

Cash Transfers and Micro-Enterprise Performance in a Refugee Camp in Kenya Podcast Transcript

Olivier Sterck

Welcome to the CSAE Research Podcasts, a series of conversations about research taking place at the Centre for the Study of African Economies at the University of Oxford. I'm Olivier Sterck, Associate Professor and Senior Research Officer at the Department of International Development and a member of CSAE.

You might know that there is mounting empirical evidence around the positive and persistent effects of cash based assistance on the direct recipients of cash transfers. But there is actually limited research on the indirect effects of cash based assistance, especially the effects on local businesses.

Today we will be discussing the paper 'Cash Transfers and Micro-Enterprise Performance: Theory and Quasi-Experimental Evidence from Kenya'. It was published recently in the Journal of Development Economics. And this study examines the business and price effects of a cash transfer programme delivered to about 400,000 refugees in Kenya. The cash was given in monthly payments of 3 to \$13, provided in the form of a digital money exclusively available for the purchase of food at licensed shops.

Joining me today to discuss this project is Antonia Delius, a DPhil student at the Department of Economics at the University of Oxford. So to start with, maybe can you tell me a bit about what the main research question is in this paper. And why do you think it's important?

Antonia Delius

Thanks, Olivier. Sure, I think you've already teased a little bit about what we're looking at. This study focuses on the effect of a cash assistance programme, not on the direct recipients of the transfer, but on the businesses and the markets where the beneficiaries of the cash assistance programme spend the money they get. This is a very exciting angle on cash transfers, there has been a lot of literature already on the direct impacts of recipients, but actually the welfare effects of cash assistance also depend on how businesses respond to the demand shock from the transfer and the resulting impacts on prices. So, for example, are businesses able to adjust their supply to meet the increased demands that beneficiaries will have after receiving a cash transfer or do they maybe increase their prices? So there's really theoretical motivation to study the cycle of cash transfers. Olivier, can you give a bit more detail on this?

Olivier Sterck

Yes. But actually we built a theoretical model to better understand this theoretical prediction of the effect of cash transfers on businesses, because that, as you said, has not been studied to a great extent in the literature. And that's somehow surprising because if you think about it, actually the direct impact of cash transfers on the direct beneficiaries, those who receive money, depends on how businesses react to the cash transfer programme first. So it's the first step of the causal chain. And so it's very important to look at this first step. And so we built a model. Basically what we did is to adapt a knowledge framework which is called the setup circle model. I will not go into the maths during this discussion, but you can find all the maths, of course, in the paper.

What was more important perhaps is the findings from this model, which I find very interesting. And it showed, perhaps not surprisingly, the predicted impact of the transfer on households and on businesses will depend on the degree of competition between the businesses and also on the characteristics of the cash based intervention. The simplest case is the case of a perfectly competitive market and unrestricted cash transfers in this perfectly competitive market. Then basically the solution is simple. Apart from a possible adjustment period in the short run, because businesses might not adapt their supply to the increased demand, but apart from this short term period of adjustment. Basically, businesses will not or are not expected to benefit from the transfers because price basically will be adjusted, they will be equal to the marginal cost. And so all the benefits of the cash transfers will be entirely reaped by the transfer recipients after the adjustment period. What is perhaps more interesting is when markets are not perfect, because in practice they are rarely perfect, especially in the context where we have been working in a refugee camp in a developing country context. Often you have regulation, you have credit constraints that can act as entry barriers in the formal sector. The prices are rarely indicated. Many people may have experience of having to negotiate price in developing countries, transportation costs can be very large. Roads are far from being perfect in the context where we worked, they are often in poor condition. And there are fixed costs, as well, implying that the assumption, the typical assumption of not increasing returns to scale, it's often inaccurate or partly accurate. And so what we did, as I said, is to build a set circle model to study the impact of this kind of market imperfect on typical entry barriers and transportation costs. How does that affect the impact of the cash transfers on businesses?

