Acknowledgments

When I started my studies in economics more than a decade ago, neither had I heard of something called development economics nor did I know much about a city called Bergen. I started my studies in Economics and Business Administration for different reasons. First, I had a very motivated economics teacher who during my high school years made us create and run our own company, and me believe that this could be something fun to follow. Second, all my other passions (writing, music, philosophy, history) seemed to suffer from a limited amount of either talent or job opportunities. It took me little time to realize that the economics component of my studies was much more relatable than the part on business administration and I was happy when at the start of my master's studies, I could finally leave the latter behind. It was then that I developed an interest in both development economics and pursuing a PhD. It is this interest that, a little more than five years ago, made me move to Bergen and start a PhD. During these years and until today, I have been extremely lucky to be surrounded by amazing people. To do what you are passionate about requires the freedom to follow your ideas and the certainty that no matter where these will take you, you won't be alone. Without people to allow me that and be by my side in so many different ways, I would not have completed this journey.

First and foremost, I would like to thank my main supervisor,

Kjetil Bjorvatn. I was extremely fortunate to have a supervisor who always supported me, and at the same time gave me the freedom to follow my ideas. Your creativity and enthusiasm for development research are inspiring and I enjoyed brainstorming new ideas and discussing research at countless coffee meetings. Thank you for introducing me to East Africa, and for making Puglia and Casa Castoro part of this journey which, and I am very happy about that, is far from over.

From the first day of the PhD on, I was lucky to be part of an excellent group of co-authors: Denise Ferris, Selim Gulesci, Vincent Somville, and Lore Vandewalle. I learned a lot from our discussions, our work together, and your way of approaching the many different stages of a project. I look forward to continuing our work and seeing where it will lead.

I particularly want to thank Pablo, Alessandro, Rene, and Eirik. I could not have imagined a better cohort to start the PhD with. Not only would I have been completely lost without you during the first year of the PhD, but we also became flatmates, travel buddies, co-authors, and, most importantly friends. Several other people at FAIR and beyond made the different stages of this journey a beautiful experience. Thanks to Laura for showing me your world, to Hikari for being a wonderful friend, to Monia and Marte for making my research stays in Uganda not only academically valuable, to Akshay for always being curious, to Adrien for making the "office" during Covid less lonely, and to Qquilla for making Bergen feel more homely. Thanks also to Carlotta, Maj-Britt, and Robinah. While my PhD journey (might) end today, I hope that these little journeys will continue and be part of whatever comes next.

Finally, I want to express my gratitude to my family. Thank you for always supporting me unconditionally in my choices, no matter

where they would take me, even if it would be far away. To be happy for someone and supporting this person, no matter what it would mean to oneself is maybe the deepest expression of love. Your passion for mathematics and languages maybe shaped, but at the very least has been valuable for this PhD journey, as have been the numerous discussions about whatever topic. I will be forever grateful for this. And to those, who can't read this anymore - I hope you always knew.

To all of you, thank you for being there during my PhD, and for reminding me that there is so much more.

Arne Nasgowitz
Bergen, November 2023

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Introduction

In 2019, more than 35 percent of the population in Sub-Saharan Africa was living in extreme poverty.[1] While there has been considerable progress in poverty reduction in other parts of the world, in particular Asia, the poverty level in Sub-Saharan Africa remained relatively stable over recent decades. This means that, given the population growth, the number of individuals living in extreme poverty has even been increasing (Abay et al., 2023).

These trends can also be observed in Uganda. While poverty decreased considerably in the early 2000s, it has remained relatively stable during the last decade. In 2019, just above 40 percent of the population was living in extreme poverty (World Bank, 2023). These seemingly stable levels are the results of counteracting developments. The overall declining trend in poverty on the one hand, and the various crises on the other hand, such as the drought crisis in 2016/17 or Covid-19 in 2020/21.

Against this background, it is important to understand how individuals can create a sufficient and reliable source of income, and in particular how to improve its resilience during times of crisis.

In this thesis, I focus on two constraints that restrain people from moving out of poverty - money and time. While the first

[1] According to the World Bank's definition of extreme poverty, which is living below a poverty line of USD 1.90 (in 2017 purchasing power parity) per day.

one has received much attention, maybe most prominently in the debate surrounding the "microfinance revolution", the role of an individual's time allocation has received less consideration. People differ in how they allocate time between unpaid and paid work, and these differences partly determine their capacities to generate an above-poverty level of income. Some of these differences are due to different choices and preferences, but others are due to factors outside the individual control, such as decisions that are made at the household level, access to markets and basic services, or norms.

The first chapter of this thesis, **Childcare, labor supply, and business development: Experimental evidence from Uganda**, focuses on a group that is particularly likely to face time constraints, that is mothers of 3-5 year old children. We experimentally test the effect of easing the money and the time constraint, both separately and jointly. To do so, we assigned 1,496 mothers of 3-5 year old children from nine districts of peri-urban Uganda randomly to one out of four groups. The first group received one year of free childcare, providing the mother with time; the second group received a labeled cash grant of equivalent value, providing the mother with money; a third group received both, to test potential complementarities; and the last group served as a control group and did not receive any intervention. We observe that the effect of providing households with childcare depends on the household composition. In households where the father is present, he increases his labor supply and earnings from wage labor, while mothers are not affected. In households where no father is present, the mother increases her labor supply and earnings. The cash grant increases the mother's labor supply and revenues in self-employment but does not affect the father. Consistent with these findings, we additionally provide evidence of a positive impact on other dimensions of well-being, such as happiness or

consumption. In all cases, children are more likely to be enrolled in full-day childcare and score higher along several dimensions of early learning, particularly in literacy and motor development.

An increasingly important discussion focuses on the resilience of income-generating activities to crises. In 2020, Uganda was hit by the Covid-19 crisis and swiftly reacted with restrictive measures on mobility and economic activity. In the second chapter, **Cash against Covid: Evidence from Uganda**, we follow the same households as in Chapter 1 into and beyond the Covid-19 pandemic. We document the impact of the lockdown on households and explore the effects of prolonging a cash transfer into the first year of the pandemic. We find that income dropped sharply after the first economic lock-down measures have been implemented, but recovered relatively quickly and returns to the pre-crisis level by the beginning of 2021. The cash transfers were successful in shielding households, both in terms of income and savings, as well as preventing business closures. We also find evidence for improved food security and, reassuringly, no signs of increased domestic violence as a consequence of prolonging the cash transfer into the pandemic.

The third chapter, **Time and Poverty**, zooms out of the specific experimental setting and provides a general framework to analyze poverty with respect to money and time. Individuals can be poor if they have too little income, but also if they have to work excessive hours. A main objective of this framework is to differentiate individuals by whether they can or cannot escape both dimensions of poverty simultaneously by adjusting their labor supply. The latter group is composed of individuals who can only escape monetary poverty at the cost of working excessive hours, and vice versa. Using the Uganda National Panel Survey, I first show that over time the two components of poverty develop in opposite directions. While

monetary poverty has been decreasing between 2009 and 2016, the opposite is true for time poverty, in particular for females. I show that an integrated framework can help to explain mobility in and out of poverty, as well as the likelihood that such transitions are permanent.

The key takeaway of this dissertation is that to better understand and potentially alleviate poverty, it is important to consider time constraints imposed by unpaid work. Certain groups of individuals are more likely to face a higher burden of unpaid work, such as women, households that have many children, no access to markets and water, or live in areas with restrictive norms, for example with respect to female labor force participation. Policies that solely focus on the monetary aspect of poverty will be biased against those individuals who might face the decision between either remaining monetary poor or working excessive hours, both of which are associated with detrimental effects on well-being. In this dissertation, I show that, in terms of income generation at the household level, easing time constraints is as efficient as easing monetary constraints. An important insight, however, is that the form of support has distributional consequences. While interventions that free up time affect the household as a whole, equivalently sized cash transfers can be more easily directed toward a specific person and might align better with an agenda of female empowerment.

Taking into account both monetary and time constraints improves the identification of poor individuals, by uncovering those who are working excessive hours to avoid monetary poverty. Policies and interventions based on this framework will be more efficient and less biased compared to those focusing on monetary poverty only. Such policies are particularly valuable during times of crisis, not only as an immediate crisis relief but also to protect vulnerable businesses.

Chapter 1

Childcare, labor supply, and business development: Experimental evidence from Uganda

Mothers of three-to-five-year-old children in Uganda were randomly offered a childcare subsidy, an equivalent cash grant, or both. Childcare improved household income and child development, but its impact on female labor varied by household composition. For single mothers, childcare increased labor supply and earnings from self-employment; among couples, it increased fathers' income from wage-employment. Cash grants had a similar effect on household income, driven by mothers' labor supply and earnings. Our findings suggest that in a low-income context, childcare can reduce household poverty and improve child development, but access to capital is more effective in increasing female labor supply.

This chapter is co-authored with Kjetil Bjorvatn, Denise Ferris, Selim Gulesci, Vincent Somville and Lore Vandewalle. We gratefully acknowledge the financial support of IZA-G^{2}LM, the Research Council of Norway and PEDL. We have benefited from discussions with Oriana Bandiera, Anne Fitzpatrick, Katrine Løken, Andreas Madestam, Alice Mesnard, David McKenzie, Rohini Pande, Eric Verhoogen, and from comments by seminar participants at the Universities of Bilkent, Bristol, Columbia, Exeter, Geneva, Groningen, Kadir Has, Kent, Oxford and Sheffield; at City University of London, Geneva Graduate Institute, NHH, NOVAfrica, PSE, Royal Holloway, SSE, Texas A&M, Trinity College Dublin. Thanks also to Akshay Moorthy, Benjamin Bjorvatn Øien and Marte Sigvaldsen for their excellent research assistance. The study was preregistered (ID AEARCTR-0004490) and obtained the approval of the NHH Institutional Review Board and the Bocconi University Ethics Committee.

1.1 Introduction

Social norms, market imperfections and the structure of the labor market may limit women's labor market opportunities in low-income contexts. Women are often responsible to do the bulk of household chores and caregiving (Jayachandran, 2021), regularly combine work with childcare (Delecourt and Fitzpatrick, 2021) and are more likely to be involved in self-employment than in wage-employment (Bonnet, Vanek and Chen, 2019). While access to childcare has been critical for mothers' labor supply in many high-income countries (Gelbach, 2002; Baker, Gruber and Milligan, 2008; Goldin, 2021), it remains an open question whether it can improve maternal labor market outcomes in low-income settings and how it affects other household members.

This paper reports from a field experiment in Uganda designed to understand the effects of offering subsidized childcare on income and child development. We hypothesize that childcare will allow household members to increase their labor supply by freeing up their time. As in other countries of Sub-Saharan Africa, the labor market in Uganda is gender-segmented: Women are more likely to be involved in self-employment, and men in wage-employment, and men receive higher wages than women in general. In order to encourage maternal labor supply, we therefore primarily focus on business development, but we also document the impact on wage labor and for other household members, such as the fathers. This is an important contribution to the literature, because we have very limited evidence on the effects of childcare on household members besides mothers and children in low-income countries (Evans, Jakiela and Heather A. Knauer, 2021).

Capital and labor are two key inputs of production in a business.

Entrepreneurs may be unable to invest in capital due to credit constraints, while their labor supply may be constrained by domestic duties. There may also be important complementarities between them.[1] Similar arguments apply to wage labor, where domestic duties can restrict labor supply and credit constraints the investment in (costly) job search.

To study these mechanisms, we randomly assigned mothers of 3–5 year old children in our sample to one of four groups. The first group was offered free childcare for one year. While private childcare services exist in urban and peri-urban regions of Uganda, these are typically not accessible to the poor, or are limited to a program that runs only in the morning. The childcare treatment offered to enroll one child of three to five years of age in a nearby childcare center of choice with all costs covered.[2] The second group was offered an unconditional cash grant equal to the cost of the childcare treatment. The cash grants were unconditional but labeled as a business grant and transferred directly to the women. The third group was offered both free childcare and the cash grant. A final group of women served as a control. This design allows us to assess the relative importance of time and credit constraints for labor supply and business development, as well as the cost-effectiveness of subsidized childcare. We surveyed the participants at baseline and approximately one year later to measure their labor supply and earnings and that of the other household members. We also collect

[1]For instance, lacking access to capital may severely limit the returns to childcare, as the marginal product of labor can be very low. Similarly, the returns to an increase in capital may be contingent on having access to childcare, allowing the entrepreneur to work more hours, and more productive hours, in the business.

[2]Note that most of the childcare centers in our sample were pre-school nurseries with lessons during the morning hours and (supervised) play or rest time in the afternoon. As such, our childcare intervention can be interpreted as providing subsidized access to pre-school education.

information on family well-being and on child development indicators for the "target child", i.e. the child who is eligible for the childcare treatment.

The childcare subsidy leads to a large increase in full-day enrollment of target children. In terms of labor market outcomes, we find that childcare significantly increases the mothers' revenues from self-employment, without increasing their average labor supply, productive assets or number of employees. The childcare treatment also increases the fathers' labor supply and earnings from wage labor. These results highlight the importance of the household composition in determining the effects of a childcare subsidy. At baseline, about a third of the women are single mothers. While the freed-up time from childcare is likely to increase the labor supply of single mothers, the prediction is less clear for mothers who live with a partner, as labor market returns are typically higher for men than for women in Uganda. Indeed, we do not find an impact on labor supply or income for women who live with a partner. In those households, the evidence suggests that fathers use the freed-up time to take on additional wage labor, leaving more domestic chores to the mothers. Single mothers, on the other hand, increase their labor supply in self-employment, which is associated with a substantial increase in their business income.

The cash treatments have a similar effect as the childcare subsidy on the mothers' revenues from self-employment. Contrary to the childcare subsidy though, the average women's labor supply increases as well. In line with the hypothesis of binding capital constraints, the treatments lead to the creation of new businesses, and investments in productive assets and makes it more likely she hires an employee. The cash treatments do not affect the father's labor supply, income, business assets or number of employees.

In a final set of results, we discuss the treatment effects on family well-being. We find that childcare has the additional benefit of significantly improving children's development, early literacy and motor skills in particular. Cash grants, on the contrary, do not have a significant effect on early childhood development after one year of treatment. Both childcare and the cash grants increase the mothers' reported levels of happiness and life satisfaction, along with household consumption and food security. In terms of domestic violence, offering childcare does not have a significant impact, while we cannot exclude that the cash grants increase the reported prevalence of physical violence between partners.

Our study contributes to the research on the effects of access to childcare on labor supply and income. Evidence from middle- and high-income countries show that childcare has positive effects on mothers' employment in general,[3] with some evidence that the effects can be particularly important for single mothers (e.g. Gelbach, 2002). A number of recent studies from India (Nandi et al., 2020) and Sub-Saharan Africa (Martinez, Naudeau and Pereira, 2017; Ajayi, Dao and Koussoube, 2022; Donald and Vaillant, 2023) study the effects of introducing new, community-based childcare facilities in a low-income context. They generally find positive effects on mothers' labor supply as well. We contribute by studying the effects of subsidizing access to existing pre-school facilities. Some articles look at the impact on fathers as well. The impact is limited in

[3]See Berger and Black (1992); Gelbach (2002); Berlinski and Galiani (2007); Baker, Gruber and Milligan (2008); Berlinski, Galiani and Gertler (2009); Paes de Barros et al. (2011); Havnes and Mogstad (2011*a*); Rosero and Oosterbeek (2011); Bettendorf, Jongen and Muller (2015); Givord and Marbot (2015); Nollenberger and Rodríguez-Planas (2015); Bauernschuster, Hener and Rainer (2016); Bick (2016); Jain (2016); Martínez A. and Perticará (2017); Olivetti and Petrongolo (2017); Clark et al. (2019); Eckhoff Andresen and Havnes (2019); Hojman and López Bóo (2019), among others.

high-income countries, as fathers are likely to work full-time already (e.g. Eckhoff Andresen and Havnes, 2019; Brewer et al., 2022). The results may differ in low-income contexts though, due to the interplay of gender-segmented labor markets and household composition. The focus on other household members and the family as a whole – on which there is currently little evidence in low-income contexts (Evans, Jakiela and Heather A. Knauer, 2021) – is a key contribution of our work.[4] Another major contribution is the inclusion of cash transfers as a separate treatment arm, at a cost equivalent to the childcare subsidy. This allows us to assess the relative importance of access to childcare versus capital on labor market outcomes and the cost-effectiveness of subsidizing access to existing childcare services.

Our factorial design also allows us to speak to the literature on the effectiveness of interventions to promote small and medium enterprises. Previous work has shown that male-owned enterprises benefit more from financial support and training programs than female-owned enterprises (de Mel, McKenzie and Woodruff, 2008; Fafchamps et al., 2014; Berge, Bjorvatn and Tungodden, 2015; Fiala, 2018; Bernhardt et al., 2019; Delecourt and Fitzpatrick, 2021). One potential explanation is that women face more severe time-constraints, arising from domestic work and care obligations.[5] Our design allows us to test separately for the importance of *time* and *credit* constraints in explaining the development of women-led businesses. Our evidence points to credit constraints being binding for the average women, while time constraints are important for particular subgroups such as single mothers.

[4] To the best of our knowledge, the only exception is Donald and Vaillant (2023), who find positive effects of childcare on fathers' commercial activities in rural areas of the Democratic Republic of the Congo.

[5] Women's preference for working closer to home is also documented in high-income countries, see Le Barbanchon, Rathelot and Roulet (2021).

Finally, the paper complements the growing evidence on the role of childcare services in promoting child development. Most of this evidence is from high-income countries, and in general shows that the impact is particularly strong for children in low socio-economic status families (Baker, Gruber and Milligan, 2008; Cascio, 2009; Havnes and Mogstad, 2011*b*, 2015; Cornelissen et al., 2018; Felfe and Lalive, 2018; van Huizen and Plantenga, 2018; Duncan et al., 2022). The more limited evidence in low- and middle-income countries shows that effects are not always positive and highlights the quality of childcare and the recipient's economic status as important mediators (Behrman, Cheng and Todd, 2004; Mwaura, Sylva and Malmberg, 2008; Berlinski, Galiani and Gertler, 2009; Engle et al., 2011; Bernal and Fernández, 2013; Dowd et al., 2016; Bietenbeck, Ericsson and Wamalwa, 2019; Bouguen et al., 2018; Andrew et al., 2019; Dean and Jayachandran, 2020; Ajayi, Dao and Koussoube, 2022; Donald and Vaillant, 2023). Given the existing evidence, it is not trivial that access to childcare will benefit children. Furthermore, given the cost of childcare, it is plausible that a better outcome could be achieved through simple cash transfers. We contribute to this literature in two ways: by providing experimental evidence on the effects of receiving full-time childcare on child development in Uganda, and by comparing the effect of childcare with that of an equivalent cash grant.

The remainder of the paper is organized as follows. Section 1.2 describes the experimental design, baseline characteristics, estimation strategy and take-up of the treatment. Section 3.4 presents treatment effects for mothers and fathers, and discusses the underlying mechanisms. Section 1.4 summarizes the impact at the household level, for the child and for family well-being more broadly. Finally, Section 1.5 concludes.

1.2 Empirical Design and Data

1.2.1 Experimental design

Our experiment is designed to understand the effects of childcare and cash transfers on labor supply and income generation. As in many low-income countries, both the labor market and domestic work are highly gender-segmented in Uganda. In the labor market, women are more likely to be involved in self-employment, and men in wage-employment.[6] Therefore, in order to improve women's labor market outcomes, we primarily focus on business development. Ugandan women are more involved in domestic work than men, but men contribute substantially as well. According to a recent national time-use survey, women spend about seven hours per day doing unpaid care work, compared to an average of five hours per day for men (Uganda Bureau of Statistics, 2019). We, therefore, also document the treatment effects on other household members, such as the mother's partner and for other income sources, such as wage labor.

Capital and labor are two key inputs of production in any business. Nonetheless, entrepreneurs may be unable to invest in capital due to credit constraints, while their labor supply may be constrained by domestic duties. In the context of Uganda, Delecourt and Fitzpatrick (2021) document that it is common for female business owners to take their children to work and that this is associated with lower profitability than other female-owned businesses where a child is not present. Hence, the labor supply constraint may have both a

[6]See, for instance, the 2018/19 wave of the World Bank's Living Standards Measurement Study (LSMS). For households living in our study districts, 12 percent of women (of the same age range as the participants in our sample) were in wage-employment and 21 percent were self-employed. For males, the corresponding rates were 32 percent for wage labor and 25 percent for self-employment.

quantity dimension (affecting the number of hours at work) and a quality dimension (affecting productivity at work). In line with this, Banerjee and Mullainathan (2008) show theoretically that limited attention (e.g. due to the presence of children) can reduce productivity. Moreover, there may be important complementarities between capital and labor. For instance, a lack of access to capital may severely limit the returns to childcare, as the marginal product of labor may be low. Similarly, the returns to an increase in capital may be contingent on the entrepreneur having access to childcare, allowing her to work more (productive) hours in the business.

Similar arguments may apply to wage labor, which childcare may impact by alleviating a time constraint, and cash transfers by facilitating increased investments in a (costly) job search. For example, Abebe et al. (2020) show that providing a transport subsidy to job seekers in Ethiopia can lead to large positive effects on the likelihood of finding a job.

As we mentioned above, labor markets are highly gender-segmented and men are more likely to be engaged in wage-employment and earn higher wages.[7] Therefore, the composition of the household is likely to matter for women's income generating activities and their responses to free childcare and cash support. At baseline, about a third of the women in our sample are single mothers. They may face very different constraints compared to women living with a partner, and their responses to childcare may differ accordingly. For instance, while the freed up time from childcare is likely to increase the labor supply of single mothers, the prediction is less clear when she lives with a partner, as the labor market returns are typically higher for men than for women.

[7]During the study period, the median monthly earnings in wage labor were UGX 240 thousand for men and 150 thousand for women (Uganda Bureau of Statistics, 2019a).

To shed light on these mechanisms, we designed and implemented a randomized controlled trial with four treatment arms: A childcare treatment that primarily targets the time constraint; a cash treatment that primarily targets the capital constraint; and a combined treatment, offering both childcare and cash, which explores any potential complementarity between the treatments:

T1 One year of free, full-time childcare.

T2 Cash grant that equals the average cost of childcare.

T3 The childcare and cash grants combined.

C Control group (no intervention).

The childcare intervention offered free, full-day childcare for a year. While private childcare services exist in urban and peri-urban regions of Uganda, these are typically not accessible to the poor, or are limited to a program that runs only in the morning. Given that more than 40 percent of Ugandan households have a three-to-five year-old child (authors' calculations using the Uganda Demographic and Health Survey, 2016), there is a potentially large unmet demand for better access to childcare services.

The childcare treatment offered to enroll one child aged three–five in a nearby childcare center of choice. Most of these centers were pre-school nurseries with lessons during the morning hours and (supervised) play or rest time in the afternoon. As such, the treatment effects can be interpreted as the effect of providing access to free pre-school education. We covered the tuition for full-day attendance, breakfast and lunch. The total cost was on average UGX 411,752 (equivalent to USD 111.2) per year. We assisted with the enrollment of children and paid the centers directly at the start of each trimester (in line with their requirements).

The cash grant was delivered to the mothers in the form of mobile

money and labeled as a business grant. The cash transfers were made at the same time as the childcare fees were paid to the childcare centers (three installments, one each trimester), the value of the transfers being equal to the average cost of childcare within the district. The total cost of the cash transfer was on average UGX 424,322 (USD 114.6) per year.

The sample for the study was selected from three districts in Western Uganda (Kasese, Kyenjojo and Kabarole), three districts in central Uganda (Mukono, Masaka and Mityana) and three districts in Eastern Uganda (Mbale, Iganga and Jinja). In these districts, we identified 454 communities containing at least one childcare center. To identify eligible households, we conducted a census of each of these communities. Households had to satisfy three criteria to be part of the study: (i) the household should have one (and only one) child in the age range three to five (we refer to this child as the "target child"), (ii) the female caregiver should be present within the household (mother or grandmother) and (iii) the target child should not already be attending full-time childcare (but we allowed for children attending part-time childcare).[8] We also wanted to have a sufficiently large group of households without a younger child (less than three years old). To that end, we restricted the study sample to communities that have at least three households that satisfy the additional criteria of not having a younger child (and one household that does not satisfy this).[9] From the list of eligible communities and households, we randomly selected 1,496 households across 389

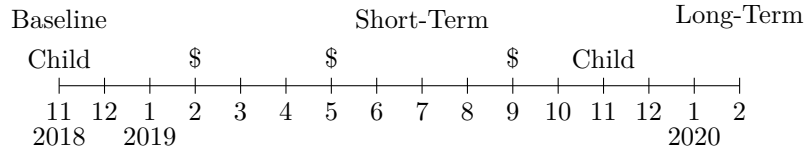
[8] In the census sample, 49 percent of the households have a child aged three–five, and 39 percent of the households have exactly one child in that age range (note this is close to our calculations using the Uganda Demographic and Health Survey, 2016). Of those, the mother was absent in three percent of the households, and 23.5 percent of the target children were already enrolled in full-time daycare.

[9] To obtain this, we had to drop an additional 2.5 percent of the census households.

communities to participate in the baseline survey.

We collaborated with BRAC Uganda on collecting the data and with Dyadic Research Impact (DRI) on implementing the interventions. The baseline surveys were conducted in November and December 2018. We then randomized the sample into the four treatment arms. Randomization was conducted at the individual level and blocked by (i) district, (ii) whether the target child had younger siblings or not, (iii) whether the target child attended any (part-time) childcare or not, (iv) the female caregiver's main occupation (self-employed, wage-employed or unemployed), and (v) whether the female caregiver was the child's mother (versus grandmother).[10] The interventions covered the 2019 school year, which began in February and ended in late November. A short-term follow-up survey was conducted in July–August 2019, and a long-term follow-up survey in November–December 2019 for children and in February 2020 for households. Figure 1.1 summarizes the timeline of the project.

Figure 1.1: Project Timeline



Notes: The numbers below the tick marks indicate the month of the year. We indicate the three household surveys (Baseline, Short-Term and Long-Term), the two child development surveys (Child), and the timing of the cash transfers ($).

The household surveys were answered by the primary female care-

[10]Of the 1,496 households that took part in the baseline survey, 363 were randomly allocated to T1, 364 to T2, 357 to T3 and 412 to C. These are not symmetric groupings because the number of observations differed across strata and it was not always divisible by four.

giver of the target child. At baseline and at the long-term follow-up, we collected information on the labor supply and business activities of the respondent and other household members, the demographic and socio-economic characteristics of all the household members, and on the respondent's well-being. During the short-term follow-up, we collected information on only a subset of indicators in order to track some potential short-run changes.

The child survey was based on the International Development and Early Learning Assessment (IDELA), as developed by Save the Children. The tool consists of a set of questions and tests aimed at measuring the level of competency that children possess across four domains: motor skills, early literacy, early numeracy and socio-emotional skills. We chose IDELA because that tool is tailored to the age of the children targeted by our study, covers the most important domains of child development and has been tested in and translated for use in Uganda (Pisani, Borisova and Dowd, 2018; Halpin et al., 2019).

We registered a pre-analysis plan with the American Economic Association's registry for randomized control trials (Bjorvatn et al., 2019). It details the power calculations, sampling, research design, baseline balance checks, outcome variables, heterogeneity, and correction for attrition.

1.2.2 Baseline characteristics

Table A.1 in Appendix 1.A presents key background characteristics of the participants from the baseline survey. We observe that in 87 percent of households, the respondent is the target child's mother (as opposed to the grandmother). For brevity, we will refer to the female respondent as the *mother* in the remainder of the paper. The average mother was 35 years old and lived in a household with five

members.[11] Her partner (i.e. the father or stepfather of the target child) was listed as being part of the household for 68 percent of the families. As for the *mother*, we will refer to the partner of the mother as the *father* in what follows. In terms of religion, about a third of the women are Muslim and the remainder Christian. The average child was 3.6 years old at baseline and almost half of them are boys. In about three quarters of the households, the target child was the youngest child in the household, and the average target child had two elder siblings: one male and one female. The enrollment rate of the target children in half-day childcare was 38 percent, and – by design – none attended full-day childcare.

Total household income is measured in two ways, by summing revenues from self-employment and income from wage labor, and by summing profits from self-employment and income from wage labor. The average household generated UGX 109 (243) thousand in monthly income measured through profits (revenues). Table A.2 shows details for mothers and fathers separately. Self-employment constitutes the larger share of the mother's labor hours and earnings than wage-employment, whereas the opposite holds for fathers.[12] This confirms the gender-segmented nature of the labor market in Uganda that we discussed in Section 1.2.1.

Tables A.1 and A.2 also provide balance tests, comparing the sample of non-attritors (i.e. households still in the sample at the time of the follow-up survey) by treatment status. Columns 2–4 present the standard difference between the control and the three treatment arms, while columns 5–7 report the normalized differences (Imbens

[11] Summary statistics from the nationally representative Demographic and Health Survey (2016) provide similar numbers: On average, adult Ugandan women are 37 years old on and live in households of 4.7 members.

[12] The father's labor market outcomes are coded as zero if the respondent does not have a partner.

and Wooldridge, 2009). Fewer than five percent of the pairwise mean comparisons are statistically significantly different, which could have occurred through random chance. Moreover, all the normalized differences are smaller than one fourth of the combined sample variation. Hence, we conclude that the randomization was successful in achieving baseline balancing in key observable characteristics and that the control group therefore constitutes a valid counterfactual for the treatment groups.

1.2.3 Estimation strategy

We estimate the treatment effects using the following model:

$$y_{it} = \alpha + \sum_{k=1}^{3} \beta^k T_i^k + \lambda y_{i0} + \Gamma_{i0} + \varepsilon_{it} \tag{1.1}$$

where y_{it} is the outcome of interest for respondent i at follow-up (t=1), y_{i0} is the baseline level of the outcome[13], $T_i^k = 1$ if the respondent is in the following treatment group: (i) childcare only (k=1), (ii) cash only (k=2), (iii) childcare & cash (k=3); Γ_{i0} are indicators for the five variables on which we stratified our randomization. In this specification, the β^k correspond to intention to treat (ITT) estimates. Under the assumption that the control observations constitute a valid counterfactual for each treatment group, β^k identifies the causal effect of the offer of childcare (β^1), cash (β^2), or both (β^3). Throughout the paper, monetary values are expressed in 1,000 UGX and are winsorized at the 99^{th} percentile.

The treatments are randomized at the individual level. Hence,

[13] If information on the baseline level of the outcome is missing (due to non-response for a specific question), we impute the missing value at baseline with the sample mean and we control for this using an indicator variable equal to one if the observation has been imputed.

we do not cluster the standard errors but they are robust to heteroscedasticity.[14] We group outcomes that test the same hypothesis in families and correct the p-values to account for multiple hypotheses testing using the procedure proposed by Benjamini and Hochberg (1995). This allows us to control the *false discovery rate* within families of outcome variables. We correct the p-values by treatment arm and group the outcomes into families as specified in the table notes.

We test for differential attrition in Table F.1. For the household survey, the attrition rate was eight percent among the control group and four–five percent among the three treatment arms. The difference in attrition between the childcare and the childcare & cash arms relative to the control group is statistically significant, but not for the cash only versus control arm. There is no differential attrition across the three treatment arms, as can be seen from the p-values in the bottom panel of the table. For the child survey, the attrition rate was ten percent among the control group and this was lower by four ppt for the childcare arm and by three ppt for the cash and combined arms. Due to the differential attrition rate in the control group relative to the treatment groups, we assess the sensitivity of our findings with respect to attrition throughout the analysis. To do so, as pre-specified in our pre-analysis plan, we follow Kling, Liebman and Katz (2007) and Fairlie, Karlan and Zinman (2015) and calculate the lower and upper bound estimates that adjust for differential non-response rates in the treatment groups relative to the control. We calculate the upper bounds by imputing the mean among the treated plus 0.1 (or 0.2) standard deviations (SD) to the non-responders in the treatment group. For the control group, we

[14] Appendix 1.D, shows that our results are robust to clustering the standard errors at the community level.

impute using the mean among the control minus 0.1 (or 0.2) SD. To calculate the lower bounds, we follow the opposite procedure. For the treatment group, we take the mean minus 0.1 (or 0.2) SD and for the control we take the mean plus 0.1 (or 0.2) SD. We then re-estimate the treatment effects. We report the results in Appendix 1.C. Overall, the attrition bounds show that our main findings are unlikely to be driven by differential attrition.

1.2.4 Take-up

Before presenting the treatment impacts of our interventions, we confirm that the childcare treatment actually led to an increase in the enrollment of the target child in childcare. Table 1.1, column 1 indicates a 15 (14) ppt increase in the likelihood that the target child is enrolled in any childcare among the childcare (childcare & cash) treatment groups. This corresponds to an increase of around 18 percent relative to the control group.[15] The cash transfer also increases enrollment in any childcare by seven ppt — this effect is significantly smaller than the effects in the treatment arms that include childcare (p-value $< .01$). Column 2 shows the treatment effects on enrollment in full-day childcare. In the control group, 34 percent of the children are enrolled for the full day. This proportion is approximately 50 ppt larger in the childcare treatments. This corresponds to a nearly 150 percent increase relative to the control. In contrast, the cash

[15] We see similar enrollment rates among children of this age range in other data from this region. For example, in Figure A.1 we compare the school enrollment rates of the children in our control group with children residing in the same districts using the 2018/19 wave of the Uganda LSMS. Among our control group, enrollment rates in any type of school are 79 percent and 83 percent among children aged three or four at baseline, while in the LSMS sample the corresponding rates are 69 percent and 82 percent respectively. Among the children aged five years at baseline, enrollment rates are above 90 percent in both samples.

treatment leads to only a seven ppt (21 percent) increase and this is significantly smaller than the effects of the childcare treatments (p-value $< .01$). Column 3 shows that the mothers report fewer days of missed childcare in all the treatment groups during the third trimester: Compared to 21 days on average in the control group, children in the childcare arms miss 15 fewer days while those in the cash-only transfer arm miss nine fewer days. The treatment effects in the childcare treatments are significantly higher than in the cash-only treatment (p-value $< .01$).

Table 1.1: Effects on childcare enrollment and attendance

	Enrollment		Attendance
	Any childcare	Full-day childcare	Days missed
	(1)	(2)	(3)
Childcare	$.15^{***}_{***}$	$.48^{***}_{***}$	-15.21^{***}_{***}
	(.02)	(.03)	(1.9)
Cash	$.07^{***}_{***}$	$.07^{**}_{**}$	-8.58^{***}_{***}
	(.02)	(.03)	(2.23)
Childcare & cash	$.14^{***}_{***}$	$.5^{***}_{***}$	-14.53^{***}_{***}
	(.02)	(.03)	(1.96)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.000
Childcare = childcare & cash	0.463	0.571	0.597
Cash = childcare & cash	0.001	0.000	0.001
Childcare & cash = childcare + cash	0.003	0.254	0.000
Mean Control	.82	.34	20.71
Obs.	1428	1428	1414

Notes: In columns (1) and (2) the dependent variables are dummies indicating the child is enrolled in any childcare, or in full-day childcare respectively; and in column (3) it measures the number of childcare days missed during the last trimester. All regressions control for the baseline level of the outcome variable and the randomization strata: district indicators, an indicator for whether the target child has younger siblings, whether the target child was already attending childcare at baseline, an indicator for whether the respondent was self-employed at baseline and the corresponding indicator for being wage-employed, and whether the respondent was the birth mother of the target child. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group all three outcomes as one family.

Overall, the findings in Table 1.1 demonstrate that all treatments increase enrollment and attendance rates in childcare among the tar-

geted children, but the increase is significantly greater in the groups assigned to the childcare subsidy in comparison to those assigned to the cash transfer.[16] One important finding from the research on childcare interventions is that full-time programs generally have stronger effects than part-time programs (van Huizen and Plantenga, 2018; Brewer et al., 2022) and it is therefore important to note the strong effects on full-day enrollment. Nevertheless, we observe that the recipients of cash grants increase their child's enrollment in childcare to some extent, primarily in half-day programs. This is also confirmed by additional evidence from the long-term survey. When we presented an open question "What did you use the cash transfer for?", 65 percent of the respondents in the cash group said they used it at least partly to cover childcare expenditures. This could reflect a latent demand for childcare that may be subject to liquidity constraints. It could also be that the cash grant increases the opportunity cost of time, by increasing labor productivity, and thereby the attractiveness of childcare services.

We also estimate the treatment effects on older siblings' school enrollment and attendance (children aged 7–18 years). As we show in Appendix Table A.4, there are no significant effects on enrollment rates, but there are significant effects on attendance. In particular, the childcare & cash treatment decreases the number of days missed by older siblings during the last school term by four days, corresponding to a 38 percent decrease relative to the control mean of ten days. The effect is driven by both sisters (three days) and brothers (two days). The other two treatments, childcare alone and cash alone,

[16] We assess the robustness of these findings with respect to differential attrition in Table C.1 and Table C.2. Overall, the magnitudes of the lower and upper bounds are similar to those reported in Table 1.1 and this holds for all the alternative assumptions about the attriters. As such, we conclude that the effects on childcare enrollment are unlikely to be caused by differential attrition.

do not significantly impact the school attendance of older siblings compared to the control group. We conclude that the increased enrollment and attendance by the target children caused by the childcare treatment(s) did not come at the expense of the enrollment and attendance of their siblings. This reinforces our confidence that these treatments freed up the parents' time.

1.3 Results

Our key research questions are whether subsidizing childcare increases labor supply and income, and how this compares to a similar-sized cash grant. The hypothesis is that childcare increases labor supply and income by alleviating a time constraint while the cash grant reduces a credit constraint on business development. We start by presenting evidence for the mother, then move on to the father, and, acknowledging the potential importance of the household composition, show evidence separately for mothers with and without a partner.

1.3.1 Mothers

Table 1.2 provides the treatment effects for mothers. We discuss the impact on income, and on the drivers of income changes, namely labor supply, investments in business assets, and the recruitment of employees. In each case, we begin by analyzing the effect of childcare and then move to cash and its comparison with childcare only, and finally the potential complementarities between the two treatments. The results are based on the long-term survey which was conducted approximately one year after the interventions started.

We measure income from self-employment as revenues and profits over the past month from all businesses owned by the mother

(columns 1–2), and wages as the total wages received by the mother over the same time period (column 3).[17] Total income is measured in two ways, by summing wages and revenues from self-employment (column 4), and by summing wages and profits from self-employment (column 5).[18]

We observe that childcare leads to a significant increase in the mother's revenues from self-employment (UGX 42 thousand compared to a control group mean of UGX 90 thousand). The point estimate on her business profits is also positive (UGX seven thousand compared to a control group mean of UGX 24 thousand). The increase in the mother's business revenues from childcare comes without any average increase in her labor supply, productive assets or number of employees.[19] This suggests that, for the average woman in our sample, childcare does not lead to more work hours, but increases productivity.

The cash transfer has a similar effect as the childcare subsidy on the mother's revenues from self-employment. The effect is large and carries through to total revenues, which are UGX 43 thousand higher than in the control group. The total effect is driven by an

[17] We focus on income from self-employment and wage labor, as they are the most important sources of income generation. Few households in our sample have income from farming (18 percent in the control group) or from livestock rearing (16 percent in the control group). As these are household activities, we cannot attribute those to the mother or the father.

[18] In case the respondent was unsure about the level of revenues or profits, we asked them to estimate these using intervals. In particular, they were asked if the revenues/profits were higher than X where X = median level of revenues/profits at baseline; if they said "Yes" ("No") they were then asked if the level was higher than X where $X = 75^{th}$ (25^{th}) percentile of revenues/profits at baseline; followed by the 62.5^{th} or 12.5^{th} percentiles from the baseline. We impute missing values using the mid-point of the relevant interval in which they finished.

[19] In addition, we do not find childcare effects on the creation of new or the closure of old businesses (Table A.5). This suggests that mothers stayed in the same occupations. Consistent with this, we do not find effects on the operating time of the business nor on the travel time to the business (Table A.6).

increase in income from self-employment (UGX 49 thousand), but partly crowded out by a reduction in income from wages (UGX seven thousand). Mothers receiving cash are 13 ppt more likely to be employed (compared to a control group average of 47 percent) and work 31 hours longer per month (compared to 112 hours in the control group). They are also seven ppt more likely to buy business assets, and the value of these assets is about UGX five thousand higher, amounting to more than a doubling compared to the control group mean. There are no differences regarding employees.[20]

A similar pattern as for the cash transfer arm emerges from the combined treatment. The mother's revenues (profits) from self-employment increase by UGX 63 (16) thousand. Again, these results also hold for total revenues. Mothers also increase their time spent in the business, but it is now accompanied by a significant reduction in the time spent on wage work. In total, mothers are nine ppt more likely to have employment, driven by a 16 ppt increase in self-employment and a five ppt reduction in wage employment. On the intensive margin, mothers increase their monthly labor supply by 20 hours in total which is due to a 36 hours increase in self-employment and a 16 hours decrease in wage labor. We observe an increase of eight ppt in the likelihood of owning newly purchased business assets and of UGX seven thousand in the value of these assets. Mothers are seven ppt more likely to employ at least one worker, which is a robust ten percent increase compared to the control group. Throughout

[20]Our finding that cash grants have a positive impact on mothers' business revenues is in line with Blattman, Fiala and Martinez (2014), who study a government program in Uganda that invited youth to form groups and submit grant proposals for business start-ups. Although the grants were labeled as being for business, they were not supervised. As such, they were similar to the cash grants we study which were labeled as being for business development. Blattman, Fiala and Martinez (2014) find that four years after baseline, the treated groups had more business assets, longer work hours and higher earnings. These effects did not differ by gender.

the paper, we check for any complementarities between the childcare and the cash transfer treatments by testing if the treatment effect of the childcare & cash arm is equal to the sum of the treatment effects of the single-arm treatments. We find no evidence of any complementarities for mothers.[21]

1.3.2 Fathers

Turning to the treatment effects on fathers, Table 1.3 shows that childcare leads to a significant and robust increase in the father's total income by UGX 38 thousand, a 36 percent increase relative to the control group mean. While the coefficients on income from self-employment and wage labor are both positive, only the latter is statistically significant. Fathers receive UGX 18 thousand more in wages than those in the control group, an increase of approximately one third. The increased income from wage employment is mirrored by a significant increase in labor supply. At the extensive margin, the father's likelihood to be in wage employment increases by nine ppt (from a mean of 27 percent in the control group) and at the intensive margin by 21 hours (compared to 70 hours in the control group). The effect on total labor supply is attenuated by a slight decrease in labor supply for self-employment, but it is still clearly positive. Consistent with the increase in the father's income being driven by changes in wage employment, we do not observe a change in his business assets or employees.[22]

The cash grant does not affect the father's income and labor supply, nor the other inputs to his business: assets and employees. All the coefficients are small and insignificant.

