

Show me the money

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Summary

This PhD dissertation studies the impact of cash transfers on young child nutritional status, with an additional focus on the role of intra-household dynamics. This study is motivated by the fact that still more than 155 million children under the age of five years suffer from stunting (too short for one's age), a chronic condition resulting primarily from prolonged malnutrition and exposure to infectious diseases during early childhood. The burden of malnutrition is particularly large in sub-Saharan Africa (SSA), where more than 1 in 3 children under five are stunted. Malnutrition has severe consequences for later life outcomes, including reduced school achievement, lower economic productivity in adulthood and poorer reproductive health outcomes for girls. Countries' economies can take a huge hit when their children suffer from malnutrition, in the order of 10 percent of GDP. Therefore, investments during early childhood that can improve nutritional status can yield large economic and social returns.

Malnutrition is a multidimensional issue with several underlying risk factors. This study builds on a widely recognized framework of the determinants of malnutrition, which lists food intake and health as the two immediate determinants of malnutrition. These immediate determinants are in turn caused by three underlying determinants: food security, care for mothers and children, and the household health environment. Social protection is increasingly recognized as an important strategy to accelerate progress in improving maternal and child nutrition because it can address structural factors such as poverty and social vulnerability. In particular cash transfer (CT) programmes, which deliver cash directly to households, have gained popularity with governments and other stakeholders in recent years. As a result, several countries in SSA have designed, piloted and scaled-up CTs in the last decade, with the potential to increase coverage to a large section of the population in the near future.

The intersection between these two developments opens up questions on how they can be linked and how CTs can help to address the burden of malnutrition. This is particularly important within the framework of the Sustainable Development Goals (SDGs) which call for the eradication of hunger, including malnutrition (Goal 2.2) and to implement nationally appropriate social protection systems (Goal 1.3). Previous research has mostly examined the direct link between CTs and child nutritional status. However, the results of these studies are mixed and point to the need to better understand the pathways through which CT programmes might work to improve nutritional status.

This dissertation aims to address this knowledge gap by building on the UNICEF conceptual framework of child nutrition to study the underlying and immediate determinant of malnutrition and the impact that a CT can have on these determinants. One novel aspect of this study is to introduce the concept of intra-

household dynamics in resource allocation and decision-making as a potential determinant of child nutrition. This concept states that there may be inequalities in the allocation of resources such as food and health care within the household, which could affect the effectiveness of a CT that aims to improve the wellbeing of children. This has thus far been ignored in the literature on CTs and nutrition, despite research showing that intra-household dynamics can be important for the health and development of children.

The main objective of this dissertation is to examine to what extent an unconditional cash transfer programme can improve child nutritional status. The following sub-questions are posed:

- a. What are the pathways of impact on child nutritional status for a cash transfer programme?
- b. What factors mediate or moderate CT programme impacts on child malnutrition?
- c. How does intra-household allocation of resources play a role in the determination of children's outcomes?
- d. To what extent do intra-household dynamics affect the impact of a cash transfer on nutritional status?

This thesis aims to answer the research questions by focusing on one particular CT programme in Ghana, the Livelihood Empowerment Against Poverty (LEAP) programme. This programme was initiated in 2008 as a small pilot and transitioned quickly to a national programme reaching 213,000 households by the end of 2017. LEAP officially targets the 'extreme poor' of Ghana, but also applies a categorical targeting approach and selects households with elders over 65 years old, people with a severe disability unable to work and households caring for orphans and vulnerable children (OVC). In 2015, a new demographic group was introduced through the LEAP 1000 programme, pregnant women and households with children under the age of one year. Households are selected into the programme through a proxy means test (PMT). LEAP beneficiaries, including children and dependents under 18 years, as all other indigents are entitled to free health insurance under the National Health Insurance Scheme, providing access to out-patient and in-patient services, dental services, and maternal health services. Households qualifying for the LEAP programme receive GHC 32, 38, 44 or 53 (approximately USD 8.00 – 13.25) per month for one, two, three or four or more eligible members in the household, respectively. The transfer is not conditional on household behaviours, although households with OVC are expected to keep their children in school, register births, vaccinate their children and ensure that their children are not trafficked and do not engage in child labour. In practice, there is no monitoring system in place that verifies compliance with these 'co-responsibilities'.

