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GHAZALA NAZ

EFFECT OF CASH-BENEFIT REFORM ON IMMIGRANTS' LABOUR SUPPLY AND EARNINGS

Department of Economics
UNIVERSITY OF BERGEN

Effect of Cash-Benefit Reform on Immigrants' Labour Supply and Earnings

by

Ghazala Naz

Department of Economics, University of Bergen, Norway
(Fax: +47-55-589210; e-mail:ghazala.naz@econ.uib.no)

Abstract. This paper evaluates the impact of a recent Norwegian family-policy reform on the labour supply of native and three groups of immigrant women in Norway. The reform provides cash benefits to families with one- to three-year-old children, who do not utilize state-subsidized day-care centres. We find that natives and non-Western immigrants quit the labour market. However, the effect is trivial for natives whereas it is more significant for immigrants. Given participation, earnings of natives and all groups of female immigrants fell after the cash-benefit reform. Specifically, earnings of non-Western immigrants fell by more than those of natives and OECD immigrants.

JEL Classifications: I38, J18, J22

Key Words: Cash-benefit Reform, Integration policy, Immigrants

1. Introduction

An important feature of Scandinavian welfare states is the transfer of resources to families with children. Long parental leaves and provision of high quality subsidized day care are important policies in this regard. Empirical studies suggest that these policies have encouraged labour force participation of women with young children (see, for instance, Gustafsson and Stafford 1992; Gustafsson et al. 1996; Kravdal 1996; Rønsen and Sundström 1996; Kenjoh 2005).

In the spring of 1998, the Norwegian government introduced cash benefits of up to NOK 3,000 (approximately € 400) per month to those parents with one- to three-year-old children who did not utilize state-subsidized day-care facilities. This amount is roughly equivalent to the state subsidy per child given to day-care centres. Parents who utilize some, but not all, day-care facilities are entitled to receive a proportionally lower cash benefit (see Table A in the Appendix). The cash benefits are neither taxable nor tested against the parents' labour-market participation or income. It is therefore quite possible for both parents to work while receiving benefits. Nevertheless, these benefits increase the relative costs of child-care centres for parents. Evidence suggests that high child-care costs may have a negative effect on married women's labour force participation (see, for instance, Blau and Robins 1988; Chiuri 2000; Klerman and Leibowitz 1990; Leibowitz et al. 1992; Powell 1997; Ribar 1992).

A number of previous studies have compared women's labour force participation before and after the cash-benefit reform of 1998. Hellevik (2000) and Rønsen (2001) report that mothers shifted from full-time work to part-time work following the introduction of cash benefits. Langset et al. (2000) estimate that the labour supply of working women with young children

was reduced most in the health sector. Håkonsen (2001) finds that cash benefits reduced females' professional capacity (defined as the percentage of women in the labour force) by 5 percentage points. Schøne (2004) testifies that mothers with 1–3 year old children reduce labour supply by 4 percent and reduce time spent in the labour market by 3 percent. Naz (2004) finds that cash-benefit reform increases specialization between wives and husbands by 3.3 hours per week.

Nevertheless, all the previous studies investigate the effect of the cash-benefit reform only on native Norwegians; however, the number of immigrants is growing rapidly in Norway. At the beginning of 1990, immigrants were 4 percent of the total population but this percentage amounted 8.3 percent in 2006 (Statistics Norway 2006). Almost 75 percent of immigrants are from non-Western countries that are male-dominated societies. Their values may come into sharp conflict with the Norwegian ideal of equality. Even though, compared with other European countries such as France and Great Britain, Norway has proportionately fewer immigrants, immigration and the new, multi-ethnic, nature of the community have nevertheless a central place in political debate. Labour force participation of non-Western female immigrants is quite low compared with native Norwegians and OECD immigrants. Integrating immigrants in the society in general and specifically in the labour market is one of the more important public policies. Opponents of cash-benefit reform argue that the reform of 1998 may have had a detrimental impact on the integration of female immigrants in the labour market. Whether the cash-benefit reform affects the labour supply of non-Western female immigrants is an empirical question that we address in this paper.

Using register data, we evaluate the effect of cash-benefit reform on labour supply of four different groups of women: native Norwegians, women from OECD countries, East European

and Asian or African immigrants. We evaluate two aspects of women's working behaviour: participation in the labour market and earned income given participation. Evidence suggests that the cash-benefit reform did not affect the wages of young children's mothers (see Schøne 2005). We therefore believe that a negative (positive) change in earned income of women because of cash-benefit reform indicates a negative (positive) change in their working hours.

