More Than a Transfer: Measuring the Multiplier Effect of MPCA in Al-Musaymir District in Yemen

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CRISIS ANALYSIS
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Introduction

This study calculates the multiplier effect of a multi-purpose cash assistance (MPCA) program over time in two villages near Al Musaymir, a town in northern Lahij governorate under the control of Yemen's internationally recognized government (IRG). The research builds upon the CCY's previous multiplier study published in 2024[1] by following a longitudinal research design and more precisely recording where expenditure occurred using an enhanced survey tool. The improved tools used to collect data for this study are concise and designed for easy integration into existing data collection efforts during an MPCA program cycle. The current study and practical data collection tool are intended to facilitate evidence generation by equipping other organizations to measure the multiplier effect and ultimately generate a larger body of evidence on the economic impact of cash programming.

The multiplier effect is an informative and easy-to-interpret quantitative indicator that measures the value of additional economic activity generated when a cash program is implemented. The indicator is the ratio of the value of the intervention plus the additional economic activity generated by the intervention, divided by the value of the intervention: it is typically presented as "every dollar of input generates X dollars of total economic activity". The multiplier effect of humanitarian cash programming has been calculated in several contexts worldwide, but the Cash Consortium of Yemen (CCY) produced the only study in Yemen in 2024, which found that every USD 1 of MPCA generated USD 2.29 and USD 2.56 of economic activity in two subdistricts where MPCA was distributed.[2]

Key Findings

- This research expands the CCY's previous multiplier study by measuring the multiplier effect during and after the cash assistance program using an enhanced survey tool that more precisely records the location of HHs and business owner spending.
  - The benefit of the improved survey tool is a more accurate estimate of the multiplier effect, which remains positive but lower than the previous study because local spending was constrained to a smaller and more realistic extent of the local economy.
  - The longitudinal design provides additional information on how the spending and purchasing behavior of recipients and businesses changes when cash assistance is distributed in a local economy.
- Every dollar of MPCA distributed by the CCY's partner Danish Refugee Council in the villages of Wadi Al Faqeer and Qareen produced USD 1.44 to USD 2.90 of total economic activity in the local economy. This is lower than the multiplier effect sizes calculated for two sub-districts in the CCY's previous study, 2.56 in Ad-Dali and 2.29 in Ja'ar, due to this study's improved methodology that more precisely identifies the boundary of a local economy and more accurately records the location where goods and services were purchased.
- In dollar terms, the MPCA program in Al Musaymir generated from USD 46,833 to USD 202,232 of additional local economic activity.

[1] REACH, The Multiplier Effect of Multipurpose Cash Assistance in Ad Dhali and Ja'ar Sub-districts in Yemen November 2024
[2] REACH, The Multiplier Effect of Multipurpose Cash Assistance in Ad Dhali and Ja'ar Sub-districts in Yemen November 2024

- The multiplier effect was calculating using two definitions of the local economy, 1.) Al Musaymir and 2.) Al Musaymir and the nearby town of Al Anad. The multiplier effect is higher when using a geographically broader geographical definition of the local economy because there are more locations for local expenditure to occur.
- The multiplier effect remained essentially identical during and after the cash program, when using just Al Musaymir to define the local economy. This is due to consistent proportions of expenditure occurring in Al Musaymir by recipient HHs and business owners during periods with higher and lower purchasing power and economic activity.
- The multiplier effect was noticeably higher after cash assistance stopped when using a broader geographic definition of the local economy because after cash assistance ended, business owners purchased a lower share from more distant markets like Aden in favor of closer markets like Al Anad and Lahij.
- Business owners benefit from MPCA distributions through increased revenue, higher rates of customer debt repayment, and higher personal income. Larger-scale cash programs are likely needed to generate enough additional revenue for businesses to make significant investments that stimulate sustainable economic growth.
- The enhanced household and business owner survey tools are optimized to record the location of household expenditures, which is used to precisely define local and non-local spending. These survey tools are freely available from CCY, and are optimized for integration into existing routine cash program data collection efforts, such as post-distribution monitoring.

Overview

Some 19.5 million people are in need of humanitarian assistance in Yemen, a country suffering from protracted conflict and economic collapse.[3] Current challenges stem from conflict-induced disruptions including fragmentation of political and economic systems, slow economic growth, competing policy frameworks, minimal capital investment, capital flight, depreciation of the Yemeni rial (YER) in IRG-controlled areas, and the de facto authorities' (DfA) strict control over public and private institutions in the north. The FTO designation has further constrained humanitarian operations in the north, resulting in reduced assistance reaching affected populations and exacerbating household needs. The detention of UN staff,[4] has resulted in less assistance reaching the north of the country, exacerbating household needs. The ongoing regional tensions and airstrikes on key ports have further exacerbated the economic situation in the north, disrupting imports and trade flows. Which have contributed to rising costs of living and recurrent service provision challenges across Yemen.

The recent contraction in humanitarian funding has had a major impact on Yemen[5] and magnified the importance of maximizing program impact. This requires richer quantitative evidence to inform more robust cost-benefit calculations. For example, cash assistance stimulates supply chains because households spend more after receiving cash assistance, an effect that should be taken into consideration when assessing the benefits of cash interventions. The wider economic benefits of cash programming are rarely measured in program evaluations but could tip the balance when calculating the value for money of a cash program.

[3] United Nations Office for the Coordination of Humanitarian Affairs, Yemen Humanitarian Needs and Response Plan 2025 January 2025
[4] United Nations Security Council, Security Council Press Statement on Houthi Detention of United Nations Workers September 12, 2025
[5] As of August 2024, only USD 374.6 million of the 2.48 billion (15%) of funding required for Yemen has been met.

Literature Review

The multiplier effect of cash assistance programs, including humanitarian cash interventions, has been found to produce economic benefits in a variety of contexts. Concern Worldwide measured the multiplier effect of an emergency cash transfer pilot program in one region of Zimbabwe,[6] and found that every dollar of cash produced USD 2.59 of economic activity in the local market. The researchers organized expenditure data in a Social Accounting Matrix (SAM)[7] to calculate the multiplier effect of cash assistance. Furthermore, the authors presented several scenarios to calculate the multiplier effect of in-kind food assistance, based on the assumption that portions of the food assistance would be bartered, resulting in multiplier effects ranging from 1 (100% in-kind food consumption) to 1.67 (30% in-kind food consumption). Cash assistance generated higher multiplier effects than in-kind food aid, strengthening the case for cash transfers as a viable aid modality that is also cost-effective.[8]

Concern Worldwide also used a SAM to calculate the multiplier effect of their emergency cash program[9] in three districts in the Central Region of Malawi.[10] They found that every dollar of cash assistance generated between USD 2.00 to USD 2.45[11] of economic activity. The multiplier effect was calculated in two consecutive months during the program, and did not change much over time.[12]

Tao et al.[13] calculated the negative multiplier effect of reductions to cash assistance for refugee and host community populations across 13 communities in Uganda. The study applied the Local Economy Wide Impact Evaluation (LEWIE) approach, using a simulation model informed by household survey data to estimate the local multiplier effect. The results revealed that a USD 1 reduction in cash and in-kind assistance to refugees leads to a total local income loss of USD 2.88 (cash) and USD 2.97(in-kind).