[21] Tables C.3 and C.4 provide the lower and upper attrition bounds for the findings in Table 1.2 and these suggest that the treatment effects are unlikely to be driven by differential attrition.

[22] Note that only 15 percent of the fathers owned a business at baseline.

Table 1.2: Effects on mothers

	Income					**Labor supply**						**Assets & employees**			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues (1)	Profits (2)	(3)	Revenues (4)	Profits (5)	>0 (6)	Hrs. (7)	>0 (8)	Hrs. (9)	>0 (10)	Hrs. (11)	>0 (12)	UGX 1000 (13)	>0 (14)	Nb. (15)
Childcare	41.51$^{**}_{*}$	6.65	-3.83	37.72*	3.37	.02	2.61	-.02	-6.83	.01	-4.24	.03	1.71	.01	-.06
	(21.04)	(4.74)	(3.41)	(21.13)	(6.04)	(.03)	(10.31)	(.03)	(5.58)	(.04)	(10.93)	(.02)	(2.22)	(.02)	(.09)
Cash	49.47$^{**}_{**}$	9$^{**}_{**}$	-7.26$^{**}_{**}$	43.34$^{**}_{*}$	2.51	.19$^{***}_{***}$	39.73$^{***}_{***}$	-.04	-10.51*	.13$^{***}_{***}$	31.31$^{***}_{***}$	.07$^{***}_{**}$	4.79$^{*}_{*}$	.06**	.05
	(19.68)	(4.56)	(3.3)	(19.72)	(5.86)	(.03)	(10.98)	(.03)	(5.54)	(.04)	(11.44)	(.02)	(2.5)	(.03)	(.1)
Childcare & cash	63.17$^{***}_{***}$	16.06$^{***}_{***}$	-9.67$^{***}_{***}$	55.43$^{***}_{**}$	7.65	.16$^{***}_{***}$	36.1$^{***}_{***}$	-.05$^{**}_{**}$	-16.28$^{***}_{***}$	.09$^{***}_{**}$	20.39$^{*}_{*}$	.08$^{***}_{***}$	7.41$^{***}_{**}$	.07$^{***}_{**}$	.02
	(20.56)	(4.91)	(3.11)	(20.78)	(6.15)	(.03)	(11.03)	(.02)	(5.08)	(.04)	(11.42)	(.02)	(2.78)	(.02)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.741	0.640	0.311	0.816	0.891	0.000	0.001	0.540	0.503	0.001	0.003	0.078	0.288	0.065	0.056
Childcare = childcare & cash	0.380	0.083	0.071	0.476	0.520	0.000	0.003	0.219	0.059	0.017	0.036	0.032	0.066	0.028	0.100
Cash = childcare & cash	0.559	0.176	0.433	0.608	0.421	0.389	0.762	0.546	0.245	0.370	0.373	0.690	0.433	0.759	0.641
Childcare & cash = childcare + cash	0.376	0.954	0.757	0.417	0.842	0.253	0.693	0.797	0.888	0.424	0.684	0.632	0.819	0.926	0.757
Mean Control	89.92	24.27	19.34	110.35	45.1	.31	81.76	.17	30.58	.47	112.34	.07	4.25	.1	.25
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchase any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

The combined treatment is associated with a positive increase in total revenues, which is not statistically different from that observed for the childcare only treatment. The effect is now mainly driven by an increase in revenues from self-employment, as the impact on wage labor is close to zero. The additional number of hours worked by fathers is similar in size to those of childcare only but less precisely estimated. While these hours were mainly allocated to wage labor in the childcare only arm, they are now more equally divided between self-employment and wage labor. [23] [24]

The impact of the childcare subsidy on the fathers' wage labor and income can be driven by two potential mechanisms. First, childcare may free up some of the father's time, either directly, by relieving time he would otherwise have spent with the child, or indirectly, by the mother taking over some of his domestic work. A recent national time-use survey shows that Ugandan men spend about five hours per day doing unpaid care work (Uganda Bureau of Statistics, 2019). This is less than the seven hours women spend on such tasks, but it is still substantial.[25] The childcare treatment relieves the household from part of the domestic work required, resulting in the reallocation of the parents' time to other tasks, such as income-generating activities. If there are capital constraints, the main income-generating option is wage labor. Given the importance of the gender gap in the labor market in Uganda (see Section 1.2.1),

[23] Fathers may help in the women's businesses. As such, this result is consistent with the increase in employees observed in women's businesses in Table 1.2, column 14.

[24] Tables C.5 and C.6 provide the lower and upper attrition bounds for the findings in Table 1.3. The results show that the treatment effects are unlikely to be driven by differential attrition.

[25] According to Uganda Bureau of Statistics (2019), cooking, shopping, childcare and care for dependent adults take up most of this time (5.3 hours for women and 3 hours for men). Men spend more time on other domestic tasks, such as home maintenance, transporting goods or family members, and unpaid work in support of other households (2.7 hours versus 1.4 for women).

Table 1.3: Effects on fathers

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nb.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	14.37	2.61	18.1^{**}_{**}	38.12^{**}_{**}	24.56^{**}_{**}	-.02	-3.38	$.09^{***}_{***}$	20.5^{**}_{**}	$.07^{**}_{*}$	18.29	0	.98	0	.03
	(14.96)	(4.03)	(9.12)	(17.46)	(10.16)	(.03)	(8.21)	(.03)	(9.55)	(.04)	(11.68)	(.01)	(1.13)	(.01)	(.05)
Cash	-7.2	-5.49	8.02	6.02	5.08	-.01	-.4	.05	8.06	.02	8.41	0	1.97	0	.03
	(13.01)	(3.56)	(8.97)	(15.62)	(9.88)	(.03)	(8.54)	(.03)	(9.09)	(.04)	(11.68)	(.01)	(1.31)	(.01)	(.04)
Childcare & cash	30.77^{*}	1.87	.92	40.65^{**}_{*}	5.04	.03	10.43	.03	7.56	.04	16.27	0	.47	.01	.06
	(15.81)	(3.84)	(8.82)	(18.35)	(9.94)	(.03)	(8.76)	(.03)	(9.33)	(.04)	(11.79)	(.01)	(1.02)	(.02)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.154	0.042	0.290	0.073	0.069	0.767	0.737	0.187	0.198	0.123	0.419	0.914	0.522	0.974	0.997
Childcare = childcare & cash	0.358	0.863	0.069	0.901	0.070	0.121	0.129	0.065	0.191	0.280	0.870	0.705	0.698	0.513	0.618
Cash = childcare & cash	0.019	0.054	0.441	0.066	0.997	0.212	0.248	0.633	0.958	0.644	0.524	0.785	0.306	0.527	0.608
Childcare & cash = childcare + cash	0.288	0.397	0.053	0.892	0.095	0.171	0.255	0.016	0.119	0.258	0.540	0.735	0.178	0.641	0.912
Mean Control	52.39	17.09	54.11	106.9	71.99	.15	40.64	.27	70.34	.4	110.14	.03	1.53	.04	.09
Obs.	1414	1414	1412	1412	1412	1414	1413	1414	1411	1414	1410	1414	1414	1413	1413

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

the most lucrative option from the household's point of view is to increase the father's wage labor, with the mother potentially taking over some of his domestic chores. In addition, the division of labor may also be guided by the traditional role of the woman as the main responsible for household chores (Uganda Bureau of Statistics, 2019). The time channel, therefore, provides a plausible explanation.

Second, the childcare subsidy may free up resources (as some households would have sent their child to childcare anyhow), allowing the fathers to invest more in costly job search.[26] Given that the cash transfer does not significantly impact the fathers' labor supply, it is unlikely that this resource channel drives the results. Offering childcare does increase his labor supply though. To better understand which households are more likely to free up resources (as they would have paid for childcare without the subsidy), we assess the correlates of full-day childcare enrollment in the control group using baseline covariates. Appendix Table A.7 shows that the mother's occupation (wage-employment) and education level, as well as the target child's age and gender are among the significant correlates of childcare enrollment among the control group. Using these covariates, we then predict the target child's likelihood to be in full-day childcare. We use this predicted likelihood to split the sample into households where it is highly likely that the target child will attend childcare or not. Table A.9 shows the heterogeneity of the father's labor supply and income with respect to this dimension. Overall, we do not find evidence that the effects are driven by households that are more likely to send the target child to childcare. This suggests that the effect of the childcare subsidy on the father's labor supply is unlikely to be driven by an income effect among the "always takers" of childcare.[27]

[26] Abebe et al. (2020) show that providing a transport subsidy to job seekers in Ethiopia can lead to large positive effects on the likelihood of finding a job.

[27] We also analyzed effects on other household members' (besides the mother

1.3.3 Impact of Childcare by Family Composition

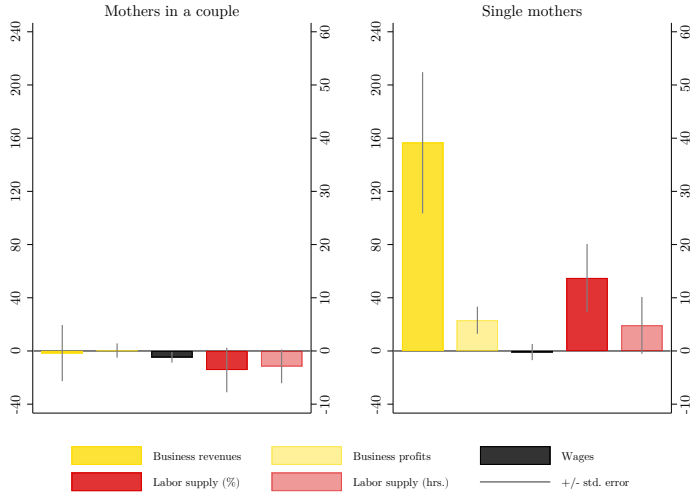
The childcare treatment increases labor supply for the average father, but not for the average mother. This suggests that the household composition may be an important aspect to look at to understand the impact of the childcare subsidy: While it may be more profitable for a couple to allocate the freed-up time to the partner, this is not an option for single mothers, who comprise 32% of our sample.

Figure 1.2 graphically summarizes the impact of the childcare subsidy on mothers who live with a partner (left panel) versus single mothers (right panel). The left axis indicates income (in UGX 1,000) and labor supply at the intensive margin (in hours per month), and the right axis labor supply at the extensive margin (percent of working mothers). While the childcare subsidy does not impact the labor supply and income of mothers in a couple, the effects are large for single mothers.

Table A.8 reports the estimates for this heterogenous effect. There is no impact of childcare on the mother's labor supply or income when a partner is present, but the interaction effects between the childcare treatment and the mother being single are positive and significant. Single mothers use the extra time to increase their labor supply in self-employment, and this is associated with a substantial increase in both their revenues and profits. The proportion of self-employed increases by 13 ppt (from 30 to 43 percent), business revenues by UGX 157 thousand per month (compared to a control mean of UGX 88 thousand) and business profits by UGX 23 thousand per month (compared to a control mean of UGX 24 thousand). The effect carries through to total revenues and profits, though the latter is less

and the father of the target child) labor supply and earnings, but did not find any significant effects – results available upon request.

Figure 1.2: The impact of childcare by family composition.



precisely estimated.[28]

This evidence is consistent with the interpretations made so far. When a father is present, the household uses the additional time to increase the father's labor supply and income from wage work. For single mothers, such a reallocation is not possible, leading them to increase their own time in self-employment.[29] Furthermore, the

[28]Note this is one of the dimensions that we pre-specified for a heterogeneity analysis. The Tables A.10, A.11 and A.12 show the heterogeneous effects for the other pre-specified dimensions: the presence of a younger child, the child's age and the child's gender. The point estimates of the interaction effects are sizable for some of these dimensions, but they are not significant when accounting for multiple hypothesis testing.

[29]The evidence could have also been consistent with a scenario in which single mothers are less credit constrained than mothers living with a partner. Our data does not support this. We asked all mothers at baseline if they would be able to borrow UGX 300 thousand for the next six months: 65 percent of single mothers said no, while only 57 percent of mothers who live with their partner said no. The difference is statistically significant ($p = 0.004$).

magnitude of the effects suggests that single mothers became more productive in their businesses. In the control group, the average single mother works 75 hours and earns UGX 88 thousand, so her average hourly earnings equal UGX 1.17 thousand. When provided childcare, the average single mother works 75+35=110 hours and earns UGX 156 thousand, which corresponds to hourly earnings of UGX 1.41 thousand. Assuming a concave production function with diminishing marginal productivity of labor, the higher hourly earnings for single mothers in the treatment group relative to single mothers in the control group (i.e. 1.41>1.17) indicates that single mothers become more productive when they receive a childcare subsidy.

1.4 Effects on Household Well-being

We now turn to the impact on a broader range of outcomes related to family welfare. We first discuss the treatment effects on household income, consumption and food security, before ruling out the possibility that childcare negatively impacts child development.

Table 1.4 reports the treatment effects on total income, the average consumption per day and food insecurity. Total household income is measured in two ways, by summing wages and revenues from self-employment (column 1), and by summing wages and profits from self-employment (column 2). The households assigned to childcare see a large increase in revenues by UGX 86 thousand, and profits by UGX 31 thousand compared to the control group averages of UGX 250 thousand and UGX 137 thousand respectively. Turning to the cash treatment, we note that the impact on total revenues is economically important, but not significant once we correct for multiple hypothesis testing. The effects on profits are small and insignificant. The households assigned to the combined treatment of

childcare & cash obtain an increase in revenues by UGX 107 thousand. The impact on profits is again positive but not statistically significant.

To measure consumption, we asked about the expenditures over the past month for infrequent purchases, and the value of consumption over the past week for drinks, food and tobacco. The measure, therefore, does not only include expenditures, but also the consumption of goods produced by the household (from farming and livestock) and received from others. All treatments increase total household consumption. This effect is mainly driven by an increase in non-food consumption by 16 percent (childcare only), 18 percent (cash only) and 26 percent (childcare and cash). Despite the higher increase in the combined treatment arm, there are no significant complementarities between childcare and cash. The coefficients on food consumption are positive for all treatment arms, yet insignificant. The effect on the consumption of temptation goods is negative and close to zero in all cases.

Finally, food security measures the experienced food insecurity during the past seven days.[30] Food insecurity is common in the region we study. In the control group, 87 percent of the households reduced the variety of products consumed due to a lack of money, and 60 percent reported they had to skip at least one meal. This declines for those receiving the cash transfer (column 7).[31]

[30]Food insecurity is measured by taking the principal component of four questions: (1) Was there a time when you ate only a few kinds of foods because of a lack of money or other resources?, (2) Was there a time when you had to skip a meal because there was not enough money or other resources to get food?, (3) Was there a time when your household ran out of food because of a lack of money or other resources? (4) Was there a time when you were hungry but did not eat because there was not enough money or other resources for food?

[31]Tables C.7 and C.8 provide the lower and upper attrition bounds for the findings in Table 1.4. The results show that the treatment effects are unlikely to be driven by differential attrition.

Table 1.4: Effects on household income, consumption and food security

	Total Income		Consumption per day				Food
	Revenues	profits	Total	Food	Non-food	Temptation	insecurity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Childcare	85.73^{**}_{**}	31.03^{**}_{**}	$.93^{*}$	.09	$.85^{**}_{*}$	-.03	-.11
	(33.85)	(13.29)	(.52)	(.27)	(.36)	(.05)	(.1)
Cash	56.2^{*}	5.76	1.29^{**}_{**}	.33	$.97^{***}_{**}$	-.06	$-.19^{*}_{*}$
	(30.66)	(12.68)	(.53)	(.27)	(.36)	(.05)	(.1)
Childcare & cash	107.05^{***}_{***}	9.12	1.63^{***}_{***}	.22	1.39^{***}_{***}	-.04	$-.23^{**}_{**}$
	(34.32)	(12.95)	(.57)	(.28)	(.39)	(.05)	(.1)
p-value (equal treatment effects):							
Childcare = cash	0.437	0.083	0.524	0.353	0.771	0.430	0.424
Childcare = childcare & cash	0.605	0.141	0.234	0.612	0.200	0.771	0.252
Cash = childcare & cash	0.184	0.816	0.563	0.711	0.322	0.608	0.718
Childcare & cash = childcare + cash	0.496	0.159	0.454	0.624	0.442	0.480	0.625
Mean Control	250.51	137.15	11.44	5.9	5.33	.18	.39
Obs.	1410	1410	1393	1413	1400	1403	1414

Notes: In column (1) and (2) the dependent variables are total income measured through revenues and profits, respectively. In column (3), the dependent variable measures total household expenditures per day, comprising expenditures on food in column (4), and non-food in column (5). The final column is a measure of food insecurity, which is the first principal component of the four questions on experiencing food insecurity in the past seven days. We include the same control variables as in Table 1.1. All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $\star p < 0.1$, $\star\star p < 0.05$, $\star\star\star p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in two families: (1) to (2) and (3) to (7).

Table 1.5 presents the treatment effects on the target child's development, as measured by the IDELA instrument. The tool, as previously mentioned, was developed by Save the Children and has been extensively used to evaluate children's cognitive and non-cognitive skills across the world (Halpin et al., 2019). Column 1 presents the impact on the standardized aggregate IDELA score, while columns 2–5 show the effects on each of its four dimensions: emergent literacy, emergent numeracy, socio-emotional skills and motor development.

We find that childcare –alone or when combined with cash– has positive and significant effects of about 0.15 SD on the aggregate score, driven by significant improvements in emergent literacy and motor development. The effects on emergent numeracy and socio-emotional skills are also positive (0.1 SD and 0.04 SD, respectively),

but not statistically significant.[32]

Turning to the cash treatment, the impact on the aggregate score and on its components are positive, but not statistically significant.[33]

Table 1.5: Effects on child development

		Breakdown into components			
	IDELA score	Emergent literacy	Emergent numeracy	Socio-emotional	Motor development
	(1)	(2)	(3)	(4)	(5)
Childcare	$.16^{***}_{***}$	$.12^{**}_{*}$	$.11_{*}$	.04	$.23^{***}_{***}$
	(.06)	(.06)	(.06)	(.07)	(.06)
Cash	.09	.06	.08	.01	$.11_{*}$
	(.06)	(.06)	(.06)	(.07)	(.06)
Childcare & cash	$.15^{***}_{***}$	$.16^{***}_{**}$	.1	.04	$.19^{***}_{***}$
	(.06)	(.06)	(.06)	(.07)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.234	0.334	0.674	0.562	0.056
Childcare = childcare & cash	0.956	0.491	0.969	0.950	0.523
Cash = childcare & cash	0.268	0.100	0.706	0.613	0.207
Childcare & cash = childcare + cash	0.258	0.786	0.379	0.921	0.080
Mean Control	0	0	0	0	0
Obs.	1366	1366	1366	1366	1366

Notes: In column 1, the dependent variable is the standardized aggregate IDELA score, and in the columns 2-5 the standardized components of the score: emergent literacy, emergent numeracy, socio-emotional skills and motor development. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes together in two families: the overall score (1) and the components of the score (2, 3, 4 and 5).

Finally, we collected information on mothers' own assessment of

[32]We do not have a direct measure of the quality of childcare. Presuming the cost reflects its quality, and under the caveat that households in the control and in the cash only arm self-select into paying for childcare, there is no evidence that children attend different types of schools. The average cost per trimester for full-time daycare is UGX 152,040 in the control arm, UGX 155,390 in the childcare arms, and 144,040 in the cash only arm.

[33]The Tables C.9 and C.10 provide the lower and upper attrition bounds for the findings in Table 1.5. The results show that the treatment effects are unlikely to be driven by differential attrition.

their well-being and domestic violence. We report the results on these outcome in the Online Appendix. Table B.1 documents that all three treatments lead to improvements in the mother's subjective well-being, measured through self-reported happiness, life satisfaction and perceived stress. In table B.2, we investigate potential treatment effects on violence against mothers, against children by members of the household, and against children by outsiders. For each block, we look separately at psychological violence, physical violence, and the combination of both. The treatments did not significantly affect violence against children. However, it cannot be entirely excluded that the cash treatments increase domestic violence.

1.5 Conclusion

We reported findings from a randomized control trial that offered women who have a child aged three–five access to (i) free childcare, (ii) a cash grant, or (iii) both a cash grant and free childcare. A fourth group of women remained as the control group. We find that access to free childcare improves household income, by allowing single mothers to work more or more effectively in self-employment, and fathers to take up new wage jobs. The cash grant of similar value and timing triggers an occupational shift from wage labor to self-employment, and increases business profits and total income. We do not find important complementarities between these treatments.

In terms of other outcomes, we find that childcare has large and positive effects on child development and does not cause any increase in violence against the child or the mother. Moreover, it has a positive effect on household consumption. The evidence from the cash transfer effects on well-being is more mixed. The impact on consumption is positive, but we cannot exclude an increase in domestic violence

against the mother and it does not have any significant effect on child development over the observation period.

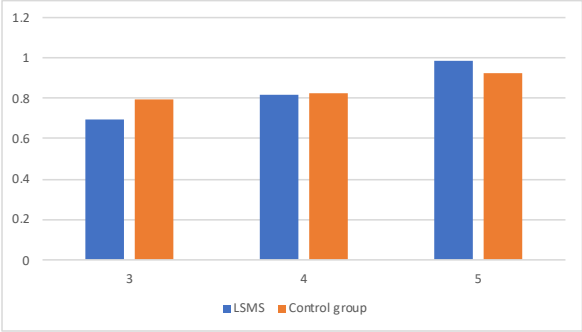
Our findings indicate that subsidizing childcare can be a cost-effective way to improve household income and child development. The positive effect of childcare on household income and child development is at least as large as that of a cash grant of equivalent cost. However, in a context where the labor market is gender-segmented (women are more likely to be involved in self-employment, and men in wage-employment), our evidence also highlights how inequality in the labor market shapes the effects of the policy. Our findings suggest that access to capital is more effective in increasing female labor supply.

Our findings also help understand why families do not use childcare services more despite the large returns. The immediate returns in income are lower than the cost of formal childcare and the substantial effects on child development can only bring long-term benefits. Credit constrained households may therefore not have the possibility to use childcare services as much as they would like. The fact that 65 percent of the households receiving the cash transfers used it partly to pay for childcare is consistent with the hypothesis of binding liquidity constraints. However, the enrollment rates in full-day childcare among the cash transfer recipients still fall short of the levels obtained through the subsidy. This may be driven by the labeling of cash grants for business activities, by households who underestimate the potential impact of childcare on household income and child development, or simply by their preference for less uncertain and immediate income gains over long-term investments in children. All of these potential explanations are worthy of further research.

Appendix

1.A Additional Figures and Tables

Figure A.1: Enrollment rate among children, by age at baseline



Notes: The figure shows the enrollment rates in any type of school (half-day or full-day) among the target children in our control group and children of a similar age, who reside in the same districts, in the LSMS data. The age on the X-axis refers to the age of the target child at baseline (the actual age of the child is +1 year older at the follow-up survey and in the LSMS).

Table A.1: Baseline descriptives and balance

	Control	Basic Difference			Normalized Difference		
	Mean (SD)	T1 v.s. C	T2 v.s. C	T3 v.s. C	T1 v.s. C	T2 v.s. C	T3 v.s. C
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				A: Descriptives			
Respondent is target child's mother	0.873	0.030	0.025	0.034	0.066	0.056	0.076
	(0.333)	(0.023)	(0.024)	(0.023)			
Mother's age	34.540	-0.253	-0.415	-0.875	-0.017	-0.029	-0.061
	(10.381)	(0.781)	(0.755)	(0.754)			
Mother's education (years)	8.190	-0.532	-0.065	-0.211	-0.098	-0.012	-0.038
	(3.946)	(0.285)*	(0.297)	(0.293)			
Household size	5.362	-0.079	-0.069	-0.036	-0.027	-0.023	-0.012
	(2.172)	(0.154)	(0.155)	(0.159)			
Father is in the household	0.677	0.062	-0.014	-0.013	0.097	-0.022	-0.019
	(0.468)	(0.034)*	(0.035)	(0.035)			
Target child has younger sibling	0.286	-0.014	-0.018	-0.012	-0.021	-0.029	-0.018
	(0.452)	(0.033)	(0.033)	(0.034)			
Nb of elder male siblings	0.952	-0.076	-0.025	-0.092	-0.051	-0.017	-0.064
	(1.072)	(0.078)	(0.077)	(0.076)			
Nb of elder female siblings	0.889	0.097	0.006	0.038	0.062	0.004	0.026
	(1.050)	(0.083)	(0.078)	(0.078)			
Mother's religion is Islam	0.270	0.017	0.009	-0.031	0.026	0.015	-0.050
	(0.444)	(0.033)	(0.033)	(0.032)			
Household owns any land	0.367	-0.062	0.018	0.023	-0.093	0.026	0.033
	(0.483)	(0.036)*	(0.038)	(0.038)			
Target child is a boy	0.503	0.011	-0.033	0.029	0.015	-0.047	0.041
	(0.501)	(0.038)	(0.038)	(0.038)			
Target child's age in years	3.612	-0.055	-0.012	-0.066	-0.055	-0.012	-0.066
	(0.710)	(0.053)	(0.052)	(0.054)			
Target child attends childcare	0.384	-0.034	-0.035	-0.026	-0.050	-0.051	-0.037
	(0.487)	(0.036)	(0.036)	(0.036)			
Child development (IDELA) score	0.005	-0.137	-0.117	-0.105	-0.101	-0.085	-0.079
	(0.993)	(0.076)*	(0.076)	(0.074)			
				B: Household-level outcomes			
Household total income (profits)	109.160	-20.770	1.581	17.996	-0.067	0.024	0.045
	(216.897)	(16.760)	(18.720)	(28.005)			
Household total income (revenues)	243.153	-5.431	-18.795	12.148	-0.001	-0.013	0.019
	(748.054)	(61.951)	(54.157)	(60.640)			

Notes: Column (1) gives the mean and the standard deviation of observations in the control group; columns (2), (3) and (4) report the differences between the control group and the childcare only, cash only, and combined arms respectively. These differences are obtained by regressing each variable on the treatment indicators, and the tests of significance are based on the regression estimates (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). Columns (5), (6) and (7) report the normalized difference between the control and the three different treatments, computed as the difference in means in the relevant treatment and control observations divided by the square root of the sum of the variances. All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile.

Table A.2: Baseline descriptives and balance (continued)

	Control	Basic Difference			Normalized Difference		
	Mean (SD)	T1 v.s. C	T2 v.s. C	T3 v.s. C	T1 v.s. C	T2 v.s. C	T3 v.s. C
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	A: Mothers' labor market outcomes and well-being						
Mother's total income (profits)	39.706	-6.116	3.598	-4.221	-0.053	0.023	-0.035
	(90.737)	(6.273)	(8.712)	(6.562)			
Mother's total income (revenues)	102.325	-5.460	4.241	7.184	-0.015	0.010	0.015
	(293.533)	(20.102)	(23.182)	(26.529)			
Mother's income from wage-employment	12.003	0.448	4.432	0.371	0.006	0.059	0.006
	(49.585)	(3.733)	(3.980)	(3.477)			
Mother's profits from self-employment	26.957	-6.816	0.190	-4.491	-0.072	0.001	-0.043
	(78.883)	(5.134)	(7.947)	(5.722)			
Mother's revenues from self-employment	89.729	-5.857	0.881	6.959	-0.016	0.002	0.014
	(292.319)	(19.971)	(23.068)	(26.491)			
Mother is employed	0.429	-0.010	0.022	-0.009	-0.015	0.031	-0.012
	(0.496)	(0.037)	(0.037)	(0.037)			
Mother's hours in employment	91.175	-4.338	9.721	1.222	-0.023	0.049	0.006
	(136.693)	(9.985)	(10.504)	(10.442)			
Mother is wage-employed	0.116	0.010	0.035	0.012	0.021	0.072	0.026
	(0.321)	(0.024)	(0.025)	(0.024)			
Mother's hours in wage-employment	17.542	-0.262	11.167	2.781	-0.003	0.108	0.030
	(61.120)	(4.348)	(5.501)**	(4.854)			
Mother is self-employed	0.325	-0.025	-0.009	-0.019	-0.037	-0.013	-0.029
	(0.469)	(0.034)	(0.035)	(0.035)			
Mother's hours in self-employment	73.743	-4.238	-1.121	-1.408	-0.023	-0.006	-0.008
	(128.325)	(9.540)	(9.559)	(9.620)			
Happiness (0-10)	4.979	0.196	-0.081	0.199	0.057	-0.024	0.057
	(2.454)	(0.182)	(0.179)	(0.185)			
Life satisfaction (0-10)	4.156	-0.001	-0.284	0.001	-0.000	-0.099	0.000
	(2.093)	(0.153)	(0.151)*	(0.158)			
Stress (Cohen scale)	21.249	0.107	0.519	-0.144	0.013	0.063	-0.018
	(5.889)	(0.431)	(0.431)	(0.426)			
	B: Fathers' labor market outcomes						
Father's total income (profits)	57.404	-9.426	12.940	29.892	-0.045	0.051	0.071
	(164.201)	(11.968)	(14.645)	(24.981)			
Father's total income (revenues)	122.220	3.450	-3.904	9.475	0.004	-0.005	0.011
	(625.610)	(51.520)	(43.368)	(47.577)			
Father's income from wage-employment	35.576	-1.763	14.744	28.128	-0.012	0.075	0.075
	(101.181)	(7.955)	(10.940)	(20.549)			
Father's profits from self-employment	16.628	-7.870	-3.485	-3.843	-0.057	-0.024	-0.027
	(123.223)	(7.602)	(7.818)	(7.892)			
Father's revenues from self-employment	75.831	4.883	-18.485	-20.117	0.006	-0.026	-0.029
	(589.986)	(46.684)	(38.285)	(38.635)			
Father is employed	0.407	-0.006	-0.021	-0.034	-0.009	-0.030	-0.050
	(0.492)	(0.036)	(0.036)	(0.036)			
Father's hours in employment	106.205	-2.089	4.177	-3.880	-0.010	0.019	-0.018
	(153.988)	(11.382)	(11.770)	(11.492)			
Father is wage-employed	0.262	-0.010	-0.026	-0.061	-0.016	-0.043	-0.102
	(0.440)	(0.032)	(0.032)	(0.031)*			
Father's hours in wage-employment	58.817	0.566	0.719	-5.777	0.003	0.004	-0.034
	(118.585)	(8.823)	(9.097)	(8.996)			
Father is self-employed	0.159	0.002	0.004	0.013	0.003	0.008	0.025
	(0.366)	(0.027)	(0.027)	(0.028)			
Father's hours in self-employment	47.766	-3.461	2.932	1.363	-0.021	0.017	0.008
	(119.649)	(8.751)	(9.133)	(8.858)			

Notes: See Table A.1.

Table A.3: Attrition

	Household survey (1)	Child survey (2)
Childcare	-0.04***	-0.04*
	(0.02)	(0.02)
Cash	-0.03	-0.03*
	(0.02)	(0.02)
Childcare & cash	-0.04***	-0.03*
	(0.02)	(0.02)
Observations	1496	1496
Mean in control	0.08	0.10
Daycare = Cash	0.274	0.917
Daycare = Daycare and cash	0.941	0.941
Cash = Daycare and cash	0.310	0.976

Notes: The dependent variable is an indicator that takes value one if the respondent (column 1) or the target child (column 2) could not be surveyed in the follow-up survey. All regressions control for the randomization strata: district indicators, an indicator for whether the target child has younger siblings, whether the target child was already attending (half-day) childcare at baseline, an indicator for whether the respondent was self-employed at baseline and the corresponding indicator for being wage-employed, and whether the respondent was the birth mother of the target child. Robust standard errors are reported in parenthesis (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.4: Effects on elder siblings' enrollment and attendance

	Enrollment			Days missed		
	All	Females	Males	All	Females	Males
	(1)	(2)	(3)	(4)	(5)	(6)
Childcare	-.02	-.02	-.01	-.12	.49	-.62
	(.02)	(.03)	(.03)	(1.43)	(1.01)	(.88)
Cash	-.01	0	0	-1.07	-.75	-.32
	(.02)	(.03)	(.03)	(1.21)	(.82)	(.85)
Childcare & cash	.01	.02	.01	-3$^{***}_{\star\star}$	-1.64$^{**}_{\star\star}$	-1.36*
	(.02)	(.03)	(.03)	(1.07)	(.68)	(.76)
p-value (equal treatment effects):						
Childcare = cash	0.684	0.546	0.871	0.487	0.205	0.718
Childcare = childcare & cash	0.170	0.208	0.512	0.021	0.015	0.323
Cash = childcare & cash	0.350	0.522	0.620	0.046	0.156	0.139
Childcare & cash = childcare + cash	0.200	0.363	0.612	0.298	0.246	0.710
Mean Control	.85	.85	.85	7.9	3.89	4.02
Obs.	1150	872	848	1414	1414	1414

Notes: In columns (1) until (3) the dependent variables measure the share of the target child's elder siblings, sisters and brothers who are enrolled in school; and in columns (4) until (6) the average number of days of school they missed in the last trimester. The sample is restricted to households where the target child has any elder sibling (columns 1 and 4), an elder sister (columns 2 and 5), or an elder brother (columns 3 and 6). All regressions control for the baseline level of the outcome variable and the randomization strata listed in Table F.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group all the outcomes together in one family.

Table A.5: Business creation and survival

	Household	Mothers	
	New business	New business	Closed business
	(1)	(2)	(3)
Childcare	0.00	0.02	0.01
	(0.03)	(0.03)	(0.03)
Cash	$0.19^{***}_{\star\star\star}$	$0.17^{***}_{\star\star\star}$	0.03
	(0.03)	(0.03)	(0.03)
Childcare & cash	$0.15^{***}_{\star\star\star}$	$0.15^{***}_{\star\star\star}$	0.03
	(0.03)	(0.03)	(0.03)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.375
Childcare = childcare & cash	0.000	0.000	0.477
Cash = childcare & cash	0.362	0.605	0.859
Childcare & cash = childcare + cash	0.496	0.390	0.754
Mean Control	.24	.15	.17
Obs.	1414	1414	1414

Notes: The dependent variables measure whether a new business was created at the household level (column 1) or by the mother (column 2). Column (3) measures whether at least one of the mother's baseline businesses closed down. All regressions control for the randomization strata listed in Table F.1. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group all the outcomes together in one family.

Table A.6: Travel time to the business and operating hours (Mother)

	Travel time			Operating time (total)		
	Any business	New business	Old business	Any business	New business	Old business
	(1)	(2)	(3)	(4)	(5)	(6)
Childcare	0.99	0.36	0.63	8.44	3.90	4.90
	(0.73)	(0.53)	(0.49)	(9.04)	(7.49)	(6.10)
Cash	2.35^{***}_{***}	1.89^{***}_{***}	0.46	45.68^{***}_{***}	36.57^{***}_{***}	9.20
	(0.75)	(0.63)	(0.41)	(10.28)	(8.44)	(6.45)
Childcare & cash	1.65^{**}_{*}	1.21^{**}_{*}	0.45	42.73^{***}_{***}	36.73^{***}_{***}	6.33
	(0.72)	(0.59)	(0.42)	(10.09)	(8.70)	(5.97)
p-value (equal treatment effects):						
Childcare = cash	0.114	0.022	0.751	0.001	0.000	0.505
Childcare = childcare & cash	0.428	0.181	0.744	0.001	0.000	0.813
Cash = childcare & cash	0.407	0.336	0.982	0.801	0.987	0.651
Childcare & cash = childcare + cash	0.130	0.239	0.351	0.442	0.765	0.379
Mean Control	2.33	1.35	.99	78.43	32.52	45.91
Obs.	1414	1414	1414	1414	1414	1414

Notes: The dependent variables are the operating time (total hours per month over all businesses) and the time needed to travel to a business (minutes per day, over all businesses). This is provided for any business (columns 1 and 4), newly created businesses (columns 2 and 5) and businesses that were in existence at the time of the baseline (columns 3 and 6). We control for the randomization strata listed in Table F.1. In columns 4 to 6, we also control for the baseline level of the outcome variable. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in two families: (1) to (3) and (4) to (6).

Table A.7: Correlates of full-day childcare enrollment, control group

	Full-day childcare
Mother self-employed	0.06
	(0.05)
Mother wage-employed	0.13*
	(0.07)
Child's age : 4	0.01
	(0.05)
Child's age : 5	0.26***
	(0.09)
Child's gender: boy	0.09*
	(0.05)
Child in half-day childcare (at baseline)	0.06
	(0.06)
Mother's age	0.00
	(0.00)
Mother's education (years)	0.02***
	(0.01)
Household size	-0.00
	(0.02)
Father is in the household	0.00
	(0.06)
Other caregiver, besides mother or father	-0.01
	(0.07)
Nb of elder male siblings	-0.01
	(0.03)
Nb of elder female siblings	0.01
	(0.03)
Mother's religion is Islam	0.03
	(0.06)
Household owns any land	-0.05
	(0.06)
Household income	0.01
	(0.01)
Observations	383
R-squared	0.14
Mean of outcome	0.33

Notes: The sample includes the control group. The dependent variable is a dummy taking value one if the child is enrolled in full-day childcare at the long-term follow-up survey. All the right-hand side variables are defined at baseline. In addition, we also control for district fixed effects and a dummy taking value one if the household's income was missing and therefore imputed to the sample mean. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$.

