How to stimulate single mothers to leave welfare for work; evidence from a field experiment

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Abstract

In this paper, we present the results from a field experiment in the Netherlands in which single mothers on welfare were stimulated to find a job. Two policy instruments were introduced: an earnings disregard and job creation. The experiment was performed at the level of municipalities. In our analysis we make a distinction between native and immigrant welfare recipients. For immigrant single mothers we find a positive employment effect of an earnings disregard. For native single mothers with the youngest child between 5 and 11 years the earnings disregard had a weakly significant positive effect on working hours. Job creation in addition to the earnings disregard increased working hours for immigrant single mothers with the youngest child between the age of 5 and 11 and for native single mothers with the youngest child in the age category from 0 to 4 years. Although the outflow from welfare is not affected, welfare expenditures go down.

Keywords: welfare, single mothers, field experiment
JEL-codes: C41, C93, I38, J64

1 Introduction

It is not easy to bring welfare recipients back to work. This is particularly difficult for single mothers with young children as they are restricted in their labor market behavior. Frequently used instruments to bring single mothers back to work are financial incentives and active labor market policies. Previous studies have found a positive effect of financial incentives on single mothers labor supply.[1] In the U.S. a series of tax acts as from 1987 have reduced tax liabilities of single women with children, while in the same period participation rates have increased. Eissa and Liebman (1996), Ellwood (2000), Meyer and Rosenbaum (2001), and Hotz et al. (2001) found that the increased generosity of The Earned Income Tax Credit (EITC)[2] as from 1987 had large effects on employment rates and created substantial efficiency gains (Eissa et al., 2008). These financial incentives, however, worked almost exclusively through the participation margin, while single mothers are rather unresponsive on the intensive margin (Meyer, 2002). Furthermore, Noonan et al. (2007) found that policy and labor market changes had a more profound effect on the employment of black single mothers, than on white single mothers. Not all previous U.S. studies found positive effects of financial incentives on single mothers labor supply. Following a welfare reform in 1996, Matsudaira and Blank (2008) analyze the impact of changes in earnings disregards. They exploit state differences in the level of the earnings disregards and find that the changes had little effect on labor supply or income because only few women used these earnings disregards.

An important 'make work pay' policy in the UK is the Working Families Tax Credit (WFTC). This program, which was introduced in 1999, provides support for low wage working families. An important difference with the EITC is that the WFTC has a minimum weekly hours eligibility condition (a description and comparison of the EITC and WFTC program can be found in Brewer, 2001). At the introduction of the less generous predecessor of the WFTC (the Family Credit) the minimum hours cut-off was set at 24 hours. In 1992 this was reduced to 16 hours and this encouraged a significant fraction of inactive single mothers into work (Blundell and Hoynes, 2004). At the introduction of the WFTC in 1999 financial incentives increased, particularly for those with younger children. Among others, Brewer et al. (2007) found that the WFTC induced single mothers to increase their participation in the labor market by 5%-points.

In Canada the self-sufficiency project experimented with a generous time-limited earnings supplement available to single parents who had been on welfare for at least a year, and who subsequently left welfare and found full-time work (defined as at least 30 hours a week). Results show that the financial incentive increased full-time employment, earnings, and income, and

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[1]A large empirical literature has studied labor supply responses to taxes, transfers and active labor market policies. See, for example, Blundell and Macurdy (1999) and Heckman et al. (1999) for an overview.

[2]The EITC is a financial incentive program to encourage work among low-income families with children by providing refundable tax credits or earnings subsidies.

reduced poverty (Michalopoulos et al., 2005). However, unfortunately, when subsidy payments had ended, employment rates and wages of the treated groups were equal to the control group. So, temporary wage subsidies did not have a long run effect on wages and welfare participation (Card and Hyslop, 2005).

Reemployment bonuses create direct financial incentives to find and accept a job. On the basis of outcomes from four U.S. cash bonus experiments and six job search experiments Meyer (1995) concludes that economic incentives affect the speed by which unemployed workers leave the unemployment insurance rolls. Nevertheless, empirical studies on reemployment bonuses usually show modest effects on the behavior of the unemployed workers who could benefit from such bonuses (see Woodbury and Spiegelman, 1987, Anderson, 1992, Decker and O'Leary, 1995, O'Leary et al., 2005 and Van der Klaauw and Van Ours, 2013.)

Finally, programs of direct job creation and wage subsidies may have a positive effect on employment at the lower end of the labor market. However, participation in subsidized jobs may have a stigmatizing effect and reduce chances of finding a regular job (Boeri, 1997). Martin and Grubb (2001) provide an overview of evaluation findings in OECD countries and find that subsidized jobs do not help the unemployed to get permanent jobs. Kluve (2010) presents a meta-analysis of 137 ALMP evaluation studies in Europe. He finds that direct employment programs in the public sector are rarely effective and frequently detrimental for the employment prospects of participants.

Our paper contributes to the literature about how to bring welfare recipients back to work by presenting the results of a field experiment among single mother welfare recipients in the Netherlands. Until 2009 Dutch single mothers on welfare had no financial incentives to work in small jobs. When a single mother started to earn money, her welfare benefits were reduced one for one. Therefore, she was only financially tempted to enter the labor market if she could earn at least the amount of the welfare benefit. However, single mothers on welfare often have low education skills and a low earnings capacity. A minimum wage single mother can only escape welfare when she works about 30 hours per week. This is a difficult task in combination with care responsibilities and is often not in accordance with the assumptions of these mothers about motherhood. The Dutch government intended to make part-time work financially more attractive for single mothers on welfare with children younger than twelve years.[3] Therefore, a field experiment was set-up to explore the potential of two policy measures; an earnings disregard and direct job creation. The experiment was focused on single mothers on welfare with at least one child younger than 12 years. In the experiment 14 Dutch municipalities[4] implemented the earnings disregard and 6 of them also implemented direct job creation. This paper evaluates

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[3]Two reasons for this are that political and public attitudes have changed towards more people having to participate in the labor market. Also, this is a possible way to reduce poverty among single mothers.

[4]In the Netherlands welfare is provided by municipalities and funded by the government. The funding is not one-to-one but depends on the characteristics of the municipalities and the history of welfare in the municipalities.

the instruments using a difference-in-difference-in-differences approach. We make three types of comparisons (a triple difference approach), namely, we simultaneously compare (1) the period before and during the experiment, (2) the municipalities with and without the experimental policy instruments, and (3) single mothers with at least one child younger than twelve years and single mothers with all children twelve years and older. Furthermore, we make a distinction between native and immigrant welfare recipients.

Our empirical analysis proceeds in three steps. First, we investigate the total effects of the policy experiments. Then, we proceed by investigating the distinct effects of the earnings disregard and of job creation on top of the earnings disregard. Finally, as in Blundell et al. (2009), we make a distinction between two types of treated single mothers depending on the age of their youngest child. We distinguish single mothers with the youngest child in the age categories 0-4 years from those with the youngest child 5-11 years, since the compulsory education requirement starts at the age of 5. Our main finding is that for immigrant single mothers there was a positive employment effect of an earnings disregard. Job creation increased working hours for immigrant single mothers with the youngest child between the age of 5 and 11 and for native single mothers with the youngest child between 0 and 4 years. Although the outflow from welfare is not affected, welfare expenditures go down. For native single mothers we find smaller treatment effects than for immigrant single mothers.

The set-up of our paper is as follows. Section 2 shortly explains the Dutch welfare system and describes the field experiment. Section 3 describes the data and section 4 presents some exploratory analyses. The empirical analysis is presented in section 5 and section 6 concludes.

2 Field experiment

2.1 Welfare in the Netherlands

In the Netherlands welfare guarantees a minimum income for all unemployed or part-time employed workers with income below a basic income level. Welfare benefits are means-tested and a single mother can only qualify for welfare when she does not receive enough income out of labor, alimonies or other social insurances, like unemployment or disability insurance. Eligibility for welfare also depends on wealth. Renters may own at most 11 thousand euro and homeowners qualify for welfare when they own not more than 46 thousand euro. Finally, welfare recipients have to comply with guidelines on job search effort.

