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Distributional effects of conditionality in welfare assistance policy – an unconditional quantile treatment effects analysis*

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Abstract

I evaluate the distributional effects on earnings of requiring welfare assistance recipients to fulfill conditions related to activation or monitoring – "conditionality". I exploit within-social insurance office variation in policy arising from a geographically staggered implementation of conditionality in Norway. Using unconditional quantile regressions (Firpo et al., 2009), I find that welfare conditionality has large effects in the lower part of the earnings distribution, and no effects in the upper part. The estimated effects decline with age. The increase in earnings is large enough to more than offset the decline in welfare payments that follows the policy change, thus the effect on total income is positive. Reduced government expenditures due to a smaller caseload and fewer welfare payments make the policy highly cost-effective.

JEL classification: C21; D31; H55; I38; J18; J22

Keywords: Social assistance; activation; conditionality; welfare reform; labor supply; quantile treatment effects

1 Introduction

Does attaching conditions to welfare payments boost labor supply and increase income? In all countries with social insurance systems, there is a question of how to handle the fact that income support programs may discourage work due to moral hazard problems (Krueger and Meyer, 2002). Activation, monitoring, and sanctions have been found to reduce the incidence and duration of benefit claims (Moffitt, 2007; Røed, 2012), however a worry with such strategies is that they may have negative distributional effects, if individuals who are already struggling financially lose what little income they have.

This paper studies the distributional effects on earnings and income of requiring welfare recipients to satisfy a set of conditions related to activation and monitoring ("conditionality").

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I implement unconditional quantile regressions following Firpo et. al (2009). Other applications of this method for policy evaluation using repeated cross-sectional data are Havnes and Mogstad (2015) on child care, and Dube (2013) on minimum wages. Exploiting a geographically staggered implementation of conditionality in Norway in the 1990s and 2000s, I find substantial positive effects in the lower end of the earnings distribution and no effects in the upper part. As expected, the positive effects in the lower end decline with age. Further, I find that although welfare payments decline, the effect on total income is positive, indicating the conditionality lead individuals to find gainful employment that makes them financially better off. At the office level, it appears that the reduced caseload from the reform more than made up for the increased workload; thus the reform was highly cost-effective.

2 Data and institutional setting

In most Norwegian social insurance programs, individuals can only claim benefits if they have earned the right to do so through previous social security contributions, or have gone through a lengthy bureaucratic process. People not covered by these programs and not able to support themselves by other means have the right to means-tested social assistance ("welfare") from their local social insurance office. The social insurance offices have a large degree of autonomy in determining policy related to such welfare payments, for instance with regards to the use of conditions the welfare claimant need to comply with in order the receive the benefits.

To get an overview of the variation in policy, the Norwegian Directorate for Health and Social Affairs in 2005 tasked Telemark Research Institute (TRI) with writing a report on Norwegian system of means-tested social assistance (Brandtzæg et al., 2006). As part of this work, TRI administered a survey to the country's 470 local social insurance offices. In this paper, I use information from the part of the survey that concerned whether there had been any changes in the office's use of conditions for receiving welfare during the period 1994-2004.

Table 1 lists the types of conditions employed by the social insurance offices, and the number of offices reporting increased for each condition. Five conditions are activation or work requirements, three concern the economic situation of the claimant, and one is health related. As most offices increase their use of several types of conditions, it will not be feasible to identify the effects of each type of condition separately. In stead, one should consider the

treatment as a quite comprehensive policy change consisting of a combination of a greater push towards activation and a higher degree of monitoring than what was previously the case.

Table 1. Types of conditions and number of offices with increased use.