The literature on household economics suggests that schooling raises earnings and productivity in the market sector, which establishes a positive association between females' education and their labour force participation (see, for instance, Becker 1985; Becker 1991). Nilsen et al. (2000) find that women with more education, experience, and income are significantly less likely to quit their jobs in Norway. However, our previous findings show that, because of the cash-benefit reform, the labour supply of highly educated native Norwegian mothers fell by more than that of mothers with less education (See Naz 2004). In the previous paper, we used survey data collected immediately after the reform whereas in this paper we use register data and estimate the change in mothers' labour supply two years after the reform.[1] We believe that short- and long-span responses to any type of reform may differ. As mothers' education is one of the important determinants of their labour supply, we also investigate the effect of the reform with respect to education for natives as well as for immigrants.

The rest of the paper is as follows. Section 2 specifies the econometric model used to evaluate the effect of the reform. Section 3 reports the data sources and explains our sample. We examine how the cash-benefit reform affects labour force participation and earnings of

[1] In addition, in our previous paper, labour supply was measured as the number of working hours whereas, in this paper, we estimate participation in the labour market and the earnings of women by level of participation.

women given participation in section 4. Section 5 explains the empirical findings and concludes the paper.

2. Econometric Specification

We are interested in evaluating the impact of the cash-benefit reform of 1998 on labour force participation and earned income of native as well as immigrant mothers. For this purpose, we use a *difference in difference* estimator, as defined and specified in this section. Let Y be the outcome variable[2] and consider the following definitions:

Y_{it}^{*} = level of outcome variable for female i who has a one- to three-year-old child at time t if the cash-benefit reform had not been introduced;

Y_{it}^{**} = level of outcome variable for female i who has a one- to three-year-old child at time t after the cash-benefit reform was introduced.

The difference between these two outcomes is the effect of the reform, denoted by α:

$$\alpha = Y_{it}^{**} - Y_{it}^{*} . \qquad (1)$$

Our aim is to obtain an estimator of α, the effect of the reform. The difficulty is that we cannot observe Y_{it}^{*} directly for mothers with a one- to three-year-old child because cash benefits have already been introduced. The economic literature uses a wide range of estimators to address this type of evaluation problem (see, for instance, Heckman and Robb 1985; Moffitt 1991; Heckman et al. 1999). Here, we use the difference in difference estimator. We consider mothers with a one- to three-year-old child as a *treatment group* and

women with a child four to six years old as a *comparison group*, and obtain the reform's effect by estimating the difference between Y_{it}^{**} and Y_{it}^{*} for the treatment and comparison group, respectively. Consider the estimator:

$$\tilde{\alpha} = (\overline{Y}_{it}^{**} \mid d = 1) - (\overline{Y}_{it}^{*} \mid d = 0), \tag{2}$$

where $d = 1$ if a woman has a child aged from one to three, and $d = 0$ if a woman has a child aged four to six years old. $\overline{Y}_{it}^{**} \mid d = 1$ and $\overline{Y}_{it}^{*} \mid d = 0$ are the corresponding average values of Y_{it}.

However, the estimator defined in (2) is likely to be biased because:

$$\overline{Y}_{it}^{*} \mid d = 1 \neq \overline{Y}_{it}^{*} \mid d = 0. \tag{3}$$

Even in the absence of cash benefits, the level of outcome variable for women with a child aged from one to three would probably differ from that of women with a child aged from three to six. This is mainly because females' labour supply may vary with the age of their children. We can address this potential selection-bias problem by using the cohort data from the pre-reform to the post-reform period. We use the following difference in difference estimator to estimate the effect of the reform:

$$\hat{\alpha} = (\overline{Y}_{it}^{**} - \overline{Y}_{it-1}^{*} \mid d = 1) - (\overline{Y}_{it}^{*} - \overline{Y}_{it-1}^{*} \mid d = 0), \tag{4}$$

where $\overline{Y}_{it}^{**} - \overline{Y}_{it-1}^{*} \mid d = 1$ is the change in Y between the pre-reform and post-reform periods for the treatment group, and $\overline{Y}_{it}^{*} - \overline{Y}_{it-1}^{*} \mid d = 0$ is the corresponding change in Y for the comparison group.