The World Bank measured the income multiplier of an unconditional cash transfer program for women in northern Nigeria, and found that recipients enjoyed income benefits as a result of the higher aggregate demand, resulting in a partial income multiplier income multiplier of 32%, meaning that every dollar of assistance generated an additional USD 0.32 of income.

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[6] Cormac Staunton and Micheál L. Collins, Evaluating the Effectiveness of Cash Transfers versus Food Aid: a case study in rural Zimbabwe April 2011.
[7] The Social Accounting Matrix, which records the circular flow of income from households (HHs) to goods and service providers, and among goods and services providers, will be explained in detail in the following section: "Calculating the Multiplier Effect, The Social Accounting Matrix".
[8] Magdalena Mikulak, Cost-effectiveness in humanitarian work: cash-based programming September 2018.
[9] Distributed in response to crop failure resulting from poor rainfall during the previous cultivation period.
[10] Davies, S. and Davey, J. 2008. A Regional Multiplier Approach to Estimating the Impact of Cash Transfers on the Market: The Case of Cash Transfers in Rural Malawi *Development Policy Review, 26*(1), 91-111.
[11] These are estimates calculated under the assumption that 10% of total spending was conducted outside the local economy, which is the more realistic scenario. The range was defined by the inclusion and exclusion of rent payments (for housing, business and farm), petrol consumption, and travel expenses as local expenditure.
[12] The lower bound estimated multiplier effect increased by 0.02 and the higher bound estimate by 0.04.
[13] Qi, Tao et al.,The Local Economywide Effects of Reduced Refugee Assistance in Uganda 2024 Annual Meeting, July 28-30, New Orleans, LA 344004, Agricultural and Applied Economics Association

Calculating the Multiplier Effect

The Social Accounting Matrix

As demonstrated by the research reviewed in the previous section, the SAM is a proven approach to calculating the multiplier effect. The SAM is a database that records economic transactions and transfers between all economic actors in an economy;[14] specifically, the proportion of total expenditure from one actor to another.[15] In short, the SAM records the circular flow of income from households (HHs) to goods and service providers, and among goods and services providers.

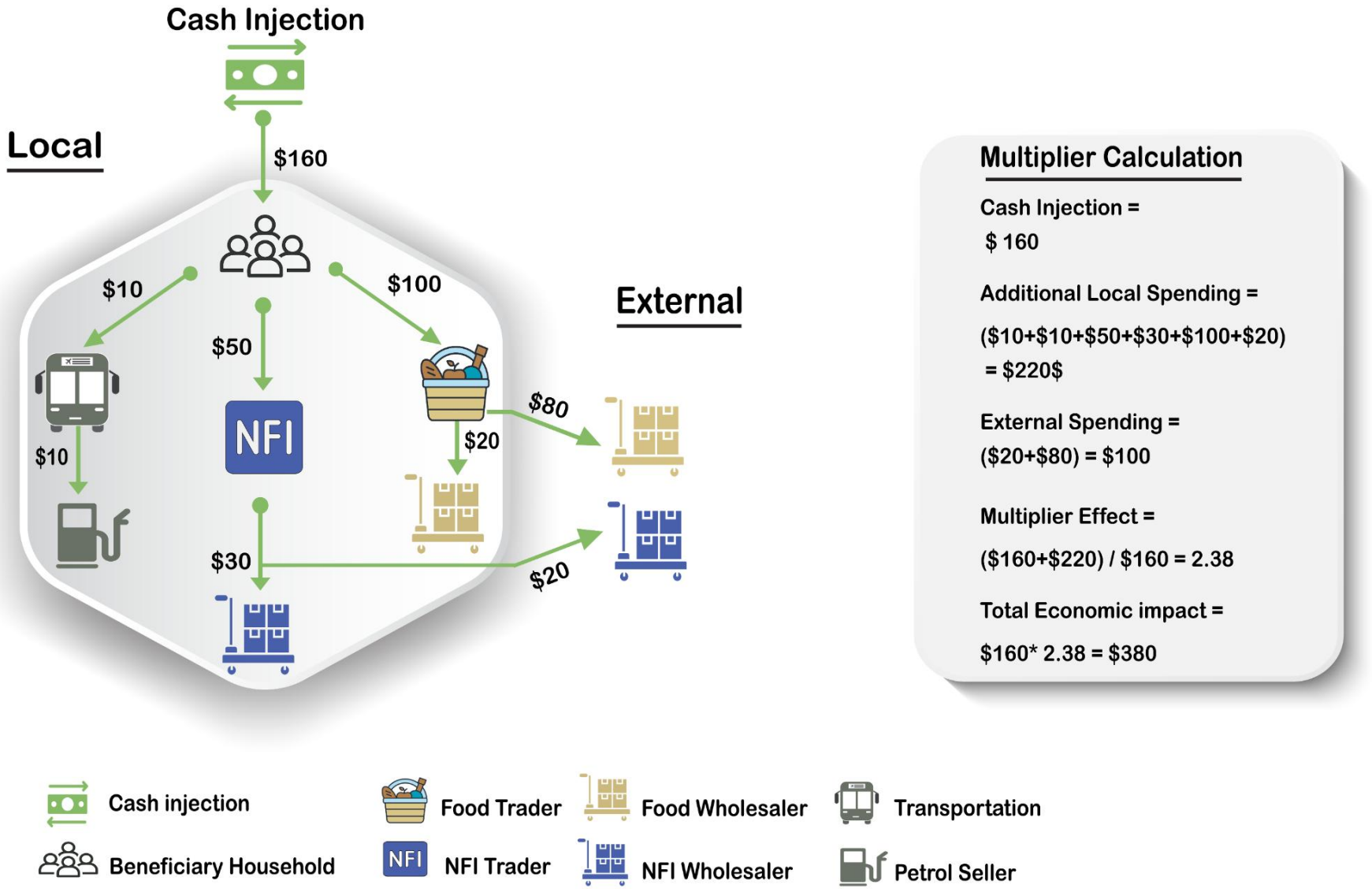
The SAM requires expenditure data from beneficiaries and the vendors they purchased goods and services from, such as traders, farmers, and health clinics. Identifying an appropriate set of vendors is critical to ensure the SAM represents the local economy. For this study, the vendors were identified through key informant interviews with DRC field staff. Equally important is the location where beneficiaries purchased a good or from where they collected a service, which is used to measure the value of transactions that occurred within or outside the local economy.[16]

The formulas used to calculate the multiplier effect using a SAM are shown below (equations 1-3). The SAM (*A*), also known as the technology matrix, is created by calculating the proportion of total expenditure, per-category, for recipient HHs and local vendors. To calculate the multiplier matrix (*M*), which results in the marginal propensity to consume[17] for each economic actor, *A* is subtracted from an identity matrix (*I*)[18] and then inverted. The total change in demand (*y*), known as the answer matrix, is the product of the multiplier matrix and the initial local gain (*x*), which is the total spending per-category by MPCA recipients.[19] The total economic activity generated by the cash injection, *including* the value of the injection, is calculated by summing all elements of *y*. The multiplier effect is calculated by dividing the total economic impact by the total cash injection (*c*). A simplified example of this calculation process is shown in Figure 1.