Activation and work requirements	Number of offices	Fraction of treated
Participate in program: A requirement to take part in a work/training or educational program.	26	0.60
Work for welfare: Requirement to participate in a work program organized by the municipality or others.	15	0.35
Register as seeking work: A requirement to register as an active job-seeker, keeping an updated CV etc.	25	0.58
General counseling: Attend counseling meetings with caseworker or others to discuss the current situation.	26	0.60
Career counseling: Attend career counseling meeting(s) with caseworker or others to improve work prospects.	10	0.23
At least one activation/work requirement	41	0.95
Economic		
Document expenses: A requirement to show documentation for housing costs and other additional costs exceeding the welfare benefit	29	0.67
How to use the benefit: Restriction on how the recipient spend the benefit	17	0.40
Move to cheaper housing: Refuse to cover housing costs exceeding the norm and require that one move to cheaper housing for obtaining housing support.	16	0.37
At least one economic condition	34	0.79
Health		
Health examination: Willingness to undertake a health examination.	14	0.33
Total number of conditions changed	175	
Total number of offices changing policy	43	

Table 2 lists the types of responses to the survey. Of the 470 offices, 223 did not reply. Of the 247 replies, 33 are discarded due to missing or inconsistent information regarding the timing of a policy change, and 7 because of lack of a link between individual and office due to multiple offices operating in the same municipality. There was a clear move towards more use of conditions – 43 of the offices reported more use of at least one type of condition and reduced use of none, while 6 reported a mix of more and less use. To have a clear comparison between offices that increased their use of conditions vs. those that maintained status quo, I also discard the 6 offices with an ambiguous policy change. This leaves 201 offices in the

final sample. In this paper, I use only information about people residing in areas covered by these 201 offices, amounting to around 60 % of the Norwegian population.

The 43 offices with an unambiguous change to more use of conditionality constitute the treatment group. The treatment variable is a dummy variable that for a given office permanently switches from 0 to 1 when the office changes its policy.

Table 2: Sample restrictions – survey data

Number of social insurance districts in Norway	470
- Non-responding districts	-223
= Offices with returned surveys	247
- Missing time information	-32
- Cannot link office to individuals	-7
- Ambiguous policy change	-6
- Inconsistent information	-1
= Final sample	201
…of which:	
Treated	43
Control	158

The rest of the data comes from administrative registers covering the complete Norwegian population.

Figure 1 shows a map of the treatment, control, and excluded social insurance office areas. Both the treatment and control areas are spread all over the country. In Table 3 we can see that the three groups are also quite similar when it comes to broad, observable socioeconomic characteristic. For the estimation sample, which consists of the treatment and control groups only, there is a 1-1 correspondence between social insurance office areas and municipalities. As data is more readily available at the municipality level, these descriptive statistics are presented in terms of municipalities instead of offices. The treatment municipalities tend be somewhat larger than the control municipalities. For other characteristics, the differences in levels are quite small, and the development in time is also similar, with one notable exception: the fraction receiving welfare, which declined much more in the treatment than in control group. 1993 and 2007 are the first and the final year of the sample.