Table A.8: Effects on single mothers

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	-1.57	.34	-4.73	-5.24	-3.17	-.02	-10.25	-.02	-1.28	-.04	-11.6	.02	1.78	-.01	-.17
	(21.1)	(5.35)	(4.05)	(21.37)	(6.9)	(.04)	(11.99)	(.03)	(5.86)	(.04)	(12.66)	(.02)	(2.66)	(.03)	(.13)
Cash	$64.04^{**}_{\star\star}$	$11.14^{*}_{\star}$	-7.38**	$60.44^{**}_{\star}$	5.78	$.19^{***}_{\star\star\star}$	$33.4^{**}_{\star\star}$	-.04	-4.28	$.12^{***}_{\star\star}$	$29.22^{**}_{\star}$	$.09^{***}_{\star\star}$	6.31*	.03	-.06
	(27.19)	(5.97)	(3.57)	(27.19)	(7.42)	(.04)	(13.63)	(.03)	(5.64)	(.04)	(14.01)	(.03)	(3.3)	(.03)	(.13)
Childcare & cash	$63.51^{**}_{\star\star}$	$14.28^{**}_{\star\star}$	$-8.43^{**}_{\star\star}$	$59.13^{**}_{\star}$	8.08	$.18^{***}_{\star\star\star}$	$40.19^{***}_{\star\star\star}$	$-.06^{**}_{\star\star}$	$-9.83^{*}_{\star}$	$.11^{**}_{\star}$	$30.03^{**}_{\star}$	$.1^{***}_{\star\star}$	$8.92^{**}_{\star}$	.07**	-.01
	(25.93)	(5.82)	(3.79)	(26.32)	(7.38)	(.04)	(13.54)	(.03)	(5.22)	(.04)	(13.84)	(.03)	(3.55)	(.03)	(.13)
Single mother	-29.72	-6.24	1.85	-25.11	-1.36	-.03	-14.93	.06	23.48**	.03	10.79	.02	1.22	-.07**	-.29*
	(24.96)	(6.44)	(5.42)	(25.25)	(8.93)	(.05)	(15.23)	(.04)	(10.21)	(.05)	(16.63)	(.03)	(2.7)	(.03)	(.15)
Childcare × single mother	$158.17^{***}_{\star\star}$	22.74**	3.89	$158.88^{***}_{\star\star}$	24.84*	.15**	45.93*	.01	-15.8	.17**	30.84	.02	.06	.07	.34**
	(57.05)	(11.55)	(7.27)	(56.7)	(13.99)	(.07)	(23.68)	(.06)	(13.2)	(.08)	(24.84)	(.05)	(5.03)	(.05)	(.17)
Cash × single mother	-41.7	-6.03	.28	-49.38	-9.62	.01	19.49	0	-19.3	.02	5.75	-.05	-4.58	.08	.35**
	(35.77)	(9.1)	(7.67)	(35.86)	(12.3)	(.07)	(23.17)	(.06)	(13.36)	(.08)	(24.38)	(.05)	(4.96)	(.05)	(.16)
Childcare & cash × single mother	.4	5.55	-3.77	-9.76	-1.27	-.06	-11.46	.02	-20.23*	-.05	-29.25	-.06	-4.54	-.02	.1
	(40.31)	(10.73)	(6.68)	(40.62)	(13.34)	(.07)	(23.47)	(.06)	(12.22)	(.08)	(24.68)	(.05)	(5.62)	(.05)	(.15)
Impact for single mothers at baseline															
Childcare	$156.6^{***}_{\star\star}$	$23.08^{**}_{\star\star}$	-.83	$153.64^{***}_{\star\star}$	$21.67^{*}_{\star}$	.13**	35.68*	-.01	-17.08	$.14^{**}_{\star\star}$	19.24	.04	1.83	.06	.17*
	(53.06)	(10.18)	(6.07)	(52.56)	(12.13)	(.06)	(20.38)	(.05)	(11.93)	(.06)	(21.36)	(.04)	(4.21)	(.04)	(.09)
Cash	22.35	5.1	-7.1	11.06	-3.84	$.2^{***}_{\star\star\star}$	$52.9^{***}_{\star\star}$	-.04	-23.58*	$.14^{**}_{\star\star}$	34.97*	.03	1.73	$.12^{***}_{\star\star\star}$	$.29^{***}_{\star\star\star}$
	(23.16)	(6.81)	(6.81)	(23.36)	(9.71)	(.06)	(18.67)	(.05)	(12.17)	(.06)	(19.95)	(.04)	(3.67)	(.04)	(.1)
Childcare & cash	$63.91^{**}_{\star\star}$	$19.83^{**}_{\star}$	$-12.2^{**}_{\star\star}$	49.37	6.81	.12**	28.72	-.04	$-30.06^{***}_{\star\star}$	.06	.78	.04	4.39	.06	.1
	(31.81)	(9.04)	(5.5)	(31.88)	(11.14)	(.06)	(19.11)	(.05)	(11.1)	(.06)	(20.39)	(.04)	(4.36)	(.04)	(.06)
p-value (equal treatment effects)															
Childcare = cash	.009	.064	.341	.005	.023	.29	.416	.665	.545	.933	.463	.862	.984	.231	.376
Childcare = childcare & cash	.095	.776	.03	.057	.237	.875	.748	.607	.174	.22	.4	.98	.631	.969	.439
Cash = childcare & cash	.14	.086	.391	.173	.296	.2	.231	.945	.508	.17	.098	.874	.592	.216	.073
Childcare & cash = childcare + cash	.055	.532	.616	.053	.489	.018	.038	.889	.493	.013	.073	.582	.899	.065	.009
Mean Control	88	24	22	113	49	.3	75	.22	48	.49	123	.1	6	.07	.1
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. The interaction term is a dummy indicating the mother was single at baseline. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table A.9: Effects on fathers by target child's likelihood to be in childcare

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues (1)	Profits (2)	(3)	Revenues (4)	Profits (5)	>0 (6)	Hrs. (7)	>0 (8)	Hrs. (9)	>0 (10)	Hrs. (11)	>0 (12)	UGX 1000 (13)	>0 (14)	Nr. (15)
Childcare	34.85	6.86	20.97	56.56$^{**}_{\star}$	34.3$^{**}_{\star\star}$	0	.86	.11$^{**}_{\star\star}$	21.46	.12**	23.4	0	-.88	.03	.08
	(23.97)	(6.33)	(13.47)	(26.89)	(15.16)	(.04)	(12.34)	(.05)	(14.08)	(.05)	(16.94)	(.02)	(1.41)	(.02)	(.08)
Cash	-8.87	-6.99	6.9	1.04	2.27	-.01	-8.87	.08*	16.29	.05	10.41	0	.93	.02	0
	(18.15)	(4.99)	(12.04)	(20.73)	(12.99)	(.04)	(11.15)	(.05)	(13.94)	(.05)	(16.45)	(.02)	(1.83)	(.02)	(.05)
Childcare & cash	48.17**	4.77	1.93	61.59$^{**}_{\star}$	9	.05	15.01	.04	5.33	.07	20.87	.01	-.57	.03	.16
	(23.49)	(5.77)	(12.88)	(27.45)	(14.42)	(.04)	(12.35)	(.04)	(13.83)	(.05)	(16.86)	(.02)	(1.37)	(.02)	(.13)
Childcare × t. c. likely to be in school	-46.66	-9.45	-6.32	-44.54	-23.21	-.04	-8.77	-.03	.22	-.08	-9.04	0	3.65	-.06*	-.09
	(29.58)	(8.02)	(18.33)	(34.49)	(20.21)	(.05)	(16.68)	(.06)	(19.18)	(.07)	(23.45)	(.03)	(2.33)	(.03)	(.1)
Cash × t. c. likely to be in school	2.33	1.4	2.95	8.88	4.44	0	14.05	-.06	-15.57	-.07	-5.08	-.01	1.4	-.03	.06
	(25.57)	(6.97)	(17.95)	(31.08)	(19.73)	(.05)	(16.93)	(.06)	(18.34)	(.07)	(23.36)	(.02)	(2.46)	(.03)	(.09)
Childcare & cash × t. c. likely to be in school	-32.3	-4.7	-.1	-38.02	-5.48	-.05	-8.45	0	6.79	-.06	-6.11	-.02	2.21	-.03	-.2
	(32.46)	(7.89)	(17.79)	(37.14)	(20.26)	(.06)	(17.85)	(.06)	(18.57)	(.07)	(23.78)	(.03)	(2.11)	(.03)	(.14)
Impact when target child likely in school															
Childcare	-11.81	-2.59	14.64	12.03	11.09	-.04	-7.91	.08$^{**}_{\star\star}$	21.68*	.03	14.36	0	2.77	-.03	-.02
	(17.37)	(4.95)	(12.4)	(21.69)	(13.32)	(.04)	(11.18)	(.04)	(12.97)	(.05)	(16.25)	(.02)	(1.8)	(.02)	(.06)
Cash	-6.54	-5.59	9.84	9.92	6.7	-.01	5.18	.01	.72	-.02	5.33	0	2.33	-.01	.05
	(18.4)	(4.85)	(13.38)	(23.3)	(14.85)	(.04)	(12.79)	(.04)	(11.9)	(.05)	(16.63)	(.02)	(1.71)	(.02)	(.08)
Childcare & cash	15.87	.07	1.83	23.57	3.52	0	6.55	.04	12.13	.01	14.76	-.01	1.64	0	-.04
	(21.98)	(5.22)	(12.25)	(24.86)	(14.07)	(.04)	(12.77)	(.04)	(12.46)	(.05)	(16.72)	(.02)	(1.6)	(.02)	(.04)
p-value (equal treatment effects)															
Childcare = cash	.776	.539	.726	.93	.77	.445	.306	.13	.12	.329	.61	.663	.853	.516	.375
Childcare = childcare & cash	.204	.616	.308	.648	.592	.285	.25	.305	.494	.654	.982	.461	.614	.248	.697
Cash = childcare & cash	.32	.261	.555	.609	.84	.742	.923	.623	.379	.619	.601	.751	.755	.637	.181
Childcare & cash = childcare + cash	.225	.245	.217	.962	.488	.313	.604	.321	.576	.922	.839	.693	.214	.185	.401
Mean Control	59	18	49	109	69	.15	42	.25	65	.4	106	.04	1	.05	.1
Obs.	1402	1402	1400	1400	1400	1402	1401	1402	1399	1402	1398	1402	1402	1401	1401

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. The interaction term is a dummy indicating it is likely that the target child would have attended full day childcare in absence of our subsidies. All regressions control for the baseline level of the outcome variable and the randomization strata listed in Table F.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $\star$ $p<0.1$, $\star\star$ $p<0.05$, $\star\star\star$ $p<0.01$ for unadjusted p-values and by $\star$ $p<0.1$, $\star\star$ $p<0.05$, $\star\star\star$ $p<0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table A.10: Effects on mothers by presence of younger children at baseline

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	69.57$^{**}_{*}$	10.58*	-2.46	66.58$^{**}_{*}$	8.25	.04	7.22	-.04	-11.78*	.01	-4.23	.03	3.64	.04	-.04
	(27.19)	(5.94)	(4.03)	(27.26)	(7.38)	(.04)	(12.45)	(.03)	(6.77)	(.04)	(13.16)	(.03)	(2.35)	(.03)	(.13)
Cash	55.95$^{**}_{**}$	7.89	-7.21$^{*}_{*}$	49.77$^{**}_{*}$	1.69	.2$^{***}_{***}$	49.7$^{***}_{***}$	-.06*	-12.52*	.13$^{***}_{**}$	39.53$^{***}_{**}$	.07$^{***}_{**}$	8.79$^{***}_{**}$	.07**	.03
	(23.27)	(5.31)	(3.81)	(23.35)	(6.89)	(.04)	(13.17)	(.03)	(7.03)	(.04)	(13.81)	(.03)	(3.09)	(.03)	(.13)
Childcare & cash	69.38$^{***}_{***}$	19.49$^{***}_{***}$	-9.42$^{***}_{**}$	61.89$^{**}_{**}$	11.39	.15$^{***}_{***}$	38.2$^{***}_{***}$	-.07$^{**}_{**}$	-21.4$^{***}_{***}$	.07$^{*}_{*}$	18.06	.04	4.75**	.07$^{**}_{*}$	-.02
	(23.9)	(6.12)	(3.62)	(24.18)	(7.57)	(.04)	(13.13)	(.03)	(6.28)	(.04)	(13.6)	(.03)	(2.39)	(.03)	(.12)
Younger children	18.9	.79	-.69	14.44	-1.13	0	8.09	-.04	-15.21**	-.03	-7.13	-.01	5.97	.03	-.08
	(25.83)	(6.2)	(5.54)	(25.98)	(8.62)	(.05)	(15.38)	(.04)	(7.62)	(.05)	(16.04)	(.03)	(3.93)	(.03)	(.14)
Childcare × younger children	-101.3$^{***}_{**}$	-14.23	-4.94	-104.21$^{***}_{**}$	-17.63	-.06	-16.16	.05	17.73	0	.29	-.02	-6.89	-.09**	-.08
	(37.88)	(9.25)	(7.44)	(38.41)	(12.46)	(.07)	(21.74)	(.06)	(11.82)	(.08)	(23.35)	(.04)	(5.61)	(.05)	(.14)
Cash × younger children	-21.82	4.52	-.12	-21.59	3.49	-.02	-36.33	.06	6.77	0	-30.38	-.01	-14.77$^{***}_{**}$	-.03	.08
	(43.84)	(10.42)	(7.42)	(43.93)	(13.14)	(.08)	(23.47)	(.06)	(10.72)	(.08)	(24.24)	(.05)	(4.91)	(.06)	(.17)
Childcare & cash × younger children	-21.12	-12.24	-.86	-21.95	-13.31	.05	-7.02	.04	18.28*	.07	8.81	.15$^{***}_{*}$	9.87	0	.14
	(46.24)	(9.88)	(7.04)	(46.67)	(12.64)	(.08)	(24.12)	(.06)	(10.4)	(.08)	(25.01)	(.06)	(8.15)	(.06)	(.16)
Impact with younger children at baseline															
Childcare	-31.73	-3.65	-7.4	-37.63	-9.38	-.02	-8.94	.01	5.94	0	-3.94	.01	-3.26	-.06	-.12**
	(26.33)	(7.12)	(6.3)	(26.93)	(10.08)	(.06)	(17.91)	(.05)	(9.69)	(.07)	(19.36)	(.04)	(5.09)	(.04)	(.06)
Cash	34.13	12.41	-7.33	28.17	5.18	.18$^{***}_{**}$	13.37	0	-5.75	.13$^{*}_{*}$	9.15	.06	-5.98	.04	.11
	(37.05)	(8.95)	(6.42)	(37.08)	(11.19)	(.07)	(19.48)	(.05)	(8.06)	(.07)	(19.97)	(.04)	(3.8)	(.05)	(.1)
Childcare & cash	48.27	7.24	-10.27*	39.94	-1.92	.2$^{***}_{***}$	31.18	-.02	-3.13	.15$^{**}_{*}$	26.87	.19	14.62	.07	.13
	(39.75)	(7.76)	(6.06)	(40.1)	(10.12)	(.07)	(20.27)	(.05)	(8.29)	(.07)	(21)	(.05)	(7.79)	(.05)	(.09)
p-value (equal treatment effects)															
Childcare = cash	.048	.073	.989	.052	.192	.004	.246	.829	.22	.076	.524	.259	.435	.027	.016
Childcare = childcare & cash	.03	.164	.597	.039	.461	.001	.046	.482	.349	.045	.153	.001	.019	.006	.004
Cash = childcare & cash	.752	.584	.592	.794	.525	.766	.407	.617	.75	.83	.423	.017	.003	.546	.918
Childcare & cash = childcare + cash	.38	.898	.596	.349	.88	.668	.339	.603	.793	.906	.461	.071	.005	.18	.332
Mean Control	89	21	19	108	40	.31	84	.15	20	.44	103	.06	8	.11	.18
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. The interaction term is a dummy indicating the target child has a younger sibling at baseline. All regressions control for the baseline level of the outcome variable and the randomization strata listed in Table F.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table A.11: Effects on mothers by age of target child

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues (1)	Profits (2)	(3)	Revenues (4)	Profits (5)	>0 (6)	Hrs. (7)	>0 (8)	Hrs. (9)	>0 (10)	Hrs. (11)	>0 (12)	UGX 1000 (13)	>0 (14)	Nr. (15)
Childcare	54.42*	12.75*	-3.48	52.03*	10.64	.02	-.37	-.01	-5.01	.02	-5.95	.01	-1.49	.02	-.13
	(30.46)	(7.23)	(5.29)	(30.62)	(9.31)	(.05)	(15.38)	(.04)	(7.97)	(.05)	(16.2)	(.03)	(3.26)	(.03)	(.17)
Cash	64.01$^{**}_{\star}$	9.36	-7.44	57.1*	3.37	.15$^{***}_{\star\star\star}$	29.36$^{\star}_{\star}$	-.03	-5.74	.1$^{\star}_{\star}$	25.69	.02	.41	.03	-.1
	(32.39)	(6.89)	(4.62)	(32.23)	(8.74)	(.05)	(16.49)	(.04)	(8.45)	(.05)	(17.37)	(.03)	(4.04)	(.04)	(.18)
Childcare & cash	78.73$^{**}_{\star\star}$	20.92$^{***}_{\star\star}$	-7.27	74.71$^{**}_{\star}$	14.56	.16$^{***}_{\star\star\star}$	32.73$^{**}_{\star\star}$	-.05	-14.04$^{\star}_{\star}$	.11$^{**}_{\star}$	17.99	.06	4.46	.08**	-.05
	(31.11)	(7.14)	(4.82)	(31.6)	(9.35)	(.05)	(16.06)	(.03)	(7.45)	(.05)	(16.59)	(.04)	(4.5)	(.04)	(.17)
4–5 yo	-18.71	-3.68	-.6	-20.63	-5.17	-.04	-16.08	.03	.37	0	-16.33	-.07**	-7.02**	-.03	-.18
	(22.57)	(5.83)	(4.79)	(22.8)	(7.82)	(.05)	(14.33)	(.04)	(7.99)	(.05)	(15.16)	(.03)	(2.75)	(.03)	(.19)
Childcare × 4–5 yo	-28.19	-12.82	-.76	-31.2	-15.33	0	4.8	-.03	-3.72	-.03	2.15	.02	6	-.02	.13
	(41.9)	(9.62)	(7.01)	(42.12)	(12.39)	(.06)	(20.76)	(.05)	(11.17)	(.07)	(22.03)	(.04)	(4.29)	(.04)	(.19)
Cash × 4–5 yo	-28.9	-.77	.32	-27.4	-1.8	.08	19.77	-.03	-9.32	.06	10.48	.09*	8.32	.05	.3
	(40.98)	(9.39)	(6.66)	(41.11)	(12.15)	(.07)	(22.28)	(.05)	(11.17)	(.07)	(23.23)	(.05)	(5.22)	(.05)	(.2)
Childcare & cash × 4–5 yo	-33.14	-10.2	-4.91	-40.81	-14.48	0	5.65	-.01	-4.56	-.02	3.63	.04	5.47	-.02	.13
	(39.92)	(9.89)	(6.34)	(40.37)	(12.42)	(.07)	(22.07)	(.05)	(10.29)	(.07)	(22.93)	(.05)	(5.67)	(.05)	(.19)
Impact when target child is 4/5 yo															
Childcare	26.23	-.07	-4.24	20.83	-4.69	.02	4.43	-.04	-8.73	-.01	-3.8	.03	4.5	0	-.01
	(28.76)	(6.15)	(4.48)	(28.87)	(7.87)	(.04)	(13.88)	(.04)	(7.86)	(.05)	(14.85)	(.02)	(2.98)	(.03)	(.07)
Cash	35.11	8.59	-7.11	29.69	1.58	.23$^{***}_{\star\star\star}$	49.13$^{***}_{\star\star\star}$	-.05	-15.05$^{**}_{\star}$	.16$^{***}_{\star\star}$	36.17$^{**}_{\star\star}$	.11	8.74	.08$^{**}_{\star\star}$	.2**
	(23.95)	(6.19)	(4.77)	(24.33)	(8.15)	(.05)	(14.81)	(.03)	(7.29)	(.05)	(15.23)	(.03)	(3.18)	(.04)	(.1)
Childcare & cash	45.59*	10.72	-12.19***	33.9	.08	.16$^{***}_{\star\star\star}$	38.38$^{**}_{\star\star}$	-.06$^{\star}_{\star}$	-18.6$^{***}_{\star\star}$	.08	21.62	.1	9.93	.06*	.08
	(25.77)	(6.77)	(4.05)	(25.86)	(8.06)	(.05)	(15.19)	(.03)	(7.03)	(.05)	(15.82)	(.03)	(3.41)	(.03)	(.08)
p-value (equal treatment effects)															
Childcare = cash	.757	.143	.549	.76	.428	0	.004	.733	.405	.001	.013	.019	.326	.018	.024
Childcare = childcare & cash	.53	.107	.052	.672	.554	.008	.032	.604	.179	.078	.127	.059	.229	.083	.228
Cash = childcare & cash	.69	.75	.234	.874	.856	.172	.515	.854	.596	.161	.39	.702	.795	.5	.233
Childcare & cash = childcare + cash	.689	.811	.893	.676	.782	.164	.483	.499	.616	.369	.634	.285	.546	.601	.374
Mean Control	90	25	18	109	45	.31	79	.18	30	.48	109	.04	1	.1	.19
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99th percentile. The interaction term is a dummy indicating the target child is older (four-five years instead of three years). All regressions control for the baseline level of the outcome variable and the randomization strata listed in Table F.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table A.12: Effects on mothers by gender of target child

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	40.18	8.21	-3.34	35.02	4.94	.01	4.53	-.03	-10.89	-.01	-6.27	0	2.13	.01	-.14
	(29.28)	(6.71)	(4.91)	(29.17)	(8.52)	(.05)	(14.26)	(.04)	(8.74)	(.05)	(15.47)	(.03)	(3.38)	(.03)	(.18)
Cash	77.79^{***}_{**}	17.2^{***}_{**}	-6.22	70.63^{***}_{**}	10.76	$.22^{***}_{***}$	52.36^{***}_{***}	-.05	-18.38**	$.14^{***}_{**}$	35.56^{**}_{*}	.06*	7.06*	.06*	-.05
	(26.46)	(6.34)	(4.59)	(26.54)	(8.09)	(.05)	(14.98)	(.04)	(8.14)	(.05)	(15.93)	(.03)	(4.01)	(.04)	(.18)
Childcare & cash	64.74^{**}_{**}	17.78^{**}_{**}	-12.15^{***}_{***}	50.45*	4.35	$.14^{***}_{***}$	32.73^{**}_{**}	$-.08^{**}_{**}$	-26.62^{***}_{***}	.06	5.04	.06*	9.67**	.06*	-.09
	(30.33)	(7.2)	(3.76)	(30.5)	(8.58)	(.05)	(15.05)	(.03)	(7.23)	(.05)	(15.76)	(.04)	(4.57)	(.04)	(.17)
Boy	13.27	5.38	-1.4	9.83	1.81	.02	19.38	-.04	-13.22*	-.02	4.49	-.04	-1.49	-.02	-.21
	(23.5)	(5.99)	(4.66)	(23.64)	(7.82)	(.05)	(14.11)	(.04)	(7.9)	(.05)	(14.97)	(.03)	(2.61)	(.03)	(.17)
Childcare × boy	2.1	-3.18	-.86	4.87	-3.04	.03	-4.49	.02	8.36	.03	3.71	.05	-.72	0	.15
	(42.66)	(9.54)	(6.79)	(42.77)	(12.08)	(.07)	(20.66)	(.05)	(11.02)	(.07)	(21.89)	(.04)	(4.51)	(.05)	(.19)
Cash × boy	-59.16	-17.05*	-2.27	-57.17	-17.36	-.06	-25.62	.01	16.03	-.03	-8.69	.02	-4.9	0	.2
	(39.6)	(8.92)	(6.53)	(39.57)	(11.35)	(.07)	(21.98)	(.05)	(11.11)	(.07)	(22.91)	(.05)	(5.17)	(.05)	(.2)
Childcare & cash × boy	-3.7	-3.54	4.77	8.84	6.13	.03	5.17	.05	20.31**	.06	28.66	.04	-4.16	.01	.23
	(40.92)	(9.95)	(6.2)	(41.43)	(12.34)	(.07)	(22.08)	(.05)	(10.07)	(.07)	(22.87)	(.05)	(5.71)	(.05)	(.19)
Impact when target child is a boy															
Childcare	42.27	5.03	-4.21	39.89	1.9	.04	.03	-.01	-2.53	.02	-2.56	.05	1.41	.01	.01
	(30.67)	(6.75)	(4.75)	(30.95)	(8.58)	(.05)	(14.9)	(.03)	(6.85)	(.05)	(15.48)	(.03)	(2.96)	(.03)	(.05)
Cash	18.63	.15	-8.49*	13.46	-6.6	$.16^{***}_{***}$	26.74*	-.03	-2.36	$.11^{**}_{*}$	26.87	.08	2.16	.06*	.15*
	(29.29)	(6.38)	(4.68)	(29.24)	(8.2)	(.05)	(16.08)	(.04)	(7.55)	(.05)	(16.49)	(.03)	(3.06)	(.04)	(.08)
Childcare & cash	61.04^{**}_{**}	14.24^{**}_{*}	-7.38	59.29^{**}_{**}	10.48	$.17^{***}_{***}$	37.9^{**}_{**}	-.03	-6.3	$.12^{**}_{**}$	33.7**	.1	5.51	$.07^{**}_{**}$	.14**
	(27.92)	(6.82)	(4.91)	(28.41)	(8.85)	(.05)	(16.08)	(.03)	(6.99)	(.05)	(16.47)	(.03)	(3.38)	(.03)	(.07)
p-value (equal treatment effects)															
Childcare = cash	.48	.473	.321	.433	.317	.015	.099	.543	.982	.106	.082	.487	.828	.204	.09
Childcare = childcare & cash	.565	.205	.491	.56	.351	.005	.018	.588	.593	.044	.03	.175	.264	.079	.057
Cash = childcare & cash	.172	.041	.806	.144	.052	.799	.518	.938	.612	.763	.701	.534	.378	.698	.882
Childcare & cash = childcare + cash	.997	.35	.42	.893	.219	.737	.624	.758	.892	.913	.689	.501	.683	.955	.814
Mean Control	94	26	18	112	45	.31	86	.15	23	.45	109	.05	3	.09	.14
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. The interaction term is a dummy indicating the target child a boy. All regressions control for the baseline level of the outcome variable and the randomization strata listed in Table F.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

1.B Other Effects: Well-Being

We first discuss the mother's psychological well-being, followed by domestic violence targeting the mother or child.

1.B.1 Mother's psychological well-being

We now analyze the treatment effects on the mother's subjective well-being. Table B.1 shows the impact on the mother's self-reported happiness, life satisfaction and stress. For happiness, we rely on the question "How happy are you with your life?", and for life satisfaction on the response to "In your opinion, where are you on the ladder of life at the moment?". Both are measured on a scale from zero to ten. The stress level is captured by the perceived stress scale (Cohen, Kamarck and Mermelstein, 1983).

Relative to the control group, providing childcare increases happiness by ten percent and life satisfaction by eight percent. It also reduces stress by an insignificant 2.4 percent. Cash has a significant impact on all three outcome variables: Compared to the control, happiness and life satisfaction increase with 20 percent and 16 percent respectively, and the level of stress is reduced by five percent. The effects on happiness and life satisfaction are significantly higher than in the childcare only arm. For the combined arm, happiness with life and life satisfaction increase by 16 percent and 11 percent respectively, and

stress goes down by three percent.

Table B.1: Effects on mothers' subjective well-being

	Happiness with life (0 to 10) (1)	Life satisfaction (0 to 10) (2)	Perceived stress scale (0-40) (3)
Childcare	.4$^{***}_{\star\star}$	.31$^{***}_{\star\star}$	-.58
	(.15)	(.11)	(.38)
Cash	.81$^{***}_{\star\star\star}$	.65$^{***}_{\star\star\star}$	-1.15$^{***}_{\star\star\star}$
	(.16)	(.12)	(.37)
Childcare & cash	.62$^{***}_{\star\star\star}$	.42$^{***}_{\star\star\star}$	-.78$^{**}_{\star\star}$
	(.16)	(.11)	(.39)
p-value (equal treatment effects):			
Childcare = cash	0.010	0.003	0.136
Childcare = childcare & cash	0.151	0.325	0.605
Cash = childcare & cash	0.256	0.063	0.348
Childcare & cash = childcare + cash	0.009	0.001	0.083
Mean Control	4.2	3.54	23.63
Obs.	1414	1414	1414

Notes: In the columns (1) and (2), the dependent variables are the mother's happiness with life and position on the ladder of life, measured on a scale from zero to ten; and in column (3) it is the mother's stress level, captured by Cohen's perceived stress scale. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes together in one family.

1.B.2 Domestic violence

In Table B.2, we investigate potential treatment effects on violence against mothers, against children by members of the household, and against children by outsiders. For each block, we look separately at psychological violence, physical violence, and the combination of both.

We first discuss the treatment effects on violence against mothers. This is particularly relevant in our context, given the recurrent finding that cash transfers may increase intimate partner violence (IPV) (Hidrobo and Fernald, 2013). Mothers who have a partner were asked in private about the occurrence of psychological and physical violence over the past month.[34] We report the extensive margin of domestic violence. The effects are not significant once we correct for multiple hypothesis testing. Nevertheless, the large point estimates imply that we cannot exclude that the cash transfers increased physical IPV. For the childcare only treatment, on the other hand, there is no impact on IPV as the coefficients are small and insignificant.

Columns (4) to (6) provide details on violence against children by household members, which is also a prevalent social problem in Uganda (Ministry of Gender and Development, 2015). We asked the mother whether she, or any other adult household member, committed violent acts against the target child in the past month and report the extensive margin results.[35] Notice that children are

[34]For violence against mothers, psychological violence includes three acts: (i) saying or doing something to humiliate the mother in front of others; (ii) threatening to hurt or harm the mother or someone she cares about; (iii) insulting the mother or make her feel bad about herself. Physical violence asks about seven acts: (i) push you, shake you, or throw something at you; (ii) slap you; (iii) twist your arm or pull your hair; (iv) punch you with his fist or with something that could hurt you; (v) kick you, drag you, or beat you up; (vi) try to choke you or burn you on purpose; (vii) threaten or attack you with a knife, gun or other weapon.

[35]For violence against children, psychological violence includes three acts: (i)

often subject to violence. In the control group, 78 percent report at least one episode of psychological violence and 75 percent report at least one episode of physical violence. The treatment effects are mostly positive, but small and statistically insignificant.

Finally, columns (7) to (9) discuss violence against children by others. We deemed this is important, as there is substantial use of violence in the education sector in Uganda (Devries et al., 2015). In this case, we asked mothers if they were aware of any other adult having performed the same acts as violence against children by household members. We do not find any evidence of increased violence against children outside the household.

shouting, yelling or screaming at the child; (ii) calling the child dumb, lazy etc.; (iii) taking away privileges. Physical violence includes six acts: (i) shaking the child; (ii) spanking, hitting or slapping the child on the bottom with bare hand; (iii) hitting the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object; (iv) hitting or slapping the child on the face, head or ears; (v) hitting or slapping the child on the hand, arm, or leg; (vi) beating the child up, that is hit him/her over and over as hard as one could.

Table B.2: Domestic violence

	Against partner			**Against child (in hh)**			**Against child (out hh)**		
	Psych.	Phy.	Any	Psych.	Phy.	Any	Psych.	Phy.	Any
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Childcare	.01	.01	.01	.05*	-.03	.03	.03	.04	.04
	(.03)	(.02)	(.03)	(.03)	(.03)	(.02)	(.04)	(.03)	(.04)
Cash	.04	.06$^{**}_{\star}$	.06*	.04	0	.03	-.02	-.01	-.02
	(.03)	(.03)	(.03)	(.03)	(.03)	(.02)	(.04)	(.03)	(.04)
Childcare & cash	.02	.05*	.04	.05	-.01	.02	.03	.02	.03
	(.03)	(.03)	(.03)	(.03)	(.03)	(.02)	(.04)	(.03)	(.04)
p-value (equal treatment effects):									
Childcare = cash	0.410	0.049	0.145	0.687	0.499	0.874	0.111	0.170	0.098
Childcare = childcare & cash	0.638	0.134	0.362	0.930	0.568	0.666	0.993	0.644	0.920
Cash = childcare & cash	0.724	0.644	0.589	0.756	0.923	0.554	0.117	0.351	0.127
Childcare & cash = childcare + cash	0.668	0.605	0.535	0.317	0.610	0.217	0.643	0.851	0.704
Mean Control	.23	.1	.24	.78	.75	.88	.47	.23	.51
Obs.	1287	1287	1282	1388	1388	1388	1388	1388	1388

Notes: The dependent variables measure the extensive margin of psychological, physical or any violence against women (column 1 to 3), against children by members of the household (column 4 to 6) and against children by others (column 7 to 9). We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in three families: (1) to (3), (4) to (6) and (7) to (9).

1.C Attrition Bounds

Given the differential attrition rate in the control relative to the treatment groups, we assess the sensitivity of our main findings with respect to attrition. As pre-specified, we follow Kling, Liebman and Katz (2007) and Fairlie, Karlan and Zinman (2015) and calculate lower and upper bound estimates that adjust for differential non-response rates in the treatment groups relative to the control. We calculate the upper bounds by imputing the mean among the treated plus 0.1 (or 0.2) standard deviations (SD) to the non-responders in the treatment group. For the control group, we impute using the mean among the control minus 0.1 (or 0.2) SD. To calculate lower bounds, we follow the opposite procedure: For the treatment group, we take the mean minus 0.1 (or 0.2) SD and for the control we take the mean plus 0.1 (or 0.2) SD. We then re-estimate the treatment effects. We report the results in the following tables.

Table C.1: Effects on childcare enrollment and attendance – Attrition: Ten Percent Imputation

	Enrollment		Attendance
	Any childcare	Full-day childcare	Days missed
	(1)	(2)	(3)
	Panel A: Lower bound		
Childcare	.14$^{***}_{***}$	.48$^{***}_{***}$	-15.21$^{***}_{***}$
	(.02)	(.03)	(1.9)
Cash	.07$^{***}_{***}$	.07$^{**}_{**}$	-8.58$^{***}_{***}$
	(.02)	(.03)	(2.23)
Childcare & cash	.13$^{***}_{***}$	.5$^{***}_{***}$	-14.53$^{***}_{***}$
	(.02)	(.03)	(1.96)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.000
Childcare = childcare & cash	0.386	0.571	0.597
Cash = childcare & cash	0.001	0.000	0.001
Childcare & cash = childcare + cash	0.003	0.254	0.000
Mean Control	.83	.34	20.71
Obs.	1496	1428	1414
	Panel B: Upper bound		
Childcare	.15$^{***}_{***}$	.48$^{***}_{***}$	-15.21$^{***}_{***}$
	(.02)	(.03)	(1.9)
Cash	.08$^{***}_{***}$	.07$^{**}_{**}$	-8.58$^{***}_{***}$
	(.02)	(.03)	(2.23)
Childcare & cash	.14$^{***}_{***}$	.5$^{***}_{***}$	-14.53$^{***}_{***}$
	(.02)	(.03)	(1.96)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.000
Childcare = childcare & cash	0.402	0.571	0.597
Cash = childcare & cash	0.001	0.000	0.001
Childcare & cash = childcare + cash	0.001	0.254	0.000
Mean Control	.82	.34	20.71
Obs.	1496	1428	1414

Notes: See Table 1.1 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $\star p < 0.1$, $\star\star p < 0.05$, $\star\star\star p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group all three outcomes together in one family.

Table C.2: Effects on childcare enrollment and attendance – Attrition: 20 Percent Imputation

	Enrollment		Attendance
	Any childcare	Full-day childcare	Days missed
	(1)	(2)	(3)
	Panel A: Lower bound		
Childcare	$.14^{***}_{***}$	$.48^{***}_{***}$	-15.21^{***}_{***}
	(.02)	(.03)	(1.9)
Cash	$.07^{***}_{***}$	$.07^{**}_{**}$	-8.58^{***}_{***}
	(.02)	(.03)	(2.23)
Childcare & cash	$.13^{***}_{***}$	$.5^{***}_{***}$	-14.53^{***}_{***}
	(.02)	(.03)	(1.96)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.000
Childcare = childcare & cash	0.379	0.571	0.597
Cash = childcare & cash	0.001	0.000	0.001
Childcare & cash = childcare + cash	0.004	0.254	0.000
Mean Control	.83	.34	20.71
Obs.	1496	1428	1414
	Panel B: Upper bound		
Childcare	$.15^{***}_{***}$	$.48^{***}_{***}$	-15.21^{***}_{***}
	(.02)	(.03)	(1.9)
Cash	$.08^{***}_{***}$	$.07^{**}_{**}$	-8.58^{***}_{***}
	(.02)	(.03)	(2.23)
Childcare & cash	$.14^{***}_{***}$	$.5^{***}_{***}$	-14.53^{***}_{***}
	(.02)	(.03)	(1.96)
p-value (equal treatment effects):			
Childcare = cash	0.000	0.000	0.000
Childcare = childcare & cash	0.410	0.571	0.597
Cash = childcare & cash	0.001	0.000	0.001
Childcare & cash = childcare + cash	0.001	0.254	0.000
Mean Control	.82	.34	20.71
Obs.	1496	1428	1414

Notes: See Table 1.1 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group all three outcomes together in one family.

Table C.3: Effects on Mothers – Attrition: Ten Percent Imputation

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Panel A: Lower bound															
Childcare	39.24*	6.74	-3.86	36.41*	3.87	.02	2.1	-.02	-6.62	0	-3.71	.03	1.84	.01	-.06
	(20.05)	(4.5)	(3.23)	(20.09)	(5.71)	(.03)	(9.73)	(.02)	(5.26)	(.03)	(10.32)	(.02)	(2.12)	(.02)	(.09)
Cash	49.04^{***}_{**}	8.65^{**}_{**}	-7.31^{**}_{**}	43.71^{**}_{**}	2.7	$.19^{***}_{***}$	38.68^{***}_{***}	$-.04^{*}_{*}$	-10.46^{**}_{*}	$.12^{***}_{***}$	31.09^{***}_{***}	$.07^{***}_{**}$	4.63^{*}_{*}	.06**	.05
	(18.68)	(4.34)	(3.08)	(18.69)	(5.52)	(.03)	(10.28)	(.02)	(5.19)	(.03)	(10.71)	(.02)	(2.37)	(.02)	(.1)
Childcare & cash	61.1^{***}_{***}	15.03^{***}_{***}	-10.11^{***}_{***}	53.34^{***}_{***}	6.67	$.16^{***}_{***}$	35.75^{***}_{***}	$-.06^{**}_{**}$	-16.76^{***}_{***}	$.09^{***}_{**}$	20.5^{*}_{*}	$.08^{***}_{***}$	7.37^{***}_{***}	$.07^{***}_{**}$	.02
	(19.68)	(4.72)	(2.95)	(19.87)	(5.86)	(.03)	(10.46)	(.02)	(4.77)	(.03)	(10.82)	(.02)	(2.68)	(.02)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.670	0.694	0.287	0.751	0.846	0.000	0.001	0.478	0.464	0.001	0.002	0.078	0.313	0.050	0.056
Childcare = childcare & cash	0.361	0.114	0.045	0.482	0.661	0.000	0.002	0.166	0.036	0.014	0.033	0.027	0.064	0.019	0.100
Cash = childcare & cash	0.592	0.205	0.340	0.671	0.520	0.400	0.798	0.503	0.185	0.345	0.366	0.637	0.391	0.717	0.641
Childcare & cash = childcare + cash	0.368	0.957	0.807	0.378	0.991	0.299	0.737	0.797	0.964	0.440	0.659	0.677	0.813	0.938	0.757
Mean Control	91.95	24.78	19.8	112.38	45.79	.32	82.95	.18	31.28	.48	113.6	.08	4.46	.11	.25
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1414
Panel B: Upper bound															
Childcare	45.05^{**}_{**}	8.16^{*}_{*}	-2.57	42.15^{**}_{*}	5.59	.03	5.68	-.02	-4.62	.02	.06	.03	2.52	.01	-.06
	(20.01)	(4.5)	(3.24)	(20.06)	(5.71)	(.03)	(9.74)	(.02)	(5.27)	(.03)	(10.33)	(.02)	(2.12)	(.02)	(.09)
Cash	55.39^{***}_{***}	10.15^{**}_{**}	-5.87^{*}_{*}	49.99^{***}_{**}	4.56	$.2^{***}_{***}$	42.9^{***}_{***}	-.03	-8.23	$.14^{***}_{***}$	35.51^{***}_{***}	$.07^{***}_{***}$	5.5^{**}_{**}	$.06^{***}_{**}$	.05
	(18.69)	(4.33)	(3.09)	(18.71)	(5.52)	(.03)	(10.29)	(.02)	(5.2)	(.03)	(10.72)	(.02)	(2.37)	(.02)	(.1)
Childcare & cash	66.56^{***}_{***}	16.51^{***}_{***}	-8.9^{***}_{***}	58.79^{***}_{***}	8.49	$.17^{***}_{***}$	39.47^{***}_{***}	$-.05^{**}_{**}$	-14.89^{***}_{***}	$.1^{***}_{***}$	24.38^{**}_{**}	$.08^{***}_{***}$	8.15^{***}_{***}	$.07^{***}_{**}$	.02
	(19.66)	(4.72)	(2.95)	(19.85)	(5.87)	(.03)	(10.47)	(.02)	(4.77)	(.03)	(10.83)	(.02)	(2.68)	(.02)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.653	0.680	0.308	0.733	0.863	0.000	0.001	0.508	0.493	0.001	0.002	0.067	0.280	0.043	0.056
Childcare = childcare & cash	0.368	0.111	0.042	0.489	0.650	0.000	0.002	0.164	0.034	0.014	0.032	0.026	0.059	0.018	0.100
Cash = childcare & cash	0.619	0.205	0.303	0.697	0.522	0.374	0.764	0.467	0.161	0.323	0.342	0.667	0.407	0.750	0.641
Childcare & cash = childcare + cash	0.262	0.791	0.918	0.272	0.844	0.188	0.543	0.960	0.774	0.291	0.473	0.509	0.973	0.860	0.757
Mean Control	87.9	23.76	18.88	108.31	44.4	.31	80.56	.17	29.88	.47	111.07	.07	4.05	.1	.25
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1414

Notes: See Table 1.2 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $* q < 0.1$, $** q < 0.05$, $*** q < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table C.4: Effects on Mothers – Attrition: 20 Percent Imputation

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Panel A: Lower bound															
Childcare	36.33*	6.03	-4.51	33.53*	3	.01	.3	-.03	-7.61	0	-5.59	.02	1.51	0	-.06
	(20.08)	(4.51)	(3.23)	(20.13)	(5.71)	(.03)	(9.74)	(.02)	(5.26)	(.03)	(10.32)	(.02)	(2.12)	(.02)	(.09)
Cash	45.86$^{**}_{**}$	7.89$^{*}_{*}$	-8.02$^{***}_{***}$	40.56$^{**}_{*}$	1.77	.18$^{***}_{***}$	36.57$^{***}_{***}$	-.05$^{**}_{**}$	-11.58$^{**}_{**}$	.12$^{***}_{***}$	28.88$^{***}_{***}$	.06$^{***}_{**}$	4.19*	.05**	.05
	(18.7)	(4.35)	(3.08)	(18.71)	(5.53)	(.03)	(10.29)	(.02)	(5.19)	(.03)	(10.72)	(.02)	(2.37)	(.02)	(.1)
Childcare & cash	58.36$^{***}_{***}$	14.28$^{***}_{***}$	-10.71$^{***}_{***}$	50.6$^{**}_{**}$	5.75	.15$^{***}_{***}$	33.89$^{***}_{***}$	-.06$^{***}_{***}$	-17.69$^{***}_{***}$	.08$^{**}_{**}$	18.56$^{*}_{*}$	.07$^{***}_{***}$	6.98$^{***}_{**}$	.06$^{***}_{*}$	.02
	(19.71)	(4.72)	(2.96)	(19.89)	(5.87)	(.03)	(10.46)	(.02)	(4.77)	(.03)	(10.82)	(.02)	(2.68)	(.02)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.679	0.701	0.277	0.760	0.838	0.000	0.001	0.464	0.451	0.001	0.002	0.084	0.330	0.055	0.056
Childcare = childcare & cash	0.358	0.116	0.046	0.479	0.667	0.000	0.002	0.168	0.037	0.014	0.033	0.028	0.067	0.019	0.100
Cash = childcare & cash	0.579	0.205	0.360	0.658	0.519	0.413	0.815	0.522	0.199	0.357	0.379	0.622	0.384	0.701	0.641
Childcare & cash = childcare + cash	0.431	0.958	0.676	0.440	0.907	0.369	0.843	0.681	0.833	0.529	0.762	0.768	0.736	0.837	0.757
Mean Control	93.97	25.29	20.26	114.41	46.49	.32	84.15	.18	31.97	.48	114.87	.08	4.66	.11	.25
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1414
Panel B: Upper bound															
Childcare	47.94$^{**}_{**}$	8.87$^{**}_{**}$	-1.93	45.02$^{**}_{**}$	6.45	.04	7.47	-.01	-3.63	.02	1.94	.04*	2.86	.02	-.06
	(20.01)	(4.51)	(3.25)	(20.06)	(5.71)	(.03)	(9.75)	(.02)	(5.28)	(.03)	(10.35)	(.02)	(2.12)	(.02)	(.09)
Cash	58.55$^{***}_{***}$	10.9$^{**}_{**}$	-5.16$^{*}_{*}$	53.13$^{***}_{***}$	5.48	.21$^{***}_{***}$	45.01$^{***}_{***}$	-.03	-7.12	.14$^{***}_{***}$	37.71$^{***}_{***}$	.08$^{***}_{***}$	5.94$^{**}_{**}$	.07$^{***}_{**}$	.05
	(18.72)	(4.33)	(3.09)	(18.75)	(5.52)	(.03)	(10.3)	(.02)	(5.21)	(.03)	(10.74)	(.02)	(2.37)	(.02)	(.1)
Childcare & cash	69.29$^{***}_{***}$	17.26$^{***}_{***}$	-8.29$^{***}_{***}$	61.52$^{***}_{***}$	9.4	.17$^{***}_{***}$	41.32$^{***}_{***}$	-.04$^{*}_{*}$	-13.96$^{***}_{***}$	.11$^{***}_{***}$	26.32$^{**}_{**}$	.09$^{***}_{***}$	8.54$^{***}_{***}$	.08$^{***}_{***}$	.02
	(19.67)	(4.73)	(2.96)	(19.86)	(5.88)	(.03)	(10.48)	(.02)	(4.78)	(.03)	(10.85)	(.02)	(2.68)	(.02)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.644	0.674	0.320	0.724	0.872	0.000	0.001	0.523	0.508	0.000	0.002	0.062	0.264	0.040	0.056
Childcare = childcare & cash	0.372	0.109	0.041	0.493	0.644	0.000	0.002	0.163	0.033	0.014	0.032	0.025	0.057	0.017	0.100
Cash = childcare & cash	0.633	0.206	0.285	0.711	0.524	0.362	0.747	0.450	0.150	0.313	0.331	0.683	0.415	0.766	0.641
Childcare & cash = childcare + cash	0.218	0.711	0.782	0.228	0.764	0.146	0.457	0.838	0.651	0.231	0.393	0.435	0.947	0.762	0.757
Mean Control	85.87	23.25	18.42	106.28	43.71	.31	79.36	.17	29.18	.47	109.8	.07	3.84	.1	.25
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1414