This dissertation exploits data from a rigorous impact evaluation that accompanied the expansion to the new category of pregnant women and infants (LEAP 1000). Approximately 2,500 households with pregnant women or children under one year old were followed over two years, from 2015 to 2017. Half of the sample was eligible for the LEAP 1000 programme and the other half was not. The impact evaluation used the PMT eligibility rule to construct a treatment and comparison group through a regression discontinuity design (RD). The main idea of this approach is that households in the close vicinity of the eligibility threshold are 'as good as randomly' assigned to the treatment and comparison group. A major benefit of this evaluation is that the sample includes many young children, which make it ideal to study the determinants of malnutrition and how a CT can affect malnutrition in this population.

The dissertation is composed of an introductory chapter, four main chapters, and a concluding chapter. The chapters are summarized as follows.

Chapter 1 introduces the study and presents the background of the main issues of interest: malnutrition and CT programmes. The chapter then introduces an expanded version of the UNICEF conceptual framework of malnutrition. This framework identifies household food security, care and a healthy environment as the underlying determinants that influence the immediate determinants of children's nutritional intake and health status. The combination and interaction of these two immediate determinants define the final outcome, a child's nutritional status. This study introduces intra-household decision-making and allocation of resources as an additional determinant. Intra-household decision-making determines what part of the income or resources held by the household are distributed among the three main resource components, as well as which household member gets what share of the total available resources. This determinant is a novel addition to the framework based on emerging evidence that intra-household dynamics play an important role in the determination of child health and nutrition as well as the premise that intra-household dynamics matter for the effectiveness of a transfer to the household. The framework also considers several moderators and mediators of the relationship between CTs and child nutrition. For example, the child's dietary intake is mediated by the caregiver's feeding practices and feeding styles. The health status of a child is mediated by the health-seeking behaviour of the caregiver. Household food security is moderated by the availability and price level of food and by external shocks. Women's empowerment (most commonly operationalized as women's decision-making or control over resources), mediates the relationship between CTs and care for mothers and children. The chapter then proceeds to present the main research questions and introduces Ghana and the LEAP programme as the context for the study.

Chapter 2 presents a literature review to examine the extent to which CT programmes can improve child nutrition. It uses the conceptual framework which captures and explains the pathways and determinants of child nutrition. The literature review uses several techniques to collect as many studies as possible that examine the impact of CTs on any of the pathways from the conceptual framework. This includes a search of academic databases, snowballing from existing reviews and meta-analyses and contacting experts in the field. To avoid any potential publication bias, grey literature is considered along peer-reviewed journal articles. The results from the selected studies are then summarized by each level according to the conceptual framework (e.g. outcome level, immediate determinants and underlying determinants). The focus is on impact pathways and new and emerging findings from sub-Saharan Africa to identify critical elements that determine child nutrition outcomes as well as knowledge gaps requiring further research. Findings from this review demonstrate that an increasing number of studies have highlighted the positive role of CTs in increasing resources for food, health and care. However, the evidence to date on the immediate determinants of child nutrition is mixed with respect to whether CTs can positively impact growth-related outcomes among children. The evidence also points to a lack of knowledge on the impact pathways.

Chapter 3 uses the baseline data of the LEAP 1000 impact evaluation to explain the underlying causes of childhood malnutrition. Guided by the conceptual framework, the chapter uses a health production function to model the relationship between the immediate determinants of malnutrition (food intake and health) and child, parent, household and community characteristics using regression analysis. It then uses the same health production function to examine the relationship between nutritional status (height-for-age) and child, parent, household and community characteristics. The results from this analysis are associations, rather than causal relationships, but they provide important *ex-ante* information on what characteristics are associated with improved food intake, health and nutritional status. The chapter then proceeds to simulate several policy interventions, including a cash transfer, improvements in maternal care, and a price shock to examine what changes might be expected as a result of these interventions. The findings suggest that maternal agency and health contribute to improved health status. Household resources – in the form of consumption – are positively associated with food intake and nutritional outcomes. The policy simulations show that income growth, improving maternal care and avoiding sudden price shocks have a positive – but rather limited effect – on the reduction of malnutrition. Effects are greater in children under two. The chapter concludes that policies that address underlying determinants simultaneously, and target the youngest population of children, could have the largest effect on reducing malnutrition in this population.