At the start of the experiment about 300,000 individuals in the Netherlands received welfare benefits (about 2.7% of all persons between the age of 15 and 65). Of these, a substantial percentage of 26% were lone parents, predominantly mothers. Single parents are of all household types most often on welfare; about 10.6% of all single parents depend on welfare (Statistics

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Netherlands, 2011). This makes single mothers an important group to investigate.

2.2 Set-up of the experiment

In the experiment two instruments were used:

1. an earnings disregard of €4 for each hour worked, up to €120 net per month,

2. direct job creation in the public and private sector.

The first instrument encouraged single mothers to participate in paid employment by allowing them to earn income while they are receiving financial assistance. In the experiment four euro per hour worked were exempted as income when determining the monthly welfare benefits. So, for every hour that a single mothers worked, she received €4, up to a maximum of €120 per month.[5] Without this instrument, welfare benefits were reduced by the full amount of labor income.

Figure 1 illustrates how in a labor supply framework, the earnings disregard affects financial incentives in case the single mother could earn the hourly minimum wage of (approximately) €7.50 and receives welfare benefits of €225 per week. In this situation a minimum wage job of 30 hours per week would generate the same income as welfare benefits would. The budget constraint for a welfare recipient is BCA and maximum utility would be derived at point B. If an earnings disregard is introduced the new budget constraint is BDECA. The maximum earnings disregard on a weekly basis would be after 7.5 hours at point D. Figure 1 indicates that a welfare recipient might reach a higher utility in point D or perhaps slightly left of point D. It does not seem very likely that the welfare recipient would find a full-time job more attractive because of the earnings disregard.

The second instrument is direct job creation in the public and private sector (a so called 'labor pool'). For this instrument municipalities search jobs for single mothers for at least 12 hours per week. Single mothers in the labor pool work for a regular employer or for the municipality itself, and the jobs may be subsidized if the earnings capacity of the single mother is low. When analyzing direct job creation we analyze an intention to treat, since the results are based on the initial treatment assignment and not on the treatment effect for people who actually took the treatment (who participated in the labor pool). The intention-to-treat effect does not suffer from a nonrandom assignment of jobs to single mothers eligible for direct job creation. Also, using an intent-to-treat analysis we analyze how direct job creation works in a realistic context, which explicitly acknowledges the success or failure that municipalities experience in finding jobs for single mothers on welfare. A disadvantage of the intent-to-treat

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[5]As a point of reference, in January 2011 gross legal minimum wage was €1424 per month, for employees as from the age of 23 who work full-time (36, 38, or 40 hours per week, depending on the sector of employment). This means a net wage of about €1150 and a net hourly wage of about €7.60.

design is that we may underestimate the potential effectiveness of job creation, for example, in case municipalities do not succeed in finding jobs for single mothers on welfare.

Fourteen Dutch municipalities participated in the experiment (the treatment municipalities). All of them applied the earnings disregard to all single mothers with a least one child below the age of 12 (the treatment group). Six of these fourteen municipalities also applied direct job creation. We exploit this variation to identify the effect of direct job creation.[6] All other Dutch municipalities[7] form the control municipalities and single mothers with children between the age of 12 and 18 form the control group. The instruments were implemented in 2009-2010 (the treatment period). We have also data of the years 2005-2008 available, which form the control period.

The treatment municipalities are of different size and are geographically spread through the Netherlands.[8] Municipalities were not forced to participate in the experiment. Instead, municipalities got the opportunity to apply for the experiment and if they participated they had to implement the instruments, for which they received a financial compensation. The advantage of voluntary participation is that the participating municipalities are capable and motivated to implement the instruments. A possible drawback of voluntary participation is that selection may take place. Possibly it are especially the motivated municipalities that participate, who perform already relatively good. On the other hand, participating municipalities may have relatively underprivileged single mothers. We contacted the representatives of all treatment municipalities repeatedly and did not find any indications for any of these reasons. Also, by using a triple difference approach we correct for a priori differences between treatment and control municipalities. Furthermore, we compare observed characteristics of the single mothers in the treatment and control municipalities.

When participation growth in the treatment group would crowd out participation of single mothers in the control group, we would overestimate the effect of the instruments. However, single mothers are only a small group in the total population of job seekers such that we are not much concerned about this.[9]

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[6]During the period of analysis also reemployment bonuses were introduced in the treatment municipalities. Single mothers on welfare could receive a reemployment bonus of €500 when they left welfare for at least six months because of working enough hours in the labor market to be financially independent. In some municipalities reemployment bonuses were already implemented before the experiment and part of the municipalities that did not participate in the field experiment also provided reemployment bonuses. We have no information about which control municipalities provided reemployment bonuses and therefore we cannot identify the effect of the reemployment bonus using the difference-in-differences approach. In the estimation we correct for the fact that in some treatment municipalities the control group was entitled to a reemployment bonus and that in some municipalities the treatment group was already entitled to a reemployment bonus in the treatment period.

[7]In total the Netherlands consisted of 441 municipalities at January 1, 2009.

[8]The participating municipalities that we study in this analysis are Almere, Bodegraven, Breda, Echt-Susteren, Enschede, Groningen, Heerenveen, Nijmegen, Reiderland, Schiedam, Scheemda, Vlaardingen, Winschoten, and Zwolle.

[9]Single parents comprise 26% of the whole population in welfare.

3 Data

The data are taken from the 2005-2010 statistics on welfare benefits (BUS, Bijstandsuitkeringen-statistiek, CBS 2010a) and the 2005-2010 population register (GBA, Gemeentelijke Basisadmin-istratie, CBS 2010b), both gathered by Statistics Netherlands. The BUS is an administrative dataset that contains all welfare recipients in the Netherlands and provides information about gender, age, the cause of the welfare benefits, whether welfare recipients receive income from other resources (like labor income or alimony), the amount of welfare benefits that they receive, and whether they are a homeowner or not. The GBA, on the other hand, is an administrative dataset that provides information about the number of children, age of the children, marital status and the ethnicity of all people registered in Dutch municipalities.

We select all Dutch municipalities except Amsterdam and Langedijk. Amsterdam and Langedijk participated in the experiment, but the implementation of the experimental instruments failed in these municipalities, such that they do not provide reliable information about the effects of the instruments. Furthermore, we select all single mothers that flowed into welfare as from January 1 2005. Table 1 shows the yearly inflow of single mothers in welfare for the treatment group and the control group in the treatment and control municipalities. In total we observe 72,814 welfare spells. Relatively a lot of welfare spells started in 2009 and 2010, probably as a result of the financial and economic crisis. About 13% of the welfare spells started in a treatment municipality and the treatment group is about six times larger than the control group.

The 72,814 welfare spells are observed for 63,058 single mothers. Table 2 shows the number of spells we observe for each single mother in the treatment and control groups. For most of the single mothers (86%) we just observe one spell, for 12% of the single mothers we observe two spells, and for the remaining 2% we observe three spells or more. The characteristics of the single mothers on welfare are presented in table 3, where we compare the characteristics of single mothers in the treatment and the control group, for the treatment and control municipalities, and for the treatment and control period. The descriptives show that the average age of the single mothers is 34 in the treatment group and 41 in the control group. On average, single mothers in the treatment group have 1.9 children and in the control group 1.7. The youngest child is on average 4.4 years old in the treatment group, and 13.9 years old in the control group. The treatment group consists of a lot of unmarried lone single mothers, while the control group consists of relatively more divorced women. Between 2005-2008 and 2009-2010 the number of divorced single mothers increased, while the number of married mothers decreased. However, all mothers that we study are living single. A relative large share of 32% of the single mothers are first generation non-western immigrants. The share of homeowners is low (3.3%).

4 Exploratory analysis

We observe five variables of interest to establish the effectiveness of the policy instruments. Two of them relate to durations, i.e. the duration to a part-time job while remaining in welfare and the duration until outflow from welfare occurs. The other three are financial variables, i.e. earnings received by the single mothers, welfare benefits paid by the municipalities, and the sum of earnings and welfare benefits. In the remainder of this section we explore these variables of interest, where we separately consider immigrant single mothers which we define as non-Western immigrants and native single mothers which we define as native Dutch or Western immigrants. Immigrant single mothers may have language difficulties and may be influenced by their home-country culture regarding the upbringing of children (Fernandez, 2007; Kok et al., 2011). This may influence their labor force participation and their reaction to the instruments. Furthermore, compared to natives, immigrant single mothers relatively often bring up their children alone as from birth, without a father. By way of exploratory analysis we consider a total treatment effect comparing treatment groups to control group, treatment municipalities to control municipalities and treatment period to control period. In the exploratory analysis we ignore the heterogeneity in treatment and the potential heterogeneity of the treatment group.

