

# Harnessing Administrative Data for Impact: The Case of Jordan's Unified Cash Transfer Programme

Teresa Janz and Zina Nimeh

# **HARNESSING ADMINISTRATIVE DATA FOR IMPACT: THE CASE OF JORDAN'S UNIFIED CASH TRANSFER PROGRAMME**

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## Abstract

Over the past decade and a half, Jordan has been facing structural challenges like rising fiscal pressures and high unemployment. In 2018, poverty stood at 15.7%, which has likely increased further due to recent economic shocks such as the COVID-19 pandemic. In response, Jordan has scaled up its social protection system, particularly through the National Aid Fund (NAF), which administers key social assistance programmes. NAF's Unified Cash Transfer (UCT) programme, launched in 2022, aims to alleviate poverty by providing targeted financial support to vulnerable households. This paper evaluates the short-term impact of Jordan's UCT programme on economic outcomes, living standards, and school attendance, using administrative data from the National Unified Registry (NUR). Employing a regression discontinuity design and propensity score matching with difference-in-differences, the study examines whether the UCT alleviates vulnerability and prevents the emergence of poverty traps. While there are positive effects on household heads' employment outcomes and children's school enrolment, the programme shows limited success in increasing household income and asset ownership. The study also assesses the programme's targeting mechanism and data management processes and offers recommendations for future impact evaluations that contribute to improving the effectiveness of the programme in addressing households' socio-economic risks.

**Keywords:** Social assistance, cash transfer, targeting, impact evaluation, Jordan.

**JEL Classifications:** I38, H53, O15

## ملخص

على مدى العقد ونصف العقد الماضيين، واجه الأردن تحديات هيكلية مثل الضغوط المالية المتزايدة وارتفاع معدلات البطالة. وفي عام 2018، بلغ معدل الفقر 15.7%، ومن المرجح أن يرتفع هذا المعدل أكثر بسبب الصدمات الاقتصادية الأخيرة مثل جائحة كوفيد-19. واستجابة لذلك، قام الأردن بتوسيع نطاق نظام الحماية الاجتماعية، وخاصة من خلال صندوق المساعدات الوطنية (NAF)، الذي يدير برامج المساعدة الاجتماعية الرئيسية. ويهدف برنامج التحويلات النقدية الموحدة (UCT) التابع لـ NAF، والذي تم إطلاقه في عام 2022، إلى التخفيف من حدة الفقر من خلال توفير الدعم المالي المستهدف للأسر الضعيفة. يقوم هذا الفصل بتقييم التأثير قصير المدى لبرنامج UCT في الأردن على النتائج الاقتصادية ومستويات المعيشة والالتحاق بالمدارس، باستخدام البيانات الإدارية من السجل الوطني الموحد (NUR). باستخدام تصميم انقطاع الانحدار ومطابقة درجة الميل مع الاختلافات في الاختلافات، تبحث الدراسة ما إذا كان UCT يخفف من الضعف ويمنع ظهور مصائد الفقر. وفي حين أن هناك آثاراً إيجابية على نتائج توظيف أرباب الأسر والتحاق الأطفال بالمدارس، فإن البرنامج يظهر نجاحاً محدوداً في زيادة دخل الأسرة وملكية الأصول. وتقوم الدراسة أيضاً بتقييم آلية استهداف البرنامج وعمليات إدارة البيانات وتقديم توصيات لتقييمات الأثر المستقبلية التي تساهم في تحسين فعالية البرنامج في معالجة المخاطر الاجتماعية والاقتصادية للأسر.

# 1 Introduction

The innovative use of data can significantly improve social and economic outcomes—especially for the poor—if the data are utilised to generate insights that improve well-being (World Bank, 2021). One such data source is administrative data, typically generated by governments when individuals interact with public services, such as schools, or tax systems, which can inform a wide range of government policies, including social protection programmes (Barca, Hebbar, Knox-Vydmanov, & Brzezinska, 2023). These data are less expensive and burdensome to gather, allow tracking over time, and can capture information that is difficult to collect accurately in surveys, which helps minimise errors or biases like social desirability or recall bias (Cole, Dhaliwal, Sautmann, & Vilhuber, 2022). However, access to administrative data as well as data shortages in terms of quality issues or lack of standardised data procedures remain a challenge, especially in low- and middle-income (LMIC) countries. Furthermore, while routine analysis based on descriptive statistics is common, using administrative data for evaluation of social protection programmes is still rare, with a few exceptions from, *inter alia*, Lesotho or the Philippines (Orbeta, Melad, & Araos, 2021; Pace, Daidone, Bhalla, & Prifti, 2021).

Over the past decades, social protection systems, consisting of policies and programmes aimed at reducing and preventing poverty and vulnerability, have been scaled up globally. Social assistance schemes—particularly cash transfer programmes—gained momentum in LMICs to reduce socio-economic vulnerability and break the intergenerational transmission of poverty (Brooks, 2015; Kawar, Nimeh, & Kool, 2022; Niño-Zarazúa, 2019). A large body of evidence testifies to their positive impacts across many dimensions, such as increased consumption or expenditures (Bastagli et al., 2019; Habimana, Haughton, Nkurunziza, & Haughton, 2021), productive investment (Daidone, Davis, Handa, & Winters, 2019) and in some cases labour outcomes, (Baird, McKenzie, & Özler, 2018; Kabeer & Waddington, 2015) or schooling (Gaentzsch, 2020; Kilburn, Handa, Angeles, Mvula, & Tsoka, 2017), to name a few. While cash transfers can be effective tools for poverty alleviation, their design, implementation, contextual factors and recipient behaviour play significant roles in determining outcomes (Della Guardia, Lake, & Schnitzer, 2022; Filmer, Friedman, Kandpal, & Onishi, 2018; Kotsadam & Villanger, 2022).

The Hashemite Kingdom of Jordan has a long tradition of social assistance programmes and subsidies aimed at helping citizens meet their basic needs and reduce poverty-related risks. In this chapter, we conduct an impact evaluation of Jordan’s Unified Cash Transfer (UCT) programme, relying on Jordan as a useful case study due to its historical reliance on social assistance and recent advancements in its social protection system, as well as the availability of

large-scale administrative data. The UCT programme was launched in February 2022 by the country's National Aid Fund (NAF), and aims to reduce monetary poverty in Jordan. In 2023, it reached more than 170,000 beneficiary households per month.

This study has two main contributions. First, we evaluate the extent to which the UCT programme succeeds in reducing vulnerability and preventing poverty traps among beneficiary households in the period from February 2022 to February 2024. Using administrative data from Jordan's National Unified Registry (NUR) and employing a regression discontinuity design that exploits a discontinuity around the programme's eligibility threshold, as well as a combination of propensity score matching (PSM) and difference-in-differences (DiD), we study the short-term impact of monthly cash transfers on economic outcomes, living standards and school attendance. This analysis is based on the notion that the poor tend to be highly exposed to idiosyncratic and covariate risks, but have few tools to deal with these risks (Holzmann, Sherburne-Benz, & Tesliuc, 2003). Social protection programmes and policies enter as protective measures that provide immediate relief or mitigate risks and avert deprivation, but also promote households' income-generating capacities (Sabates-Wheeler & Devereux, 2007). In the context of Jordan, its social assistance landscape predominantly features reactive and shock-responsive programmes that are protective or preventive in nature (Kawar et al., 2022). Evaluating the impact of the UCT thus becomes essential to gauge the programme's effectiveness with regards to enabling households to manage risks, and to create the evidence base that can support strengthening the technical foundation of social protection efforts in the country. Second, through a thorough analysis of the UCT's design and data management processes, this study aims to enhance the effectiveness of the programme and sets out to be a foundation for further impact evaluations of Jordan's cash programmes, leveraging the potential of Jordan's National Unified Registry administrative data. Thereby, we aim to foster a productive research-policy partnership by promoting close collaboration between researchers and the Government of Jordan in utilising its administrative data, leading to innovative, policy-relevant studies (Cole et al., 2022).

Our findings show that the UCT programme has a positive, or cushioning, effect on children's school enrolment and drop-out, and increases the likelihood of household heads to be employed, mostly in irregular forms of employment. However, the latter do not necessarily translate into increases in household income, and a possible substitution effect induced by the cash transfer may be at play. We also find a negative impact on asset accumulation, that seems to be partly driven by improvements among non-beneficiary households. Besides this, the process analysis reveals several key areas where data management and processing, storage as well as the targeting design can be improved. We identify several key policy recommendations to strengthen

the effectiveness and efficiency of Jordan’s Unified Cash Transfer programme as well as its data management that can build on this chapter as a foundation for future impact evaluations.

The remainder of this chapter is structured as follows. Section 2 provides an in-depth background on the context of social assistance and the Unified Cash Transfer programme in Jordan. Data and methods are presented in Sections 4 and Section 3, and Section 5 provides the results. In Section 6, we discuss the findings, and conclude with policy recommendations in Section 7.

## 2 Background

Over the past 15 years, Jordan has grappled with structural challenges, driven in part by external shocks such as regional conflicts, and disruptions in trade and investment. Jordan was affected by price and supply shocks of key imported commodities such as oil and wheat, associated with the Russian war on Ukraine. Inflationary pressures and the lingering effects of the COVID-19 pandemic have further constrained economic recovery and resilience. These challenges are compounded by high unemployment—particularly among youth and women—and persistent fiscal pressures along with a growing reliance on foreign aid. As the population in Jordan has more than doubled from about 5 million in 2000 to more than 11 million in 2022 (World Bank, n.d.-b), pressure on limited public and natural resources has intensified. The latest out-of-school-children report estimated that more than 39,800 Jordanian children (around 3 percent) do not go to school, with the rate being particularly high for Jordanian girls of primary school age, and around ten times higher for children of Syrian and other nationalities (UNICEF, 2020a). Lower secondary school completion rates stand at 93% among Jordanian girls, and only 90% among boys. In addition, the labour force participation rate among men in Jordan was 62.8 percent, and as low as 14% among women in 2023 (World Bank, n.d.-c). This is also linked to challenges regarding labour supply. Over the past decades, modest levels of economic growth did create some jobs, but rate of job creation was insufficient to keep up with a growing labour force (Winkler & Gonzalez, 2019). Moreover, jobs were mostly created in low-productivity sectors, while dynamic sectors with higher levels of productivity growth are not labour-intensive, absorbing only a small fraction of the labour force. The consequences of these structural challenges, most importantly insufficient labour supply, unemployment and inflation, keep disproportionately affecting the poorest households in Jordan. An increase in the poverty rate from 15.7% in 2018<sup>1</sup> to 24.1% in 2022 testifies to their struggles during the

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<sup>1</sup>The national poverty line in Jordan was 99.9 Jordanian Dinars (JOD) per capita per month in 2018, an equivalent of \$322.3 (2017 PPP) (UNICEF, 2020b).

past years and highlights a need for continued investment in poverty reduction efforts in the Kingdom (The Jordan Times, 2022).

### *Social Assistance in Jordan*

Social protection has become a cornerstone for combating socio-economic issues and promoting sustainable development in Jordan, formalised in the National Social Protection Strategy (NSPS) 2019-2025 (Hashemite Kingdom of Jordan, 2019). Jordan has a long history of programmes and initiatives designed to support its citizens in meeting their basic needs and reduce poverty-related risks, through a variety of mechanisms including commodity subsidies, in-kind provision of food and housing, and cash transfers (Hashemite Kingdom of Jordan, 2019). Significant progress has been made in shifting social assistance resources away from subsidies towards poverty-targeted programmes (FAO, 2018). In 2019, together with international donors, the Government of Jordan (GoJ) had allocated a budget of 100 million Jordanian Dinars (JOD) to its National Aid Fund (NAF) that administers social assistance in the Kingdom, which rose to JOD 240 million or 0.7% of GDP in 2023 (UNICEF, 2020b; World Bank, n.d.-a). With the aim to reduce poverty rates and alleviate the severity of poverty, NAF implements several programme lines, including regular and one-time cash assistance, economic empowerment programmes and cash plus services that empower households economically and break the inter-generational transmission of poverty<sup>2</sup>. Covering more than 220,000 households in 2023, Jordan's cash transfer programmes are now the largest in terms of coverage of the poor in the Middle East and North Africa (MENA) region (World Bank, n.d.-a).

