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Remittances, consumption patterns and household investment: The case of Zimbabwe

Advanced policy-focused poverty analysis in Zimbabwe

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Abstract

Using nationally representative household survey data on Zimbabwe, we utilize propensity score matching and multinomial treatment regression approaches to investigate the impact of domestic and international remittances on household expenditure. The results from the propensity score matching approach suggest that remittances, in general, tend to stimulate all categories of household expenditure (food, durables, education and health), indicating that remittances tend to reduce liquidity constraints faced by households in Zimbabwe. We find that domestic remittances increased expenditure on food and healthcare emergencies but had no impact on durables and education. International remittances, on the other hand, stimulated the expenditure on all expenditure categories (including on durables and education). Furthermore, households that received international remittances witnessed larger increases in all categories of expenditure, compared to domestic recipients. This suggests that international remittances are important in not only reducing household liquidity constraints but in stimulating expenditure on important household investment in durables and education.

1. Introduction

1.1   Context: Importance and policy relevance of remittances in Zimbabwe

Since the late 1990s development economists have started paying increased attention to remittances sent home by international migrants (Yang, 2011). This is because international remittances to developing countries have significantly increased, sometimes exceeding official development assistance (ODA) and sometimes even approaching the magnitudes of FDI. According to the Word Bank's World Development Indicators database, in 2018 international remittances to developing countries were more than USD 500 billion, and Zimbabwe received almost USD 2 billion of that amount. Given the large magnitudes of remittances, and also the fact that they are a more stable financial resource, researchers have expended more research effort trying to better understand the drivers and impact of international remittances on development outcomes.

A number of important questions have been raised in the literature regarding household usage of remittances (Adams and Cuecuecha, 2013, 2010). For example, how do households use the received remittances and what is the impact of such remittances on poverty? There is no consensus on the impact of international remittances: findings on the usage and impact of remittances tend to be either optimistic or pessimistic. For example, Chami, Fullen and Jahjah (2003) argue that a significant proportion of remittances are used to finance status-oriented consumption goods and, when invested, the remittances are invested

inefficiently[1]. This view is however challenged by Adams and Cuecuecha (2010, 2013), Yang (2008), Randazzo and Piracha (2019) and Osili (2004) who argue that households that receive remittances tend to use a significant proportion of it on household investment goods such as health and housing.

The main objective of this study is to investigate the usage and impact of remittances in Zimbabwe. The country is an interesting case study for a number of reasons. First, the country's economic and political instability (since the early 2000s) drove a large number of Zimbabweans out of the country, with most of them migrating to South Africa, the United Kingdom and the US. There is no reliable data on the number of Zimbabweans that left the country since 2000. However, data (which is largely indicative) from the Global Migration online database shows that the number of Zimbabweans residing outside the country increased by about 2% per year (during the period 1990-2000) and 5% per year (during the period 2000-2017). Most of these individuals maintain social and economic ties with their families back home and send money back home quite often. Whilst some remittances may be sent for consumption purposes or are discretionary, others may be for a specific purpose[2] (for example, to build a house, to send a child to school, for the medical care of a relative, etc). The World Bank's World Development Indicators online database has information on remittances covering the period 1980–1994 and then 2009–2019. The information on remittances for the period 1980-1994 shows that remittances to Zimbabwe averaged about USD 10 million per year. The database also shows that, compared to the 1980s and early 1990s, remittances in 2009 (and beyond) had increased to billions (USD 1.2 billion in 2009). In 2012 the country received over USD 2 billion in remittances (13.17% of the country's GDP). The annual average amount of remittances during the 2009-2019 period was USD1.78 billion.

Second, most studies on remittances have focused on large remittance recipients like India, China, Mexico and Philippines. Although African countries like Nigeria, Senegal and Ghana have received some attention, smaller countries like Zimbabwe have not received adequate attention. This may be due to data unavailability. Given that the structure of the Zimbabwean economy is quite different to that of large remittance recipient countries like Mexico or Philippines, it is important to investigate how Zimbabwean households perceive and spend remittances. Also, given that data on remittances is categorised into internal and international remittances, it is important to assess if the two types of remittances are spent differently and if they have different impacts. For policy makers understanding how remittances are spent is important. If it is true that remittances are used inefficiently or are for conspicuous consumption, it may be necessary to come up with incentives to encourage better usage. For example, in an attempt to fill the resource gap, the Zimbabwean

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[1] Indeed there is some anecdotal evidence at the household level on the misuse of international remittances in Zimbabwe. For example, a migrant's remittances sent home to build a house being used for consumption purposes.