1. $M = (I - A)^{-1}$
2. $y = Mx$
3. $Multiplier\ effect = \sum y/c$

[14] At any geographic scale, regional or national.
[15] Round, Jeffery. "Social Accounting Matrices and SAM-based Multiplier Analysis" The impact of economic policies on poverty and income distribution: Evaluation techniques and tools 14 (2003): 261-276.
[16] Defined as spending in the local market, which is defined on a per-case basis but includes the town or neighborhood where cash assistance was distributed and often the neighboring towns or villages where beneficiaries from the area of intervention frequently shop.
[17] The SAM approach to calculating the multiplier effect assumes that the marginal propensity to consume (MPC) is static; therefore, this analysis assumes that MPC is equal to the average propensity to consume (APC).
[18] The identity matrix (I) is the same dimension as the SAM with ones across the diagonal and zeroes elsewhere.
[19] Practically, this is the total cash injection multiplied by the first row of the SAM.

Figure 1. Simplified calculation of the multiplier effect of MPCA in a hypothetical local economy. This diagram assumes that recipient HHs spend all the MPCA and includes seven economic actors: a recipient HH, Food Trader, non-food item Trader, Food Wholesaler, non-food item Wholesaler, Transportation, and Petrol Seller.



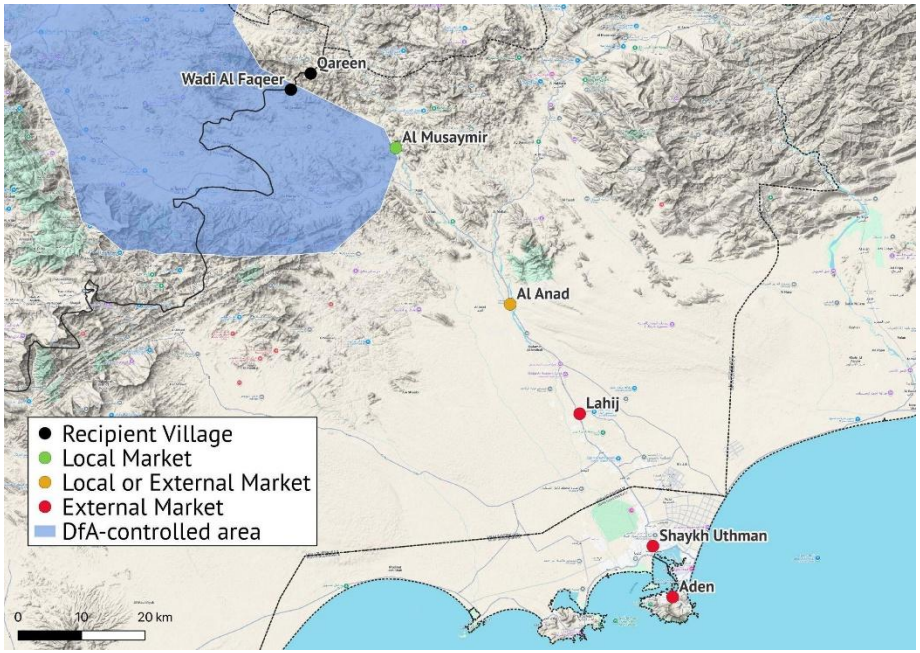
Calculating the multiplier effect using a SAM relies on several assumptions that must be considered when interpreting results. Most importantly, the results represent a particular time period in a limited geographic area[20] and cannot be generalized beyond the time and plane where the data was collected. A fundamental assumption of multiplier theory[21] is that supply can expand to meet higher demand and that prices remain constant despite change in demand. This presents challenges in contexts with volatile currencies or unstable supply chains – for example Yemen – but survey questions asking respondents whether they observed any recent changes in item availability and affordability can be used to ascertain whether these assumptions are problematic.

Creating a Social Accounting Matrix

Household & Business Owner Assessment

The study measures the multiplier effect of MPCA distributed by the Danish Refugee Council (DRC) in Wadi Al Faqeer[22] and Qareen,[23] two villages north of the town of Al Musaymir in Lahij governorate. According to expenditure data collected from MPCA recipients, most goods and services are purchased from Al Musaymir and to a lesser extent the town of Al Anad.[24] Specialized and irregularly purchased goods and services, such as furniture and medical treatment, are typically purchased in Lahij (Al-Hawtah), Shakykh Uthman, and Aden. These locations are mapped in Figure 2.

Figure 2: Map of the villages MPCA recipients live and the local and external markets relevant to the study. Controlling actor boundaries obtained from liveuamap.



Expenditure data from households and local businesses are required to create a SAM. Expenditure data from recipient households (HHs) was collected from a statistically random sample[25] of HHs receiving MPCA in the two villages:108 household surveys in the first round[26] and 115 surveys in the second round.[27] Expenditure data was also collected

[20] A SAM can be collected for any local economy at any point in time, and at any geographic scale defined and justified by the researcher. For example, the multiplier effect can be measured for an entire metropolitan area or individually for several neighborhoods within that metropolitan area, and at different points in time.
[21] Davies, S. & Davey, J. 2008. A Regional Multiplier Approach to Estimating the Impact of Cash Transfers on the Market: The Case of Cash Transfers in Rural Malawi, *Development Policy Review, 26*(1), 91-111.
[22] Geo-coordinates: 13.526514, 44.463347
[23] Geo-coordinates: 13.549859,44.492176
[24] Information about the most common locations where MPCA recipients make most of their purchases was obtained from the DRC field manager, which informed the choice of location options listed in the HH survey.
[25] 95% Confidence interval with a 5% margin of error.
[26] 98 interviews in Wadi Al Faqeer village and 10 interviews in Qareen village.
[27] 104 interviews in Wadi Al Faqeer village and 11 interviews in Qareen village.

from a purposive sample of 30 business owners in Al Musaymir, three per-business category.[28] Both sets of respondents were also asked questions about the economics of their household or business, such as income level and debt burden.

This study follows a longitudinal research design, with household expenditure data being collected at two different points during the MPCA distribution cycle. Specifically, a random sample[29] of households were assessed after the third and fifth rounds of MPCA distributions.[30] The same set of business owners were assessed after the third MPCA distribution[31] and three months after the end of the program.[32] This allows for comparison of the multiplier effect during and after MPCA has been distributed in a local economy.

Fundamentally, changes in the multiplier effect over time reflect structural shifts in HH expenditure patterns and the local economy's capacity to meet higher or lower demand for goods and services that are more competitive outside the local economy. When MPCA is distributed in a local economy, the demand for higher quality and imported or specialized products and services increases, which reduces the multiplier effect unless the local market already provides these goods and services or is able to rapidly supply them.