### *The Unified Cash Transfer programme*

Over the past years, a key strategic objective of the National Social Protection Strategy has been to consolidate cash assistance implemented by the National Aid Fund and expand coverage, while improving targeting accuracy of social assistance programmes. In the beginning of 2022, the previous *Monthly Financial Aid* programme<sup>3</sup>, and the former poverty-targeted cash transfer programme *Takaful* were merged into NAF's flagship social protection programme, the Unified Cash Transfer (UCT) programme.

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<sup>2</sup>These programmes are: 1) Main cash transfer programmes (*Monthly Financial Aid* programme, Unified Cash Transfer programme), 2) Targeted aid programmes (Emergency Aid programme, Physical Rehabilitation programme, Additional Aid programme, Winter Aid programme), 3) Economic empowerment programmes (training, qualification and employment programmes), and 4) Additional services (*Takaful+*, consisting of a health insurance programme, renewable energy programme, *Makani* project as well as food parcels and purchasing vouchers).

<sup>3</sup>The *Monthly Financial Aid* provides cash assistance to poor households whose head is unable to work, amongst others due to being elderly, sick, or having a disability.

By providing assistance under one common name to a larger share of households, NAF has addressed the compartmentalisation of Jordan’s social assistance landscape, and a new poverty-based targeting system ensures that the UCT aims to reach the most vulnerable households in the country. In 2023, the UCT reached more than 170,000 beneficiary households per month<sup>4</sup>, and more than 866,000 individuals, 52% of which are children up to the age of 18 (NAF, 2023). The UCT has fully adopted a digital payment mechanism to deliver cash assistance to beneficiaries through bank accounts, electronic wallets, and prepaid cards. Monthly transfers range between 40 and 100 JOD (\$148 to \$370 in 2017 PPP in April 2024 (IMF, 2024)), depending on household size<sup>5</sup>. Geographically, beneficiary households are distributed across all governorates in the Kingdom, with the majority of households, about 29%, living in the capital city Amman, followed by Irbid (22%) and Zarqa (16%).

To achieve the most just and equitable distribution of funds in the UCT programme, NAF uses a digital poverty-based targeting mechanism based on a Proxy-Means Test (PMT) to assess households at the time of their application<sup>6</sup> for eligibility for the UCT. This PMT was developed in cooperation with The World Bank and Jordan’s Department of Statistics (DoS), and is based on the Household Income and Expenditure Survey (HIES) of 2017/18. The PMT model includes indicators that collectively measure household demographics, geographic factors, educational status, health, and material well-being, amongst others. The full model is displayed in Table A.1. After this model had been established, the weights that result from coefficients in the PMT model are used to ‘impute’ income, or to predict household income based on the selected correlates. The running variable that determines eligibility into the UCT is then established based on the function

$$X_i = \frac{\max(\text{income}_{\text{imputed}}, \text{income}_{\text{reported}})}{\text{household size}}, \quad (1)$$

where  $X_i$  is the running variable expressed as monthly per capita income, which can be based either on a household’s imputed income from the PMT model, or reported income, whichever is higher<sup>7</sup>. The eligibility threshold, or cut-off, has been determined based on financial capacities of the programme, and lies at JOD 119.2 per person per month. A household’s eligibility is then based on their rank in the variable  $X_i$ . In addition to this ranking, a total of eleven filters

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<sup>4</sup>This includes approximately 120,000 from the original UCT caseload plus an additional 50,000 households from the *Monthly Financial Aid* programme who are gradually being migrated into the UCT.

<sup>5</sup>The base transfer amount is 40 JOD (\$148 2017 PPP for one person, and an additional 15 JOD (\$55.5 2017 PPP is added for every additional household member, up to a maximum of 100 JOD (\$370 2017 PPP).

<sup>6</sup>Households are technically re-assessed on a monthly basis in line with regular data pull for monitoring purposes. However, until summer 2024, households had not been excluded from the programme even in case they achieved a substantial improvement in well-being.

<sup>7</sup>This formula does not take into consideration household composition.

are applied with the aim of minimising inclusion errors (Table A.2), based on which households are automatically deemed ineligible.

### 3 Methodology

#### 3.1 Fuzzy regression discontinuity design

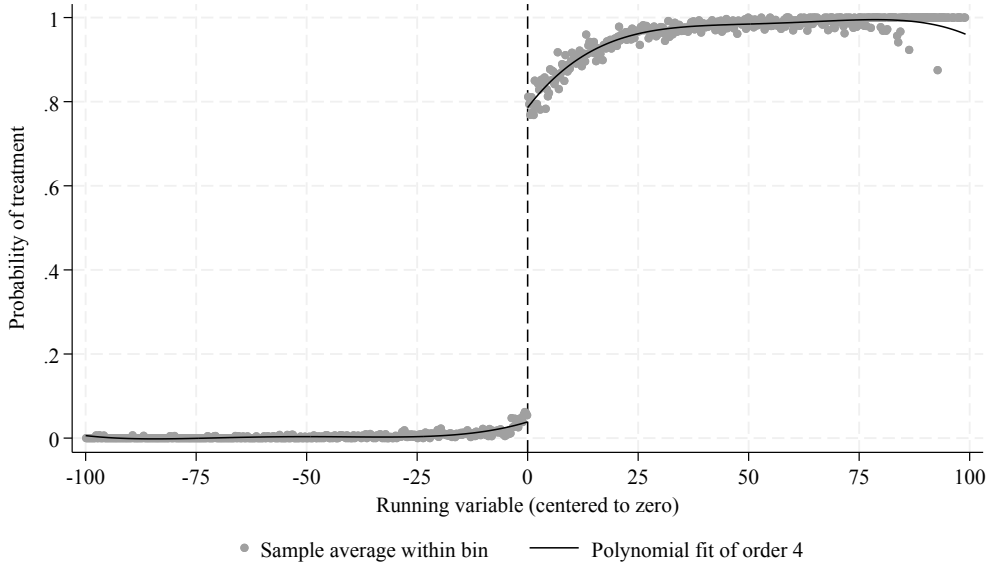
Given the non-random assignment of treatment based on the ranking variable in Equation (1), our preferred methodology for this impact evaluation is the quasi-experimental regression discontinuity design (RDD), where we exploit a discontinuity in eligibility for the cash transfer programme around the threshold. RDD has been used in previous similar studies, for instance for an evaluation of a similar programme in Egypt in El Enbaby et al. (2022), or in Bergolo and Galván (2018), MacPherson and Sterck (2021), Altındağ and O’Connell (2023), or Mora, de Crombrughe, and Gassmann (2022). We use a fuzzy RDD due to the imperfect assignment of treatment, meaning that some households around the eligibility cut-off may not receive treatment—the UCT cash transfer—even if they are eligible, and vice versa. In other words, some households with  $X_i \leq c$ , i.e., where the ranking variable (imputed monthly per capita income)  $X_i$  is lower than the eligibility threshold  $c$  (119.2 JOD), may not have received the transfer, while others with  $X_i \geq c$  received the transfer even though they are not technically eligible. Indeed, we observe that approximately 2.5% of eligible households by ranking do not receive the UCT transfers, while approximately 1.3% of non-eligible households do. A fuzzy RDD design helps address non-compliance with original treatment assignment  $T_i = f(X_i \leq c)$ . As it is imperfect, the probability of receiving treatment no longer jumps from 0 to 1 exactly at the cut-off. Actual take-up of treatment is expressed by the binary variable  $D_i$ , where for some households,  $T_i \neq D_i$ . The observed outcome in this fuzzy regression discontinuity is therefore  $Y_i = T_i Y_i(1, D_i(1)) + (1 - T_i) Y_i(0, D_i(0))$ . In a fuzzy RDD, treatment or cash receipt is thus instrumented by eligibility (Bertanha & Imbens, 2020), and the fuzzy RDD measures the local average treatment effect (LATE) for complier households. The first-stage estimation equation is as follows:

$$D_i = \alpha_1 + \beta_1 T_i + f(X_i) + \epsilon_i, \quad (2)$$

where  $D_t$  and  $T_t$  are treatment assignment and take-up as defined above, and  $f(X_i)$  is a flexible function in the running variable  $X_i$ . The second-stage regression is:

$$Y_{i,t+1} = \alpha_2 + \beta_2 \hat{D}_{i,t+1} + f(X_{i+1}) + \epsilon_{i,t+1}, \quad (3)$$

**Figure 1:** Regression discontinuity plot: Treatment take-up



*Note:* We limit the range of the running variable to monthly per capita incomes of 100 or less (in absolute terms) as data become relatively sparse for larger incomes.

where  $Y_{i,t+1}$  is our outcome variable of interest in the follow-up period  $t+1$ , such as imputed per capita income, reported per capita income, an binary variable indicating whether the household head is in employment, and the type of this employment (e.g., regular vs. irregular), asset ownership, and children’s schooling. We use these outcome variables for two main reasons. First, the UCT programme aims to alleviate poverty in Jordan by enabling households to become productive and engaged contributors to society (NAF, 2023). Therefore, we assess the programme’s impact towards economic variables such as income, employment (of the household head), and productive assets. Second, the choice of outcome variables is shaped and bound by the availability of data in the NUR, which is restricted to information on the household’s income and assets, and the household head’s employment information. The implications and limitations thereof will be further discussed in Section 6.

We first centre the running variable  $X_i$  to zero, based on the eligibility cut-off point of monthly per capita income of approximately JOD 119.2, and then inverse the running variable so that households with  $X_i > 0$  are the treated households, and vice versa. Figure 1 shows the regression discontinuity plot for treatment take-up  $D$ ,  $\mathbb{P}(D_i = 1|X_i = x)$  in our sample. This figure shows that treatment assignment is indeed fuzzy and there is two-sided non-compliance. Using the Stata command `rdrobust` to estimate the first-stage relationship between UCT eligibility and actual receipt of the cash transfer results in a coefficient of 0.73, consistent with the jump observed at the cut-off in Figure 1.

Yet, in line with the data cleaning described in Section 4, a number of households, many of them close to the cut-off  $c$  had to be excluded from the analysis. As a result, the manipulation test for verifying continuity of the running variable around the cut-off becomes invalid (Figure B.3). However, given that households do not have full information regarding the elements in the PMT model and weights of different indicators, or the exact eligibility criteria of the UCT more generally, active manipulation by treatment or control units around the cut-off is practically impossible. We also test for discontinuities at the threshold for various covariates used to generate the running variable (Table A.8 and Table A.9), which prove to be insignificant at conventional significance levels. In other words, there is no significant jump at the threshold for relevant household characteristics. Therefore, we consider the bias to be sufficiently small and a fuzzy RDD to still be valid, and employ it as our main methodology. We proceed estimating the fuzzy regression discontinuity model using bandwidth selection procedures in the form of MSE-optimal bandwidth selector for the treatment effect estimator as our main analysis.

### 3.2 Propensity score matching and difference-in-difference estimator

Still, we acknowledge the potential drawbacks induced by non-discontinuity in the running variable, and perform a second type of analysis based on a combination of propensity score matching (PSM) and a difference-in-difference (DiD) estimator as a robustness test to our main analysis. Specifically, we estimate the propensity score and use inverse probability weighting (IPW) to identify causal effects, following Özler, Çelik, Cunningham, Cuevas, and Parisotto (2021). First, we assign a propensity score  $\hat{p}$  to each household, representing the estimated probability that a household with specific baseline characteristics is selected for treatment—the UCT cash transfer. We then use IPW to estimate treatment effects by applying regression weights that are equal to  $1/\hat{p}$  for beneficiaries, and  $1/(1 - \hat{p})$  for non-beneficiary households.