[2] The outcome labour force participation is a latent variable that takes the value of 1 if woman is employed and 0 if she is not employed.

The identification assumption is that the change in the treatment and comparison groups between the pre-reform and post-reform periods would have been the same in the absence of the reform; that is:

$$(\overline{Y}_{it}^{*} - \overline{Y}_{it-1}^{*} \big| d = 1) = (\overline{Y}_{it}^{*} - \overline{Y}_{it-1}^{*} \big| d = 0), \tag{5}$$

where *t–1* is the pre-reform period and *t* is the post-reform period.

To calculate $\hat{\alpha}$, we may estimate the following equation:

$$Y_i = \beta_0 + \beta_1 d_1 + \beta_2 d_2 + \beta_3 d_1 d_2 + \varepsilon, \tag{6}$$

where $d_1 = 1$ if the treatment group, $d_1 = 0$ if the comparison group, and $d_2 = 1$ if the time period is after the reform; and $d_2 = 0$ if the time period is before the reform. Substituting (6) into (4) we obtain the reform's effect equal to β_3.

To determine whether the effect of the cash-benefit reform depends on women's schooling, we estimate the following equation:

$$Y_i = \beta_0 + \beta_1 d_1 + \beta_2 d_2 + \beta_3 d_1 d_2 + \gamma_0 x \ + \gamma_1 d_1 x + \gamma_2 d_2 x + \gamma_3 d_1 d_2 x + v, \tag{7}$$

where $x = 1$ if the education level is high (more than 12 years of schooling) and $x=0$ if the education level is low (12 or less than 12 years of schooling). The estimator of the effect of the reform for highly educated women is equal to $\beta_3 + \gamma_3$.

To estimate the effect of the cash-benefit reform on earnings, we run linear regressions. However, to evaluate the effect of the reform on labour force participation, we run probit regressions as the outcome is a latent variable taking the value 1 if the woman is employed and 0 if she is not employed.

3. Data and Sample

Our data are extracted from the FD-Trygd database, which contains information about the total Norwegian population aged 16–67. The data include information from several public registers, merged by Statistics Norway. The database is organized in an event-oriented fashion; i.e. records are added when an individual's status in a register changes. It states the per annum income and qualification of each person and gives relatively detailed background information on each individual, including income, age, and education of the spouse. FD-Trygd currently covers the period from 1992 to 2002. Our sample comprises married and cohabitating women. The family status of some cohabitating women may not be registered correctly in the data. Many cohabitating women are registered as singles. Our sample includes only those females who are registered as cohabitants. Most likely, singles would behave differently than would cohabitants; therefore, we exclude singles from our analyses as we do not know whether they are really singles or cohabitants. Moreover, we also intend to evaluate the effect of cash benefits on spouses' (male cohabitants') labour supply.

We split our sample into treatment and comparison groups and define women with a child aged one to three as the treatment group and women with a child age four to six as the comparison group. To evaluate the effect of the reform of 1998, we form a pseudo panel of treatment and comparison groups and compare their labour force participation and earned income in the year 1997 (i.e. pre-reform period) to those in the year 2000 (i.e. post-reform period) as discussed in Section 2. The use of a pseudo panel enables us to control for the effects of childbirth and provides relatively unbiased information on the effect of the cash-benefit reform only. A genuine panel tracks the same individuals over time, whereas a pseudo panel tracks cohorts/groups over time (see Deaton 1985 for details of pseudo panels). The

pseudo panel of the treatment group in our sample comprises women who gave birth to a child either in the year 1995 or in the year 1998. The pseudo panel of the comparison group comprises women who gave birth to a child either in 1993 or in 1996.

To define our dependent variables, i.e. market work and earnings, we use income files of the year 1997 and year 2000. We consider all women who had no income as non-participants in the labour market. We exclude women whose labour incomes or education levels were missing.

Table 1 shows the mean values for work and education of the four groups of women and their spouses of our total sample.[3] The percentage of women in the labour market and percentage of women with higher education[4] is highest among natives and lowest among Asian-African immigrants. Table 1 also illustrates that, for natives and OECD immigrants, the labour force participation rates of the treatment and the comparison groups are almost the same in the pre-reform and the post-reform periods. However, among East European and Asian-African immigrant women, the labour force participation of the comparison group in the post-reform period is much higher than that of the treatment group.