The rate that traders restock also contributes to changes in the multiplier effect. Restocking is more frequent during an MPCA distribution cycle due to higher demand, but most items are likely sourced from non-local wholesalers, lowering the local multiplier because a larger share of expenditure exits the community. When an MPCA program ends, the demand for imported goods declines in favor of cheaper, locally sourced substitutes (e.g., wheat for sorghum), potentially increasing the domestic multiplier despite lower overall spending. It is also important to note that local demand and restocking rates increase during major holiday periods, such as higher spending on food during Ramadan and clothing before Eid al-Fitr.

Survey Tool

The survey tool used for this study – an improved version of the tool used during the previous CCY multiplier effect study – can record the precise location where HHs and business owners purchased goods and services. Specifically, respondents are asked the location [33] where they purchased each item from, along with the estimated proportion of spending in that category.[34] Location-specific expenditure data enables more accurate analysis, specifically when determining whether spending is carried out within or outside the local economy.[35] Location-specific spending data enables flexible definitions of the local economy across different geographic boundaries and allows the multiplier effect to be calculated at varying scales.

[28] During data collection, three business owners from each category were assessed, except for construction/building repair businesses owners because only two could be identified in Al Musaymir; therefore an additional NFI trader was assessed instead due to higher the relative frequency of the category.
[29] Random sampling with replacement, so many of the same HHs were present in the first and second rounds of HH data collection.
[30] Round 1 HH data collection: March 9 and 15, 2025; Round 2 HH data collection: April 27 and 28, 2025
[31] March 9 and 16, 2025
[32] September 3, 2025
[33] From a list of villages, towns, neighborhoods, and cities predefined after consultations with the DRC field team.
[34] All (100%); About three-quarters (75%); About half (50%); About a quarter (25%). Responses are required to sum to 100%.
[35] In contrast, the previous CCY multiplier study required the respondent to estimate their local and external spending, according to the prompt that local spending is within the subdistrict or in a nearby town in a neighboring subdistrict.

Table 1. Household and business owner expenditure category equivalencies.[36]

Business Category	HH Spending Equivalent	
	Regular	Irregular
Automotive/motorbike/engine mechanic		
Construction or building repair services		
Education (schoolteacher, school master, or private tutor)	Education (school fees; private tutors)	Education fees
Food Trader (fruit and vegetable seller; bakery; food store)	Food items (bread, rice, vegetables, meat, spices, vegetable oil, salt, sugar, etc.)	
Health (doctors or pharmacists)	Medication	Healthcare services (clinical visits, doctor consultations, maternal care, surgeries)
NFI Trader (any non-food items, library, household item store, furniture, building supplies)	- Hygiene (e.g. soap, laundry powder, sanitary napkins, bleach, etc.) - Fuel for cooking and heating - Educational materials (stationery, books, etc.) - Communications	- HH construction and maintenance materials (e.g. repair tools, poles, doors, roofing) - HH items (furniture, mattress, kitchenware, bucket) - HH clothing (clothing, scarfs and footwear) - Productive assets (livestock, machines, seeds) - Small HH items (tools, kitchenware, bucket, etc.)
Qat seller	Qat	
Transportation (taxi/bus driver; truck delivery driver)	Transportation (taxis, buses, etc.)	
Water trucking	Water (all sources - washing, cooking, cleaning, etc.)	

[36] Petrol sellers were assessed in the first round of data collection but could not be accessed in the second round of data collection and were not included in the SAM; therefore, HH spending on petrol was categorized as “other local” spending.

Inputs for the SAM

The team calculated the proportion of total expenditure per-category by recipient households and each business type to create the SAM. The business categories and corresponding HH items in each category are shown in Table 1. Household spending on gifts, rent, debt, and savings, and business owners' personal income and spending on wages, rent, and debt were included and used to calculate expenditure proportions. However, the proportion of savings, personal income, and spending on gifts were included in the expenditure proportions but not included in the SAM because they did not produce a measurable circular effect.[37] Spending on debt and rent were assumed to be local.[38] The SAM calculated with data collected during the MPCA program (Round 1) is shown in Table 2.

Table 2: Social Accounting Matrix (SAM) from the first round of data collection.[39] This SAM was calculated with Al Musaymir defined as the only location where expenditure was considered "local".

	RPNT	FOOD	NFI	AUTO	BLDG	EDU	HLTH	QAT	TRSP	WAT	EXT
MPCA Recipient (RPNT)	0.0%	48.2%	12.9%	0.0%	0.0%	0.0%	7.6%	4.1%	0.4%	0.1%	13.6%
Food Trader (FOOD)	0.0%	24.4%	12.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	48.9%
NFI Trader (NFI)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	58.6%
Auto Repair (AUTO)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	92.4%
Building construction or repair (BLDG)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.9%	68.4%
Education (EDU)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%
Health (HLTH)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	59.6%
Qat Seller (QAT)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Transportation (TRSP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
Water Trucking (WAT)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.5%	29.6%

[37] The HH survey did not record the type of gift that was purchased; therefore, it was not possible to allocate this spending to a specific category. This category will be reconfigured in future HH surveys.
[38] The location of debt and rent spending was only recorded on the HH survey and were all reported as local spending in Al-Musaymir, which informed the assumption of the same for business owners. However, the location of business owner's landlords and creditors will be recorded in future business owner surveys.
[39] Note that savings was considered a leakage and not explicitly modeled in the SAM; therefore, the expenditure proportions may not sum to 100%. The SAM from the second round of HH and business owner data collection is found in the Annex.

Multiplier Effect Results

Table 3 shows the multiplier effect results for Rounds 1 and 2 when the local economy is defined according to a geographically narrower and wider definition. The multiplier effect calculations indicate that every one dollar of MPCA distributed to recipients in Wadi Al Faqeer and Qareen generated between USD 1.44 to USD 2.90 of additional economic activity in Round 1 of data collection. In Round 2 when no MPCA was distributed, the multiplier effect sizes for this local economy ranged from 1.41 to 3.27.

The magnitude of the multiplier effect is heavily influenced by the number and size of local markets included in the definition of the local economy. To measure these differences, the team calculated the multiplier effect according to the following two definitions of the local economy informed by the DRC field: 1.) Al-Musaymir, and 2.) Al-Musaymir and Al-Anad.[40] As expected, the multiplier effect is larger when the local economy includes more locations because a larger proportion of total spending inevitably occurs locally. The geographically broader definition of the local economy is comparable to the previous CCY multiplier study and other similar studies,[41] in terms of the geographic extent and the resultant magnitude of the multiplier effect.