Given that our sample size is extremely large, containing more than 200,000 observations, we first draw a random sample of 10% of beneficiary and non-beneficiary households each, that allows for a more efficient analysis. We then estimate the propensity score  $\hat{p}$  using a logit model that includes all available variables used in the PMT model (or the closest approximation thereof), which is presented in Table A.7. In line with Özler et al. (2021), we winsorise the propensity score and trim the original sample by dropping households whose propensity score is below 0.05 or above 0.95, as this may violate the condition that the probability of treatment is bounded away from zero and one, which is required for matching and re-weighting (Nichols, 2008). This leaves us with a final sample of 3,086 beneficiary (treatment), and 4,585 non-beneficiary (control) households. Figure B.5 displays the kernel density plots for the treatment

and control groups, both before and after applying inverse probability weights, and Tables A.8 and A.9 show the balance across covariates for the trimmed sub-samples for February and September 2022, respectively. While the sample is highly unbalanced at baseline, with large and statistically significant differences between treatment and control households, we manage to eliminate those differences after matching based on inverse probability weights. As confirmation, a Hotelling’s T-squared test for a set of zero means returns an F-statistic of 0.753 and a p-value of 0.832.

Eventually, we follow Song and Imai (2019) and Saldivar-Frausto, Unar-Munguía, Méndez-Gómez-Humarán, Rodríguez-Ramírez, and Shamah-Levy (2022) and apply the weights generated above in a DiD estimator to estimate treatment effects using the the same outcome variables as in Section 3.1, according to the following equation:

$$\text{DiD} = (\bar{Y}_{T,\text{post}} - \bar{Y}_{T,\text{pre}}) - (\bar{Y}_{C,\text{post}} - \bar{Y}_{C,\text{pre}}) \quad (4)$$

where  $\bar{Y}_{T,\text{post}}$  is the average outcome for the treatment group at endline (after cash receipt),  $\bar{Y}_{T,\text{pre}}$  is the average outcome for the treatment group at baseline (before receiving cash),  $\bar{Y}_{C,\text{post}}$  is the average outcome for the control group at endline, and  $\bar{Y}_{C,\text{pre}}$  is the average outcome for the control group at baseline.

## 4 Data

### *The National Unified Registry for social protection*

We use administrative data on 205,665 households from Jordan’s National Unified Registry (NUR), which was launched in 2013 amongst others to improve the targeting and efficiency of social protection programmes (World Bank, 2023b). The NUR links databases from 30 different government agencies and accesses 38 different registries, verifying and unifying household information into a single registry of social assistance beneficiaries. Moreover, the NUR is an integral part of Jordan’s National Social Protection Strategy 2019-2025, which has prioritised a further development of the registry for targeting potential social assistance beneficiaries. Different components of the NUR like the education data base EMIS have been used for research and evaluation in the past, for instance towards a study on out-of-school children (UNICEF, 2020a). However, to our knowledge, the NUR has not been leveraged as the sole data base for other research purposes.

The NUR’s front-end management of information system (MIS) is hosted by the National Aid Fund and enables the registration of beneficiaries through the application form, the applica-

tion of the targeting formula, updating beneficiary data, managing payments, grievance redress mechanisms as well as monitoring and evaluation purposes. Once a beneficiary applies to a NAF cash transfer programme, the NUR automatically pulls data from the different databases and pre-fills about 70% of the household’s application sheet. With the help of the NUR as well as home visits by social workers, self-reported application data is verified and updated in case of discrepancies between the application and NUR data. Eventually, the data provided serves as input for the proxy-means test that identifies the poorest households to be included in the UCT programme.

### *Data processing*

The National Aid Fund cooperates with an external company for data management and storage, which pulls data from the National Unified Registry for registration of beneficiaries and monitoring activities on a monthly basis. The data we use in this study come from five of those data pulls. Specifically, we use data from February 2022 when households first applied to the Unified Cash Transfer programme—serving as the baseline for our study—as well as four follow-up rounds from September 2022, November 2022, June 2023, and finally February 2024, two years after the start of the UCT programme. We obtain household-level data with information on household demographics, economic activity of the household head, household-level reported and imputed income (the result of the proxy-means test) as well as some individual-level demographic data. In addition to that, we have access to a variety of indicators on household well-being that stem from the previous *Takaful* programme’s targeting methodology, which are still part of the regular data pull. These indicators are mostly categorical variables on various measures of living standard (some of which overlap with the UCT PMT model), based on which we construct further outcome variables.

Our raw data base contains information on 519,109 households per data round. We only retain households who newly applied to the UCT programme at its launch in early 2022, excluding households from the former *Takaful* and *Monthly Financial Aid* programmes as these households had either been receiving cash previously, or were selected as part of a different target group and through a different targeting mechanism<sup>8</sup>. Thanks to the benefits of administrative data over survey data, attrition in our sample across data rounds is reasonably small—below 1

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<sup>8</sup>The *Monthly Financial Aid* programme is a cash transfer programme for households whose head is economically unable to produce an income, such as (single) female-headed households, or households whose head is disabled or unable to work due to other reasons. Hence, this additional categorical targeting element results in a narrower target population group than the former *Takaful* programme and current UCT programme (poverty targeting only), and thus makes a perfect comparison between the *Monthly Financial Aid* programme and the previous *Takaful* case load, now UCT case load, difficult.

percent<sup>9</sup>, and mostly due to households becoming (temporarily) unreachable<sup>10</sup>—suggesting that no attrition-related adjustments are necessary (Card, Chetty, Feldstein, & Saez, 2010). Moreover, within the first two years after implementation, and thus over the timeline of this study, households have not been re-assessed for eligibility or ‘graduated from the programme’ following improvements in their level of well-being. Thus, there should be no endogenous attrition or selection bias based on households’ well-being trajectories.

To measure effects across the two-year period, we keep only households that have non-missing data across all five rounds, a condition which will be relaxed in later robustness tests. We also employ a set of corrections pertaining to the running variable and beneficiary status, correcting for actual (vs. initially assigned<sup>11</sup>) beneficiary status based on cash payments and (income) data corrections performed by NAF between February and September 2022<sup>12</sup>, and exclude extreme income outliers in the running variable<sup>13</sup>.

For our main analysis, we only use households who were ranked based on imputed income (see Equation (1)), or whose imputed income was higher than reported income. We believe that using both types of income could severely influence the comparability of households, and thus not satisfy the requirements for a regression discontinuity design, our preferred methodology as specified in Section 3. On the contrary, using a ranking solely based on imputed income will be more granular and comparable. Lastly, in our main model, we exclude households who are beneficiaries but received only 20 payments or less, as those households have not been fully treated. We later run robustness checks in which we re-integrate them into the sample. This leaves us with a final sample of 205,665 households for our main analysis, out of which 42,001 are beneficiary, and 163,664 are non-beneficiary households. Table A.3 provides a detailed description of these data cleaning steps.

Eventually, we evaluate the impact of the UCT programme on households that were deemed eligible in February 2022 and received payments for two years, comparing them to households that were in-eligible in February 2022 and remained so for at least two years after. We discard

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<sup>9</sup>Attrition is only slightly higher between rounds 1 and 2, but 99.4% of households are recuperated in later survey rounds, meaning that attrition between rounds 1 and 2 was likely due to data corrections and temporary issues in data processing, rather than non-random attrition.

<sup>10</sup>Attrition based on households becoming unreachable during later survey rounds is addressed in the robustness checks where we include households without full information for all five survey waves.

<sup>11</sup>Households with a monthly per capita income of 123 JOD or less were supposed to be eligible for the UCT. The cut-off eventually became 119.2 JOD amongst others due to funding constraints. Hence, we relabel households as non-beneficiaries if their running variable was between 119.2 JOD and 123 JOD per person and month.

<sup>12</sup>Many of the households excluded through income corrections had per capita incomes just below the cut-off of 119.2 JOD, as shown in Figure B.2. Having received some, albeit few, payments, we disregard these households.

<sup>13</sup>We define an outlier as having a monthly per capita income of three standard deviations above the mean, for example equivalent to JOD 5,130 (\$19,000 2017 PPP) and above in round 1.

any household that were treated—or received payments—for a shorter period in our main analyses, but add robustness tests where we relax this condition, and exclude households who applied or became eligible for the programme later than September 2022.

#### 4.1 Descriptives

Table 1 provides summary statistics for selected household characteristics and outcome variables within the final sample at baseline (February 2022), disaggregated by beneficiary status in the Unified Cash Transfer programme. Due to the fact that households are assessed for eligibility based on various demographic, economic and geographic indicators, those two groups are constructed to be systematically different, which is reflected in the significant differences across all variables of Table 1. Geographically, the large majority of applicants to the UCT is concentrated in urban areas, and especially the capital city of Amman, in line with the general population distribution in Jordan. Moreover, Table 1 shows that beneficiary households are on average slightly larger than non-beneficiary households and are less likely to have a female-head of household, which is due to the fact that most of these vulnerable households were absorbed by the *Monthly Financial Aid* programme, and cross-participation in multiple programmes has been very limited. In line with poverty targeting, beneficiaries exhibit lower levels of both imputed and reported income.

**Table 1:** Summary statistics at baseline (February 2022)

	Beneficiaries	Non-Beneficiaries	Difference
<b>Geography</b>			
Urban (%)	80.92 (0.39)	85.57 (0.35)	0.0465*** (0.00)
Live in Amman (%)	37.90 (0.49)	41.91 (0.49)	0.0401*** (0.00)
<b>Demographics</b>			
Household size	5.63 (1.60)	3.16 (1.76)	-2.47*** (0.01)
Dependency ratio	133.89 (0.78)	43.03 (0.54)	-0.91*** (0.00)
Female household head <sup>a</sup>	3.74 (0.19)	26.88 (0.44)	0.23*** (0.00)
Age of household head	41.32 (9.15)	45.37 (15.13)	4.05*** (0.06)
<b>Household income</b>			
Monthly per capita income—reported (JOD)	52.79 (17.38)	115.61 (75.67)	62.82*** (0.21)
Monthly per capita income—imputed (JOD)	88.88 (21.79)	238.10 (145.10)	149.22*** (0.37)
<b>Employment</b>			
HH head works (any job)	68.19 (0.47)	49.37 (0.50)	-0.19*** (0.00)
Head is in irregular employment	55.38 (0.50)	31.78 (0.47)	-0.24*** (0.00)
Head is in regular employment	8.66 (0.28)	11.40 (0.32)	0.03*** (0.00)
Head is a business owner	3.99 (0.20)	6.11 (0.24)	0.02*** (0.00)
Nr. of regular income sources in HH	41.55 (0.61)	61.87 (0.75)	0.20*** (0.00)
<b>Household assets</b>			
Household has any assets	30.06 (0.46)	48.78 (0.50)	0.19*** (0.00)
Household owns land	14.94 (0.36)	24.14 (0.43)	0.09*** (0.00)
Household cultivates land	14.49 (0.35)	23.49 (0.42)	0.09*** (0.00)
Household owns a car	18.32 (0.39)	34.70 (0.48)	0.16*** (0.00)
Household owns property	2.34 (0.15)	6.71 (0.25)	0.04*** (0.00)
<b>Children's schooling</b>			
All school children are enrolled (%) <sup>b</sup>	92.83 (0.26)	70.63 (0.46)	-0.22*** (0.00)
Nr. non-enrolled children	0.18 (0.66)	0.55 (0.96)	0.38*** (0.01)
Any child dropped out (%)	65.17 (0.48)	18.54 (0.39)	-0.47*** (0.00)
Nr. children who dropped out	1.1 (0.88)	0.51 (0.66)	-0.58*** (0.01)
Observations	42,001	163,664	205,665

Standard errors in parentheses

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

<sup>a</sup>Another of NAF's social assistance programmes, the *Monthly Financial Aid* provides assistance to households whose head is economically unable to produce an income, such as (single) female-headed households. Many poor female-headed households are thus absorbed by this other programme and automatically ineligible to the UCT, resulting a significantly lower share of female-headed households among UCT beneficiaries.