4.1 Duration indicators

The earnings disregard and direct job creation may increase the inflow of single mothers to a part-time job, which diminishes their dependency on welfare. The solid lines in figure 2a and 2b present the inflow to part-time work for immigrant single mothers in the treatment and the control group. At $t = 0$ a welfare spell starts and the graphs show the share of immigrant single mothers that started a part-time job over the duration of their welfare benefit spell. Figure 2a shows that in the control period the inflow into part-time work was about the same in treatment and control municipalities, which reassures us about the comparability of the treatment and control municipalities. Within 730 days after the start of a welfare spell almost 20% of the single mothers in the treatment group started part-time work. In the control municipalities the inflow to part-time jobs is lower in the treatment period than in the control period. This is probably related to the slowdown in economic activity. However, in treatment municipalities the inflow to part-time jobs increased, despite the economic crisis. Since we have no reason to assume that only single mothers in the control municipalities are influenced by the crisis, this indicates a positive effect of the experiment on the inflow to part-time work. The dashed lines in figure 2a show first differences for the treatment groups. The first difference is positive for treatment municipalities, since the inflow to part-time work in the treatment municipalities is higher in the treatment period than in the control period. For the control municipalities the inflow to part-time work declined, such that the first difference is negative. Figure 2b shows

the same graph for the control group. For the control group we find that the inflow to part-time work decreased in both treatment and control municipalities. This results in negative first differences (the dashed lines). In figure 2c we plot the double differences – between the treatment period and the control period and between the treatment group and the control group – for the control municipalities and for the treatment municipalities. For example, the line that represents the double difference (dif2) of the treatment municipalities shows us that in the treatment municipalities the increase in the inflow to part-time work within two years after the start of the welfare benefit was 23% higher in the treatment than in the control group. The line that represents the double difference of the control municipalities is almost zero, indicating that there are no large differences between the treatment and the control group in the control municipalities. The triple difference is clearly positive indicating a positive treatment effect. Using the triple difference approach we take into account that the business cycle may had a different effect on the treatment and the control group, and we exclude the possibility that the results are the consequences of municipality-specific developments (e.g. that treatment municipalities are less affected by the crisis than control municipalities). The bottom part of figure 2 shows the same graphs for native single mothers. Here the graphs for the treatment and the control group and for the treatment and control municipalities are not so different indicating that there is hardly any treatment effect, as is confirmed by the triple difference graph in figure 2f. When interpreting the graphs in figure 2 we have to take into account that not all single mothers received the treatment as from the start of their welfare spell. In addition, the sample becomes more and more selective over the welfare duration. In the model we will take this into account by including unobserved heterogeneity.

Panel a of table 4 is set-up in the same way as figure 2 and shows how the triple differences after a welfare spell of 2 years can be calculated. The left part of panel a is about immigrant single mothers. In the control municipalities there is almost no difference between the evolution of the treatment group and control group in the share of single mothers finding a part-time job within 2 years. The double difference is equal to 0.04. For the treatment municipalities there is a substantial difference. Whereas the control group faces a decline of 0.19, the treatment group faces an increase of 0.04, leading to a double difference of 0.23. In combination with the double difference for the control municipalities of 0.04 this leads to a triple difference of 0.19, i.e. a triple difference of 19 percentage-points. The right-hand side part of table 4a shows that for native single mothers the triple difference estimates of the treatment effects are small. Here the triple difference is only -0.01.

The second duration indicator from which the effectiveness of the treatment may be derived is the duration of the welfare spell. The earnings disregard and direct job creation may strengthen mother's labor force attachment and increase their probability to flow out of welfare. However,

on the other hand, direct job creation may have a lock-in effect and the earnings disregard may be so attractive that outflow from welfare becomes less attractive. To find out which argument dominates it is important to examine the effect of the instruments on the outflow from welfare. In the data we have information about total outflow from welfare. We do not know whether people flow out of welfare because of a job or because of other reasons such as finding a partner. Therefore, given our difference-in-differences approach, we assume that outflow because of reasons other than work are not influenced by the experiment. Just as before, we start with comparing the treatment and control municipalities for single mothers in the treatment group (figure 3a). Again at $t = 0$ the welfare spell starts. The graph shows that in the control period one year after the start of a welfare benefit 31% of the single mothers in the treatment group left welfare, after two years this was 54%, and after three years this was about 63%. In the treatment period outflow was lower, probably because of the economic crises. Nevertheless, both before and during the experiment the outflow from welfare was about the same in the treatment and control municipalities. This indicates that in total the instruments did not have an effect on the outflow from welfare. Figure 3b compares the treatment and the control treatment municipalities conditional on being a member of the control group. Here too the differences between the treatment municipalities and the control municipalities are small. Consequently, figure 3c shows that the triple difference is small indicating a small treatment effect. The lower part of figure 3 shows that by and large for natives the results are very much the same.

Panel b of table 4 collects the results of the graphs in figure 3 and shows us triple difference estimates of the treatment effects after two years in welfare. The treatment effect is 2 percentage-points for immigrants and 5 percentage-points for natives. Apparently, the treatment effects are small or perhaps even absent.

4.2 Financial indicators

The remaining three indicators of the success of the treatment relate to financial variables. Compared to the inflow to a part-time job, described above, labor income also measures whether people who were already participating in a part-time job increased working hours because of the earnings disregard. Furthermore, with these variables we examine whether the instruments reduce the welfare benefits that have to be paid by the municipalities and whether the instruments reduce poverty among single mothers and their children.

Figure 4 shows the distribution of welfare benefits and income from sources other than welfare during the experiment. Income from other resources includes labor income, but also resources like alimonies from ex-partners and tax reductions. Unfortunately, we can not distinguish the amount of labor income from other income that single mothers receive in addition to

welfare. However, using the difference-in-differences approach, we can reasonably assume that other income, like alimonies, are not influenced by the experiment and in the remainder of this paper we will therefore define income from others sources as earnings. Figure 4a shows that 38% of the welfare recipients received welfare benefits between €1000 and €1049 per month. Those who received less benefits mostly received labor earnings and/or alimonies in addition to welfare benefits. Higher benefits are often related to post-payments. Figure 4 demonstrates that 44% of the welfare recipients receive income less than €99 from other resources in addition to their welfare benefits. This often consists of a general tax credit. People with more income from other sources mainly receive income from labor or the ex-partner (alimonies).

The policy of income disregard and job creation caused an increase in earnings, as shown in panel c of table 4. For immigrant single mothers the triple difference estimate of the treatment effect on earnings is €41 per month, while for native single mothers it is €8 per month. Panel d of table 4 gives an indication of how the welfare benefits are affected using the same triple difference set-up as before. For immigrant single mothers due to the earnings disregard and job creation welfare benefits on average went down with about €30 per month. For native single mothers this was only €9 per month. The results also show the importance of using a triple difference approach. When we would only compare the treatment and the control group in the treatment municipalities (double difference approach) we would overestimate the treatment effect because of not taking into account that also in the control municipalities the increase in welfare benefits is higher for the control group than for the treatment group (single mothers in the control group work more and also have more to loose in a recession). On the other hand, when we would compare treatment and control municipalities for the treatment group (double difference approach in the other dimension) we would not take into account municipality specific characteristics. It seems that treatment municipalities are on average somewhat more affected by the crisis than the control municipalities[10]. Finally, panel e shows that the net benefits for the single mothers are low; for immigrant mothers it is about €10 per month, for native mothers it is almost zero.

5 Empirical analysis

5.1 Model

In addition to the exploratory analysis presented above, we estimate models to take into account background characteristics and unobserved heterogeneity. Using these models we can take into account changing compositions between the treated and non-treated single mothers that may affect the outcome variables.