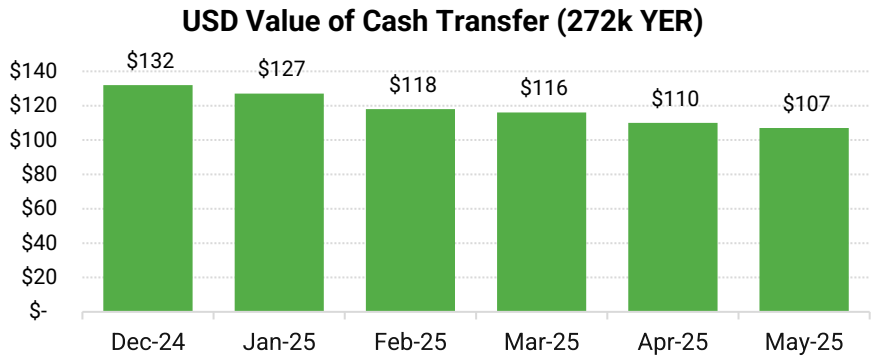
Table 3: Multiplier effect calculations for rounds 1 and 2 of data collection. Round 2 occurred after the completion of the MPCA program and therefore did not generate an economic impact because no cash was injected into the local economy.[42]

Definition of local economy	Multiplier Effect		Total cash injected		Additional economic activity generated	
	Round 1	Round 2	Round 1	Round 2	Round 1	Round 2
Al-Musaymir	1.44	1.41	106,438.20	USD 0	USD 46,832.72	
Al-Musaymir and Al Anad	2.90	3.27	106,438.20	USD 0	USD 202,232.20	

DRC distributed six monthly YER 272,000 cash transfers to 150 HHs in the two villages, summing to a total injection of USD 106,438.20. Calculating the US dollar (USD) value of the cash transfer accounted for the significant YER/USD depreciation during the distribution cycle from December 2024 to May 2025. The USD value of the cash transfer over time is shown in Figure 3.

[40] Defining Al Anad as a local market is reasonable because it is the closest market to Al-Musaymir (30km away along the N1 road).
[41] Concern Worldwide's multiplier effect studies in Malawi (2.02 to 2.45) and Zimbabwe (2.59).
[42] The Round 2 multiplier effect indicates how self-contained the local economy was in September 2025.

Figure 3: US dollar value of the YER 272,000 cash transfer during the six-month distribution cycle.[43] The value of the cash transfer decreased by about 19% during the distribution cycle.



The total economic impact of the MPCA program on the local economy – in USD terms – is calculated by multiplying the total injection by the multiplier effect. The total additional economic activity attributable to the MPCA program is calculated by subtracting the total cash injection from that product. For example, as shown in Table 3, the Round 1 multiplier effect is 1.44 when the local economy is defined as Al-Musaymir. Therefore, the total economic impact is USD 153,271 and the total additional economic activity is USD 46,832.8 (USD 153,271-USD 106,438.20).

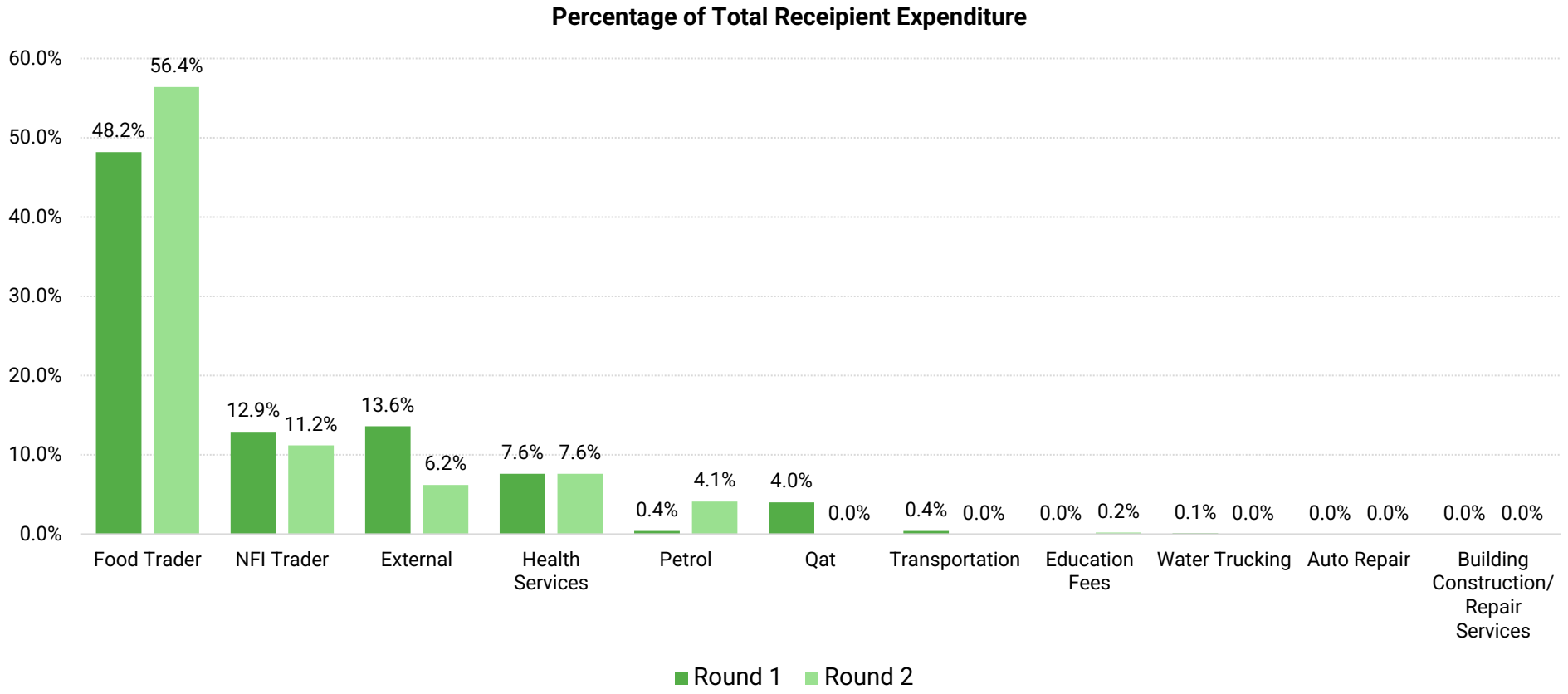
Expenditure Patterns

The multiplier effect is fundamentally determined by the proportion of spending per business category, which varied among the three periods when data was collected. Data was collected from HHs in Round 1 during Ramadan in mid-March 2025, the second round of data was collected from HHs in early May 2025, and from business owners in early September 2025 (Round 2). This research assumes that HH spending in Round 2 is more representative of typical spending patterns compared to Round 1 due to the Ramadan holiday.[44]

Figure 4 shows the proportion of MPCA recipient spending on each business owner category in Rounds 1 and 2.[45] The most noticeable difference between the two rounds of spending is the proportion of spending outside the local economy in Round 1, and a larger proportion of spending on food items in Round 2. However, the proportion of spending on food is comparable between rounds when external spending on food is accounted for, meaning HHs spent a higher proportion on food outside the local economy in Round 1.[46]