<sup>b</sup>Due to the nature of the EMIS (education) data base, school enrollment and drop-out may not always be up to date in the NUR. The differences here are likely to be due to varying levels of verification across beneficiary and non-beneficiary households. We therefore rely particularly on the DiD results for schooling to minimise bias due to non-random differences at baseline.

## 5 Results

### 5.1 Main results: Impact of UCT programme

In this section, we analyse the impact of the Unified Cash Transfer programme on beneficiaries during the two-year period between 2022 and 2024. We mainly find that beneficiaries experience a relative decrease in their level of well-being, both in terms of monetary and multidimensional indicators such as asset ownership, while at the same time the household head's employment and income sources increases, and children's schooling improves.

### 5.2 Main results: Impact of the UCT programme

The short-term impacts of the UCT programme on income and employment obtained from the fuzzy regression discontinuity model are displayed in Table 2. As income and employment can be cyclical across the year, we initially report outcomes for both the endline in February 2024 as well as June 2023 in order to ensure capturing structural, rather than temporary effects. Contrary to the programme's objective, the results show that household income, in the form of both imputed and reported income has decreased over time for beneficiary households in comparison to non-beneficiary households. Two years after implementation, beneficiary households' monthly imputed per capita income via the PMT model was approximately 11% lower, and reported per capita income was 40% lower than that of non-beneficiaries (see Figure B.4 for regression discontinuity plots of reported and imputed income).

Despite the overall decrease in household income, household heads among beneficiaries show an increase in the likelihood to earn an income and be in employment. As Table 2 illustrates, the share of household without income decreases by 32 percentage points over two years, while more household heads earn income from irregular work (+26 percentage points). Similarly, household head employment among beneficiary households is increasing over time, by up to 27 percentage points, compared to non-beneficiary households. This seems to be driven by increases in the share of irregular employment (21 percentage points), as well as business ownership (6 percentage points), while there are no effects on regular employment; likely due to the small sample size of household heads in this category. Moreover, the number of regular income sources in the household, or the number of household members who earn an income, also slightly increases for beneficiary households.

We also find significant and sustained, albeit negative impacts of the UCT programme on asset ownership (Table 3). Beneficiary households are more likely to have no assets (+6 percentage points) than non-beneficiaries, and less likely to have any assets, or to have experienced

**Table 2:** Fuzzy RDD: Income and employment

	(1)	(2)
	June 2023	February 2024
<b>Household income</b>		
Monthly reported household income (log)	-0.430*** (0.0669)	-0.390*** (0.0742)
Monthly reported per capita income (log)	-0.419*** (0.0550)	-0.396*** (0.0600)
Monthly imputed household income (log)	-0.044*** (0.0183)	-0.072*** (0.0185)
Monthly imputed per capita income (log)	-0.086*** (0.0109)	-0.114*** (0.0112)
<b>Household head income</b>		
Head earns no income	-0.288*** (0.0258)	-0.321*** (0.0264)
Head earns income from irregular work	0.244*** (0.0268)	0.257*** (0.0277)
Head earns income from regular work	0.042*** (0.0112)	0.062*** (0.0170)
<b>Employment</b>		
Household head works	0.236*** (0.0270)	0.271*** (0.0269)
Head is in irregular employment	0.199*** (0.0277)	0.214*** (0.0276)
Head is in regular employment	0.001 (0.0035)	0.000 (0.0032)
Head is a business owner	0.037*** (0.0105)	0.061*** (0.0113)
Number of regular income sources within household	0.134*** (0.0379)	0.127*** (0.0330)

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable. The results for household income are expressed as percentages, and all other results are expressed as percentage points, as the outcome variable is binary, except the number of regular income sources, which is expressed in absolute values.

an increase in the number of assets (-9 percentage points) by February 2024. This is also reflected in the asset-related indicators used for income imputation in the proxy-means test model (Table 3). Our results show negative impacts on indicators like land ownership or cultivation (though only significant at the 10% level), or owning a car (-7 percentage points). Finally, we analyse the effects of the UCT programme on children's school enrolment and drop-out. As Table 3 shows, children in beneficiary households are 37 percentage points more likely to all be enrolled in school by February 2024 compared to non-beneficiary households. In line with that, the number of children who are not enrolled in school drops by nearly 0.5.

**Table 3:** Fuzzy RDD: Assets and schooling

	(1) June 2023	(2) February 2024
<b>Asset ownership</b>		
Household has no assets	0.030 (0.0261)	0.056*** (0.0264)
Household has any asset	-0.029 (0.0263)	-0.055*** (0.0267)
Household experienced increase in number of assets	-0.076*** (0.0138)	-0.094*** (0.0151)
<b>Indicators in proxy-means test</b>		
Household owns land	-0.037* (0.0208)	-0.036* (0.0194)
Household cultivates land	-0.035* (0.0209)	-0.035* (0.0192)
Household owns a car	-0.042* (0.0221)	-0.076*** (0.0227)
Household owns property	-0.007 (0.0117)	-0.009 (0.0116)
PMT asset index <sup>1</sup>	-0.022* (0.0118)	-0.029** (0.0118)
<b>Children's school attendance</b>		
All children are enrolled	0.359*** (0.0244)	0.371*** (0.0255)
Number of non-enrolled children	-0.490*** (0.0459)	-0.454*** (0.0467)
Any child dropped out of school	-0.037 (0.0371)	-0.062 (0.0384)
Number of children who dropped out	-0.071 (0.0502)	-0.049 (0.0474)
Standard errors in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable. The results for assets and indicators in the proxy-means test are expressed as percentage points, as the outcome variable is binary, except for the PMT asset index, whose coefficient is expressed in absolute values. The results for children's schooling are expressed in percentage points, except the number of non-enrolled children or children who dropped out, which are expressed in absolute values.

<sup>1</sup>This PMT asset index was constructed by the authors to analyse changes in only the structural, non-demographic aspects in the PMT model. We construct this index through principal-component factor analysis using the indicators on livestock ownership, land ownership, land cultivation, car ownership, property ownership and stock ownership.

### Fuzzy RDD: Round 2 as baseline

As mentioned in Section 4, data corrections were performed between the baseline round in February 2022 and September 2022 due to identified errors<sup>14</sup>. To verify our results, we thus replicate the analysis in 5.2 using the second round of data collection from September 2022 as baseline, and rank households based on the imputed per capita income at this moment in time. We keep the eligibility threshold of JOD 119.2 constant. Figure B.6 displays the corresponding

<sup>14</sup>These errors refer to, among others, but not limited to, errors in the recording and verification of income data and other variables, as well as some retrospective changes to the targeting mechanism (an additional filter had been installed where households who have a reported or imputed income above a certain threshold would be deemed ineligible. This maximum threshold is the equivalent of 100 JOD per person for the first five household members, and 50 JOD per person for any household member after that).

**Table 4:** Fuzzy RDD: Income and employment (round 2 baseline)

	(1) June 2023	(2) February 2024
<b>Household income</b>		
Monthly reported household income (log)	-0.527*** (0.1489)	-0.554*** (0.140)
Monthly reported per capita income (log)	-0.479*** (0.1150)	-0.519*** (0.1060)
Monthly imputed household income (log)	-0.047 (0.0338)	-0.066* (0.0350)
Monthly imputed per capita income (log)	-0.065*** (0.0163)	-0.090*** (0.0184)
<b>Household head income</b>		
Head earns no income	-0.287*** (0.0452)	-0.359*** (0.0451)
Head earns income from irregular work	0.230*** (0.0486)	0.302*** (0.0499)
Head earns income from regular work	0.063*** (0.0206)	0.071*** (0.0200)
<b>Employment</b>		
Household head works	0.216*** (0.0487)	0.295*** (0.0495)
Head is in irregular employment	0.176*** (0.0491)	0.246*** (0.0490)
Head is in regular employment	-0.014** (0.0067)	-0.009 (0.0060)
Head is a business owner	0.052*** (0.0161)	0.051*** (0.0153)
Number of regular income sources within household	0.120* (0.0647)	0.114* (0.0611)
Standard errors in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable. The results for household income are expressed as percentages, and all other results are expressed as percentage points, as the outcome variable is binary, except the number of regular income sources, which is expressed in absolute values.

regression discontinuity plot which shows that treatment assignment is now even more fuzzy, with significant two-sided non-compliance, especially to the right of the cut-off (among eligible households). The first-stage relationship between UCT eligibility and actual receipt of the cash transfer in this scenario is 0.36, and the manipulation test now finds no evidence for discontinuity around the cut-off (Figure B.7).

Considering data from September 2022 as baseline, the negative effects of UCT receipt on imputed and reported income persist, and even seem to be amplified compared to the February 2022 baseline (Table 4). Similar trends are observable for income of the household head, which show an increase in the likelihood of earning income from irregular work of 30 percentage points, and 7 percentage points from regular employment by February 2024. Similarly, there are positive effects on the household head's employment (+30 percentage points), mostly driven by irregular employment (+25 percentage points) and business ownership (+5 percentage points).

The results on asset ownership are partly sustained, confirming that beneficiary households

**Table 5:** Fuzzy RDD: Assets and schooling (round 2 baseline)

	(1)	(2)
	June 2023	February 2024
<b>Asset ownership</b>		
Household has no assets	0.024 (0.0508)	0.078 (0.0505)
Household has any asset	-0.025 (0.0485)	-0.764 (0.0479)
Household experienced increase in number of assets	-0.010 (0.0175)	-0.053** (0.0258)
<b>Indicators in proxy-means test</b>		
Household owns land	-0.034 (0.0383)	-0.031 (0.0383)
Household cultivates land	-0.023 (0.0384)	-0.023 (0.0383)
Household owns a car	0.012 (0.0447)	-0.043 (0.0452)
Household owns property	-0.009 (0.0231)	-0.008 (0.0239)
PMT asset index <sup>1</sup>	-0.015 (0.0222)	-0.020 (0.0241)
<b>Children’s school attendance</b>		
All children are enrolled	0.353** (0.0572)	0.461*** (0.0554)
Number of non-enrolled children	-0.428*** (0.1030)	-0.634*** (0.1060)
Any child dropped out of school	-0.062 (0.0915)	-0.186* (0.0975)
Number of children who dropped out	-0.056 (0.1120)	-0.221* (0.1170)
Standard errors in parentheses		
* p<0.05, ** p<0.01, *** p<0.001		

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable. The results for assets and indicators in the proxy-means test are expressed as percentage points, as the outcome variable is binary, except for the PMT asset index, whose coefficient is expressed in absolute values. The results for children’s schooling are expressed in percentage points, except the number of non-enrolled children or children who dropped out, which are expressed in absolute values.

<sup>1</sup>This PMT asset index was constructed by the authors to analyse changes in only the structural, non-demographic aspects in the PMT model. We construct this index through principal-component factor analysis using the indicators on livestock ownership, land ownership, land cultivation, car ownership, property ownership and stock ownership.

are less likely to have experienced an increase in assets between September 2022 and February 2024, by about 5 percentage points (Table 5). However, we cease to observe significant effects on single asset indicators used in the PMT model. On the other hand, effects on children’s schooling are persistent, and even slightly stronger as in Table 3. Children in beneficiary households are 46 percentage points more likely to all enrol in school, and fewer of them are non-enrolled.

### Fuzzy RDD: Heterogeneous effects

Next to these general results and to discern potential differences across population sub-groups, we perform heterogeneity analyses based on the household’s area of residence and household size. The latter is important for the discussion around transfer adequacy—the total

transfer amount received by a household as a share of their total income—which we will come back to in Section 6. Table A.4 and Table A.5 show the results for the February 2022 and September 2022 baselines, respectively, split into small households (1-3 members), medium-sized households (4-6 members), and large household (7+ members); households living in urban versus rural areas; as well as households living in Amman versus other governorates. We find that overall, the negative effects on income and positive schooling effects are mostly driven by large(r) households. Nevertheless—and notwithstanding slight differences in magnitude—household head income and employment improve consistently among beneficiaries across those three groups. Heads of small households are even more likely to be business owners (+13 percentage points), or have a regular source of income. Beneficiary children of medium-sized and large households are much more likely to be enrolled in school (+62 percentage points), and fewer children in these households are not enrolled.

