or on unobservables. These two terms are closely connected to each other and depend on the institutional setting of active programmes. It is evident that the richer the data set the larger the share of the selection process is allocated to observables. In an extreme case, when an analyst has information on all factors affecting the allocation process and all of these are included in the selection model, all selection is based on observables. As Frölich (2004) points out, a bureaucratic and rule-based administration of active programmes results in a selection process that one finds easier to control by assuming that the selection is based on observable factors. The rule-based administration makes it easier to select the relevant factors for the empirical model of programme participation. At the same time it reduces the requirements for the data set, as the major factors influencing participation can be related to the selection process carried out by the labour administration.

This study adopts the propensity score matching framework, in which case the underlying assumption is that selection is based on observables, i.e. we assume that, conditional on observables, the means of counterfactual outcomes are independent of participation in a treatment, see Heckman et al. (1998). In the Finnish context it is easier to argue that this assumption holds in job-related measures than in the case of labour market training. As is discussed above, participants in job-related measures are selected by local public employment agencies, which follow the guidelines set by the Ministry of Labour. These guidelines are, to a large extent, rule-based, targeting job-related measures principally at the long-term unemployed and young unemployed people. In addition, the data set includes some information gathered by public employment agencies at the time an individual is registered as an unemployed job seeker, so we have much of the same information as a person who selects the unemployed into job-related measures, added with information provided by other registers.

The decision to participate in labour market training requires more activity from an unemployed job seeker than does participation in a job-related measure. Given the training programmes provided by the local employment agency, the selection

process consists of sending an application, being accepted by an employment agency and finally starting a training course. This leaves more room for individual aspirations, not all aspects of which are necessarily observed by researchers. There are, however, two reasons why we believe that the selection on observables assumption is acceptable in our study. First, previous evaluations of LMT imply that the role of unobservable factors declined during the early 1990s, see Hämäläinen (2002). Second, the occurrence of mass unemployment in the early 1990s more than quadrupled the number of applications in LMT, which, in turn, was likely to increase the importance of observed factors in the final selection stage carried out by local employment agencies. By these means, we believe that our data set is rich enough to cover the factors that determine both the motivation to apply for LMT and, more importantly in the era of high unemployment, success during the final stage of selection.

To explore the heterogeneity of treatment effects, the programmes are divided into selective employment measures, youth practical training and labour market training. The independent variables control for a wide variety of observable differences among the unemployed. Typical background characteristics, such as gender, age, presence of children and education, are also controlled for in this study. In addition, we have information on the spouse (employment, education, income and debt) and on personal debt that may affect both the participation decision and future labour market outcomes. These factors are connected to the probability of employment through reservation wages. For instance, higher personal debts lower the reservation wage, provided that an unemployed person accepts lower job offers to cover the debt instalments. If personal debts or a spouse's economic situation also affect the participation decision, these factors need to be controlled for in empirical analyses.

Heckman et al. (1999) pointed out that it is vital to control for labour market histories. In this study this requirement is mainly satisfied by focusing on the first period of unemployment. To complement the unemployment history, the participation probability is allowed to depend on the employment status, the graduation status and the child home care allowance status on the previous year, the last one controlling for whether a person has taken care of children at home. In addition, preliminary data analyses revealed that some persons enrolled in a programme shortly after graduation. For this reason, graduation in the year of becoming unemployed and in the previous year is also included among the explanatory variables.

There are wide differences in the supply of active programmes across regions and occupations. One of the aims of Finnish active labour market policy is to reduce regional differences in unemployment rates. Accordingly, the participation rate is higher in high unemployment regions. This calls for the inclusion of variables controlling for the travel-to-work unemployment rate and individuals' labour market areas. By this means, we are able to place the programme partici-

pants and the controls in the same labour market, which is essential, given the wide and persistent unemployment differences across Finnish regions. Similarly, an unemployed person's occupation influences both his/her employment possibilities and probabilities of participating in different programmes.

The final set of variables, viz. disability, professional skills, job-seeking area and the working hours an unemployed person is willing to accept, is based on the interview between a job seeker and an employment agency officer. These interviews are carried out at the time a job seeker is registered as an unemployed person. This information is potentially important, since it reflects the skills and motivation of a job seeker. By this means, we are able to reduce the proportion of individual heterogeneity that is allocated to unobservables. We expect that after controlling for all these factors there is nothing that systematically introduces correlation between the participation decision and labour market outcomes[3].

Before carrying out the propensity score matching, one has to obtain the participation probabilities. At the minimum, an analyst needs the conditional probabilities, $p^{m|ml}$, that determine the probability of participation in a programme m among the participants in programmes m and l. These can be estimated by separate binary logit or probit models as in Sianesi (2003) and Jespersen and Munch (2004). This requires the estimation of M(M-1)/2 separate binary models, where M equals the number of programme groups.

An alternative to separate binary models is to model programme participation within a multiple choice model, see Lechner (2002a). According to his results, these two approaches have fairly similar balancing properties and, hence, lead to similar evaluation results. This implies that the choice of empirical model employed in estimating participation probabilities is not crucial for evaluation results. For this reason, we follow Larsson (2003) and Raaum et al. (2002) and estimate the propensity scores within a unifying framework by employing the multinomial logit model (MNL) in constructing the propensity scores[4].

3.3 Determinants of Participation

Appendix 3 reports the results of participation equations that are identified by setting the non-participants in the reference category. Encouragingly, the parameter estimates of the independent variables included in participation equations are well determined and in line with what we would expect, based on our understanding of the Finnish active labour market policy system.

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[3] The definition of variables and basic statistics is described in Appendices 1 and 2.

[4] Unreported results show that the evaluation results reported below are fairly robust for the choice of empirical model (binary probit models vs. multinomial logit model) adopted in estimating the propensity score. These results are available from the authors on request.

Among individual characteristics the main determinants of programme participation are gender, age, marital status and a spouse's labour market position. The influence of these factors is mainly shown in selective employment measures and youth practical training equations. The targeting of these measures at young people is highlighted in the results by significant and negative parameter estimates of the age variable. Age does not have any significant impact in the LMT equation, most probably since, owing to data limitations, vocational and preparatory training are grouped together. An interesting finding is that a spouse's employment and income increase the odds of participating in job-related measures as opposed to non-participation. This is consistent with the findings according to which a spouse's employment is positively connected to an individual's own employment and closer attachment to labour markets; see, for example, Dex et al. (1995).

It is equally important to control for the previous labour market state in the selection process. History variables obtain large and statistically significant parameter estimates, even though we control for previous unemployment/programme participation and various other factors affecting participation. According to the results in Appendix 3, the selection process sorts young unemployed persons with previous employment experience (Employed previous year) into selective employment measures and labour market training. This is an intuitive result, since they do not necessarily need any practical training, given their previous work experience. Labour market training is also offered to young persons who enter unemployment after taking care of their children at home (Child home care allowance prev. year). These individuals may have been out of the labour force for several years, so their working skills need updating. This task is carried out by complementary training rather than by youth practical training. Finally, youth practical training is provided for young persons who have registered as unemployed job seekers straight after graduation (Same year graduate). Since many university graduates work while studying, this result is likely to concern mainly graduates from lower levels of education. If this is the case, they already have a vocational education, which is reflected in their lower odds of participating in labour market training straight after graduation.

Also, the effects of labour market variables are consistent with a priori knowledge of the aims and target groups of different programmes. A person with a longer period of unemployment is more likely to end up in an active programme than a similar person with a shorter period of unemployment. Since youth practical training is aimed at offering young persons their first contact with working life, it is not surprising that young people who have acquired an occupation are less likely to end up in youth practical training when compared with non-participants. Instead, they are placed in selective employment measures. The aim of reducing regional unemployment differences through ALMP is clearly reflected in the results. Almost all of the parameter estimates for the regional dummies gain significant and positive parameter estimates. In particular, job-related measures are more heavily aimed at regions with high unemployment.

Finally, information gathered by an employment office at the time an individual is first registered as an unemployed job seeker is found to explain participation in an active programme. Young persons who are less adaptable to working hours are more likely to end up in youth practical training. One explanation for this finding is that young persons with the least knowledge of working life believe that the job offers for young persons are predominantly full-time jobs with regular working hours. More experienced persons have noticed that this is not necessarily the case, and they put less weight on regular working hours. Similarly, young individuals who are willing to seek and accept jobs outside their living area are less likely to participate in youth practical training when compared with non-participation. One reason for this is that they are more motivated in finding a job that offers wage earnings above the unemployment compensation. Finally, if a young person has a disability, he/she is more prone to participate in a selective employment measure as opposed to non-participation, other things being equal.