And what we find is that with this kind of market imperfection, businesses can benefit from the transfer themselves. They can grab part of the benefits of the transfer by increasing their prices. And we make several extensions to this model. But one that is important to highlight is case of restricted cash transfers. Why is it important? Because it's a case that is a type of cash transfer that is very popular or very wide spread especially with humanitarian assistance and social assistance. Basically cash transfers that either can only be spent on the certain goods or can only be spent at certain shops. There are many programmes that are like that. You can think of humanitarian assistance. Sometimes it's limited to certain categories of food. For example, a non-government organisation (NGO) that has wash programmes may restrict its cash transfer to hygiene products or things like that. The World Food Program (WFP), with which we worked, they may restrict cash transfers that they implement to food. But even in developed countries, you have many restricted programmes. For example, in the US, you have the Supplemental Nutrition Assistance Programme

that is distributing electronic cash transfer restricted to food to almost 50 million Americans. So there are plenty of examples of restricted cash transfers.

And what we find, theoretically, in the case of restricted cash transfers is that two different parallel markets can coexist. One that is more competitive with lower prices, it's the cash market, the traditional market, and then another market for the restricted cash transfers, which is less competitive and which has higher prices because of limited competition. The firms can have a higher market power. I noticed that some elements of my answer were referring to some important elements of context because we worked in a refugee camp, maybe, Antonia, that's something you can explain to our audience. What context were we working in? I've discussed about cash transfers in a refugee camp. What are the characteristics of this cash transfer programme? Maybe you can tell us a bit more here.

Antonia Delius

Happy to. So the specific programme that we studied was a cash transfer programme for refugees in Kenya. Kenya hosts quite a lot of refugees and has for many years, who are mainly from the neighbouring countries Somalia, South Sudan, and also a range of other countries in the region. Most refugees in Kenya live in camps or camp like settlements, which are typically located in rural areas near the borders, across which many of these refugees flee. In those complex setups, economic opportunities are typically relatively limited, which means very large parts of the refugee population has to strongly rely on humanitarian aid. Which in this context is provided by a couple of different actors, but one of the very programmes is the food aid programme from the World Food Program. Which is the one that we were evaluating. We've collaborated very closely with WFP to understand this programme and to implement this study.

The way it is set up is through this food aid program from WFP refugees in the Kenyan refugee camps receive a monthly cash transfer, which is implemented as a digital mobile money transfer. So recipients basically have a digital wallet that is linked to their SIM card, in which they receive an amount of money every month. It varies a bit on their individual situation and the location they live in to how much they receive. This transfer is restricted so that it can only be spent on food items. So the way it works is that this digital mobile money transfer can only be spent at licenced traders who've been selected by the WFP to be able to sell in exchange for this digital currency. And the traders are only allowed to sell food items to beneficiaries of this cash assistance programme. The focus of our research is on these licenced businesses. They can sell to refugees who are getting this cash transfer and we are interested in what is the impact of this programme on these businesses and the market they operated in?

The way to become one of those licensed traders was set up through an open application process. The World Food Program asked for applications from traders to become licensed to trade in the cash transfer programme. There were a couple of iterations of the applications and the first step was very simple. Applicants had to fill in an application form, interviewers came to the market areas and encouraged traders to sign up. Supported them in filling the form, and gathering all the necessary information. It was a relatively basic, application. They had to describe the characteristics of their business. So, for example, what kinds of products do they sell? What is the nationality of

the business owner? Some demographics like that. Once all of the applications were collected, they were compiled in a spreadsheet, which was handed off to a multi-stakeholder committee with representatives from several humanitarian organisations, the government of Kenya, the different groups that had a stake in the system and they selected traders to become licensed to sell for the cash transfer mobile money. Basically aiming to select a very diverse group of traders. So there was no kind of selection based on a specific score or certain criteria that had to always be met. The aim was to put together a group of traders that was very diverse in terms of the look, the market stay, their nationalities and the languages they speak, the types of things they sell, the gender of the business owner, and so on.

During the implementation of this study, we spent a lot of time in the refugee camps where this programme was implemented to really understand the context and collect the data. So, could you maybe tell us a bit more about what the data collection for this project was like?

Olivier Sterck

Yes, yes, thank you. Our paper draws on four types of data, a very rich set of data. So first we use the exact same datasets that you described, the dataset that the selection committee used to allocate business licenses. Bamba Chakula licences, the name of the program was Bamba Chakula. And this dataset contained all the information that shop owners provided when they applied to this programme. So that means all the information that the selection committee used to make decisions when selecting the firms that could benefit ultimately from the cash transfers. We will use this dataset to be able to implement matching methods, because we have the exact same knowledge as the selection committee who decided who would be [in the treatment group] and who would be in the control group.