There are few geographic differences in our estimates, though the observed effects seem to be slightly stronger in Amman. The effects on children’s school enrolment in beneficiary households are slightly stronger in magnitude in rural areas, as well as among children living in Amman. The strongest heterogeneity seems to be that for rural beneficiary households, economic opportunities are more scarce, and in contrast to urban counterparts, we find no significant effects of UCT receipt on indicators like regular income, business ownership or the number of income sources in rural areas. In line with that, beneficiary households in rural areas (and in Amman) are more strongly affected by decreases in reported income compared to non-beneficiaries.

### **Fuzzy RDD: Robustness**

We employ a set of robustness tests to demonstrate that our results above hold. First, we lift the restriction on the number of payments for beneficiary households imposed in Section 4, and include households who received only 20 payments or less, expanding the sample to 163,851 non-beneficiary, and 42,398 beneficiary households. These households may not have been fully treated but did benefit from the programme in more or less intensive ways. The results in columns (1) and (2) of Table A.6 show that the outcomes at endline are largely consistent<sup>15</sup> with the main results in Section 5.2, both in terms of magnitude and significance. Second, we consider all household observations that are non-missing in rounds one, two and five (February 2022, September 2022, February 2024), and include observations with potential missing information during survey rounds three and four. Again keeping all households, irrespective of the number of payments, this further increases the total sample to 164,531 non-beneficiary, and 42,427

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<sup>15</sup>The only exception occurs in terms of asset ownership when considering February 2022 as baseline, where coefficients cease to be significant.

beneficiary households. Columns (3) and (4) in Table A.6 again show that the resulting point estimates are largely robust to this inclusion, and are in line with our main results in terms of magnitude and significance.

### 5.3 Difference-in-differences

The fuzzy RDD from Section 5.2 estimates local average treatment effects (LATE) at the eligibility threshold. Despite valid reasons to believe that manipulation is negligible, interpretation of these results requires caution due to the data issues described in Section 4. In order to verify these results and obtain more generalisable findings, we re-weight households based on their baseline characteristics using inverse probability weighting (IPW), and then apply a Difference-in-Difference (DiD) estimator, as detailed in Section 3. In contrast to the fuzzy RDD which produces estimates of LATE, we now obtain the average treatment effect on the treated (ATT). The results of the DiD analysis are displayed in Table 6 to Table 7 for the February 2022 baseline, and Table A.10 and Table A.11 for the September 2022 baseline.

In line with the fuzzy RDD, we observe a negative impact of UCT receipt on both imputed and reported income between February of 2022 and 2024. Although the direction of these estimates is consistent, they are lower in magnitude (e.g., 19% for reported, and -6% for imputed monthly per capita income). However, the results on reported income are not sustained under the corrected baseline data in Table A.10, meaning that only imputed income has a robust and negative effect, both driven by an increase in imputed income among non-beneficiaries, and a decrease among beneficiary households.

Further, we observe increasing economic activity of beneficiary household heads that confirm previous results, which however don't survive changing the baseline from February to September 2022 either (see Table 6 and Table A.10). Hence, there seem to be some, but weaker evidence for effects of UCT receipt on the income and employment of household heads when analysing the ATT. Our results suggest that both beneficiary and non-beneficiary households may have experienced a decrease in the quality and number of income sources, or jobs, within their households, and UCT receipt merely cushions some of these negative impacts. Regarding assets, we find that beneficiary households are less likely to have any assets, driven by an increase in assets among non-beneficiaries (Table 7) and to some extent a decrease in assets among beneficiaries (Table A.11). Moreover, impacts in terms of asset variables in the PMT model are largely driven by an increase in car ownership among non-beneficiary households. Finally, our results show that, similar to the LATE estimates, children in beneficiary households are more likely to be enrolled in school, and less likely to have dropped out, although the coefficients are

**Table 6:** Difference-in-differences: Income and employment

	Control		Treatment		DiD
	Baseline Mean	Difference Coef	Baseline Mean	Difference Coef	Coef
<b>Income</b>					
Household income reported (log)	6.328 (0.016)	-0.055 (0.041)	6.259 (0.008)	-0.228*** (0.032)	-0.187*** (0.052)
Per capita income reported (log)	4.784 (0.014)	0.008 (0.033)	4.691 (0.007)	-0.171*** (0.027)	-0.193*** (0.042)
Household income imputed (log)	7.181 (0.005)	0.029*** (0.007)	6.845 (0.005)	-0.023*** (0.007)	-0.053*** (0.010)
Per capita income imputed (log)	5.614 (0.003)	0.032*** (0.007)	5.277 (0.003)	-0.024*** (0.007)	-0.058*** (0.010)
<b>Household head income</b>					
No income	0.290 (0.007)	0.416*** (0.013)	0.082 (0.005)	0.136*** (0.012)	-0.267*** (0.018)
Irregular income	0.384 (0.007)	-0.104*** (0.013)	0.721 (0.008)	-0.010 (0.016)	0.088*** (0.020)
Regular income	0.326 (0.007)	-0.312*** (0.009)	0.197 (0.007)	-0.126*** (0.012)	0.178*** (0.015)
<b>Employment</b>					
Household head works	0.469 (0.007)	-0.241*** (0.012)	0.654 (0.009)	-0.038** (0.017)	0.199*** (0.021)
Head is in irregular employment	0.287 (0.007)	-0.078*** (0.012)	0.544 (0.009)	0.004 (0.018)	0.080*** (0.021)
Head is a business owner	0.017 (0.002)	-0.002 (0.003)	0.039 (0.003)	0.017** (0.007)	0.018** (0.008)
Nr. regular income sources in HH	0.609 (0.011)	-0.333*** (0.019)	0.440 (0.011)	-0.011 (0.022)	0.308*** (0.029)
Observations	4,585	9,170	3,086	6,172	15,342

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

*Note:* The results for household income are expressed as percentages, and all other results are expressed as percentage points, as the outcome variable is binary, except the number of regular income sources, which is expressed in absolute values.

slightly lower in magnitude (Table 7 and Table A.11). Again, UCT receipt seems to cushion overall deteriorating schooling outcomes among recipient households.

**Table 7:** Difference-in-differences: Assets and schooling

	Control		Treatment		DiD
	Baseline Mean	Difference Coef	Baseline Mean	Difference Coef	Coef
<b>Assets</b>					
Household has no assets	0.576 (0.007)	-0.102*** (0.013)	0.595 (0.009)	-0.011 (0.016)	0.093*** (0.021)
Household has assets with revenue	0.198 (0.006)	0.042*** (0.011)	0.205 (0.007)	0.012 (0.015)	-0.032* (0.019)
Household has any assets	0.424 (0.007)	0.102*** (0.013)	0.405 (0.009)	0.011 (0.016)	-0.093*** (0.021)
<b>Indicators in proxy-means test</b>					
Household owns land	0.186 (0.006)	0.028*** (0.010)	0.194 (0.007)	0.015 (0.015)	-0.017 (0.019)
Household cultivates land	0.181 (0.006)	0.027*** (0.010)	0.189 (0.007)	0.016 (0.015)	-0.015 (0.018)
Household owns a car	0.296 (0.007)	0.119*** (0.013)	0.281 (0.008)	-0.011 (0.015)	-0.129*** (0.019)
Household owns property	0.043 (0.003)	0.020*** (0.006)	0.048 (0.004)	0.008 (0.009)	-0.013 (0.011)
PMT asset index	0.138 (0.004)	0.028*** (0.006)	0.141 (0.004)	0.009 (0.009)	-0.022** (0.011)
<b>Children's school attendance</b>					
All children are enrolled	0.703 (0.009)	-0.251*** (0.018)	0.948 (0.005)	-0.047*** (0.009)	0.185*** (0.020)
Number of non-enrolled children	0.709 (0.023)	0.439*** (0.047)	0.139 (0.011)	0.186*** (0.020)	-0.149*** (0.052)
Any child dropped out of school	0.328 (0.013)	0.232*** (0.026)	0.497 (0.013)	0.166*** (0.020)	-0.071** (0.033)
Number of children who dropped out	0.666 (0.017)	0.338*** (0.033)	0.886 (0.018)	0.269*** (0.029)	-0.081* (0.045)
Observations	4,585	9,170	3,086	6,172	15,342

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Note:* The results for assets and indicators in the proxy-means test are expressed as percentage points, as the outcome variable is binary, except for the PMT asset index, whose coefficient is expressed in absolute values. The results for children's schooling are expressed in percentage points, except the number of non-enrolled children or children who dropped out, which are expressed in absolute values.

<sup>1</sup>This PMT asset index was constructed by the authors to analyse changes in only the structural, non-demographic aspects in the PMT model. We construct this index through principal-component factor analysis using the indicators on livestock ownership, land ownership, land cultivation, car ownership, property ownership and stock ownership.

## 6 Discussion

In this study, we have leveraged Jordan's National Unified Registry to conduct an impact evaluation of the Unified Cash Transfer programme between February 2022 and February 2024. The objective of this study, as mentioned in the introduction, is twofold. First, we put forward an estimate of the impact of the UCT programme on economic and non-economic indicators, using various estimation methods to verify the robustness of our results. Our findings suggest

that the UCT’s effect on household well-being is inconclusive: while beneficiary households achieve lower levels of income and assets in the short term, household head seem to be more economically active and children’s schooling improves.

### *Income, employment and assets*

Our main outcome of interest is household income, which is associated negatively with UCT receipt. This seems to occur simultaneously through a relative increase in income among non-beneficiaries, as well as a decline in beneficiary households’ income, and is observed both for reported and imputed income. Importantly, imputed income includes demographic dimensions, such as household size, so a change in the level of imputed income may not necessarily—or nor only—result from a household’s change in structural assets. We nonetheless include this indicator to assess to what extent the outcome of the PTM model changes over time and whether households may experience a disincentive to invest in components that contribute towards this index. We come back to this question below. Furthermore, the impacts on reported income may suggest that beneficiary households indeed achieve lower levels of income.

The measures of income we use are net of the UCT cash transfer, meaning that there may be a substitution effect at play, where cash received from the UCT programme represents a relatively stable and reliable income stream and thus substitutes other parts of household income. This substitution effect has been reported in different scenarios in previous studies such as Baird et al. (2018); Ribas and Soares (2011) or Asfaw, Davis, Dewbre, Handa, and Winters (2014). As non-beneficiaries must find other income sources to improve their level of well-being, income increases among this group, while beneficiaries can rely on the UCT transfer. Still, and despite the programme’s goal to reduce poverty in the Kingdom, any effects on imputed or reported income do not allow us to make assumptions about the UCT’s achievements in terms of poverty reduction among Jordanian households. Poverty in Jordan is estimated using monthly per capita consumption, not income, based on the Household Income and Expenditure (HIES) survey collected by the Department of Statistics (DoS), which is not part of NUR. We therefore cannot claim the programme to have, or rather not have, any impact on poverty reduction, although the negative effects on income may be correlated with a deterioration in poverty among beneficiary households.

Notwithstanding, we observe overall positive effects on labour supply of the household head, in line with previous cash transfer research on labour supply (Bastagli et al., 2019). Beneficiary household heads are more likely to work<sup>16</sup>, particularly engaging in irregular work activities,

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<sup>16</sup>While the positive local average treatment effects (LATE) on economic activity of the household head are robust, average treatment effects on the treated (ATT) depend on the underlying baseline time frame.

and correspondingly, increasingly gaining an income from irregular employment. Those positive effects are also significant for business ownership among beneficiary households, albeit at a much lower magnitude. This could be early signs of the UCT programme having an encouraging effect on labour market outcomes, even though a strengthening of employment especially in the formal sector is constrained by Jordan’s generally high unemployment rate and challenges in providing job opportunities (Winkler & Gonzalez, 2019; World Bank, 2023a). Still, despite the increase in the household head’s economic activity and income sources, those effects seemingly do not translate into higher household income overall. This may provide further evidence for the substitution effect described above, where households shift employment away from laboured work to other forms of non- (or lower)-waged labour, in this case especially irregular forms of employment and income (Asfaw et al., 2014). However, doubts remain whether the UCT transfer value is sufficient to allow for altered labour decision on the intensive- or extensive margin, in line with previous research (Kabeer & Waddington, 2015), which we will discuss below.