4   The Evaluation of Active Programmes

4.1 Empirical Model

This study adopts the propensity score matching framework in constructing the causal model for the impact of participation in an active measure on future labour market outcomes. Rosenbaum and Rubin (1983) showed that under the assumption of selection on observables conditional independence also holds when the propensity score is used in conditioning, given the explanatory variables. Imbens (2000) and Lechner (2001) generalised this result for the evaluation of multiple treatments. In this case, the relevant propensity score is either the conditional probability of participating in a programme m for a participant in programmes m or l, given the pre-treatment variables X, $P^{m|ml}(X)$, or a metric based on the participation probabilities, $P^m(X)$ and $P^l(X)$. These two approaches lead to similar results, but there is some evidence that the estimators based on $P^m(X)$ and $P^l(X)$ outperform the estimators based on conditional participation probabilities; see Lechner (2002a).

In setting up the causal model, the principal problem is that the counterfactual labour market outcomes of the participants in a treatment m, $E(Y^l \mid T = m)$, are unknown. In propensity score matching these counterfactuals are created by control observations whose probability of participating in a treatment resembles that of the treated. Under the CIA assumption the generalised propensity score matching estimator for the average treatment effect on the treated (ATT) can be written as (see for example Heckman et al., 1999),

$$ATT = E(Y^m - Y^l \mid P^m(X), P^l(X), T = m) = \frac{1}{N_m} \sum_{i=1}^{N_m} \left(Y_i^m - \sum_{j=1}^{N_l} w(i,j) Y_j^l \right), \quad (1)$$

where N_m (N_l) is the number of the treated (controls), Y_i^m (Y_j^l) is the outcome of the ith (j^{th}) treated person (person in the control group) and w(i,j) are the weights attached to persons in the control group. Different estimators differ from each other by the weights given to control observations. For instance, the nearest neighbour pair-matching estimator with replacement is obtained by setting the weight to one for the control observation whose estimated propensity score is the closest to the ith treated individual[5].

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[5] The nearest neighbour matching with replacement is commonly employed in recent non-experimental evaluation studies; for detailed descriptions and applications of this method see Heckman et al. (1997, 1999), Lechner (2002a, 2002b), Gerfin and Lechner (2002), Dehejia and Wahba (1999, 2002), Larsson (2003), Sianesi (2003) and Raaum et al. (2002).

Other matching estimators are obtained by varying the number of control observations that are assigned positive weights and the size of these weights. Asymptotically, different estimators lead to the same results, but in finite samples there may be large differences in the results. Employing more neighbours for the participant observation for which the counterfactual is being constructed reduces variance but increases bias as matches become poorer. An increase in bias may be reduced by more heavily weighting those control observations whose match is closer to the ith treated individual; see Heckman et al (1997, 1999). This can be done, for example, via Kernel matching, which is found to outperform nearest-neighbour matching in the studies by Frölich (2004) and Black and Smith (2004). The Kernel method sets the weighting function w(i,j) equal to $G\left(\dfrac{P_j - P_i}{\alpha_n}\right) \Big/ \sum_{k=1}^{N_l} G\left(\dfrac{P_k - P_i}{\alpha_n}\right)$, where the P's refer to probability measures employed in matching. This requires the choice of a Kernel function, G, as well as the choice of a bandwidth parameter, α_n. Encouragingly, Black and Smith (2004) show that there are no large differences between Kernel functions, and the method is relatively insensitive to the choice of bandwidth until very small bandwidths are employed.

4.2 Success of Matching

Before implementing the propensity score matching, we need to make sure that observations from the four groups could be observed as having similar participation probabilities. Following Lechner (2002b) this requirement is carried out by removing all observations with probabilities larger than the smallest maximum and smaller than the largest minimum of all sub-samples.

After implementing the common support requirement we matched the participants in different programmes to non-participants by employing the Epanechnikov Kernel and the Mahalanobis metric, based on participation probabilities. The following means of propensity scores are reported in Table 1. The first column refers to the treated, the second to the unmatched non-participants and columns 3-6 to the matched non-participants. The last column reports the number of participants. The numbers change somewhat across different bandwidths employed in Kernel matching, even though the common support condition is also employed in Kernel matching. It is evident that, originally, the treated and the non-participants differ sharply from each other in terms of participation probabilities, the mean of probability values being much smaller for non-participants.

Table 1. The means of predicted participation probabilities

Treated	Non-participants					
	Before matching	Nearest neighbour matching	Kernel matching (bandwidth)			
			(Rule-of-thumb)	(0.4)	(0.2)	N
Selective employment measures						
.191	.061	.190 (0.5)	.181 (7.5)			470
.187				.181 (4.8)		465
.178					.175 (2.8)	456
Youth practical training						
.338	.179	.338 (0.6)	.325 (8.5)			1280
.338				.329 (6.3)		1280
.338					.333 (3.3)	1277
Labour market training						
.179	.054	.178 (0.5)	.167 (9.3)			402
.179				.169 (6.4)		400
.168					.163 (3.9)	388

Notes: Rule-of-thumb corresponds to a bandwidth calculated as $2.34*N^{-1/5}$. The figures presented in parentheses next to the matched participation probabilities refer to absolute standardized mean bias; see Lechner (1999).

The estimated matching models do a great job in balancing the propensity scores. The standardized differences reported in parentheses are far from the level of 20 that is characterised as being large in Rosenbaum and Rubin (1985). Not surprisingly, the nearest-neighbour pair-matching produces mean values that are the closest to the treated. The Kernel method puts some weight on poorer matches in creating the counterfactual and results in lower mean values than the nearest-neighbour method. However, a reduction in the bandwidth cuts the difference between the treated and the matched non-participants group. The drawback is that the number of the treated drops as the bandwidth gets smaller. A reduction in the means of predicted participation probabilities shown in the first column implies that smaller bandwidths are not able to create suitable counterfactuals for participants whose propensity scores are situated in the upper part of the probability distribution. This issue can be further explored by examining the distribution of predicted propensity scores based on the rule-of-thumb bandwidth reported in Appendix 4. Even though the distribution of propensity scores is fairly similar between the treated and the matched non-participants, the matching method has some difficulties in creating corresponding observations for participants with very high propensity scores. This finding calls for sensitivity analyses in which the treatment effect is estimated by dropping the treated with the highest participation probabilities. These results are reported along with other sensitivity analyses in Appendix 7.

Through balancing the propensity scores, matching is expected to balance the pre-treatment variables employed in constructing participation probabilities. This issue is explored in Appendix 5, which puts the balancing property of the rule-of-thumb Kernel matching under scrutiny through standardized bias and the regres-

sion-based test suggested by Smith and Todd (2003). In the latter, each variable is regressed by the quadratic of estimated propensity scores and the quadratic of propensity scores interacted with the participation dummy. Provided that the balancing condition holds, the interaction terms should not provide any information about explanatory variables.

All in all, the covariates are well balanced between the groups. In particular, the performance of the absolute values of standardized differences is excellent, their values being well below the benchmark of 20 proposed by Rosenbaum and Rubin (1985). This also holds in unreported balancing tests that were carried out for the nearest-neighbour matching method. This indicates that the results are not driven by an increase in the number of control observations owing to Kernel matching, the point that was put forward in Smith and Todd (2003). Having said that, the regression-based balancing tests indicate potential problems, especially in the context of youth practical training.

Our reading of the results concerning balancing properties is that they do not prevent us from employing the matching method in the current context. At the same time, some worrying test results call for sensitivity analyses to confirm the robustness of the evaluation results. In what follows, we discuss the average treatment effects for the treated (ATT) based on the Epanechnikov Kernel, in which the bandwidth is set to the level of Silverman's (1986) rule-of-thumb. The choice of bandwidth is purely based on its common use in empirical studies. In accordance with the Black and Smith (2004) study, various experiments with smaller bandwidths gave results similar to those reported below.