The second dataset that we used was data from the survey that we did with businesses in the Kakuma Refugee Camp and the Kalobeyei Refugee Settlement, which is a camp that is just next to the Kakuma Refugee Camp and they are often considered as one big camp. We did that survey in 2018. We recruited 20 enumerators, actually, Antonia you were the main person coordinating the fieldwork as part of your MPhil thesis, so I'm sure you are better placed actually to answer this question than me. We trained 20 enumerators for a few days. We discussed all the questions. We practiced the questionnaire with them. We did at least one pilot survey with each of them, we explained the relevant concepts, etc. Our objective was to interview all the refugees that had applied to get a Bamba Chakula license, whether they got it or whether they didn't get it. We followed the list of applicants received by the WFP. We tried to find them, then we would interview them with questions on business characteristics, business practices, living standards, extensive information, entrepreneurs, their households, etc.

The third data set that we used was a household dataset that was collected the same year before we used that dataset to measure prices. And then finally, the fourth type of data that we used was qualitative data. That's not really typical for papers in economics, but that's something that has always been very important in our research group, we collect both quantitative and qualitative data because we like to triangulate the findings from both approaches and use a mixed method approach. That's also important because we are working hand-in-hand with the World Food

Program and they're interested in policy insights. When we write reports for them or with them, they like to have quotes, anecdotes or stories that can back up the points that we are making with brief quantitative data and numbers. And so we did 122 qualitative interviews with business owners, with their clients, but also with different stakeholders that were interviewed in the programme. So, as I said, actually, you coordinated the data collection. So I think you are better placed to discuss this because the field work was part of your thesis when you were doing your MPhil in Economics. You were using the data in your MPhil, using matching methods, basically to study the impact of the business licenses. So let me jump on that to ask you about matching methods. That is a difficult question. It has bad press in economics, unfortunately for us. But I think that's partly unfair. In our paper we argue that at least in our case today, we have a perfect case where matching methods can perhaps be used. And let me be blunt, maybe it can be as good as randomisation. So can you tell us a bit why you think this is the case, or maybe why you think this is not the case and how we have been implementing matching methods in practice?

Antonia Delius

Absolutely Before I get into the technicalities of the of the matching approach, basically what we want to evaluate with this very rich data that Olivier has described, is the impact of the cash transfer programme on these license businesses that can sell food to beneficiary f the cash transfer. And to do this, we need a credible comparison group of businesses who are not licensed but otherwise comparable. We obtain this comparable for comparable group of businesses, by exploiting the quasi random variation in the allocation of the licenses using matching methods. And the way we do this came up a couple of times before, we obtain the full application data from the World Food Program that was available to the people who selected the traders. And we use it to match traders who didn't get the license but who looked similar at the application stage. And I think here, a very important component to using this data well and to be able to argue that matching is a credible approach in this context is the very extensive time we spent in the camps and spent working with WFP and really understanding every single step of the selection process, looking at the data, at the application forms that were collected, how the data was compiled, how exactly it looked when it was provided to the selection committee.

So basically the way we used this was that we matched businesses that were comparable based on the characteristics that were available in the application data and that basically means that we can compare similar businesses based on observable characteristics at the time of the applications for licenses. In addition though, it is important to make a convincing argument that there are not actually any unobservable characteristics that potentially make these groups different. And I think that's where this context comes in. Firstly we only work with businesses that have applied to participate in the programme. That's very important for any selection on unobservable characteristics. We only work with businesses who were sort of motivated to be able to participate in this programme, who took the initiative to apply in the first place. Then we use the data that the selection committee had available. And we know that no other data was used in this process. So they should not have had any information on any of the other characteristics of these businesses except for what is available in and that data set that we also accessed. We also have a very detailed understanding of how the licensing process took place. A detail that that really helps us in the

matching approach is that the committee did not create a score or ranking or aim to select the businesses that are already largest or most successful, but really aimed to select a diverse group of traders, which introduced quite some level of randomness in terms of who actually ended up getting selected. And then finally, another part that really makes these businesses comparable is that the businesses operate in the same markets, in the same marketplaces, in the same context, and they participate in the same surveys. The only difference really is some have been selected to participate in this Bamba Chakula programme where cash transfer beneficiaries can come and spend their mobile money transfer on food items and others have not been selected for this programme.