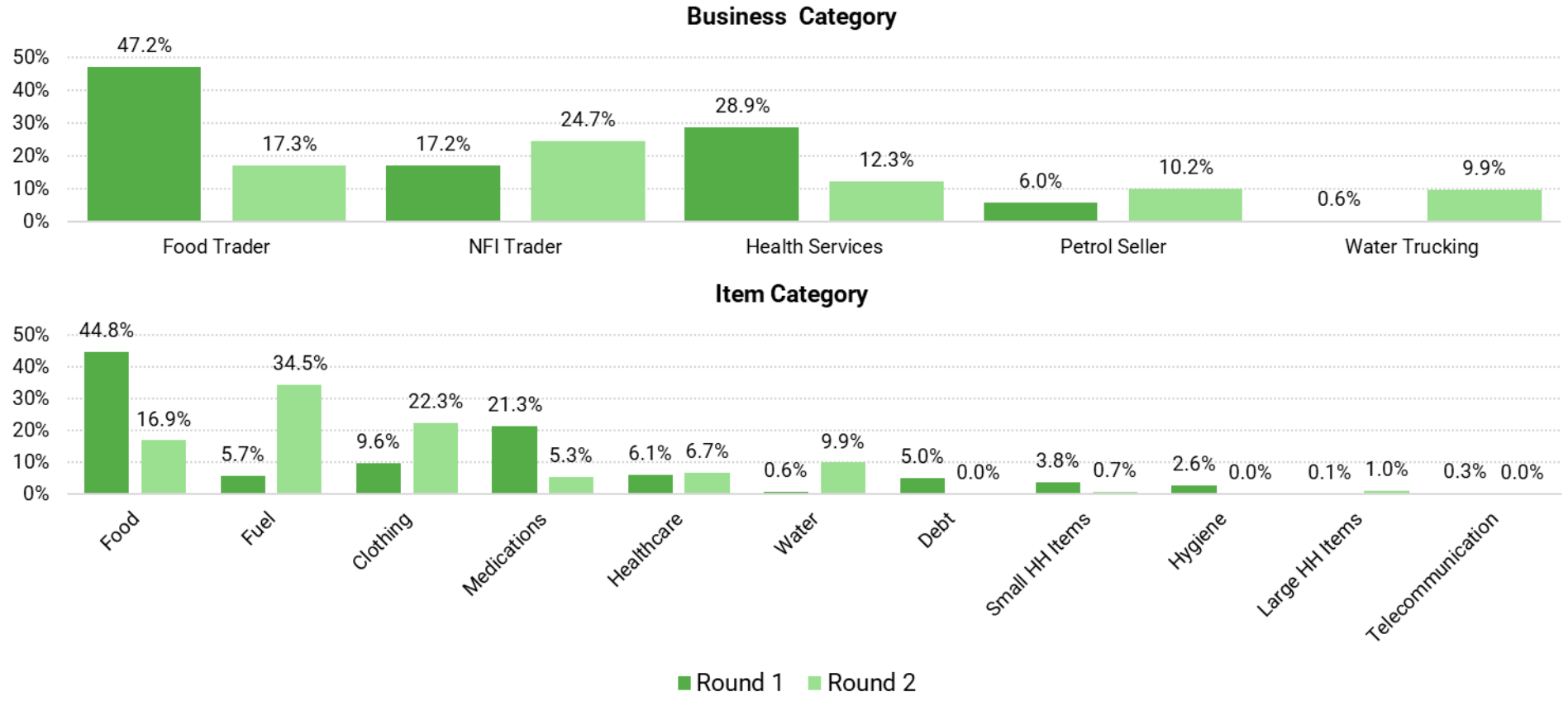
[43] Monthly average YER/USD exchange rates in IRG-controlled areas were obtained from YETI.
[44] Data collected from HHs and business owners should occur at the same time; however, issues assessing the same set of business owners caused a delay. Special attention will be paid to ensure that HH and business owner data collection is harmonized in future multiplier effect studies.
[45] The proportion of expenditure allocated to saving was marginal in both rounds of data collection, accounting for about 1% of total expenditure in Round 1 and 0% in Round 2. This is important because essentially the entire cash transfer was spent in both rounds, which means changes in the multiplier effect can be attributed to changes in the proportion of expenditure spent by category and location within or outside the local economy.
[46] Food spending in locations within and outside the local economy was 57% in and 55% in Round 2.

Figure 4. The proportion of spending by MPCA recipient HH in Rounds 1 and 2. The local economy is defined using the geographically smaller definition that only includes Al-Musaymir.



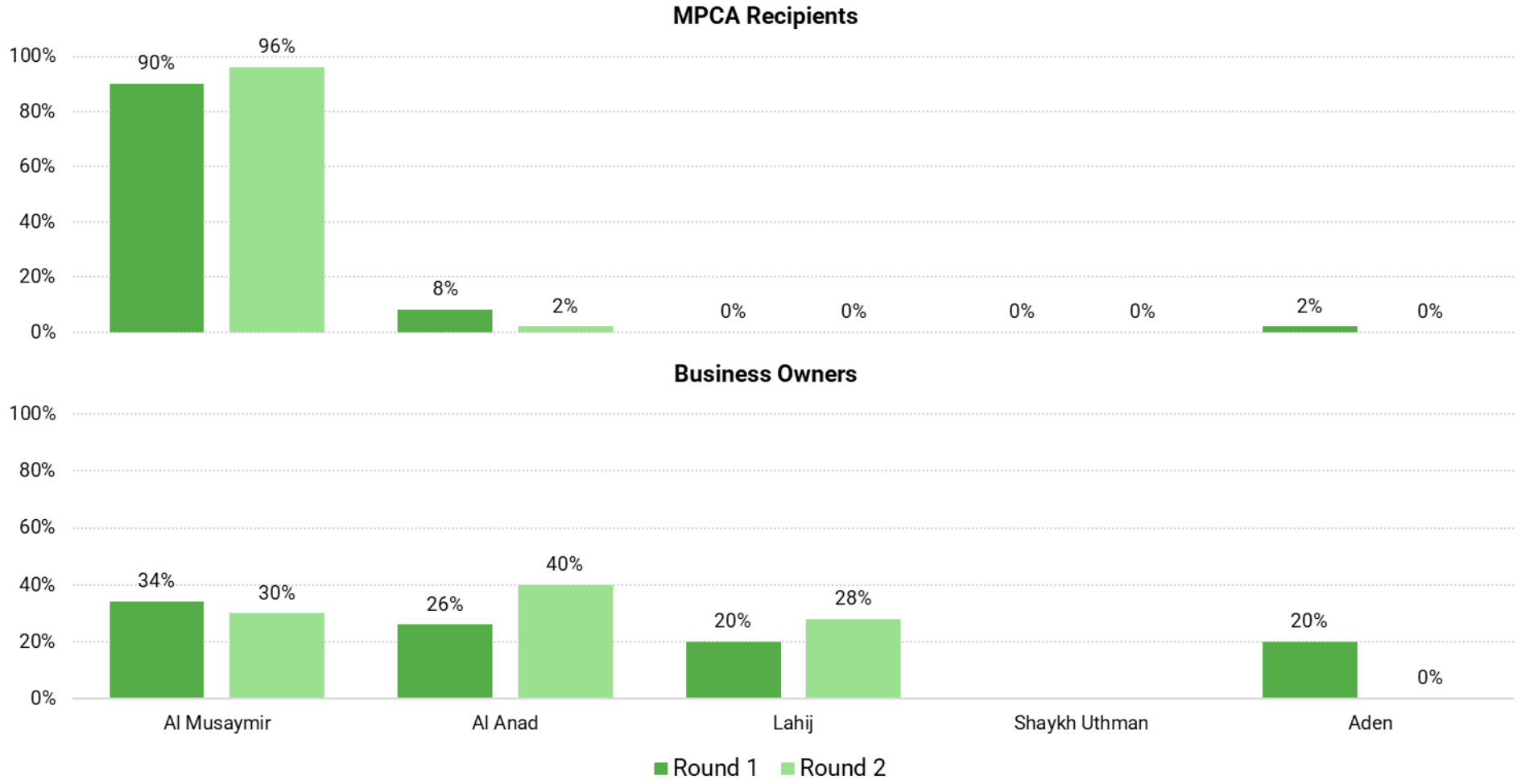
After expenditures on food, the proportion of spending occurring outside the local economy (external spending) is the most appreciable difference between Round 1 and 2. A breakdown of external spending by business and item category is found in Figure 5, and shows a significantly higher proportion of external spending on food in Round 1 (13.6%) compared to Round 2 (6.2%). This is most likely influenced by a higher demand for larger quantities, higher quality, or special food items during the Ramadan holiday. Therefore, the higher proportion of external spending can be attributed to a higher demand for food products not available in Al-Musaymir.

