Conditional Cash Transfers Targeted at Early Childhood Development and Female Labor Force Participation in Transition Economies: Evidence from Kazakhstan

by

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Abstract

The share of women in the labor force of transition economies has decreased after the collapse of the socialism to the great extent due to the restructuring of preschool education system. In the context of inaccessible childcare, the so-called "motherhood punishment" has become an acute problem, given the increased ageing of populations. Solving the issue not only generates more production in the economies of countries, but also has a potential to empower women and terminate intergenerational poverty. To empirically investigate the extent to which more accessible childcare leads to increased female employment, this work uses data from a conditional cash transfer program conducted in Almaty, Kazakhstan. The program aimed at increasing early childhood development in poor regions by providing cash to eligible households and conditioning the transfer on preschool attendance. Utilizing the randomized control trial setting of the program, this thesis uses difference-in-difference method that takes into account any pre-program differences and exterior shocks to measure the relationship of interest. The results reveal positive effect of the program on extensive margin, but no significant effect on the intensive margin of the maternal labor force participation.

Acknowledgements

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Introduction

Existing research recognizes the importance of accessible childcare to increase female labor force participation rate (hereinafter FLFPR). The issue of decreased FLFP is particularly pressing in the context of transition economies, which underwent major economic transformations that affected all institutional structures, including the preschool education system. Women in transition countries are educated as much as women in developed countries, yet the labor participation rates are lower (Pignatti 2016). The main reason behind the low FLFPR in transition economies is the so called "motherhood punishment", which discourages female employment as mothers are the primary caregivers of children. In the context of inaccessible childcare and preschool facilities, the economies are losing the potential labor force, as Angel Gurría, the secretary-general of the Organisation for Economic Co-operation and Development said "women are the most unutilized economic asset in the world's economy". Not only is women's employment beneficial for the economies of countries, but in many cases it also serves as a tool for empowering women, increasing their dignity, self-esteem and independence. Moreover, as will be discussed in the subsequent chapters, female employment can help families escape poverty traps in certain cases by increasing investment into the human capital of children.

To date, there have been numerous studies evaluating programs both directly targeted at increasing female employment, as well as programs designed to tackle other developmental issues, while at the same time indirectly affecting FLFPR. One of such types of interventions are conditional cash transfers (hereinafter CCTs). While their results have not yet resulted in an unequivocal consensus, they have become a popular tool of intervention, given their success in reducing poverty in some parts of the world, mostly in Latin America. CCT programs aim at reducing both current and future poverty, by combining direct cash transfers with conditions to fulfil certain requirements to invest in human capital, such as children's enrollment in schools and regular health check-ups.

In the context of affecting adult employment, CCTs were found to produce mixed results. The reasons behind the results that differ both in magnitude and direction lies in the sensitivity of CCTs to the context of the areas of implementation, the different amounts of cash transfers and more importantly, the interplay between different theories of economic behavior that affect adult's decisions to work. Apparently, the effects of CCTs on adult employment are not clear and have to be investigated empirically. Moreover, as most of CCT programs are directed towards primary and secondary school students, there is a very limited amount of empirical investigations of CCTs targeted at early childhood development, and even fewer studies in the context of transition economies. To my knowledge, there are no rigorous studies researching the link between CCTs targeted at early childhood development and FLFP neither in transition economies context, nor in any other.

In order to address the gap existing in the literature, this study aims to evaluate a CCT program conducted in Almaty, Kazakhstan that used cash transfers to encourage investments in the development of preschool-aged children by making the transfer conditional on preschool attendance; it concomitantly aims to measure the increase in LFP of mothers due to improved access to childcare, and understand the income generation process of the poor in transition economies. Young children need constant presence of their primary caregivers and hence might deter caregivers from pursuing official employment. Assuming that childcare costs and the distance to a preschool facility are the main obstacles to employment for primary caregivers, cash transfers as well as increased supply of preschools have the potential to increase the employment among caregivers, who are almost always women in the transition countries.

The primary evaluators of the program, O'Brien et al. (2013) provided an extensive overview of the effects of the program on different outcomes. The authors touched upon the effects of the transfers on adult employment, using a method of comparing the means in areas that did and did not receive the transfers. My evaluation builds upon the experimental design of the program that

randomized beneficiaries and non-beneficiaries of the program, and uses difference-in-difference technique to evaluate the effect of the CCT, accounting for any pre-program differences and possible exterior shocks, factors which were missed from the evaluations of O'Brien et al.

The structure of the thesis is as follows. Section 1 discusses the importance of FLFP and barriers to female employment in transition economies, particularly concentrating on inefficient preschool system as one of the main obstacles. Section 2 follows by describing the preschool education system and its accessibility in Kazakhstan, where the CCT program was implemented. Section 3 situates adult employment in the context of CCTs and summarizes the main findings from previous research, illustrating the need for further empirical investigation. Section 4 provides an overview on the CCT program itself, pointing out some anticipated outcomes and estimates from O'Brien et al. Section 5 describes data used as well as the empirical strategy in detail. Section 6 provides the results of the empirical estimation and discusses them. Finally, section 7 concludes the work, providing policy implications of the findings.

1 Barriers to FLFP in transition economies

The share of women in the labor force in post-socialist countries is now lower than it was during socialism. The problem that arose as a result of the transition from centrally planned to market economies has particularly serious consequences, since the fertility rates are decreasing and the population is ageing, the two factors that exacerbate the shrinking of the labor force (Pignatti 2016). The experience of post-socialist countries illustrates that investment in female education is not an effective tool on its own, since the prioritization of universal education and employment during the Soviet times left the women of the transition countries with a legacy of high education levels, much so that by the early 1990s in most of the post-communist states women were more educated than men on average, a trend that largely holds true in present (Pignatti 2016). Additionally, women in transition countries are as educated as women in high-income, developed countries, and much more educated then women in developing countries[1] (Pignatti 2016). Yet the FLFPR decreased since the collapse of the socialist regime due to a variety of mutually-reinforcing reasons. This suggests a need of a broad set of policies that will help women to maintain work-life balance to ensure higher participation in the labor market.

1.1 The importance of FLFP

From a micro-level perspective, a broad range of studies on the psychology of work have proven that participating in the labor force positively affects individual well-being through connecting a person to the broader social and economic world, thus providing a means for individual satisfaction and a sense of accomplishment (Blustein 2008). In particular, participation of women in labor force could be one of the key tools of women empowerment. In the context of gendered power division in households, women's participation in a paid work results in more respect and acknowledgment

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[1] What Pignatti (2016) refers to as "developing countries" is unclear, since according to the IMF, most of the post-socialist countries are considered as "developing" ("World Economic Outlook Database October 2018" 2020)

of a woman from her husband and other family members, which endows women with more voice in decision-making regarding household matters (Kabeer 2008). Additionally, a review of different empirical studies on the relationship between paid work and female empowerment produced by Kabeer (2008) found that in the majority of studies, paid work is associated with more efforts to take care of one's health, greater mobility in the public domain, stronger position in "the sexual politics of the household", and increased instances of termination of abusive relationships.

It is not only income that brings changes for women through the participation in the labor force. A study by Ver Beek (2001), who investigated the impact of maquiladora[2] work in Honduras on social and economic situation of workers found that women formally employed in maquiladora not only gained increased authority in their households, but also became more active in the public sphere. Compared to women employed in informal sectors, they were more likely to vote and believed that they could have an impact on government's decisions (Ver Beek 2001). This change can be attributed to the exposure to new ideas, experiences and social interactions in the workforce. As for the social interactions, studies about microfinance groups in the context of South Asia and Latin America found that the participants of such programs cite the support and solidarity from other women as one of the most important aspects of the program for them (Kabeer 2008). The "sociability" aspect of microfinance programs was investigated by Murthy et al. (2005), who found that participating in South Asia Poverty Alleviation Program[3] created opportunities for women to make friends: 83 percent of participants reported an increase in friendship ties, including with women from different castes, compared to 26 percent of non-participants. Thus, participating in out-of-house work activities not only allows women to exercise their basic human right to make

[2] Maquiladora is a company that allows factories to be largely duty free and tariff-free. These factories take raw materials and assemble, manufacture, or process them and export the finished product (Wikipedia).