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[10]E.g., in Breda, a municipality in the south of the Netherlands, the average monthly welfare benefits increased on average €221 in the control group. This is much more than in the control municipalities (on average €79)

To identify the effect of the experiment we use three dimensions, (1) we compare the treatment and the control group, (2) we compare treatment and control municipalities, and (3) we compare the treatment period (2009-2010) and the control period (2005-2008). We combine these dimensions using the difference-in-difference-in-differences approach explained by Imbens and Wooldridge (2007). The advantage of the triple difference approach is that 1) when developments are different for the treatment and the control group because of other reasons than the instruments we can take this into account by comparing the developments in the control municipalities, and 2) when developments are different for the treatment and control municipalities because of other reasons than the experiment we can take this into account by comparing the control group in the treatment and control municipalities. Using the triple difference approach we have to assume that without the experiment developments for the control group and developments for the treatment group in the control municipalities would have been the same.

The determinants of the inflow into part-time work and the outflow from welfare are established using a hazard rate model in which the transition rate of individual i at duration t conditional on observed characteristics X, unobserved characteristics u and treatment variables function $D\gamma$ is specified as follows:

$$\theta(t|X_{it}, D_{it}, u_i) = u_i \lambda(t) \exp(X_{it}\beta + D_{it}\gamma) \tag{1}$$

where β is a parameter vector and $\lambda(t)$ a piecewise constant function representing the pattern of duration dependence. We assume unobserved heterogeneity u to follow a Gamma distribution with variance θ.

The vector X contains control variables such as the age of the single mother, the age of the youngest child, the number of children, marital status, the cause of the welfare benefits, whether the single mother receives alimony, and whether the single mother is a homeowner. In addition, X contains year dummies, dummies for the treatment municipalities, to control for period and municipality specific characteristics, and dummy variables to correct for the presence of a reemployment bonus in some treatment municipalities (B)[11].

The treatment variables function $D\gamma$ is specified as follows:

$$D_{it}\gamma = \gamma_1 G_{it} + \gamma_2 T_t + \gamma_3 M_i \cdot G_{it} + \gamma_4 M_i \cdot T_t + \gamma_5 G_{it} \cdot T_t + \delta G_{it} \cdot M_i \cdot T_t \tag{2}$$

where G represent a dummy variable for the treatment group, M a dummy variable for the

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[11]Unfortunately, we do not have information about reemployment bonuses in control municipalities. However, for all treatment municipalities we know whether and in which years they provided reemployment bonuses to the control group and the treatment group. To correct for this we include interactions of year and the provision of a reemployment bonus (yes=1, no=0). In addition, we allow these effects to be different for the treatment and the control group, and later on within the treatment group for single mothers with the youngest child younger or older than 5.

treatment municipality, and T a dummy variable for the treatment period (T).[12] The most important parameter in equation (2) is δ, which represents the total treatment effect based on the triple-difference approach.

The first term, G, captures the possible differences between the treatment and the control group (identification comes from the control period and the control municipalities). The second term, T, captures the difference between the treatment period and the control period (identification comes from the control group and the control municipalities). $M \cdot G$ captures the possible differences between the treatment groups in the municipalities that did and did not implement the instruments (identification comes from the control period). The period effect may be different for the treatment and control municipalities, which is captured by the fourth term $(M \cdot T)$. The fifth term represent the interaction between treatment group and treatment period. We do not include M as a separate variable, because all treatment municipality dummies are already included in X.

The determinants of earnings y_{it} that single mother i receives in time period t in addition to her welfare benefit is established using a linear regression model of the form

$$y_{it} = X_{it}\rho + D_{it}\kappa + \varepsilon \tag{3}$$

where X_{it} and D_{it} are specified before. In the same way, welfare benefits per recipient, paid by the municipalities, and income are modeled using a linear regression model. By computing clustered standard errors, we take into account that there are observations that belong to the same persons.

5.2 Parameter estimates

We present the results of our empirical analysis in three steps. In this section we present the total effectiveness of the policies. In the next section we investigate the effect of the earnings disregard and job creation separately. In the section thereafter we investigate whether the treatment effects differ between different treatment groups making a distinction between single mothers with very young children aged 0 to 4 and single mothers with older children aged 5 to 11.

The top part of table 5 shows the total estimated treatment effects. The full parameter estimates are shown in tables A.1 and A.2. As shown in panel Ia of table 5, the treatment increased the inflow rate to a part-time job for immigrant single mothers almost sixfold (exp(1.778)). For native single mothers there is no significant treatment effect.[13] From panel Ib of table 5 it

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[12]Note that G is a time-varying variable as a single mother may switch between groups due to the introduction of the new policy or because of the fact that her youngest child turns 12 years of age.

[13]Appendix table A.1 shows that the inflow into part-time employment increases with the age of the children and decreases with the number of children in the household. Lone single mothers who receive alimony start

appears that there is no significant treatment effect on the outflow from welfare. Panel Ic shows that for both immigrant single mothers and native single mothers the policies increased earnings; €95 per month for immigrant single mothers and €62 per month for native single mothers. Welfare benefits go down for both groups albeit the effect is only significant – at a 10% level – for immigrant single mothers. It is reassuring that the reduction in welfare benefits because of the experiment is lower than the earnings growth, since only part of the earnings (€4 per hour) are exempted from welfare benefits. The ratios of the reduction in welfare benefits and the additional earnings are 53.7% (0.051/0.095) for immigrant single mothers and 56.5% (0.035/0.062) for native single mothers. This is reasonable because it means an average (gross) wage rate of €8.64 (€4/(1-0.537)) for immigrants and €9.19 (€4/(1-0.565)) for native single mothers (the net hourly minimum wage is about €7.60). Hence, the financial advantage for the municipality is €4.64 for immigrants and €5.19 for natives. High wage rates increase the financial advantage for the treatment municipalities, since all earnings above €4 per hour are subtracted from the welfare benefits.

Finally, a potential effect of the experiment is a poverty reduction among single mothers on welfare and their children. This can also indirectly improve other aspects of life, such as health and self-esteem of the single mother. Panel Ie shows that single mother welfare recipients experience a net increase in their income, although this is only significant for immigrant single mothers. When we compare the results in panel Ic, Id, and Ie with the triple difference estimates in table 4c, 4d, and 4e, we find that taking into account unobserved heterogeneity and observed differences between single mothers increases the estimated treatment effects.

5.3   Sensitivity analysis – heterogeneous treatment effects

As indicated before, municipalities applied different types of policies to persuade single mothers to find (part-time) jobs and to leave welfare. All treatment municipalities allowed single mothers in the treatment group an earnings disregard. In addition to that some municipalities stimulated direct job creation in the public and private sector. By way of sensitivity analysis we investigate to what extent the different policy measures had different treatment effects. The bottom part of table 5 shows the relevant parameter estimates. Panel a shows that for immigrant single mothers the earnings disregard had a significant positive effect on the inflow to a part-time job but job creation did not have a significant additional positive effect. For native single mothers none of the two instruments was significantly effective. For the outflow from welfare we find no effect of both instruments.

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working part-time sooner than single mothers without any alimony and immigrants, especially first generation immigrants, are less likely to start a part-time job in addition to their welfare benefits. The longer people are in welfare without a part-time job, the less likely they are to start a part-time job (state dependence). Related to this, we find that the unobserved heterogeneity term is significant (the variance of the unobserved heterogeneity term, θ, is significantly positive).

As shown in panel IIc of table 5, the earnings disregard increased earnings of immigrant single mothers significantly with €83 per month. For native single mothers the effect of the earnings disregard on earnings was also positive (€49), but not significant. For both types of mothers, job creation had an additional significant positive effects on earnings. Since the time to employment was not increased by direct job creation (panel a), single mothers probably start jobs for more hours per week than they would do without direct job creation.

One of the aims of the experiment was to decrease welfare expenditures. When the experimental instruments increase labor force participation and/or the number of hours worked, and only part of labor income is exempted from the welfare benefit, this has a positive effect on the welfare benefits paid by the municipality. On the other hand, single mothers that already worked part-time before the experiment was implemented now receive an earnings disregard of €4 per hour, whereas they received nothing before the experiment. This has a negative effect on the amount of welfare benefits per welfare recipient paid by the municipality. Panel d of table 5 shows that the positive effect dominates, but that the effect of the earnings disregard is not significant. Job creation, additional to the earnings disregard, significantly reduced welfare benefits for immigrant and native single mothers by €55 and €57, respectively. The sum of welfare benefits and earnings is only positive for immigrant single mothers through the effect of the earnings disregard.