[Table 1 about here]

First, we investigate the effect of the cash-benefit reform on labour market participation of women and thereafter on working women's earnings, i.e. women with positive income. The

[3] Our sample comprises married as well as cohabitating women who are registered as cohabitants. Moreover, registered cohabitants with children probably behave like married couples and are treated as married couples as far as public policies are concerned. Nevertheless, we run separate regressions on married and cohabitant women, but get similar results. Therefore, we do not differentiate between married and cohabitating couples. We deem that cohabitating males are husbands.

mean values of education and income of working women are illustrated in Table 2. The mean value of income is highest for OECD immigrants and lowest for Asian-African women.

[Table 2 about here]

Comparing treatment and comparison groups, we see in Table 2 that mean values of income are not very different between these groups in the pre-reform period whereas in the post-reform period the mean values of income of the comparison group are much higher than those of the treatment group.

Our descriptive statistics show the negative effect of the cash-benefit reform on labour force participation of East European and Asian-African women and the negative effect on income of all working women. In the next section, we illustrate the results by running regressions to see whether these effects are statistically significant and how they change with respect to women's schooling. Mean values of women's labour force participation and earnings with respect to women's schooling are in the Appendix (See Tables B and C).

5. Regression Results

Effect of Cash Benefits on Labour Force Participation

The main objective of our research is to evaluate the impact of the reform of 1998 on natives as well as immigrant mothers. First, we investigate whether women stay in or quit the labour market because of cash benefits. For this purpose, we run separate probit regressions for natives and each group of immigrants. We show the marginal effects in Table 3.

[4] More than 12 years of schooling is defined as higher education and schooling equal to or lower than 12 years is defined as lower education.

We find that the reform of 1998 does not affect the labour force participation of OECD women and the effect on natives is also trivial. However, 6 percent of non-Western immigrants quit the labour market because of the cash-benefit reform. Since the labour supply of non-Western immigrants is already low, the negative change of 6 percent is quite significant.

To determine whether the effect on labour force participation of the cash-benefit reform depends on the education level of women, we run probit regressions that interact with our independent variable with dummies for mothers' education. Table 4 illustrates the marginal effects. We see that, among natives, the effect of the reform does not vary with respect to education level. One percent of lower as well as higher educated native women quit the labour market. Nevertheless, among non-Western immigrants, it is only lower educated women who quit the labour market after the cash-benefit reform. Inclusion of additional variables, e.g. dummies of women's age, husbands' education, and number of children gives us larger coefficients but does not change the basic pattern of our results.

Effect of Cash Benefits on Labour Market Income

Given that some women remain attached to the labour market, we evaluate the effect of cash-benefit reform on their earned income. We run regressions on log income of women, and the results are shown in Table 5. We see that natives as well as immigrant women's earned income reduces, which indicates a decrease in working hours of women because of the cash-benefit reform. It is women from non-Western countries who are more affected. Asian-African women's earnings fall by 18 percent and East Europeans' earnings fall by 21 percent.

Table 6 illustrates how the reform's effect differs with respect to education level. For natives, the lower as well as the higher educated women are affected but the effect is larger for lower educated women. The decrease in earned income is 12 percent for lower educated and 6 percent for higher educated native women. This result is in contrast to our previous findings (Naz 2004), if we presume that a decrease in earnings indicates a reduction in working hours. We conjecture that perhaps lower educated women required more time to respond to the cash-benefit reform as their jobs are less flexible.

Table 6 also illustrates that, among OECD immigrants, only lower educated women's earnings fall after the cash-benefit reform whereas, among non-Western immigrants, the reform affects the earnings of higher educated women. The cash-benefit reform leads to 36 percent, 44 percent, and 35 percent decreases in earnings of lower educated OECD immigrants, higher educated Asian-African, and East European immigrants, respectively. After controlling for dummies of women's age, husbands' education, and number of children, we get slightly larger coefficients for natives and OECD immigrants and slightly smaller coefficients for non-Western immigrants; however, the basic pattern remains the same.

We also ran regressions on labour force participation and earned income of husbands (cohabitants), but we did not find any statistically significant effects (therefore, we do not show the results).

6. Discussion and Conclusion

The main objective of this paper was to evaluate the effect of cash-benefit reform on women from different ethnic backgrounds. We estimated a change in labour market participation and

earned incomes of four groups of women: natives, OECD immigrants, Asian-African, and East European immigrants.