We also run a range of checks on the data, that provide further reassurance that there are no unobservable differences between the businesses with and without a license, before the implementation of the program. So we ran a couple of placebo tests where we basically confirmed that the treatment status is not correlated with any predetermined characteristics of the business owners, that could be proxies for entrepreneurial abilities. So, for example their education level, whether their families used to own a business before their current one, whether they participated in any business trainings, characteristics like that. And we also confirm that proxies for business size and capacity don't predict the probability of receiving a license. It is really only the characteristics that were considered by the selection committee.

Olivier Sterck

Yes. And maybe to add to that, sorry to interrupt you. So I think I remember I may be wrong on the exact number, but that in the first stage of the matching procedure, it's something like 17% or 20% of the variation in the allocation of license. So the R-squared basically that we calculated, it's about 0.12. And that is interesting in itself because it shows that the variables that were used by the selection committee to allocate license predicted the allocation of license to use this dataset. But there's also a lot of quasi randomness that can be exploited. And it's actually that quasi randomness that we're exploiting afterwards to assess the impact of the license. There is a lot of quasi randomness that implies that similar businesses, before the allocation of businesses, got or didn't get the license and can be compared afterwards. Sorry for interrupting you.

Antonia Delius

No problem, thanks for the addition. And yeah, that really makes an important point in terms of predicting, using all of the data we have, who was more likely to get one of these licenses. And an important finding here is that only the variables that were used by the selection committee have some predictive power, but not actually that much. So there's some randomness here. And then at the same time, any other variables that we included in the prediction estimation that were not considered by the selection committee, none of these have any predictive power, which is consistent with them not having any additional information on the size and capacity of the businesses. We were already very convinced by this approach and very sure that the selection committee really only had the application there to available in their decision making process. But

these additional tasks are reassuring that that this is indeed what happened. And we don't have any other systematic differences between these types of businesses, that could potentially impact the results.

So, just to wrap up this point, comparing the business outcomes and business practices of businesses with and without the Bamba Chakula license. To do that we evaluate the difference between these two matched types of differences, to get at the impact of getting a license on a business compared to a counterfactual where food assistance is not distributed through a market setup. So in this context, for example, it could alternatively be distributed through in-kind assistance like it was the case before the introduction of this cash transfer for a programme.

Olivier, with that, I'll hand over to you. Feel free to compliment further, but it would also be great if you could talk a bit about the results we find from this comparison.

Olivier Sterck

Yes. Nothing to add. I'm completely convinced that that's a perfect setup to implement matching methods. Thank you.

Let's turn to the findings, because they're actually very interesting. So we find large impacts from this allocation of licenses on the businesses that were selected to get the licenses. What does it suggest? What's the big picture message? It suggests that markets are far from being perfectly competitive in the Kakuma Refugee Camp and the Kalobeyei Refugee Settlement. So applicants selected to get a license, they massively benefited from the cash transfer programmes. That means also that that's at the expense of beneficiaries. That means that they could increase their price, and we'll come back to that later, and thereby grab part of the benefits of the cash transfer programme for their own benefits. And what we find, in terms of impact, is that license applicants have monthly business revenue that are three to 4000 USD higher on average than unlicensed applicants. So it's an increase of 175%. So that's a massive increase in business revenue. The impact of profit is also positive and large. 685 USD more than unlicensed applicants. That's massive in this context. And I'll provide some numbers to compare later. But the license applicants also have more employees that have higher labour productivity. There are more types of commodities, more goods. So that's the impact on the businesses themselves. But we also actually asked these business owners to give us some information about their households. And we also find that the households of these business owners are benefiting from the cash transfers if they were selected to get a Bamba Chakula license. They are more food secure and have more diverse diets. Also, they have more assets than those in the control group. But the total household income is also increased thanks to the license. We don't find that these households which received a license reduced the other type of business activities or employment opportunities that they could have otherwise done. Actually, we don't find effects on other income opportunities. So we just found additional income and profits thanks to the license.