4.3 Average Treatment Effects on the Treated

We are able to evaluate the effects of ALMP participation on employment, unemployment, studying, annual earnings consisting of wage and entrepreneurship income, subsequent programme participation and being out of the labour force for other reasons than studying. Excluding annual earnings, all outcome variables are measured during the last week of a year. Data limitations prevent us from creating monthly measures of outcome variables. This limitation is not likely to be of great importance for two reasons. First, Gerfin and Lechner (2002) report that the concept of time (monthly vs. a particular calendar time) has no significant impact on the evaluation results. Second, the evaluation period of this study covers five years after the start of a programme, which reduces the need for more frequent measures of outcome variables.

The studies on Swedish active labour market programmes have raised an issue on how to interpret the evaluation studies when practically all unemployed persons may participate in an active programme at some point of their unemployment history; see Larsson (2003) and Sianesi (2003, 2004). The conclusion of this dis-

cussion is that the evaluation results of Swedish ALMP are interpreted as reflecting participation now versus joining later rather than the programme effects that arise in a counterfactual world without participation.

The Swedish discussion also concerns the interpretation of the results in this study. Finnish active programmes are ongoing, so it is possible that a control person will participate in a programme at some later stage. When investigating the subsequent participation of the control group in the Finnish context, we find that some 1100 out of 4000 controls do participate in an active programme at some point during the five-year observation period[6]. In addition, the delay from the end of the first unemployment period until the programme participation turned out to be extremely long. Only ten per cent of the controls participated in a programme within 100 days after the end of their first period of unemployment, the maximum delay for some individuals reaching up to 1800 days. When it comes to the 3000 control persons who never entered active programmes, two thirds of them have managed to regain employment while 500 of them were studying at the end of the observation period. Some 200 were registered as unemployed and another group of 200 persons were out of the labour force for other reasons. Thus, it seems to be the case that the evaluation results reported below are to be interpreted as being somewhere between the Swedish interpretation of waiting longer and the no-programme interpretation, particularly since the high level of unemployment in Finland effectively means that ongoing programmes are not open to all the unemployed. This is highlighted by comparing the activation rates (participants per participants + unemployed) that are some 15 percentage points lower in Finland than in Sweden.

Figure 2 reports the results for the changes in outcome variables owing to the participation in a programme. The comparison is carried out between the participants in a specific programme and the matched non-participants. Naturally, matching results in very different comparison groups across the three programme categories, even though the evaluation results of different programmes are presented in the same figures. The exact figures, together with bootstrapped standard errors, are presented in Appendix 6.

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[6] It is possible that some non-participants participated in a programme straight from the first period of unemployment provided that the duration of the spell exceeded two years. This turned out to be relatively rare, participation terminating the first period of unemployment of non-participants in only 50 cases.

Figure 3. Average treatment effects on the treated.
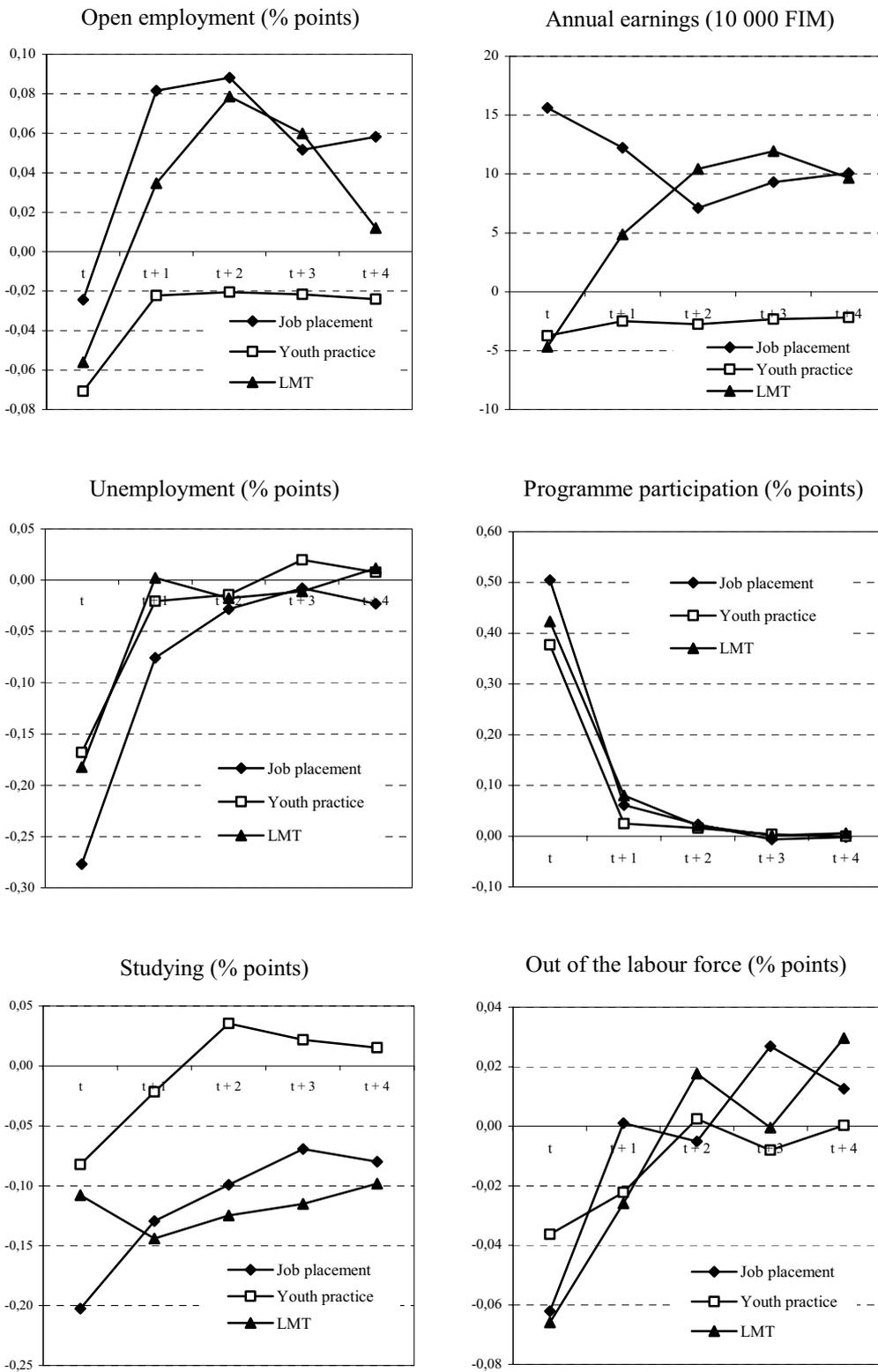
The negative treatment effects during the first observation year, t, present the locking-in effect that arises from a less intensive search process. During the period of participation the differences between programme participants and their counterfactual non-participants are similar across programme categories. The exception is formed by participants in selective employment measures who are found to have significantly higher annual earnings than non-participants at t. This is not surprising, given that they receive the market wage while being in subsidized work.

The evaluation results for post-programme periods show clear differences between the three programmes. Selective employment measures and labour market training are found to improve the participants' labour market prospects in terms of higher employment and annual earnings. In contrast, the results strongly suggest that youth practical training has no effect on the participants' future labour market career. Its impact is effectively zero during the whole observation period, regardless of the outcome variable under examination.

Even though both selective employment measures and LMT improve the labour market career of the participants, the paths of long-term impacts differ between these two measures. The results indicate that both increase the probability of employment by some 6-8 percentage points at t+2 and t+3. Better employment prospects are also reflected in annual earnings that exceed the earnings of control groups by some 10 000 FIM (1 675 euros) during these years. The beneficial employment effect of LMT vanishes at t+4 while the impact on annual earnings remains significantly positive but to a smaller extent than in previous two years. Contrary to LMT, the long-term impacts of selective employment measures are found to be persistent.

The explanation for the observed differences in the dynamic effects is offered by the other outcome variables presented in Figure 2. Neither selective employment measures nor LMT have any significant impact on unemployment, future programme participation or moving out of the labour force, but their impact on the probability of being a student turns out to be statistically significant and negative. This indicates that young unemployed persons who do not participate in active programmes use further education as an alternative for active measures in obtaining the skills they need in labour markets.