We find that many lower educated women from non-Western countries quit the labour market whereas lower educated women from OECD countries do not quit the labour market but earn less after the cash benefits. As for natives, they also have a greater tendency to reduce earnings rather than to quit the labour market.

The cash-benefit reform does not affect the higher educated OECD immigrants. The effect on higher educated natives is also small but is stronger for non-Western immigrants. We find that higher educated non-Western immigrants reduce their earnings, although they do not quit the labour market because of the reform.

Our results suggest a larger and pronounced effect of the cash-benefit reform on the labour supply of non-Western immigrants compared with natives and OECD immigrants. Even higher educated non-Western female immigrants behave like lower educated OECD immigrants. The greater effect of the cash-benefit reform on non-Western immigrants requires an explanation. We conjecture that non-Western immigrants have different preferences compared with natives and OECD immigrants. Because of social values or lower wages in the labour market, non-western immigrant women may have a stronger preference for leaving the labour force to rear children. The cash-benefit reform increases the relative price of subsidized day care, which leads to a negative effect on the mothers' labour supply for all the groups, but especially on the labour supply of non-Western female immigrants since they have a stronger preference for leaving the labour market compared with natives and OECD

immigrants. However, a full analysis of the different effects of cash-benefit reform on non-Western immigrants requires a richer data set than the one used in this paper.

Even though we are unable to explain the greater effect of the cash-benefit reform on non-Western female immigrants, our results suggest that the cash-benefit reform has a negative effect on integration policies that are intended to increase immigrants' female labour force participation and the use of day care by immigrant children.

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Table 1: Descriptive statistics for all women in our sample

Variable	Mean			
	Child between 1-3		Child between 4-6	
	Before	After	Before	After
Natives				
Woman works	0.86	0.87	0.86	0.88
Husband works	0.91	0.90	0.91	0.90
Woman's education	0.64	0.69	0.60	0.65
Husband's education	0.68	0.74	0.65	0.71
Woman's Age	31.51	32.46	33.80	34.63
Husband's Age	34.17	35.02	36.52	37.27
Married	0.82	0.80	0.85	0.87
Number of children	2.01	2.11	2.17	2.26
# of observations	*32,090*	*24,229*	*26,749*	*22,350*
OECD				
Woman works	0.80	0.83	0.81	0.84
Husband works	0.91	0.91	0.92	0.90
Woman's education	0.59	0.60	0.59	0.60
Husband's education	0.66	0.75	0.68	0.73
Woman's Age	32.38	33.25	34.89	35.61
Husband's Age	34.92	35.86	37.64	38.21
Married	0.86	0.82	0.87	0.88
Number of children	1.96	2.01	2.12	2.21
# of observations	*1,938*	*1,792*	*1,294*	*1,384*
East Europe				
Woman works	0.67	0.70	0.70	0.79
Husband works	0.92	0.90	0.91	0.90
Woman's education	0.39	0.42	0.39	0.41
Husband's education	0.51	0.65	0.46	0.60
Woman's Age	30.56	32.29	32.86	34.03
Husband's Age	35.03	36.57	37.19	37.94
Married	0.93	0.82	0.90	0.86
Number of children	1.96	2.04	2.12	2.16
# of observations	*1,278*	*1,183*	*1,.001*	*1,063*
Asia and Africa				
Woman works	0.51	0.57	0.52	0.64
Husband works	0.90	0.91	0.91	0.90
Woman's education	0.24	0.22	0.26	0.24
Husband's education	0.41	0.51	0.41	0.51
Woman's Age	30.90	31.63	33.07	33.92
Husband's Age	36.50	37.58	38.52	39.35
Married	0.93	0.91	0.88	0.86
Number of children	2.12	2.13	2.10	2.31
# of observations	*1,873*	*1,865*	*1,450*	*1,198*