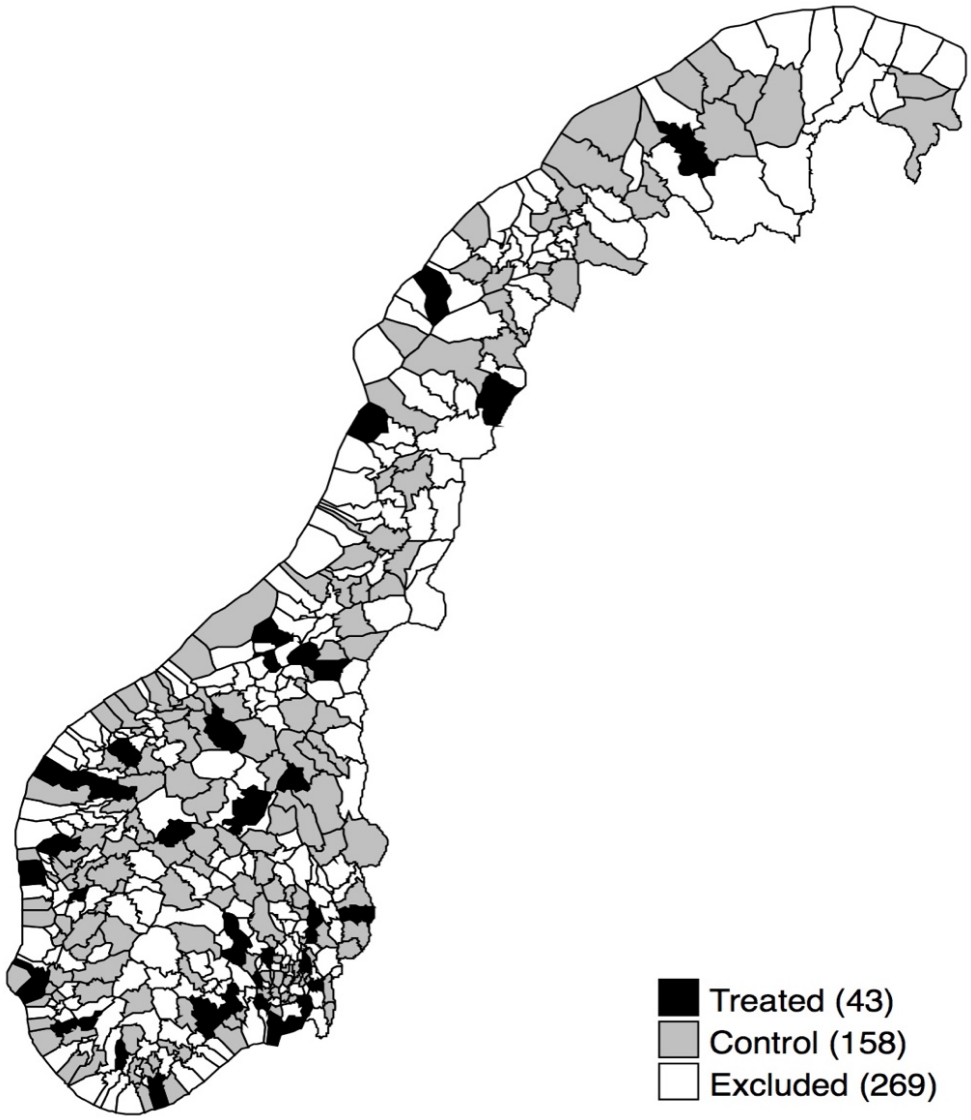

Figure 1. Treatment and control offices.

Table 3: Municipality characteristics in excluded, control and treated municipalities.

	Excluded municipalities (n= 178)		Control municipalities (n=158)		Treated municipalities (n=43)	
	1993	2007	1993	2007	1993	2007
Inhabitants	11,674	13,058	7,207	7,732	10,392	11,554
Employment rate	0.66	0.72	0.67	0.72	0.65	0.72
Mean income (1,000 NOK)	381	413	362	388	354	386
Unemployment rate	0.044	0.015	0.040	0.014	0.046	0.014
Fraction with tertiary education	0.23	0.32	0.18	0.26	0.17	0.24
Fraction with at least secondary education	0.47	0.63	0.42	0.60	0.41	0.59
Fraction receiving welfare benefits	0.027	0.017	0.021	0.015	0.027	0.016
….below age 30	0.039	0.022	0.033	0.022	0.041	0.024
Fraction receiving disability benefits	0.085	0.085	0.087	0.093	0.090	0.096
Fraction immigrants	0.11	0.19	0.07	0.12	0.09	0.15
…below age 30	0.14	0.26	0.09	0.17	0.11	0.21
Fraction in working age of total population	0.59	0.60	0.59	0.58	0.59	0.58

Note: All variables refer to the age group 18-61 years if not specified otherwise, and reported means are weighted by population size. Income levels are measured in 1000 NOK, inflated to 2015-value with the adjustment factor used in the Norwegian pension system (approximately corresponding to the average wage growth). 1 USD ≈ 8 NOK.