[3] A program designed for social mobilization of the poor, skill development and capital formation in Andhra Pradesh

friends outside of their houses, but bolsters the inter-caste interactions, which potentially could positively affect social cohesion in societies.

There is ample evidence that an increase in women's employment has a potential to boost the economic development of countries. Cuberes and Teigner (2012) have estimated that losses in per capita GDP due to gaps in employment between the genders reaches up to 27 percent in the Middle East and North Africa, a 23 percent loss in South Asia, and a loss of around 15 percent in the rest of the world. Increasing female labor force participation rates to that of country-specific male levels would increase GDP in the US by 5 percent, by 9 percent in Japan, by 12 percent in the UAE, and by as high as 34 percent in Egypt (Aguirre et al. 2012). Moreover, based on the statistics collected by the International Labor Organization (ILO), out of 865 million women who potentially could join the labor force, 812 million live in developing economies, which highlights the potential of transition economies to contribute to the overall increase in the FLFP (Aguirre et al. 2012).

Empirical investigations have established that women tend to invest money into education and health of their children significantly more than men. Investigating the cash transfers in South Africa, Duflo (2003) found that the efficiency of transfer programs is gender sensitive, with money transferred to women resulting in significantly better anthropometric[4] outcomes for girls. The trend holds in other parts of the world; for instance, in the US the extension of suffrage rights to American women led to a decrease in infectious diseases among children, as a result of increased spending on public health (Miller 2008). Hence, increasing women's earnings and bargaining power in families can create virtuous cycle, when women invest in girl's education and health, and they continue the trend for future generations (Miller 2008). Thus, even small improvements in opportunities available to women and the elimination of some cultural or political constraints can

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[4] weight for height and height for age

improve current and future well-being of nations. Therefore, women employment may be an important factor in reducing poverty both in developing and developed regions.

1.2 FLFPR in transition economies

Across the world, women spend twice as much time on household chores, and four times as much time on childcare than men (Duflo 2012). In the OECD countries, compared to men women spend 2.5 hours more on housework, including child care (Aguirre et al. 2012). Moreover, Aguirre and others (2012) found out that while women are responsible for carrying out routine housework, that has to be accomplished regardless of other work pressures, men's housekeeping responsibilities are often of occasional nature. Such unequal gender division between formal and informal work tends to further reinforce the established gender inequality at the household level (Heintz 2006), which is one of the main factors contributing to low FLFPR in transition economies.

For the post-socialist countries "motherhood punishment" is a major reason behind low female employment. During the Soviet era, to reach the targets of a planned economy, female labor force participation was actively encouraged. The Soviets used both propaganda and policies to attract women to work. At the policy level, women's participation in the labor market was encouraged by accessible childcare services, including infant care (Grogan 2010). Coupled with a shaming policy for those who did not work5, the policy assured almost universal female employment in the countries of the Soviet Union. However, while women were encouraged to participate in the labor force, the cultural norms made them take upon themselves the burden of household work and care after children (Pignatti 2016). Such traditional views on gender roles affected women's employment by dictating the norms on the type of jobs open for females. The perception that women are more fit for jobs resembling household work made them apply for semi-skilled jobs such as retail sellers, teachers and healthcare workers (Pignatti 2016). These professional occupations have more flexible

5 such people were considered to be "*izhdiventsy*", a pejorative term meaning "a dependent", closer to the English term "sponger"

working hours, which helped women to maintain work-life balance, even if that implied lower salaries (Brainerd 2000).

The collapse of the socialist regime led to fundamental changes in all formal institutions, including labor market and childcare. The labor market in the early days of transition suffered a severe crisis. Initially, in most countries men were hit the hardest as mostly male-dominated spheres stopped operating at the regular pace for the period of transition (Pignatti 2016). Women's employment increased for a while, to compensate for the lost income from men (Pignatti 2016). Later, after the year 2000, on average post-soviet countries preferred men over women in hiring decisions (Pignatti 2016). Moreover, once lost a job, more married women chose not to rejoin the labor force compared to men and unmarried women (Lauerova and Terrell, 2007).

1.3 Preschool education system and FLFP

The reasons behind the decreased FLFPR after the collapse of the socialist regime are numerous, one the greatest being the changes in the childcare system. Due to the shrinking of the public budget and privatization or closure of public childcare facilities, there was a shortage of supply of early education facilities. Moreover, previously free childcare services became costly and increased the opportunity cost of working. The increased uncertainty, lack of or high cost of childcare facilities led to decreased fertility rates. The governments of newly created independent states implemented policies of prolonged and well-paid maternity leaves in order to encourage fertility. This in turn resulted in the postponement of returning to work and created more incentives to quite the labor force (Loskshin and Fong, 2006). As childcare facilities mostly employed women, the shrinking also implied reduced demand for female workers.

The effect of motherhood policies on FLFPR in transition economies can be clearly illustrated on the example of Estonia and Slovenia. Before the transition to the market economy, the two countries had almost identical childcare and maternity leave policies, which took different paths

after the collapse of the USSR. During the transition the length of maternity leave in Estonia increased twice, while it was left unchanged in Slovenia. Moreover, Estonia prolonged the unemployment benefits for women with children up to 4 years. These policies, coupled with a drop in preschool facilities by 14% from 761 to 656 and increased prices, incentivized women to raise their children at home and elevated the opportunity cost of employment for women in Estonia (Orazem and Vodopivec, 2000). In Slovenia, on the contrary, the number of preschool facilities increased by 1 percent and the prices did not change (Orazem and Vodopivec, 2000). As a result, Slovenian women with children did not experience a fall in the number of preschool facilities and thus had more opportunities to reenter labor force after childbirth (Orazem and Vodopivec, 2000). Consequently, the FLFPR increased in Slovenia and decreased in Estonia. This example illustrates the importance of sufficient supply of childcare facilities and efficient maternity policies, which would not discourage FLFP in transition economies.

The extent to which mother's labor supply is responsive to changes in supply and prices of preschool is a subject of debate. Universal public provision might crowd out the business of private preschool facilities and the price of public preschool provision might not produce commensurate payoff in outcomes. Barros and others (2011) investigated the impact of free publicly provided childcare in low-income neighborhoods of Rio de Janeiro on maternal labor force participation, private preschools and the net cost of the policy (subsidies offered minus tax revenue from increased employment). The study reported a substantial increase in the use of child care (from 51 to 94 percent), an increase in maternal employment from 36 to 46 percent, and most importantly, the employment of mothers who did not work prior to the program increased twice, suggesting that maternity in the context of inaccessible preschool facilities is a significant deterrent for employment (Barros et al. 2011). As for the net cost, the increase in the income of households by 91 USD is beyond the cost of the expenditure of 250 USD on a single child Barros et al. 2011). However, the researchers did not account for the indirect gains of increases in female

empowerment and the gains in children's development as a result of preschool participation. Although the political, socio-economic, cultural contexts of Rio de Janeiro differ from that of transition economies, the outcomes suggest the potential magnitude of the link between the provision of childcare and FLFP.