5.4 Sensitivity analysis – heterogeneous treatment groups

Table 6 presents the parameter estimates of the heterogeneous treatment effect on the various outcome measures if we distinguish two treatment groups, single mothers with the youngest child age 0 to 4 and single mothers with the youngest child of age 5 to 11. Panel a of table 6 shows the estimated treatment effects for the inflow to part-time work. Comparing the parameter estimates with those in panel IIa of table 5 it is clear that making a distinction between two treatment groups does not add much to the insight in the policy effects. The parameter estimates for the two treatment groups are not significantly different. The parameter estimates for the outflow from welfare are reported in panel b of table 6 and are also not significantly different for the two treatment groups.

Panel c of table 6 shows that direct job creation was significantly effective for the earnings of immigrants with children of age 5-11 (an income growth of €79 per month) and natives with the youngest child between 0 and 4 years (€94 per month), but not for immigrants with the youngest child between the age of 0-4 and natives with the youngest child between 5 and 11 years. Regarding job creation we measure the intention to treat. Immigrant single mothers with the youngest child between the age of 0 and 4 are the most difficult category within the treatment group and are less often approached by municipalities to participate in the labor

pool. This may explain the insignificant effect of job creation for this group. On the other hand, natives with the youngest child between 5 and 11 years (the most 'easy' category within the treatment group) are approached frequently but probably need less help in finding a job, such that direct job creation is not significantly effective for them. As mentioned before, since the time to employment was not reduced by direct job creation (panel a), immigrant mothers with the youngest child between 5 and 11 years and native mothers with the youngest child between 0 and 4 years probably start jobs of more hours per week than they would do without direct job creation.

The estimated treatment effects for welfare benefits, reported in panel d of table 6 are significantly different for immigrant single mothers with children between the age of 0-4 and 5-11. The earnings disregard reduced welfare benefits significantly for immigrant mothers with the youngest child between the age of 0-4, but not for immigrant single mothers with the youngest child between the age of 5-11. This can be explained by the fact that in the last group (with older children) relatively more single mothers were already working part-time before the experiment was implemented. These mothers received an earnings disregard of €4 per hour in the treatment period, whereas they received nothing before. This reduced the financial advantage for the municipalities for this group. Job creation as an additional instrument, on the other hand, is more effective for immigrant single mothers with children between 5-11 years and for native single mothers with children between 0-4 years (just like we explained for panel c above). Finally, panel e of table 6 shows the estimated treatment effects on income, which are not significantly different for single mother with young (0-4 years) and old (5-11 years) children.

6 Conclusions

Single mothers with young children are a difficult group to encourage to leave welfare for work. To explore the effectiveness of possible policy instruments the Dutch government funded a field experiment in 2009 and 2010. In the experiment two policy instruments were introduced: an earnings disregard and job creation. The experiment was performed at the level of municipalities in the Netherlands. Our paper presents an analysis of the effectiveness of both policies. We evaluate the effectiveness by comparing the calendar time periods before and during the experiment, the municipalities with and without the experimental policy instruments and by comparing single mothers with young children (who are treated) and single mothers with older children (who are not treated). In our analysis we make a distinction between native single mothers and immigrant single mothers as the latter group has a particularly weak labor market position. In addition we differentiate the treatment effect for single mothers with the youngest child between the age of 0 and 4 and single mothers with the youngest child between the age of 5 and 11, as both have different needs for care.

16

Our main findings are that the earnings disregard stimulated the labor force participation and earnings of immigrant single mothers. In addition, job creation reduced welfare benefits and increased earnings, but not labor force participation, for immigrant single mothers with the youngest child between the age of 5 and 11 and for native single mothers with the youngest child between the age of 0 and 4. Probably, these single mothers started a job with more hours per week than they would have done without job creation. Regarding job creation, we measure an intention to treat. This means that we do not have to worry about a non-random selection of single mothers into the treatment and that we take into account the success or failure that municipalities experience in finding jobs for single mothers, but that we may underestimate the potential effectiveness of job creation. Welfare expenditures are reduced by the experiment. The earnings disregard significantly reduced welfare benefits for immigrant single mothers with the youngest child between 0 and 4 years. That is because labor force participation increased for this group and almost no disregards had to be paid to mothers that would also have worked without the financial incentive. Income increased significantly for immigrant single mothers with the youngest child between 5 and 11 years. This also implies favorable effects on the children in these households. Both the earnings disregard and job creation do not provide incentives to flow out of welfare in the short run, but fortunately they also did not reduce outflow from welfare (the attractiveness of the instruments may keep single mothers in welfare). An important note that we have to make is that because of the experiment, some extra attention has been paid to single mothers in the treatment group who were living in treatment municipalities. That is, some of these mothers got an individual appointment with a case manager of the municipality to inform them about the experiment and review their situation.

Remarkably, the instruments had a stronger effect on immigrant single mothers than on native single mothers. The lack of effects for native single mothers could have to do with the situation in the labor market. Namely, during the period of the experiment there was little or no job growth in the Netherlands which could have influenced the results. On the other hand, the labor market position of immigrant single mothers on welfare was so weak that it could only improve by providing the right incentives. Maybe, it is not the immigrant status itself that causes a higher receptiveness to the instruments. For example, if immigrant single mothers have a lower education level on average, and the effect of the instruments are higher for lower-educated single mothers, this may also explain the difference. Finally, maybe low wage individuals feel more attracted by the earnings disregard as they benefit the most (relatively) from the earnings disregard (they may keep a larger share of their income). If this is the case this may also explain the difference between immigrant and native single mothers, when wage rates are on average lower for immigrant single mothers than for native single mothers.

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Table 1: Yearly inflow of single mothers in welfare (start of new spells)

		2005	2006	2007	2008	2009	2010	Total
Treatment	Treatment group	1319	1219	1151	1104	1292	1370	7455
municipality	Control group	145	158	156	173	247	268	1147
Control	Treatment group	10707	9230	8252	8195	9425	9706	55515
municipality	Control group	1105	1144	1220	1286	1895	2047	8697
Total		13276	11751	10779	10758	12859	13391	72814

Note: Treatment municipality = municipality that implemented the instruments; control municipality= all other Dutch municipalities; treatment group = single mothers with children younger than 12 years; control group = single mothers with all children 12 years or older.

Table 2: Number of welfare spells per single mother

| | Treatment municipality | | | | Control municipality | | | |
| | Treatment group | | Control group | | Treatment group | | Control group | |
# spells	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	5584	86.3	854	88.4	41288	85.6	6650	90.3
2	767	11.9	96	9.9	6206	12.9	650	8.8
3	107	1.7	13	1.4	680	1.4	61	0.8
4	12	0.2	3	0.3	72	0.2	6	0.1
5	3	0.1	0	0	5	0.0	1	0.0
Total	6473	100	966	100	48251	100	7368	100

Note: Treatment municipality = municipality that implemented the instruments; control municipality= all other Dutch municipalities; treatment group = single mothers with children younger than 12 years; control group = single mothers with all children 12 years or older.