Lastly, the results on asset ownership suggest that the UCT programme has limited ability to structurally improve household well-being thus far, or rather fails to cushion a divergence in asset endowments between non-beneficiary and beneficiary households. In both the LATE and ATT estimations, asset accumulation among non-beneficiary households leads to an overall negative effect of the UCT programme on beneficiary’s asset endowments. Although we cannot specifically test this hypothesis, this may be a result of uncertainty among beneficiary households who take sub-optimal decisions that maximise their short-term utility—remaining eligible for the cash transfer—as has been found in various previous settings (Mora et al., 2022). Non-beneficiary households, on the other hand, may be more under pressure or more ready to realise structural improvements in their living conditions without external financial support. As a result, they seem to incur higher income gains over time, which subsequently translate into asset accumulation. Beneficiary households may be reliant on the cash transfer, or face other barriers that render them vulnerable and unable to accumulate assets, especially in the short term (Barrett, Carter, & Chavas, 2017; Premand & Stoeffler, 2020). However, as the results on asset ownership and accumulation seem to be primarily driven by car ownership, a deeper investigation of asset trajectories is required to derive robust conclusions in that regard.

### *Reducing risk*

These findings highlight obstacles facing the UCT programme in improving household income and structural assets. In line with Kawar et al. (2022), the UCT in its current state is,

at best, a protective rather than promotive instrument that can lessen the intensity of income shocks, but has limited capacity in promoting structural improvements in well-being. This leads us to an assessment of whether in this case, poverty traps may be at play, and to what extent the UCT programme influences the ability of poor households to overcome such poverty traps. For this purpose, we define a poverty trap as economic conditions in which people struggle to escape poverty and financial insecurity over time (Antman & McKenzie, 2007). In these situations, poor households cannot—or are not willing to—accumulate enough assets or income to escape poverty.

In the context of the UCT, we observe that local average treatment effects, in comparison to average treatment effects on the treated, are much stronger in magnitude, for instance on imputed and reported income. In other words, effects on households that are just eligible seem to be stronger than on the overall beneficiary population. Now, households have not been re-interviewed since their application in February 2022; no households have been 'forcibly graduated' out of the programme thus far; and they have not been informed of an official re-evaluation point. Yet, adverse incentive effects to either misreport the level of well-being or actively avoid an improvement in structural well-being in order to remain eligible for the UCT may be at play (Banerjee, Hanna, Olken, & Sumarto, 2020; Mora et al., 2022; Wolfe, 2002). We assume that while households are unaware of the precise PMT model, they know that eligibility into the programme is based on certain volatile or structural indicators of well-being, such as having a car. Apart from this behavioural component, the inability among beneficiary households to accumulate assets provides further suggestive evidence that poverty traps may be at play (Barrett et al., 2017; Barrett, Carter, Chavas, & Carter, 2019). Of course, this could be due to the fact that asset accumulation takes time, and positive gains will not become evident over the course of only two years. However, it could also hint at the fact that beneficiary households are so structurally poor that they are practically unable to invest in productive assets (Kraay & McKenzie, 2014). Alternatively, the cash received through the UCT programme may be used for immediate consumption needs rather than productive activities or assets, and thus may have limited impact in terms of helping households to move out of poverty eventually.

An important consideration in this debate is the transfer accuracy, or the sufficiency of the cash transfer amount in allowing for such productive investments. In the UCT programme, transfer amounts vary between 40 JOD to 100 JOD per household per month depending on household size, whereby the large majority of households (76%) receive the full amount of 100 JOD and only about 6% receive 70 JOD or less. Yet, even 100 JOD per month—equivalent to the monthly poverty line for one person—may not be sufficient to achieve structural improve-

ments in well-being, especially within larger households. This is somewhat confirmed through our heterogeneity analyses, which show that the negative impact we observe intensify the larger the household. While there are of course trade-offs between coverage and transfer adequacy, the cash transfers are on average only equivalent to 18% of the poverty line among Jordanian beneficiary households, and may thus be insufficient to cover the needs of all household members as well as productive investments simultaneously.

### *Schooling*

Finally, we find that children of households who are beneficiaries of the Unified Cash Transfer programme are consistently more likely to (all) be enrolled in school, and fewer children within these households are not enrolled, similar to previous studies (Baird, Ferreira, Özler, & Woolcock, 2014; Bastagli et al., 2019; Kilburn et al., 2017). Beneficiary households are also less likely to have a child drop out of school, and the effects are particularly pronounced among large households. The increased school enrolment and reduced drop-out is important because education is a critical tool for breaking the inter-generational transmission of poverty, offering long-term benefits such as higher income potential (Moore, 2001). However, the positive effects observed are likely driven by a cushioning of overall negative trends in enrolment and drop-out. Still, schooling outcomes like school enrolment may vary considerably throughout the year due to the school cycle and school holidays, and the EMIS data base may not always be immediately updated. Therefore, these results are likely to vary throughout time naturally and require an in-depth follow up study, perhaps with additional data sources to confirm our results.

### *Estimation challenges and limitations*

While our study presents valuable findings on the impact of the UCT programme on beneficiary household's well-being, a few estimation challenges remain. First of all, the time frame during which the UCT programme has been implemented until the point of evaluation is rather short. We can only detect short-term effects, but are unable to analyse to what extent the UCT programme enables households to sustainably improve their level of well-being or to ultimately move out of poverty. A follow-up evaluation of the programme is hence needed in order to continue monitoring the functioning of the programme and assess mid- to long-term effects, possibly including graduation effects. A second limitation concerns the data used in this impact evaluation. As explained in Section 4, the data for determining eligibility come from Jordan's integrated government database NUR, while they are managed by an independent data company contracted by NAF. There, applications are processed, and the data are

transformed and stored. However, not all indicators within this PMT model are stored in the data that we used, complicating the types and depths of the analyses we can perform. Furthermore, especially among non-beneficiary households and households in the informal sector, some of the data regarding employment or income may naturally not be updated in the NUR system, and thus provide limited variation over time. Another limitation in terms of data is that after application, eligible households are being visited and their information is verified, while non-eligible households—or at least those who are far from being eligible—are often not. Therefore, there may be a discrepancy in terms of the data quality across beneficiary and non-beneficiary observations. Our difference-in-difference model addresses this limitation, but more structural verification of non-beneficiary data would be helpful for future evaluation exercises. On top of that, the complex targeting mechanism of the UCT programme led us to exclude some households. As a consequence, the estimates in this study may not hold for the entire beneficiary population, but only for the subset that comprises our primary sample.

## 7 Policy recommendations for future impact evaluation

### *Concluding remarks*

The Unified Cash Transfer programme shows some positive trends, particularly in household head employment outcomes and children’s school enrolment. These results are promising, as they suggest that the programme frees up capacities of the household head or other members to pursue (irregular) employment, and supports education as a tool to break the inter-generational transmission of poverty. However, a likely substitution effect and decreases in asset ownership raise concerns about the programme’s long-term effectiveness. Likely, the programme prioritises risk coping over risk prevention and mitigation, addressing immediate financial pressures but failing to prevent financial risks and provide sustainable pathways out of poverty. Asset accumulation among non-beneficiary households further emphasises this gap. While the UCT achieves its protective function by providing some immediate relief, its overall poverty-reducing potential may remain limited.

Due to the short implementation time frame, this study primarily captures short-term effects, limiting our ability to assess how the programme supports long-term structural improvements in household well-being and poverty alleviation. If the programme seeks long-term impact, complementary measures like skills development or job creation programmes are necessary. At the time of writing, the National Aid Fund had already begun to develop additional, supplementary elements to the cash transfers, such as a link with UNICEF Jordan’s *Makani* project. *Makani* is an intervention that integrates learning support, community-based child protection services,

early childhood development (ECD), adolescent and youth participation and skills development (UNICEF, 2022). In addition, NAF administers skills training programmes with the aim to increase employment among NAF beneficiaries, a further strengthening of which and linkage with the UCT could improve employment and income-generation outcomes.

#### *Way forward for the UCT programme*

The second objective of this study has been to conduct a process evaluation that focuses on how administrative data can be utilised for monitoring and evaluation of the UCT programme in Jordan. It also aims to assess how the programme’s design and implementation feed into and facilitate the evaluation process, ensuring that administrative data informs improvements in programme effectiveness and accountability over time. Based on the findings above as well as the insights we have gained into the UCT programme while conducting this impact evaluation on-site, the following design and evaluation policy recommendations have emerged.

From a programme design perspective, the targeting model and process should be revised and structured. At the time of writing (summer 2024), there are ongoing efforts to revise the proxy-means test used to impute income for the UCT in line with updated household data availability and refined indicators to more accurately predict poverty in the Kingdom. This will help increase the targeting efficiency and ensure that the most vulnerable households are reached. Furthermore, we recommend to reduce the complexity in eligibility decisions taken after the income imputation model. While we acknowledge that some control mechanisms are useful and necessary to filter out households with very high levels of well-being, such as income or property ownership caps, additional layers of exclusion or inclusion render the targeting mechanism less transparent. Above all, we recommend that targeting should be based on the PMT or income imputation model *only*, and households should not be ranked based on the formula in Equation 1. This will not only facilitate future impact evaluations that capture local average treatment effects around the threshold in an RDD model, but also help ensuring fairness in the ranking exercise as well as minimising income reporting errors.

Moreover, we recommend to change the way data is processed and stored for easier use of the rich administrative data for monitoring and evaluation purposes. At first, key outcome variables that reflect the overall objectives of the UCT programme need to be defined. These can be, amongst others, but not limited to, (per capita) income, employment—potentially of all working-age household members—on the intensive and extensive margin (e.g., type of employment and hours worked), or different and specific asset indicators and school enrolment for each child. In the current system, only the output of the income imputation model as well as

some other categorical variables from earlier targeting systems is stored, meaning that we had to proxy for some of these variables. Storing the underlying raw data separately in each data run that enables to leverage these underlying data will facilitate further evaluation activities. All of these data should be collected for relevant beneficiary and non-beneficiary households alike. Furthermore, whenever data is pulled from the NUR, it should also be coded clearly whether this variable comes from the NUR data base, or was self-reported by the household, in order to ensure transparency and that all variables used for monitoring and evaluation accurately and objectively reflect households' levels of well-being.

Our goal has been to leverage the rich administrative data from the National Unified Registry, and outline future directions for the Unified Cash Transfer programme within the context of Jordan's social protection landscape. This analysis, while only capturing short-term outcomes, lays the groundwork for long-term evaluations. While having administrative data is critical, its quality is equally important. Notwithstanding the current data limitations, this study contributes to both policy design and evaluation, ensuring further improvements in the potential of leveraging the data for improving the UCT's effectiveness in addressing households' socio-economic risks.