3 Empirical strategy

3.1 Identification

I compare outcomes for individuals measured before and after implementation of conditionality. At the heart of the empirical strategy lies a linear probability model with a difference-in-differences structure (Equation (1)). Office fixed effects γ_o capture all factors that are fixed at the office level, such as local area health and worker characteristics, while time fixed effects δ_t capture factors that are common across cohorts. The treatment dummy T_{ot} starts out as 0 for all offices, then for a given office turn permanently to 1 when that office increases its use of conditionality.

$$y_i = \beta\, T_{ot} + \gamma_o + \delta_t + \rho\, x_i + \varepsilon_o \qquad (1)$$

The main threat to this identification strategy is that the policy change may be endogenous; in particular, a (local) economic downturn may trigger implementation of conditionality, which may appear to have effects simply because of mean-reversion of the business cycle. To challenge the baseline specification at his point, I also provide estimates that are only based on pre-treatment periods four or more years prior to the policy change, and perform sensitivity checks where I include contemporaneous unemployment and other local labor market characteristics as covariates.

Since the last policy change in the data occurred in 2004, there is the danger that some offices from the control group become treated afterwards, thus one set of estimates is only based on data until 2005. It is reassuring to find the baseline results are robust to these alternative specifications.

Welfare policy affects both those actually receiving welfare, and a wider population with only a potential connection to the welfare system. To capture effects on both these groups, as well as spill-over effects, I focus on the reduced form effects on all people residing in the treatment areas. Standard errors are clustered at the office level.

3.2 Econometric model

I implement unconditional quantile regressions following Firpo et. al (2009). This method allows one to evaluate the effect of the policy change on each unconditional quantile of the earnings distribution. This can be contrasted with estimating effects on each quantile conditional on the control variables, which is what conventional quantile regression does. What I do in practice is to define a series of earnings cutoffs corresponding to specified quantiles of the empirical earnings distribution, and then for each such cutoff estimate the effect of the policy on being above that cutoff using the linear probability model (including office and time fixed effects) specified in (1). To arrive at the quantile treatment effects, the resulting estimates are (locally) inverted using a kernel density estimate of the slope of the CDF of the earnings distribution at each particular quantile.

Standard errors are bootstrapped with 200 replications and clustered at the office level, which is the level of the treatment.

I present results for age groups 30, 40, and 50, but place particular emphasis on 30-year olds because welfare receipt, and thus the importance of welfare policy, declines with age. Earnings and income are measured in the years 1993-2007.

4 Results

4.1 Mean impacts

Table 4 shows estimated average effects of welfare conditionality on welfare uptake and earnings. Receiving welfare is quite uncommon – among 30-year olds, which is the group with the highest uptake, only 5 percent actually receive it. Nevertheless, the implementation of conditionality reduces welfare uptake by around half a percentage point. The estimated average effect on earnings is positive, however, the fact that changes in welfare policy mainly will have effects on people with a low earnings potential makes it interesting to go beyond the mean impact, and analyze effects on the distribution. It is likely that the relatively small average effects mask the effect of higher earnings among low-earners, and no effects among high-earners.

Table 4. Estimated intention to treat (ITT) effect of welfare conditionality on welfare uptake (standard errors in parentheses).

	Welfare uptake			Earnings, NOK		
Age	30	40	50	30	40	50
ITT	-0.0076** (0.003)	-0.0045** (0.002)	-0.0039*** (0.012)	3173 (4174)	1230 (3661)	1813 (3077)
Office fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Cohort fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable	0.05	0.04	0.02	338,154	386,281	380,336
Number of observations	386,820	435,443	408,556	386,820	435,443	408,556

Note: Standard errors are clustered at the 201 offices. *(**)(***) indicates statistical significance at the 10(5)(1) percent level. 1 USD ≈ 8 NOK.

4.2 Earnings of 30-year olds

Figure 4.1 shows the baseline estimates. Conditionality increases earnings substantially in the lower part of the earnings distribution. Welfare recipients have a relatively low earnings potential, hence it is reasonable that the estimated effects show up in the lower end. Between the 20th and 40th percentiles, the estimated treatment effect is around 10 000 NOK, which corresponds to around 1250 USD. As expected, estimated effects are close to 0 in the upper part of the distribution.