Notes: See Table 1.2 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table C.5: Effects on Fathers – Attrition: Ten Percent Imputation

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Panel A: Lower bound															
Childcare	18.36	4.57	19.24$^{**}_{**}$	42.74$^{**}_{**}$	28.47$^{***}_{***}$	-.02	-3.76	.09$^{***}_{***}$	21.83$^{**}_{**}$	.07$^{**}_{*}$	18.07$^{*}_{*}$	0	.96	0	.03
	(15.07)	(4.2)	(8.68)	(16.95)	(9.77)	(.02)	(7.74)	(.03)	(8.98)	(.03)	(10.95)	(.01)	(1.09)	(.01)	(.05)
Cash	-4.86	-4.94	8.44	8.54	7.1	-.01	-.96	.04	7.31	.02	7.68	0	1.85	0	.03
	(12.51)	(3.51)	(8.54)	(14.94)	(9.5)	(.02)	(7.96)	(.03)	(8.53)	(.03)	(10.87)	(.01)	(1.23)	(.01)	(.04)
Childcare & cash	36.81$^{**}_{*}$	4.3	-.23	40.64$^{**}_{*}$	7.72	.02	10.11	.03	7.66	.03	16.11	0	.42	.01	.06
	(16.67)	(4.07)	(8.52)	(18.16)	(9.66)	(.03)	(8.26)	(.03)	(8.84)	(.03)	(11.1)	(.01)	(.98)	(.01)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.127	0.020	0.239	0.050	0.040	0.779	0.740	0.110	0.116	0.094	0.371	0.865	0.552	1.000	0.997
Childcare = childcare & cash	0.326	0.954	0.033	0.918	0.050	0.106	0.112	0.029	0.136	0.256	0.869	0.680	0.667	0.453	0.618
Cash = childcare & cash	0.014	0.021	0.336	0.088	0.953	0.179	0.215	0.581	0.969	0.595	0.474	0.805	0.307	0.440	0.608
Childcare & cash = childcare + cash	0.304	0.424	0.026	0.675	0.051	0.130	0.209	0.008	0.093	0.255	0.549	0.776	0.174	0.492	0.912
Mean Control	53.95	17.56	55.15	108.74	73.12	.15	41.53	.27	71.43	.41	111.43	.03	1.62	.05	.09
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1413
Panel B: Upper bound															
Childcare	21.29	5.58	21.81$^{**}_{**}$	44.88$^{***}_{***}$	30.66$^{***}_{***}$	-.01	-1.02	.1$^{***}_{***}$	25.27$^{***}_{***}$	.09$^{**}_{**}$	22.25$^{**}_{**}$	.01	1.29	0	.03
	(14.98)	(4.19)	(8.69)	(16.82)	(9.75)	(.02)	(7.74)	(.03)	(9.01)	(.03)	(10.96)	(.01)	(1.09)	(.01)	(.05)
Cash	-1.1	-4.07	11.47	11.97	9.54	0	2.16	.06$^{**}_{*}$	11.04	.03	12.2	0	2.27$^{*}_{*}$	0	.03
	(12.5)	(3.49)	(8.55)	(14.87)	(9.48)	(.02)	(7.96)	(.03)	(8.54)	(.03)	(10.88)	(.01)	(1.23)	(.01)	(.04)
Childcare & cash	40.45$^{**}_{**}$	5.23	2.16	43.3$^{**}_{**}$	8.99	.03	12.89	.04	10.95	.05	20.04*	0	.73	.01	.06
	(16.64)	(4.07)	(8.52)	(18.13)	(9.66)	(.03)	(8.27)	(.03)	(8.85)	(.03)	(11.11)	(.01)	(.98)	(.01)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.139	0.018	0.259	0.058	0.042	0.741	0.706	0.121	0.124	0.104	0.387	0.899	0.506	0.961	0.997
Childcare = childcare & cash	0.306	0.940	0.031	0.938	0.040	0.103	0.111	0.028	0.132	0.256	0.852	0.675	0.658	0.448	0.618
Cash = childcare & cash	0.014	0.019	0.300	0.094	0.957	0.190	0.230	0.542	0.993	0.627	0.505	0.765	0.269	0.464	0.608
Childcare & cash = childcare + cash	0.370	0.521	0.013	0.590	0.028	0.211	0.320	0.003	0.047	0.155	0.370	0.575	0.107	0.680	0.912
Mean Control	50.83	16.62	53.06	105.06	70.86	.14	39.74	.27	69.25	.4	108.84	.03	1.44	.04	.09
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1413

Notes: See Table 1.3 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table C.6: Effects on Fathers – Attrition: 20 Percent Imputation

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Panel A: Lower bound															
Childcare	16.78	4.04	17.96$^{**}_{**}$	41.46$^{**}_{**}$	27.31$^{***}_{**}$	-.02	-5.14	.09$^{***}_{***}$	20.11$^{**}_{**}$	.07$^{**}_{*}$	15.97	0	.8	0	.03
	(15.11)	(4.2)	(8.69)	(17.03)	(9.8)	(.02)	(7.74)	(.03)	(8.98)	(.03)	(10.95)	(.01)	(1.09)	(.01)	(.05)
Cash	-6.84	-5.4	6.93	6.65	5.84	-.02	-2.53	.04	5.45	.01	5.43	0	1.63	-.01	.03
	(12.54)	(3.53)	(8.55)	(15)	(9.54)	(.02)	(7.97)	(.03)	(8.54)	(.03)	(10.88)	(.01)	(1.23)	(.01)	(.04)
Childcare & cash	34.88$^{**}_{*}$	3.82	-1.41	39.13$^{**}_{*}$	7.02	.02	8.72	.02	6.02	.03	14.15	-.01	.27	.01	.06
	(16.69)	(4.08)	(8.52)	(18.2)	(9.69)	(.03)	(8.27)	(.03)	(8.84)	(.03)	(11.11)	(.01)	(.98)	(.01)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.122	0.021	0.229	0.047	0.039	0.799	0.757	0.105	0.113	0.089	0.364	0.849	0.575	0.980	0.997
Childcare = childcare & cash	0.337	0.961	0.034	0.909	0.056	0.108	0.113	0.029	0.138	0.255	0.878	0.682	0.671	0.456	0.618
Cash = childcare & cash	0.014	0.022	0.355	0.085	0.909	0.175	0.208	0.601	0.950	0.579	0.459	0.825	0.328	0.429	0.608
Childcare & cash = childcare + cash	0.273	0.378	0.036	0.724	0.069	0.100	0.166	0.012	0.126	0.319	0.652	0.884	0.217	0.410	0.912
Mean Control	55.51	18.03	56.2	110.59	74.24	.15	42.42	.28	72.52	.41	112.73	.03	1.71	.05	.09
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1413
Panel B: Upper bound															
Childcare	22.66	6.07	23.1$^{***}_{***}$	45.79$^{***}_{***}$	31.71$^{***}_{***}$	-.01	.35	.11$^{***}_{***}$	26.99$^{***}_{***}$	.09$^{***}_{**}$	24.35$^{**}_{**}$	.01	1.45	.01	.03
	(14.95)	(4.19)	(8.71)	(16.78)	(9.75)	(.02)	(7.75)	(.03)	(9.03)	(.03)	(10.98)	(.01)	(1.09)	(.01)	(.05)
Cash	.7	-3.65	12.98	13.55	10.72	0	3.73	.06$^{**}_{*}$	12.9	.04	14.45	.01	2.48$^{**}_{*}$	.01	.03
	(12.51)	(3.48)	(8.57)	(14.88)	(9.5)	(.02)	(7.97)	(.03)	(8.55)	(.03)	(10.9)	(.01)	(1.23)	(.01)	(.04)
Childcare & cash	42.17$^{**}_{**}$	5.68	3.36	44.48$^{**}_{**}$	9.58	.04	14.28*	.04	12.6	.05	22.01$^{**}_{*}$	0	.88	.02	.06
	(16.63)	(4.07)	(8.54)	(18.14)	(9.69)	(.03)	(8.28)	(.03)	(8.86)	(.03)	(11.13)	(.01)	(.98)	(.01)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.146	0.017	0.270	0.063	0.043	0.722	0.689	0.128	0.128	0.109	0.395	0.916	0.485	0.941	0.997
Childcare = childcare & cash	0.296	0.933	0.031	0.948	0.036	0.101	0.111	0.028	0.131	0.257	0.843	0.673	0.654	0.445	0.618
Cash = childcare & cash	0.014	0.019	0.284	0.097	0.912	0.196	0.238	0.524	0.974	0.644	0.521	0.746	0.252	0.476	0.608
Childcare & cash = childcare + cash	0.404	0.572	0.009	0.555	0.021	0.263	0.389	0.002	0.033	0.119	0.297	0.485	0.083	0.784	0.912
Mean Control	49.27	16.16	52.02	103.22	69.73	.14	38.85	.26	68.16	.39	107.55	.03	1.35	.04	.09
Obs.	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1413

Notes: See Table 1.3 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table C.7: Effects on household income, consumption and food security – attrition: Ten Percent Imputation

	Total Income		Consumption per day				Food
	Revenues	profits	Total	Food	Non-food	Temptation	insecurity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Lower bound							
Childcare	92.22$^{***}_{***}$	35.91$^{***}_{***}$	.96**	.04	.89$^{***}_{**}$	-.04	-.14
	(32.53)	(12.72)	(.48)	(.25)	(.33)	(.05)	(.1)
Cash	59.85$^{**}_{*}$	8.26	1.27$^{***}_{**}$	.29	.95$^{***}_{**}$	-.07*	-.21$^{**}_{**}$
	(28.86)	(12.1)	(.49)	(.25)	(.34)	(.04)	(.09)
Childcare & cash	108.23$^{***}_{***}$	12.33	1.62$^{***}_{***}$	.18	1.41$^{***}_{***}$	-.05	-.25$^{***}_{**}$
	(32.72)	(12.42)	(.52)	(.26)	(.37)	(.05)	(.1)
p-value (equal treatment effects):							
Childcare = cash	0.374	0.048	0.560	0.312	0.863	0.417	0.478
Childcare = childcare & cash	0.687	0.100	0.236	0.592	0.198	0.756	0.273
Cash = childcare & cash	0.188	0.768	0.525	0.678	0.263	0.607	0.681
Childcare & cash = childcare + cash	0.374	0.091	0.415	0.674	0.407	0.330	0.471
Mean Control	253.67	138.54	11.51	5.94	5.38	.19	.41
Obs.	1496	1496	1496	1496	1496	1496	1496
Panel B: Upper bound							
Childcare	94.9$^{***}_{***}$	37.65$^{***}_{***}$	1.18$^{**}_{**}$	.14	1.03$^{***}_{**}$	-.02	-.1
	(32.43)	(12.65)	(.49)	(.25)	(.34)	(.05)	(.1)
Cash	65.36$^{**}_{**}$	10.54	1.52$^{***}_{***}$	.4	1.12$^{***}_{***}$	-.05	-.17*
	(28.85)	(12.01)	(.49)	(.25)	(.34)	(.04)	(.09)
Childcare & cash	112.27$^{***}_{***}$	13.34	1.85$^{***}_{***}$	.28	1.55$^{***}_{***}$	-.03	-.22$^{**}_{**}$
	(32.86)	(12.36)	(.52)	(.26)	(.37)	(.05)	(.1)
p-value (equal treatment effects):							
Childcare = cash	0.416	0.052	0.518	0.294	0.826	0.440	0.511
Childcare = childcare & cash	0.662	0.090	0.231	0.589	0.202	0.759	0.275
Cash = childcare & cash	0.201	0.839	0.556	0.654	0.287	0.633	0.648
Childcare & cash = childcare + cash	0.328	0.063	0.253	0.481	0.253	0.518	0.671
Mean Control	247.35	135.77	11.37	5.87	5.29	.17	.38
Obs.	1496	1496	1496	1496	1496	1496	1496

Notes: See Table 1.4 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in two families: (1) to (2) and (3) to (7).

Table C.8: Effects on household income, consumption and food security – attrition: 20 Percent Imputation

	Total Income		Consumption per day				Food
	Revenues	profits	Total	Food	Non-food	Temptation	insecurity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Lower bound							
Childcare	90.52^{***}_{***}	34.96^{***}_{***}	$.85^{*}$	0	$.82^{**}_{*}$	-.05	$-.16^{*}$
	(32.66)	(12.8)	(.48)	(.25)	(.33)	(.05)	(.1)
Cash	56.78^{*}	7.06	1.14^{**}_{**}	.24	$.87^{***}_{**}$	$-.09^{*}_{*}$	$-.23^{**}_{**}$
	(28.95)	(12.19)	(.49)	(.25)	(.34)	(.04)	(.09)
Childcare & cash	105.89^{***}_{***}	11.75	1.51^{***}_{***}	.14	1.34^{***}_{***}	-.06	$-.27^{***}_{***}$
	(32.7)	(12.5)	(.52)	(.26)	(.37)	(.05)	(.1)
p-value (equal treatment effects):							
Childcare = cash	0.355	0.046	0.582	0.322	0.882	0.406	0.463
Childcare = childcare & cash	0.700	0.106	0.239	0.594	0.196	0.754	0.272
Cash = childcare & cash	0.182	0.734	0.510	0.690	0.252	0.595	0.699
Childcare & cash = childcare + cash	0.403	0.109	0.515	0.781	0.502	0.256	0.386
Mean Control	256.83	139.93	11.59	5.97	5.42	.19	.42
Obs.	1496	1496	1496	1496	1496	1496	1496
Panel B: Upper bound							
Childcare	95.99^{***}_{***}	38.47^{***}_{***}	1.29^{***}_{**}	.18	1.1^{***}_{***}	-.01	-.09
	(32.47)	(12.66)	(.49)	(.25)	(.34)	(.05)	(.1)
Cash	67.89^{**}_{**}	11.66	1.64^{***}_{***}	$.45^{*}$	1.2^{***}_{***}	-.04	-.15
	(28.93)	(12.03)	(.49)	(.25)	(.34)	(.04)	(.09)
Childcare & cash	114.07^{***}_{***}	13.83	1.96^{***}_{***}	.33	1.62^{***}_{***}	-.02	$-.2^{**}_{*}$
	(32.99)	(12.41)	(.52)	(.26)	(.37)	(.05)	(.1)
p-value (equal treatment effects):							
Childcare = cash	0.439	0.055	0.498	0.285	0.808	0.452	0.529
Childcare = childcare & cash	0.648	0.085	0.229	0.588	0.204	0.761	0.276
Cash = childcare & cash	0.208	0.875	0.572	0.643	0.300	0.646	0.631
Childcare & cash = childcare + cash	0.309	0.053	0.191	0.397	0.194	0.629	0.781
Mean Control	244.18	134.38	11.29	5.84	5.24	.17	.37
Obs.	1496	1496	1496	1496	1496	1496	1496

Notes: See Table 1.4 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in two families: (1) to (2) and (3) to (7).

Table C.9: Effects on child development – Attrition: Ten Percent Imputation

		Breakdown into components			
	IDELA score	Emergent literacy	Emergent numeracy	Socio-emotional	Motor development
	(1)	(2)	(3)	(4)	(5)
			Panel A: Lower bound		
Childcare	$.15^{***}_{***}$	$.1^{*}$	.09	.04	$.21^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.06)
Cash	$.09^{*}_{\star}$	.06	.08	0	$.11^{*}$
	(.05)	(.05)	(.06)	(.06)	(.06)
Childcare & cash	$.15^{***}_{***}$	$.16^{***}_{***}$	$.11^{*}_{\star}$	.02	$.19^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.281	0.390	0.781	0.544	0.062
Childcare = childcare & cash	0.893	0.297	0.828	0.807	0.630
Cash = childcare & cash	0.232	0.058	0.626	0.723	0.166
Childcare & cash = childcare + cash	0.290	0.995	0.464	0.857	0.093
Mean Control	.01	.01	.01	.01	.01
Obs.	1496	1496	1496	1496	1496
			Panel B: Upper bound		
Childcare	$.16^{***}_{***}$	$.12^{**}_{\star}$	$.11^{*}_{\star}$	.06	$.23^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.05)
Cash	$.11^{**}_{**}$	.08	$.1^{*}$	.03	$.13^{**}_{\star}$
	(.05)	(.05)	(.06)	(.06)	(.06)
Childcare & cash	$.17^{***}_{***}$	$.18^{***}_{***}$	$.12^{**}_{**}$	.05	$.21^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.322	0.419	0.832	0.562	0.074
Childcare = childcare & cash	0.867	0.289	0.810	0.818	0.644
Cash = childcare & cash	0.254	0.062	0.656	0.732	0.186
Childcare & cash = childcare + cash	0.195	0.807	0.329	0.631	0.048
Mean Control	-.01	-.01	-.01	-.01	-.01
Obs.	1496	1496	1496	1496	1496

Notes: See Table 1.5 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in two families: (1) and (2, 3, 4 and 5).

Table C.10: Effects on child development – Attrition: 20 Percent Imputation

		Breakdown into components			
	IDELA score	Emergent literacy	Emergent numeracy	Socio-emotional	Motor development
	(1)	(2)	(3)	(4)	(5)
			Panel A: Lower bound		
Childcare	$.14^{***}_{***}$	$.09^{*}$	.08	.03	$.2^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.06)
Cash	.08	.05	.06	-.01	.1
	(.05)	(.05)	(.06)	(.06)	(.06)
Childcare & cash	$.14^{***}_{***}$	$.15^{***}_{**}$	.1	.01	$.18^{***}_{***}$
	(.05)	(.06)	(.06)	(.06)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.262	0.378	0.756	0.536	0.057
Childcare = childcare & cash	0.906	0.302	0.837	0.802	0.624
Cash = childcare & cash	0.223	0.056	0.611	0.720	0.157
Childcare & cash = childcare + cash	0.350	0.895	0.544	0.975	0.128
Mean Control	.02	.02	.02	.02	.02
Obs.	1496	1496	1496	1496	1496
			Panel B: Upper bound		
Childcare	$.17^{***}_{***}$	$.13^{**}_{**}$	$.12^{**}_{*}$	.08	$.25^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.05)
Cash	$.12^{**}_{**}$	.09	$.11^{*}$	.04	$.15^{**}_{**}$
	(.05)	(.05)	(.06)	(.06)	(.06)
Childcare & cash	$.18^{***}_{***}$	$.19^{***}_{***}$	$.13^{**}_{**}$	.06	$.22^{***}_{***}$
	(.05)	(.05)	(.06)	(.06)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.345	0.434	0.858	0.571	0.080
Childcare = childcare & cash	0.855	0.286	0.801	0.823	0.652
Cash = childcare & cash	0.267	0.065	0.671	0.737	0.197
Childcare & cash = childcare + cash	0.158	0.712	0.273	0.530	0.034
Mean Control	-.02	-.02	-.02	-.02	-.02
Obs.	1496	1496	1496	1496	1496

Notes: See Table 1.5 for a description of the dependent and control variables. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes in two families: (1) and (2, 3, 4 and 5).

1.D Clustered standard errors

The treatment is at the individual level, but it does not exclude that some of the outcomes may be correlated across households within communities. This section shows that our results are robust to clustering the standard errors at the community level.

Table D.1: Effects on mothers – clustered standard errors

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nb.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	41.51*	6.65	-3.83	37.72*	3.37	.02	2.61	-.02	-6.83	.01	-4.24	.03	1.71	.01	-.06
	(22.41)	(4.99)	(3.85)	(22.3)	(6.2)	(.03)	(10)	(.03)	(5.87)	(.04)	(10.61)	(.02)	(2.23)	(.02)	(.09)
Cash	49.47$^{**}_{**}$	9$^{**}_{**}$	-7.26$^{**}_{**}$	43.34$^{**}_{*}$	2.51	.19$^{***}_{***}$	39.73$^{***}_{***}$	-.04	-10.51*	.13$^{***}_{***}$	31.31$^{***}_{***}$	.07$^{***}_{**}$	4.79$^{*}_{*}$	.06**	.05
	(19.72)	(4.44)	(3.38)	(19.57)	(5.55)	(.03)	(11.04)	(.03)	(5.73)	(.03)	(11.23)	(.02)	(2.57)	(.03)	(.1)
Childcare & cash	63.17$^{***}_{***}$	16.06$^{***}_{***}$	-9.67$^{***}_{***}$	55.43$^{***}_{**}$	7.65	.16$^{***}_{***}$	36.1$^{***}_{***}$	-.05$^{**}_{**}$	-16.28$^{***}_{***}$	.09$^{***}_{**}$	20.39$^{*}_{*}$	.08$^{***}_{***}$	7.41$^{***}_{**}$	.07$^{**}_{*}$	.02
	(20.51)	(5.01)	(3.24)	(20.46)	(6.12)	(.03)	(10.82)	(.03)	(5.42)	(.03)	(11.29)	(.02)	(2.77)	(.03)	(.09)
p-value (equal treatment effects):															
Childcare = cash	0.752	0.652	0.328	0.824	0.890	0.000	0.002	0.558	0.501	0.001	0.003	0.078	0.302	0.077	0.048
Childcare = childcare & cash	0.401	0.088	0.082	0.497	0.530	0.000	0.005	0.240	0.057	0.015	0.044	0.026	0.056	0.031	0.110
Cash = childcare & cash	0.561	0.180	0.436	0.608	0.404	0.389	0.761	0.563	0.264	0.359	0.365	0.679	0.425	0.776	0.646
Childcare & cash = childcare + cash	0.392	0.954	0.772	0.431	0.841	0.245	0.693	0.805	0.891	0.403	0.678	0.629	0.812	0.929	0.760
Mean Control	89.92	24.27	19.34	110.35	45.1	.31	81.76	.17	30.58	.47	112.34	.07	4.25	.1	.25
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchase any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99th percentile. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $\star p < 0.1$, $\star\star p < 0.05$, $\star\star\star p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table D.2: Effects on fathers – clustered standard errors

	Income					**Labor supply**						**Assets & employees**			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	14.37	2.61	18.1$^{*}_{\star}$	38.12$^{**}_{\star\star}$	24.56$^{**}_{\star\star}$	-.02	-3.38	.09$^{***}_{\star\star\star}$	20.5$^{**}_{\star\star}$	.07$^{**}_{\star}$	18.29	0	.98	0	.03
	(15.95)	(4.15)	(9.5)	(18.69)	(10.63)	(.03)	(8.46)	(.03)	(10.31)	(.04)	(11.79)	(.01)	(1.27)	(.02)	(.05)
Cash	-7.2	-5.49	8.02	6.02	5.08	-.01	-.4	.05	8.06	.02	8.41	0	1.97	0	.03
	(12.67)	(3.44)	(9.39)	(16.16)	(10.4)	(.02)	(8.17)	(.03)	(9.26)	(.03)	(11.03)	(.01)	(1.3)	(.01)	(.04)
Childcare & cash	30.77*	1.87	.92	40.65$^{**}_{\star}$	5.04	.03	10.43	.03	7.56	.04	16.27	0	.47	.01	.06
	(15.94)	(3.69)	(8.8)	(19.2)	(9.83)	(.03)	(8.89)	(.03)	(9.68)	(.04)	(11.36)	(.01)	(1)	(.02)	(.07)
p-value (equal treatment effects):															
Childcare = cash	0.157	0.041	0.328	0.080	0.086	0.771	0.746	0.203	0.206	0.139	0.430	0.921	0.564	0.975	0.998
Childcare = childcare & cash	0.377	0.865	0.078	0.905	0.082	0.109	0.119	0.070	0.197	0.280	0.867	0.689	0.693	0.510	0.626
Cash = childcare & cash	0.017	0.035	0.451	0.059	0.997	0.206	0.250	0.636	0.958	0.643	0.502	0.788	0.311	0.509	0.606
Childcare & cash = childcare + cash	0.302	0.394	0.060	0.895	0.109	0.162	0.232	0.018	0.133	0.252	0.517	0.717	0.164	0.629	0.914
Mean Control	52.39	17.09	54.11	106.9	71.99	.15	40.64	.27	70.34	.4	110.14	.03	1.53	.04	.09
Obs.	1414	1414	1412	1412	1412	1414	1413	1414	1411	1414	1410	1414	1414	1413	1413

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99th percentile. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $\star p < 0.1$, $\star\star p < 0.05$, $\star\star\star p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table D.3: Effects on single mothers – clustered standard errors

	Income					Labor supply						Assets & employees			
	Self-emp.		Wage	Total		Self-emp.		Wage		Total		Assets		Employees	
	Revenues	Profits		Revenues	Profits	>0	Hrs.	>0	Hrs.	>0	Hrs.	>0	UGX 1000	>0	Nr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Childcare	-1.57	.34	-4.73	-5.24	-3.17	-.02	-10.25	-.02	-1.28	-.04	-11.6	.02	1.78	-.01	-.17
	(22.35)	(5.84)	(4.63)	(22.51)	(7.35)	(.04)	(12.29)	(.03)	(6.43)	(.04)	(13.02)	(.02)	(2.69)	(.03)	(.13)
Cash	$64.04^{**}_{\star\star}$	$11.14^{*}_{\star}$	-7.38*	$60.44^{**}_{\star}$	5.78	$.19^{***}_{\star\star\star}$	$33.4^{**}_{\star\star}$	-.04	-4.28	$.12^{***}_{\star\star\star}$	$29.22^{**}_{\star\star}$	$.09^{***}_{\star}$	6.31*	.03	-.06
	(27.75)	(5.9)	(3.76)	(27.48)	(7.23)	(.04)	(13.76)	(.03)	(5.98)	(.04)	(14.01)	(.03)	(3.53)	(.03)	(.13)
Childcare & cash	$63.51^{**}_{\star\star}$	$14.28^{**}_{\star\star}$	$-8.43^{**}_{\star\star}$	$59.13^{**}_{\star}$	8.08	$.18^{***}_{\star\star\star}$	$40.19^{***}_{\star\star\star}$	$-.06^{**}_{\star\star}$	$-9.83^{*}_{\star}$	$.11^{***}_{\star\star}$	$30.03^{**}_{\star}$	$.1^{***}_{\star\star}$	$8.92^{**}_{\star\star}$	.07**	-.01
	(26.4)	(5.66)	(3.83)	(26.46)	(7.15)	(.04)	(13.35)	(.03)	(5.51)	(.04)	(13.5)	(.03)	(3.56)	(.03)	(.13)
Single mother	-29.72	-6.24	1.85	-25.11	-1.36	-.03	-14.93	.06	23.48**	.03	10.79	.02	1.22	-.07**	-.29*
	(24.25)	(6.62)	(5.3)	(24.72)	(9.05)	(.05)	(15.33)	(.04)	(9.86)	(.05)	(16.63)	(.03)	(2.68)	(.03)	(.15)
Childcare × single mother	$158.17^{**}_{\star\star}$	$22.74^{*}_{\star}$	3.89	$158.88^{**}_{\star\star}$	$24.84^{*}_{\star}$	.15*	45.93*	.01	-15.8	.17**	30.84	.02	.06	.07	.34**
	(62.71)	(12.21)	(7.38)	(62.39)	(14.82)	(.08)	(24.84)	(.06)	(13.45)	(.08)	(25.45)	(.05)	(5.02)	(.05)	(.17)
Cash × single mother	-41.7	-6.03	.28	-49.38	-9.62	.01	19.49	0	-19.3	.02	5.75	-.05	-4.58	.08*	.35**
	(35.89)	(9.18)	(7.86)	(35.85)	(12.77)	(.07)	(22.58)	(.06)	(13.02)	(.07)	(24.32)	(.05)	(5.24)	(.05)	(.15)
Childcare & cash × single mother	.4	5.55	-3.77	-9.76	-1.27	-.06	-11.46	.02	-20.23*	-.05	-29.25	-.06	-4.54	-.02	.1
	(40.35)	(9.87)	(6.45)	(40.54)	(12.55)	(.07)	(22.83)	(.06)	(11.93)	(.07)	(23.75)	(.05)	(5.51)	(.05)	(.15)
Impact for single mothers at baseline															
Childcare	$156.6^{***}_{\star\star}$	23.08**	-.83	$153.64^{***}_{\star\star}$	$21.67^{*}_{\star}$	.13**	35.68*	-.01	-17.08	$.14^{**}_{\star}$	19.24	.04	1.83	.06	.17*
	(58.26)	(10.46)	(6.03)	(57.62)	(12.42)	(.06)	(20.32)	(.05)	(11.96)	(.06)	(20.72)	(.04)	(4.18)	(.04)	(.09)
Cash	22.35	5.1	-7.1	11.06	-3.84	$.2^{***}_{\star\star\star}$	$52.9^{***}_{\star\star\star}$	-.04	-23.58**	$.14^{**}_{\star\star}$	34.97*	.03	1.73	$.12^{***}_{\star\star\star}$	$.29^{***}_{\star\star\star}$
	(22.12)	(6.78)	(6.87)	(22.28)	(9.85)	(.06)	(18.15)	(.05)	(11.8)	(.06)	(19.56)	(.04)	(3.64)	(.04)	(.09)
Childcare & cash	$63.91^{**}_{\star\star}$	$19.83^{**}_{\star}$	$-12.2^{**}_{\star}$	49.37	6.81	.12**	28.72	-.04	$-30.06^{***}_{\star\star}$	.06	.78	.04	4.39	.06	.1
	(30.92)	(8.74)	(5.49)	(30.93)	(10.77)	(.06)	(18.48)	(.05)	(11.07)	(.06)	(19.89)	(.04)	(4.23)	(.04)	(.06)
p-value (equal treatment effects)															
Childcare = cash	.018	.07	.349	.011	.026	.277	.404	.686	.528	.933	.466	.858	.983	.23	.371
Childcare = childcare & cash	.121	.774	.029	.081	.25	.87	.744	.643	.175	.228	.398	.979	.626	.971	.439
Cash = childcare & cash	.117	.078	.409	.142	.27	.188	.238	.949	.511	.17	.102	.874	.587	.217	.072
Childcare & cash = chidlcare + cash	.07	.532	.62	.067	.497	.014	.04	.895	.497	.012	.07	.582	.899	.06	.007
Mean Control	88	24	22	113	49	.3	75	.22	48	.49	123	.1	6	.07	.1
Obs.	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414

Notes: The dependent variables measure total revenues (1) and profits (2) earned through self-employment; income earned through wage labor (3) and the sum of wages and revenues (4) or wages and profits (5); labor supply in wage labor, and in self-employment, and in total at the extensive margins (6, 8 and 10) and at the intensive (7, 9 and 11) margins; whether the household purchased any business asset during the last 12 months (12) and the value of these assets (13); whether it has any employee in its businesses (14) and the number of employees (15). All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. The interaction term is a dummy indicating the mother was single at baseline. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$ for unadjusted p-values and by $\star$ $p < 0.1$, $\star\star$ $p < 0.05$, $\star\star\star$ $p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in eight families: (1) and (2), (3), (4) and (5), (6) and (7), (8) and (9), (10) and (11), (12) and (13), (14) and (15).

Table D.4: Effects on household income, consumption and food security – clustered standard errors

	Total Income		Consumption per day				Food
	Revenues	profits	Total	Food	Non-food	Temptation	insecurity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Childcare	85.73^{**}_{**}	31.03^{**}_{**}	$.93^{*}$	.09	$.85^{**}$	-.03	-.11
	(34.73)	(13.34)	(.54)	(.25)	(.38)	(.05)	(.1)
Cash	56.2^{*}	5.76	1.29^{**}_{**}	.33	$.97^{***}_{**}$	-.06	$-.19^{*}_{\star}$
	(30.39)	(12.99)	(.51)	(.25)	(.36)	(.04)	(.1)
Childcare & cash	107.05^{***}_{***}	9.12	1.63^{***}_{**}	.22	1.39^{***}_{***}	-.04	$-.23^{**}_{**}$
	(34.58)	(12.58)	(.57)	(.27)	(.41)	(.05)	(.09)
p-value (equal treatment effects):							
Childcare = cash	0.429	0.092	0.493	0.327	0.752	0.450	0.431
Childcare = childcare & cash	0.609	0.147	0.242	0.615	0.192	0.776	0.227
Cash = childcare & cash	0.173	0.816	0.542	0.689	0.301	0.577	0.709
Childcare & cash = childcare + cash	0.499	0.167	0.459	0.607	0.443	0.415	0.609
Mean Control	250.51	137.15	11.44	5.9	5.33	.18	.39
Obs.	1410	1410	1393	1413	1400	1403	1414

Notes: In column (1) and (2) the dependent variables are total income measured through revenues and profits, respectively. In column (3), the dependent variable measures total household expenditures per day, comprising expenditures on food in column (4), and non-food in column (5). The final column is a measure of food insecurity, which is the first principal component of the four questions on experiencing food insecurity in the past seven days. We include the same control variables as in Table 1.1. All monetary values are in thousands of UGX and are winsorized at the top 99^{th} percentile. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values for multiple hypothesis testing, we group the outcomes in two families: (1) to (2) and (3) to (7).

Table D.5: Effects on child development – clustered standard errors

		Breakdown into components			
	IDELA score	Emergent literacy	Emergent numeracy	Socio-emotional	Motor development
	(1)	(2)	(3)	(4)	(5)
Childcare	$.16^{***}_{\star\star\star}$	$.12^{**}_{\star}$	$.11^{*}$	.04	$.23^{***}_{\star\star\star}$
	(.05)	(.06)	(.06)	(.06)	(.06)
Cash	.09	.06	.08	.01	$.11^{*}$
	(.06)	(.06)	(.06)	(.07)	(.07)
Childcare & cash	$.15^{***}_{\star\star\star}$	$.16^{***}_{\star\star}$	.1	.04	$.19^{***}_{\star\star\star}$
	(.06)	(.06)	(.06)	(.07)	(.06)
p-value (equal treatment effects):					
Childcare = cash	0.237	0.334	0.675	0.550	0.063
Childcare = childcare & cash	0.956	0.482	0.970	0.949	0.507
Cash = childcare & cash	0.255	0.091	0.712	0.605	0.204
Childcare & cash = childcare + cash	0.238	0.774	0.384	0.916	0.075
Mean Control	0	0	0	0	0
Obs.	1366	1366	1366	1366	1366

Notes: In column 1, the dependent variable is the standardized aggregate IDELA score, and in the columns 2-5 the standardized components of the score: emergent literacy, emergent numeracy, socio-emotional skills and motor development. We include the same control variables as in Table 1.1. Robust standard errors are reported in parenthesis. Statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$ for unadjusted p-values and by $\star \ p < 0.1$, $\star\star \ p < 0.05$, $\star\star\star \ p < 0.01$ for p-values that are adjusted for multiple hypotheses testing. When correcting the p-values, we group the outcomes together in two families: the overall score (1) and the components of the score (2, 3, 4 and 5).

Chapter 2

Cash against Covid: Evidence from Uganda

How can governments mitigate the effects of a sudden economic crisis on poor households? The Covid-19 pandemic and the lockdown policies that followed led to a sharp economic downturn, and many countries used cash transfers to limit the negative effect on vulnerable households. There is, however, little evidence on the effects of such a policy during a time of crisis. In this paper, we study the impacts of cash transfers in Uganda during and after the pandemic, covering a broad range of outcome variables. Leveraging differences in the timing of the intervention, we show that the temporary cash transfer successfully mitigated the sharp, but relatively short-lived, economic downturn, and induced a persistent, positive effect on household income and savings. We also document a substantial improvement in food security and find no evidence of any adverse effect of the cash transfer on domestic violence.

This chapter is co-authored with Kjetil Bjorvatn, Denise Ferris, Selim Gulesci, Vincent Somville and Lore Vandewalle. We gratefully acknowledge the financial support of IZA-G^{2}LM, the Research Council of Norway and PEDL. We have benefited from comments by seminar participants at the NHH, Trinity College Dublin and attendees at EGI in Bari and the conference on Jobs for Development at the Policy Studies Institute in Addis Ababa. Thanks are also due to Akshay Moorthy, Benjamin Bjorvatn Øien and Marte Sigvaldsen for their excellent research assistance. The study obtained the approval of the NHH Institutional Review Board and the Bocconi University Ethics Committee.

2.1 Introduction

Cash transfers are a widely used policy tool to assist poor households.[1] Many governments resorted to such policies during the recent pandemic, to cushion the effects of an economic lockdown.[2]

It is unclear, however, whether cash transfers are in fact effective in a time of crisis, such as the recent pandemic with its far-reaching restrictions on mobility and economic activity. First, cash may be ineffective when markets are closed down or have limited accessibility due to restrictions on transportation and physical interaction. Second, job loss and stay-at-home policies typically increase stress and contact between spouses and may heighten the risk of a male backlash, in particular since transfers often target women.[3]

We report from a large randomized controlled trial that includes about 1,400 households across 389 villages in Uganda (see Bjorvatn et al., 2022). The implementation of the treatments started in 2019 and included unconditional cash transfers to half of the women in our sample. When the pandemic hit in 2020, we kept transferring cash to a

[1] Paxson and Schady (2010); Macours, Schady and Vakis (2012); Hidrobo et al. (2014); Haushofer and Shapiro (2016, 2018); Bastagli et al. (2019); Egger et al. (2019); Haushofer et al. (2019); Haushofer, Mudida and Shapiro (2020).

[2] Bailey and Harvey (2017); Gentilini et al. (2020); Hale et al. (2021); Kirti et al. (2022).

[3] Farmer and Tiefenthaler (1997); Eswaran and Malhotra (2011); Bulte and Lensink (2019); Kotsadam and Villanger (2020).

subset of these participants. This allows us to document the effects of cash transfers during and after the pandemic.

Our evidence shows that households who did not receive cash suffered a marked loss of income and depletion of savings during the pandemic, but with no clear deterioration in general well-being, measured by food security, health, happiness, stress, or domestic violence. The transfers were successful in protecting business incomes and shielding savings during the pandemic. Quantitatively, the impact of cash transfers is large: It amounts to a 45 percent increase in the household's income and a 50 percent increase in savings. We also find a positive impact on food security, but no significant effects on happiness and stress. We further find evidence of a reduction in violence against children and no increase in intimate partner violence.

Our paper relates most closely to the small, but growing literature on the effectiveness of cash transfers during the pandemic. Stein et al. (2022) show that an unconditional cash program improved food security and psychological well-being among refugees in Uganda. Brooks et al. (2022) analyze the short-term effects of a one-time cash grant to female micro-enterprise owners in Kenya, and find large and positive effects on profits and food spending. Karlan et al. (2022) analyze the effect of cash transfers among low-income households in Ghana, showing positive effects on income and food security, but with no impact on psycho-

logical well-being. Aggarwal et al. (2020) show that cash transfers through the Give Directly program increased food security in Malawi (although, somewhat surprisingly, the authors do not find that the pandemic was associated with reduced food security in neither Malawi nor in Liberia).[4]

We also relate to the developing literature on the economic impacts of Covid-19 (for a literature overview, see Miguel and Mobarak, 2022). Egger et al. (2021) present evidence from nine countries in Africa, Asia, and Latin America during the initial phase of the pandemic, up to July 2020. They document a median drop of 70 percent in income and 45 percent of the households were forced to skip or downsize meals. In rural Kenya, average firm profits and revenues fell by 51 and 44 percent, respectively. Bundervoet, Dávalos and Garcia (2022) also track the development during the first months of the pandemic. Based on evidence from 31 countries, the authors find a higher job loss among women than men, and the non-agricultural self-employed suffered more than people working in agriculture. Khamis et al. (2021) show that 20 percent of respondents in Uganda stopped working during the pandemic, while 13 percent changed their work. Mahmud and Riley (2021) survey households in rural Uganda right before and seven to eight weeks into the lockdown and

[4]In an ongoing project in rural Kenya, Banerjee et al. (2020) find that a universal basic income program led to a reduction in hunger but not to an increase in business income in the early phase of the lockdown period.

document a sharp reduction in household income and food consumption, by 60 percent and 50 percent, respectively, a reduction in reported quality of life, and an increase in perceived intimate partner violence. Tracking the same households on a monthly basis for one year after the lockdown, Mahmud and Riley (2023) document a rather quick recovery among households that did not have a business prior to the pandemic, while business owners experienced enduring lower levels of income and wealth. Kansiime et al. (2021) show that food security and incomes fell during the pandemic in both Kenya and Uganda. Alfonsi, Namubiru and Spaziani (2022) analyze the impact of the the lockdown on employment among skilled workers in Uganda and find a particularly large reduction in women's employment, at least partly explained by the prolonged school closures. In an overview article, Davis (2021) highlight the many different ways the pandemic affected the household economy, including changes in health, consumption, and time allocation.