Chapter 4 also uses the baseline data from the LEAP 1000 impact evaluation. The objective of chapter 4 is to examine the intra-household dynamics in the baseline sample and whether these dynamics affect the wellbeing of children in the household. First, outlay equivalence analysis is used to assess how households change their consumption pattern when an additional child enters the household. More specifically, this analysis uses regression methods to examine how the consumption of exclusive adult goods (items that are only consumed by adults in the household such as tobacco, alcohol, clothing for adults, etc.) responds to an addition of a child to the household. When the household budget is fixed, adults must give up spending on adult goods to cater for the needs of a child. Then, testing whether this response is different when the additional child is a boy or a girl can reveal general gender preference of the household. Next, the chapter aims to analyse whether fathers and mothers have different preferences with regards to investing in their daughters or sons. This analysis uses the educational achievement of the parents as a source of bargaining power and tests how parental education has an effect on outcomes (education and nutrition) and inputs (educational expenditures and infant and young child feeding practices) for sons versus daughters. This analysis is conducted using OLS, fixed effects and random effects.

The outlay equivalence analysis shows that households are willing to give up spending on adult goods in favour of children. However, there is no difference in gender preferences in the allocation of household resources. In other words, parents are willing to give up an equal amount of spending on adult goods, irrespective of whether the child is a boy or a girl. The second analysis reveals suggestive evidence that fathers are more inclined to invest in their daughters compared to their sons. More specifically, girls of secondary school age (12 – 17 years) seem to benefit from living in a household where the father has received some form of formal education compared to boys. In contrast, similar girls in households where only the mother completed some formal schooling, are worse off compared to boys. Similar findings emerge from the analysis using nutritional status as outcome. More years of maternal schooling is associated with lower HAZ for girls, while higher paternal schooling is positively related to HAZ for girls. The effects of father's education on HAZ are further corroborated by similar findings on nutritional inputs (infant and young child feeding practices), especially when girls are still young. These effects might be driven by an investment motive of fathers to obtain a higher bride price when girls are old enough to marry, but more research is needed to fully understand these findings.

Chapter 5 presents results from the impact evaluation of Ghana LEAP 1000 on child nutrition and its determinants, taking advantage of two waves of data. The evaluation constructs a quasi-experimental treatment and comparison group by using the discontinuity of the PMT threshold as a cut-off for eligibility. The chapter

first establishes that this quasi-experimental strategy was valid by conducting balance tests on all the main indicators and a manipulation test to verify that the PMT scores were not compromised. The main impact analysis uses a difference-in-difference approach and compares the change in the treatment group to the change in the comparison group, while controlling for several individual and household characteristics as well as community fixed effects. The chapter then proceeds to conduct heterogeneity analysis by examining the role of i) duration in the programme, ii) distance to and quality of nearby health centres, iii) negative and positive shocks to households' livelihoods, and (iv) the intra-household dynamics. This heterogeneity analysis is conducted through a triple-difference approach which estimates how the treatment effect varies with respect to these moderators.

The results show no main treatment effect on nutritional status, nor on the two immediate determinants of food intake and health. However, there is a positive effect on one of the three underlying determinants, food security. The heterogeneity analysis shows no differential impacts by age group. Quality of nearby health facilities increases the programme's impact on food security. There are also lower impacts on weight in case of crop-related shocks and higher health impacts when communities benefit from additional development programmes. Finally, there is some suggestive evidence that better-educated mothers invest fewer resources in the health of their daughters compared to their sons. Results from this evaluation are compared to results from other programmes and countries (Zambia, Malawi, Kenya, Zimbabwe and Ethiopia) to put them in perspective. This comparison shows that none of these programmes had an impact on any of the nutritional status indicators. In the three programmes that collected information on food intake for children, all of them found a significant impact, indicating that one of the immediate determinants of malnutrition was affected. However, none of the programmes had an impact on child health. On the other hand, all programmes had a strong and significant effect on food security, similar to the Ghana LEAP 1000 programme. Some reasons for the non-impact in the Ghana LEAP 1000 programme could be the relatively low transfer size and the short time frame of the evaluation. The chapter concludes that cash alone is unlikely to yield impacts on young child nutrition and integrated programmes that aim to address multiple underlying determinants at the same time need to be further examined.