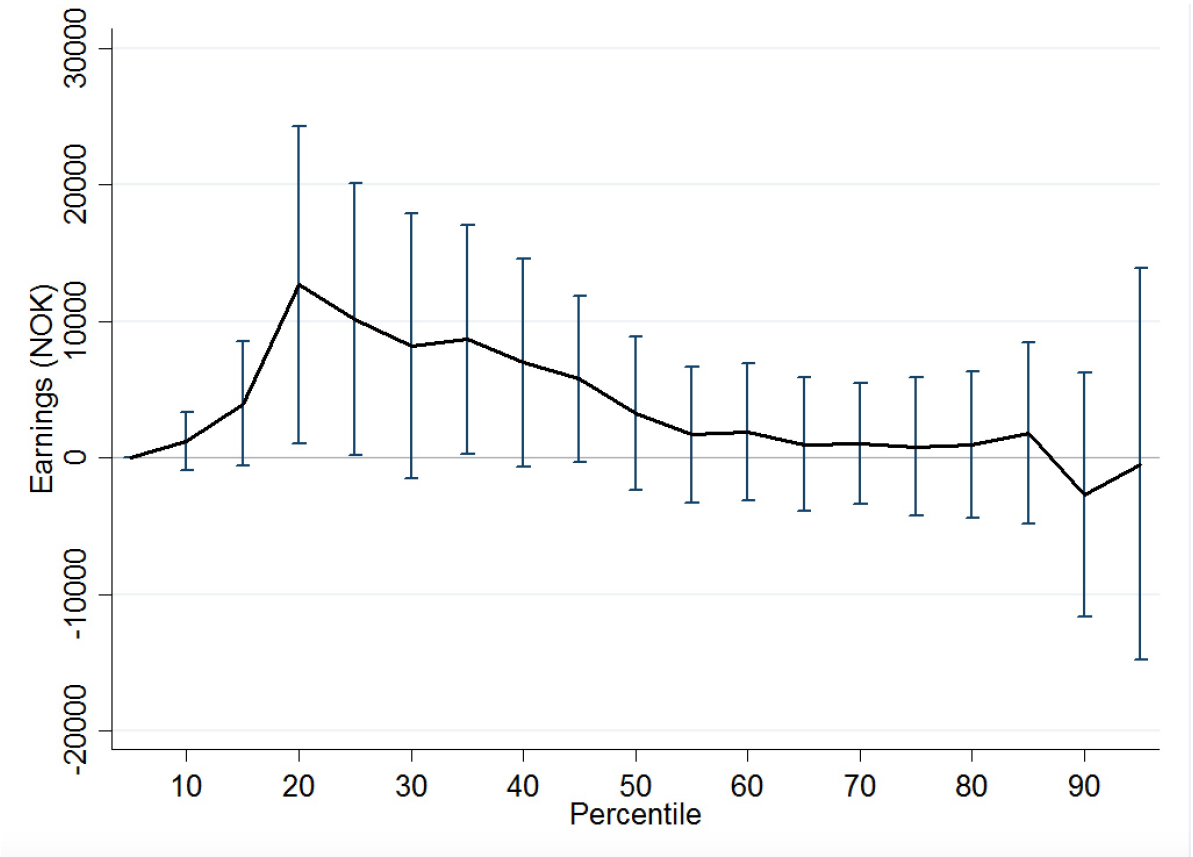

Figure 4.1 QTE estimates on earnings of 30-year olds.
Note: QTE estimates at each fifth percentile. Standard errors are bootstrapped with 200 replications. Vertical bars indicate 90% confidence intervals. 1 USD ≈ 8 NOK.

Figure 4.2 shows the robustness checks. The QTE estimates are stable across specifications. Neither including unemployment or other labor market covariates (education, age, immigrants) alters the results much. Of particular importance is the specification "Distant pre-period," which excludes observations three years or less before treatment. This serves as a check of the possibility that the office changes its policy after a few bad years, which could artificially depress the baseline the treatment is compared against. A final robustness check is excluding observations from after 2005. As the data on conditionality only go until 2004, there is the danger that the control offices gradually become treated. Excluding observations later than 2005 reduces this measurement error problem, and the estimated effects are indeed somewhat larger.

