Labour Supply Effects of a Large Unconditional Cash Transfer *

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The proposals of unconditional cash transfers in a form of universal basic income, universal basic pension or universal child benefit become increasingly discussed in many countries. The pilot projects are scheduled or have been already launched in selected regions in Brazil, Canada, Finland, and the Netherlands. The potentially negative labour supply effects of introducing unconditional cash transfers remain a major concern that is usually raised in the debates on the proposals. A positive income shock could discourage individuals from working. Little is known about income effects of cash transfers because the previous studies analysed the impact of means-tested transfers rather than unconditional transfers.

My paper answers the question on how the unconditional cash benefit affect the individual labour supply. I analyse the labour supply effects of the introduction of a large child benefit with an unconditional component in Poland. The unique design of the program allows me to isolate the income effects from other effects such as substitution effects and fertility effects of the child benefit.

I contribute to the existing literature by providing a novel quasi-experimental evidence on income elasticity of labour supply. The estimates of income elasticity of labour supply remain inconclusive (see e.g., Blundell, Duncan, and Meghir, 1998; Chetty et al., 2011; Devereux, 2004; Saez, 2002). In my study, I provide novel evidence based on a quasi-experimental setting.

I also contribute to the literature on the effects of child benefit programs. Milligan and Stabile (2009) and Schirle (2015) investigated the effects of introducing a universal child benefit in Manitoba (Canada). The two studies arrived at different results. González (2013) analysed the introduction of a child benefit in a form of one-time payment and showed that mothers who were eligible for the benefit delayed their return to the labour

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market. Finally, the introduction of the child benefit in Poland was studied by Brandt, Kiełczewska, and Magda (2018). They showed that overall the introduction of the child benefit had significant negative effects on maternal labour supply. However, they were unable to isolate the effect of the unconditional component of the child benefit program. The universal child benefit was introduced in Poland in 2016 as a result of a political change. Thus, it can be treated as exogenous income shock. The size of the shock was exceptionally large. The monthly benefit amounted to 34% of disposable income per capita in Poland. The monthly child benefit is universal for the second and every further child in a family. It is means-tested for the first child in a family: a family receives the child benefit for the first child when the income per person is below a certain threshold. Thus we can describe the impact of introducing a child benefit on a parental labour supply, L_i, by the following equation

$$\Delta L_i = \text{Treatment Assignment Effect} + \text{Fertility Effect}$$
$$+ \text{Pure Income Effect} \tag{1}$$

The *Treatment Assignment Effect* captures the incentives to reduce the labour supply in order to meet the income threshold for the child benefit for the first child. *Fertility Effect* is similar to the *Treatment Assignment Effect* - households may decide to increase fertility in order to receive additional child benefit. Finally, *Pure Income Effect* captures the change in labour supply due to the additional income. This is the effect I want to identify since it can be interpreted as the effect of the unconditional cash transfer. I exploit the discontinuity of the child benefit amount depending on the number of children in a household to isolate the *Pure Income Effect*. I compare the labour supply responses of the two groups: parents of one children (control group) and parents of two children (treatment group). The effect for parents of two children includes the following components:

$$\Delta L_i^{TwoChildren} = \text{Treatment Assignment Effect} + \text{Fertility Effect}$$
$$+ \text{Pure Income Effect} \tag{2}$$

Parents of two children unconditionally receive a child benefit for the second child (which leads to the *Pure Income Effect*), but they may also receive child benefit for their first child if they meet the financial requirements (*Treatment Assignment Effect*), and they may increase child benefit amount received by having more children in the future (*Fertility Effect*). For parents of one child, the effect of introducing child benefit includes the following components:

$$\Delta L_i^{OneChild} = \text{Treatment Assignment Effect} + \text{Fertility Effect} \tag{3}$$

Parents of one child do not receive the unconditional child benefit and therefore *Pure Income Effect* is not included. They may receive a child benefit for one child if their income is below income threshold (*Treatment Assignment Effect*) or if they decide to have more children (*Fertility Effect*). I identify the difference in the effects of introducing child

benefit on labour supply of parents of two chlidren and parents of one child:

$$(4) \qquad \Delta L_i^{TwoChildren} - \Delta L_i^{OneChild} = Pure\ Income\ Effect$$