[2] According to Yang (2011) another important question is whether migrants have or desire greater control over how family members back home use the remittances they receive.

government can come up with diaspora bonds to encourage investment into certain sectors of the economy (agriculture, education, health, infrastructure, etc.). Other countries have used diaspora bonds for balance of payment support or to raise financial resources in the international capital markets (especially during difficult economic times). A secondary market for such bonds can be established to enhance liquidity and their pricing.

2. Objectives and methodology

The main objective of the study is to assess the impact of remittances on household consumption patterns and household investment. More specifically, the study seeks to: (a) investigate if household investment (into health, education and housing) by remittance receiving households is different to that by those not receiving remittances; (b) investigate if the impact of internal remittances differs to that of international remittances. The study utilises nationally representative household level survey data from the 2011 and 2017 Poverty Income Consumption and Expenditure Surveys (PICES) conducted by Zimbabwe National Statistics Agency. The two surveys, which cover about 30 000 households each, contain information on different aspects of living conditions in Zimbabwe, including consumption expenditure, household income, poverty and inequality issues and social welfare interventions by the government. More importantly, the surveys also contain information on income transfers within and outside the country. They also include an international migration module which probes for information on migration, including the characteristics of people that emigrated from Zimbabwe. It also includes information on households that received remittances: domestic and international remittances.

This study uses the propensity score matching approach to investigate the impact of remittances on household expenditure. Like any other quasi-experimental approach the PSM estimator seeks to solve a missing data problem. In this particular case the missing data problem arises from the fact that we only observe households that receive remittances but we do not know what their expenditure would have been if they did not receive remittances. That is, we cannot at the same time observe the same households with and without the remittances. Properly matching households receiving remittances and those not receiving remittances will help create the counterfactual. After matching the two groups of households (those with and those without access to remittances), and after conducting relevant matching quality tests, we then assumed that if the households that received remittances did not receive remittances their expenditure levels would have been equal to the expenditure levels for their matched counterparts that did not receive remittances. The difference between household expenditure by those receiving and those not receiving remittances is then the estimated impact of remittances. The multinomial treatment regression approach, which corrects for endogeneity, was also used as a robustness check.

3. Findings

The study seeks to investigate the impact of remittances on household consumption. Tables 1 and 2 show that household remittance recipients tend to spend more than their non-recipient counterparts. Remittances may therefore be helping Zimbabwean households to reduce liquidity constraints. It is therefore important to further investigate the role of remittances in explaining the different consumption levels by the two groups of households.

Table 1: Expenditure patterns by household remittance status in Zimbabwe (2011) (in U$ per household per month).

	Non-Recipient of remittances	Recipient of remittances	diff	t-value	p-value
Food exp. ($)	97	106	9	9.7	0.00
Non-food exp. ($)	133	167	34	12.7	0.00
Total exp. ($)	230	273	43	13.6	0.00
Education exp ($)	11	14	3	3.3	0.00
Health exp. ($)	4	6.	2	4.9	0.00
Durables exp. ($)*	17	19	2	2.0	0.05
Per capita food exp. ($)	29	32	-3	6.2	0.00
Per capita total exp. ($)	70	84	14	10.0	0.00
Education share to total exp.	0.03	0.03	-0.00	3.0	0.00
Health share to total exp.	0.01	0.02	0.00	5.8	0.00
Food share to total exp.	0.50	0.47	-0.03	-12.7	0.00

Source: Own calculations from the PICES 2011 and 2017 Survey Data
Note: Figures are the difference between those receiving remittances and their matched counterparts that do not.

Table 2: Expenditure patterns by household remittance status in Zimbabwe (2017) (in U$ per household per month).

	non-Recipient	Recipient	diff	t-value	p-value
Food exp. ($)	84	92	8	8.8	0.00
Non-food exp. ($)	130	165	35	15.4	0.00
Total exp. ($)	214	257	43	15.7	0.00
Education exp ($)	15	19	4	8.6	0.00
Health exp. ($)	3	6	2	5.3	0.00
Durables exp. ($)*	65	76	11	4.7	0.00
Per capita food exp. ($)	24	27	3	7.8	0.00
Per capita total exp. ($)	64	77	13	11.0	0.00
Education share to total exp.	0.07	0.07	0.00	2.0	0.05
Health share to total exp.	0.01	0.01	0.00	5.5	0.00
Food share to total exp.	0.44	0.41	-0.03	-12.2	0.00

Source: Own calculations from the PICES 2011 and 2017 Survey Data
Note: Figures are the difference between those receiving remittances and their matched counterparts that do not.