In the post-communist transition context, the research by Lokshin and Fong (2006) on childcare policies in Romania illustrates the sensitivity of female employment to prices of preschool facilities. In the pre-transition period, women in Romania, as in other communist countries, participated in the labor force more than women in industrialized countries (Lokshin and Fong, 2006). This trend, as mentioned previously, was only possible due to the wide range of government-subsidized childcare programs, which cared for children from the early months until the time they reach primary school age. The authors report that between 1989 and 1997, child benefits fell by 65 percent compared to the pre-transition benefits (Lokshin and Fong, 2006). This resulted in a drop in the number of nurseries from 847 in 1989 to 573 in 1995, and the consequent two-fold decrease in the number of children (from 2 months to 3 years old) in nurseries (Lokshin and Fong, 2006). In kindergartens, the number of attendees (from 3 to 6 years old) decreased by 1/3 (Lokshin and Fong, 2006). Among surveyed mothers, the absolute majority (65.5 percent) indicate the price of preschool is significant in their decision to work, and one third of them cite inaccessible preschool facilities as an obstacle to employment (Lokshin and Fong, 2006). Considering the similarity of shifts of trends in other post-communist states, these findings suggest the importance of research of the link between the two factors in other transition countries.

Figure 1. Locally-weighted smoothed scatter plot of the distributional impact of a 10 per cent decrease in the price of childcare on the mother's probability of being employed, by per capita income.
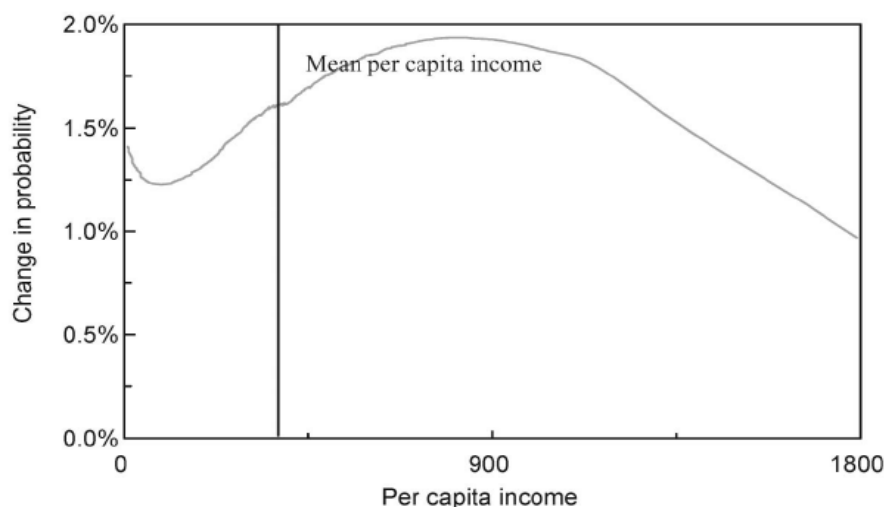
Source: Lokshin and Fong (2006).

Lokshin and Fong (2006) generated a graph illustrating the response in LFP for different income levels to a decrease in the price of preschool by 10%, which is illustrated on Figure 1. The peak corresponds to middle-income mothers, but the trend is positive and increasing for income groups from poor to middle income (with the exception of very poor), suggesting that making kindergartens more affordable benefits a large segment of population.

The significance of the preschool education system in the context of increasing female employment leads me to investigate the access to and the quality of childcare facilities in Kazakhstan.

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2 Early childhood development in Kazakhstan

Kazakhstan has set an ambitious plan to enter the "Top Thirty Advanced Countries" by 2050, which highlights the advancement of human capital, underpinned by early childhood development (ECD), education and health (Gotsadze and Karzhaubayeva, 2017). The ECD and early childhood education (ECE) are also covered by the State Education Development Program for 2011-2020, which aims at the full coverage of children by quality early childhood development, education and equal access of children from all socioeconomic backgrounds to ECD/ECE programs in order to equally prepare children for primary school. In a row with national programs, there are several NGOs, such as BOTA Foundation, which aims to improve the lives of vulnerable children and youth suffering from poverty in Kazakhstan through investment in their health, education, and social welfare. BOTA Foundation ran its Conditional Cash Transfer in six regions in Kazakhstan between 2009 and 2014 targeted at early childhood development, the effectiveness of which will be evaluated in this paper. This chapter provides a brief overview of the pre-school education system in Kazakhstan, its accessibility and quality.

2.1 Preschool education system in Kazakhstan

Preschool education in Kazakhstan aims at developing children's social, self-learning skills and comprehensive knowledge formation, thereby preparing children for primary school (Ministry of Education of Kazakhstan 2019). Children's legal right for preschool education is realized by a variety of preschool facilities, which differ by function and hence have different hours of operation. Table 1 presents the types of preschool education facilities in Kazakhstan and the duration of their operation. Nurseries are facilities for the youngest children aged 1-3 and operate 10 hours per day, 5 times per week. Types of kindergartens differ by ages of children, usually operate 10 hours, with the exception of mini-centers, which are usually established as a part of secondary education facility or at houses that satisfy operational criteria and operate only 2 hours on weekdays. Kinder Dorf is

Table 1. Types of Preschool Facilities in Kazakhstan

Facility type	Age range	Hours of operation (per day)
Nursery	1-3	10
Kindergarten		
Kindergarten	3-5/6	10
Nursery-kindergarten	1-5/6	10
Kindergarten-school complex	1-10	10
Mini centers[a]	3-5/6	2
Kinder Dorf [b]	4-7	24
Pre-primary education		
Zero classes[c]	5/6	4
Early childhood orphanages	0-3	24

Notes: (a) Mini centers are established in secondary school or home; (b) Kinder Dorf is a pre-school facility for children in orphanages; (c) Zero classes are attended for one year before starting primary education. *Source:* Ministry of Education of Kazakhstan cited in Zhalelova (2016).

a special kind of childcare facility for orphans, hence operate 24 hours every day. Zero classes are a part of secondary schools and operate exclusively to prepare children for first grade and operate 4 hours on weekdays.

2.2 Access to preschool facilities in Kazakhstan

As for the supply-side of preschool facilities, the government of Kazakhstan increases investments annually in an effort to provide equal and universal access to preschool education in all regions of Kazakhstan. The funding has increased more than twice between 2015 and 2016: from 30.7 million USD in 2015 to 74.2 million USD in 2016 (Ministry of Education of Kazakhstan 2019). The average expenditures on education of one preschooler also increased from 181 USD in 2015 to 430 USD in 2016 (Ministry of Education of Kazakhstan 2019). Yet, the statistics for 2019 shows

Figure 2. Map of regions of Kazakhstan

Source: Gotsadze and Karzhaubayeva (2017).

that there are 424 thousand children in the waiting lists, not able to enroll in any kind of preschool facility, 118 thousands of which are within the 3-6 age group (Ministry of Education of Kazakhstan 2019). This figure does not include those children, who have no preschool facility nearby and hence cannot enroll in a waiting list, which is mostly true in rural areas.