Hence, what I obtain is the *Pure Income Effect.* I use data from Polish Labour Force Survey and Polish Household Budget Survey to estimate this effect. I use difference-in-differences approach and estimate the following equation:

$$(5) \qquad L_{it} = \alpha_0 + \gamma T_i + \phi Y_t^{2016} + \theta T_i * Y_t^{2016} + \beta X_{it} + \epsilon_{it}$$

where L_{it} is labour market status (I generate three dummy variables: inactivity, unemployment and employment), and 0 otherwise. T_i is treatment variable: it equals 1 for parents of two children and 0 for parents of one child. Y^{2016} is dummy variable, which equals 1 for post-treatment period and 0 for the pre-treatment period. Additionally, I control for a set of individual characteristics (X_{it}).

I find that the effects of introducing universal child benefit on maternal labour supply are insignificant and neglibile (see Table 1). I find that parallel trend assumption is satisfied. Further robustness checks confirm the results about lack of significant impact of the unconditional component of the child benefit program. The results are similar for the labour supply of fathers.

Table 1: DID results: mothers of 2 children vs 1 child

	(1) Inactive Coef./SE/p-value	(2) Unemployed Coef./SE/p-value	(3) Employed Coef./SE/p-value
Treatment group	-0.001	0.002	-0.001
×	(0.009)	(0.005)	(0.009)
treat_time=1	[0.932]	[0.661]	[0.883]
Treatment group	0.062	-0.010	-0.052
	(0.005)	(0.003)	(0.006)
	[0.000]	[0.001]	[0.000]
treat_time=1	0.044	-0.009	-0.035
	(0.006)	(0.004)	(0.007)
	[0.000]	[0.018]	[0.000]
Ind. characteristics	yes	yes	yes
Region FE	yes	yes	yes
Adj. R-Squared	0.08	0.02	0.08
N	40669	40669	40669

Notes: Table displays coefficients of 3 individual regressions with standard errors in parentheses and p-values in square brackets. In the first column, the dependent variable equals 1 if an individual is inactive, and 0 otherwise. In the second column, the dependent variable equals 1 if an individual is unemployed but looking for a job, and 0 otherwise. In the third column, the dependent variable equals 1 if an individual is employed, and 0 otherwise. Individual characteristics include gender, age, education level, type of area of living (urban vs. rural), marital status. Standard errors are clustered at the household level.

References

Blundell, Richard, Allan Duncan, and Costas Meghir (1998). "Estimating Labor Supply Responses Using Tax Reforms". In: *Econometrica* 66.4, pp. 827–861.

Brandt, Nicola, Aneta Kiełczewska, and Iga Magda (2018). "The Family 500+ Child Allowance and Female Labour Supply in Poland". In: *IBS Working Paper* 1.

Chetty, Raj, Adam Guren, Day Manoli, and Andrea Weber (2011). "Are Micro and Macro Labor Supply Elasticities Consistent? A Review of Evidence on the Intensive and Extensive Margins". In: *American Economic Review* 101.3, pp. 471–475.

Devereux, Paul J. (2004). "Changes in Relative Wages and Family Labor Supply". In: *The Journal of Human Resources* 39.3, pp. 696–722.

González, Libertad (2013). "The Effect of a Universal Child Benefit on Conceptions, Abortions, and Early Maternal Labor Supply". In: *American Economic Journal: Economic Policy* 5.3, pp. 160–188.

Milligan, Kevin and Mark Stabile (2009). "Child Benefits, Maternal Employment, and Children's Health: Evidence from Canadian Child Benefit Expansions". In: *American Economic Review* 99.2, pp. 128–132.

Saez, Emmanuel (2002). "Optimal income transfer programs: intensive versus extensive labor supply responses". In: *The Quarterly Journal of Economics* 117.3, pp. 1039–1073.

Schirle, Tammy (2015). "The effect of universal child benefits on labour supply". In: *Canadian Journal of Economics* 48.2, pp. 438–463.