In the case of LMT, the catching-up happens as more and more of the controls finish their alternative education and move to labour markets. This is, however, a long way, as after four years there is still a significant difference in participation in education between the participants in LMT and non-participants. Even though the differences in the probability of employment cancel out in time, the longer working careers of the labour market trainees result in higher annual earnings. Since the control group is matched with respect to age, education and occupation, the discussion above suggests that LMT is a fairly effective way to help the

young unemployed in their first steps in labour markets. It takes several years to catch up the boost of LMT via alternative routes.

The persistent positive effects of selective employment measures may highlight the importance of work experience in connecting to the labour market. It is well known that the early working careers of young people are irregular, and consist of fixed-term job contracts and frequent changes between labour market states. Selective employment measures, especially in private labour markets where subsidized job contracts are expected to continue after completion of the job placement, offer one route for a young person to attach himself/herself to open employment. The results imply that alternative routes, such as further education, do not totally compensate for direct work experience in the youth labour market.

There are two more observations worth making from Figure 2. First, there is no evidence on circulation between active programmes and unemployment. The impacts of all programmes on unemployment and further programme participation are found to be negligible on all post-programme years. This may be partially explained by non-participants participating in active programmes at further stages of their labour market career, but only partially. After all, the vast majority of individuals in the non-participant group never participated in a programme during the observation period. Second, the results concerning being out of the labour force suggest that ALMP is not very effective in preventing displacement in youth labour markets. In this case a word of caution is in place. Displacement is a complicated phenomenon that cannot be totally captured by examining whether persons are out of the labour force for other than study-related reasons or not, especially since the outcome variable includes child-rearing. However, since different groups are matched across numerous background characteristics that also control for child-rearing, we believe that this result gives some guidance on the effectiveness of active measures in preventing displacement in youth labour markets.

It is not possible to compare all the finding of this study with other studies, but, as far as is possible, they compare quite well with the available evidence from other Nordic countries. The selective employment measures analyzed in this study are a combination of Swedish relief work and job subsidies that are separately evaluated for adults in Sianesi (2003). Her results show that private sector job subsidies improve employment prospects, having no impact on the probability of unemployment benefit collection. Public sector relief work, on the other hand, has no or a negative impact on the probability of employment and a positive impact on benefit collection. Owing to data limitations, we had to combine public and private sector subsidies, but unreported results for separate programmes produced similar results to those in Sianesi.

In contrast to selective employment measures, labour market training seems to be more effective in Finland than in Sweden. Larsson (2003) reports negative earn-

ings and negative or negligible employment effects for young people in Sweden. Sianesi (2003) reports similar employment results for the adults who are entitled to unemployment benefits. In addition, their results suggest that LMT has only minor effects on further education among young people and a positive impact on benefit collection among the entitled adults. Our results are more in line with the Norwegian ones reported in Raaum et al. (2002), who report that participation in LMT significantly increases post-training earnings among adults and that these effects remain for 4 or 5 years.

The closest comparison to the results concerning youth practical training is Larsson (2003). In her study a slightly different Swedish youth practical training programme is found to have a negative impact on earnings and employment at t+1 and a negligible impact at t+2. The impact on further education turned out to be non-existent in both post-programme periods. These results are well in line with the Finnish experience of youth practical training.

To put the results of this study under scrutiny we re-estimated the matching models with different estimation methods and different sets of explanatory variables. For the sake of brevity, Appendix 7 reports the average treatment effects only for the probability of employment[7]. Contrary to expectations, the exclusion of regional dummies introduces only small changes in the results. The likely reason for this is that we also control for the travel-to-work unemployment rate, which might capture a part of the impact that regional labour markets have on the results. Next, we dropped occupational dummies from the propensity score estimations. After this change the initially insignificant parameter estimates of youth practical training turned out to be significantly negative. This result reflects the importance of occupational indicators in the selection process that sorts the unemployed to youth practical training. If the observed difference arising from occupational status is not taken into account, one compares participants in youth practical training with non-participants who have already achieved an occupation. This is inevitably reflected as a downward bias in the evaluation results. As a final exclusion restriction, we also left out the control variables under the heading labour market variables. To recall, these variables control for observed differences in unemployment experience, and regional rate of unemployment, as well as in individual skills and motivation. This further reduced the programme effects, also turning the impacts of labour market training into insignificant ones.

The experiments with different sets of control variables clearly show the importance of controlling for differences in regional labour markets, and occupation, as well as in individual working skills and aspirations. This is a predictable finding, given that these are among the main factors that influence both the propensity to

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[7] When it comes to the unreported results, neither a change of the estimation method from Kernel to nearest neighbour pair-matching with replacement nor a change in the bandwidth employed in the Kernel function alters the qualitative results. These results are available from the authors on request.

participate in active programmes and further labour market careers. However, the changes induced by the exclusion of these variables turned out to be smaller than we expected. The results are surprisingly robust with respect to small changes among the background variables. We need to leave out more than half of the background variables before we observe any significant changes in the results concerning the effectiveness of labour market training. Even then, the results concerning selective employment measures remain practically unaffected.

The most crucial thing turns out to be whether we match participants with non-participants who were unemployed long enough to be potential participants or not. The last column of Appendix 7 reveals that if the control group consisted of all the individuals whose first period of unemployment started at the same time as the participants, the evaluation results would have been drastically worse than the ones reported above. This clearly shows the importance of aiming at comparing the comparables. After all, there is no sense in comparing programme participants with the unemployed who have already left the pool of unemployment before participants participate in programmes.

Finally, Appendix 8 presents the average effects of participation in a particular programme compared with participation in another programme. These results are in accordance with our previous findings, suggesting that job placement and labour market training perform better than youth practical training and provide more positive labour market outcomes for the participants. Between these two programmes, selective employment measures dominate LMT, but only during the last observation period.

5 Conclusions

This study explores the long-run effects of active labour market programmes in youth labour markets in Finland during 1995-2000. To offer a comprehensive picture, the impacts are analyzed with respect to post-programme employment, unemployment, education, annual earnings, subsequent programme participation and being out of the labour force. The potential heterogeneity of treatment effects across different programmes is examined by evaluating job placements in a selective employment measure, youth practical training and labour market training. All the estimated effects are average treatment effects on the treated. We focus on the role of active programmes during the first period of unemployment to control for differences in individuals' unemployment history and to avoid endogeneity problems arising from previous participation periods.

The non-experimental evaluation in this study is based on propensity score matching. Using propensity score matching we can, ex post, carefully select the most fitting comparison group of non-participants in measuring the counterfactual outcomes of the participants. The choice of the estimation method is motivated by a large data set that contains the vast majority of background information that is expected to be employed in the actual, fairly rule-based selection process. The balancing properties of matching estimators are, to a large extent, very good. However, since there are some exceptions to this rule, the sensitivity of the results is put under scrutiny by exploring the effects of changes in estimation methods, background variables and common supports.

From a policy perspective, the main focus of the study is in examining the relative effectiveness of various programmes in the early stages of young persons' labour market careers. The finding can now be summarized. First, publicly sponsored programmes can be employed in improving young persons' labour market prospects. Second, not all programmes are effective. In particular, we do not find any significant differences between the participants in youth practical training and their matched controls. This is a rather disconfirming result for the Finnish system of active labour market programmes operating in youth labour markets, given that some 60 per cent of all placements offered to young persons were organized through youth practical training during the years 1995-96. Youth practical training might be appealing as the least expensive of active programmes offered to young unemployed persons but it is the least effective as well. Finally, young persons may also boost their labour market career through alternative routes, such as further education. Alternative and longer routes do not, however, immediately compensate for the work experience that participants in selective employment measures and in labour market training have gained owing to larger employment rates during the first two or three years after participation.

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Appendix 1. Definitions of the variables.