Since the CCT program organized by BOTA, which is the subject of the empirical evaluation of this paper, was conducted between 2011 and 2012, the statistics on the situation of access to preschool will be provided for the corresponding period. Figure 3 provides the statistics for enrollment rates in any type of preschool facilities by oblast (region), including the estimates for two big cities – Astana and Almaty in 2010 and 2011. The trend is positive for most of the regions, with the exception of Aqtobe, Astana and Zhambyl. The lowest rates of enrollment are observed for South-Kazakhstan, Qyzylorda, Zhambyl, Mangystau oblasts and Almaty city. These regions, located in the South and the West of Kazakhstan (as illustrated on Figure 2) have high amounts of Kazakh population: in 2010 Kazakh population accounted for 75 percent of the total population in the Southern Kazakhstan and only 40 percent in the Northern and Central regions, which have higher proportions of Russian population (Agency of Statistic of Kazakhstan, 2010). This could

Figure 3. Preschool enrollment by regions, 2010, 2011
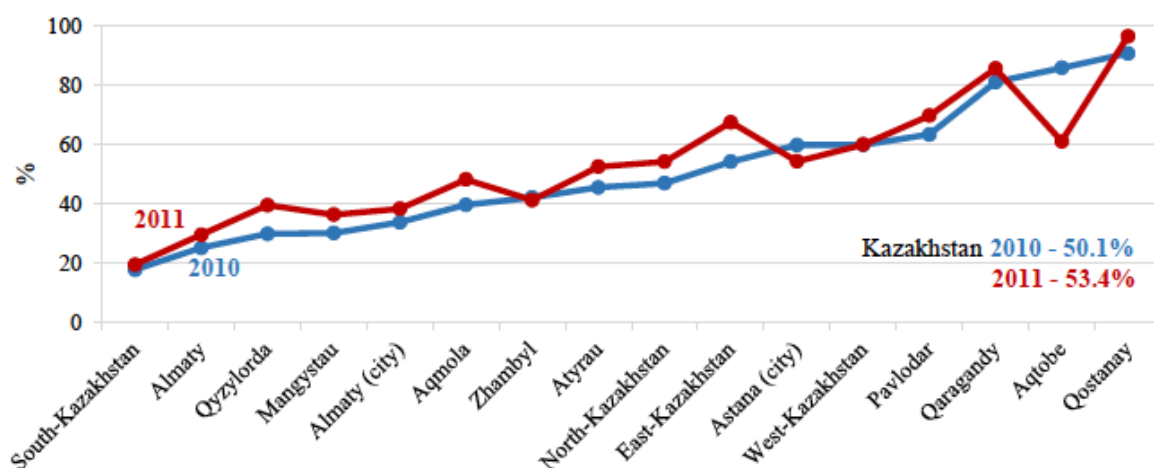
Source: Ministry of education and sciences of Kazakhstan (2012) cited in Zhalelova (2016).

potentially have resulted from a tendency of the native Kazakh population to have more traditional values, which normalize women's role as a housewife and discourage their participation in the labor force, hence the demand for formal preschool facilities is lower compared to other regions.

Figure 4. Preschool enrollment rate by urban/rural areas, 2013
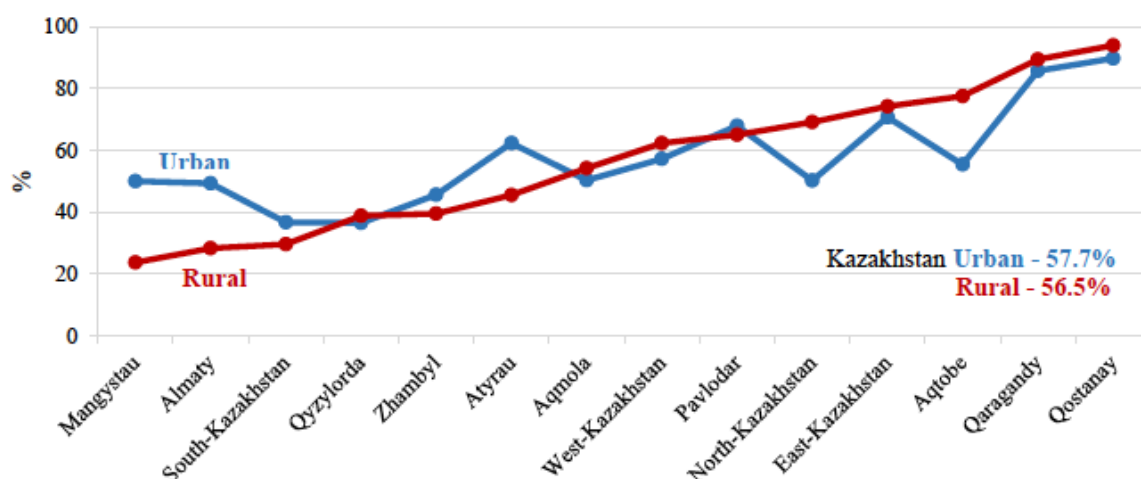
Source: Ministry of education and sciences of Kazakhstan (2012) cited in Zhalelova (2016).

Figure 4 illustrates the differences between preschool enrollment between rural and urban areas, which are quite important for this work, since the CCT program was conducted in a rural area with an intention of addressing the inequality of access to educational facilities. Similarly to the previous graph, Southern and Western regions of Kazakhstan - Mangystau, Atyrau, Almaty, Qyzylorda, Zhambyl and South Kazakhstan regions have significantly lower preschool enrollment rates in rural neighborhoods, compared to urban areas. Although not visible on the graph, more than half (69 percent) of the populated localities in Kazakhstan have no preschool facility (Ministry of Education of Kazakhstan, 2010).

The problem of inaccessible preschools is being addressed both by governmental policies and NGO's projects, which use different development intervention tools, such as Conditional Cash Transfers, to respond to the problem.

3 CCTs and adult employment

Conditional cash transfers have become a popular tool in development intervention. They are targeted towards decreasing poverty both in the short and long-term. The former goal is accomplished through contributing to a household's income with a direct transfer of cash, while the latter is achieved by conditioning this transfer on an action directed towards investment in long-term human capital development through attendance of an educational facility, regular health check-ups and other activities. This chapter will investigate the potential effect of CCTs on adult employment.

3.1 Cash transfers and microeconomics of work decision

Economic theory suggests several pathways in which CCTs can affect labor force participation. First, with an increase in the total income of a household after cash transfers, a pure income effect might dominate. If we assume that leisure is a normal good, i.e. its consumption increases with income, individuals receiving cash might opt for shifting a part of the time they used to allocate on work to leisure activities. The supply of labor might also decrease as a result of extra duties related to fulfilling the conditions of a program, such as bringing children to schools or hospitals. Participants might also decide not to work to stay "poor" and be eligible for transfers in an anticipation of potential future rounds of a program. The supply of labor might shift to the opposite direction if CCTs are conducted in a region where child labor is a common practice and to compensate for the loss of an income resulted from children's involvement in education instead of work, parents increase their supply of labor. Another channel to increase employment and hours of work is possible due to the time freed up from taking care of a child. This channel is particularly applicable in a context of CCTs targeted at early childhood development, since children of this age category require the most laborious and intensive care and constant presence of a caregiver near to a child.

3.2 Evidence from previous CCT programs

A large share of CCTs are targeted towards incentivising primary and secondary education, and there is only a few CCT programs targeted at early childhood development and a limited number of rigorous studies on the effect of CCTs on adult employment. To my knowledge, there is no rigorous study to investigate the effect of CCTs targeted at preschool attendance on adult employment, which is the primary contribution of this work. The studies that empirically assess the effect of CCTs on adult employment have different results both in direction and magnitude, with some reporting positive effect on adult employment, others no significant effect and third group showing negative effects of conditional transfers on LFP. The result could depend on many factors among which are the amount of transfer compared to a household's income, cultural specifics and power division in a household. As there is no single theory behind the response of adult employment for conditional transfers, the effect can only be established empirically.

The assessment of the effectiveness of CCTs is largely based on the evidence from Latin America, where such programs are very common. The results reported from such assessments should not be generalized to other socio-economic, cultural, political and demographic backgrounds. Moreover, an analysis by Kabeer and others (p.43, 2012), which reviewed a range of papers that measure the impact of CCTs, found that "despite some of the recent claims made for the economic impacts of CCTs, evidence that meets the strict methodological criteria is still extremely scarce, reducing the credibility of these claims as well as the extent to which they can be generalised". Nevertheless, I review some of the results from previous studies to examine potential outcomes of CCTs.