Table 3: **Characteristics of the sample**

	Treatment municipalities				Control municipalities			
	Control period		Treatment period		Control period		Treatment period	
	Treatment group	Control group	Treatment group	Control group	Treatment group	Control group	Treatment group	Control group
Average age	32.5	38.3	33.4	41.7	33.2	39.3	34.2	42.9
Average age youngest child	4.0	13.8	4.5	13.9	4.2	13.8	4.7	13.9
Average number of children	1.9	1.7	1.9	1.6	1.9	1.8	2.0	1.7
% Unmarried	50.9	40.2	53.9	36.6	43.7	33.3	46.7	26.5
% Divorced	26.1	41.1	30.3	47.8	30.1	45.0	34.6	57.2
% Married	22.5	17.4	15.2	15.0	25.4	20.1	18.0	15.2
% Widowed	0.4	1.2	0.4	0.6	0.5	1.3	0.5	1.1
% Cohabiting	0.1	0.0	0.2	0.1	0.3	0.2	0.2	0.1
% First generation non-western immigrants	34.9	25.7	36.7	33.3	31.0	24.1	33.3	30.3
% Second generation non-western immigrants	6.9	4.4	8.8	3.4	5.0	3.3	6.4	2.4
% Immigrants from Western countries	10.4	13.7	10.2	13.6	10.5	12.3	10.7	12.4
% Receiving alimony	10.7	12.5	11.8	15.7	14.8	15.6	16.0	18.6
% Home owner	3.7	3.9	3.7	3.7	3.6	3.4	2.9	3.3

Note: Treatment municipality = municipality that implemented the instruments; control municipality = all other municipalities; treatment period = 2009-2010; control period = 2005-2008; treatment group = single mothers with children younger than 12 years; control group = single mothers with all children 12 years or older.

Table 4: Treatment effects – exploratory analysis

		Immigrants			Natives		
		Treatment group	Control group	ΔΔ	Treatment group	Control group	ΔΔ
a. Part-time work after two years							
Treatment municipality	Treatment period	0.23	0.14		0.28	0.29	
	Control period	0.19	0.33		0.34	0.36	
	Δ	0.04	-0.19	0.23	-0.06	-0.07	0.01
Control municipality	Treatment period	0.14	0.19		0.28	0.28	
	Control period	0.18	0.27		0.34	0.36	
	Δ	-0.04	-0.08	0.04	-0.06	-0.08	0.02
	ΔΔΔ			0.19			-0.01
b. Outflow from welfare after two years							
Treatment municipality	Treatment period	0.41	0.40		0.49	0.49	
	Control period	0.54	0.69		0.60	0.75	
	Δ	-0.13	-0.29	0.16	-0.11	-0.26	0.15
Control municipality	Treatment period	0.41	0.42		0.48	0.49	
	Control period	0.50	0.65		0.61	0.72	
	Δ	-0.09	-0.23	0.14	-0.13	-0.23	0.10
	ΔΔΔ			0.02			0.05
c. Earnings							
Treatment municipality	Treatment period	197.1	212.3		307.1	364.0	
	Control period	204.1	286.0		340.9	420.1	
	Δ	-7.0	-73.7	66.7	-33.8	-56.1	22.3
Control municipality	Treatment period	185.1	240.5		343.8	390.8	
	Control period	212.9	293.9		361.8	422.8	
	Δ	-27.8	-53.4	25.6	-18.0	-32.0	14.0
	ΔΔΔ			41.1			8.3
d. Welfare Benefits							
Treatment municipality	Treatment period	945.4	933.3		881.1	814.6	
	Control period	915.8	834.9		848.8	743.6	
	Δ	29.6	98.4	-68.8	32.3	71.0	-38.7
Control municipality	Treatment period	953.3	912.5		840.4	790.9	
	Control period	912.9	833.8		792.5	713.3	
	Δ	40.4	78.7	-38.3	47.9	77.6	-29.7
	ΔΔΔ			-30.5			-9.0
e. Earnings + Welfare Benefits							
Treatment municipality	Treatment period	1142.5	1145.6		1188.2	1178.7	
	Control period	1119.8	1120.9		1189.6	1163.7	
	Δ	22.7	24.7	-2.0	-1.4	15.0	-16.4
Control municipality	Treatment period	1138.4	1153.0		1184.2	1181.7	
	Control period	1125.8	1127.7		1154.3	1136.1	
	Δ	12.6	25.3	-12.7	29.9	45.6	-15.7
	ΔΔΔ			10.7			-0.7

Note: This table provides an indication of the treatment effect using a triple difference approach; Δ = first difference; $\Delta\Delta$ = Difference in differences; $\Delta\Delta\Delta$ = Triple difference. Treatment municipality = municipality that implemented the new policy; control municipality = all other Dutch municipalities; treatment group = single mothers with children younger than 12 years; control group = single mothers with all children 12 years or older. Natives are defined as native Dutch or Western immigrants. Earnings and welfare benefits in €per month.

	Immigrants		Natives	
Variable	Coeff.	S.E.	Coeff.	S.E.
I. Total treatment effects				
a. Time to (part-time) employment	1.778***	0.575	-0.130	0.310
b. Outflow from welfare	0.237	0.290	-0.120	0.158
c. Earnings	0.095***	0.033	0.062**	0.031
d. Welfare benefits	-0.051*	0.030	-0.035	0.029
e. Income (earnings + welfare benefits)	0.044**	0.023	0.027	0.024
II. Heterogeneous treatment effects				
a. Time to (part-time) employment				
Earnings disregard	1.592**	0.629	-0.247	0.319
Job creation	0.486	0.617	0.562	0.383
b. Outflow from welfare				
Earnings disregard	0.369	0.314	-0.143	0.162
Job creation	-0.544	0.387	0.086	0.211
c. Earnings				
Earnings disregard	0.083**	0.032	0.049	0.031
Job creation	0.065*	0.036	0.078**	0.038
d. Welfare benefits				
Earnings disregard	-0.038	0.030	-0.025	0.029
Job creation	-0.055*	0.031	-0.057*	0.033
e. Income (earnings + welfare benefits)				
Earnings disregard	0.045*	0.024	0.025	0.025
Job creation	0.010	0.024	0.020	0.026

Table 5: Parameter estimates treatment effects

Note: Earnings, welfare benefits and income in €1000 per month. Natives are defined as native Dutch or Western immigrants. Panel b shows the estimated treatment effect of the earnings disregard and the estimated treatment effect of job creation on top of the earnings disregard.

Table 6: Parameter estimates treatment effects: differentiated by age of the youngest child

	Immigrants				Natives			
Age youngest child	0-4		5-11		0-4		5-11	
Variable	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
a. Time to (part-time) employment								
Earnings disregard	1.444**	0.649	1.801***	0.654	-0.262	0.349	-0.228	0.346
Job creation	0.655	0.640	0.310	0.648	0.544	0.411	0.595	0.415
b. Outflow from welfare								
Earnings disregard	0.316	0.327	0.442	0.341	-0.157	0.178	-0.122	0.178
Job creation	-0.529	0.407	-0.579	0.428	-0.056	0.230	0.240	0.233
c. Earnings								
Earnings disregard	0.096***	0.033	0.076**	0.034	0.043	0.033	0.061*	0.034
Job creation	0.049	0.037	0.079**	0.039	0.094**	0.039	0.061	0.041
d. Welfare benefits								
Earnings disregard	-0.055*	0.031	-0.023	0.031	-0.006	0.031	-0.047	0.031
Job creation	-0.033	0.033	-0.076**	0.033	-0.057*	0.035	-0.057	0.036
e. Income (earnings + welfare benefits)								
Earnings disregard	0.041	0.026	0.053**	0.025	0.036	0.027	0.014	0.027
Job creation	0.016	0.025	0.003	0.026	0.037	0.028	0.004	0.028

Note: Earnings, welfare benefits and income in €1000 per month. Natives are defined as native Dutch or Western immigrants. This table shows the estimated treatment effect of the earnings disregard and the estimated treatment effect of job creation on top of the earnings disregard.