VARIABLE	DEFINITION
Dependent variable	
Programme code	The active programme the person participated in: 1 job placement, 2 youth practical training, 3 labour market training, 0 not participating in any programme.
Independent variables	
Female	1 if a person is female, 0 if male.
Age	Person's age at the beginning of the unemployment period, continuous.
Marital status	Dummy variables designating whether a person is married or single (ref.).
Children	Dummy variables designating the age of a person's youngest child: 1-3 years or 4-7 years.
Living with parents	1 if a person is still living with his/her parents, otherwise 0.
Residential area	Dummy variables designating whether a person's residential area is urban, population centre or rural (ref.).
Disability	1 if a person is disabled, otherwise 0.
Education	Dummy variables designating whether a person had comprehensive (ref.), post-comprehensive or higher education.
Graduation	Dummy variables designating whether a person has graduated in the year of unemployment or in the previous year.
Income variables	1 if the person's or his/her spouse's income, wealth or liabilities are above the sample mean, otherwise 0.
Spouse's employment	1 if a person's spouse has been employed in the year the person's unemployment period began.
Spouse's education	Dummy variable designating whether a person's spouse had post-comprehensive or higher education.
Occupational sector	1 if a person is seeking employment from a specific occupational sector (8 sectors), 0 if a person has no occupation or the occupation is unknown.
Unemployment duration	Length of a person's unemployment period until placement, continuous. Simulated duration for the control group.
Travel-to-work unemployment rate	The unemployment rate of the person's travel-to-work area at the beginning of unemployment, continuous,
Professional skills	Dummy variables designating whether a person has complete or partial professional skills or no professional skills (ref.)
Employment history	1 if a person was employed in the year prior to unemployment.
Job seeking area wide	1 if a person is willing to accept work outside his/her residential municipality.
Only typical working hours accepted	1 if a person is only willing to accept full-time work with no irregular hours.
Labour districts	1 if the person's place of residence is within a particular labour district. The reference group is the Helsinki labour district (metropolitan area).

Appendix 2. Means of the variables by programme participation.

VARIABLES	Mean	Mean	Mean	Mean
Programme code	0	1	2	3
INDIVIDUAL CHARACTERISTICS				
Female	0,50	0,60	0,65	0,51
Age	21,08	21,22	19,05	22,74
Married	0,09	0,10	0,02	0,15
Age of youngest child 1-3 years	0,06	0,07	0,02	0,14
Age of youngest child 4-7 years	0,01	0,01	0,00	0,03
Living with parents	0,57	0,47	0,71	0,44
Residential area population centre	0,15	0,17	0,15	0,18
Residential area urban	0,65	0,57	0,57	0,58
Disability	0,01	0,02	0,01	0,02
Post-comprehensive education	0,69	0,70	0,75	0,57
Higher education	0,12	0,15	0,02	0,17
Previous year graduate	0,12	0,15	0,07	0,10
Same year graduate	0,55	0,55	0,68	0,37
Personal debt	0,07	0,07	0,01	0,12
Child home care allowance prev. year	0,05	0,05	0,01	0,13
Spouse employed	0,17	0,25	0,09	0,24
Spouse has post-comp. or higher education	0,19	0,26	0,09	0,26
Spouse's income	0,10	0,13	0,04	0,18
Spouse's debt	0,04	0,05	0,01	0,07
OCCUPATIONAL SECTOR				
Engineering	0,08	0,08	0,01	0,11
Healthcare	0,06	0,12	0,04	0,03
Clerical	0,05	0,10	0,03	0,12
Commercial	0,04	0,05	0,01	0,06
Agriculture	0,02	0,03	0,01	0,02
Transportation	0,01	0,02	0,01	0,02
Industrial	0,19	0,22	0,10	0,21
Services	0,08	0,10	0,05	0,10
LABOUR MARKET VARIABLES				
Unemployment duration	41,00	146,00	58,00	154,00
Travel-to-work unemployment rate	19,49	20,39	21,28	19,73
Partial professional skills	0,19	0,22	0,12	0,22
Complete professional skills	0,10	0,09	0,01	0,18
Employed previous year	0,44	0,53	0,29	0,52
Job seeking area wide	0,08	0,08	0,03	0,08
Only typical working hours accepted	0,75	0,76	0,78	0,76
LABOUR MARKET AREA				
Turku labour district	0,09	0,08	0,05	0,11
Häme labour district	0,14	0,14	0,16	0,14
Kymi labour district	0,06	0,10	0,08	0,07
Mikkeli labour district	0,04	0,06	0,05	0,02
Vaasa labour district	0,09	0,08	0,10	0,11
Keski-Suomi labour district	0,05	0,06	0,05	0,07
Kuopio labour district	0,05	0,04	0,09	0,06
Pohjois-Karjala labour district	0,03	0,03	0,06	0,03
Kainuu labour district	0,02	0,02	0,04	0,02
Oulu labour district	0,08	0,09	0,08	0,06
Lappi labour district	0,04	0,06	0,07	0,03
Satakunta labour district	0,04	0,05	0,05	0,07
p0	0,71	0,49	0,55	0,51
p1	0,06	0,19	0,06	0,15
p2	0,18	0,18	0,34	0,15
p3	0,05	0,13	0,04	0,18
N	4203	492	1377	421

Appendix 3. Results of the multinomial logit model

	Job placement		Youth practice		LMT	
INDIVIDUAL CHARACTERISTICS	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Female	0,341***	(0,127)	0,569***	(0,077)	-0,092	(0,132)
Age	-0,130***	(0,030)	-0,152***	(0,031)	-0,014	(0,028)
Married	-0,100	(0,239)	-0,615**	(0,291)	-0,189	(0,230)
Age of youngest child 1-3 years	-0,361	(0,354)	1,241***	(0,379)	-0,163	(0,317)
Age of youngest child 4-7 years	-0,768	(0,531)	0,113	(0,598)	-0,041	(0,427)
Living with parents	-0,245*	(0,145)	-0,152	(0,093)	-0,175	(0,158)
Residential area population centre	0,010	(0,169)	-0,312***	(0,114)	0,011	(0,181)
Residential area urban	-0,418***	(0,139)	-0,311***	(0,090)	-0,407***	(0,150)
Disability	0,842**	(0,414)	0,002	(0,375)	0,413	(0,425)
Post-comprehensive education	0,293	(0,249)	-0,192	(0,269)	-0,007	(0,213)
Higher education	0,881**	(0,389)	-0,245	(0,429)	0,821**	(0,358)
Previous year graduate	0,255	(0,240)	0,384	(0,260)	-0,530**	(0,243)
Same year graduate	-0,160	(0,224)	0,824***	(0,246)	-0,715***	(0,204)
Personal debt	-0,052	(0,228)	-0,973**	(0,380)	0,074	(0,210)
Child home care allowance prev. year	0,362	(0,370)	-1,056**	(0,461)	0,806**	(0,320)
Spouse employed	0,546**	(0,233)	-0,049	(0,204)	-0,219	(0,259)
Spouse has post-comp. or higher ed.	-0,142	(0,211)	-0,282	(0,178)	-0,026	(0,215)
Spouse's income	-0,331	(0,236)	0,547**	(0,233)	0,391	(0,259)
Spouse's debt	0,246	(0,300)	0,260	(0,355)	-0,252	(0,299)
OCCUPATIONAL SECTOR						
Engineering	0,387	(0,283)	-1,385***	(0,348)	-0,008	(0,285)
Healthcare	0,870***	(0,224)	-0,685***	(0,191)	-1,083***	(0,362)
Clerical	0,785***	(0,218)	-0,895***	(0,195)	0,669***	(0,227)
Commercial	0,603**	(0,261)	-1,489***	(0,288)	0,189	(0,277)
Agriculture	0,501	(0,336)	-1,639***	(0,370)	0,046	(0,381)
Transportation	0,918**	(0,388)	-0,848**	(0,388)	-0,087	(0,460)
Industrial	0,542***	(0,164)	-1,110***	(0,116)	0,275	(0,177)
Services	0,294	(0,208)	-1,111***	(0,152)	0,091	(0,232)
LABOUR MARKET VARIABLES						
Unemployment duration	0,013***	(0,001)	0,007***	(0,001)	0,013***	(0,001)
Travel-to-work unemployment rate	0,009	(0,021)	0,036***	(0,014)	-0,014	(0,022)
Partial professional skills	0,175	(0,140)	-0,078	(0,106)	0,097	(0,154)
Complete professional skills	-0,443*	(0,260)	-1,031**	(0,408)	-0,512**	(0,232)
Employed previous year	0,555***	(0,116)	-0,106	(0,077)	0,316**	(0,128)
Job seeking area wide	-0,315	(0,204)	-0,580***	(0,185)	-0,295	(0,217)
Only typical working hours accepted	0,087	(0,124)	0,199**	(0,081)	-0,049	(0,132)
LABOUR MARKET AREA						
Turku labour district	0,260	(0,217)	0,076	(0,162)	0,644***	(0,213)
Häme labour district	0,473**	(0,205)	0,722***	(0,136)	0,577***	(0,219)
Kymi labour district	0,936***	(0,242)	0,624***	(0,169)	0,806***	(0,275)
Mikkeli labour district	0,733**	(0,297)	0,408**	(0,207)	-0,178	(0,421)
Vaasa labour district	0,251	(0,231)	0,699***	(0,145)	0,742***	(0,228)
Keski-Suomi labour district	0,331	(0,290)	0,260	(0,198)	0,753**	(0,298)
Kuopio labour district	0,176	(0,314)	0,844***	(0,177)	0,625**	(0,311)
Pohjois-Karjala labour district	0,215	(0,389)	0,930***	(0,221)	0,624	(0,406)
Kainuu labour district	0,730	(0,487)	0,865***	(0,285)	0,730	(0,529)
Oulu labour district	0,499**	(0,243)	0,305*	(0,166)	0,160	(0,286)
Lappi labour district	0,941***	(0,359)	0,871***	(0,232)	0,458	(0,435)
Satakunta labour district	0,501*	(0,296)	0,660***	(0,202)	0,976***	(0,294)
Constant	-1,774**	(0,728)	0,347	(0,633)	-2,648***	(0,719)