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## A Appendix

**Table A.1:** Expenditure model for income imputation

Variable	Value	Weight
<b>Demographics</b>		
Age household head	Age	-0.0171
Age household head squared	Age squared	0.0002
Gender household head	Head is female (reference: male head)	0.1245
Gender and marital status	Head is female, never married	-0.1049
Gender and marital status	Head is female, divorced	-0.0847
Gender and marital status	Head is female, widow	-0.0599
Disability household head	Head is disabled or chronically ill	-0.0059
Education household head	Can read or elementary education (reference: illiterate)	0.0655
Education household head	Preparatory, basic, secondary, vocational	0.1169
Education household head	Intermediate diploma, BA, post-BA	0.2517
Household members	Number of working age members (age 15-64)	0.0174
Disabled household members	Share of working age members who are disabled	-0.2135
Household members	Share of working age members who are males age 15-17	0.1909
Household members	Share of working age members who are males age 18-44	0.1428
Household members	Share of working age members who are males age 45-64	0.0111
Household size	Household size	-0.1573
Household size squared	Household size squared	0.0049
Dependency ratio	Dependency ratio	-0.1771
<b>Ownership of assets</b>		
Livestock	Household owns livestock	-0.4863
Livestock productivity	Imputed livestock productivity	0.0651
Land ownership	Household owns land	0.001
Land cultivation	Household cultivates land	0.0601
Car ownership	Household owns a car	0.4368
Number of cars	Number of private cars	0.27
Age of car	Age of newest car	-0.0307
Age of car squared	Age of newest car, squared	0.0004
Other vehicles	Number of cargo vehicles, taxis, buses	0.1829
Property ownership	Household owns residential or commercial property	0.016
Stock ownership	Household owns stocks	0.1136
<b>Housing</b>		
Type of house	HH lives in an apartment (vs. villa, house, shack/slum)	0.0692
House size	Area of the house per capita	0.0057
Utility costs	Value of water and electricity bills	0.1446
<b>Geography</b>		
Rural	Household lives in rural area	-0.0845
Governorate	Balqa (reference: Amman)	-0.1677
Governorate	Zarqa	0.0415
Governorate	Madaba	0.0041
Governorate	Irbid	-0.081
Governorate	Mafrw	-0.2212
Governorate	Jerash	-0.1123
Governorate	Ajloun	-0.1162
Governorate	Karak	-0.259
Governorate	Tafilah	-0.201
Governorate	Ma'an	-0.1006
Governorate	Aqaba	-0.1428

**Table A.2:** Filters for exclusion from UCT programme

Category	Exclusion Criteria
Ownership of assets or real estate	The household owns two or more real estate
Ownership of assets/buildings	The cash value is $\geq 69120$ JOD
Ownership of assets or land	The monetary value is $\geq 74,880$ JOD
Ownership of assets or agricultural units	The return is $\geq 10250$ JOD
Ownership of assets or livestock	The estimated production is 352 JOD and more (based on per capita productivity of 40 JOD for cows, 15 JOD for camels, and 4 JOD for sheep and goats)
Ownership of assets or vehicles	2 or more
Vehicle model and age of vehicle in years	Five years or less
Financial assets (stocks, bonds)	The return is $\geq 10250$ JOD
Having a maid	The household has a maid
Sole proprietorship and/or ownership of company	A sole proprietorship with a capital of 3,000 JOD or more, or a share in a company exceeding 3,000 JOD, or a family owns two establishments, regardless of capital.
Membership in professional unions	The head of household belongs to any professional union (doctors, dentists, engineers, lawyers, nurses, etc.).

**Table A.3:** Overview: Data cleaning

	Nr. of household observations
<b>Raw data</b>	<b>519,109</b>
— <i>Takaful</i> beneficiaries	82,331
— Missing data rounds	122,427
— Eligibility corrections	10,895
— Exclusion by filter	50,162
— Outliers	68
— Income corrections	1,729
— Reported income for ranking	31,954
— Small number of payments	13,878
<b>Final sample</b>	<b>205,665</b>
— Thereof beneficiary households	42,001

**Table A.4:** Heterogeneous results RDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Small HH	Medium HH	Large HH	Urban	Rural	Amman	Other Gov.
<b>Income</b>							
HH income reported (log)	-0.263 (0.2295)	-0.432*** (0.0884)	-0.600*** (0.1734)	-0.370*** (0.0798)	-0.526** (0.187)	-0.415*** (0.117)	-0.381*** (0.0961)
PC income reported (log)	-0.242 (0.1953)	-0.423*** (0.0743)	-0.528*** (0.1389)	-0.375*** (0.0644)	-0.520*** (0.1468)	-0.429*** (0.0965)	-0.379*** (0.0765)
HH income imputed (log)	-0.083 (0.0518)	-0.100*** (0.0147)	-0.148*** (0.0287)	-0.085*** (0.0168)	-0.052 (0.0532)	-0.076** (0.024)	-0.073** (0.0245)
PC income imputed (log)	-0.102* (0.0476)	-0.116*** (0.0134)	-0.103** (0.0322)	-0.115*** (0.0129)	-0.112*** (0.0321)	-0.121*** (0.0159)	-0.108*** (0.0157)
<b>Household head income</b>							
No income	-0.357*** (0.0775)	-0.320*** (0.027)	-0.383*** (0.0642)	-0.306*** (0.0291)	-0.389*** (0.0692)	-0.389*** (0.0332)	-0.270*** (0.0348)
Regular income	0.190* (0.0845)	0.263*** (0.0306)	0.324*** (0.0623)	0.241*** (0.0305)	0.360*** (0.0709)	0.320*** (0.0363)	0.215*** (0.0359)
Irregular income	0.167*** (0.0483)	0.051*** (0.0134)	0.062* (0.0265)	0.065*** (0.0127)	0.013 (0.0253)	0.068*** (0.0159)	0.053*** (0.0149)
<b>Employment</b>							
Housheold head works	0.365*** (0.0771)	0.265*** (0.0333)	0.311*** (0.056)	0.252*** (0.0301)	0.343*** (0.0613)	0.320*** (0.0358)	0.232*** (0.0346)
Head irregular employment	0.217** (0.0816)	0.218*** (0.0317)	0.223*** (0.0517)	0.187*** (0.0294)	0.352*** (0.0615)	0.259*** (0.0358)	0.179*** (0.0339)
Head regular employment	0.023 (0.0155)	-0.002 (0.0043)	0.011 (0.0097)	0.000 (0.0037)	0.003 (0.0094)	0.008 (0.0051)	-0.006 (0.0043)
Head business owner	0.127** (0.0439)	0.049*** (0.0119)	0.071** (0.0241)	0.066*** (0.0122)	0.006 (0.022)	0.051*** (0.0137)	0.053*** (0.0128)
Nr. income sources in HH	0.157* (0.0819)	0.081* (0.0369)	0.328** (0.1062)	0.127*** (0.0352)	0.117 (0.0811)	0.081* (0.0338)	0.143** (0.0442)
<b>Assets</b>							
HH has no assets	0.070 (0.0702)	0.079* (0.032)	0.057 (0.0578)	0.048* (0.0287)	0.151* (0.0613)	0.108** (0.0369)	0.026 (0.0353)
HH has assets with revenue	-0.079 (0.0492)	-0.039 (0.0244)	-0.124* (0.0712)	-0.047* (0.0208)	-0.026 (0.0528)	-0.081*** (0.0232)	-0.022 (0.0297)
HH has any assets	-0.070 (0.0708)	-0.079* (0.0326)	-0.057 (0.0585)	-0.048* (0.0288)	-0.148* (0.0624)	-0.106** (0.0375)	-0.025 (0.0355)
<b>Indicators in PMT</b>							
HH owns land	-0.051 (0.0514)	-0.038* (0.0226)	-0.094 (0.0695)	-0.037* (0.0213)	-0.017 (0.0534)	-0.073** (0.0231)	-0.010 (0.0292)
HH cultivates land	-0.062 (0.0489)	-0.036 (0.0226)	-0.079 (0.0699)	-0.035* (0.0214)	-0.015 (0.052)	-0.070** (0.0233)	-0.008 (0.0291)
HH owns car	-0.045 (0.0521)	-0.101*** (0.0276)	0.014 (0.0728)	-0.074** (0.0238)	-0.128* (0.0592)	-0.056 (0.0375)	-0.059* (0.0328)
HH owns property	0.000 (0.0251)	0.003 (0.0126)	-0.065 (0.0475)	-0.010 (0.0129)	-0.009 (0.0231)	-0.016 (0.018)	-0.001 (0.0143)
PMT Asset index	-0.038 (0.0304)	-0.031* (0.0142)	-0.057 (0.0428)	-0.027* (0.0138)	-0.023 (0.0331)	-0.055*** (0.0141)	-0.012 (0.0179)
<b>Children's schooling</b>							
All children enrolled	0.281** (0.0899)	0.344*** (0.0277)	0.622*** (0.0746)	0.374*** (0.029)	0.391*** (0.065)	0.419*** (0.038)	0.321*** (0.0336)
Nr. non-enrolled children	-0.074 (0.1456)	-0.437*** (0.0534)	-.926*** (0.1675)	-0.457*** (0.0523)	-0.506*** (0.1312)	-0.509*** (0.0689)	-0.417*** (0.0652)
Any child dropped out	-0.103 (0.1684)	-0.067 (0.0502)	-0.167 (0.1072)	-0.048 (0.0403)	-0.175 (0.1357)	-0.039 (0.0603)	-0.107* (0.0587)
Nr. dropped out children	-0.032 (0.1343)	-0.049 (0.0617)	-0.217 (0.1522)	-0.017 (0.0469)	-0.113 (0.1391)	0.006 (0.0691)	-0.092 (0.062)

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable.

**Table A.5:** Heterogeneous results RDD (round 2 baseline)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Small HH	Medium HH	Large HH	Urban	Rural	Amman	Other Gov.
<b>Income</b>							
HH income reported (log)	-0.254 (0.2235)	-0.435*** (0.089)	-0.599*** (0.1736)	-0.37*** (0.0798)	-0.523** (0.187)	-0.415*** (0.117)	-0.381*** (0.0961)
PC income reported (log)	-0.240 (0.1911)	-0.423*** (0.0742)	-0.525*** (0.1391)	-0.375*** (0.0643)	-0.518*** (0.1467)	-0.429*** (0.0964)	-0.380*** (0.0765)
HH income imputed (log)	-0.082* (0.0476)	-0.101*** (0.0148)	-0.148*** (0.029)	-0.085*** (0.0169)	-0.052 (0.0532)	-0.076** (0.024)	-0.073** (0.0245)
PC income imputed (log)	-0.117* (0.0459)	-0.115*** (0.0134)	-0.101** (0.0322)	-0.115*** (0.0129)	-0.111*** (0.0321)	-0.121*** (0.0159)	-0.108*** (0.0157)
<b>Head income</b>							
No income	-0.366*** (0.0748)	-0.318*** (0.0275)	-0.381*** (0.0643)	-0.306*** (0.0291)	-0.388*** (0.0692)	-0.39*** (0.0332)	-0.270*** (0.0348)
Irregular income	0.200* (0.0812)	0.262*** (0.0308)	0.322*** (0.0624)	0.241*** (0.0305)	0.359*** (0.0708)	0.320*** (0.0363)	0.215*** (0.0359)
Regular income	0.166*** (0.0465)	0.051*** (0.0134)	0.063* (0.0266)	0.065*** (0.0128)	0.013 (0.0253)	0.068*** (0.0159)	0.053*** (0.0149)
<b>Employment</b>							
Household head works	0.369*** (0.0759)	0.264*** (0.0333)	0.309*** (0.0559)	0.252*** (0.0301)	0.342*** (0.0611)	0.320*** (0.0358)	0.232*** (0.0346)
Head irregular empl.	0.221** (0.0785)	0.217*** (0.0316)	0.221*** (0.0517)	0.187*** (0.0294)	0.351*** (0.0614)	0.259*** (0.0358)	0.179*** (0.0339)
Head regular employment	0.019 (0.0146)	-0.002 (0.0043)	0.011 (0.0097)	0.000 (0.0037)	0.003 (0.0094)	0.008 (0.0051)	-0.006 (0.0043)
Head business owner	0.125** (0.0425)	0.049*** (0.0119)	0.071** (0.0241)	0.066*** (0.0122)	0.005 (0.022)	0.051*** (0.0137)	0.053*** (0.0128)
Nr. income sources in HH	0.165* (0.0778)	0.080* (0.037)	0.328** (0.1064)	0.127*** (0.0352)	0.117 (0.0811)	0.081* (0.0338)	0.143** (0.0442)
<b>Assets</b>							
HH has no assets	0.077 (0.0668)	0.079* (0.032)	0.056 (0.0579)	0.048* (0.0287)	0.152* (0.0611)	0.108** (0.0369)	0.026 (0.0353)
HH assets with revenue	-0.069 (0.0447)	-0.040 (0.0242)	-0.125* (0.0714)	-0.047* (0.0208)	-0.027 (0.0528)	-0.081*** (0.0232)	-0.022 (0.0297)
HH has any asset	-0.077 (0.0665)	-0.079* (0.0326)	-0.055 (0.0587)	-0.048* (0.0288)	-0.149* (0.0622)	-0.106** (0.0375)	-0.025 (0.0355)
<b>Indicators in PMT</b>							
HH owns land	-0.045 (0.0471)	-0.039* (0.0226)	-0.095 (0.0697)	-0.037* (0.0213)	-0.017 (0.0534)	-0.073** (0.0231)	-0.010 (0.0292)
HH cultivates land	-0.055 (0.0448)	-0.037 (0.0226)	-0.080 (0.0701)	-0.035* (0.0214)	-0.016 (0.052)	-0.07** (0.0233)	-0.008 (0.0291)
HH owns car	-0.043 (0.0492)	-0.102*** (0.0274)	0.016 (0.0729)	-0.074** (0.0237)	-0.128* (0.0591)	-0.056 (0.0375)	-0.059* (0.0328)
HH owns property	-0.005 (0.0239)	0.003 (0.0125)	-0.062 (0.0474)	-0.010 (0.0129)	-0.008 (0.023)	-0.016 (0.018)	-0.001 (0.0143)
PMT asset index	-0.035 (0.0279)	-0.031* (0.0141)	-0.057 (0.0429)	-0.027* (0.0138)	-0.023 (0.0331)	-0.055*** (0.0141)	-0.012 (0.0179)
<b>Children's schooling</b>							
All children enrolled	0.283** (0.0899)	0.344*** (0.0277)	0.622*** (0.0746)	0.375*** (0.029)	0.391*** (0.065)	0.419*** (0.038)	0.321*** (0.0336)
Nr. non-enrolled children	-0.079 (0.1457)	-0.436*** (0.0534)	-0.925*** (0.1674)	-0.457*** (0.0523)	-0.506*** (0.1312)	-0.509*** (0.0689)	-0.417*** (0.0652)
Any child dropped out	-0.101 (0.1673)	-0.067 (0.0502)	-0.166 (0.107)	-0.048 (0.0403)	-0.175 (0.1356)	-0.039 (0.0603)	-0.107* (0.0587)
Nr. children dropped out	-0.033 (0.1344)	-0.049 (0.0616)	-0.216 (0.152)	-0.017 (0.0468)	-0.121 (0.1403)	0.006 (0.0691)	-0.092 (0.062)