The negative effect is plausibly expected since CCTs often target households that are poor, but are still employed on a low-paying job or have opportunities for employment. Cash transfers might provide opportunities to quit work, a feature of CCTs for which some of them were accused (Medeiros et al. 2008). An example of such program is the Uruguayan "Ingreso Ciudadano" CCT

that transferred 56 USD monthly to families who earn less than 51 USD per-capita, provided that children attend school and do regular health check-ups. An empirical study about this program by Borraz and González (2009) found a significant negative effect on the intensive margin: hours of work for women decreased by 6.4 hours on average, which corresponds to 17% less compared to a control group; for men the result was milder – 2.5 hours less. However, the study did not report the effect on quitting or entering labor market. Neither it explained a mechanism behind decreased work efforts. A possible channel could be an income effect in combination with increased duties related to fulfilling the conditions of the program, as was explained above.

The results produced by different authors on the effect of PROGRESA CCT on adult employment vary both in direction and size. A study by Skoufias and Di Maro (2007) that was reported as methodologically rigorous by Kabeer et al. (2012), found no significant effects of the transfers neither on adult work hours, nor on the time spent on leisure. However, the authors reported shifts from self-employed or unpaid work to salaried jobs, thus reducing adult participation in family enterprises, which were less remunerative (Skoufias and Di Maro, 2007). The potential channel could be that cash transfers give an opportunity for people to quit from hazardous informal employment and enter salaried (often legal) market, an option which they did not have before because of the increased risk of quitting a job and searching for a better one. This suggests a positive feature of CCTs in reducing the risk of changing unprofitable jobs and hence give an opportunity to escape poverty traps. Medeiros and others (p.11, 2008) offer another potential explanation of how CCTs might positively affect work outcomes on a specific example:

Picture a self-employed worker, a street vendor, for instance. One barrier for this worker to expand his business and involve other family members in it is the access to credit to generate stocks. If the family of this vendor receives the benefit, this money would be like opening a line of microcredit—without the repayment requirements, of course. Indeed, if the government lowers taxes and interest rates or grants credit to entrepreneurs at the other end of the income distribution, will they become idle and quit working? Generally, the answer to this question is no. It is expected that the impoverished micro entrepreneurs behave like their wealthy counterparts. The transfers, therefore, could end up increasing the level of workers' occupation and their commitment to work.

Hence, the overall effect of CCTs on adult employment is not clear, the results are mixed and the causal mechanisms are not straightforward, therefore to find out the effect of CCTs targeted at early childhood development on adult labor force participation, an empirical analysis has to be conducted, with attention to the context under which a program is operating.

4 Overview of BOTA CCT

Operational since 2009, BOTA Foundation conducted a program targeting poor household aiming to increase the living conditions and access to education for children. The program used 65 million USD conditional cash transfers to provide aid in several regions of Kazakhstan, namely Aqmola, Almaty, Atyrau, Qyzylorda, Zhambyl and Mangystau. As discussed in the previous chapters, Mangystau, Atyrau, Almaty, Qyzylorda and Zhambyl regions have the lowest statistics on enrollment in preschool both in urban and rural areas. This chapter presents the overview of the cash transfer program and the findings of the primary evaluators of the program.

4.1 Program overview

To be eligible for a monthly benefit, households had to belong to one of the following categories: households containing pre-school-age children, children with disabilities, pregnant and lactating women and teenage school-leavers. In addition to meeting the criteria relevant to the beneficiary groups mentioned, possessing the right documentation and living in the area where BOTA is operating, the household must also be classified as 'poor' in order to enroll in the program. The inclusion of the poorest households is maximized by a proxy means test conducted by the representatives of the program. The amount of benefit ranged from 24 USD to 35 USD, depending on the category of a household and was awarded on a condition that a child attended preschool more than 85 percent of its operation time.

The data collection concentrated on households receiving aid on a condition of pre-school children in *okrugs*[6] of Almaty region. The effect of the intervention was quantified by comparing the outcomes a year after the program in two groups of communities: one that received the cash transfers during the survey period in 2011-12 (the 'treatment' group), and one that did not receive

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[6] *okrug* is the smallest administrative division in Kazakhstan that consists of a few villages and is headed by an *akim* (mayor)

it in that period, but received a year later (the 'control' group). The randomization occurred on an *okrug* level. The researchers matched 226 *okrugs* into 113 pairs, ensuring their similarity in location, the distance to the *rayon* [7]center and the population size, upon which they randomly chose one in each pair for the treatment group.

The CCT significantly affected preschool attendance rates in treatment areas. While part of the increase in preschool participation in the year after the start of the program is attributable to the fact that children became one year older and are enrolled in mandatory zero-classes or first grades, the percentage of participation is different for treatment and control areas: 84% for the former and 70% for the latter (O'Brien et al. 2013). Thus, if the price of the preschool education is the main deterrent for enrolling a child in a preschool, the increased participation could be explained by a "subsidized" (the money received as a transfer) childcare.

As a response to the increased demand, new preschool facilities were created in order to accommodate children eligible for BOTA transfers. Thereby, in locations with absent or limited preschool facilities, local communities have set up their own preschools, which operated in classrooms or houses, satisfied the criteria for a preschool set by the government, but were mostly informal. Such childcare institutions, called "BOTA facilities" operate usually for two hours per day and few times per week. This created some difficulties, since the education children receive in such facilities is much lower in depth compared to full-time kindergartens and the condition to participate in 85 percent of the operating hours becomes unfair to those, who have to attend full-time childcare facilities to be eligible for the transfers. Moreover, this type of preschools should not affect maternal labor force participation, since it still leaves a substantial amount of childcare duties on the part of the caregivers.

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[7] is a type of administrative unit of several post-Soviet states, often translated to English as "district"

While the results of the program show an increase in enrollment among beneficiaries of the CCT, overall the average size of enrollment in kindergartens, zero classes and mini-centers has not changed (O'Brien et al. 2013). The authors of the evaluation of the program (O'Brien et al. 2013) believe the effect was partially caused by the fact that preschools were biased towards accepting children eligible for BOTA program, so that all families eligible for the program could benefit from the transfer by fulfilling the condition of attending a preschool. This creates a setting, in which preschools that were earlier unavailable both from the demand side (expensive) and supply side (long waiting lists), become available, providing an opportunity to testify the extent to which maternal employment is responsive to a more accessible childcare.

4.2 Experimental estimates and anticipated outcomes for LFP

Prior to the implementation of the program, half of the households have at least (most often) one member of a family who has a salaried job, which comprises family's main income source (O'Brien et al. 2013). Out of the approximately 50 percent of people not in the labor force, almost all are students, pensioners and housewives (O'Brien et al. 2013). Although households receive a variety of state benefits, few of them have consumption levels low enough to receive the state's Targeted Social Assistance (O'Brien et al. 2013).

The primary evaluators of the program expect to see no significant changes in the adult work efforts: "We expect that the CCT is unlikely to encourage people to give up work or reduce their working hours because the value is too small and the duration is short-term. In any case levels of economic inactivity and unemployment are high" (O'Brien et al., p.47, 2013). Thus, there is no expectation of increased work efforts or labor force participation.