Appendix 4. Histograms of the propensity scores – Treated vs. matched controls
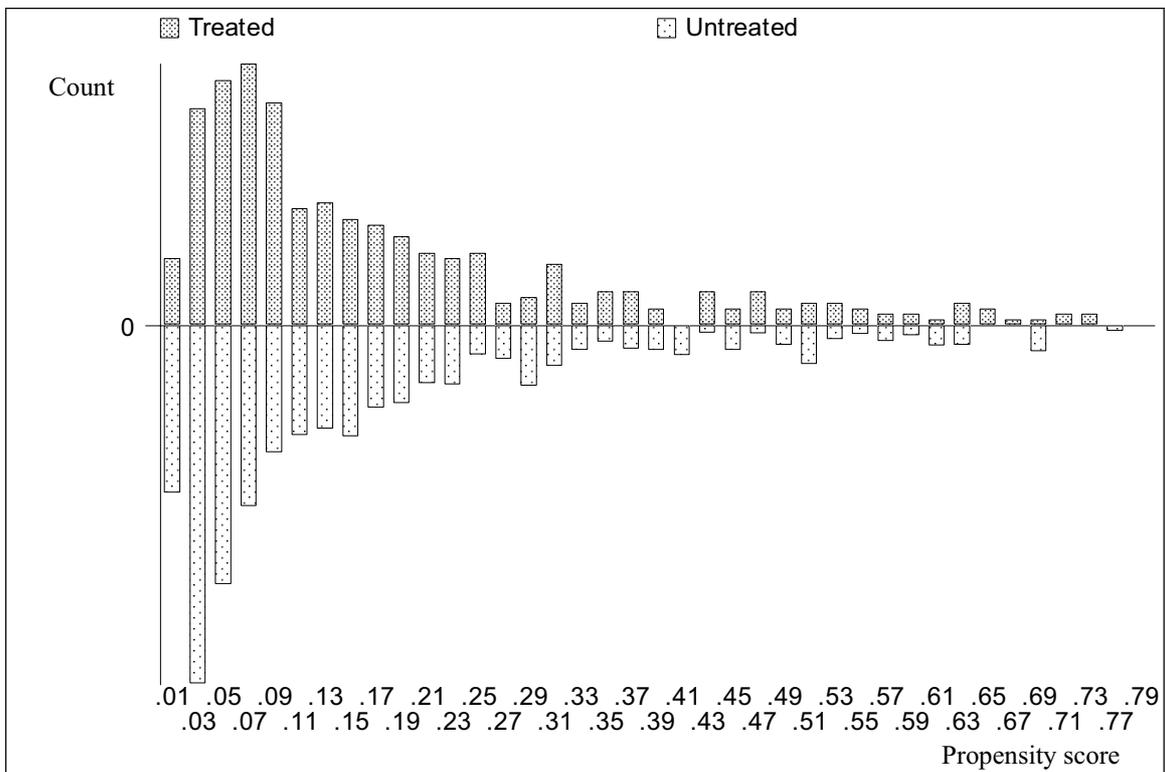
Selective employment measures
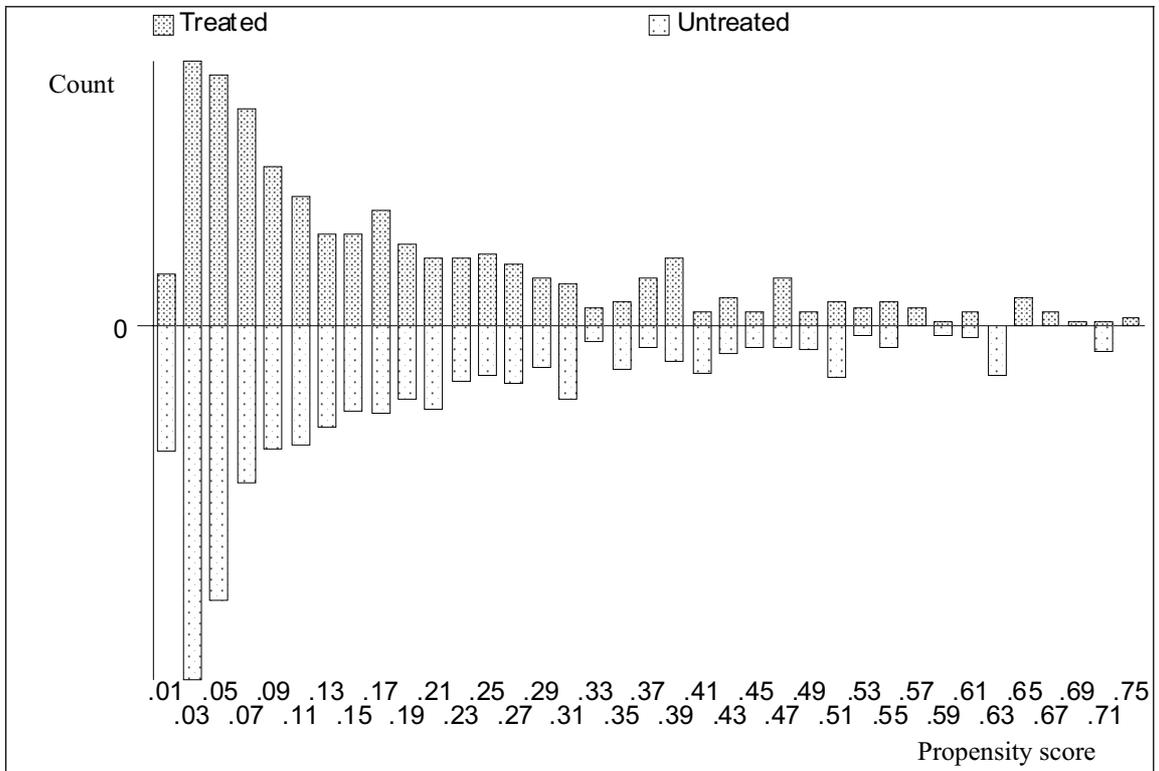
Youth practical training
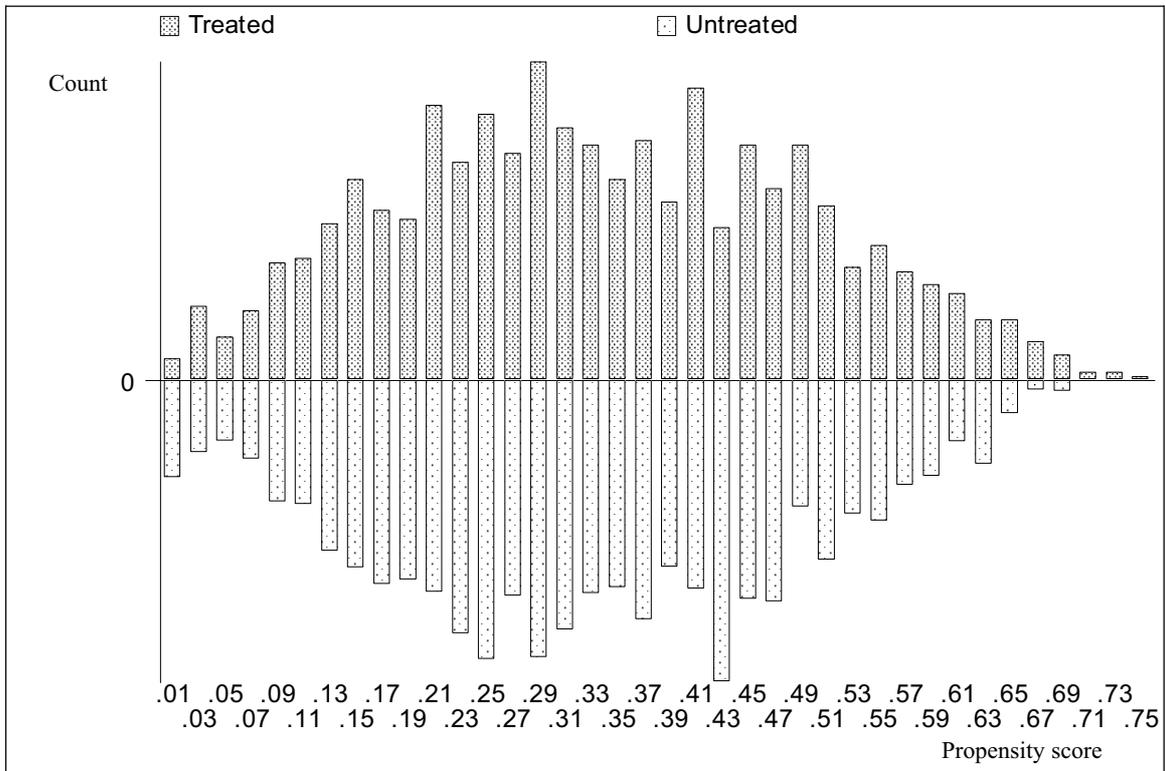
Labour market training