We add to the literature by evaluating the long-term impact of cash transfers offered during Covid-19, tracking households for two years after the onset of the pandemic, and for one-and-a-half year after the final payment. The second noticeable feature of our study is that we provide evidence on a broad range of variables related to well-being, such as food security, happiness, stress and domestic viol-

ence. Both of these features of our study are highly important for policy purposes. The long-term data collection allows us to address the question of whether a time-limited intervention can have lasting effects, or whether in fact there will be a significant drop in income and well-being as soon as the transfers are discontinued. Capturing a broad range of outcome variables is also crucial, for instance to understand whether the cash transfers have undesired side-effects, such as domestic violence.

The remainder of the paper is organized as follows. Section 2 describes the sample, the surveys and the empirical specification. Section 3 reports results, and section 4 concludes.

2.2 Sample and surveys

We start this section by presenting the sample used in our study and provide background statistics. We then give an overview of the surveys and the timeline of the study.

Our sample consists of female respondents, who were part of a research project on subsidized childcare. We randomly assigned the women to one of four groups. The first group was offered free childcare, paid directly to the childcare centers. The second group was offered an unconditional cash grant equal to the cost of the childcare treatment. The cash grants were unconditional but labeled

as business grants and transferred directly to the women. The transfers were paid in the spring, summer, and fall (roughly coinciding with the beginning of the school terms). The third group was offered both free childcare and the cash grant, and the final group served as a control. Households in the cash-support group received an average yearly transfer of around UGX 424 thousand (114 USD), which is about 12 percent of the average household income before the pandemic broke out.

The sample was selected from three districts in Western Uganda (Kasese, Kyenjojo and Kabarole), three districts in central Uganda (Mukono, Masaka and Mityana) and three districts in Eastern Uganda (Mbale, Iganga and Jinja). We started by identifying 454 communities containing at least one childcare center. We then conducted a census to identify households that are eligible for participation in the study: Households should have one (and only one) child in the age range three to five. We refer to this child as the "child". This child should not yet be enrolled in full-time daycare, and a female caregiver should be present in the household. To have a sufficiently large group of households without a younger child (less than three years old), we restricted the study sample to communities that have at least three households that satisfy the additional criteria of not having a younger child (and one household that does not satisfy this). From the list of eligible communities

and households, we randomly selected 1,496 households across 389 communities to participate in the baseline survey. For further details, we refer the reader to Bjorvatn et al. (2022).[5]

We intended to offer two years of support to households with a child who was three or four years old at baseline, and one year to households with a child of five years old, as the child would enter (free) primary education during the second year. The pandemic induced school closures, which implied that all households received one year of childcare only. In contrast, the cash intervention was implemented as planned: households with a young target child received cash grants in 2019 and 2020, while households with an old target child received cash in 2019 only. We will use this discontinuity in the treatment to identify the causal effect of cash during the pandemic.

In the remainder of the paper, we will use two distinct samples: "experimental" and "pure control". The experimental sample consists of 682 households who received cash in 2019 and 2020 ("treated") and households who only received cash in 2019 ("control"), before the Covid-19 pandemic started.[6] The pure control sample consists of

[5]Randomization was conducted at the individual level and blocked by (i) district, (ii) whether the child had younger siblings or not, (iii) whether the child attended any (part-time) childcare or not, (iv) the female caregiver's main occupation (self-employed, wage-employed or unemployed), and (v) whether the female caregiver was the child's mother (versus grandmother).

[6]In order to be able to assign households to the second year of treatment, we asked households during S3 to provide verifiable information on the age

373 households that were never part of any intervention. We use this sample to show trends before, during, and after the Covid-19 pandemic. As an additional criterion, we only include households that were part of each of the eight survey rounds.

Table 1 shows the timeline of our study. We distinguish between three different periods: Period 0 before the outbreak of Covid-19, Period 1 during the most intense lockdown (March until December 2020), and Period 2 after most of the measures were lifted (2021 and 2022). There are eight surveys in total: three in Period 0 (S1-S3), three in Period 1 (S4-S6), and two in Period 2 (S7 and S8).[7] Note that we do not have all outcome variables available for each survey, which explains the difference in sample size across tables. For the pre-covid surveys we used face-to-face interviews. During the lockdown (the first year of the pandemic), we resorted to phone surveys. In the second year of the pandemic, we did face-to-face interviews again, following the official guidelines (e.g. about the use of masks and safe distancing).

There is six percent attrition in Period 1 and seven percent attrition in Period 2, but it is balanced across

of the target child. The sample is therefore limited to households that were visited during S3. In addition, four households could not provide verifiable age information.

[7]Surveys S4 and S5 were carried out by phone, due to the public health measures imposed by the government, while the other surveys were carried out in person.

Table 1: Periods and surveys.

Survey details				Variables				
Period	Survey	Time of survey	Format	INC	SAV	FS	HP	DV
Period 0	S1	November 2018	Physical	✓	✓		✓	
	S2	July 2019	Physical	✓			✓	
	S3	February 2020	Physical	✓	✓	✓	✓	✓
Period 1	S4	April 2020	Phone	✓	✓	✓	✓	✓
	S5	July 2020	Phone	✓	✓	✓	✓	✓
	S6	December 2020	Physical	✓	✓	✓	✓	✓
Period 2	S7	February 2021	Physical	✓	✓	✓	✓	
	S8	February 2022	Physical	✓	✓	✓	✓	✓

Notes: INC = Income, SAV = Savings, FS = Food security, HP = Happiness and Stress, DV = Intimate partner violence and violence against children.

groups (see Table F.1).[8]

Table F.2 provides a balance test for the experimental sample. It shows that the baseline variables are balanced across treated and control households, except for target child (by construction) and household size, where the older target child in the control group also implies a larger household size.

We observe that the respondent's average age is 34 years, and 72 percent are married or have a partner. The average household consists of five to six members. The participants are more or less equally divided between those who have not completed primary education, those who completed primary education, and those who completed secondary education as their highest level of education. Only seven percent have education beyond secondary school. Regard-

[8]Appendix 2.D shows that the results are robust to restricting the sample to those households who participated in all surveys.

ing occupation, 44 percent are self-employed and 20 percent are engaged in wage employment. The remaining participants are not employed. The majority of the households own land and 43 percent also own some livestock (reflecting the fact that the households do not live in large cities).

2.3 The lockdown and economic trends

Uganda's response to the pandemic was rapid and comprehensive (Hale et al., 2021). In March 2020, the government implemented a series of lockdown measures, including a prohibition of mass gatherings, closure of schools and universities, banning of public and private transportation, the implementation of a curfew, and the closure of most businesses. The policies were gradually lifted from May 2020 onwards, starting with hardware shops, insurance companies and take-away restaurants. Most businesses were allowed to resume their work by the end of July, but public gatherings with more than five people and international travel remained prohibited until early October. The most restrictive constraints applied to schools and preschools: They remained closed in 2020 *and* 2021.

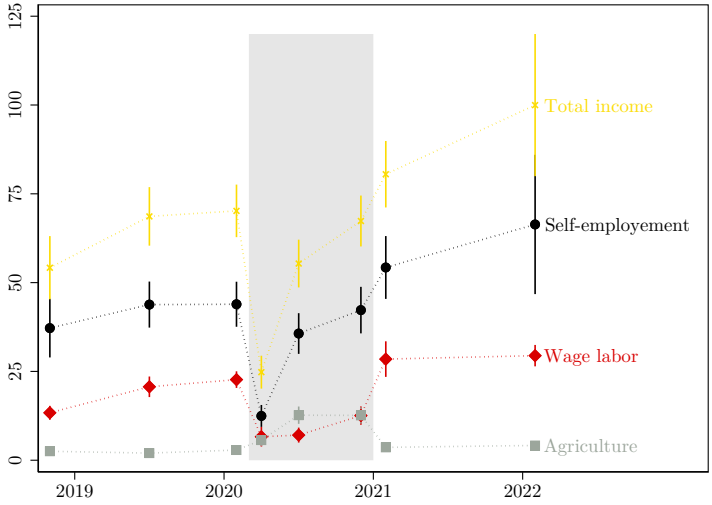
We graphically present the evolution of the key economic outcomes for the pure control sample, that is, households that were not randomly allocated to receiving cash transfers. Figure 1 shows the patterns before, during, and after

the pandemic for income, and Figure 2 for savings. The grey shading indicates the period with the most intense lockdown measures (April to December 2020).

Total household income dropped sharply during the early phase of the lockdown, from UGX 70 thousand right before the pandemic to UGX 25 thousand in the first survey during the pandemic, a 65 percent drop. This is comparable to the 60 percent drop reported in Mahmud and Riley (2021). The most important source of income, self-employment, fell to about one-fourth of its 2019 level. Income from wage labor fell radically as well, while income from sales of livestock and crops increased, surpassing wage income in importance for most of 2020. We interpret the rise in sales as the liquidation of assets in the face of an emergency. The figure also points to a rapid recovery of the households' economy: The income from self-employment and wage labor reached the levels of 2019 towards the end of 2020, and the income from sales recovered to pre-covid levels by early 2021.

In addition to selling crops and livestock, people also depleted their savings. Total household savings decreased from an average of UGX 98 thousand shortly before the pandemic to UGX 74 thousand a few weeks later (a drop of 25 percent, somewhat less than the 40 percent drop in savings reported in Mahmud and Riley (2021)). Figure 2 shows this is driven by a decline in cash holdings, bank

Figure 1: Income by source, before, during and after Covid

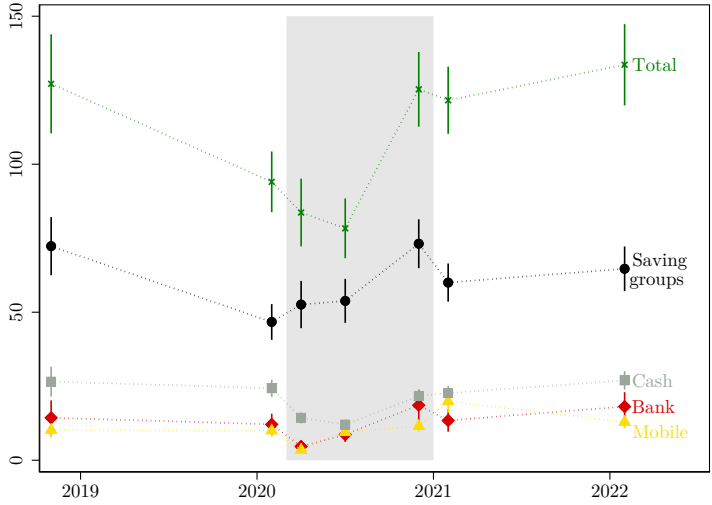


Notes: The Figure shows the evolution over time of the mean weekly household income from ● self-employment, ◆ wage labor, ■ agriculture (sale of livestock and crops), and × the total of these categories (in UGX 1,000). The sample consists of the households in the pure control sample (that is, who did not receive any support from the project before or after the onset of the pandemic) that took part in all surveys. They grey area indicates the lockdown period. The spikes correspond to a one standard error interval around the means.

savings (bank accounts and micro-finance), and mobile money. Group savings (e.g. VSLAs) remained stable.

During the first phone survey the respondents also directly expressed a deterioration of their economic situation, their main concerns being not having enough money to buy food (85 percent), school closures (85 percent), the risk of employment loss (84 percent), and health risks (82

Figure 2: Savings, before, during and after Covid



Notes: The Figure shows the evolution of the households' savings over time by categories (● saving groups, ◆ bank, ■ cash, ▲ mobile money) and × in total (in UGX 1,000). The sample consists of the households in the pure control sample. They grey area indicates the lockdown period. The spikes correspond to a one standard error interval around the means.

percent), see Table F.3. Only two respondents had received government support and only 15 percent of the households had received gifts or loans from their social network in the past 30 days.

2.4 Empirical specification

Against the backdrop of this sharp economic downturn, we evaluate the impact of cash transfers. The analysis

is based on the experimental sample, that is, households that were randomly assigned to receive cash transfers.[9] We identify the impact of cash transfers during the pandemic, by using a difference-in-difference estimator (DD) that uses the discontinuity in the length of the treatment, as summarized in Table 2.

Table 2: Cash transfers, experimental sample.

Group	Cash transfer		
	2019	2020	2021
Treated	Yes	Yes	No
Control	Yes	No	No

To build the DD estimator, we start from the treated group, which is the only group that received transfers during the pandemic. The first difference is in the value of the outcomes before versus during/after the pandemic in this group. The second difference comes from the comparison between the treated and the control group, that is, those who continued receiving cash during the pandemic versus those who received support before the pandemic only.

This double difference (DD) provides a valid estimator if the trends in outcomes are parallel by cohort. In order to rely on weaker assumptions (allowing for different trends by birth cohort) and assess the robustness of our results,

[9] As explained in section 2.D, the cash transfers equal 12 percent of the average household's 2019 income and were sent in three installments (February, June, and October).

we also use a third difference: The DD in the experimental sample versus the DD in the pure control sample. The DDD estimates are very consistent with the DD estimates though generally less precise. We present the DD results in the main text and the DDD estimates in Appendix 2.A.

In the main specification, we pool the data by period and use Period 0 as the omitted category (see Table 1).[10] We estimate:

$$\begin{aligned} Y_{i,t} = \alpha_0 + \alpha_1(Treated_i \times Period_1) \\ + \alpha_2(Treated_i \times Period_2) + H_i + T_t + \epsilon_{i,t} \end{aligned} \tag{2.1}$$

where $Y_{i,t}$ is the value of the outcome for household i in period t; $Period_t$ is equal to one if the observation is collected during (Period 1) or after (Period 2) the treatment; $Treated_i$ is equal to one if the household is in the experimental group and received the transfers also during 2020, and zero otherwise. H_i are household fixed effects, T_t are time fixed effects and $\epsilon_{i,t}$ is the error term. We account for multiple hypotheses testing following the procedure developed by Benjamini, Krieger and Yekutieli (2006). We group outcomes by table and period and correct the p-values within these families.

The key variables, α_1 and α_2, are the DD estimators of the effect of cash transfers in Period 1 and Period 2.

[10] Appendix 2.B provides an analysis of survey-wave-specific effects.

Throughout the paper, monetary values are expressed in 1,000 Ugandan shillings (UGX) and are winsorized at the 99^{th} percentile. Standard errors are clustered at the household level.

In the Tables B.1, B.2 and B.3, we test whether the pre-trends are parallel for all the outcomes that we observe at least twice before the pandemic. We cannot reject the hypothesis of parallel pre-trends for the main economic outcomes (total income and savings).

2.5 Results

We start by reporting the impact on economic outcomes (income and savings), before moving to various measures of well-being: food security, happiness, stress, and domestic violence.

2.5.1 The effects of cash transfers on the household economy

Table 3 shows the treatment effects on the household's total income and on the different sources it comprises. To put the size of the effects into perspective, we provide the summary statistics for the *control* group, i.e. households that received cash in 2019, so before the onset of the

pandemic only. [11] The cash intervention had a positive impact on livelihoods in Period 1. The increase in weekly income is significant at the five-percent level and economically sizeable: It represents a 44 percent increase relative to the household income of the comparison group. The increase implies that the transfers completely shield the recipient against the income drop that we observed in the comparison group (from UGX 89 thousand pre-pandemic to UGX 46 thousand). Columns (2) to (5) show that the positive effect is driven by an increase in revenues from self-employment. The effects on income are slightly higher in the post-pandemic Period 2.

The cash transfer protected households from a drop in savings as well. During the pandemic, there is a positive effect of UGX 45 thousand on the average total stock of savings, which represents an increase of 49 percent relative to the comparison group (Table 4). The transfers have large and significant effects on savings hold in saving groups but not on other forms of savings.[12] As for income, the effects are persistent throughout the aftermath of the pandemic.

[11] The income measures do not include the cash transfers, as those were sent outside the time frame of the relevant survey questions. For the in-person surveys, the time frame was the preceding month, and for the phone surveys the preceding week. We re-scaled the monthly measures to weekly ones, as to make them comparable throughout.

[12] Saving groups include savings in Village and Loan associations (VSLAs), Saving and Credit Cooperatives (SACCOs) or money guarded by someone else.

Table 3: Household income

	Total	Self-empl.	Wage labor	Agriculture
	(1)	(2)	(3)	(4)
Treatment x Period 1	20.67$^{**}_{\star}$	21.14$^{**}_{\star\star}$	-5.16$^{*}_{\star}$	1.86$_{\star}$
	(10.08)	(8.3)	(2.77)	(1.75)
Treatment x Period 2	32.16$^{***}_{\star\star}$	23.61$^{***}_{\star\star}$	.87	.02
	(10.94)	(8.97)	(2.8)	(.68)
Obs.	4777	5124	5080	4961
Mean Control				
Period 0	89.26	69.78	12.7	2.4
Period 1	46.33	29.36	7.54	7.26
Period 2	80.39	58.86	19.35	3.53

Notes: Weekly household income in UGX 1,000. Standard errors are clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Control* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Households in the Treatment group received cash transfers worth UGX 424 thousand in 2020, but increased savings by about UGX 49 thousand only. We, therefore, deduce that the transfers were mainly spent and not saved. Next, we provide evidence that households (at least partially) used the transfers to shield their businesses and finance consumption. In the post-pandemic surveys, we asked the households whether they closed a business in the past 12 months and why they did so. Table F.4 shows that 24 percent of the households stopped their activity during the pandemic (the comparison group in Period 2). The cash transfer, however, canceled this effect. In addition,

the most frequently stated reason for the business closure is the lack of funds (13 percent). According to our estimate, the cash transfer eliminated the business closures that were due to a lack of funds. Our interpretation is simply that cash allowed businesses to stay afloat during the lockdown.

Table 4: Household savings

	Total	Saving groups	Bank	Mobile	Cash
	(1)	(2)	(3)	(4)	(5)
Treatment x Period 1	$45.52^{**}_{\star}$	$34.78^{***}_{\star\star\star}$	6.08	4.38^{*}	6.11
	(20.78)	(10.98)	(7.85)	(2.63)	(5.8)
Treatment x Period 2	$50.91^{**}_{\star}$	$23.15^{*}_{\star}$	5.63	4.06	$15.11^{**}_{\star}$
	(23.44)	(12.69)	(8.75)	(3.51)	(6.92)
Obs.	3821	4169	4250	4040	4019
Mean Control					
Period 0	124.67	70.82	16.68	9.45	28.53
Period 1	91.69	54.36	7.22	6.22	18.45
Period 2	129.35	71.72	18.35	11.58	25.89

Notes: Savings in thousand Ugandan Shilling. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Control* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

The results are robust to using a triple difference estimator, accounting for the difference in age of the target child between treatment and control (Tables A.1 and A.2). While the point estimates on income and savings are similar in magnitude or even bigger, they are less precise, in particular in the longer run (Period 2).

2.5.2 The effects of the cash transfers on well-being

The cash transfers shielded households against the economic downturn that followed the lockdown. We now investigate whether they also have an impact on more direct measures of well-being: food security, health happiness, and stress. In addition, we estimate the effects on violence against women and children. This is important given the widespread fear of increased domestic violence during the lockdown (Leslie and Wilson, 2020; Arenas-Arroyo, Fernandez-Kranz and Nollenberger, 2021) and the mixed evidence on cash transfers and violence in other contexts (Bobonis, González-Brenes and Castro, 2013; Hidrobo, Peterman and Heise, 2016; Haushofer and Shapiro, 2016; Haushofer et al., 2019).

Table 5 shows the impact on food security, health, happiness, and stress. Stress is measured using Cohen's Perceived Stress Scale, which consists of 10 questions on being upset or lacking control during the last month, each measured on a five-point scale from 0 (Never) to 4 (Very often), and hence a total score ranging from zero to 40 (www.sprc.org). Happiness is measured as the respondent's general happiness with life (0–10). Health is the respondent's assessment of own health and that of the child during the last month, ranging from 1 (Very bad) to 5 (Very good).

Food security is measured using two questions about their experience in the previous month: "Was there a time when you had to skip a meal because there was not enough money or other resources to get food?" and "Was there a time when your household ran out of food because of a lack of money or other resources?". Overall, there is evidence for a strong increase in food security both in the short term (Period 1) and slightly nuanced in the longer term (Period 2).[13] The evidence from the control group does not show any consistent evidence of a deterioration in food security during the pandemic: Around 50 percent of the households reporting being forced to skip a meal both before and after the onset of the pandemic, while there is a dip in those reporting to always having enough food. Figure E.3 in the Appendix shows the development for the pure control group, and in fact for this group, food security seems to improve. This evidence stands in some contrast to Mahmud and Riley (2021) who find a large increase in the households that report skipping a meal, which could be due to their sample being more vulnerable than ours (for instance, in their sample, only 19 percent have a non-farm business, while the corresponding number in our study is 44 percent). In fact, our findings of a positive treatment

[13]While the questions on food security remain the same across survey waves, the reference period was changed from "last month" to "last week" in Period 2. In particular the levels in Period 2 should therefore be taken with caution and not be compared to the previous periods.

effect on food security in a setting where the control did not suffer greatly harmonize well with the findings in Malawi, reported in Aggarwal et al. (2020).

Table 5: Food Security, Health, Happiness and Stress

	Food security		Health		Happiness		Stress
	no skip	always food	general	child	general	ladder	PSS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment x Period 1	.17***	.16***	-.08	.04	-.01	.04	-.56
	(.06)	(.06)	(.11)	(.09)	(.17)	(.14)	(.43)
Treatment x Period 2	.14**	.08	-.05	0	.2	.03	-.02
	(.06)	(.06)	(.12)	(.11)	(.19)	(.17)	(.5)
Obs.	3845	3851	3849	3827	5205	5205	5205
Mean Control							
Period 0	.46	.51	3.48	3.98	4.68	3.82	22.93
Period 1	.44	.37	3.62	4	4.32	4.08	24.18
Period 2	.48	.5	3.65	4.04	4.46	4.11	23.05

Notes: Columns (1) and (2) report a dummy variable equal to one if the household did not have to skip a meal or did not run out of food in the previous month. Columns (3) and (4) report the health of the respondent and target child on a scale from 1 (very bad) to 5 (very good). In columns (5) and (6), the dependent variables are the mother's happiness with life (5) and (expected) position on the ladder of life now (6), measured on a scale from 0 to 10; and in column (7) it is the mother's stress level, captured by Cohen's perceived stress scale (PSS). Standard errors clustered at the household level. Statistical significance is indicated by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

We do not find significant effects of the cash treatment on health, happiness or stress. One reason for the more muted effects of the interventions here compared to those on livelihoods could be that the pandemic did not lead to major shifts in well-being, as evidenced by the control group averages (figure E.1).

Table 6 shows evidence on intimate partner violence (IPV) and violence against children (VAC), measured as an index of a series of questions on psychological and physical

violence. The VAC questions are adapted from the Child Discipline Module from UNICEF used in the Multiple Indicator Cluster Surveys. The IPV measures come from the Demographic and Health Surveys Domestic Violence Module.[14]

We measure violence on the extensive margin, so that 0 implies no violence on any dimensions while 1 implies violence reported on at least one dimension. Overall, our evidence suggests that an additional year of cash transfers did not impact the prevalence of domestic violence, neither in the short nor the longer term. The point estimates are negative throughout, although not statistically significant. This is reassuring, in particular in light of the literature showing evidence that offering cash to women can lead to a male backlash.

Our data also shows that in Period 2, cash has led to a significant reduction in violence against children, driven by a reduction in psychological violence. Potentially, this could be due to the persistent increase in household income documented in Table 3.

[14]The questions on which these indexes are constructed are reported in Appendix 2.F, with tables F.5 and F.6 showing the outcomes for each of the dimensions related to VAC and IPV.

Table 6: Domestic violence

	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x Period 1	-.04	-.04	0	-.04	-.06	-.08
	(.05)	(.05)	(.04)	(.04)	(.05)	(.06)
Treatment x Period 2	-.01	-.01	-.01	-.15***	-.13**	-.1
	(.06)	(.06)	(.05)	(.05)	(.06)	(.07)
Obs.	3221	3221	3221	3192	3193	3192
Mean Control						
Period 0	.31	.27	.17	.87	.79	.72
Period 1	.28	.26	.09	.89	.85	.74
Period 2	.23	.22	.09	.94	.86	.65

Notes: IPV measures any intimate partner violence last 12 months (1)-(3) if the respondent has a partner; VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Again, these results are robust to using a triple difference estimator (Tables A.3 and A.4) and using a balanced panel of respondents who were interviewed in all waves (Tables D.3 and D.4).

2.6 Conclusion

Cash transfers are widely used to support poor households but there is little evidence on their effects in times of crisis, such as during the recent pandemic.

Our study shows the impact of cash transfers in Uganda,

tracking households a year before the onset of the pandemic and two years after. We show that a temporary cash transfer was successful in shielding households from the sharp, but relatively short-lived, economic downturn. In a situation where a large number of businesses had to close due to a lack of funds, the cash transfers allowed households to keep their businesses floating, thus inducing a positive effect on incomes, savings, and food security. Indeed, we find that the positive effects of the transfer are sustained over time, even one year after the payment of the last installment.

The transfers also led to a reduction in violence against children, and we find no sign of an increase in intimate partner violence. We do observe signifcant effects on other well-being measures, such as happiness, stress, and health.

In sum, our study in Uganda shows that cash transfers successfully shielded households and their businesses during the Covid-19 pandemic. It has been argued that the risk of global health crises is rapidly increasing, partly due to climate change, with low-income countries bearing the brunt of the burden (e.g. Madhav et al., 2017; Carroll et al., 2018). The policy lessons that can be derived from our study are therefore likely to be uncomfortably relevant also in the future.

Appendix

2.A Triple difference

In our main specification, we use a difference-in-difference estimator (DD) that combines the randomization of the transfers with the discontinuity in the length of the treatment based on the age of the target child. We start from the "Treated" group, which is the only group that received transfers during the pandemic. The first difference is in the value of the outcomes before versus during/after the pandemic in this group. The second difference comes from the comparison between "Treated" and "Control', that is, those who continued receiving cash during the pandemic versus those who received support before the pandemic only.

This double difference (DD) provides a valid estimator if the trends in outcomes are parallel by cohort. In order to rely on weaker assumptions (allowing for different trends by birth cohort) and assess the robustness of our results, we estimate a triple difference in this section. We take the difference between the DD in the "Experimental" group versus the DD in the "Pure control" group (who never

received any transfer). We estimate:

$$\begin{aligned} Y_{i,t} = \alpha_0 &+ \alpha_1(Experimental_{\times} Period_1) \\ &+ \alpha_2(Experimental_{\times} Period_2) \\ &+ \beta_1(Treated_i \times Period_1) + \beta_2(Treated_i \times Period_2) \\ &+ \delta_1(Experimental_{\times} Treated_i \times Period_1) \\ &+ \delta_2(Experimental_{\times} Treated_i \times Period_2) \\ &+ H_i + T_t + \epsilon_{i,t} \end{aligned} \tag{2.2}$$

where $Y_{i,t}$ is the value of the outcome for household i in period t; $Period_t$ is equal to one if the observation is collected during (Period 1) or after (Period 2) the treatment; $Experimental$ is equal to one if the household was allocated to the cash treatment at some point in time and zero otherwise; and $Treated_i$ is an indicator equal to one if the target child was three to four years old at baseline (the household received the transfers in 2019 and 2020) and zero if the child was aged 5 (the household received the transfers in 2019 only). Finally, H_i are household fixed effects, T_t are time fixed effects and $\epsilon_{i,t}$ is the error term.

The key variables, δ_1 and δ_2, are the triple-difference estimators of the effect of cash transfers in Period 1 and Period 2. The DDD estimates are shown in Tables A.1 to A.4.

In the Appendix, Section 2.C, we test whether the pre-trends are parallel for all the outcomes that we observe at least twice before the pandemic. We cannot reject the hypothesis of parallel pre-trends.

Table A.1: Household income

	Total	Self-empl.	Wage labor	Agriculture
	(1)	(2)	(3)	(4)
Cash x Treatment x Period 1	27.48$^{*}_{\star}$	28.68$^{**}_{\star}$	-3.38	2.6
	(14.55)	(11.39)	(3.74)	(2.4)
Cash x Treatment x Period 2	25.59*	21.79*	2.22	.28
	(14.93)	(12.72)	(3.8)	(.95)
Obs.	9646	10416	10286	10045
Mean Control				
Period 0	89.26	69.78	12.7	2.4
Period 1	46.33	29.36	7.54	7.26
Period 2	80.39	58.86	19.35	3.53

Notes: Weekly household income in UGX 1,000. Standard errors are clustered at the household level. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Control* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table A.2: Household savings

	Total	Saving groups	Bank	Mobile	Cash
	(1)	(2)	(3)	(4)	(5)
Cash x Treatment x Period 1	73.49$^{***}_{**}$	40.24$^{***}_{**}$	14.34	5.8	12.1
	(26.76)	(13.98)	(10.23)	(3.88)	(7.74)
Cash x Treatment x Period 2	53.49*	25.86	-1.04	5.16	14.45
	(30.35)	(16.18)	(10.59)	(5.36)	(9.35)
Obs.	7727	8450	8607	8151	8091
Mean Control					
Period 0	124.67	70.82	16.68	9.45	28.53
Period 1	91.69	54.36	7.22	6.22	18.45
Period 2	129.35	71.72	18.35	11.58	25.89

Notes: Savings in thousand Ugandan Shilling. Standard errors clustered at the household level. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Control* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table A.3: Food Security, Health, Happiness and Stress

	Food security		Health		Happiness		Stress
	no skip	always food	general	child	general	ladder	PSS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cash x Treatment x Period 1	.12	.19$^{**}_{*}$	.07	.13	.19	.27	-1.28*
	(.08)	(.08)	(.15)	(.12)	(.25)	(.19)	(.71)
Cash x Treatment x Period 2	.04	.05	.17	.03	.32	-.05	-.66
	(.08)	(.08)	(.15)	(.14)	(.28)	(.23)	(.74)
Obs.	7785	7795	7793	7747	10571	10571	10571
Mean Control							
Period 0	.46	.51	3.48	3.98	4.68	3.82	22.93
Period 1	.44	.37	3.62	4	4.32	4.08	24.18
Period 2	.48	.5	3.65	4.04	4.46	4.11	23.05

Notes: Columns (1) and (2) report a dummy variable equal to one if the household did not have to skip a meal or did not ran out of food in the previous month. Columns (3) and (4) report the health of the respondent and target child on a scale from 1 (very bad) to 5 (very good). In columns (5) and (6), the dependent variables are the mother's happiness with life (5) and (expected) position on the ladder of life now (6), measured on a scale from 0 to 10; and in column (7) it is the mother's stress level, captured by Cohen's perceived stress scale (PSS). Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table A.4: Domestic violence

	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Cash x Treatment x Period 1	-.04	-.03	-.04	-.06	-.1	-.09
	(.07)	(.07)	(.05)	(.05)	(.07)	(.07)
Cash x Treatment x Period 2	.01	.03	-.01	-.13**	-.17**	-.11
	(.08)	(.08)	(.06)	(.06)	(.08)	(.1)
Obs.	6529	6529	6529	6464	6465	6464
Mean Control						
Period 0	.31	.27	.17	.87	.79	.72
Period 1	.28	.26	.09	.89	.85	.74
Period 2	.23	.22	.09	.94	.86	.65

Notes: IPV measures any intimate partner violence last 12 months (1)-(3) if the respondent has a partner; VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Standard errors clustered at the household level. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

2.B Wave by wave (DD)

Table B.1: Household income

	Total	Self-empl.	Wage labor	Agriculture
	(1)	(2)	(3)	(4)
Treatment x S-2	28.74	19.82	$9^{**}_{\star}$	$-1.72^{**}_{\star}$
	(21.08)	(15.8)	(4.11)	(.76)
Treatment x S-3	20.29	19.42	1.56	-1.11
	(21.52)	(17.11)	(4.97)	(.89)
Treatment x S-4	32.06*	31.48**	-4.4	1.35
	(16.39)	(14.22)	(4.08)	(1.15)
Treatment x S-5	$52.51^{***}_{\star\star\star}$	$43.34^{***}_{\star\star\star}$	-.86	$4.94^{*}_{\star\star}$
	(18.29)	(14.81)	(4.7)	(2.67)
Treatment x S-6	25.78	28.5**	.56	-3.24
	(17.24)	(12.74)	(6.12)	(3.87)
Treatment x S-7	$38.66^{**}_{\star}$	$30.02^{**}_{\star}$	1.47	-.98
	(16.49)	(13.28)	(5.09)	(.87)
Treatment x S-8	$56.06^{***}_{\star\star\star}$	$43.55^{***}_{\star\star\star}$	7.53	-.78
	(18.78)	(15.35)	(5.07)	(1.03)
Obs.	4777	5124	5080	4961
Mean Control				
Period 0	89.26	69.78	12.7	2.4
Period 1	46.33	29.36	7.54	7.26
Period 2	80.39	58.86	19.35	3.53

Notes: Weekly household income in UGX 1,000. Standard errors are clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table B.2: Household savings

	Total	Saving groups	Bank	Mobile	Cash
	(1)	(2)	(3)	(4)	(5)
Treatment x S-3	-24.29	-15.45	-4.9	5	4.39
	(40.48)	(19.09)	(15.61)	(5.29)	(12.21)
Treatment x S-4	-3.28	14.13	-5.92	4.42	8.55
	(39.58)	(17.78)	(14.03)	(3.99)	(11.6)
Treatment x S-5	45.45	34.59*	.55	7.11	11.25
	(43.45)	(20.2)	(13.68)	(4.99)	(11.68)
Treatment x S-6	51.88	32.12	15.75	9.71*	6.37
	(39.55)	(20.59)	(14.87)	(5.15)	(11.46)
Treatment x S-7	36.83	10.08	10.6	7.35	17.74
	(44.92)	(20.75)	(15.16)	(6.07)	(12.47)
Treatment x S-8	37.25	19.81	-4.58	6.37	17.45
	(42.14)	(18.68)	(16.47)	(4.78)	(12.51)
Obs.	3821	4169	4250	4040	4019
Mean Control					
Period 0	124.67	70.82	16.68	9.45	28.53
Period 1	91.69	54.36	7.22	6.22	18.45
Period 2	129.35	71.72	18.35	11.58	25.89

Notes: Savings in thousand Ugandan Shilling. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table B.3: Food Security, Health, Happiness and Stress

	Food security		Health		Happiness		Stress
	no skip	always food	general	child	general	ladder	PSS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment x S-2					.3	-.46**	.42
					(.36)	(.23)	(.79)
Treatment x S-3					.19	-.16	-.45
					(.33)	(.25)	(.81)
Treatment x S-4	.18***	.21***	-.17	-.02	.01	-.21	-1.03
	(.07)	(.06)	(.13)	(.13)	(.3)	(.25)	(.72)
Treatment x S-5	.14**	.08	-.08	.12	.02	-.32	-.76
	(.07)	(.07)	(.12)	(.1)	(.32)	(.23)	(.73)
Treatment x S-6	.18***	.18***	.02	.04	.43	.03	.08
	(.07)	(.07)	(.12)	(.1)	(.31)	(.23)	(.71)
Treatment x S-7	.07	.05	.08	.03	.29	-.2	-.3
	(.06)	(.07)	(.12)	(.12)	(.29)	(.25)	(.76)
Treatment x S-8	.22***	.1	-.18	-.03	.44	-.14	.26
	(.07)	(.07)	(.13)	(.12)	(.3)	(.27)	(.84)
Obs.	3845	3851	3849	3827	5205	5205	5205
Mean Control							
Period 0	.46	.51	3.48	3.98	4.68	3.82	22.93
Period 1	.44	.37	3.62	4	4.32	4.08	24.18
Period 2	.48	.5	3.65	4.04	4.46	4.11	23.05

Notes: Columns (1) and (2) report a dummy variable equal to one if the household did not have to skip a meal or did not ran out of food in the previous month. Columns (3) and (4) report the health of the respondent and target child on a scale from 1 (very bad) to 5 (very good). In columns (5) and (6), the dependent variables are the mother's happiness with life (5) and (expected) position on the ladder of life now (6), measured on a scale from 0 to 10; and in column (7) it is the mother's stress level, captured by Cohen's perceived stress scale (PSS). Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table B.4: Domestic violence

	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x S-4	-.05	-.05	-.01	-.03	-.04	-.11
	(.06)	(.06)	(.05)	(.06)	(.06)	(.07)
Treatment x S-5	-.02	-.02	.01	-.05	-.04	-.04
	(.06)	(.06)	(.04)	(.04)	(.05)	(.07)
Treatment x S-6	-.05	-.04	-.01	-.05	-.09*	-.09
	(.06)	(.06)	(.05)	(.04)	(.05)	(.06)
Treatment x S-8	-.01	-.01	-.01	-.15***	-.13**	-.1
	(.06)	(.06)	(.05)	(.05)	(.06)	(.07)
Obs.	3221	3221	3221	3192	3193	3192
Mean Control						
Period 0	.31	.27	.17	.87	.79	.72
Period 1	.28	.26	.09	.89	.85	.74
Period 2	.23	.22	.09	.94	.86	.65

Notes: IPV measures any intimate partner violence last 12 months (1)-(3); VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

2.C Wave by wave (DDD)

Table C.1: Household income

	Total	Self-empl.	Wage labor	Agriculture
	(1)	(2)	(3)	(4)
Cash x Treatment x S-2	18.86	20.84	3.38	-2.57**
	(26.52)	(19.75)	(5.64)	(1.16)
Cash x Treatment x S-3	-3.14	4.51	2.79	-2.74**
	(26.40)	(21.39)	(6.47)	(1.25)
Cash x Treatment x S-4	38.52*	37.92**	-0.44	1.08
	(23.15)	(18.52)	(5.69)	(1.99)
Cash x Treatment x S-5	48.21**	47.31**	-2.55	5.53
	(24.04)	(19.15)	(6.18)	(4.61)
Cash x Treatment x S-6	12.72	26.91	-0.96	-3.51
	(22.59)	(16.70)	(7.61)	(4.81)
Cash x Treatment x S-7	7.16	9.94	3.23	-1.20
	(22.07)	(17.38)	(6.53)	(1.33)
Cash x Treatment x S-8	52.40**	50.99**	5.61	-1.50
	(25.18)	(22.79)	(6.57)	(1.47)
Observations	9646	10416	10286	10045
Mean Control				
Period 0	89.26	69.78	12.70	2.40
Period 1	46.33	29.36	7.54	7.26
Period 2	80.39	58.86	19.35	3.53
Wave FE	✓	✓	✓	✓
HH FE	✓	✓	✓	✓

Notes: Weekly household income in UGX 1,000. The estimation includes all the relevant single interaction terms (Cash x Period; Young x Period). Standard errors are clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table C.2: Household savings

	Total	Saving groups	Bank	Mobile	Cash
	(1)	(2)	(3)	(4)	(5)
Cash x Treatment x S-3	10.88	-0.90	9.48	-1.23	13.53
	(50.71)	(26.13)	(18.05)	(7.53)	(15.15)
Cash x Treatment x S-4	64.88	44.77*	11.38	2.09	20.98
	(48.96)	(25.23)	(15.54)	(6.27)	(14.02)
Cash x Treatment x S-5	110.54**	57.41**	11.31	5.18	23.36*
	(51.48)	(26.38)	(15.10)	(7.84)	(14.16)
Cash x Treatment x S-6	65.63	17.70	33.98*	8.12	14.62
	(51.47)	(26.57)	(19.00)	(8.02)	(14.22)
Cash x Treatment x S-7	37.59	19.44	6.13	3.62	17.69
	(52.90)	(26.47)	(16.33)	(9.22)	(15.17)
Cash x Treatment x S-8	76.89	29.58	1.65	5.59	25.69*
	(54.04)	(25.96)	(17.91)	(7.08)	(15.30)
Observations	7727	8450	8607	8151	8091
Mean Control					
Period 0	124.67	70.82	16.68	9.45	28.53
Period 1	91.69	54.36	7.22	6.22	18.45
Period 2	129.35	71.72	18.35	11.58	25.89
Wave FE	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓

Notes: Savings in thousand Ugandan Shilling. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table C.3: Food Security, Health, Happiness and Stress

	Food security		Health		Happiness		Stress
	no skip	always food	general	child	general	ladder	PSS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cash x Treatment x S-2					0.47	-0.62*	0.24
					(0.49)	(0.35)	(1.12)
Cash x Treatment x S-3					0.29	-0.51	1.40
					(0.47)	(0.34)	(1.18)
Cash x Treatment x S-4	0.14	0.24***	0.09	0.06	0.25	-0.05	-1.65
	(0.09)	(0.09)	(0.18)	(0.17)	(0.43)	(0.35)	(1.09)
Cash x Treatment x S-5	0.03	0.11	0.01	0.19	0.44	-0.26	-1.52
	(0.09)	(0.10)	(0.16)	(0.13)	(0.45)	(0.33)	(1.16)
Cash x Treatment x S-6	0.19**	0.23**	0.12	0.14	0.63	0.00	0.94
	(0.10)	(0.09)	(0.16)	(0.13)	(0.42)	(0.33)	(1.08)
Cash x Treatment x S-7	-0.05	-0.01	0.28*	-0.02	0.51	-0.69*	-0.24
	(0.09)	(0.10)	(0.16)	(0.16)	(0.42)	(0.35)	(1.14)
Cash x Treatment x S-8	0.14	0.12	0.05	0.08	0.63	-0.15	0.03
	(0.10)	(0.10)	(0.18)	(0.16)	(0.44)	(0.37)	(1.17)
Observations	7785	7795	7793	7747	10571	10571	10571
Mean Control							
Period 0	0.46	0.51	3.48	3.98	4.68	3.82	22.93
Period 1	0.44	0.37	3.62	4.00	4.32	4.08	24.18
Period 2	0.48	0.50	3.65	4.04	4.46	4.11	23.05
Wave FE	✓	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓	✓

Notes: Columns (1) and (2) report a dummy variable equal to one if the household did not have to skip a meal or did not ran out of food in the previous month. Columns (3) and (4) report the health of the respondent and target child on a scale from 1 (very bad) to 5 (very good). In columns (5) and (6), the dependent variables are the mother's happiness with life (5) and (expected) position on the ladder of life now (6), measured on a scale from 0 to 10; and in column (7) it is the mother's stress level, captured by Cohen's perceived stress scale (PSS). Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table C.4: Domestic violence

	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Cash x Treatment x S-4	-0.05	-0.03	-0.10	-0.00	-0.02	-0.11
	(0.12)	(0.12)	(0.09)	(0.08)	(0.09)	(0.09)
Cash x Treatment x S-5	-0.14	-0.10	-0.10	-0.05	-0.10	-0.02
	(0.12)	(0.11)	(0.08)	(0.06)	(0.08)	(0.09)
Cash x Treatment x S-6	-0.18	-0.15	-0.07	-0.13**	-0.19**	-0.14
	(0.12)	(0.11)	(0.09)	(0.06)	(0.07)	(0.09)
Cash x Treatment x S-8	-0.06	-0.02	-0.06	-0.14**	-0.17**	-0.11
	(0.11)	(0.11)	(0.09)	(0.06)	(0.08)	(0.10)
Observations	4200	4210	4207	6465	6465	6464
Mean Control						
Period 0	0.45	0.40	0.25	0.87	0.79	0.72
Period 1	0.42	0.39	0.13	0.89	0.85	0.74
Period 2	0.37	0.35	0.15	0.94	0.86	0.65
Wave FE	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓

Notes: IPV measures any intimate partner violence last 12 months (1)-(3); VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

2.D Balanced panel

In this section we report the estimation results for a balanced panel, i.e. excluding households that have not participated in all eight survey rounds S1 to S8.