Figure 5. The proportion of HH expenditure outside the local economy in Rounds 1 and 2, by business and item category. The local economy is defined using the geographically smaller definition that only includes Al-Musaymir.



To explain the large difference between the multiplier effect in Round 1 (2.90) and Round 2 (3.27) when using the broader definition of the local economy, it is necessary to examine the locations where HHs and business owners conducted most of their spending. Figure 6 shows the proportional spending breakdown by location in Rounds 1 and 2 for HHs and business owners. The graph clearly illustrates the difference between the geographic range for HH consumption and business owner operating expenses, with the latter being heavily concentrated in Al-Musaymir and the former mainly occurring in Al Musaymir and in neighboring locations. HHs purchased goods and services from a wider range of locations in Round 1 compared to Round 2, but overwhelmingly chose Al-Musaymir to purchase most of their goods and services.

Figure 6. Proportion of spending per-location for MPCA recipient HHs and business owners in Rounds 1 and 2.



Business owners spent 10 percentage points more locally in the second round of data collection compared to the first round. Specifically, business owners spent more in Al Anad and Lahij and much less in Aden during the second round of data collection. The proportion of total household spending occurring in Al Musaymir and Al Anad remained constant at 98 percent across both rounds. As a result, the multiplier effect is higher in Round 2 than Round 1 – when the definition of the local economy includes both locations - because business owners spent a greater share in the local economy after the MCPA program ended.

The shift away from more distant markets (e.g., Aden) from Round 1 to Round 2 is likely due to restocking patterns.[47] Market demand was higher in Round 1 due to the MPCA distributions and the Ramadan holiday, which likely prompted traders to conduct a more frequent and/or comprehensive resupply of goods. By contrast, the second round of data collection better reflects typical market demand in the local economy, which necessitates relatively less specialized and premium products and decreases the need to restock from larger markets. This is the most likely explanation, but businesses' resupply cycles, which varies among business owners and types, should be considered a potential confounding factor when calculating the multiplier effect over time. Furthermore, it raises the importance of collecting expenditure data at consistent, regular intervals (e.g., first second week of the month) to accurately account for variability in expenditure patterns, which depend on the timing and scale of periodic restocking.

In conclusion, the magnitude of the multiplier effect was similar when Al Musaymir was defined as the local economy, but was larger and more variable when Al Anad was included as part of the local economy. The multiplier effect calculated using the geographically smaller definition (1.41 to 1.44) indicates that the internal supply chain in Al-Musaymir did not significantly change when MPCA was distributed, likely because additional demand from MPCA recipients is met through suppliers located outside the town. However, businesses in Al Musaymir tend to resupply in relatively proximate locations, resulting in a substantial multiplier effect when the nearest significant market, Al Anad, is included in the definition of the local economy.

The supply chain in Al Musaymir and Al Anad is relatively more locally integrated when cash is not injected in the local economy due to lower market demand for more specialized and premium products, but the multiplier effect remains sizable when MPCA is distributed. Specifically, every dollar distributed by DRC in the villages of Wadi Al Faqeer and Qareen generated between USD 1.44 to USD 2.90 of total economic activity. DRC distributed USD 106,438 to MPCA recipients in these locations; therefore, the program generated from USD 46,832.72 to USD 202,232.20 of additional economic activity for the local economy.

[47] The DRC field team commented that wholesalers expanded market coverage and provided more supply to closer markets, such as Al Anad. This may also contribute to the lower proportion of spending in Aden in favor of Al Anad and Al Hawtah; however, the specific details on the timing, scale, and coverage of the wholesalers' expansion requires additional data collection.

Descriptive Insights from Business Owners

The team asked business owners to explain the economics of their businesses in Round 1 to better understand how MPCA impacted their business.[48] The main descriptive finding from CCY's previous multiplier study was the positive impact of MPCA on customer debt repayment.[49] For this study, the team added a module asking business owners if and how the additional revenue earned from higher demand levels after MPCA distributions prompted them to invest in their business.[50]

MPCA increased the revenue of most businesses: Of the 27 businesses, 16 businesses reported higher revenue after MPCA was distributed. Fourteen businesses reported a minor (<10%) increase in revenue. One grocery store owner reported a 30% increase in revenue. Another foodstuffs store owner stated that revenue increased because more customers paid with cash instead of on credit.

Product prices and variety remained constant after MPCA distributions: Business owners did not observe any changes in the type of goods or services sold after MPCA was distributed, and did not report any changes to their own pricing or product offering.

MPCA did not produce employment gains: No businesses reported hiring additional employees due to the additional revenue from customers receiving cash assistance over the past six months.

Personal earnings increased due to MPCA: Of the 27 businesses, eight reported an increase in personal earnings when MPCA was distributed. Three businesses reported an increase of 10% or less, and in YER terms, three businesses[51] reported an increase of about YER 200,000 and two businesses reported an increase of around YER 30,000. Two businesses reported that their revenue increased but could not ascertain by how much.

MPCA had a limited impact on employee wages: Of the 27 businesses, only one (grocery store) reported an increase in the wage rate of employees; specifically, a YER 7,000 increase in the monthly salary for their two employees.