Chapter 6 summarizes the main results by answering the research questions, draws conclusions and discusses the implications and way forward.

1. *What are the pathways of impact on child nutritional status for a cash transfer programme?*

The findings from this study show that child malnutrition has several determinants, and CTs have most consistent impacts on one of the pathways, food security at the household level, in some cases leading to improvements in

children's individual food intake. For these results to translate into improved nutritional status, it is just as important to create a healthy environment around the child, to minimize the impact of illnesses on the growth potential. However, there is only limited evidence that CTs, if implemented in isolation, are also able to impact child nutrition through the health pathway.

2. *What factors mediate or moderate CT programme impacts on child malnutrition?*

Based on the literature review in this dissertation, there are several moderating factors for the impact of CTs on child nutrition. They include, the amount of the transfer in relation to household consumption; age of children when benefitting from the programme; supply-side conditions such as markets, prices, health facility access and quality of health services; livelihood shocks; and duration of programme participation. However, there is only limited evidence for these moderating factors in the context of the Ghana LEAP 1000 programme. Younger children did not necessarily benefit more from the programme, and presence of (quality) health facilities was not related to higher programme impacts. Since these are findings from one particular programme, more research is needed to examine these and other moderating factors.

3. *How does intra-household allocation of resources play a role in the determination of children's outcomes?*

This study found that intra-household dynamics matter for children's outcomes to some extent. In general, households tend to give up spending on adult goods when an additional child joins the household, irrespective of whether the additional child is a boy or a girl. Educational and nutritional outcomes of girls tend to be somewhat better in case the father has attained more education, suggesting that fathers are inclined to invest in their daughters.

4. *To what extent do intra-household dynamics affect the impact of a cash transfer on nutritional status?*

The impact analysis reveals that there are differences in impacts between household members, particularly in the number of meals. There is also suggestive evidence that daughters of better-educated mothers have poorer health status because of LEAP 1000. However, the analysis is unable to fully understand what intra-household dynamics are driving these findings and more research is needed to address this gap in knowledge.

The main objective of this dissertation is to examine to what extent an unconditional cash transfer programme can improve child nutritional status. Overall, the findings show that a CT, when implemented in isolation, is unlikely to yield strong impacts on young child nutrition, but when coupled with complementary programmes aimed at addressing multiple underlying and immediate determinants at the same time, could have the potential to make a

difference. In addition, a long-term perspective is needed as other evidence shows that increased wealth and improving the education and status of women all have positive effects on child nutritional status.

The policy implications derived from this study are summarized as follows.

1. While policies that direct cash to poor households certainly helps, especially for improving the household's food security situation, it is likely not enough to systematically improve children's nutritional status. It is therefore important to explore complementarities between programmes across different sectors that can affect the underlying and immediate determinants of nutrition simultaneously through integrated programming. This is an emerging policy area which has shown some promising results thus far.
2. The transfer amount in relation to household consumption is an important element. If a transfer is too low, it is unlikely to change household consumption and investment patterns. In addition, transfer values need to be linked to inflation to preserve purchasing power of the grant.
3. Intra-household dynamics are important to consider. Cash is usually distributed to an adult member of the household and their preferences and bargaining power within the household will have an effect on the impact of the transfer on children. Measures to increase the effectiveness of a CT to improve child wellbeing need to be considered within the context of the programme.
4. While CTs are primarily a demand-side intervention, policy makers need to equally invest in supply-side conditions such as health facilities and health infrastructure to improve the overall health environment for households and their children.
5. A long-term perspective is required since evidence shows that increased wealth, higher educational achievement and improved status of women all have positive effects on child nutritional status.

To conclude, this dissertation examined the impact of cash transfers on young child nutritional status, with an additional focus on the role of intra-household dynamics. The results show that cash alone is unlikely to make a large contribution to reducing child malnutrition. The determinants of child malnutrition are complex and additional income is only one driver, mostly associated with increasing the resources for food at the household level. There needs to be increased effort to address the other determinants of nutrition through complementary programming and proper investments in the local health infrastructure. In addition, more effort is needed to ensure that CT programmes translate into improvements for young children, by considering inequalities in the intra-household division of resources. The results of this thesis provide policy makers with relevant evidence as they continue to design, implement and scale-up social protection programmes that address the needs of vulnerable populations.