Appendix 5. Balancing tests

VARIABLES	Mean	Mean	Diff	Mean	Mean	Diff	Mean	Mean	Diff
Programme code	1	0		2	0		3	0	
INDIVIDUAL CHARACTERISTICS									
Female	0.589	0.540	9.9	0.638	0.609	6.0	0.502	0.510	1.5
Age	21.2	21.3	3.6	19.0	19.1	3.7	22.6	22.1	10.7
Married	0.094	0.091	1.0	0.016	0.021	2.4	0.142	0.114	9.0
Age of youngest child 1-3 years	0.060	0.063	1.6	0.016	0.016	0.3	0.137	0.117	6.7
Age of youngest child 4-7 years	0.013	0.012	0.3	0.003	0.002	1.2	0.027	0.021	4.8
Living with parents	0.479	0.478	0.1	0.699	0.702	0.5	0.453	0.480	5.5
Residential area population centre	0.170	0.196	7.0	0.159	0.165	1.7	0.177	0.171	1.5
Residential area urban	0.572	0.561	2.2	0.560	0.559	0.3	0.575	0.583	1.7
Disability	0.019	0.016	2.6	0.009	0.010	1.0	0.022	0.021	1.4
Post-comprehensive education	0.694	0.699	1.2	0.738	0.718	4.4	0.560	0.567	1.6
Higher education	0.151	0.132	5.5	0.026	0.031	1.9	0.172	0.153	5.2
Previous year graduate	0.157	0.153	1.4	0.077	0.081	1.4	0.102	0.103	0.2
Same year graduate	0.545	0.522	4.5	0.665	0.634	6.3	0.373	0.377	0.7
Personal debt	0.068	0.078	3.8	0.006	0.012	3.1	0.102	0.107	1.9
Child home care allowance prev. year	0.047	0.048	0.7	0.009	0.011	1.8	0.117	0.098	7.1
Spouse employed	0.247	0.248	0.2	0.084	0.086	0.5	0.231	0.202	7.3
Spouse has post-comp. or higher ed.	0.251	0.240	2.7	0.094	0.100	1.9	0.251	0.231	4.8
Spouse's income	0.123	0.143	6.4	0.039	0.045	2.5	0.172	0.146	7.6
Spouse's debt	0.053	0.061	3.7	0.009	0.013	3.3	0.072	0.057	6.6
OCCUPATIONAL SECTOR									
Engineering	0.074	0.074	0.4	0.010	0.014	1.9	0.109	0.087	7.6
Healthcare	0.096	0.087	3.3	0.030	0.029	0.8	0.030	0.029	0.5
Clerical	0.100	0.073	10.0	0.031	0.029	0.9	0.127	0.101	8.9
Commercial	0.053	0.046	3.1	0.012	0.013	1.0	0.052	0.046	2.8
Agriculture	0.030	0.045	9.5	0.007	0.008	1.0	0.022	0.022	0.0
Transportation	0.026	0.031	4.0	0.007	0.008	0.7	0.020	0.027	5.7
Industrial	0.226	0.226	0.1	0.103	0.105	0.5	0.204	0.191	3.2
Services	0.100	0.089	3.9	0.055	0.052	0.9	0.095	0.095	0.0
LABOUR MARKET VARIABLES									
Unemployment duration	141	133	7.2	61	57	6.1	146	132	15.4
Travel-to-work unemployment rate	20.3	20.0	8.4	21.0	21.1	0.4	19.7	19.7	0.8
Partial professional skills	0.215	0.211	0.9	0.121	0.125	0.9	0.224	0.219	1.1
Complete professional skills	0.087	0.095	2.6	0.005	0.012	3.4	0.162	0.151	3.4
Employed previous year	0.536	0.547	2.2	0.301	0.316	3.2	0.502	0.514	2.4
Job seeking area wide	0.083	0.081	0.8	0.030	0.030	0.3	0.077	0.072	2.1
Only typical working hours accepted	0.753	0.727	6.0	0.780	0.764	4.0	0.764	0.750	3.1
LABOUR MARKET AREA									
Turku labour district	0.085	0.072	4.7	0.056	0.058	0.6	0.109	0.094	5.1
Häme labour district	0.140	0.164	6.8	0.174	0.169	1.3	0.147	0.160	3.7
Kymi labour district	0.098	0.090	2.8	0.083	0.084	0.3	0.075	0.073	0.5
Mikkeli labour district	0.062	0.054	3.4	0.034	0.038	1.8	0.017	0.024	3.9
Vaasa labour district	0.077	0.096	7.0	0.108	0.108	0.2	0.104	0.110	1.7
Keski-Suomi labour district	0.062	0.050	5.0	0.052	0.055	1.5	0.075	0.057	7.0
Kuopio labour district	0.045	0.035	4.7	0.074	0.077	1.3	0.060	0.049	4.5
Pohjois-Karjala labour district	0.028	0.021	4.3	0.062	0.051	5.3	0.030	0.030	0.0
Kainuu labour district	0.021	0.020	0.7	0.033	0.033	0.0	0.020	0.022	1.4
Oulu labour district	0.087	0.087	0.2	0.076	0.082	2.4	0.055	0.068	5.1
Lappi labour district	0.060	0.055	2.2	0.063	0.068	2.3	0.032	0.035	1.3
Satakunta labour district	0.049	0.038	5.1	0.050	0.051	0.5	0.067	0.052	6.5
Mean of standardized differences			3.7			2.0			4.1
Maximum of standardized differences			10.0			6.3			15.4
Regression test – significant at 1/5/10 %			1/3/2			5/0/4			0/0/3

Notes: Diff refers to the absolute value of standardized difference. Regression test reports the number of variables for which the joint test is statistically significant at the stated significance level.