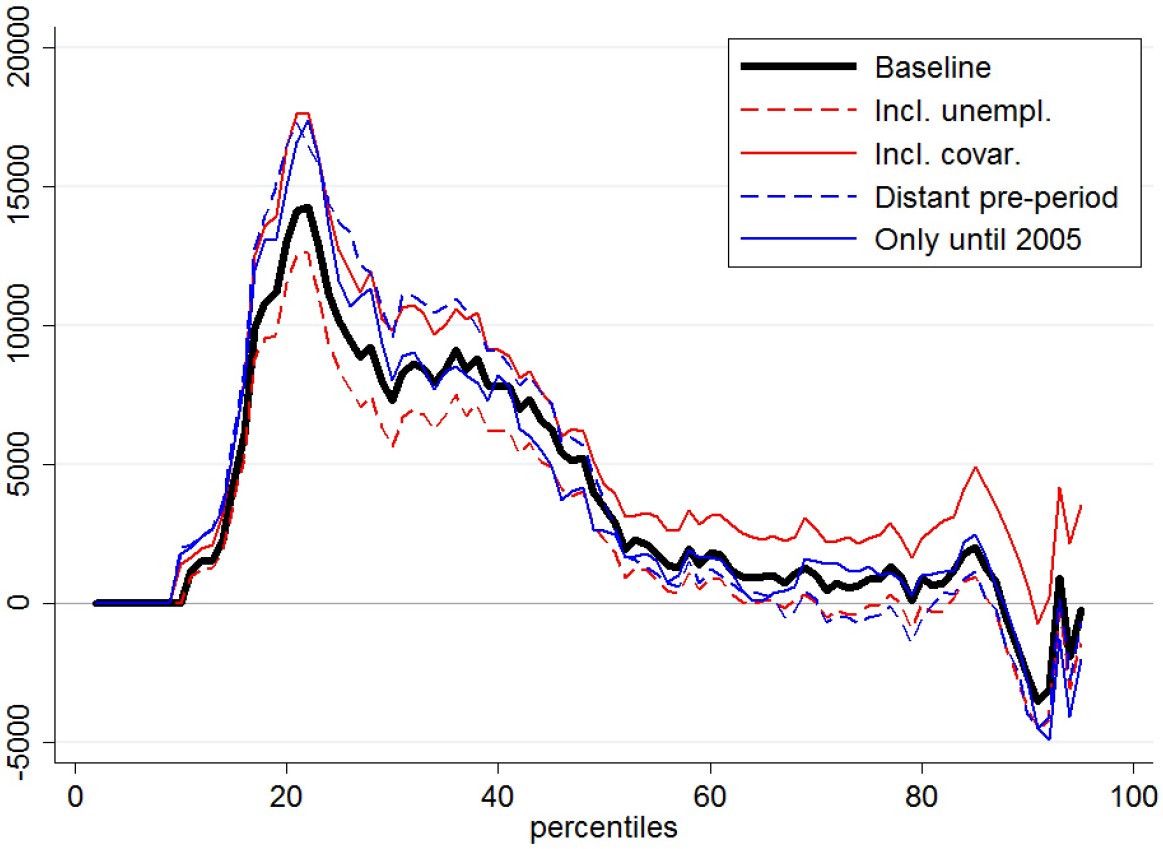

Figure 4.2 Robustness checks, earnings of 30-year olds
Note: All specifications include office and cohort fixed effects. Specification with covariates includes share of population with tertiary education, average age of working age population and share of immigrants in the office area. "Distant" pre-period excludes observations three years or less before treatment.

4.3 Total income of 30-year olds

Although the policy is successful in boosting labor supply and increasing wage earnings, it is important to analyze the effect on total income (all income combined) to get a fuller grasp of the welfare effects. Even if earnings increase, it is not clear whether the effects on total income will also be positive, since welfare payments are reduced. The estimated quantile treatment effects on the sum of income from all sources is shown in Figure 4.3 The estimated effects are somewhat lower than for earnings, as expected since welfare payments are reduced. However, the positive effects are still substantial in the lower part of the distribution.

From a policy perspective it is encouraging that more use of conditionality does not reduce income.