Table D.1: Household income

	Total	Self-empl.	Wage labor	Agriculture
	(1)	(2)	(3)	(4)
Treatment x Period 1	15.31	17.43**	-4.4	2.01
	(9.4)	(7.82)	(3.2)	(2)
Treatment x Period 2	27.77***	19.99**	1.69	.14
	(10.72)	(8.8)	(3.21)	(.79)
Obs.	3913	4179	4152	4061
Mean Control				
Period 0	88.85	69.17	12.45	2.78
Period 1	49.02	31.41	7.55	7.56
Period 2	79.75	58.27	19.43	3.66

Notes: Weekly household income in UGX 1,000. The estimation includes all the relevant single interaction terms (Cash x Period; Young x Period). Standard errors are clustered at the household level. Statistical significance is indicated by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table D.2: Household savings

	Total	Saving groups	Bank	Mobile	Cash
	(1)	(2)	(3)	(4)	(5)
Treatment x Period 1	53.04$^{**}_{\star}$	36.22$^{***}_{\star\star}$	5.85	4.49	6.33
	(24.82)	(12.77)	(9.15)	(2.94)	(6.96)
Treatment x Period 2	66.13$^{***}_{\star}$	26.98*	5.96	5.06	15.93*
	(25.51)	(14.9)	(8.2)	(3.72)	(8.15)
Obs.	3122	3400	3470	3304	3291
Mean Control					
Period 0	142.45	79.29	18.22	9.73	31.42
Period 1	100.45	60.22	8.35	5.92	19.83
Period 2	129.05	74.72	16.66	10.6	27.11

Notes: Savings in thousand Ugandan Shilling. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table D.3: Food Security, Health, Happiness and Stress

	Food security		Health		Happiness		Stress
	no skip	always food	general	child	general	ladder	PSS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment x Period 1	.13**	.15**	-.06	.02	.11	.09	-.36
	(.06)	(.06)	(.11)	(.1)	(.19)	(.15)	(.48)
Treatment x Period 2	.12**	.08	0	.02	.42**	.15	-.23
	(.06)	(.07)	(.13)	(.13)	(.21)	(.19)	(.54)
Obs.	3181	3186	3185	3176	4248	4248	4248
Mean Control							
Period 0	.44	.52	3.52	3.98	4.88	3.94	22.63
Period 1	.44	.39	3.64	4.02	4.41	4.17	23.83
Period 2	.46	.51	3.65	4.03	4.47	4.14	23.08

Notes: Columns (1) and (2) report a dummy variable equal to one if the household did not have to skip a meal or did not ran out of food in the previous month. Columns (3) and (4) report the health of the respondent and target child on a scale from 1 (very bad) to 5 (very good). In columns (5) and (6), the dependent variables are the mother's happiness with life (5) and (expected) position on the ladder of life now (6), measured on a scale from 0 to 10; and in column (7) it is the mother's stress level, captured by Cohen's perceived stress scale (PSS). Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Table D.4: Domestic violence

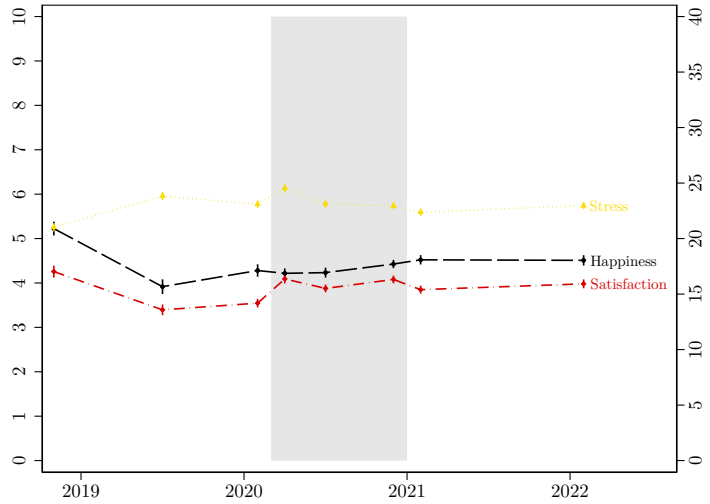
	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x Period 1	-.04	-.02	-.02	-.05	-.04	-.08
	(.06)	(.06)	(.04)	(.04)	(.05)	(.06)
Treatment x Period 2	.01	.02	-.03	-.15***	-.11*	-.1
	(.06)	(.06)	(.05)	(.05)	(.06)	(.07)
Obs.	2655	2655	2655	2632	2632	2632
Mean Control						
Period 0	.3	.28	.14	.88	.81	.73
Period 1	.28	.26	.08	.9	.85	.75
Period 2	.2	.19	.08	.94	.85	.65

Notes: IPV measures any intimate partner violence last 12 months (1)-(3); VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

2.E Additional figures

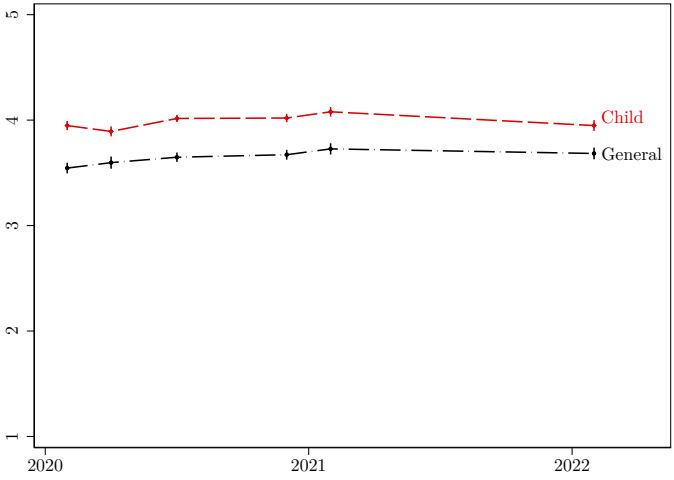
This section shows the evolution of our measures of happiness, satisfaction with life, and stress (Figure E.1), self-reported health (Figure E.2), food security (Figure E.3) and domestic violence (Figure E.4), in the control group, before during and after the pandemic.

Figure E.1: Happiness, satisfaction with life and stress, before, during and after Covid



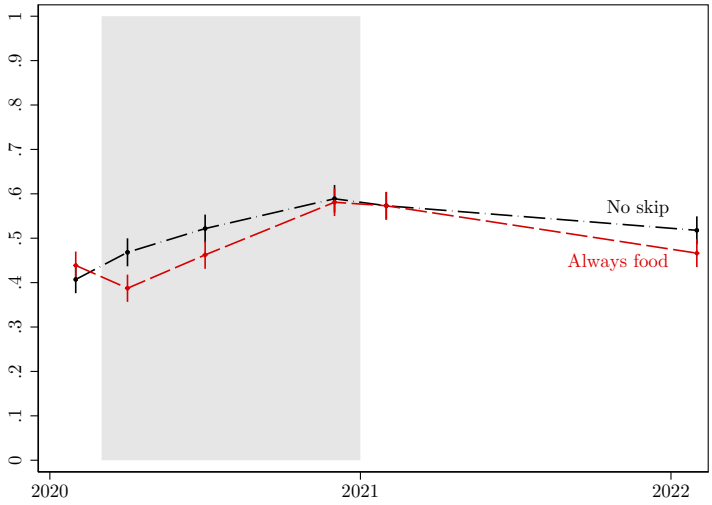
Notes: The Figure shows the evolution of the respondent's reported ● happiness and ◆ satisfaction with life (left axis), and ▲ stress level (right axis). The sample consists of the households in the pure control group. They grey area indicates the lockdown period. The spikes correspond to a one standard error interval around the means.

Figure E.2: Health, before, during and after Covid



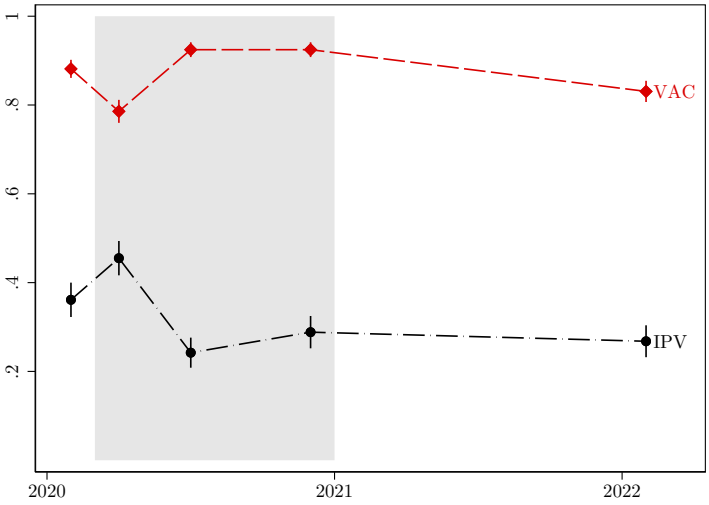
Notes: The Figure shows the evolution of ● adult and ◆ child health. Health is self-reported by the respondent and a dummy variable which equals one in the absence of bad health in the past month. The sample consists of the households in the pure control group. They grey area indicates the lockdown period. The spikes correspond to a one standard error interval around the means.

Figure E.3: Food security, before, during and after Covid



Notes: The Figure shows the evolution over time of two measures of food security: the proportion of households who ● did not have to skip a meal due to financial constraints and ◆ did not run out of food during the last month. The sample consists of the households in the pure control group. They grey area indicates the lockdown period.

Figure E.4: Domestic violence, before, during and after Covid



Notes: The Figure shows the evolution of the proportion of ● women subject to their patner's violence and of ◆ children subject to violence. The sample consists of the households in the pure control group. They grey area indicates the lockdown period. The spikes correspond to a one standard error interval around the means.

2.F Additional tables

Table F.1: Attrition

	Attrition
Treatment x Period 1	-0.007
	(0.018)
Treatment x Period 2	-0.022
	(0.022)
Period 1	0.062***
	(0.017)
Period 2	0.074***
	(0.020)
Observations	5456
Mean Control	
Period 0	0.024
Period 1	0.079
Period 2	0.091

Notes: Attrition = 1 if the household could not be contacted during the respective period.

Table F.2: Balance table, experimental sample

	Mean treated	Mean control	Difference	Nb. Observations
	(1)	(2)	(3)	(4)
Respondent's age	33.84	34.16	-0.32	682
	(9.89)	(9.35)	(0.98)	
Married or partner	0.71	0.75	-0.04	682
	(0.45)	(0.43)	(0.05)	
Household size	5.16	6.15	-0.99	682
	(2.02)	(1.91)	(0.20)***	
Child's age	3.45	5.12	-1.67	682
	(0.56)	(0.32)	(0.04)***	
Education				
Below primary	0.28	0.31	-0.03	682
	(0.45)	(0.46)	(0.05)	
Primary	0.32	0.30	0.02	682
	(0.47)	(0.46)	(0.05)	
Secondary	0.33	0.35	-0.01	682
	(0.47)	(0.48)	(0.05)	
Above secondary	0.07	0.05	0.02	682
	(0.26)	(0.21)	(0.02)	
Employment				
Self-employment	0.44	0.44	0.00	682
	(0.50)	(0.50)	(0.05)	
Wage employment	0.20	0.18	0.02	682
	(0.40)	(0.39)	(0.04)	
No employment	0.36	0.38	-0.02	682
	(0.48)	(0.49)	(0.05)	
Assets				
Own land	0.67	0.73	-0.05	682
	(0.47)	(0.45)	(0.05)	
Own livestock	0.43	0.46	-0.04	682
	(0.50)	(0.50)	(0.05)	

Notes: Columns (1) and (2) give the mean values and the standard deviations of observations in the treated and the control group, respectively. Column (3) reports the differences between treated and control group. The differences are obtained by regressing each variable on the treatment indicator and the tests of significance are based on the regression estimates (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table F.3: Covid

	Mean	SD	Min	Max	N
Share concerned (in %, S4)					
Employment loss	0.84	0.37	0	1	1395
Employment reduction	0.89	0.31	0	1	1395
School closure	0.85	0.36	0	1	1395
Sickness	0.82	0.38	0	1	1395
No agric. market	0.71	0.45	0	1	1395
Uncertainty	0.82	0.38	0	1	1395
No money for food	0.85	0.36	0	1	1395
No access to water	0.31	0.46	0	1	1395
Support					
Gvt transfer (*S4*)	0.00	0.04	0	1	998
Gvt transfer (*S5*)	0.02	0.15	0	1	1239
Informal loan, gift (*S4*)	0.15	0.36	0	1	1318
Informal loan, gift (*S5*)	0.27	0.45	0	1	1235
Informal loan, gift (*S6*)	0.26	0.44	0	1	1295
Exposure					
Know so infected (*S5*)	0.06	0.24	0	1	1239
Know so infected (*S6*)	0.31	0.46	0	1	1298
Know so dead (*S5*)	0.01	0.09	0	1	1239
Know so dead (*S6*)	0.24	0.43	0	1	1298
Perceived risk (*S5*)	2.79	0.99	1	5	1239
Perceived risk (*S6*)	2.85	1.08	1	5	1298

Notes: In bracket the survey round the respective variables were elicited. Perceived risk: How likely do you think it is that you or any of your family members will get infected with Covid, from 1 (very unlikely) to 5 (very likely).

Table F.4: Effects on business closures, by reason

		Reasons							
	All	Funds	Workers	Demand	Supplies	Health	Covid	Move	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment x S-7	-0.09*	-0.13***	0.02*	0.01	0.02	-0.01	0.02***	-0.00	-0.03
	(0.06)	(0.05)	(0.01)	(0.03)	(0.03)	(0.02)	(0.01)	(0.02)	(0.02)
Treatment x S-8	0.03	-0.02	-0.01	-0.01	0.03	-0.02	0.01**	-0.00	-0.00
	(0.05)	(0.04)	(0.02)	(0.04)	(0.03)	(0.02)	(0.00)	(0.02)	(0.01)
Observations	2614	2614	2614	2614	2614	2614	2614	2614	2614
Mean Control									
Period 0	0.16	0.06	0.01	0.04	0.04	0.01	0.00	0.00	0.01
Period 2	0.24	0.18	0.02	0.07	0.04	0.03	0.00	0.01	0.01
Wave FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: The dependent variable is one if at least one business was closed during the last 12 months due to the stated reason.

Table F.5: Violence against child, decomposed

	Psychological			Physical					
	insult	shout	privileges	shook	hit hand	hit object	hit face	hit arm	beat
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment x Period 1	0.00	-0.01	-0.06	0.03	-0.18***	-0.15***	0.06	-0.03	-0.01
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.04)	(0.06)	(0.03)
Treatment x Period 2	0.03	-0.06	-0.12*	-0.04	-0.09	-0.13**	-0.01	0.02	-0.02
	(0.06)	(0.06)	(0.07)	(0.05)	(0.08)	(0.07)	(0.04)	(0.07)	(0.03)
Observations	3193	3192	3190	3191	3192	3191	3190	3191	3190
Mean Control									
Period 0	0.28	0.75	0.22	0.24	0.43	0.31	0.17	0.37	0.06
Period 1	0.30	0.78	0.48	0.23	0.58	0.50	0.12	0.31	0.09
Period 2	0.26	0.78	0.35	0.18	0.39	0.39	0.13	0.20	0.04
Wave FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Any psychological (columns (1)-(3)) or physical (columns (4)-(9)) violence against child during last 12 months. **Psychological violence** includes three types of acts: (i) shouting, yelling or screaming at the child; (ii) calling the child dumb, lazy or another name like that; (iii) taking away privileges. **Physical violence** asks about six different acts: (i) shaking the child; (ii) spanking, hitting or slapping the child on the bottom with bare hand; (iii) hitting the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object; (iv) hitting or slapping the child on the face, head or ears; (v) hitting or slapping the child on the hand, arm, or leg; (vi) beating the child up, that is hit him/her over and over as hard as one could.

Table F.6: Intimate partner violence, decomposed

	Psychological			Physical						
	humilate	threaten	insult	push	slap	twist	punch	kick	burn	attack
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment x Period 1	0.03	-0.02	-0.04	-0.00	0.01	0.02	0.02	0.02	0.00	0.01
	(0.04)	(0.03)	(0.05)	(0.03)	(0.04)	(0.02)	(0.03)	(0.03)	(0.01)	(0.02)
Treatment x Period 2	0.03	-0.01	-0.01	-0.00	0.02	0.02	0.02	0.02	0.00	0.00
	(0.05)	(0.04)	(0.05)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Observations	3221	3221	3220	3221	3221	3221	3221	3221	3221	3221
Mean Control										
Period 0	0.18	0.09	0.25	0.09	0.14	0.08	0.07	0.07	0.02	0.03
Period 1	0.13	0.07	0.22	0.05	0.07	0.03	0.02	0.03	0.01	0.01
Period 2	0.13	0.07	0.21	0.04	0.07	0.02	0.01	0.03	0.01	0.01
Wave FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Any psychological (columns (1)-(3)) or physical (columns (4)-(10)) intimate partner violence experienced during last 12 months. **Psychological violence** includes three types of acts: (i) saying or doing something to humiliate the mother in front of others; (ii) threatening to hurt or harm the mother or someone she cares about; (iii) insulting the mother or make her feel bad about herself. **Physical violence** asks about seven different acts: (i) push you, shake you, or throw something at you; (ii) slap you; (iii) twist your arm or pull your hair; (iv) punch you with his fist or with something that could hurt you; (v) kick you, drag you, or beat you up; (vi) try to choke you or burn you on purpose; (vii) threaten or attack you with a knife, gun or other weapon.

Table F.7: Domestic violence (partner at baseline)

	IPV			VAC		
	any	psych	phys	any	psych	phys
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x Period 1	-0.07	-0.06	-0.01	-0.04	-0.06	-0.08
	(0.07)	(0.07)	(0.05)	(0.04)	(0.05)	(0.06)
Treatment x Period 2	-0.02	-0.02	-0.01	-0.15***	-0.13**	-0.10
	(0.08)	(0.08)	(0.06)	(0.05)	(0.06)	(0.07)
Observations	2220	2220	2220	3193	3193	3192
Mean Control						
Period 0	0.45	0.40	0.25	0.87	0.79	0.72
Period 1	0.37	0.35	0.11	0.89	0.85	0.74
Period 2	0.29	0.28	0.11	0.94	0.86	0.65
Wave FE	✓	✓	✓	✓	✓	✓
HH FE	✓	✓	✓	✓	✓	✓

Notes: IPV measures any intimate partner violence last 12 months (1)-(3) for respondents who reported to have a partner in period 0; VAC measures any violence against child during the last 12 months (4)-(6). For more detail, see tables F.5 and F.6 in Appendix 2.F. Includes relevant single interaction terms (Cash x Period; Young x Period), but not reported. Standard errors clustered at the household level. Statistical significance is indicated by $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. *Mean Cash Old* reports averages in the comparison group, that is, those who received cash transfers only before the pandemic.

Chapter 3

Time and Poverty

Poverty is often understood in exclusively monetary terms. Despite recent advances in including other dimensions of well-being, one dimension that is still often overlooked is time. This is problematic for two reasons: First, free time in itself is an important part of individual well-being. Second, the direct trade-off between free time and income makes poverty measures that consider only one side of this trade-off biased and policies resulting from this potentially inefficient. The aim of this study is therefore twofold. First, to develop a measure of poverty that accounts for both time and money. Second, to take this measure to the data and examine the prevalence of different poverty regimes in the population and in particular the transitions between them over time. I use data from Uganda and show that monetary poor individuals who are also time poor, or at the risk of becoming time poor, have a significantly lower likelihood of transitioning out of poverty compared to equally monetary poor households with sufficient time. Females are particularly likely to be dual poor.

I would like to thank Kjetil Bjorvatn, Keisaku Higashida, Selim Gulesci, and participants at the Bergen Development Seminar, the Nordic Conference in Development Economics in Göteborg and the International Conference on the Economics of Global Interactions in Bari for their feedback.

3.1 Introduction

The poverty rate of a country is an important indicator of well-being and a crucial target for policy-makers. Traditionally, it has been based on monetary measures, both on the individual and on the national level. This focus has been criticized for being too narrow, which led to the development of several multidimensional poverty measures, following the seminal work by Sen et al. (1980). Those measures aim to provide a more complete picture of poverty by accounting for other dimensions such as inequality, education, or health.

However, few of them account for time, neither as the amount of leisure time available nor as the time needed to achieve a non-poor level of income or consumption. A lack of time is associated with worse dietary choices (Jabs and Devine, 2006; Seymour et al., 2019), lower school attendance (Martey, Etwire and Koomson, 2022) and worse outcomes in several other domains, including life satisfaction, divorces or job turnover (Giurge, Whillans and West, 2020). Several recent contributions have therefore highlighted the importance of measuring time as a separate poverty dimension to obtain a more comprehensive picture of who is poor and how to best target them (for example Giurge, Whillans and West 2020). Individuals are usually considered time poor when their working time in both paid

and unpaid work exceeds a certain threshold. While the time allocation is partially determined by preferences and choices, factors outside of the individual control such as household composition, infrastructure or norms restrict these choices.

From a policy perspective, taking into account time constraints is crucial to determine two groups of individuals. First, individuals who are both income and time poor. This closely relates to the concept of the "working poor". Individuals in this group can not easily adjust their labor supply upwards to generate additional income and will have worse perspectives compared to other monetary poor individuals. Second, individuals who are time poor and not able to reduce their working time without the risk of becoming monetary poor and meeting their basic needs. This group is missing in traditional poverty accounts.

More broadly, measuring time poverty and combining it with measures of monetary poverty is important for at least three reasons: First, time matters for well-being, both directly in the form of leisure time as well as indirectly through the production of goods which individuals then derive well-being from (Macchia and Whillans, 2021).[1] Second, time and income are to some degree substitutes, and any attempt to capture poverty by only considering one

[1] In a recent paper, Masuda, Williams and Tallis (2021) shows that individuals with similar income report lower levels of life satisfaction if they have less free time.

side of this relationship is necessarily missing an important aspect. It seems incomplete to ask the question of whether an individual reaches a specific monetary poverty line but to ignore whether he or she needed to work five hours a day to get there or 15. Third, individuals differ in the degree to which they are able to convert time into income for reasons outside their individual control, such as norms. Policies that do not account for these differences will likely be biased (Williams, Masuda and Tallis, 2016). An example of this is a policy with the aim of increasing female labor force participation. In a context where women already bear the major part of (unpaid) work, this likely poses an additional burden, if not accompanied by policies to tackle the allocation of unpaid work as well.

In this paper, I study time poverty in Uganda. In line with the literature, I define time poverty as working more hours than a certain threshold, where working time includes both time in paid and unpaid work. I aim to answer two sets of research questions. First, what are the correlates of time poverty on the individual, household, and community level? Which households are particularly vulnerable? And second, how can we use measures of time poverty to better understand poverty as a whole? I will provide a framework that accounts for both time and monetary poverty. One goal of this framework is to differentiate one-dimensional poor individuals by whether they have

sufficient resources along the other dimension to escape poverty or not. Do monetary (time) poor individuals have sufficient time (money) available to escape poverty? Taking this framework to the data, I will investigate the prevalence of the different poverty regimes and transitions in and out of poverty. This is the first paper jointly investigating time and monetary poverty over time and its implications for mobility as well as policies.

This paper most closely relates to the literature on multidimensional poverty and its measurement. Following Sen's capability approach and the realization that measures of poverty focusing on its monetary aspect might be too narrow, a number of attempts to measure poverty along multiple dimensions emerged (Sen, 1976; Sen et al., 1980). Several researchers discussed the aggregation of various dimensions into a single index, such as Bourguignon and Chakravarty (2003), who create a poverty measure including income and education, Alkire and Foster (2011), who also include health and insurance, or Duclos, Sahn and Younger (2006). While there is no consensus on which dimensions to include or whether a multidimensional poverty index provides clearly different insights than a one-dimensional monetary poverty index, these measures gained momentum. A current example is the Multidimensional Poverty Index (Alkire and Santos, 2010).[2] The

[2]Von Maltzahn and Durrheim (2008) show that in five southern African

sub-strand of this literature closest to this paper aims at specifically integrating measures of time and monetary poverty. Most studies here expand or correct a one-dimensional measure of time or monetary poverty rather than provide a complete "typology" of two-dimensional poverty. For example, Zacharias et al. (2018) show that monetary poverty is underestimated when not including those who only escape monetary poverty by working excessive hours. Bardasi and Wodon (2010) in turn find that time poverty is overestimated when including those who work long hours despite having an income that would allow them to reduce working hours. While the methodology of these papers is discussed in more detail in chapter 3.2, the evidence suggests that females and households with more young children and lower levels of education face a higher risk of not being able to reach a sufficient income while not working excessive hours (Burchardt, 2008; Bardasi and Wodon, 2010; Zacharias et al., 2018). To my knowledge, the only study to provide a complete "typology" of poverty types when combining measures of time and monetary poverty is by Merz and Rathjen (2014). They find that for Germany around 12.2 percent of the population is multidimensionally poor, which is more than twice as much as a unidimensional measure of income poverty

countries, implications derived from a multidimensional poverty index do not significantly differ from those obtained by focusing on monetary poverty alone.

would suggest. I relate to this literature by integrating measures of monetary and time poverty and examining the prevalence and determinants of the different poverty regimes in a developing country. This is to my knowledge the first study in this strand of the literature that is able to follow individuals over time, which allows to test some of the basic assumptions underlying all these attempts and derive policy implications.

This paper also relates to the literature on mobility in and out of poverty. This is particularly important in the setting of a developing country, where a considerable part of the poor are temporarily poor and experience transitions in and out of poverty (Baulch and Hoddinott, 2000). Van Campenhout, Sekabira and Aduayom (2016) show that Uganda over the last decades experienced a rapid decline in poverty, as expressed by the official poverty headcounts, from almost 40 percent at the beginning of the 21st century to below 20 percent in 2012, only ten years later. In this period, only 12.3 percent of the population was always poor while the majority of the population was sometimes poor.[3] Even though these measures might only show part of the picture, the reduction in poverty is indisputable (Daniels and Minot, 2015). It is however less clear, how this reduction took place. Daniels and Minot

[3] "Always" refers to the four points in time where a household survey was carried out.

(2015) show that asset-based measures of poverty suggest a much slower decline in poverty compared to the official consumption-based measures. Potentially because the decline in consumption poverty is accompanied by a rise of what Scott, Diwakar and Okech (2016) call the "insecure non-poor", households who escape poverty but remain vulnerable. These are exactly those households who might face the decision between working too long hours (time poverty) and having too little (consumption poverty). I contribute to this literature by following individuals over time and extending traditional (monetary) poverty measures by the time dimension. This allows for investigating transitions in, out, and between different poverty regimes.

Finally, this paper also relates to the literature on time poverty. Evidence from low-income countries suggests that the likelihood of being time poor is higher for females (Blackden and Wodon, 2006; Bardasi and Wodon, 2010; Arora, 2015; Orkoh, Blaauw and Claassen, 2020; Carmichael et al., 2023), a difference which already exists for girls (Bardasi and Wodon, 2010), and in rural areas (Bardasi and Wodon, 2010). The gender-specific patterns of time poverty might vary by whether a region is rural or urban. Saboor, Manzoor and Khan (2016) find that in India women are more likely to be time poor in rural and more traditional settings, while they are less time poor in cities. Wodon and Beegle (2006) find that in Malawi time poverty, as income

poverty, follows seasonal patterns. Arora (2015) shows that women are not only more likely to be time poor, but their working time is also likely to be more taxing due to multi-tasking, such as working and taking care of children at the same time. Investments in time-saving devices such as electrical or gas stoves in Guatemala (Gammage, 2010) or liquefied petroleum gas in India (Su and Azam, 2023) have been successful in reducing the incidence of time poverty. Lawson (2008) highlights the importance of infrastructure for reducing time poverty. In line with this, Orkoh, Blaauw and Claassen (2020) find that traffic congestion in urban areas in Ghana contributes to time poverty and shows that investments in the public transportation infrastructure can reduce time poverty. Bjorvatn et al. (2022) show that reducing the unpaid care work of mothers by offering free childcare for their young child leads to an increase in the labor supply of single mothers and, if present, the father. With a few exceptions such as Burchardt (2008) for the United Kingdom or Qi and Dong (2018) for China, most of these studies have been conducted in African countries.[4] I contribute to this strand of the literature by investigating determinants of time poverty in Uganda, where this is the first study to consider determinants that go beyond the household level, in particular, village infrastructure

[4]Zacharias et al. (2018) in Ghana and Tanzania, Bardasi and Wodon (2010) in Guinea, Arora (2015) in Mozambique, Lawson (2008) in Lesotho.

and norms, and by differentiating between the severity of time poverty based on the adjustment opportunities of individuals.

This paper touches on several other strands of the literature, such as the measurement of time use, or more generally multidimensional measures of poverty and well-being. I will refer to the corresponding literature and findings whenever relevant.

The remainder of this paper is structured as follows. Section 3.2 presents the conceptual framework, discussing previous attempts at integrating monetary and time poverty and explaining the framework used in this paper. Section 3.3 describes the data sources and the measurement of time and monetary poverty, as well as poverty regimes. Section 3.4 proceeds in three steps: First, by presenting some stylized patterns on time and consumption poverty, as well as their development over time. Second, by nuancing the picture along the conceptual framework developed earlier, and finally, by investigating transitions in, out, and between poverty types over time. It also discusses the practical relevance of these findings. Section 3.5 concludes.

3.2 Conceptual framework

The goal of this paper is to provide a poverty measure that captures both monetary and time poverty, and in particular

the interaction between the two. This chapter lays out the conceptual framework and discusses the underlying assumptions.

A natural starting point are the unidimensional measures of time and monetary poverty. Combining those, an individual finds itself in one out of four possible situations. Either the individual is (i) both time and monetary poor, (ii) time poor but not monetary poor, (iii) monetary poor but not time poor, or (iv) not poor along either dimension. Individuals who are poor along both dimensions are particularly vulnerable since they neither have free time to increase income nor additional income to be able to reduce working time. While it seems obvious that those dual poor individuals should be considered as poor (and those who are neither time nor monetary poor as non-poor), it is less clear whether individuals who are poor along only one dimension and potentially have adjustment opportunities (free time or consumption above the poverty line) should be counted as poor. The main task of the conceptual framework is therefore to distinguish between unidimensional poor individuals who should be considered poor and those who shouldn't. Or, put differently, individuals who in theory have the possibility to escape poverty by adjusting their working time and those who are trapped and can only escape monetary (time) poverty by becoming time (monetary) poor.

Generally, there are two main approaches to assigning individuals to a poverty regime. The first one is based on *actual* working time and the corresponding income. Individuals are poor if they are either poor along both dimensions (intersection approach) or at least one of the two dimensions (union approach). An example of the latter is the study by Gammage (2010), who studies time and income poverty in Guatemala. Merz and Rathjen (2014) estimate a well-being function with leisure and working time as the arguments, and then draw a well-being isoquant through the intersection of the two poverty lines. Individuals whose well-being falls below this line are considered poor while those with well-being levels above are not, even if they are poor along one of the dimensions. Intuitively, one might consider this latter group as more likely to be "voluntarily" poor, since their relatively high well-being might indicate that the labor supply decision is more likely to be a choice and therefore based on preferences.

The second approach is based on the *hypothetical* adjustment opportunities of individuals. Rather than considering the actual consumption and working time of a household, the question becomes whether an individual could escape poverty by either re-adjusting his or her labor supply or by substituting unpaid work with domestic workers. It is therefore based on hypothetical or "optimal", rather than actual working time. Could a time poor individual

reduce working time without risking becoming monetary poor? And vice versa, could a monetary poor individual escape monetary poverty by working more hours without becoming time poor?

To be able to answer these questions, one needs to make two key decisions. The first decision concerns the substitutability between time and money. At what rate or income can an individual reduce or increase working time? The most obvious candidate for a rate of substitution between time and income is the wage rate. However, in many settings, a (constant) hourly wage rate is not realistic and requires additional assumptions. In settings where it is realistic, working hours are typically not flexible. Bardasi and Wodon (2010) instead propose a measure of "consumption productivity" which circumvents this particular problem, but is only available at the household level. They use this measure to redefine their measure of time poverty by excluding those who would not become monetary poor when they reduce their excess working time. This is similar to the measure of discretionary time, which defines those as time poor who would, in order to reach the consumption poverty line and given their wage rate, need to spend more time in paid work than they have available (Goodin et al., 2005). When substituting unpaid (rather than leisure time) for paid work, the additional income is determined by the wage differential between the individual and a domestic

worker which takes over the unpaid work (Zacharias, 2011; Vickery, 1977). Zacharias et al. (2018) use the wage of a domestic worker to compute a redefined measure of monetary poverty, adding those people who are not monetary poor but would be if they would "buy out" their time deficit by hiring a domestic worker. Most assumptions hinge on the possibility of actually extending and reducing working time, or hiring domestic workers. While this is certainly not always possible, it is more plausible in a setting with high levels of self-employment like Uganda, compared to a setting where the dominant form of employment is wage employment and working time arrangements are rather fixed.

The second key decision is about *who* adjusts the working time. Most previous work assumes that adjustments are made on the household level, in line with monetary poverty usually being measured at the household level (Zacharias, 2011). This however might not be realistic, as it would require multiple household members to simultaneously adjust their working time in such a way that no one is time poor and the household is not monetary poor. Therefore, one could ask whether an individual by adjusting the *own* labor supply could escape poverty, taking the time allocation and income of the remaining household members as given. This approach is more intuitive since time, in contrast to income, is best measured at the individual level and can

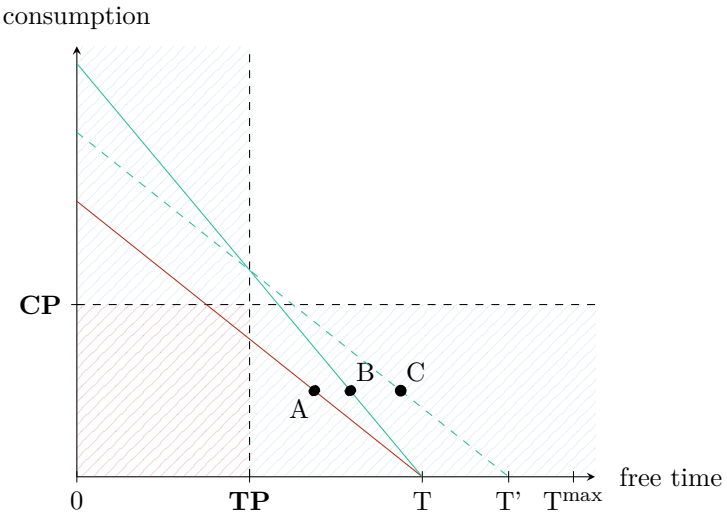
not be pooled across household members.

Figure 1 broadly follows Burchardt (2008) and illustrates in a simple framework how time and monetary poverty relate to each other. The level of income is plotted on the y-axis, while the amount of free time is plotted on the x-axis. The dashed lines represent the respective poverty lines. The point T^{max} marks the maximum available time, and hence the distance between T^{max} and TP equals the number of hours that coincide with the time poverty threshold. These hours can be split between paid and unpaid work.

As a start, let's assume a one-person household, which is monetary poor but not time poor, as indicated by point A in figure 1. Whether A has the potential to escape monetary poverty in practice depends on two factors: The rate at which the household can exchange free time for money and the amount of unpaid work. The distance between T^{max} and T represents the amount spent on unpaid work, while the slope of the line starting at T and crossing X represents the rate of substitution between time and income, which is given by the wage rate or the consumption productivity.[5] Graphically, the question of whether individual A can escape both monetary and time poverty becomes whether the line through A and crosses the non-poor quadrant in

[5]In the simple case, there are no frictions and the individual is able to freely adjust the working time at a given wage rate.

Figure 1: Poverty regimes



Notes: The y-axis represents the level of consumption and the x-axis free time. T marks the maximum available time. The two dashed lines represent the respective poverty thresholds, below which an individual is considered time poor (TP) or monetary poor (MP).

the upper right corner or not. In figure 1 this is not the case and the individual is not able to escape monetary poverty. The moment it would cross the consumption poverty line, it already became time poor.

Figure 1 also depicts two additional situations, in which the individual differs with respect to the time in unpaid work and the rate of substitution between time and income. The point B represents an individual with the same income level and the same amount of free time (T), but a higher

wage rate. This individual could in theory adjust working time in such a way that he or she would be neither time nor monetary poor. Graphically this is illustrated by the green line, and in particular the segment that crosses the upper-right non-poor quadrant. The second variation illustrates a situation where the individual spends less time on unpaid work (T') and therefore has more time available to work for pay. Again, the individual has the exact same level of income as in the other two cases (C). The range of feasible allocations is illustrated by the dashed line. As in the previous case, the individual now has a range of feasible allocations where he or she is neither monetary nor time poor.

This framework is easily applicable to the (more realistic) setting where households have several members. However, the choice of perspective matters here. Following most of the literature and taking the perspective of the household as one unit, the question becomes whether the household as a whole could re-arrange labor supply in such a way, that it could escape poverty or not. The difficulty here is to find a rate of substitution that is applicable to several members, or to appropriately aggregate individual rates. Taking this rate as given, the problem is exactly as illustrated in figure 1. Taking the perspective of the individual (within a household), the question becomes whether an individual, taking the income and labor supply decisions of other household

members as given, can escape poverty by only changing his or her individual labor supply. In contrast to figure 1, the non-work consumption level will be above zero in case at least one other household member is generating an income. In addition, the rate of substitution becomes flatter, since the income earned by the individual is shared with the other household members. An illustration of this can be seen in figure B.6. Both perspectives have their advantages and provide interesting insights. I will refer to them as the *household framework* and the *individual framework*.

Note that this simple framework takes the number of hours in unpaid work as given. In theory, households have the opportunity to buy out at least part of their domestic work by for example paying childcare or hiring domestic workers. This allows the individual to expand their labor supply beyond T and theoretically until A^{max}, generating an additional income that is the differential between their own income and the wage of the domestic worker. This can also be considered as an exercise to evaluate unpaid work.

This categorization results in six possible poverty regimes. As before, a household can be poor on both dimensions and non-poor on either. Those who are poor in one dimension can be distinguished by whether they have feasible time-income allocations that allow them to escape monetary and time poverty simultaneously, or not. Taken

together, households can therefore be (i) dual poor, (ii) monetary poor and not able to escape poverty (trapped), (iii) time poor and not able to escape poverty (trapped), (iv) monetary poor and able to escape poverty, (v) time poor and able to escape poverty and (vi) non-poor. I consider individuals who fall into one of the first three categories as trapped. Those individuals are not able to escape poverty by adjusting their individual labor supply.

In the empirical part of this paper, I take this framework to the data to answer two related sets of questions. First, how common are the respective poverty regimes? Which groups are particularly vulnerable? How likely is it that a monetary poor individual is also time poor, trapped, or has sufficient time to escape poverty? Second, what implications do these traps have in practice? Are monetary poor individuals who are trapped indeed less likely to escape monetary poverty than those who aren't?

3.3 Data and measurement

The following chapter introduces the main data sources used throughout this paper and then discusses the measurement of time and monetary poverty as well as poverty regimes.

3.3.1 Data

For most parts of this paper, I rely on data from the Uganda National Panel Survey (UNPS). The UNPS is a household survey that was launched in 2005 with a sample of 3123 households. While the composition of the sample has not been changed for the first three waves, from the fourth wave on, a rotation component was introduced, replacing one-third of the previously visited households with new households. Consequently, all households are visited for three consecutive waves before being replaced. In this paper, I use data from wave 2 (2010/2011) to 5 (2015/2016), since these surveys elicit data on time use in a consistent way. I will therefore be able, attrition aside, to follow one-third of households for all four waves (households in A), one-fourth of the households for three years (part of households in B), and one-third of the households for two years (households in C). For the remaining households, I only have one observation (see Table 1).

During these waves, the UNPS collects data on the time use of all individuals aged 10 and above residing in the household. This data contains information on paid and unpaid work. It does however not contain information on the time spent on non-work activities. This is sufficient to obtain measures of time poverty based on working time, but does not allow for a deeper exploration of time use. It is also

Table 1: Household retention

	Wave			
	2	3	4	5
A ($\frac{1}{3}$)	4 waves			
B ($\frac{1}{3}$)	3 waves			1 wave
C ($\frac{1}{3}$)	2 waves		2 waves	

Notes: Duration for which households are followed. Households from the original sample are in blue, while households that were newly introduced via the rotation component in wave 4 are in red.