The method of impact evaluation used by O'Brien et al. (2013) is a comparison of means in the outcomes after the intervention. This method is built upon the assumption that before the intervention, the treatment and control groups are identical, and any changes in the outcome

variables can be attributed to the CCT. The authors found no change in the labor force participation of adults, in line with their expectations. The category that comprised the adult group contains young people aged 15-17 and pensioners, which the program was not supposed to affect. In addition, as mentioned previously, no change in the employment decisions is also explained by the short-term duration of the program. However, as was discussed in the previous chapter CCTs can reduce the risk of changing unprofitable jobs and hence give an opportunity to escape poverty traps. In line with this, the authors of the evaluation found that out of the 47 percent of the adults in labor force, "adult members of BOTA beneficiary households are now 5 percentage points less likely to work for themselves, with a tendency to be more engaged on paid employment, either formally or informally" (O'Brien et al., p.51, 2013). This is a small, but a significant shift.

As explained in the previous chapters, inaccessible childcare causes "motherhood punishment", depriving mothers with preschool-age children to participate in the labor force. The transfers by BOTA made preschool facilities available from the demand side, providing cash and conditioning it on a mandatory childcare attendance and the supply side, by encouraging the opening of new facilities. Consistent with this, O'Brien at al. (2013) found that the program significantly affected main caregiver's employment, who started to be in paid employment, work outside the house for a third party: 28 percent of primary caregivers in treatment areas are in paid employment, compared to 21 percent in control areas. Moreover, caregivers in the treatment areas work 3 hours more per week, compared to the control group (O'Brien et al. 2013).

5 Data, Empirical Strategy and results

This section presents the empirical strategy to measure the impact of CCT on female labor supply. Oxford Policy Management (hereinafter OPM) evaluation covered the impact of the program on education, health, consumption and expenditure, unemployment patterns of all adults and caregivers in particular and poverty levels. Although the coverage is very detailed and extensive, it is based on the assumption that the treatment and control groups are similar. My work builds upon the results of OPM, by aiming to provide separate estimates on the amount of the effect attributable to BOTA, exterior shocks and pre-program differences between the treatment and control groups. Therefore, I use difference-in-difference technique to measure the effect of the transfers, which allows to account for the aforementioned factors.

5.1 Description of data

The dataset for this evaluation are taken from World Banks' Microdata Library. The surveys were conducted at the baseline in both treatment and control regions, in the households that were eligible for the CCT. The data collected information both on children (enrollment and attendance at pre-school, caring arrangements, ECD environment and health) and households' characteristics (attitudes towards pre-school education, consumption patterns, education, employment information). The survey also collected information on preschool institutions attended by eligible children (what facilities are available for children, operation hours, attendance list management), when it was possible. However, the information cannot be representative of the region, since it was not possible to obtain a sampling frame with all pre-school facilities (O'Brien et al., 2013).

To estimate the effect of the CCT on female labor force participation, I use data on the main caregivers of the children. Initially, the evaluation should provide the information about the impact on caregivers in general, not solely women, but as 97 percent of caregivers are women (as expected by the discussion in the previous chapters and revealed by the data), the effect is reduced to

Table 2. Baseline Balance Check

Indicator	Treatment	Control	Difference
Child characteristics			
Mean age	4.4	4.4	0.04
Ever enrollment rate (%)	46.5	36.6	9.9***
Current enrollment rate (%)	81.8	71.5	10.3**
Days per year spent in pre school[a]	256.7	280	-23.3***
Child suffered from diarrhea last month (%)	6.8	7	-0.2
Child is mentally backward (%)	1.4	1.4	0.05
N	589	584	
Household characteristics			
HH head is female (%)	18	20	-2
Mean age of the head of household	46.6	47.7	-1.2
HH head has no education (%)	2	2	0
HH head is unemployed (%)	60.3	63.3	-3
HH head is a pensioner (%)	50.8	48.8	2
HH receives state transfers for children under 18 years (%)	29	33	-4
N	589	584	
Main caregiver characteristics			
Mean age of the caregiver	35.47	36.71	-1.25**
Mean number of years of education	5.582	5.454	0.129*
Working for pay (%)	17.66	13.87	3.79
Self-employed	19.86	15.41	4.45
Not working but searching	33.62	30.99	2.63
Days worked in the last 7 days	5	7.8	-2.8
Hours worked in total in the last 7 days?	42	46.7	-4.7

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

maternal labor force participation. As discussed in the precious chapters, childbirth and inaccessible childcare is one of the main obstacles to increase FLFP in transition economies.

At the baseline, the number of caregivers in treatment and control areas was 589 and 584 respectively. The follow-up collected information about 1170 caregivers in treatment and 1119 in control areas. Household roster dataset contains data on 3658 family members in the treatment

area and 3561 in the control. I merge the household dataset with data on caregivers to extract additional information on caregiver's education, age and gender.

The measurement of the effect of any intervention presumes calculating the differences between $Y_i(1) - Y_i(0)$, where $Y_i(1)$ is the outcome for individual or household i that receives a treatment, and $Y_i(0)$ is the outcome for the same individual or household but without the treatment, or counterfactual. In reality such measurement is unattainable, since one cannot experience both states at the same moment in time. The setting of RCT presumes random assignment of subjects into control and treatment groups, which is supposed to create a situation in which the groups are identical on all parameters, except for being treated. Although the randomization process was taken place, it is necessary to check baseline characteristics of the two groups. I therefore provide a balance check for variables that might affect the outcome variable in any degree, illustrated in Table 2.

Household characteristics can impact the decision to work of caregivers. For instance, disproportionately high amounts of state transfers on one group could discourage employment. Similarly, if a household is headed by a female the power division in the household can be altered and hence affect a decision to work. However, neither these, nor other factors related to household characteristics are significantly different in the two groups.

As to the difference in the characteristics of caregivers themselves, mean age is not substantially different, neither is education level, although the small difference is statistically significant. Variables related to employment were created by recoding a single variable, that displayed a question about employment and had multiple answer choices. Therefore, the statistical significance for the difference in these variables couldn't be obtained. However, the table suggests some difference in means: almost 4 percent more people were working for pay in the treatment area before any intervention, and 2.63 percent more were looking for a job. These facts question the

Table 3. Balance check of pre-intervention outcomes targeted by the program when controlling for time difference between listing and data collection, full sample

Indicator	Ever enrollment rate (%)	Current enrollment rate (%)	Days per year spent in pre school
Treatment dummy	0.0731	-0.00742	-28.514
	(0.120)	(0.0763)	(19.299)
Time elapsed	0.0542*	0.0590	-4.548
	(0.0266)	(0.0423)	(5.615)
Constant	0.246*	0.659***	275.161
	(0.120)	(0.180)	(25.642)
Observations	171	82	70
R^2	0.022	0.051	0.043

Notes: (a) Days per year estimate include children who never enrolled in pre-schools.
Source: Zhalelova 2016.
Cluster-robust standard errors are in brackets.
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

similarity of the two groups. The direction of the difference is opposite for the number of days worked in the last week (2.8 percent less for the treatment group) and the amount of hours worked during a week (4.7 percent less for the treatment *okrugs*).

The difference between the ever-enrollment rate and current enrollment rate is both substantial and statistically significant. The test shows that families in treatment areas send their children to preschools more often than control areas in the baseline. If there is a factor that makes families enroll their children to preschools education more, compared to the control areas, then there is something fundamentally different between the two groups, and they cannot be treated as identical. Zhalelova (2016) has suggested an explanation to this trend. The author suggests that this could be a result of the time elapsed between the start of the program and the interviews for the households in the end of the interview list. By the time the researchers get to the respondents, they might have enrolled their children to preschools, aware of the future need for enrollment (Zhalelova 2016). She does a balance checks controlling for time difference between listing and data collection, which

is shown in Table 3. Once time difference is taken into account, the significance of the difference between the treatment and the control households disappears, as is illustrated on Table 3.