Appendix 6. Average participation effects on the treated with bootstrapped standard errors (400 iterations)

	Employment		Earnings		Unemployment		Programme part.		Studying		Out of labour force	
	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.
Job placement												
t	-0,024	(0,022)	15,617	(1,461)	-0,277	(0,026)	0,505	(0,024)	-0,203	(0,028)	-0,062	(0,014)
t+1	0,082	(0,031)	12,241	(2,426)	-0,076	(0,027)	0,061	(0,019)	-0,129	(0,026)	0,001	(0,018)
t+2	0,088	(0,030)	7,124	(2,763)	-0,028	(0,025)	0,023	(0,013)	-0,099	(0,027)	-0,005	(0,019)
t+3	0,052	(0,029)	9,310	(3,419)	-0,008	(0,026)	-0,006	(0,010)	-0,069	(0,027)	0,027	(0,019)
t+4	0,058	(0,028)	10,072	(3,658)	-0,023	(0,021)	-0,002	(0,006)	-0,080	(0,026)	0,013	(0,020)
Youth practice												
t	-0,071	(0,010)	-3,744	(0,472)	-0,168	(0,016)	0,377	(0,014)	-0,082	(0,016)	-0,036	(0,010)
t+1	-0,022	(0,014)	-2,493	(0,785)	-0,021	(0,015)	0,025	(0,010)	-0,022	(0,016)	-0,022	(0,010)
t+2	-0,021	(0,016)	-2,751	(1,052)	-0,014	(0,012)	0,016	(0,008)	0,036	(0,015)	0,002	(0,009)
t+3	-0,022	(0,017)	-2,317	(1,285)	0,020	(0,012)	0,004	(0,009)	0,022	(0,015)	-0,008	(0,010)
t+4	-0,024	(0,018)	-2,193	(1,485)	0,008	(0,012)	0,000	(0,006)	0,015	(0,017)	0,000	(0,010)
LMT												
t	-0,056	(0,022)	-4,659	(1,381)	-0,182	(0,027)	0,423	(0,028)	-0,108	(0,027)	-0,066	(0,014)
t+1	0,035	(0,028)	4,880	(2,247)	0,002	(0,026)	0,080	(0,019)	-0,144	(0,029)	-0,026	(0,019)
t+2	0,079	(0,031)	10,444	(3,246)	-0,018	(0,025)	0,021	(0,016)	-0,125	(0,026)	0,018	(0,019)
t+3	0,060	(0,031)	11,951	(3,555)	-0,011	(0,026)	0,001	(0,012)	-0,115	(0,026)	0,000	(0,017)
t+4	0,012	(0,031)	9,679	(4,343)	0,012	(0,024)	0,006	(0,009)	-0,098	(0,025)	0,030	(0,020)

Appendix 7. Average participation effects on employment with differing model specifications, bootstrapped standard errors (400 iterations)

	Basic		No regional dummies		No occupation dummies		No reg. & occ. dummies		Only individ. characteristics		Thick support p < 0,5		No common support		No UNDUR	
	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.
Job placement																
t	-0,024	(0,023)	-0,032	(0,024)	-0,022	(0,021)	-0,013	(0,019)	-0,057	(0,019)	-0,024	(0,024)	-0,031	(0,022)	-0,106	(0,018)
t + 1	0,082	(0,029)	0,082	(0,031)	0,091	(0,028)	0,101	(0,028)	0,061	(0,023)	0,082	(0,029)	0,077	(0,028)	0,026	(0,023)
t + 2	0,088	(0,030)	0,104	(0,029)	0,088	(0,030)	0,099	(0,031)	0,061	(0,024)	0,068	(0,029)	0,085	(0,029)	0,015	(0,024)
t + 3	0,052	(0,029)	0,040	(0,030)	0,054	(0,030)	0,059	(0,030)	0,026	(0,023)	0,038	(0,028)	0,050	(0,028)	-0,014	(0,022)
t + 4	0,058	(0,030)	0,033	(0,033)	0,048	(0,030)	0,046	(0,030)	0,036	(0,025)	0,045	(0,030)	0,061	(0,030)	0,009	(0,025)
Youth practice																
t	-0,071	(0,011)	-0,071	(0,011)	-0,076	(0,009)	-0,073	(0,010)	-0,098	(0,010)	-0,076	(0,012)	-0,072	(0,010)	-0,098	(0,009)
t + 1	-0,022	(0,014)	-0,029	(0,013)	-0,050	(0,013)	-0,055	(0,013)	-0,077	(0,013)	-0,031	(0,015)	-0,024	(0,013)	-0,047	(0,012)
t + 2	-0,021	(0,017)	-0,027	(0,016)	-0,047	(0,015)	-0,050	(0,016)	-0,074	(0,015)	-0,025	(0,018)	-0,021	(0,016)	-0,052	(0,014)
t + 3	-0,022	(0,018)	-0,032	(0,017)	-0,044	(0,017)	-0,052	(0,018)	-0,077	(0,016)	-0,029	(0,018)	-0,022	(0,016)	-0,056	(0,016)
t + 4	-0,024	(0,019)	-0,031	(0,018)	-0,043	(0,017)	-0,055	(0,019)	-0,067	(0,016)	-0,015	(0,019)	-0,024	(0,018)	-0,045	(0,016)
LMT																
t	-0,056	(0,025)	-0,053	(0,023)	-0,049	(0,021)	-0,060	(0,025)	-0,101	(0,018)	-0,055	(0,023)	-0,068	(0,023)	-0,149	(0,018)
t + 1	0,035	(0,029)	0,037	(0,028)	0,039	(0,029)	0,030	(0,029)	-0,013	(0,023)	0,033	(0,029)	0,024	(0,030)	-0,039	(0,022)
t + 2	0,079	(0,031)	0,088	(0,029)	0,090	(0,028)	0,091	(0,028)	0,048	(0,026)	0,075	(0,031)	0,077	(0,032)	-0,002	(0,025)
t + 3	0,060	(0,029)	0,062	(0,029)	0,069	(0,028)	0,077	(0,027)	0,025	(0,026)	0,053	(0,032)	0,059	(0,032)	-0,011	(0,026)
t + 4	0,012	(0,032)	0,005	(0,032)	0,015	(0,031)	0,023	(0,031)	-0,020	(0,027)	-0,008	(0,033)	0,004	(0,032)	-0,039	(0,027)

Appendix 8. Average participation effects compared with participation in another programme

	Employment		Earnings		Unemployment		Programme part.		Studying		Out of labour force	
	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.	Effect	S.E.
SEM vs YPT												
t	0,058	(0,028)	19,995	(1,968)	-0,004	(0,029)	0,070	(0,038)	-0,166	(0,029)	-0,020	(0,014)
t + 1	0,098	(0,036)	15,562	(2,709)	-0,003	(0,027)	-0,014	(0,027)	-0,085	(0,025)	0,014	(0,019)
t + 2	0,107	(0,035)	11,132	(3,172)	-0,028	(0,028)	-0,013	(0,020)	-0,108	(0,029)	-0,002	(0,024)
t + 3	0,067	(0,037)	12,241	(3,800)	-0,016	(0,027)	-0,020	(0,016)	-0,083	(0,028)	0,024	(0,021)
t + 4	0,102	(0,037)	11,364	(4,710)	-0,023	(0,027)	-0,003	(0,008)	-0,094	(0,025)	-0,002	(0,024)
LMT vs YPT												
t	0,000	(0,036)	2,302	(1,659)	0,047	(0,033)	0,057	(0,040)	-0,031	(0,030)	-0,039	(0,026)
t + 1	0,089	(0,042)	10,881	(2,620)	-0,011	(0,043)	0,031	(0,027)	-0,077	(0,025)	-0,002	(0,021)
t + 2	0,189	(0,040)	19,935	(3,632)	-0,075	(0,045)	-0,003	(0,028)	-0,144	(0,037)	-0,005	(0,027)
t + 3	0,107	(0,041)	20,291	(4,962)	-0,058	(0,037)	-0,016	(0,020)	-0,130	(0,037)	0,006	(0,021)
t + 4	0,092	(0,048)	18,720	(5,519)	-0,033	(0,037)	0,009	(0,010)	-0,081	(0,028)	0,022	(0,025)
SEM vs LMT												
t	0,034	(0,028)	20,363	(1,643)	-0,064	(0,032)	0,067	(0,039)	-0,132	(0,034)	-0,003	(0,013)
t + 1	0,092	(0,034)	12,069	(2,646)	-0,071	(0,030)	-0,010	(0,025)	-0,027	(0,030)	0,011	(0,023)
t + 2	0,046	(0,036)	1,154	(3,537)	-0,019	(0,029)	-0,002	(0,019)	-0,004	(0,033)	-0,021	(0,023)
t + 3	0,034	(0,036)	1,189	(3,994)	-0,004	(0,026)	-0,017	(0,017)	0,030	(0,034)	0,014	(0,024)
t + 4	0,062	(0,038)	1,977	(5,292)	-0,043	(0,026)	-0,003	(0,009)	0,001	(0,030)	-0,017	(0,027)

SEM = Selective Employment Measures
YPT = Youth Practical Training
LMT = Labour Market Training

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