Figure 1: **Budget constraint with and without earnings disregard**

Weekly Earnings
and Benefits

A

E

D

255
Euro

4 Euro per hour

225
Euro

C

B

7.50 hours

7.50 Euro per hour

O
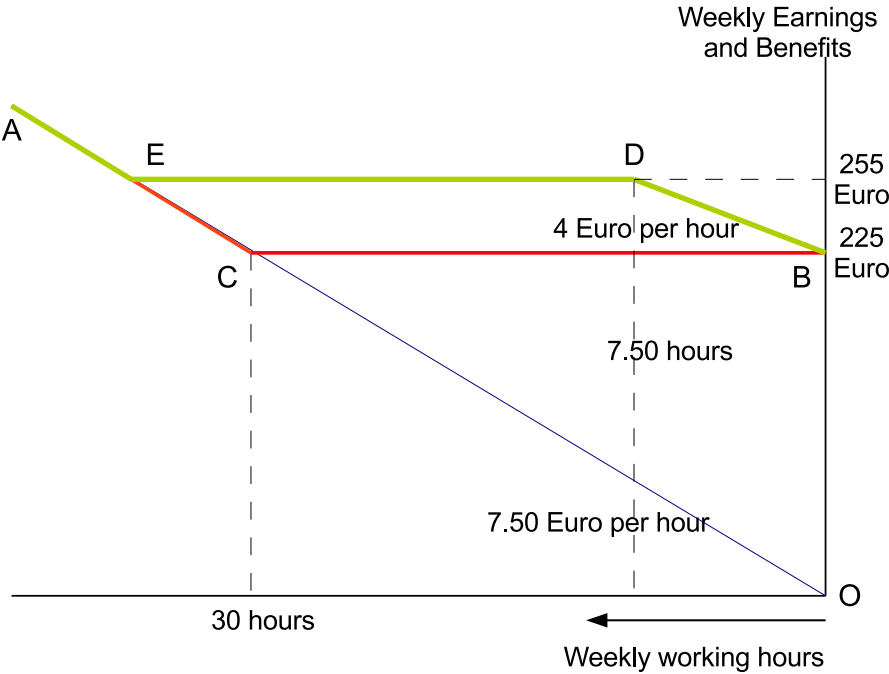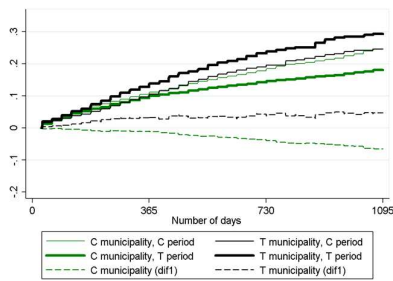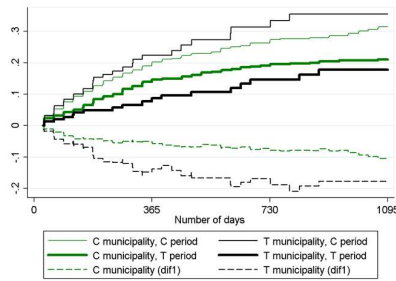
30 hours

Weekly working hours

Figure 2: Share of single mothers working part-time by duration of the welfare benefits spell - immigrants and natives
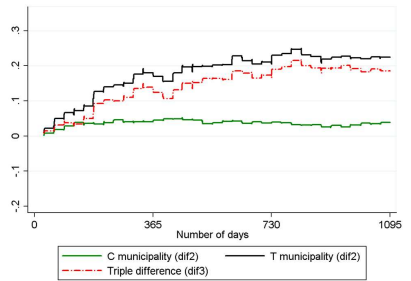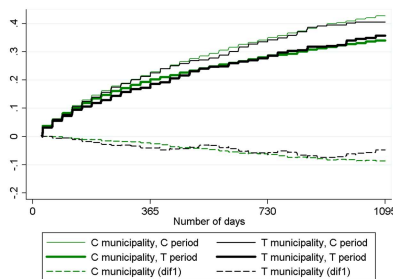
<u>Immigrants</u>
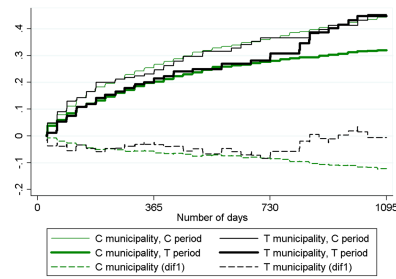

(a) Treatment group

(b) Control group
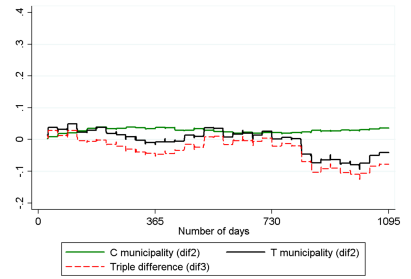
(c) Triple difference
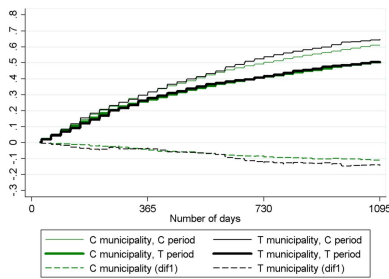
<u>Natives</u>

(d) Treatment group

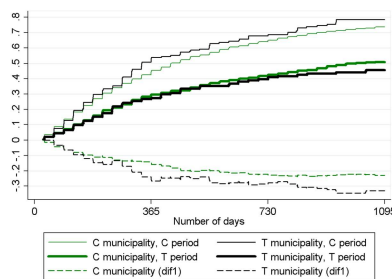(e) Control group

(f) Triple difference

Figure 3: Outflow of single mothers from welfare benefits - immigrants
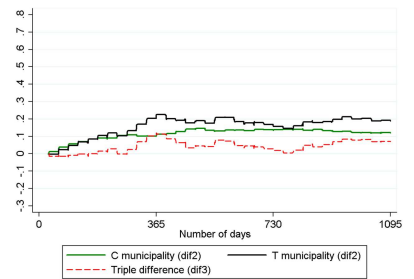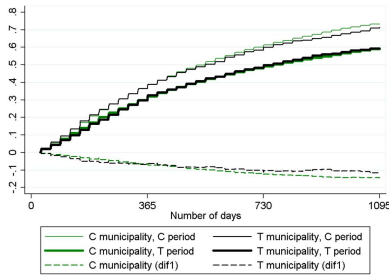
a. <u>Immigrants</u>

(a) Treatment group

(b) Control group
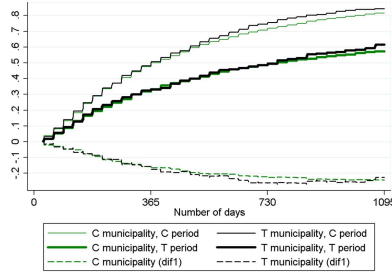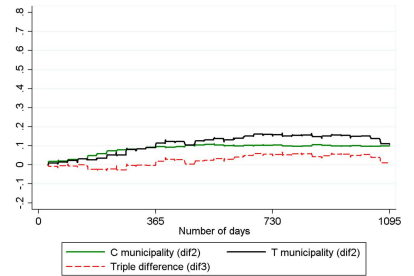