MPCA had a limited impact on business investment: Of the 27 businesses, only one (truck driver) reported investing in their business, namely changing the tires and oil of their truck. The driver reported maintenance cost about YER 300,000 and allowed him to operate more regularly. The driver also stated that he purchased the maintenance *partially* in response to higher demand and additional revenue gained from MPCA beneficiaries.

[48] Business owners were not asked these questions in Round 2 due to time constraints.
[49] CALP Network, SAM Multiplier Effect of Cash Study November 2024
[50] ibid.
[51] 2 truck drivers, 1 health clinic

Some investment by other businesses is motivated by MPCA: Of the 27 businesses, four reported that cash assistance encouraged *other businesses* to invest or expand. A building materials seller observed that business owners[52] purchased building materials to expand their small shop. A grocery store owner reported that the MPCA distributions generated enough additional demand to motivate several other grocery shops to increase the size of their inventories. A health clinic owner observed MPCA recipients purchasing organic fertilizer to improve the productivity of their small farm. Another health clinic owner acknowledged that other businesses invested due to MPCA but did not provide a specific example.

Of the remaining business owners, 19 reported that they did not know whether cash assistance encouraged investment or the expansion of businesses, and four did not notice that cash assistance encouraged other businesses owners to invest or expand (grocer, public school teacher, qat seller, building materials seller).

MPCA facilitates customer debt repayment: Of the 27 businesses, 18 reported that fewer customers bought goods or services on credit after receiving MPCA. Of these 18 business owners, 15 specified instances of customers paying back a debt. Of these 15, eight business owners stated that a customer paid back an accumulated multi-month debt after receiving MPCA; four reported that a customer paid back an existing debt and then made a purchase using cash instead of credit after receiving MPCA; two reported that a customer was able to pay off a large proportion of their debt after receiving MPCA; and one reported paying off debt faster than usual after receiving MPCA.

Customer debt repayment improved businesses' liquidity and increased business owners' personal incomes: Of the 18 business owners whose customers repaid debt after receiving MPCA, six reported that customer debt repayment positively impacted their business via higher personal income and liquidity that allowed them to buy more inventory. Another six business owners reported that the primary benefit of customer debt repayment was generally higher liquidity because fewer new lines of credit had to be established. Four business owners reported a higher personal income as the primary benefit of customer debt repayment, and two reported the primary benefit was the ability to establish new lines of credit.

Debt repayment facilitated by MPCA allowed business owners to extend credit to financially disadvantaged customers that did not receive cash assistance: Nine of the 18 businesses that reported that customers repaid all or some of debt after receiving MPCA were able to extend credit to other financially disadvantaged customers due to the additional liquidity provided by customer debt repayment. Of these nine businesses, seven simply stated they are able to extend credit to other customers who did not receive cash assistance, and one health clinic doctor was able to provide free medication to several[53] patients that could not afford it. The remaining business owner that responded affirmatively to the question did not provide a specific example.

Business-related debt: Of the 27 businesses interviewed, only four reported business-related debt:

a. Truck driver A: YER 500,000 for vehicle maintenance
b. Truck driver B: YER 200,000 for vehicle maintenance
c. Building materials trader: YER 1,500,000 from suppliers for inventory
d. Health Clinic: YER 500,000 from suppliers for inventory

[52] Exact number unspecified.
[53] Exact number unspecified.

Discussion

This study found that every dollar of MPCA distributed by DRC in the villages of Wadi Al Faqeer and Qareen generated USD 1.44 to USD 2.90 of total economic activity in the local economy, which translated to USD 46,833 to USD 202,232 of additional economic activity for the local economy. An important additional finding is that the multiplier effect increased when the cash was no longer injected in the local economy – when specified beyond Al Musaymir – because local supply chains were able to better absorb the lower level of demand. Specifically, the rate of resupplying inventories slows down and a lower quantity and variety of products are demanded by the market, which are more likely to be sourced from local supply chains.

A lower multiplier effect size during MPCA distributions suggests that suppliers and vendors outside the local economy are better able to meet higher market demand after MPCA is distributed. Therefore, identifying the item categories most often purchased outside the local economy could be useful for designing programs that align MPCA with business grants and livelihoods. One potential design would provide business development support to relatively uncompetitive but potentially viable business categories in the local economy – identified through the proportion of HH spending conducted externally – in conjunction with the distribution cash programming after the completion of the program to provide higher levels of demand. In Al Musaymir, the development of food or clothing value chains should be considered; however, a more thorough market assessment should be conducted when planning such an intervention.

The primary benefit of MPCA distributions for businesses is increased revenue, higher rates of customer debt repayment, and higher personal income. These positive impacts are all driven by higher market demand after MPCA is distributed in the local economy, but customer debt repayment also has the secondary benefit of facilitating the extension of credit to financially challenged HHs that did not receive cash assistance. This study produced weak evidence that the higher revenue from HHs receiving MPCA stimulated business investment or expansion, most likely because of the relatively low number of MPCA recipients in the local economy (150 HHs). The additional revenue generated by MPCA is sufficient for business owners to enjoy higher personal incomes and high levels of liquidity, but a larger cash injection is needed for businesses to afford investments significant enough to produce sustainable economic growth.

Future multiplier studies should focus on consistently measuring the indicator over the course of an entire MPCA program cycle. This would provide the evidence needed to quantitatively assess the impact of MPCA programming on the structure of a local economy. However, such an analysis would not produce causal evidence, which requires quasi-experimental research design and a local economy that did not receive MPCA as a comparison group. The ideal research design would be a long longitudinal quasi-experimental approach, but such research would prove difficult ethnically and likely logically. Therefore, a longitudinal multiplier effect study over the course of an MPCA program cycle is recommended as the next step for its operational feasibility and more useful results for cash actors.

The enhanced HH and business owner survey tools used in this study performed well by recording the precise geographic location where spending occurred. To facilitate scaling this research in Yemen and other contexts, an abridged KoBo tool that records the information needed to calculate the multiplier effect is available HERE (will add link). The original survey tool was abridged to better fit within post-distribution monitoring tools, which is likely the lowest cost and most operationally suitable means to collect the HH expenditure data needed to calculate the multiplier effect. However, the business owner survey requires a dedicated data collection capacity, and should be coordinated with the team assessing recipient HHs to ensure the both surveys are conducted simultaneously.

Annex

Table A1. Social Accounting Matrix (SAM) from Round 2 of data collection. The local economy is defined using the geographically smaller definition that only includes Al-Musaymir.

	RPNT	FOOD	NFI	AUTO	BLDG	EDU	HLTH	QAT	TRSP	WAT	EXT
MPCA Recipient (RPNT)	0.0%	56.4%	11.2%	0.0%	0.0%	0.2%	7.6%	0.0%	0.0%	0.0%	6.2%
Food Trader (FOOD)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.7%
NFI Trader (NFI)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	59.4%
Auto Repair (AUTO)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	84.9%
Building construction or repair (BLDG)	0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	74.7%
Education (EDU)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%
Health (HLTH)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	60.5%
Qat Seller (QAT)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Transportation (TRSP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.3%
Water Trucking (WAT)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%