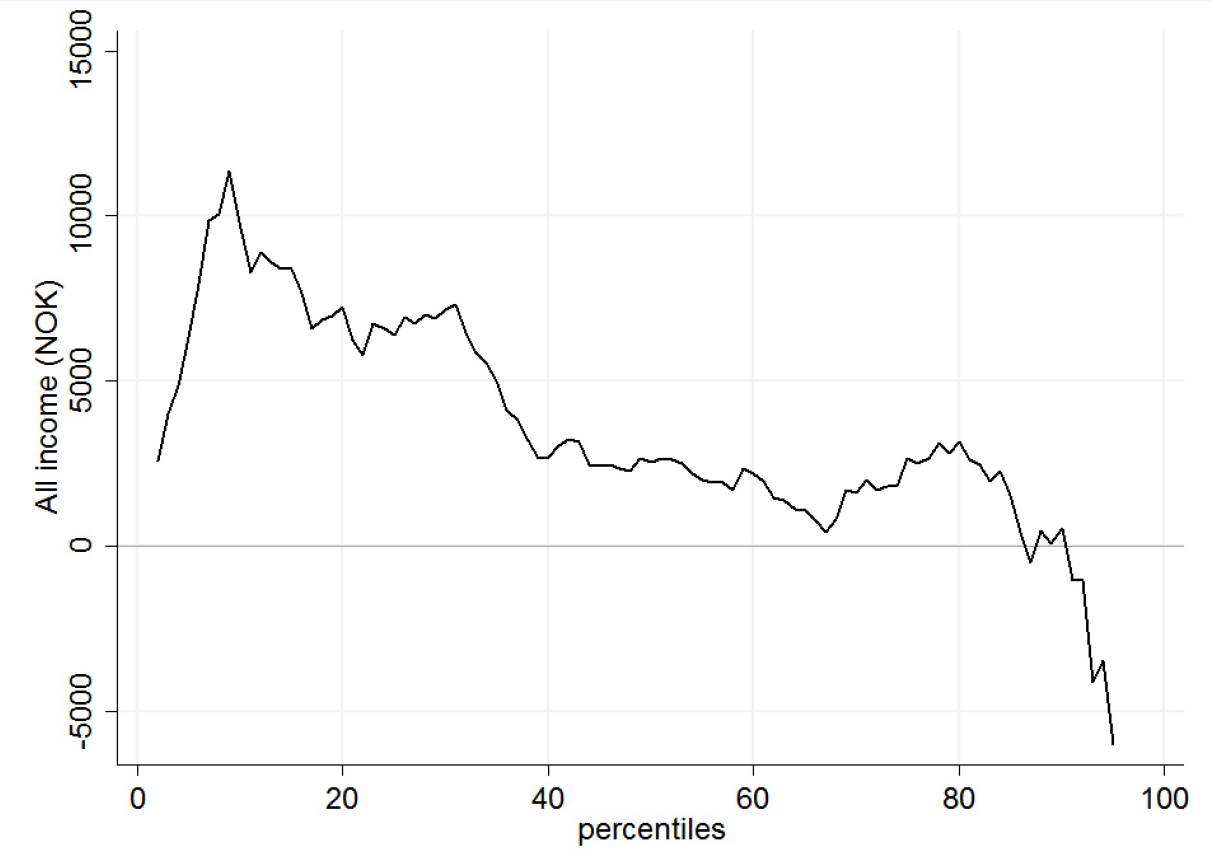

Figure 4.3 QTE estimates on total income for 30-year olds.
Note: Income from all sources, including welfare. 1 USD ≈ 8 NOK.

4.4 Earnings of all age groups

Figure 4.4 shows the estimated quantile treatment effects on earnings of various age groups, measured in percent of earnings at each percentile for comparison. Estimated effects are largest for 30-year olds and decline with age. As the time period 1993-2007 covers more than ten years, there is some overlap between adjacent groups.