Table 2: Descriptive statistics for all working women in our sample

Variable	Mean			
	Child between 1-3		Child between 4-6	
	Before	After	Before	After
Natives				
Woman's education	0.65	0.73	0.63	0.69
Husband's education	0.69	0.74	0.65	0.72
Woman's Income (NOK 100)	1 454	1 596	1 519	1 737
Husband's Income (NOK 100)	2770	3145	2796	3138
Woman's Age	31.49	32.41	33.76	34.58
Husband's Age	34.08	34.92	36.48	37.19
Married	0.81	0.80	0.86	0.87
Number of children	1.94	2.04	2.13	2.23
# of observations	*27,597*	*21,079*	*23,004*	*19,891*
OECD				
Woman's education	0.65	0.63	0.65	0.60
Husband's education	0.69	0.74	0.68	0.74
Woman's Income (NOK 100)	1 628	1 780	1 607	1 878
Husband's Income (NOK 100)	2796	3039	2900	3165
Woman's Age	32.33	33.07	34.80	35.04
Husband's Age	34.88	35.50	37.55	37.69
Married	0.84	0.80	0.87	0.87
Number of children	1.88	1.92	2.09	2.16
# of observations	*1,550*	*1,487*	*1,048*	*1,162*
East Europe				
Woman's education	0.48	0.46	0.46	0.43
Husband's education	0.56	0.65	0.53	0.62
Woman's Income (NOK 100)	1 358	1 475	1 407	1 608
Husband's Income (NOK 100)	2785	3147	2890	3147
Woman's Age	31.77	32.35	33.66	33.89
Husband's Age	35.05	36.37	37.13	37.67
Married	0.88	0.84	0.89	0.88
Number of children	1.95	1.95	2.04	2.06
# of observations	*856*	*828*	*707*	*839*
Asia and Africa				
Woman's education	0.32	0.33	0.32	0.33
Husband's education	0.48	0.51	0.47	0.53
Woman's Income (NOK 100)	1 129	1 213	1 153	1 353
Husband's Income (NOK 100)	2748	3141	2940	3258
Woman's Age	31.06	31.42	33.28	33.41
Husband's Age	36.08	37.09	38.69	39.08
Married	0.93	0.91	0.90	0.88
Number of children	1.88	1.88	1.92	2.01
# of observations	*955*	*1,063*	*754*	*778*

Table 3: Effect of cash benefits reform on women's Labour Force Participation

Variables	β_0	t ratio	β_3	t ratio
Natives	0.23	108.51	-0.01	-2.65
# of observations		*105,418*		
OECD	0.22	20.84	0.0002	0.01
# of observations		*6,453*		
East Europe	0.18	12.85	-0.06	-2.20
# of observations		*4,525*		
Asia_Africa	0.02	1.33	-0.06	-2.12
# of observations		*6,386*		

β_0 ***≡constant;*** β_3 ***≡reform's effect***;

Table 4: Effect of cash benefits reform on women's labour force participation with respect to education level

	β_0	t ratio	γ_0	t ratio	β_3	t ratio	γ_3	t ratio	$\beta_3 + \gamma_3$	t ratio
Natives										
No control Variables	0.18	61.17	0.08	19.93	-0.01	-2.29	-0.0005	-0.06	-0.01	-2.69
With control Variables	0.12	29.64	0.07	17.27	-0.01	-2.76	-0.002	-0.24	-0.01	-3.47
OECD										
No control Variables	0.15	9.56	0.13	5.90	0.003	0.11	-0.01	-0.26	-0.01	-0.26
With control Variables	0.08	3.97	0.12	5.56	-0.003	-0.11	-0.01	-0.28	-0.01	-0.51
East Europe										
No control Variables	0.11	6.46	0.20	6.43	-0.07	-2.08	0.02	0.34	-0.05	-1.58
With control Variables	-0.07	-2.84	0.14	4.62	-0.08	-2.36	0.02	0.31	-0.06	-1.56
Asia_Africa										
No control Variables	-0.02	-0.82	0.16	3.78	-0.06	-1.80	-0.04	-0.58	-0.10	-1.10
With control Variables	-0.23	-8.31	0.14	3.34	-0.08	-2.46	0.02	-0.26	-0.06	-1.33

$\beta_0 \equiv$ constant for low education level; $\beta_0 + \gamma_0 \equiv$ constant for high education level; $\beta_3 \equiv$ reform's effect on low educated; $\gamma_3 \equiv$ difference in the effect of the reform for low and high educated; $\beta_3 + \gamma_3 \equiv$ reform's effect on high educated. Control Variables: Dummy if Women's age>30; Dummy if husband's education>12 years; Dummy if number of children>2.