The above tables however do not really show us the causal impact of remittances. To do that we use the propensity score matching approach. The 2011 and 2017 propensity score matching results are shown in Table 3. We use the following matching estimators to estimate the effects[3]: nearest neighbour, caliper and kernel estimators. The remittance recipients were categorised into three main groups: domestic remittance recipients only, international remittance recipients only and those that received either domestic or international, or both international and domestic remittances. When it comes to the category of remittance recipients that received either domestic or international or both domestic and international remittances, the results (see Table 3, Panel A) suggest that remittances (for both years) had a positive and significant effect on all categories of household expenditure. For example, in 2011 households that received any kind of remittances spent an additional USD10[4] per month on food than they would have spent if they did not receive remittances. In 2017 this was USD7. Similar patterns are also observed for other expenditure categories. For this treatment category, the estimated effects for both years and across all the categories of household expenditure were positive and significant, regardless of the matching estimator used.

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[3] That is, the average treatment effect on the treated (ATT).
[4] Using the Kernel matching estimator.

It is however important to separate remittance recipients (domestic versus international remittance recipients) as this enables us to further investigate if households perceive domestic and international remittances differently. Panels B and C in Table 3 show the effect of the different categories of remittances. When it comes to domestic remittances, we find that they have a positive and significant effect on the food and health care categories of expenditure[5]. For example, in 2011 households that receive domestic remittances spent an additional USD6 per month on food than they would have if they did not receive remittances. In 2017 this was USD5. Regarding the impact of international remittances on household expenditure, we find that in 2011 households that received international remittances spent an additional USD20 per month on food compared to what they would have spent if they did not receive remittances[6]. In 2017 this was USD18. A similar pattern is observed for the other expenditure categories and matching estimators. Across both years the estimates are significant across all categories of household expenditure, regardless of the matching estimator used.

For example, in 2011 households that receive domestic remittances spent an additional USD6 per month on food than they would have if they did not receive remittances. In 2017 this was USD5. Regarding the impact of international remittances on household expenditure, we find that in 2011 households that received international remittances spent an additional USD20 per month on food compared to what they would have spent if they did not receive remittances

[5] In this category the treated are those that received domestic remittance only and the untreated are those that did not receive any remittance.
[6] Using the Kernel matching estimator.

Table 3: Impact of additional US$ remittances on Food, Durables, Education and Health in 2011 and 2017 (US$ per household per month)[7]

	Food		Durables		Education		Health	
	2011	2017	2011	2017	2011	2017	2011	2017
Panel A: Recipient (domestic remittances, international remittances or both)								
Nearest Neighbour	7.6*** (1.15)	5.5*** (1.27)	0.3 (1.10)	10.9** (3.97)	2.1** (1.02)	2.9*** (0.49)	1.8** (0.54)	1.4* (0.59)
Caliper[8]	7.7*** (1.02)	6.3*** (1.10)	0.3 (0.96)	8.5** (3.55)	1.8* (0.91)	1.9*** (0.44)	1.5*** (0.48)	1.3* (2.48)
Kernel	10.0*** (1.13)	6.6*** (1.03)	1.3 (0.89)	8.4** (2.22)	2.6*** (0.82)	2.3*** (0.53)	1.8*** (0.44)	1.4** (0.42)
Panel B: Domestic remittances								
Nearest Neighbour	5.7*** (1.18)	2.9* (1.54)	0.9 (1.05)	-4.9 (3.69)	-0.5 (0.99)	0.3 (0.60)	1.2* (0.53)	0.9 (0.74)
Caliper	5.5*** (1.07)	3.9*** (1.13)	-0.5 (0.95)	-2.3 (2.50)	-0.2 (0.89)	0.6 (0.40)	1.1* (0.49)	0.4 (0.59)
Kernel	6.3*** (0.99)	4.8*** (1.12)	0.2 (0.88)	-1.8 (1.31)	0.3 (0.33)	01.0 (0.50)	1.4** (0.48)	0.8 (0.70)
Panel C: International remittances								
Nearest Neighbour	18.1*** (2.56)	7.1** (3.09)	5.1* (2.94)	28.1*** (8.24)	9.8*** (2.71)	4.0** (1.79)	3.9** (1.47)	3.5* (1.39)
Caliper	17.9*** (2.31)	14.8*** (2.43)	5.8* (2.75)	43*** (6.48)	7.6** (2.59)	6.1*** (1.48)	3.9** (1.39)	3.01* (1.30)
Kernel	20.2*** (2.11)	17.7*** (2.31)	7.4	57.1*** (5.69)	10.3*** (2.68)	9.7*** (1.61)	4.7*** (1.21)	3.9* (1.39)