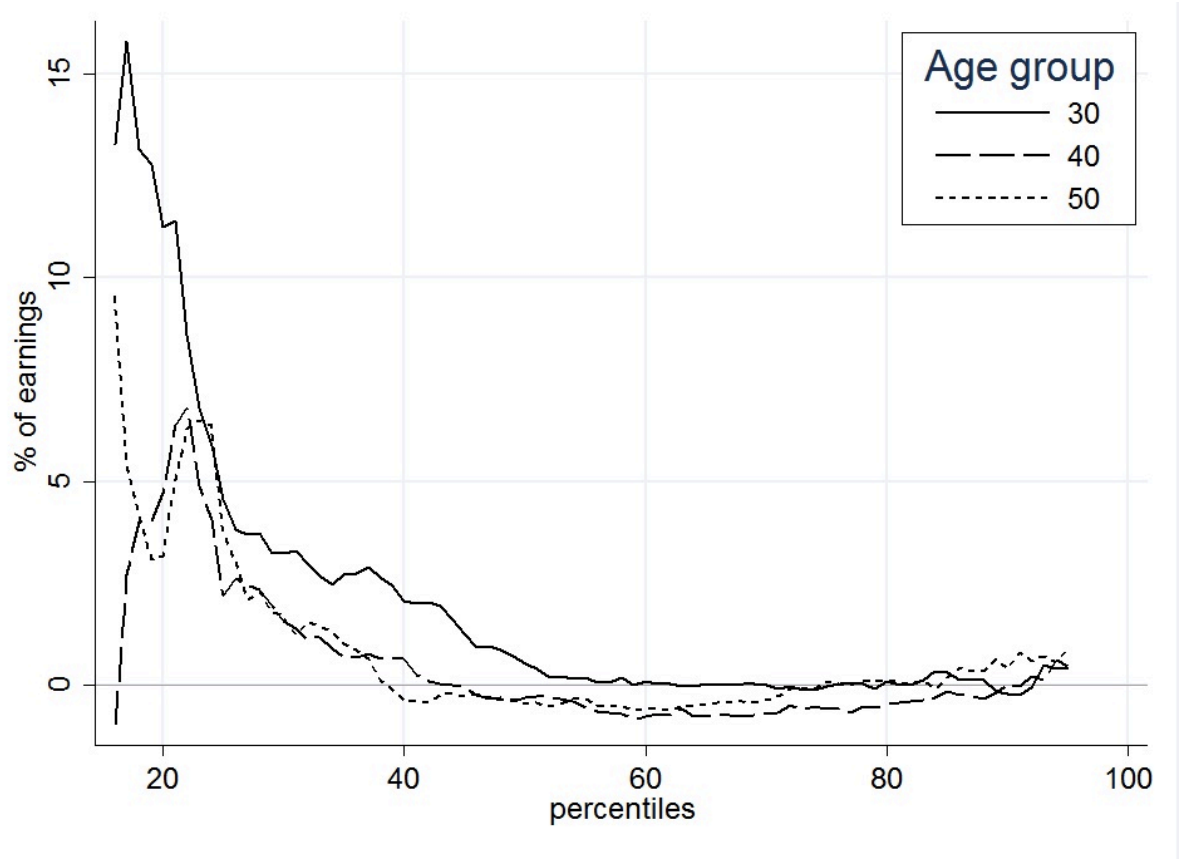

Figure 4.4 QTE estimates on earnings of various age groups.
Note: Effects in percent of earnings at each percentile.

4.5 Cost-effectiveness

How much resources did the new policy require at the offices? Encouragingly, operating expenses related to welfare decreased both in the treatment year and later. This suggests that the treatment effect of a reduced case load more than made up for some of the conditions requiring higher expenses at the office. The fact that there are also savings related to a reduced number of welfare checks paid out (the cost of which are born on the local

government's budget), as well as increased tax income, imply that welfare conditionality is a highly cost-effective policy.

5 Conclusion

I find that attaching conditions to welfare payments has the ability to increase both earnings and income at the lower end of the earnings and income distributions. The program I study, a mix of activation, monitoring, and work-related requirements, is highly effective: It gets welfare clients into work and brings savings to the social insurance system through reducing both administrative costs and welfare payments.

6 References

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