Table 5: Effect of cash benefits reform on women's Log income

Variables	β_0	t ratio	β_3	t ratio
Natives	7.01	876.9	-0.07	-4.54
# of observations		*91,571*		
OECD	6.92	77.41	-0.15	-1.71
# of observations		*5,247*		
East Europe	6.52	81.06	-0.21	-1.69
# of observations		*4,525*		
Asia_Africa	6.62	98.55	-0.18	-1.75
# of observations		*6,386*		

β_0 ***≡constant;*** β_3 ***≡reform's effect***;

Table 6: Effect of cash benefits reform on women's Log income with respect to education level

	β_0	t ratio	γ_0	t ratio	β_3	t ratio	γ_3	t ratio	$\beta_3 + \gamma_3$	t ratio
Natives										
No control Variables	6.73	540.05	0.46	28.80	-0.12	-4.37	0.06	1.84	-0.06	-3.12
With control Variables	6.24	392.86	0.39	24.56	-0.13	-5.09	0.05	1.70	-0.08	-4.42
OECD										
No control Variables	6.70	54.79	0.46	2.61	-0.36	-2.11	0.40	1.64	0.04	0.77
With control Variables	6.04	42.93	0.46	2.63	-0.38	-2.25	0.44	1.79	0.06	0.32
East Europe										
No control Variables	6.38	70.26	0.57	3.15	-0.17	-1.12	-0.27	-0.99	-0.44	-1.93
With control Variables	5.82	51.50	0.45	2.49	-0.18	-1.20	-0.25	-0.94	-0.43	-1.94
Asia_Africa										
No control Variables	6.58	82.21	0.14	1.00	0.06	0.50	-0.41	-1.81	-0.35	-1.81
With control Variables	6.31	60.88	0.12	0.88	0.05	0.42	-0.39	-1.71	-0.34	1.75

$\beta_0 \equiv$ constant for low education level; $\beta_0 + \gamma_0 \equiv$ constant for high education level; $\beta_3 \equiv$ reform's effect on low educated; $\gamma_3 \equiv$ difference in the effect of the reform for low and high educated; $\beta_3 + \gamma_3 \equiv$ reform's effect on high educated. Control Variables: Dummy if Women's age>30; Dummy if husband's education>12 years; Dummy if number of children>2.

Appendix

Table A: Distribution of Cash Benefits by the Use of Subsidized Care

Time per Week in the Day Care	**Cash Benefits per month**
No Day Care	3,303
1-8 hours	2,642
9-16 hours	1,982
17-24 hours	1,321
25-32 hours	661
>32 hours	0

Source: Social Office, Norway

Table B: Women's Education and Work

Variable	Mean			
	Child between 1-3		Child between 4-6	
	Before	After	Before	After
Natives				
Woman works if Education High	0.90	0.90	0.90	0.91
Woman works if Education Low	0.79	0.78	0.81	0.83
# of observations	*32,090*	*24,229*	*26,749*	*22,350*
OECD				
Woman works if Education High	0.87	0.86	0.85	0.87
Woman works if Education Low	0.70	0.76	0.72	0.78
# of observations	*1,938*	*1,792*	*1,294*	*1,384*
East Europe				
Woman works if Education High	0.83	0.80	0.82	0.84
Woman works if Education Low	0.59	0.62	0.62	0.72
# of observations	*1,278*	*1,183*	*1,.001*	*1,063*
Asia and Africa				
Woman works if Education High	0.70	0.71	0.69	0.79
Woman works if Education Low	0.45	0.52	0.47	0.61
# of observations	*1,873*	*1,865*	*1,450*	*1,198*

Table C: Working Women's Education and Income in NOK 100

Variable	Mean			
	Child between 1-3		Child between 4-6	
	Before	After	Before	After
Natives				
Woman's income if Education High	1644	1 769	1 701	1 900
Woman's income if Education Low	1 124	1 193	1 175	1 319
# of observations	*27,597*	*21,079*	*23,004*	*19,891*
OECD				
Woman's income if Education High	1 614	1 991	1 687	2 062
Woman's income if Education Low	1590	1 518	1577	1624
# of observations	*1,550*	*1,487*	*1,048*	*1,162*
East Europe				
Woman's income if Education High	1 710	1 805	1 716	1 913
Woman's income if Education Low	972	1 174	977	1398
# of observations	*856*	*828*	*707*	*839*
Asia and Africa				
Woman's income if Education High	1 473	1 615	1 456	1 774
Woman's income if Education Low	985	1 794	1 035	1 148
# of observations	*955*	*1,063*	*754*	*778*

Department of Economics
University of Bergen
Fosswinckels gate 6
N-5007 Bergen, Norway
Phone: +47 55 58 92 00
Telefax: +47 55 58 92 10
http://www.svf.uib.no/econ