5.2 Empirical strategy

The experimental design of the study used for the data collection allows to attribute the changes in adult employment rates to the CCT. Building upon the estimation by O'Brien et al. (2013), I use difference-in-difference method which is based on controlling differences between the treatment and control group before and after the cash benefit. The advantage of this strategy is that it allows to control for any pre-program differences between the two groups, which might be affecting the results as illustrated by the baseline balance check. The difference-in-difference estimation will control for the heterogeneity between the two groups under the assumption that this heterogeneity is fixed over time of the experiment. In other words, we assume that the two groups would follow similar trend had the CCT not been transferred. To eliminate any other factors that could bias the results, I add several control variables.

$$Y(i,t) = \alpha + \beta_1 T(i) + \beta_2(R) + \beta_3(T(i) \times R) + \beta_4 X(i,t) + \varepsilon(i,t) \text{ (1)}$$

Where $Y(i,t)$ denotes the value of the outcome of interest for household i in round t (baseline or follow-up), and α and $\beta_1, \beta_2, \beta_3, \beta_4$ are parameters to be estimated and $X(i,t)$ is a vector of control variables that summarize household and *okrug* characteristics and $\varepsilon(i,t)$ is the error term, responsible for capturing random disturbances.

The parameter β_3 provides an estimate of the "intent to treat" effect, which captures the efficiency or lack of such in the program implementation. Randomized Control Trials (RCT) often suffer from problems as non-compliance and attrition. Including all the households randomly selected to the treatment category, regardless of compliance, β_3 proves the lower band of the estimate of the impact of the program.

I expect β_1 to be statistically insignificantly different from zero, which would mean that there are no significant pre-program differences between the *okrugs* that received and did not receive CCTs. The coefficient for the Round variable β_2 is responsible for capturing any macro-economic shocks that happened during the program period, which could be some governmental programs targeted towards the poor, or macroeconomic fluctuations, that could affect employment. The estimate for the interaction term illustrates the effect of being in the treatment area on the work outcomes after the program implementation, which would display the effect of the program, excluding other factors. The intercept estimates α will show the differences in the average employment before the program, for the reasons unrelated to the BOTA CCT

6 Results and discussion of empirical findings

In this work, I measure the effect of giving opportunities to eligible households to receive cash transfer, i.e. the "intent to treat" effect. The dependent variable $Y(i, t)$ specified in the Equation(1) as a binary variable indicates whether an individual i is in the labor market at time t. Specifically, an individual is reported to be in labor market if he/she reports to be working for pay or not working, but searching for employment. I do not include those working in family business as employed, as this category of employment has a very limited potential to empower women and terminate poverty as discussed in the chapter 1, and hence is not of interest for this evaluation.

As explained in the previous chapters, one potential channel through which cash transfers can impact adult employment is that a condition of preschool enrollment and attendance will spare time spent on childcare for the main caregivers, which they could use to join the labor force. This channel is more likely to work if inaccessible childcare was the main deterrent for LFP. Table 4 presents the reasons for non-enrollment at the baseline. As can be seen, the main reason in both areas is the high price of preschools and inaccessibility from the supply side. BOTA cash transfers are supposed to function as a subsidy to increase the demand for the childcare facilities, while new BOTA facilities might also increase the supply of preschools. Although the supply of preschools seems to have increased in both treatment and control areas (possibly due to external governmental programs to increase preschool supply), the demand side increased only for the treated areas.

As expected by the discussion of gender roles in the transition countries, 97 percent of the main caregivers are women. Therefore, the effect on the work decisions of main caregivers can be generalized to the effect on female labor force participation. Time that is saved from the childcare at home should only encourage employment of a main caregiver if a preschool attended by a child is full-time, that is functions 5 times per week and at least 8 hours daily. Therefore, I restrict my regression sample only to those caregivers whose children attend full-time kindergartens. The effect on those caregivers, whose children attended part-time preschools, such as mini-centers and zero

Table 4. Reasons for non-enrollment in preschools

Reason for non-enrollment	Baseline		Follow-up	
	Treatment	Control	Treatment	Control
Too expensive	110	160	45	109
No pre-school here/too far away	70	68	17	23
There is somebody in/outside the family who can look after	40	46	27	46
Child too young	39	33	20	84
Impossible to enroll/waiting list too long/no places	20	18	11	26
Home is a better environment	11	15	7	8
Other	9	14	6	17
Did not want to go	7	8	8	12
Quality of care/education not very good	3	2	0	1
Needed to help out around the house	2	1	0	0
Stigma and discrimination	1	2	0	0
Total	312	367	141	326

classes was found to be statistically insignificant. The results of the effect of part-time preschools are presented in the Appendix.

I estimate the equation (1) using a) no control variables, b) education as a control variable, c) education, distance to the center of rayon, *okrug* and the nearest preschool as controls. Education variable is included as a proxy for human capital, which might affect employment decisions. The longer distance to the rayon, okrug centers might decrease employment, since these are the areas with more employment opportunities. Longer distance to preschool is expected to also decrease employment both because it is more difficult to enroll children in preschools, but also because preschools mostly employ women of all education levels, from cleaners and cookers to nurses and teachers.

Table 5. The impact of BOTA (2DIF estimates) on the LFP among main caregivers

	(1)	(2)	(3)
	The main caregiver is in the Labor Force		
Treatment	0.023	0.008	0.006
	(0.031)	(0.031)	(0.031)
Follow up	-0.074**	-0.071*	-0.072*
	(0.029)	(0.039)	(0.039)
Treatment*Follow up	0.076*	0.078	0.079
	(0.043)	(0.056)	(0.056)
Education		0.062***	0.063***
		(0.010)	(0.010)
Distance to the *rayon* center			0.017
			(0.014)
Distance to the *okrug* center			-0.001
			(0.022)
Distance to the nearest pre-school			-0.133**
			(0.067)
_cons	0.323***	-0.015	-0.024
	(0.021)	(0.060)	(0.061)
Obs.	1854	1272	1272
R-squared	0.008	0.033	0.037

Standard errors are in parenthesis
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

The results of the 2DIF regression for this sample is presented in Table 5. As expected, the coefficient for the treatment variable is insignificantly different from zero in the three regressions, hence there are no significant pre-program differences prior to program implementation. Follow-up seems to decrease the chances of being in the labor force, which means that there could be some external macroeconomic circumstances that discourage LFP in both treatment and control areas. In the first regression, our main variable of interest, that captures the intention to treat effect of the program, i.e. being in the treatment area at the follow-up, seems to increase the LFP of the main caregivers by 7.6 percent. The result is consistent with the evaluation by O'Brien et al. (2013), who found this difference to be 7 percent. Adding more control variables eliminates the significance of the result, however, the magnitude and the direction of the effect remain the same.

The insignificance can be explained by the decreased sample size, once the control variables are included the sample decreases from 1854 to 1272 observations.

The education variable is measured by the highest level of education attained, rather than the years of schooling. There is clearly a significant return to education, a level higher by one rung (from lower professional college to middle professional college, for example) increases the chances of being in the labor force by 6.2 percent, significant at 99 percent confidence level. Hence, more educated women tend to participate in the labor force with higher probability than those with lower education levels, somewhat contrary to what was stated in chapter 1 about the significance of education in the transition states. However, the argument that in post-communist societies education level is already high does not apply to our sample, which represents the bottom of the income distribution. In such a case, return to education is substantial, since the most of the participants of the survey (53.85 percent) have only grade 10-11 level of education. Another statistically significant variable is the distance to the preschool, the longer the distance the less is the probability of working or searching for a job (significant at 95 percent confidence interval), which is explained both from the demand for female workers at preschools and the possibility to relinquish child caring duties to official childcare.