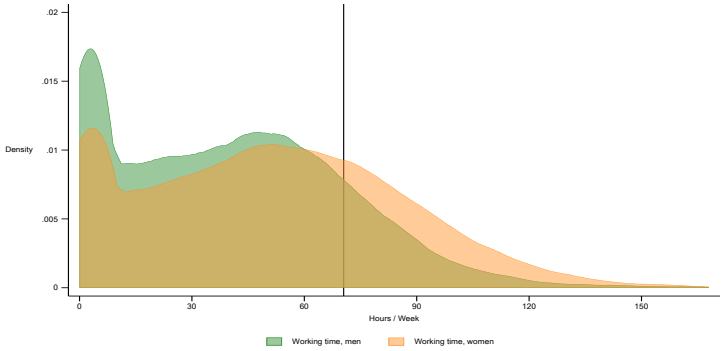
worth noting that the category "domestic work" is relatively broad and requires the respondent to aggregate various activities such as cooking and caretaking. Comparing the data from the UNPS with time use data from other sources suggests that respondents and in particular women under-report time spent on care-taking and hence domestic work.[6] However, many time use modules that are included in household surveys take this reduced form and it is therefore a useful point of departure when referring to other studies or comparing time poverty across countries. The main advantage of the UNPS is its panel structure, which allows for tracking individuals over time, even when

[6]In the UNPS women report on average 14.6 hours of domestic work per week, while the number for care-taking alone in the SIGI (Social Institution and Gender Index) 2013 is already 25.5 hours per week. The data is not directly comparable, and the UNPS seems less prone to report multitasking activities, but this hints at the possibility that care work is under-reported in the UNPS. I will therefore re-run the main regressions in the alternative sample (SIGI) and report whenever results diverge.

they move, and its focus on individuals, eliciting time use for all household members. The sample is representative on the national and regional level.

Individuals above 15 years of age spend on average around 22 hours each in paid and unpaid work. While men spend more time on paid work (25.8 hours vs 20.19 hours per week), women spend more time on domestic work (30.14 vs 13.91 hours). Taken together, women work on average 10 hours more per week than men. The distributions can be seen in figure 2.

Figure 2: Total working time by gender



Notes: Density function of total working time, including paid and unpaid work, for men and women. The vertical line represents a common time poverty threshold of 70 hours per week.

These figures are roughly in line with the results from the National Time Use Survey (NTUS) from 2017.[7] While

[7]In the Time Use Survey, time was elicited in a diary format.

it is difficult to directly compare categories, individuals in the survey reported to have spent on average 7 hours per day working, compared to 6.31 hours in wave 5 of the UNPS.[8]

Considering the whole period from 2010 to 2016, there is a slight increase in time spent on paid work and a more pronounced increase in unpaid work, driven by longer hours spent in agriculture. Both developments are driven by women. Table C.1 gives an overview of time spent on the several tasks recorded and their development over time.

3.3.2 Measurement

This section explains the measurement of (i) time poverty, (ii) monetary poverty, and (iii) poverty regimes, that is the integration of the two.

While there is ample variation in how to measure time poverty and even more on how to integrate it with measures of income or consumption poverty, approaches to measure time poverty all start with the following identity:

$$24 \equiv T_{paid} + T_{unpaid} + T_{selfcare} + T_{leisure} \tag{3.1}$$

Each individual has 24 hours per day available that are distributed between four broad categories: Paid work

[8]Wave 5 is closest in time to the 2017 National Time Use Survey survey. The numbers are for the population aged above 14, aggregating the NTUS-categories of productive work, unpaid domestic and caregiving services for household members.

(T_{paid}), unpaid work (T_{unpaid}), self-care ($T_{selfcare}$) and leisure ($T_{leisure}$). Individuals are usually defined as time poor, when their total working time, i.e. $T_{paid} + T_{unpaid}$, exceeds a certain absolute or relative threshold, or if their leisure time falls below a certain threshold. Assuming that time spent on self-care such as sleeping or eating is constant, these two approaches are equivalent.

While the measurement of time poverty then broadly follows other poverty measures such as income or consumption poverty, there are some differences that are important to keep in mind when both calculating and interpreting time poverty. First, time in contrast to income is bounded at 24 hours a day. Therefore, absolute poverty measures seem to be more suited than relative ones since the lack of time can be more objectively defined than the lack of income. For instance, individuals require a certain amount of sleep to not suffer from detrimental effects on their health and general well-being. This threshold is absolute, while well-being derived from income does have a relative component. Individuals derive utility from their income relative to their reference groups (Luttmer, 2005). Second, time has a qualitative dimension that money does not have to the same degree. Working time might be more or less intense or enjoyable. In particular, there is the possibility of multitasking. Arora (2015) shows how to account for multitasking and how this changes the interpretation of

time poverty. Third, time poverty is defined at the individual level. This is in contrast to income or consumption poverty, which is usually defined on the household level since resources can be pooled and shared (Zacharias, 2011). This allows to investigate intra-household dynamics but also poses a challenge when integrating these two measures.

In this paper, individuals are defined as time poor if they work more than 70 hours per week, following for example Bardasi and Wodon (2010). I choose this main specification for several reasons. First, an absolute measure of time poverty is better able to capture developments over time and, following the above discussion, more likely to be relevant. Second, working time is the most commonly available time use category and is often included in general household surveys. Hence, such a measure is more widely applicable and results are more comparable across settings. Third, working time is likely the most salient time dimension and both easier to recall and more regular than time spent on social activities and leisure activities. However, I will provide alternative specifications where the time poverty threshold is (i) absolute and set to 84 hours/week and (ii) relative and set to working more than 150 percent of the median working time in the adult population (15 to 64 years).

I use standard consumption-based measures of poverty, which are adjusted for regional differences as well as differ-

ences between urban and rural areas. Using consumption data rather than earnings follows the intuition that in particular the earnings of poor individuals are not easily observable, volatile, and potentially biased, while consumption data yields a more reliable picture of depreciation. These measures closely follow the official poverty accounts of the Uganda Bureau of Statistics (UBOS) (Appleton and Ssewanyana, 2003). In addition, I compute alternative measures of monetary poverty which are based on a relative income poverty threshold (60 percent of the median income) or an absolute threshold of USD 1.9 or USD 3.2, in line with the definition of (extreme) poverty by the World Bank.

For both time and consumption poverty, I compute three poverty measures: The headcount, the poverty gap, and the squared poverty gap (Foster, Greer and Thorbecke, 1984). While the first is the typical incidence measure of poverty, here taking the value 1 if an individual is working more than 70 hours per week or a household falls below the regional consumption-based poverty line, the remaining two measures are meant to give an impression of the "depth" of poverty, by showing how far the individual is from the poverty threshold. The squared poverty gap accounts for the fact that the severity is increasing exponentially when moving away from the time poverty threshold.

Following the conceptual framework explained in chapter

3.2, integrating measures of time and consumption poverty requires a measure of substitutability between the two. An intuitive candidate for such a measure is the wage rate. However, the majority of Ugandans do not work for a fixed salary and a wage rate therefore is not easily obtainable.[9] I will therefore rely on two alternative measures of substitution between time and income. As in Bardasi and Wodon (2010), I will use a measure of consumption productivity at the household level, which is obtained by dividing total household consumption by the total amount of time in paid and unpaid work. This measure closely relates to the *household framework* since it provides a rate of substitution applicable to the household as a whole. Second, I use an individual hourly income measure which is constructed as the wage rate (when available) and otherwise the hourly profit from self-employment or agriculture, calculated as the total profit of the enterprise divided by the labor supply of all household members. In the main specification, I assume that individuals who are not involved in any income-generating activity can *not* adjust their labor supply upwards.[10] I allow for this in an extension.

[9] It is however possible to impute a wage for individuals who are not in wage- but self-employment. I will provide such a measure, following the procedure in Bardasi and Wodon (2010) or Gammage (2010). Due to the limited information available and the hence imprecise imputation, I will report this measure but not rely on it for the main part of the analysis.

[10] 53.22 percent of the working-age population in the sample is involved in some kind of income-generating activity.

3.4 Results

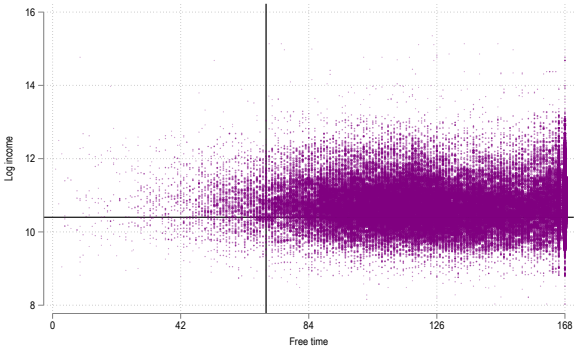
The following chapter presents the empirical results in three steps. I start by showing the prevalence of time and consumption poverty and how it develops over time. Then, I provide a more nuanced picture of poverty, by using the framework developed in chapter 3.2 to distinguish time and consumption poor individuals by whether they are trapped or not. I show which subgroups of the population are particularly affected and how this has changed over the years. Finally, I follow individuals over time and investigate transitions in and out of different poverty regimes.

3.4.1 Time and consumption poverty

Figure 3 plots individuals according to their log consumption level and their working time. Using the baseline specifications of time and consumption poverty, 22.97 percent of the sample are time poor while 24.76 percent of individuals live in households that are consumption poor. Approximately one out of twenty individuals is both time and consumption poor (5.14 percent).

While this pooled view on time and consumption poverty gives a first impression of the prevalence and the severity of the respective poverty types, it masks important dynamics. Figure 4 shows the incidence of time poverty, consumption poverty, being either time or consumption poor, and being

Figure 3: Time and consumption poverty - scatterplot

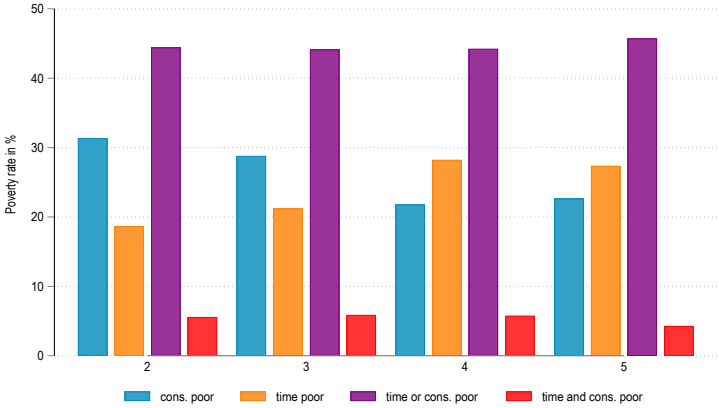


Notes: Total log consumption level (y-axis) versus free time (x-axis, 168 hours minus working time). Pooled across all waves. Poverty lines are indicated by black horizontal and vertical lines.

both. The latter two are equivalent to the union and the interaction approach mentioned earlier. In line with previous research and the official poverty estimates, the level of consumption poverty decreased by approximately ten percentage points between 2010 and 2016 (Daniels and Minot, 2015). In contrast to this, the level of time poverty increased from 18.13 percent, which is remarkably close to the time poverty headcount of 17.5 percent found by Bardasi and Wodon (2010) in Guinea, to 28.3 percent. The "severity" of time poverty, as measured by the time poverty gap and squared time poverty gap, increased accordingly (Table C.2). While there is some variation in the incidence of time poverty over the month of the year, seasonality

seems to play a minor role here (Figure B.1), in contrast to what Blackden and Wodon (2006) found for Malawi.[11] The incidence of time poverty is relatively stable across the different deciles of the income distribution, with the exception of the top ten percent of the income distribution, who face the lowest likelihood of being time poor (figure B.2).

Figure 4: Time and consumption poverty over time



Notes: Incidence of consumption poverty (■), time poverty (■), time *or* consumption poverty (■), as well as time *and* consumption poverty (■) across the survey waves 2 (2010/2011) to 5 (2015/2016).

As a consequence of these two opposing trends, the level of poverty measured as being either time or consumption poor remained relatively stable over the four survey waves,

[11] A more thorough examination would require to account for varying cropping activities and therefore seasons across Uganda.

suggesting that at least some of the decrease in consumption poverty came at the expense of longer working hours. In line with this, the number of dual poor, that is the consumption poor who were already working (too) long hours, did not decrease and remained stable. These patterns are similar for male and female respondents, despite the initially higher levels of time or dual poverty for females, and consumption poverty for males (figure B.3).

3.4.2 Poverty regimes

In the next step, I refine the poverty measurement in line with the framework provided in chapter 3.2. The goal here is to differentiate between time (consumption) poor individuals who have sufficient consumption (time) available to escape poverty, and those who would fall into consumption (time) poverty if they would try. While these groups have been given different names, I will simply refer to them as "trapped" whenever they are not able to escape both poverty dimensions simultaneously, given the assumptions made in the framework.[12] This distinction is important both descriptively, as it allows to draw conclusions about the "depth" of poverty, but also from a policy perspective,

[12]Vickery (1977) calls the group of consumption poor with sufficient time available the "hidden poor"; (Zacharias et al., 2018) call the group of time poor individuals who would fall into consumption poverty if they would reduce their excess working time the "hidden poor" and (Bardasi and Wodon, 2010) call the same group "the time poor with a consumption constraint".

as these groups will likely react very differently to policies.

Of the 22.94 percent of individuals who are time poor, 11.92 percent are trapped while 11.02 percent have a sufficiently high level of consumption to not become consumption poor if they would reduce their working time. Of the 24.72 percent of individuals who are consumption poor, 11.03 percent are trapped while 13.69 percent in theory have a sufficient amount of free time to escape consumption poverty, if they would or could use this time in a productive way. The ratio between trapped and non-trapped individuals remains relatively stable over time (see figure B.4).

There is considerable variation in who is time and/or consumption poor, as well as who is trapped and who isn't. Table 2 shows the prevalence of each type of poverty across different subgroups of the population, pooled across all waves. The last column shows the percentage change of individuals in any type of poverty over the four survey waves, from 2010/2011 to 2015/2016. In line with the previous findings, females are more likely to be dual poor or trapped in poverty compared to males. While there has been a considerable decrease in poverty for males, the levels have remained relatively stable for females. Although the poverty rates declined in rural and increased in urban areas, in particular for females (Table C.6), the rates for any type of poverty are still higher in rural areas. Interestingly, more than half of the time poor individuals living in rural areas

are trapped, while this only applies to less than a third of urban time poor individuals. As expected, households with more children and fewer adults are more likely to be dual poor and trapped, and less likely to be non-poor. For example, almost thirty percent of single adult households with at least two children are dual poor or trapped, while that only applies to eleven percent of households with two or more adults and less than two children. Poverty is highest when the household head is working in agricultural labor and lowest when employed as a paid laborer. However, agricultural laborers experienced the largest reduction in poverty.[13]

The interplay between poverty types and norms exhibits interesting patterns. I consider two dimensions of norms, domestic norms and economic norms. Domestic norms here measure the degree to which individuals prefer the wife to be a housewife and economic norms the degree to which individuals think that females should not have the same decision-making power with respect to working outside the households as males.[14] Poverty is highest in an environment with restrictive domestic norms but liberal economic norms. That is, an environment where the wife is expected to do the housework, but can engage in work outside the home as well. The amount of unpaid work for

[13]The results are similar when considering the household framework, see Table C.8.

[14]For more information on the creation of these variables, see Appendix 3.A.

Table 2: Poverty regimes

	Poverty regime						Any poverty
	(1) dual poor*	(2) cons. poor*	(3) time poor*	(4) cons. poor	(5) time poor	(6) not poor	(7) Δ (2010 - 2016)
Overall	5.14	5.89	6.78	13.69	11.02	57.48	-8.01
Sex							
female	7.04	5.85	8.8	11.92	13.06	53.33	-1.67
male	3.07	5.93	4.59	15.61	8.8	62	-15.45
Rural vs urban							
rural	6.36	7.15	7.95	16.49	9.72	52.33	-10.51
urban	1.56	2.17	3.37	5.49	14.83	72.59	8.5
Migration status							
never	5.15	6.99	5.33	16.68	8.03	57.83	-15.76
more than 5 years ago	5.96	5.64	8.91	12.58	11.84	55.07	-3.03
last 5 years	3.65	3.84	6.37	8.59	17.15	60.39	7.33
Marrital status							
single	3.38	5.39	3.7	14.73	8.5	64.29	-10.27
monogamous	6.22	6.29	9.48	12.32	13.48	52.22	-5.6
polygamous	8.04	6.48	9.57	14.25	12.34	49.32	-4.83
Age group							
16-25	3.48	5.45	3.32	15.26	7.24	65.24	-11.14
26-35	5.8	5.69	9.06	11.43	15.71	52.31	-8.1
36-45	7.78	6.63	9.81	13.16	12.73	49.88	2.45
46-55	5.93	6.34	9.24	13.11	11.57	53.82	-5.04
56-65	4.14	6.16	6.78	14.35	11.88	56.69	-17.08
Household composition							
Single adult, 0-1 children	1.16	1.41	5.06	3.24	24.07	65.06	-5.35
Single adult, 2+ children	8.54	6.58	11.48	10.64	17.93	44.82	-5.97
2 adult, 0-1 children	2.92	2.76	5.88	6.3	19.01	63.13	-7.04
2 adult, 2+ children	7.15	8.28	10.44	14.21	12.1	47.82	-6.08
2+ adult, 0-1 children	2.52	2.97	4.71	7.18	11.75	70.87	-9.12
2+ adult, 2+ children	5.43	6.4	5.81	17.16	7.77	57.43	-1.79
Occupation (head)							
Paid labor	3.35	4.45	4.02	7.57	18.26	62.36	-3.41
Self employment	4.59	3.49	8.02	8.02	23.9	51.98	-2.73
Agriculture	7.41	8.71	9.42	15.41	9.3	49.75	-15.54
Norms							
D-lib x E-lib	4.81	5.51	3.97	12.09	12.36	61.26	8.83
D-res x E-lib	7.04	7.5	8.13	17.05	10.6	49.68	.64
D-lib x E-res	4.08	6.2	7.57	14.55	10.01	57.6	-26.82
D-res x E-res	5.63	5.48	8.15	13.96	10.37	56.41	-24.72

Notes: Reports the share of individuals in the respective group that fall in either of the six poverty regimes. Column 7 reports the percentage change in any poverty, i.e. regimes 1 to 5, from wave 2 to wave 5. The stars indicate being trapped, i.e. not having a feasible time allocation to escape time and consumption poverty simultaneously.

females in such an environment is likely fixed at a high level, and any time in paid work to earn an income might come on top of that. The poverty rates are lowest when norms are liberal. In such a context, females might be able to substitute some of their time in unpaid work for time in paid work, while another household member, potentially the partner, takes on domestic tasks.

These findings are confirmed when estimating the cor-

relates of the respective poverty regimes (Table C.11). Females are more likely to be poor in most dimensions, and more likely to be trapped in time poverty when they are married. In contrast, males are less likely to be dual poor when married. Having children correlates with a higher likelihood of being consumption or dual poor, while the number of other adults in the household goes along with a lower likelihood of being time poor. These findings are also in line with previous literature on time poverty (Bardasi and Wodon, 2010; Zacharias et al., 2018).[15] Infrastructure such as access to piped water goes along with a lower likelihood of being time poor. The coefficients on norms are in line with previous results, highlighting the importance of considering economic and domestic norms jointly.

3.4.3 Mobility

An important dimension of poverty is its development over time. This is particularly true when the poverty measure hinges on assumptions with respect to adjustment opportunities, that might be realized and observed when following individuals over time. The main advantage of using the UNPS dataset is that it, in contrast to the previous literature on time or dual poverty, allows to follow individuals and households over time. This is important

[15] See also Table C.9 for an estimation with time poverty as the dependent variable.

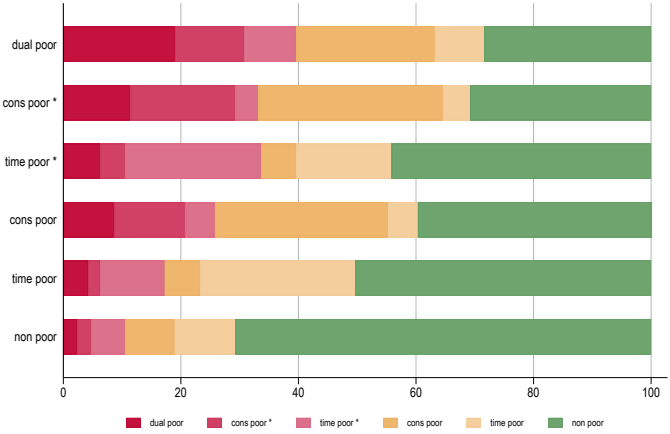
for several reasons. First, it allows to test the assumptions behind the framework laid out in chapter 3.2. The classification of individuals as trapped or non-trapped requires assumptions on feasible time-income allocations. While there are several reasons why these allocations and the necessary adjustments are in practice not always feasible, ranging from a lack of jobs over the inability to adjust working time on the intensive margin to varying returns to (working) time, the classification rests on the assumption that these adjustments are at least to some degree possible. They might, however, occur at a later point in time, when the options become feasible. Following individuals over time allows to observe these adjustments and test whether they are indeed more likely to take place for individuals that are not trapped compared to trapped.[16]

Figure 5 gives a first glance on these movements, by showing the likelihood of being in the respective poverty regimes in period *t* (y-axis) and period *t+1* (x-axis). Indeed the likelihood of transitioning out of any poverty, i.e. the green area, seems to be significantly lower for poor individuals who are trapped compared to those who are not. This is true both for consumption and for time poor individuals and these differences are around ten percentage points in size. In line with this, the likelihood of remaining

[16]This is, however, not a direct test, since the individual's situation, for example with respect to the household composition, likely changes between waves.

poor follows the opposite pattern. It is important to note that this is not because non-trapped individuals have a higher income or more free time compared to those who are trapped and are therefore more likely to escape poverty. If at all, trapped individuals seem to have worse prospects on the other dimension as well. That is, consumption poor individuals who are trapped already work longer hours than those who are not trapped, and time poor individuals who are trapped have slightly lower levels of income than those who are not trapped (Table C.10).

Figure 5: Transitions between poverty regimes



Notes: Share of households who are in the respective poverty regimes in period t-1 (y-axis) and t (x-axis).

These differences become smaller but persist over time when considering transitions from t to $t+2$ or $t+3$ (figure

B.9), or when considering transitions in the household framework (figure B.10).

The degree to which individuals are able to escape poverty is clearly an important indicator of how severe poverty is. A second important indicator is how sustainable these transitions out of poverty are. Do individuals remain non-poor, or are transitions out of poverty only transitory? Table 3 shows these two dimensions. Column (1) reports the likelihood of exiting poverty from one period to the next for each poverty regime. This likelihood is equivalent to the areas shaded in green in figure 5 and is lower for individuals who are poor along both dimensions or trapped in poverty. The subsequent columns show the likelihood of falling back into (any) poverty in the period after transitioning out of poverty (column 2), or in either of the two next two periods, given the individual is followed for two more periods (column 3).[17] The table shows that trapped individuals are not only less likely to exit poverty. Once they do, they are also significantly more likely to fall back into poverty. Less than half of dual poor individuals who exit poverty remain non-poor in the period after. This number is significantly higher for non-trapped poor individuals.

Overall this highlights that time or consumption poor

[17]Figure B.11 shows a complete picture of movements between the poverty regimes for all individuals who are followed over all four survey waves.

individuals who are trapped do not only show lower mobility out of poverty, but their transitions are also more likely to be temporary rather than permanent. The overall patterns are similar when considering alternative frameworks and measurements (Table C.14).

Table 3: Out of poverty mobility and persistence

	out	temporary	
	t	t+1	t+2
	(1)	(2)	(3)
dual poor	28.34	54.47	69.81
cons poor *	30.77	43.02	56.67
time poor *	44.12	46.78	62.9
cons poor	39.67	37.55	58.54
time poor	50.31	35.4	60.38

Notes: Mobility out of poverty (1) and the conditional probability of falling back into poverty in period t+1 (2) or t+2 (3), by poverty regime.

But poor individuals who are trapped are not only different with respect to their likelihood of escaping poverty and the persistence of this transition, they also differ in *how* they escape poverty. Following the conceptual framework laid out earlier, there are three two broad reasons why an individual could escape poverty. First, and most in

line with the framework, by adjusting his or her working time; second by changing the wage rate (the slope), for example by finding a new job; and third by changes in the amount of (necessary) unpaid work, for example via changes in the household composition. Table C.15 shows the correlates of transitions out of poverty. Reducing working time by more than ten hours correlates with a higher likelihood of escaping (mostly time) poverty, this is not true for individuals who are consumption poor and trapped. Changes in the household composition do not seem to affect out-of-poverty transitions strongly. This differs when considering transitions into poverty, where especially the birth of a child and the leaving of an adult household member correlate with a higher likelihood of becoming dual poor (Table C.16).

An important question is how all this compares to a simple, one-dimensional measure of consumption poverty. That is, what additional insights do we gain from this analysis? The first main insight is that consumption poor individuals can be assigned to one out of three regimes. They are either (i) consumption and time poor, (ii) consumption poor and at the risk of becoming time poor if they increase their labor supply, or (iii) consumption poor with sufficient time available to escape consumption poverty when increasing working hours. As shown previously, individuals in these categories differ in their characteristics, their likeli-

hood to transition out of poverty as well as the probability that this transition is sustainable. A non-trapped consumption poor individual has an eleven percentage points higher likelihood of escaping poverty compared to an individual that is also time poor (dual poor), and a 17 percentage points lower likelihood of falling back to poverty in one of the next two periods (Table 3). These differences are not only important descriptively but also have implications for policy. Individuals in either of the first two regimes are unlikely to escape poverty by increasing their labor supply. Programs offering or expanding employment will be biased towards those consumption poor individuals who do have the necessary capacities with respect to time. This will likely be households with more adults and fewer children, as well as males.

The second main insight that arises in comparison to a one-dimensional measure of consumption poverty, is the existence of time poor individuals, particularly those who are trapped. Zacharias et al. (2018) call this group the "hidden poor". These are individuals who are only not consumption poor because they work excessive hours. While one can argue that these should be considered as poor per se, it is also possible to back this claim with a look into the data. Individuals who are trapped in time poverty are twice as likely to fall into any kind of consumption poverty compared to individuals who are time poor but

not trapped (Table C.18). This might partly be explained by their lower resilience to shocks. One common coping strategy with the income loss induced by shocks such as rainfall or other weather-related shocks is to increase the labor supply in other areas. Individuals who are time constrained might find this more difficult. Table C.19 shows different strategies that households apply to cope with shocks. Indeed, individuals who are time poor (both trapped and not trapped) are less likely to adjust their labor supply and relatively more frequently rely on other coping strategies, such as help from friends, adjusting the diet, or selling assets.

Taken together, even without fully integrating measures of monetary and time poverty, one can gain insights from considering time constraints that allow to better understand movements in and out of monetary poverty.

3.4.4 Policy relevance

I have shown that both, the consumption level as well as the time available to the individual and the household matter for the capabilities of escaping poverty or, more generally, generating a higher income. The success of policies or programs that aim at alleviating poverty and increasing income will therefore likely be mediated by these capabilities, and programs that do not take into account

time constraints or capabilities are likely biased (Vickery, 1977; Burchardt, 2008).

For example, microcredits or cash grants to foster business activities will benefit recipients with sufficient available time, while recipients who are already working long hours (either in unpaid work, paid work, or both) will not benefit if the returns are not significantly higher than those of the existing work (or the wage of the domestic worker that might be hired to free up time in domestic work). Those recipients will only have the choice between not taking up the new work, or working even longer hours, making them time poor. The same is true for employment programs.[18]

While a framework to account for time and consumption poverty therefore yields important insights, in particular in identifying severe poverty and vulnerable subgroups that do not appear as such in traditional poverty accounts, the question remains how applicable it is in practice.

The first point to note is that the data requirements are relatively modest compared to more extensive consumption modules in household surveys. However, it is challenging to obtain objective measures of time use. Time use is usually self-reported and in a setting with high self-employment and low formalization, there do not seem to be feasible

[18]Somehow more promising are ultra-poor graduation programs, that follow a more holistic approach (Matin, Rabbani and Sulaiman, 2008). While these have been found to decrease monetary poverty, there is little evidence that these programs affect those with time constraints, and more broadly, the prevalence of time poverty.

alternatives to this. Time-based poverty measures should therefore likely not be used as a sole and binary measure of who is poor and who is not. Rather should insights from analyses, such as the one preceding this discussion, be used when designing policies or programs. Even without a clear definition of who is time or dual poor, it is clear that several groups, such as single adult households with several children and more generally females, are more likely to suffer from time constraints. When designing anti-poverty programs and policies, these constraints should and can be taken into account.

The framework in this paper intentionally refrained from the temptation of aggregating several poverty dimensions into a single number, partially because which angle is the most informative will depend on the question and policy in mind. However, if a binary measure of poverty based on both consumption and time should be needed, the most agreeable candidate seems to be a measure along the lines of Zacharias et al. (2018), who define those as poor who are either consumption poor or would become consumption poor if they would reduce their time deficit. Other than Zacharias et al. (2018), such a measure ideally is based on the options available to the individual rather than the household, also acknowledging the fact that households in many African countries are a rather temporary construct and adjustment options best thought of at an individual

level (Zacharias, 2011).[19]

3.5 Conclusion

This paper aims to integrate measures of time and consumption poverty, to test this measure, and to report on the new insights arising from this.

Overall, poverty declined in Uganda during the period from 2010 to 2016, but to a much lesser degree than a one-dimensional measure of monetary poverty would suggest. This is because some of the decline has been offset by an increase in time poverty, experienced mostly by females. Factors beyond the sex that correlate with time poverty are household composition and infrastructure. In addition, norms on female labor force participation and domestic work seem to matter.

I provided a framework to jointly analyze time and consumption poverty, following a very simple intuition: An individual who faces the decision whether to work too long hours or have too little to eat should be considered poor no matter which of the two options it "decides" for. This stands in contrast to monetary measures of poverty which omit the first group. The framework then allows to dis-

[19] There are several options through which the individual might be able to adjust time, either by working more or less according to the wage rate or consumption productivity or by hiring a domestic worker to substitute unpaid work, as in Zacharias et al. (2018).

tinguish population groups by the severity of poverty, and their chances to escape poverty. Both time and monetary poor individuals are less likely to escape poverty when they are trapped, that is when they can only escape the poverty dimension they are poor in by becoming poor along the other dimension. This hints at the existence of a particularly vulnerable group that is trapped in poverty and only able to escape poverty temporarily or at the expense of becoming poor along the other dimension.

This analysis can also be useful as a complement to more traditional consumption poverty measures. The likelihood of individuals escaping consumption poverty strongly varies by their amount of disposable time. This is not only interesting descriptively but also bears important implications for policy design. For example, providing trapped or dual poor individuals with programs that require time (new job, grants to start or expand business) is likely not effective or at least biased towards individuals who are not trapped.

Future research could provide more evidence on how the efficiency of programs can be predicted and potentially improved by incorporating time and income capacities into the design. Other promising areas for better understanding time poverty and its relationship with and impact on consumption poverty are the intra-household dynamics as well as the connection between time poverty and norms.

Appendix

3.A Data and variables

Poverty measures

a **Time poverty:** Indicator variable equal to 1 if the sum of working time (paid and unpaid work) exceeds a certain threshold. In the main specification, this threshold is set to 70 hours per week. In two additional specifications,

- the absolute poverty threshold is increased to 84 hours per week (12 hours per day).
- I compute a measure of relative time poverty, where I define those as poor who work more than 150 percent of median working time in the adult population (age 16 to 64) in the respective survey wave. This relative time poverty threshold lies between 57 and 70.5 hours.

b **Consumption poverty:** Indicator variable equal to 1 if the adult equivalent level of consumption falls below the official consumption poverty (see Table C.4). Poverty lines are adjusted monthly, by region and rural/urban. In two additional specifications, I use the World bank poverty lines of USD 3.2 a day and USD 1.9 a day for extreme poverty.

c **Poverty regimes:** Two-dimensional poverty measure, combining consumption and time poverty. Individuals can be either (1) poor in both dimensions, (2) consumption poor and non-time poor (trapped), (3) non-consumption poor and time poor (trapped), (4) consumption poor and non-time poor, (5) non consumption poor and time poor, (6) poor in neither dimension.

- **Individual framework** An individual is trapped if the individual is not able to escape both poverty dimensions simultaneously by re-adjusting working his or her time, taking the decisions of other household members as given.
- **Household framework** An individual is trapped if the household is not able to escape both poverty dimensions simultaneously by re-adjusting the working time of its members.

Rate of substitution

a **Consumption productivity:** Value of total household consumption divided by number of household members in per-adult equivalents.

b **Hourly return:** Either (i) wage from wage-employment, (ii) profits from household business, or (iii) profits from the sale of crops and livestock (produce), where (ii)

and (iii) are weighted by the time-share in the respective activity relative to all other household members, times total profit.

c **Domestic worker:** Wage rate of domestic workers, which is set to 600 Ugandan Shilling per hour, based on the approximate median wage of individuals within the survey.

Norms

Norms are obtained from the *Social Institution and Gender Index* (SIGI), which was carried out by the OECD and UBOS in 2013 (OECD, 2015). The two questions used in this paper are

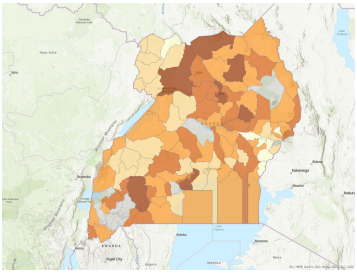
a **Domestic:** "Most men would prefer their wives to be housewives instead of going out to get a job."

b **Work outside home:** "Women and men should have the same decision-making power regarding work outside home."

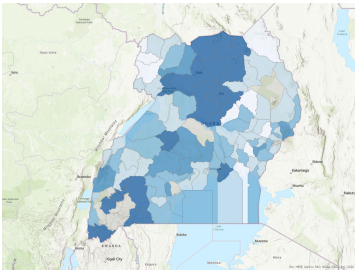
Answers are given on a scale from 1 ("Strongly agree") to 5 ("Strongly disagree"). I calculate the share of respondents who agree (answers 1 and 2) with the first statement disagree (answers 4 and 5) with the second statement and within a district (plotted below in figure A.1). Therefore, the higher share can be interpreted as more restrictive gender-specific norms. I turn this into an indicator that takes the value 1 if the share of respondents

that agree/disagree within a district is above the median.

Figure A.1: Norms



(a) Domestic work

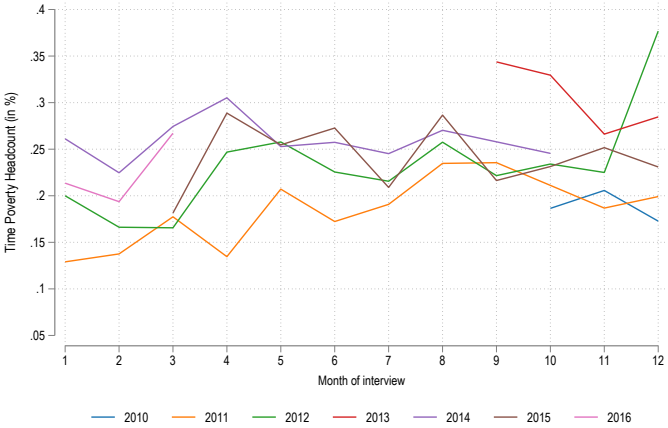


(b) Work outside home

Notes: Share of respondents who agree with statement a and disagree with statement b. Darker colors show higher disagreement, gray areas represent missing data.

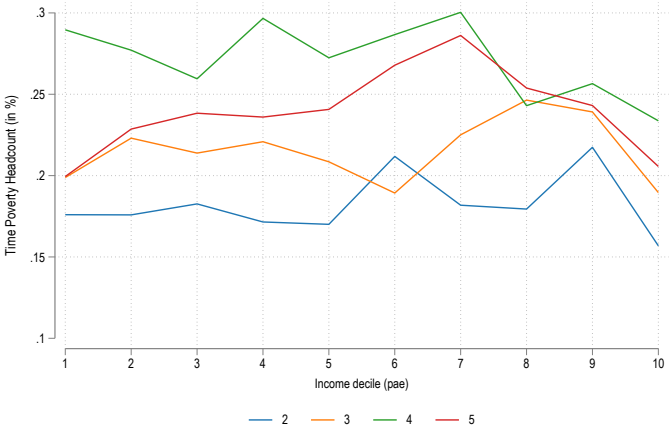
3.B Additional figures

Figure B.1: Time poverty and seasonality



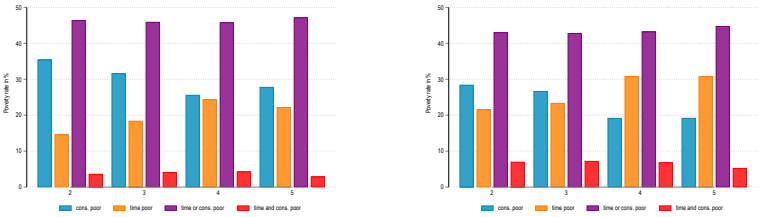
Notes: Incidence of time poverty by month (if month contains at least 50 observations).

Figure B.2: Time poverty by decile of income distribution



Notes: Time poverty headcount over the income distribution, from the lowest decile (1) to the highest (10). Income measured as per-adult equivalent household income.

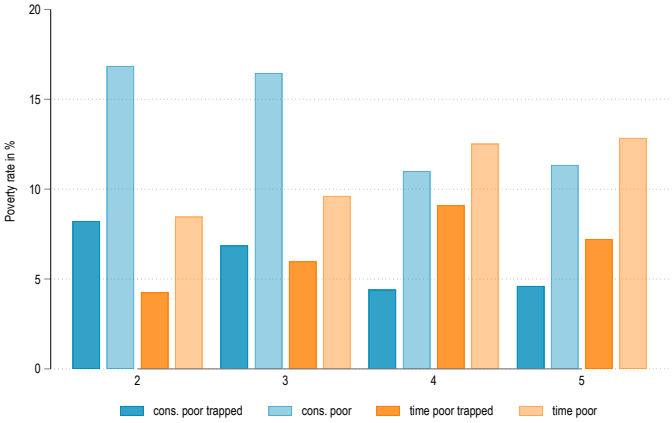
Figure B.3: Time and consumption poverty over time and by gender



(a) Male (b) Female

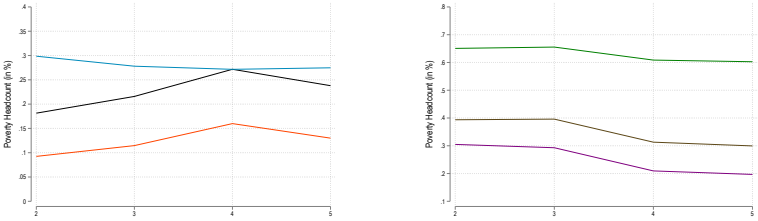
Notes: Incidence of time poverty (■), consumption poverty (■), time *or* consumption poverty (■), as well as time *and* consumption poverty (■) across the survey waves 2 to 5.

Figure B.4: Trapped vs non-trapped consumption and time poor



Notes: Share of individuals who are trapped and non-trapped in time poverty (■) and consumption poverty (■) over time.

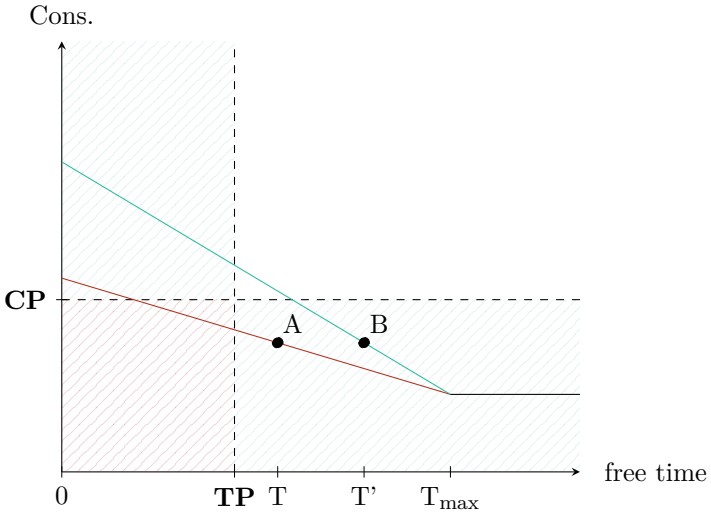
Figure B.5: Alternative measures of poverty by wave



(a) Time poverty (b) Monetary poverty

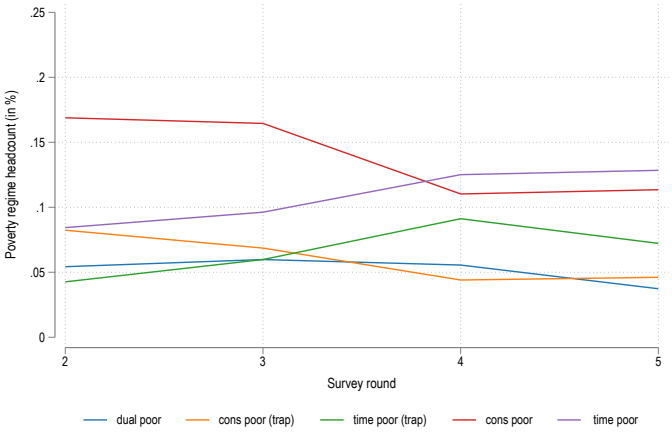
Notes: The figure on the left shows the incidence of time poverty, measured as working more than 70 hours per week (■), 84 hours per week (■) or 150 percent of the median working time (■). The figure on the right shows the incidence of monetary poverty, measured as having a household income below the consumption poverty line (■), below USD 1.9 (■) and below USD 3.2 (■).

Figure B.6: Poverty regimes, individual adjustment



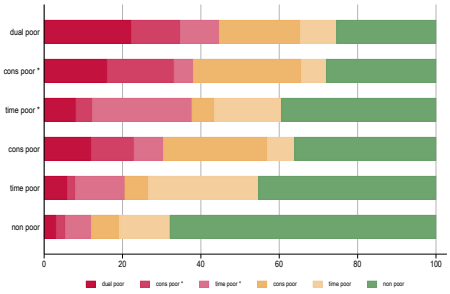
Notes: The y-axis represents the level of consumption and the x-axis free time. Point T marks the maximum available time. The two dashed lines represent the respective poverty thresholds, below which an individual is considered time poor (TP) or consumption poor (CP). In contrast to figure 1, the minimum consumption level is given by the income of other household members. This is the case if the individual reduces its labor supply to the point T.