And there are two things that could explain, basically, why successful applicants have such higher revenue and profit. First, they're more likely to have a business at the time of the survey. So it's between one and three years after the allocation of licenses. They're 24 percentage points more

likely to have a business. But it's not only that they are more likely to have a business. It's also that their business is more successful. The estimate that the effect of getting a license on profits is higher than \$500 per month on businesses that would exist even in the absence of the cash transfer program. And that's a lower bound estimate. So that's extremely rare. It might not seem that large if you are in Oxford and you are used to a wage in the Western world. But in the camp context, it is extremely large. It's about 18 times the average monthly wage of paid employees in Kakuma and 39 times the value of monthly assistance per refugee. So for these businesses, the impact on their profit is really massive.

I've said that there was also an impact on prices. And it's true, this effect on prices that we think these businesses are increasing their profits, maybe. Antonia, that's something you can tell us a bit more about that.

Antonia Delius

Absolutely. As you mentioned, Olivier, another important component in understanding what these cash transfers do to the market was to understand the impacts on prices. In general, the World Food Program requires businesses to charge the same prices, whether it's a cash transaction or a transaction that is through this mobile money transfer. But in practice that doesn't necessarily happen. It's very difficult to observe in this context where there's no formal bookkeeping requirement or anything like that. So, to study the impact on the prices further, we implemented a household survey to really get at the information on what beneficiaries in practice spend when they're purchasing items with cash or with the Bamba Chakula transfer. In the household survey we collected a detailed consumption model. We asked for a range of food items, whether the household consumed them, the quantity that was consumed, how they obtained it. So whether they bought it with hard cash, with a digital Bamba Chakula transfer or they obtained it through some other means, and what price they paid. That way we obtained data on many, many purchases that were done, both with hard cash and the Bamba Chakula system. And this data allows us to assess how different prices are between these two modalities using regression analysis. But we also control for a range of different factors that could impact prices, such as the specific market, the quality, what purchases, etc. So depending on the exact specification, what we find is that prices for purchases that were with the digital cash transfer versus hard cash are between 16 and 30% higher. So that means that consumers who buy items using the cash transfer money pay much higher prices than if they were to purchase the exact same item with hard cash. And this, of course, impacts how much beneficiaries get out of this transfer if prices are 16 to 30% higher. They will be able to purchase correspondingly fewer items with the same amount of money. This is also a finding that came out particularly strongly in the qualitative work we did. In the same contexts, these higher prices when purchasing items with the money from the transfer are a source of quite some frustration among beneficiaries. And it's also sort of a fact that is very well known that different prices are charged and for these two different market systems, for cash and the transfer.

Olivier Sterck

Yeah, it's interesting that you say that these things are very well known. And I would say that a lot of the findings, actually, maybe in our research are sometimes very well known by the refugees that are participating in our survey. And our results are often confirming what, I would say, everyone knows in the camp. And that's also why I'm somehow very much convinced that the matching methods that we are using in this research are leading us to accurate unbiased findings is because the findings are not actually that surprising. If you spend quite a bit of time in the camp doing research.

Antonia Delius

Yeah, I totally agree. I think overall we really saw a big impact on the market structure that goes beyond the direct beneficiaries, and that really impacts how the direct beneficiaries can use that transfer.

But yeah, maybe before we go into what does this mean for policy and so on. Shall we briefly touch on some challenges we faced with this project? We already spoke a bit about the challenges with matching and that it really required to showcase that in this scenario this is a strong approach. But also some other sort of tricky bits in the data. Olivier, do you want to take that on?

Olivier Sterck

Yes, thanks. I see that time is flying. So I'll try to briefly explain a few of the challenges that we faced. Maybe the first one that we faced during the fieldwork, the main challenge was to find businesses. Addresses are not always available. Business names are not always very clear. So we had to do quite extensive searches to find some of the businesses. And actually we did quite well. Thank you, Antonia, for that. We managed to find 93.8% of all the applicants. That's very, very good. And among these, 86% more or less were interviewed. So it's a relatively high success rate given that we are talking about mobile populations here. 12% of the total set of applicants actually left the camp. So it's not that we didn't do our job correctly, it's just that they could not be found because they moved permanently, or they were deceased. There are 2% of the people that we found that we find that did not agree. So that's very, little. So overall, I feel that was a challenge that that we managed quite well thanks to especially your presence on the field.