(c) Triple difference

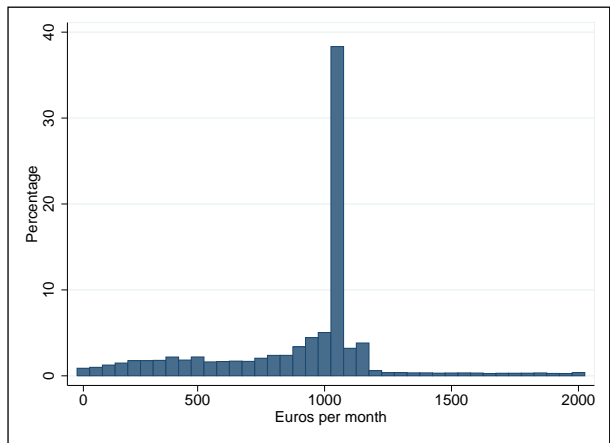b. <u>Natives</u>

(d) Treatment group
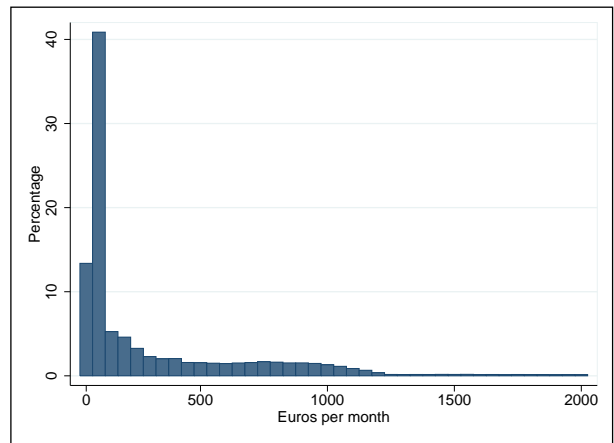

(e) Control group

(f) Triple difference

Figure 4: **Distribution of welfare benefits and income from other sources**

(a) Welfare benefits

(b) Income from other sources

A Extended estimation results

Table A.1: Time to employment and outflow from welfare

| Variable | Time to part-time employment | | | | Outflow from welfare | | | |
| | Immigrants | | Natives | | Immigrants | | Natives | |
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
G	-0.073	0.116	-0.035	0.069	-0.011	0.077	0.053	0.037
M · G	-0.107	0.241	0.007	0.177	-0.129	0.150	-0.020	0.084
T	-0.564***	0.111	-0.429***	0.068	-0.853***	0.074	-0.819***	0.035
M · T	-0.975*	0.560	0.212	0.283	-0.254	0.272	0.179	0.142
G · T	0.190*	0.113	0.182***	0.068	0.398***	0.074	0.276***	0.036
G · M · T	1.778***	0.575	-0.130	0.310	0.237	0.290	-0.120	0.158
Welfare 30-60 days	0.046	0.105	-0.025	0.057	0.047	0.101	0.065	0.059
Welfare 61-90 days	-0.359***	0.108	-0.288***	0.057	0.263***	0.095	0.377***	0.055
Welfare 91-180 days	-0.270***	0.095	-0.390***	0.052	0.105	0.088	0.592***	0.050
Welfare 181-365 days	-0.510***	0.094	-0.754***	0.054	-0.071	0.087	0.576***	0.050
Welfare 366-730 days	-0.739***	0.099	-1.018***	0.060	-0.292***	0.089	0.402***	0.052
Welfare > 730 days	-0.998***	0.108	-1.303***	0.073	-0.559***	0.094	0.125**	0.059
Age	0.157***	0.021	0.070***	0.012	-0.043***	0.012	-0.001	0.007
Age^2	-0.002***	0.000	-0.001***	0.000	0.000**	0.000	0.000***	0.000
Age youngest child	0.067***	0.017	0.051***	0.011	-0.079***	0.010	-0.014**	0.006
Age youngest child^2	-0.001	0.001	-0.002**	0.001	0.007***	0.001	0.004***	0.000
# Children	-0.124***	0.020	-0.121***	0.015	-0.033***	0.012	-0.056***	0.008
Unmarried	0.298***	0.043	-0.014	0.027	-0.069**	0.027	-0.251***	0.016
Widow	-0.104	0.197	-0.707**	0.274	-0.004	0.120	0.081	0.101
First gen. immigrant	-0.331***	0.053			-0.153***	0.033		
Western immigrant			-0.143***	0.032			-0.097***	0.017
Alimony	0.521***	0.064	0.387***	0.027	0.243***	0.043	-0.408***	0.019
Homeowner	0.209	0.152			0.294***	0.097	0.213***	0.033
Constant	-10.256***	0.393	-7.809***	0.228	-5.754***	0.234	-6.425***	0.129
θ	0.418***	0.148	0.231***	0.084	0.062	0.062	0.065***	0.023
# Individuals	20020		30172		22150		40132	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: G = target group, M = treatment municipality, T = treatment period, P = treatment municipality with job creation. In this model we also included year dummies, treatment municipality dummies, dummies indicating the cause of welfare, and correction terms for treatment municipalities with a reemployment bonus. Unfortunately we do not have information about reemployment bonuses in control municipalities. However, for all treatment municipalities we know whether and in which years they provided reemployment bonuses to the control group and the treatment group. To correct for this we include interactions of year and the provision of a reemployment bonus (yes=1, no=0). In addition, we allow these effect to be different for the treatment and the control group. Finally, natives are defined as native Dutch or Western immigrants.

Table A.2: Earnings and Welfare Benefits

Variable	Earnings Immigrants Coeff.	S.E.	Earnings Natives Coeff.	S.E.	Welfare benefits Immigrants Coeff.	S.E.	Welfare benefits Natives Coeff.	S.E.	Earnings + Benefits Immigrants Coeff.	S.E.	Earnings + Benefits Natives Coeff.	S.E.
G	-19.15*	9.88	-9.54	8.09	14.26	8.86	-1.06	7.37	-4.89	6.27	-10.61*	5.45
M · G	2.25	31.86	-8.20	24.74	-1.99	28.23	9.07	21.33	0.26	18.13	0.87	17.21
T	-62.73***	10.75	-2.57	7.60	71.29***	10.00	143.20***	6.91	8.57	7.81	140.62***	5.53
M · T	-89.35***	30.80	-75.33***	28.23	64.62**	28.71	21.33	26.76	-24.74	21.44	-54.01**	22.95
G · T	31.15***	9.50	20.12***	7.37	-53.56***	8.58	-40.50***	6.57	-22.41***	5.78	-20.38***	4.88
G · M · T	95.22***	32.60	62.31**	31.14	-50.76*	29.86	-35.09	29.40	44.46**	22.50	27.22	24.27
Welfare 30-60 days	-17.45***	5.79	-10.80**	5.03	-26.80***	7.40	-25.41***	5.48	-44.24***	8.49	-36.21***	6.88
Welfare 61-90 days	-36.34***	4.33	-26.07***	3.70	-134.04***	5.88	-82.32***	4.23	-170.37***	6.74	-108.39***	5.33
Welfare 91-180 days	-85.05***	4.63	-97.26***	3.93	-206.98***	6.08	-180.22***	4.45	-292.03***	7.02	-277.48***	5.64
Welfare 181-365 days	-87.89***	4.88	-105.30***	4.18	-207.93***	6.20	-190.94***	4.61	-295.82***	7.16	-296.24***	5.76
Welfare 366-730 days	-99.94***	5.12	-122.47***	4.47	-184.34***	6.29	-160.72***	4.80	-284.29***	7.15	-283.19***	5.78
Welfare longer than 730 days	-107.72***	5.40	-133.84***	4.79	-148.65***	6.29	-114.55***	4.87	-256.37***	6.85	-248.39***	5.47
Age	21.71***	1.71	26.91***	1.69	17.15***	1.85	17.82***	1.71	38.86***	1.43	44.74***	1.36
Age^2	-0.24***	0.02	-0.32***	0.02	-0.24***	0.03	-0.24***	0.02	-0.48***	0.02	-0.56***	0.02
Age youngest child	2.31*	1.22	4.73***	1.33	-1.21	1.14	-7.51***	1.20	1.10	0.83	-2.78***	0.91
Age youngest child^2	0.08	0.10	-0.14	0.10	-0.29***	0.10	0.01	0.09	-0.21***	0.07	-0.13**	0.07
# Children	-18.21***	1.51	-31.19***	1.91	8.90***	1.35	16.06***	1.70	-9.31***	0.89	-15.13***	1.17
Unmarried	7.95**	3.75	-21.62***	4.08	6.27*	3.27	24.64***	3.54	14.22***	2.08	3.02	2.18
Widow	32.20	22.03	34.75	35.35	-35.01*	19.80	-37.26	31.85	-2.81	8.67	-2.51	12.15
First generation immigrant	-21.48***	4.66			6.73	4.30			-14.74***	3.14		
Western immigrant			-33.63***	4.53			24.69***	3.98			-8.94***	2.51
Alimony	243.02***	7.15	227.70***	3.84	-177.57***	6.22	-153.95***	3.40	65.46***	4.20	73.76***	2.26
Homeowner	42.63**	16.80	17.74*	9.06	-41.45***	14.50	-11.26	7.84	1.19	10.86	6.48	5.84
Constant	-110.54***	29.94	-103.05***	29.47	807.19***	33.34	602.83***	30.33	696.65***	27.54	499.78***	25.32
# Individuals	22177		38614		22177		38614		22177		38614	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: G = target group, M = treatment municipality, T = treatment period, P = treatment municipality with job creation. In this model we also included year dummies, treatment municipality dummies, dummies indicating the cause of welfare, and correction terms for treatment municipalities with a reemployment bonus. Unfortunately we do not have information about reemployment bonuses in control municipalities. However, for all treatment municipalities we know whether and in which years they provided reemployment bonuses to the control group and the treatment group. To correct for this we include interactions of year and the provision of a reemployment bonus (yes=1, no=0). In addition, we allow these effect to be different for the treatment and the control group. We only take into account observations for which welfare benefits and earnings are lower than €2000 per month. Finally, natives are defined as native Dutch or Western immigrants.