Figure B.7: Poverty regimes over time

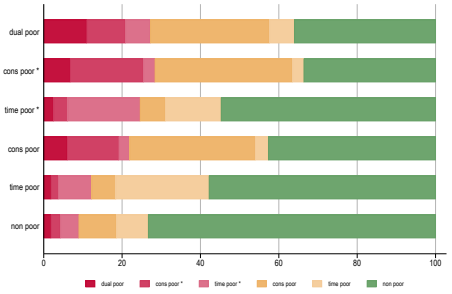


Notes: Incidence of poverty category by survey wave. Omitting individuals in non-poor households.

Figure B.8: Mobility in and out of poverty (by sex)



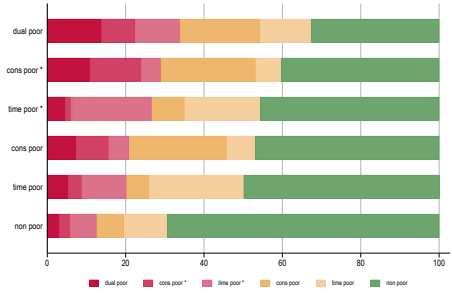
(a) females



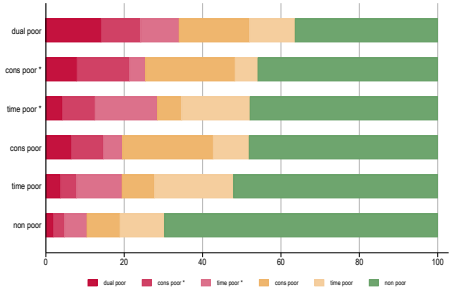
(b) males

Notes: Share of individuals who are in the respective poverty regimes in period t (y-axis) and transition into the respective poverty regime in t+1, by sex.

Figure B.9: Mobility in and out of poverty, expanded



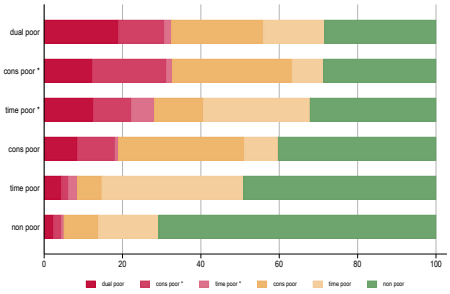
(a) t+2



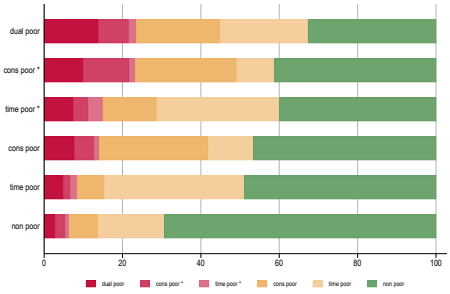
(b) t+3

Notes: Share of individuals who are in the respective poverty regimes in period t (y-axis) and transition into the respective poverty regime in t+2 and t+3 (x-axis).

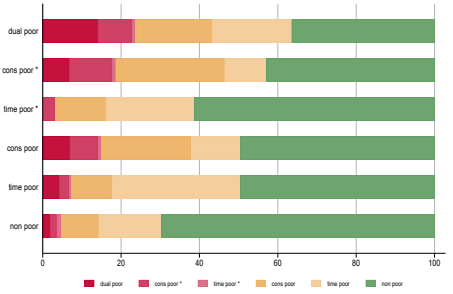
Figure B.10: Mobility in and out of poverty (household framework), expanded



(a) t+1



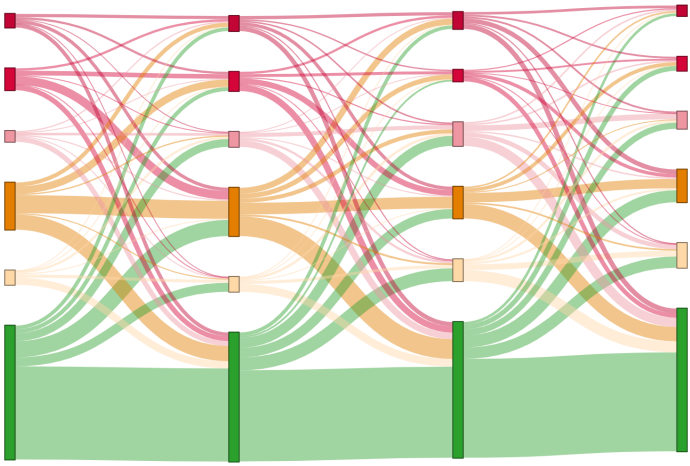
(b) t+2



(c) t+3

Notes: Share of individuals who are in the respective poverty regimes in period t (y-axis) and transition into the respective poverty regime in t+1, t+2 and t+3 (x-axis).

Figure B.11: Poverty transitions, sankey diagram



Notes: Transitions between different poverty regimes from wave 2 (left) to wave 5 (right). From top to bottom, dual poor (■), consumption poor trapped (■), time poor trapped (■), consumption poor (■), time poor (■), not poor (■). The sample is restricted to individuals who are followed over all waves and of working age in all four survey years (n=3435).

3.C Additional tables

Table C.1: Time use statistics

	Waves			
	2	3	4	5
Self-employment	4.821	4.786	6.334	6.102
	(15.054)	(15.518)	(17.595)	(17.040)
Wage emplyoment	4.990	5.423	6.971	6.705
	(15.044)	(16.470)	(17.599)	(17.316)
Farming and livestock	7.246	8.349	10.641	10.050
	(11.672)	(12.243)	(13.291)	(12.726)
Paid, total	21.877	22.530	23.998	22.869
	(22.399)	(22.884)	(23.004)	(22.713)
Firewood	1.073	1.250	1.412	1.009
	(2.048)	(2.499)	(3.081)	(2.127)
Water	2.856	2.744	2.536	2.018
	(5.079)	(4.788)	(4.592)	(3.509)
Construction and repairs	0.221	0.135	0.242	0.129
	(1.949)	(1.550)	(1.879)	(1.168)
Food production	0.217	0.380	0.551	0.779
	(1.293)	(1.805)	(2.572)	(3.342)
Handicraft	0.120	0.129	0.077	0.065
	(1.316)	(1.616)	(0.994)	(0.930)
Agriculture	6.008	7.260	9.863	8.798
	(10.624)	(11.899)	(12.809)	(12.269)
Hunt	0.128	0.147	0.194	0.205
	(2.181)	(1.951)	(2.492)	(2.465)
Domestic	8.717	10.320	9.677	9.670
	(10.891)	(11.139)	(11.606)	(11.129)
Unpaid, total	19.340	22.334	24.548	22.673
	(20.309)	(20.689)	(23.455)	(22.029)
Total	41.217	44.864	48.546	45.542
	(31.534)	(32.173)	(34.808)	(33.584)

Notes: Hours per week spent on the respective activity in the respective survey wave for the adult population (age 16 or above). Standard deviations in parentheses.

Table C.2: Time Poverty headcount and gap, by wave

	Incidence				Poverty gap				Poverty gap, sq.			
	2	3	4	5	2	3	4	5	2	3	4	5
All	.14	.16	.21	.18	2.79	3.4	4.68	3.8	100.45	126.34	174.29	135.49
Male	.1	.13	.15	.12	1.78	2.37	2.81	2.23	61.93	82.05	94.25	77.54
Female	.18	.2	.26	.24	3.75	4.37	6.48	5.32	136.89	168.17	251.23	191.75
Urban	.11	.15	.18	.16	2.29	2.96	3.81	3.19	88.74	100.64	137.95	105.29
Rural	.15	.17	.22	.19	2.95	3.52	4.98	4	104.08	133.59	186.97	145.2

Notes: The time poverty gap is calculated as the distance to the time poverty threshold of 70 hours.

Table C.3: Time Poverty headcount, alternative measures

		by wave			
		2	3	4	5
Time poor (70 hrs)	.23	.18	.22	.27	.24
Time poor (84 hrs)	.13	.09	.11	.16	.13
Time poor (150%)	.28	.3	.28	.27	.27
Consumption poor	.25	.3	.29	.21	.2
Consumption poor (below 1 USD)	.2	.25	.23	.15	.15
Consumption poor (below 1.9 USD)	.35	.38	.39	.31	.3

Table C.4: Per-adult equivalence scale

Age	Factor	
group	male	female
0	0.273	
1	0.383	
2	0.45	
3-4	0.517	
5-6	0.617	0.584
7-9	0.700	0.600
10-11	0.733	0.650
12-13	0.800	0.700
14-15	0.883	0.717
16-17	0.950	0.717
18-29	1.000	0.808
30-59	0.967	0.800
60 +	0.817	0.717

Notes: Per-adult equivalence scale used in the official poverty statistics in Uganda.

Table C.5: Poverty regimes, alternative measurement

	Poverty regime					
	(1) dual poor*	(2) cons. poor*	(3) time poor*	(4) cons. poor	(5) time poor	(6) not poor
Hourly income						
individual (baseline)	5.14	7.94	5.82	9.89	13.79	57.41
+ substitution	5.14	2.83	5.53	15	14.08	57.41
time poverty = 84 hours	2.77	3.47	6.18	6.41	15.81	65.36
cons. poverty = 1.9 USD	3.4	10.44	2.64	9.14	9.51	64.88
household	5.21	4.83	2.16	13.05	16.56	58.19
Consumption productivity						
household (baseline)	5.14	3.14	4.97	14.69	14.65	57.41
time poverty = 84 hours	2.77	.34	4.19	9.55	17.8	65.36
cons. poverty = 1.9 USD	3.4	3.69	1.46	15.89	10.68	64.89
individual	5.14	3.41	10.07	14.42	9.55	57.41
+ individual (if working)	5.14	3.41	11.31	14.42	8.3	57.41

Notes: The stars indicate being trapped, i.e. not having a feasible time allocation to escape time and consumption poverty simultaneously. The measures follow the discussion in chapter 3.3. The first set of measures is based on the hourly income of individuals, where the baseline scenario refers to the individual adjusting, the substitution scenario refers to the possibility of hiring domestic workers to substitute time in unpaid work for time in paid work, the following scenarios refer to a different poverty line (time poor when working more than 84 hours a week and consumption poor if living of less than USD 1.9 per day), and the household scenario refers to the whole household adjusting. The second set of measures is based on a measure of consumption productivity, wherein the baseline scenario the whole household adjusts. The additional scenarios are in line with the ones mentioned above. The last scenario restricts the adjustment to household members that are already working for a pay.

Table C.6: Poverty regimes, females

	Poverty regime						Any poverty
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor	not poor	Δ (2010 - 2016)
Overall	7.04	10.68	5.79	11.18	11.99	53.33	-1.67
Rural vs urban							
rural	8.76	12.57	6.99	9.61	14.42	47.65	-4.64
urban	2.05	5.2	2.28	15.75	4.92	69.79	14.21
Migration status							
never	7.62	7.9	6.14	8.57	14.71	55.06	-7.16
more than 5 years ago	7.8	12.81	6.58	11.24	12.04	49.53	1.44
last 5 years	4.71	11.02	3.72	15.14	7.6	57.8	7.96
Marrital status							
single	4.45	5.77	5.16	9.23	13.23	62.16	-5.63
monogamous	8.52	14.68	6.19	12.89	10.49	47.23	.49
polygamous	10.92	14.91	6.69	12.54	12.31	42.64	6.16
Age group							
16-25	4.49	5.65	4.82	7.62	13.18	64.25	-8.8
26-35	8.23	13.84	5.94	14.35	10.8	46.83	1.68
36-45	10.63	14.27	6.79	13.47	11.26	43.58	5.99
46-55	7.86	14.54	6.78	11.97	10.94	47.92	6.85
56-65	5.87	10.54	5.95	12.07	13.19	52.37	-10.43
Household composition							
Single adult, 0-1 children	1.5	10.17	1.17	22.67	3.17	61.33	6.22
Single adult, 2+ children	9.54	15.79	5.92	15.3	9.54	43.91	.3
2 adult, 0-1 children	4.05	10.71	2.3	18.41	5.63	58.89	.53
2 adult, 2+ children	9.49	15.22	7.89	11.71	12.47	43.21	3.3
2+ adult, 0-1 children	2.88	8.45	2.42	13.11	6.33	66.82	5.2
2+ adult, 2+ children	7.61	8.81	6.53	8.13	14.95	53.98	1.08
Occupation (head)							
Paid labor	4.46	6.12	4.08	24.32	6.42	54.61	-.36
Self employment	6.85	10.59	3.67	27.78	7.16	43.94	4.12
Agriculture	9.62	14.41	8.21	9.44	12.78	45.54	-12.09
Norms							
D-lib x E-lib	6.69	7.12	5.16	12.23	11.03	57.78	14.2
D-res x E-lib	10.14	13.42	7.26	9.87	14.75	44.56	3.19
D-lib x E-res	5.7	11.22	6.65	9.89	12.71	53.83	-20.66
D-res x E-res	7.27	12.4	5.43	11.34	11.7	51.87	-12.11

Notes: The stars indicate being trapped, i.e. not having a feasible time allocation to escape time and consumption poverty simultaneously.

Table C.7: Poverty regimes, males

	Poverty regime						Any poverty
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor	not poor	Δ (2010 - 2016)
Overall	3.07	4.96	5.88	8.43	15.66	62	-15.45
Rural vs urban							
rural	3.77	5.61	7.18	7.19	18.87	57.39	-17.48
urban	1.01	3.03	2.02	12.14	6.14	75.67	2.5
Migration status							
never	3.55	5.05	7.41	6.28	18.08	59.63	-21.74
more than 5 years ago	2.82	5.3	3.91	9.79	13.64	64.54	-11.2
last 5 years	1.88	3.93	3.93	15.18	10.36	64.71	4.51
Marrital status							
single	2.3	3.08	5.47	6.3	16.42	66.43	-15.11
monogamous	3.73	6.99	6.33	10.97	14.37	57.62	-12.84
polygamous	3.93	5.79	6.05	8.18	17.17	58.88	-23.2
Age group							
16-25	2.5	2.94	5.92	4.97	17.45	66.21	-13.34
26-35	2.84	6.57	5.25	14.05	12.33	58.96	-19.26
36-45	4.58	6.9	6.47	9.84	15.28	56.94	-4.78
46-55	3.78	6.07	5.73	8.37	15.64	60.4	-20.02
56-65	2.04	5.15	6.22	8.75	15.94	61.9	-27.02
Household composition							
Single adult, 0-1 children	.83	4.63	.99	20.83	3.97	68.76	-18.22
Single adult, 2+ children	2.83	8.49	7.55	11.32	19.81	50	-38.1
2 adult, 0-1 children	1.71	5.64	3.25	14.7	7.01	67.69	-17.78
2 adult, 2+ children	4.39	7.89	8.61	9.5	16.39	53.22	-18.09
2+ adult, 0-1 children	2.19	3.05	3.48	8.67	7.97	74.64	-23.28
2+ adult, 2+ children	3.18	4.16	6.19	5.94	19.53	60.99	-4.43
Occupation (head)							
Paid labor	2.86	3.89	4.59	14.79	8.11	65.77	-3.42
Self employment	2.66	7.45	3.23	18.97	8.86	58.83	-14.43
Agriculture	4.38	6.47	9.25	5.22	19.17	55.51	-20.71
Norms							
D-lib x E-lib	2.71	3.17	5.76	9.79	13.42	65.15	2.53
D-res x E-lib	3.7	5.84	7.69	7.98	19.61	55.19	-1.85
D-lib x E-res	2.35	5.78	5.51	8.06	16.7	61.59	-33.42
D-res x E-res	3.86	5.69	5.48	7.24	16.46	61.28	-38.66

Notes: The stars indicate being trapped, i.e. not having a feasible time allocation to escape time and consumption poverty simultaneously.

Table C.8: Poverty regimes, household framework

	Poverty regime						Any poverty
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor	not poor	Δ (2010 - 2016)
Overall	5.14	3.12	4.96	14.68	14.61	57.48	-8.01
Sex							
female	7.04	4.75	3.82	17.12	13.96	53.33	-1.67
male	3.07	1.36	6.21	12.03	15.33	62	-15.45
Rural vs urban							
rural	6.36	3.75	6.19	13.92	17.45	52.33	-10.51
urban	1.56	1.29	1.36	16.91	6.3	72.59	8.5
Migration status							
never	5.15	2.18	6.1	11.17	17.56	57.83	-15.76
more than 5 years ago	5.96	3.8	4.46	16.94	13.76	55.07	-3.03
last 5 years	3.65	4.24	3.34	19.29	9.09	60.39	7.33
Marrital status							
single	3.38	1.6	4.32	10.6	15.81	64.29	-10.27
monogamous	6.22	4.54	5.4	18.41	13.21	52.22	-5.6
polygamous	8.04	4.18	6.02	17.72	14.72	49.32	-4.83
Age group							
16-25	3.48	1.99	4.56	8.57	16.16	65.24	-11.14
26-35	5.8	4.35	5.43	20.43	11.69	52.31	-8.1
36-45	7.78	3.88	5.86	18.67	13.93	49.88	2.45
46-55	5.93	3.36	4.58	17.44	14.87	53.82	-5.04
56-65	4.14	3.26	4.18	15.4	16.33	56.69	-17.08
Household composition							
Single adult, 0-1 children	1.16	4.98	1	24.15	3.65	65.06	-5.35
Single adult, 2+ children	8.54	8.68	5.74	20.73	11.48	44.82	-5.97
2 adult, 0-1 children	2.92	4.32	1.69	20.58	7.37	63.13	-7.04
2 adult, 2+ children	7.15	5.41	8.06	17.13	14.43	47.82	-6.08
2+ adult, 0-1 children	2.52	1.94	1.61	14.52	8.54	70.87	-9.12
2+ adult, 2+ children	5.43	1.86	5.27	11.72	18.3	57.43	-1.79
Occupation (head)							
Paid labor	3.35	1.36	3.51	20.91	8.52	62.36	-3.41
Self employment	4.59	2.34	3.83	29.58	7.68	51.98	-2.73
Agriculture	7.41	4.67	6.3	14.05	17.82	49.75	-15.54
Norms							
D-lib x E-lib	4.81	2.55	4.63	13.78	12.97	61.26	8.83
D-res x E-lib	7.04	4.71	6.47	14.02	18.08	49.68	.64
D-lib x E-res	4.08	2.8	5.17	14.77	15.57	57.6	-26.82
D-res x E-res	5.63	3.25	4.33	15.28	15.12	56.41	-24.72

Notes: Reports the share of individuals in the respective group that fall in either of the six poverty regimes. Column 7 reports the percentage change in any poverty, i.e. regimes 1 to 5, from wave 2 to wave 5. The stars indicate being trapped, i.e. not having a feasible time allocation to escape time and consumption poverty simultaneously. The rate of substitution between income and free time here is calculated using the *consumption productivity* measure introduced in section 3.3.

Table C.9: Correlates of time Poverty

	All			Sex		Rural	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	base	+ hh	+ vill	male	female	urban	rural
Female	0.828***	0.831***	0.896***	0.000	0.000	0.779***	0.941***
	(0.032)	(0.032)	(0.039)	(.)	(.)	(0.085)	(0.044)
Rural	-0.022	0.110**	0.099	0.142	0.064	0.000	0.000
	(0.039)	(0.047)	(0.060)	(0.094)	(0.079)	(.)	(.)
Age	0.045***	0.045***	0.051***	0.040**	0.065***	-0.006	0.064***
	(0.008)	(0.009)	(0.010)	(0.018)	(0.013)	(0.024)	(0.012)
Age, sq.	-0.001***	-0.001***	-0.001***	-0.001**	-0.001***	0.000	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paid work	3.707***	3.717***	3.535***	3.775***	3.455***	3.882***	3.407***
	(0.123)	(0.124)	(0.141)	(0.337)	(0.156)	(0.287)	(0.162)
Married	0.125***	0.113***	0.133***	-0.066	0.227***	0.053	0.153***
	(0.039)	(0.040)	(0.049)	(0.096)	(0.059)	(0.104)	(0.057)
Primary	-0.006	-0.027	-0.008	0.053	-0.006	-0.077	0.012
	(0.037)	(0.037)	(0.045)	(0.069)	(0.061)	(0.103)	(0.051)
Secondary	-0.027	-0.059	-0.026	0.089	-0.148	-0.064	-0.030
	(0.065)	(0.066)	(0.082)	(0.109)	(0.125)	(0.143)	(0.103)
Tertiary and above	-0.452***	-0.537***	-0.535***	-0.511***	-0.520***	-0.666***	-0.457***
	(0.065)	(0.069)	(0.088)	(0.121)	(0.130)	(0.136)	(0.123)
Own child (0-3)	-0.006	-0.008	0.016	0.029	0.055	0.020	0.014
	(0.038)	(0.041)	(0.051)	(0.084)	(0.065)	(0.119)	(0.056)
Nb adults (hh)		-0.025***	-0.026**	-0.020	-0.033**	-0.054**	-0.015
		(0.009)	(0.011)	(0.018)	(0.014)	(0.023)	(0.013)
Nb young children (hh)		-0.009	-0.023*	-0.020	-0.021	-0.054*	-0.018
		(0.010)	(0.012)	(0.020)	(0.016)	(0.031)	(0.014)
Nb older children (hh)		-0.034*	-0.046**	-0.026	-0.067**	-0.098*	-0.036
		(0.018)	(0.022)	(0.036)	(0.029)	(0.052)	(0.025)
Access to piped water (hh)		-0.248***	-0.228***	-0.077	-0.339***	-0.239**	-0.126
		(0.069)	(0.088)	(0.129)	(0.118)	(0.106)	(0.175)
Primary education (vill)			0.142***	0.223***	0.096*	-0.164*	0.212***
			(0.041)	(0.067)	(0.053)	(0.095)	(0.046)
Health facility (vill)			0.030	0.052	0.012	0.397***	-0.083
			(0.044)	(0.068)	(0.057)	(0.087)	(0.051)
Market (vill)			-0.090**	-0.033	-0.127**	-0.094	-0.085*
			(0.042)	(0.066)	(0.055)	(0.091)	(0.048)
Observations	29309	29243	19711	9432	10226	4662	15032
Mean	0.23	0.23	0.23	0.16	0.29	0.20	0.24
Controls							
Individual	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household	No	Yes	Yes	Yes	Yes	Yes	Yes
Village	No	No	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable measures the incidence of time poverty, defined as working more than 70 hours per week. Estimated with a logit model. Control variables that are included but not shown: Survey wave, education, disability (on hh level), electricity access, number of senior residents (above 64), use of firewood, and community size. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$.

Table C.10: Consumption and working time by poverty regime

	Time		Consumption	
	Mean	SD	Mean	SD
	(1)	(2)	(3)	(4)
dual poor	91.44	18.95	760.93	2818.52
time poor *	108.97	21.31	2672.82	13020.93
cons poor *	34.37	21.45	636.97	2640.98
time poor	87.46	14.25	2768.12	9635.04
cons poor	24.64	19.5	612.97	1130.01

Notes: Columns (1) and (2) report the mean working time and its standard deviation, respectively. Columns (3) and (4) report mean income in thousand UGX and its standard deviation, respectively.

Table C.11: Correlates of poverty regimes

	Poverty regime				
	(1)	(2)	(3)	(4)	(5)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Female	0.938***	0.101*	0.901***	-0.287***	0.655***
	(0.066)	(0.057)	(0.058)	(0.040)	(0.045)
Rural	0.264**	0.073	0.452***	0.312***	-0.088
	(0.111)	(0.097)	(0.090)	(0.065)	(0.061)
Age	0.012	-0.064***	0.062***	-0.044***	0.019
	(0.017)	(0.015)	(0.015)	(0.011)	(0.012)
Paid work	3.825***	3.892***	4.476***	-0.601***	3.381***
	(0.307)	(0.281)	(0.380)	(0.045)	(0.151)
Married	-0.034	-0.213***	0.278***	-0.094	0.009
	(0.081)	(0.078)	(0.073)	(0.060)	(0.055)
Primary	-0.697***	-0.754***	-0.030	-0.677***	-0.058
	(0.079)	(0.075)	(0.063)	(0.056)	(0.053)
Secondary and above	-1.466***	-1.276***	-0.336***	-0.932***	-0.320***
	(0.166)	(0.134)	(0.096)	(0.084)	(0.068)
Recent migrant	-0.358***	-0.389***	0.044	-0.247***	0.259***
	(0.096)	(0.091)	(0.076)	(0.064)	(0.055)
Own child (0-3)	0.138*	-0.042	-0.065	0.055	-0.067
	(0.078)	(0.078)	(0.070)	(0.059)	(0.061)
Nb adults (hh)	-0.039**	-0.079***	-0.020	-0.050***	-0.053***
	(0.019)	(0.017)	(0.016)	(0.011)	(0.013)
Nb young children (hh)	0.164***	0.162***	0.110***	0.161***	-0.074***
	(0.018)	(0.016)	(0.017)	(0.011)	(0.016)
Nb older children (hh)	0.187***	0.205***	0.010	0.211***	-0.041
	(0.033)	(0.030)	(0.032)	(0.021)	(0.027)
Access to piped water (hh)	-1.943***	-2.015***	-0.221	-1.084***	-0.271***
	(0.510)	(0.458)	(0.144)	(0.172)	(0.082)
D-res x E-lib	0.265***	0.155**	0.711***	0.174***	0.210***
	(0.083)	(0.079)	(0.084)	(0.057)	(0.067)
D-lib x E-res	-0.512***	-0.270***	0.440***	-0.073	-0.112*
	(0.089)	(0.077)	(0.080)	(0.054)	(0.061)
D-res x E-res	-0.112	-0.279***	0.509***	-0.059	-0.040
	(0.080)	(0.077)	(0.077)	(0.054)	(0.060)
Observations	26067				
Mean	0.57				

Notes: The dependent variable measures the poverty regime, estimated with a multinominal logit model. Control variables that are included but not shown are survey wave, education, disability (on hh level), electricity access, number of senior residents (above 64), use of firewood, and community size. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$.

Table C.12: Correlates of poverty regimes (by sex)

	female					male				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Rural	0.322**	0.053	0.555***	0.324***	-0.134*	0.106	0.109	0.268*	0.309***	-0.013
	(0.135)	(0.133)	(0.116)	(0.096)	(0.081)	(0.197)	(0.143)	(0.145)	(0.088)	(0.094)
Age	0.031	-0.044**	0.103***	-0.048***	0.037**	-0.021	-0.097***	0.008	-0.051***	0.006
	(0.021)	(0.021)	(0.020)	(0.016)	(0.016)	(0.033)	(0.023)	(0.027)	(0.016)	(0.020)
Married	0.065	-0.182*	0.404***	-0.142*	0.073	-0.513***	-0.315**	0.014	-0.075	-0.074
	(0.093)	(0.097)	(0.087)	(0.077)	(0.068)	(0.193)	(0.142)	(0.150)	(0.101)	(0.103)
Primary	-1.103***	-1.010***	0.019	-1.001***	-0.091	-0.091	-0.529***	-0.107	-0.462***	-0.014
	(0.110)	(0.118)	(0.081)	(0.092)	(0.071)	(0.120)	(0.100)	(0.104)	(0.072)	(0.082)
Secondary and above	-1.741***	-1.587***	-0.372***	-1.121***	-0.435***	-1.069***	-1.065***	-0.311**	-0.813***	-0.220**
	(0.252)	(0.254)	(0.142)	(0.156)	(0.100)	(0.224)	(0.160)	(0.133)	(0.100)	(0.095)
Recent migrant	-0.344***	-0.397***	0.192**	-0.373***	0.194***	-0.418**	-0.345**	-0.348**	-0.103	0.349***
	(0.111)	(0.120)	(0.092)	(0.089)	(0.073)	(0.205)	(0.143)	(0.156)	(0.092)	(0.087)
Nb adults (hh)	-0.021	-0.046*	-0.024	-0.018	-0.081***	-0.083**	-0.118***	-0.023	-0.076***	-0.022
	(0.023)	(0.024)	(0.020)	(0.017)	(0.018)	(0.034)	(0.026)	(0.027)	(0.016)	(0.020)
Nb young children (hh)	0.163***	0.169***	0.111***	0.140***	-0.087***	0.172***	0.151***	0.128***	0.176***	-0.055**
	(0.022)	(0.022)	(0.021)	(0.017)	(0.021)	(0.032)	(0.024)	(0.028)	(0.016)	(0.024)
Nb older children (hh)	0.175***	0.229***	-0.001	0.231***	-0.053	0.211***	0.179***	0.004	0.195***	-0.041
	(0.041)	(0.042)	(0.040)	(0.031)	(0.036)	(0.059)	(0.044)	(0.054)	(0.029)	(0.043)
Access to piped water (hh)	-1.760***	-15.638	-0.248	-0.935***	-0.282**	-2.298**	-1.392***	-0.186	-1.171***	-0.248**
	(0.592)	(609.280)	(0.190)	(0.252)	(0.111)	(1.014)	(0.468)	(0.221)	(0.237)	(0.122)
D-res x E-lib	0.365***	0.221**	0.805***	0.160*	0.260***	0.144	0.113	0.612***	0.194**	0.177*
	(0.102)	(0.112)	(0.105)	(0.084)	(0.089)	(0.153)	(0.111)	(0.141)	(0.077)	(0.102)
D-lib x E-res	-0.512***	-0.171	0.382***	-0.114	-0.154*	-0.520***	-0.389***	0.560***	-0.040	-0.055
	(0.107)	(0.107)	(0.101)	(0.080)	(0.081)	(0.162)	(0.111)	(0.132)	(0.075)	(0.094)
D-res x E-res	-0.167*	-0.212*	0.538***	-0.104	0.011	0.063	-0.334***	0.482***	-0.015	-0.112
	(0.099)	(0.108)	(0.097)	(0.079)	(0.078)	(0.139)	(0.109)	(0.130)	(0.073)	(0.094)
Observations	13533					12534				
Mean	0.53					0.61				

Notes: The dependent variable measures the poverty regime, estimated with a multinominal logit model. Columns (1) to (5) report the results for females and columns (6) to (10) for males. Control variables that are included but not shown are survey wave, education, disability (on hh level), electricity access, number of senior residents (above 64), use of firewood, and community size. Statistical significance is indicated by $* p < 0.1$, $** p < 0.05$, $*** p < 0.01$.

Table C.13: Correlates of poverty regimes (household framework)

	Poverty regime				
	(1)	(2)	(3)	(4)	(5)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Female	0.898***	-0.540***	0.535***	-0.062	0.733***
	(0.066)	(0.062)	(0.127)	(0.039)	(0.039)
Rural	0.270**	0.481***	0.521**	0.183***	0.075
	(0.111)	(0.118)	(0.232)	(0.061)	(0.055)
Age	0.012	-0.046***	-0.026	-0.052***	0.039***
	(0.017)	(0.017)	(0.034)	(0.010)	(0.011)
Paid work	3.799***	0.418***	2.364***	-0.164***	3.719***
	(0.307)	(0.080)	(0.362)	(0.044)	(0.151)
Married	-0.040	-0.138	0.292*	-0.145***	0.089*
	(0.081)	(0.091)	(0.167)	(0.056)	(0.049)
Primary	-0.698***	-0.894***	-0.274**	-0.643***	-0.031
	(0.079)	(0.083)	(0.139)	(0.053)	(0.045)
Secondary and above	-1.465***	-1.568***	-1.309***	-0.895***	-0.296***
	(0.165)	(0.163)	(0.335)	(0.079)	(0.060)
Recent migrant	-0.335***	-0.234**	0.178	-0.286***	0.204***
	(0.096)	(0.097)	(0.158)	(0.062)	(0.050)
Own child (0-3)	0.142*	0.046	-0.157	-0.006	-0.079
	(0.077)	(0.083)	(0.147)	(0.057)	(0.051)
Nb adults (hh)	-0.047**	-0.182***	-0.680***	-0.032***	-0.019*
	(0.019)	(0.021)	(0.067)	(0.011)	(0.011)
Nb young children (hh)	0.162***	0.240***	0.211***	0.135***	-0.008
	(0.017)	(0.017)	(0.039)	(0.011)	(0.013)
Nb older children (hh)	0.188***	0.236***	0.173**	0.205***	-0.031
	(0.033)	(0.032)	(0.073)	(0.021)	(0.023)
Access to piped water (hh)	-1.934***	-2.116***	-0.444	-1.160***	-0.258***
	(0.510)	(0.586)	(0.477)	(0.167)	(0.076)
D-res x E-lib	0.249***	0.199**	0.591***	0.142***	0.348***
	(0.083)	(0.083)	(0.159)	(0.055)	(0.058)
D-lib x E-res	-0.534***	-0.248***	-0.492***	-0.118**	0.107**
	(0.088)	(0.082)	(0.183)	(0.053)	(0.053)
D-res x E-res	-0.128	-0.299***	0.000	-0.090*	0.158***
	(0.080)	(0.083)	(0.162)	(0.052)	(0.052)
Observations	26067				
Mean	0.57				

Notes: The dependent variable measures the poverty regime, estimated with a multinominal logit model. Control variables that are included but not shown are survey wave, education, disability (on hh level), electricity access, number of senior residents (above 64), use of firewood, and community size. Statistical significance is indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$.

Table C.14: Out of poverty mobility and persistence

	Base		Household		Base, cons. prod	
	out	temporary	out	temporary	out	temporary
	(1)	(2)	(3)	(4)	(5)	(6)
dual poor	28.34	54.47	28.34	54.47	28.34	54.47
cons poor *	30.77	43.02	28.68	39.75	32.69	42.76
time poor *	44.12	46.78	32.14	45.83	35.87	53.85
cons poor	39.67	37.55	40.28	38.76	41.88	35.67
time poor	50.31	35.4	49.08	39.43	49.03	38.42

Notes: Mobility out of poverty for a given poverty regime (columns 1, 3 and 5) and the conditional probability of falling back into poverty after initially transitioning out of the respective poverty regime (columns 2, 4 and 6).

Table C.15: Mobility out of poverty by regime, correlates

	Poverty regime				
	(1)	(2)	(3)	(4)	(5)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Labor supply					
Work more	-1.415***	-0.742***	-1.533***	-0.621***	-1.899***
	(0.392)	(0.192)	(0.245)	(0.135)	(0.205)
Work new	-0.560	0.000	-0.745	0.000	-0.416
	(1.157)	(.)	(1.186)	(0.132)	(0.506)
Work more (hh)	-0.264	-0.275	-0.364**	-0.143	0.047
	(0.204)	(0.175)	(0.155)	(0.112)	(0.137)
Work new (hh)	-0.325*	-0.056	-0.118	-0.197*	-0.037
	(0.180)	(0.166)	(0.147)	(0.106)	(0.135)
Wage increase	0.316*	0.146	0.160	0.420***	0.102
	(0.172)	(0.169)	(0.146)	(0.135)	(0.118)
Household composition					
Baby new	-0.400	-0.449	-0.369	0.018	0.423
	(0.365)	(0.335)	(0.326)	(0.207)	(0.282)
Child new	0.067	0.004	0.087	-0.193	-0.129
	(0.293)	(0.296)	(0.255)	(0.183)	(0.220)
Adult new	0.303	0.387*	-0.252	0.007	-0.138
	(0.269)	(0.227)	(0.218)	(0.156)	(0.166)
Adult left	-0.079	-0.056	0.045	-0.543***	-0.014
	(0.227)	(0.232)	(0.171)	(0.142)	(0.150)
Shocks					
Weather shock	-0.371*	0.340*	-0.504***	-0.157	0.010
	(0.212)	(0.194)	(0.190)	(0.124)	(0.169)
Severe illness	0.387	0.346	0.023	-0.331	-0.119
	(0.481)	(0.398)	(0.406)	(0.322)	(0.324)
Cost shock	0.240	1.024**	-0.705	0.647*	1.895**
	(0.522)	(0.481)	(0.975)	(0.377)	(0.861)
Observations	812	832	1041	1837	1392
Mean	0.26	0.29	0.40	0.36	0.46
Individual controls	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable is equal to one when the individual transits from being poor in the respective poverty regime in period t to being non-poor in period t+1. Estimated using a multinomial logit, statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$.

Table C.16: Mobility into poverty by regime, correlates

	Poverty regime				
	(1)	(2)	(3)	(4)	(5)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Labor supply					
Work less	-1.973***	0.009	-2.968***	0.035	-1.980***
	(0.422)	(0.178)	(0.385)	(0.126)	(0.207)
Work loss	-18.645	-3.295***	-4.566***	0.193*	-3.765***
	(1289.481)	(0.592)	(0.713)	(0.104)	(0.455)
Work less (hh)	-0.304	0.287*	-0.177	0.260***	-0.504***
	(0.199)	(0.147)	(0.128)	(0.088)	(0.111)
Work loss (hh)	0.057	0.026	-0.077	0.147*	-0.414***
	(0.163)	(0.145)	(0.112)	(0.086)	(0.096)
Wage decrease	0.407**	0.576***	-0.286***	-0.375***	0.636***
	(0.160)	(0.143)	(0.108)	(0.111)	(0.087)
Household composition					
Baby new	0.963**	-0.529*	-0.061	0.045	-0.588***
	(0.424)	(0.278)	(0.225)	(0.164)	(0.186)
Child new	-0.885**	0.367*	-0.061	0.263*	0.184
	(0.402)	(0.220)	(0.195)	(0.141)	(0.148)
Adult new	0.318	0.228	-0.084	-0.147	0.126
	(0.209)	(0.191)	(0.155)	(0.120)	(0.120)
Adult left	0.669***	0.237	0.447***	0.187	0.060
	(0.227)	(0.196)	(0.144)	(0.119)	(0.111)
Shocks					
Severe illness	0.509	0.291	0.640***	0.296	0.327
	(0.359)	(0.344)	(0.237)	(0.185)	(0.223)
Cost shock	-18.513	-0.204	-0.741	-0.283	-0.464
	(4261.097)	(0.528)	(0.481)	(0.318)	(0.376)
Weather shock	1.013***	0.061	0.032	0.215**	0.145
	(0.176)	(0.185)	(0.140)	(0.107)	(0.113)
Observations	7211				
Mean	5.25				

Notes: The dependent variable is equal to one when the individual transits from being non-poor in period t to being poor in the respective poverty regime in period t+1. Estimated using a multinomial logit, statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$.

Table C.17: Mobility out of poverty by regime, correlates (household framework)

	Poverty regime				
	(1)	(2)	(3)	(4)	(5)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor
Labor supply					
Work more	-1.415***	-0.732***	-1.202*	-0.688***	-1.795***
	(0.392)	(0.235)	(0.688)	(0.126)	(0.161)
Work new	-0.560	0.015	-0.375	-0.019	-0.341
	(1.157)	(0.278)	(1.369)	(0.137)	(0.504)
Work more (hh)	-0.264	-0.143	-0.376	-0.234**	-0.182*
	(0.204)	(0.202)	(0.608)	(0.107)	(0.104)
Work new (hh)	-0.325*	-0.411**	-0.273	-0.145	-0.045
	(0.180)	(0.189)	(0.425)	(0.103)	(0.102)
Wage increase	0.316*	0.166	-0.392	0.230*	0.191**
	(0.172)	(0.189)	(0.366)	(0.119)	(0.092)
Household composition					
Baby new	-0.400	-0.793**	0.096	0.179	0.119
	(0.365)	(0.359)	(0.826)	(0.205)	(0.222)
Child new	0.067	0.391	-0.458	-0.364**	-0.001
	(0.293)	(0.321)	(0.679)	(0.180)	(0.172)
Adult new	0.303	-0.017	-0.376	0.102	-0.137
	(0.269)	(0.289)	(0.552)	(0.144)	(0.136)
Adult left	-0.079	-0.207	0.206	-0.447***	0.019
	(0.227)	(0.247)	(0.478)	(0.139)	(0.116)
Shocks					
Weather shock	-0.371*	-0.172	-0.691	0.042	-0.146
	(0.212)	(0.207)	(0.545)	(0.122)	(0.129)
Severe illness	0.387	-0.850	0.200	0.025	-0.106
	(0.481)	(0.786)	(1.091)	(0.271)	(0.261)
Cost shock	0.240	1.426***	0.000	0.600	0.992
	(0.522)	(0.488)	(.)	(0.384)	(0.626)
Observations	812	771	194	1904	2238
Mean	0.26	0.27	0.30	0.37	0.45
Individual controls	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable is equal to one when the individual transits from being poor in the respective poverty regime in period t to being non-poor in period t+1. Estimated using a multinomial logit, statistical significance is indicated by $* \ p < 0.1$, $** \ p < 0.05$, $*** \ p < 0.01$.

Table C.18: Mobility in and out of consumption poverty, hh

		Wave		
	All	3	4	5
Out mobility				
dual poor	28.34	27.44	29.48	28.34
cons poor *	30.85	23.71	35	37.11
cons poor	39.58	32.34	41.39	46.46
In mobility				
time poor *	17.59	25.83	14.13	15.67
time poor	10.68	10.3	9.42	11.44
non poor	13.26	15.45	12.64	11.82

Notes: Transitions out of poverty and into consumption poverty from the respective poverty regime. Average and by wave.

Table C.19: Coping strategies with shocks

	Poverty regime					
	(1)	(2)	(3)	(4)	(5)	(6)
	dual poor*	cons. poor*	time poor*	cons. poor	time poor	not poor
labor supply	42.86	46.37	24.91	38.62	27.46	28.51
sales	6.38	9.03	9.96	8.04	8.38	10.16
behavioral adoption	47.45	49.73	45.91	50.14	45.09	45.44
help	47.19	40.18	24.91	31.88	35.84	28.44

Notes: Weather shocks include flood, heavy rain, drought, landslides and erosion. Self-reported as any such event taking place in the twelve months prior to the survey. Coping strategies are change in labor supply (household members took on more farm or non-farm work), unconditional help (from friends, relatives or government), sales (durable household assets, land, building, animal stock), adoption (change in dietary patterns, change in cropping practices, reduce expenditures on health and education).

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