Note 1: Figures are the difference between those receiving remittances and their matched counterparts that do not.
Note 2: Robust standard errors in brackets

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[7] These are average treatment on the treated effect estimates from the propensity score matching approach.
[8] Nearest neighbour, Caliper and Kernel matching estimators are estimators used to match the recipient's and non-recipients of remittances. They help create the counterfactual.

Households can perceive remittances as transitory income (in which case they would spend it on durables and education), or compensatory income (in which case they would mostly spend it on food or health care emergencies), or just as any other income[9]. The evidence from the study suggests that households spend their remittances on both durables and food, so it is difficult to conclude whether they perceive remittances as transitory or compensatory income. What is clear, however, is that households in Zimbabweans perceive domestic and international remittances differently. The fact that domestic remittances seem to be used for emergencies like food and health care while international remittances are used for durables and education (in addition to food and healthcare) suggests that, to a certain extent, households in Zimbabwe may be considering international remittances to be more of transitory income rather than compensatory income, while they may be considering domestic remittances as compensatory income (hence its use on food and healthcare emergencies). Robustness checks using the multinomial treatment regression approach more or less confirm the results from the propensity score matching approach.

4. Policy recommendations

The study uses the propensity score matching and multinomial treatment regression approaches to investigate the impact of remittances on household expenditure using the 2011 and 2017 household survey data. The results suggest that remittances, in general, tend to stimulate all categories of household expenditure in Zimbabwe. We find that domestic remittances increased expenditure on food and healthcare emergencies but had no impact on durables and education. International remittances, on the other hand, stimulated the expenditure on all expenditure categories (including on durables and education). Furthermore, households that received international remittances witnessed larger increases in all categories of expenditure, compared to domestic recipients. This suggests and corroborates the view in the literature that international remittances are important in not only reducing household liquidity constraints but in stimulating expenditure on household investment in durables and education. That domestic remittances largely stimulate expenditure on food and health care emergencies while international remittances stimulate expenditure on all household categories indicates that households treat domestic and international remittances differently.

From the above it is quite evident that remittances are playing an important role in reducing liquidity constraints faced by Zimbabwean households. It is also evident that the impact of international remittances is larger than that of domestic remittances. There is therefore need for Zimbabwean government to encourage the inflows of international remittances.

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[9] Transitory income signifies windfall gains and is measured by the difference between current and permanent income. According the permanent income hypothesis such gains do not significantly affect current consumption but are usually saved (or invested). Compensatory remittances are transfers sent to help recipients avoid shortfall due to poor economic performance or bad luck (e.g., illness in the family, floods, droughts, etc.) (Chami et al, 2005; World Bank, 2006).

One major problem is that sending remittances to Africa is quite expensive (World Bank, 2006; Cirasino, 2013). For example, sending remittances through major corridors like US to Mexico may costs about 5% of the amount remitted while sending remittances to Africa can cost as much as 20% of the amount remitted (World Bank, 2006). One way to encourage remittances inflows is to reduce or regulate the cost of sending remittances from abroad. Most transfers are however conducted through private players like Western Union and MoneyGram, making it difficult to reduce such costs. The government can however encourage competition in the sector using a number of strategies. First, it needs to reduce barriers to entry. Second, it needs to allow competition between Money Transfer Operators (MTOs) and commercial banks. Third, it needs to reduce capital requirements and other burdensome legal and compliance requirements for new MTOs (World Bank, 2006). The government also needs to create better investment opportunities for those in the diaspora so that such resources are also used for long-term investments like housing and infrastructure (road, hospitals, schools, etc.). One way to encourage long-term investment is to issue diaspora bonds. Countries like India and Israel have raised vast amounts through diaspora bonds.

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