The above estimation measured the effect of CCT on FLFP on the extensive margin, that is how the number of people in the labor force has changed. To measure the effect on the intensive margin, I investigate the change in the intensity of work measured by the change in days per week spent working and the total amount of hours worked in the last 7 days. Using the Equation (1) and the same control variables as for the previous regression, I evaluate the effect of the CCT using difference-in-difference method, as presented in Table 6 and Table 7.

Table 6. The impact of BOTA (2DIF estimates) on the number of days worked per week among main caregivers

	(1)	(2)	(3)
	Days worked by the main caregiver in the last 7 days		
Treatment	0.236	0.260	0.313
	(0.321)	(0.305)	(0.310)
Follow up	-0.410	-0.204	-0.156
	(0.304)	(0.372)	(0.376)
Treatment*Follow up	0.309	0.098	0.035
	(0.415)	(0.502)	(0.507)
Education		-0.021	-0.027
		(0.085)	(0.085)
Distance to the *rayon* center			0.142
			(0.133)
Distance to the *okrug* center			-0.297
			(0.492)
Distance to the nearest pre-school			0.054
			(0.802)
_cons	4.808***	4.939***	4.853***
	(0.239)	(0.574)	(0.589)
Obs.	405	259	259
R-squared	0.016	0.007	0.013

Standard errors are in parenthesis
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 6 reports the results of the impact of BOTA on the number of days worked per week among main caregivers. None of the results are statistically significant, probably due to the small sample size, and the coefficients are negligible. This result is consistent with O'Brien et al (2013), whereas the impact on number of hours worked per week presented in Table 7 is not in line with the authors' findings. The 2DIF estimation shows that the effect of the increased hours of work is attributable to the follow-up variable, rather than the interaction term. For the estimation with no controls being in the end of the 2011 increases hours of work by 6 hours per week on average both for the treatment and control regions. That suggests that exterior factors were likely to affect the change in the intensive margin, and not the BOTA program. Hence, the primary evaluators

Table 7. The impact of BOTA (2DIF estimates) on the number of hours worked per week among main caregivers

	(1)	(2)	(3)
	Hours worked by the main caregiver in the last 7 days		
Treatment	-1.588	-1.908	-1.858
	(3.890)	(3.580)	(3.634)
Follow up	6.206*	1.302	1.407
	(3.654)	(4.265)	(4.301)
Treatment*Follow up	0.154	5.019	4.606
	(4.951)	(5.738)	(5.786)
Education		-0.447	-0.555
		(0.975)	(0.982)
Distance to the *rayon* center			0.404
			(1.523)
Distance to the *okrug* center			-4.608
			(5.679)
Distance to the nearest pre-school			-11.540
			(9.018)
_cons	43.879***	46.644***	47.472***
	(2.926)	(6.599)	(6.724)
Obs.	393	247	247
R-squared	0.018	0.012	0.022

Standard errors are in parenthesis
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

overestimated the effect of CCTs on the intensive margin, reporting it increased working time by 3 hours for the treated areas. Adding controls changes the magnitude of the coefficients significantly, although the results lose the statistical significance.

Overall, the results reveal some positive effect CCT program produced on the extensive margin of LFP among main caregivers. This is in line with the expectation, since preschools attended by BOTA beneficiaries report prioritizing acceptance from the waiting list those children, who are eligible for cash transfers, which increases the supply of preschool education spots for the beneficiaries, and the money received from BOTA works as a subsidy to increase the demand. There was no significant effect of the increased access to childcare facilities on the intensive margin.

Table 7. The impact of BOTA (2DIF estimates) on the proportion of caregivers in salaried employment

	(1)	(2)
	Salaried Employment	
Treatment	-0.005	-0.001
	(0.045)	(0.042)
Follow up	-0.027	0.001
	(0.040)	(0.044)
Treatment*Follow up	0.052	0.031
	(0.052)	(0.057)
Education		0.038***
		(0.010)
_cons	0.892***	0.655***
	(0.034)	(0.070)
Obs.	757	432
R-squared	0.004	0.036

Standard errors are in parenthesis
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

This can be a result of several opposite effects offsetting each other: the income effect for those mothers who decide to consume more leisure with the increased budget constraint, those who spent increased time to fulfil the conditions of the program, like bringing a child to a distant preschool and those whose time freed-up after relinquishing childcare duties. In a row with that, many households might perceive the transfers as temporary, rather than permanent, which might explain the absence of a significant effect on decisions of the intensity of work. Moreover, as Fiszbein et al. (2009) suggests, poor households have very low elasticity of leisure, which makes income effect vanish.

 To testify the hypothesis suggested by the theory on CCTs that cash transfers might aid in moving the poor from low-paid self-employment and family business to salaried employment, I estimate the effect of the BOTA program on the proportion of primary caregivers in salaried jobs. The results of the 2DIF regression are presented on Table 8. Although the coefficient of interest (the interaction term) is positive, it is not statistically significant. Hence, the CCT does not seem to have produced an effect on switching to better employment, contrary to what was found by O'Brien et

al. (2013). The possible explanation is that the amount of transfer was small compared to households' incomes and was probably used to pay for preschool and other expenses related to preschool, such as stationery and children's clothes. Hence, there was no funds left to serve as a backup for the time of searching a more profitable employment.

The results obtained in this work can be generalized to other regions having similar difficulties of accessibility to preschools (both from the demand and the supply sides), similar governmental regulations regarding the maternity leave and identical image of gender roles. Several post-communist countries of Central Asia might qualify for such setting, although more research has to be conducted from different transition economies prior to generalizing the results and scaling up the program.

Conclusion and policy implications

This thesis investigated the effect of the CCT program targeted at increasing preschool accessibility on work decisions of the primary caregivers of children. As primary caregivers are almost totally female (97 percent), the findings are generalized to FLFP. Three main conclusions can be made with respect to the findings. First, more accessible childcare has positively affected the LFP of the primary caregivers on the extensive margin. Second, there was no discouragement of work efforts on the intensive margin, contrary to the economic theory that would predict income effect to increase leisure time. The explanation could be that for poor households, the elasticity of leisure is quite low. Additionally, households might perceive the transfers as something temporary and hence do not change the work intensity. Thirdly, there was no evidence of switching for more profitable salaried employment among the main caregivers, probably due to the depletion of the transfers on preschool expenses and hence lack of resources to serve as a reserve for the time of job search.

I expect the effect on the extensive margin to last even after the termination of transfers, since once a child is in a preschool, it is unlikely that parents will withdraw him or her. Due to the similarities of the history of childcare system in post-socialist transition countries, the results might hold in other transition economies, although more research has to be conducted in other cultural contexts. Finally, prior to decisions on scaling up the program to be implemented in other areas, there is a need for research to evaluate the cost-effectiveness of such CCT programs, taking into account the benefits from early childhood development, women empowerment and economic outcomes for countries.

Appendices

Table 8. The impact of BOTA (2DIF estimates) on the LFP among main caregivers for part-time preschools

	(1)	(2)	(3)
	The main caregiver is in the Labor Force		
Treatment	0.054	0.064	0.068
	(0.079)	(0.076)	(0.076)
Follow up	0.005	0.025	0.024
	(0.068)	(0.070)	(0.070)
Interaction	-0.016	-0.027	-0.027
	(0.084)	(0.087)	(0.087)
Education		0.114***	0.114***
		(0.014)	(0.014)
Distance to the *rayon* center			0.011
			(0.018)
Distance to the *okrug* center			-0.019
			(0.013)
Distance to the nearest preschool			-0.016
			(0.076)
_cons	0.288***	-0.349***	-0.357***
	(0.065)	(0.101)	(0.102)
Obs.	1272	632	632
R-squared	0.002	0.096	0.100

Standard errors are in parenthesis
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

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