There are two other challenges that we faced when processing data, and I want to briefly mention them. The first one is that some of our measures for our variables of interest, for example, revenue, profit, etc., there are numerous zeros and there we have dispersed right tails with large outliers. Without zeros we could just use a log transformation, as is typical in economics, but with the zeros it's more complicated. Initially we used the inverse hyperbolic sine transformation that was promoted at that time in economics. But soon we discovered that the results were not making sense, and so we relegated these results basically in the appendix, because they were way too large, they were just not plausible. They were not making sense compared to the result we were obtaining with the variables before the transformation, basically. And so we created a new method

to deal with this kind of variable that has zeros or negative values and skewed data. Our idea was that instead of using the log transformation or inverse hyperbolic sine transformation, the idea is basically to use a quantile transformation. So transform the data to go from 0 to 1 and rely on the quantile of the distribution of the variable. And that means that instead of interpreting the result in percentage terms, as you would do with a log transformation, basically you interpret the results in percentile terms. So it's relatively intuitive. For more details you can look at the paper.

Then the final challenge with the data that we faced and we tried to solve in the paper is the fact that some of the businesses did not exist anymore. And so there is the question of how to account for that in the analysis. These people that we interviewed, they have no business anymore. So what should we do? Should we put a zero, instead of the profit? For the revenue should we put a zero? Should we impute the data or should we consider them as missing values? Should this observation be dropped when we analyse the impact on revenue and profit? And this is a bit technical, but in the paper we propose a method to calculate lower bound estimates of the average treatment effect that takes into account these zeros. And it's then the lower bound estimate of the average treatment effect on what we call the 'always trader'. So that's the firm that would still have a business even if they did not get the license. Again, it's probably better explained in the paper.

Now that it's probably time to conclude, maybe let's take a step back and think about the big picture message that we want to convey during this podcast. What do you think we learned about markets in the refugee camp? What are the big picture conclusions or the recommendation that that you would make in one or two minutes, to the people who are listening?

Antonia Delius

Thanks, I'll try to keep this brief. For me, really, the key lesson of this project is that it's really important to look beyond the direct beneficiaries when designing cash transfer programmes and also when evaluating their impact. On the latter point, we see that business owners massively benefited, they made huge profits from this programme. So actually the positive impact that the cash transfer programme had on people in this context is not only the impact that we see on direct beneficiaries, but also on the owners of the shops where the transfers are spent. Only looking at the impact on direct beneficiaries may actually underestimate the positive effects that cash transfer programmes can have. That effect, of course, can multiply in the economy as the business owners again spent their profits in the local markets.

Olivier Sterck

What would you recommend to NGOs trying to implement these kind of programmes?

Antonia Delius

So I think at the same time, in designing cash transfer programmes, the design features of the programme can be really important in affecting who gets the welfare gains from the transfer. I

think organisations should look at the market imperfections that exists in the context they work in, but also think about how the design features of the transfers are going to shape that market. In particular, if there are any factors that limit market competition, either as part of the transfer design, if you limit the number of businesses that can participate, or due to market imperfections that already exists beforehand, businesses might be able to extract very high profits based on the programme. I guess if strengthening local businesses is one of your goals, this might not be too problematic. But I think in this context in particular, and in many similar ones, recipients of humanitarian and social support programs are often in very precarious situations and maximising the welfare gains they get from the programme tends to be a key priority. So if that is really the main goal, thinking about how to strengthen competition in the market where the transfer is spent to ensure beneficiaries benefit from prices that are as low as possible should really be a key priority when thinking about the implementation details.

Back to you, Olivier, if you want to add anything.

Olivier Sterck

No, no. Okay. I'll wrap up. This is part of a long partnership with the World Food Program, and maybe I want to conclude by thanking them for the support that they have provided in the field to help us with everything. It's a partnership that we started in 2017 and it is still ongoing. So let me end on that acknowledgment. And we also thank everyone who has participated in that research. It's not only Antonia and myself, of course, there was a huge team of people helping us on the ground, and this research would not have been possible without them.

Let me end the podcast here, Antonia. By thanking you as well, for joining me for this interesting discussion. Thank you also to everyone who is listening to this research podcast of the CSAE. We hope you'll be joining us again next time. And to listen to more episode from the series, please go on the CSAE website. Thanks a lot.

Antonia Delius

Bye.