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Note:* The number of observations is not reported, as it may vary across estimations due to the separate MSE-optimal bandwidth selection procedure for each outcome variable.

**Table A.6:** Fuzzy RDD robustness checks

	(1)	(2)	(3)	(4)
	All Payments	All Payments	Missing Values	Missing Values
	Round 1	Round 2	Round 1	Round 2
	baseline	baseline	baseline	baseline
<b>Income</b>				
HH income reported (log)	-0.395*** (0.0783)	-0.564*** (0.1434)	-0.396*** (0.0781)	-0.562*** (0.1429)
PC income reported (log)	-0.398*** (0.0629)	-0.523*** (0.1023)	-0.398*** (0.0627)	-0.503*** (0.0973)
HH income imputed (log)	-0.064** (0.0201)	-0.065* (0.0349)	-0.064** (0.0201)	-0.065* (0.0349)
PC income imputed (log)	-0.112*** (0.0116)	-0.092*** (0.018)	-0.112*** (0.0117)	-0.098*** (0.0162)
<b>Head income</b>				
No income	-0.321*** (0.0281)	-0.358*** (0.0454)	-0.322*** (0.028)	-0.359*** (0.0454)
Irregular income	0.258*** (0.0292)	0.302*** (0.0498)	0.258*** (0.0292)	0.301*** (0.0497)
Regular income	0.063*** (0.0118)	0.070*** (0.02)	0.064*** (0.0119)	0.071*** (0.0201)
<b>Employment</b>				
Household head works	0.274*** (0.0278)	0.294*** (0.0503)	0.274*** (0.0279)	0.293*** (0.0501)
Head is in irregular employment	0.213*** (0.0277)	0.243*** (0.0493)	0.213*** (0.0277)	0.242*** (0.0492)
Head is in regular employment	0.000 (0.0031)	-0.010 (0.0062)	0.00 (0.0032)	-0.010 (0.0062)
Head is business owner	0.064*** (0.0115)	0.052*** (0.0155)	0.064*** (0.0115)	0.052*** (0.0155)
Nr. of income sources in HH	0.131*** (0.0333)	0.116* (0.0609)	0.132*** (0.0333)	0.123* (0.0611)
<b>Assets</b>				
HH has no assets	0.052* (0.0274)	0.074 (0.0509)	0.052* (0.0273)	0.072 (0.0508)
HH has assets with revenue	-0.038* (0.0219)	-0.015 (0.0397)	-0.037* (0.0219)	-0.011 (0.0399)
HH has any assets	-0.050* (0.0278)	-0.073 (0.0483)	-0.050* (0.0277)	-0.071 (0.0482)
<b>Indicators in PMT</b>				
HH owns land	-0.034* (0.0203)	-0.031 (0.0385)	-0.033 (0.0204)	-0.027 (0.0386)
HH cultivates land	-0.034* (0.0197)	-0.023 (0.0385)	-0.032 (0.02)	-0.02 (0.0387)
HH owns a car	-0.073** (0.0234)	-0.041 (0.046)	-0.077*** (0.0228)	-0.041 (0.0459)
HH owns property	-0.008 (0.0117)	-0.004 (0.0237)	-0.008 (0.0116)	0.000 (0.0235)
PMT asset index	-0.031** (0.0113)	-0.020 (0.0243)	-0.029* (0.012)	-0.017 (0.0246)
<b>Children's schooling</b>				
All children are enrolled	0.370*** (0.0252)	0.452*** (0.0553)	0.37*** (0.0254)	0.454*** (0.0555)
Number of non-enrolled children	-0.458*** (0.0467)	-0.614*** (0.1053)	-0.457*** (0.0468)	-0.618*** (0.1058)
Any child dropped out	-0.062 (0.04)	-0.189* (0.0983)	-0.062 (0.04)	-0.189* (0.0989)
Number of children who dropped out	-0.041 (0.0471)	-0.219* (0.1177)	-0.042 (0.0471)	-0.218* (0.1182)

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A.7:** Regression results from estimation of the propensity score (round 1)

Dep. variable: Treatment take-up	(1) Round 1	(2) Round 2
Age of household head	-0.060*** (0.019)	-0.041** (0.019)
Age of household head squared	0.000 (0.000)	-0.000 (0.000)
Household head is female (reference: male)	0.127 (0.112)	0.119 (0.112)
Head is female, never married	-0.991*** (0.283)	-0.827*** (0.278)
Head is female, divorced	-0.849*** (0.293)	-0.825*** (0.277)
Head is female, widowed	-1.480* (0.759)	-1.363* (0.768)
Head is female, disabled or chronically ill	0.285*** (0.099)	0.285*** (0.095)
Household size	2.342*** (0.111)	2.373*** (0.117)
Household size squared	-0.115*** (0.010)	-0.117*** (0.010)
Dependency ratio	1.781*** (0.064)	1.803*** (0.064)
Share of HH members of working age, disabled	1.975*** (0.294)	1.936*** (0.271)
Share of male HH members, age 15-17	-0.214 (0.416)	0.253 (0.406)
Share of male HH members, age 18-44	-1.703*** (0.300)	-1.919*** (0.295)
Household owns land	-1.635*** (0.386)	-1.375*** (0.417)
Household owns livestock	-1.593** (0.708)	-1.463** (0.647)
Household cultivates land	0.596 (0.391)	0.534 (0.420)
Household owns a car	-2.617*** (0.072)	-2.555*** (0.070)
Household owns property	-1.509*** (0.163)	-1.450*** (0.129)
Household owns stocks	-3.030*** (0.648)	-3.341*** (0.632)
Household lives in an apartment	0.545*** (0.068)	0.579*** (0.068)
Rural	0.489*** (0.125)	0.512*** (0.124)
Governorate: Amman (reference: Ajloun)	0.079 (0.315)	0.187 (0.294)
Governorate: Aqaba	1.332*** (0.396)	1.411*** (0.384)
Governorate: Balqa	1.823*** (0.333)	1.862*** (0.313)
Governorate: Irbid	0.766** (0.315)	0.789*** (0.295)
Governorate: Jerash	0.978*** (0.358)	0.961*** (0.342)
Governorate: Karak	1.435*** (0.391)	1.413*** (0.374)
Governorate: Ma'an	1.015* (0.519)	1.018** (0.474)
Governorate: Madaba	0.809** (0.374)	0.813** (0.357)
Governorate: Mafraq	1.925*** (0.347)	1.913*** (0.326)
Governorate: Tafilah	1.454*** (0.547)	1.434*** (0.516)
Governorate: Zarqa	-0.289 (0.317)	-0.211 (0.296)
Observations	20,566	20,567

The dependent variable is treatment take-up  $D_i$ . Robust standard errors in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A.8:** Covariate sample means and balance tests at the threshold (round 1)

	Bandwidth	Mean non-beneficiaries	Mean beneficiaries	Difference at threshold
Household size	28.7	4.6	5.1	0.105 (0.0808)
Working-age household members	29.4	3.0	2.8	-0.066 (0.0810)
Female household head	33.9	0.06	0.04	0.021* (0.0114)
Household lives in rural area	33.2	0.06	0.07	-0.014 (0.0122)
Household lives in an apartment	29.1	0.67	0.75	-0.034 (0.0254)
Household owns property	31.1	0.06	0.04	-0.004 (0.0113)
Household owns land	32.5	0.22	0.16	-0.006 (0.0209)
Household cultivates land	32.1	0.21	0.16	-0.001 (0.0208)
Household owns livestock	45.5	0.003	0.002	-0.001 (0.0024)
Household owns a car	32.4	0.36	0.23	0.047* (0.0239)

Standard errors in parentheses

\* p&lt;0.1, \*\* p&lt;0.05, \*\*\* p&lt;0.05

**Table A.9:** Covariate sample means and balance tests at the threshold (round 2)

	Bandwidth	Mean non- beneficiaries	Mean beneficiaries	Difference at threshold
Household size	31.9	4.6	5.2	0.015 (0.145)
Working-age household members	31.6	3.1	2.9	-0.049 (0.0242)
Female household head	32.5	0.06	0.04	0.016 (0.1560)
Household lives in rural area	32.0	0.06	0.07	-0.027 (0.0251)
Household lives in an apartment	41.2	0.66	0.74	-0.037 (0.0397)
Household owns property	38.8	0.08	0.05	-0.015 (0.0230)
Household owns land	40.7	0.24	0.19	-0.02 (0.0370)
Household cultivates land	45.9	0.24	0.19	-0.014 (0.0338)
Household owns livestock	39.2	0.003	0.002	-0.001 (0.0044)
Household owns a car	36.6	0.36	0.24	0.052 (0.0444)

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table A.10:** Difference-in-differences: income and employment (round 2 baseline)

	Control		Treatment		DiD
	Baseline Mean	Difference Coef	Baseline Mean	Difference Coef	Coef
<b>Household income</b>					
Household income reported (log)	6.385 (0.019)	-0.103** (0.044)	6.176 (0.017)	-0.160*** (0.041)	-0.072 (0.061)
Per capita income reported (log)	4.874 (0.015)	-0.071** (0.035)	4.632 (0.014)	-0.127*** (0.034)	-0.070 (0.049)
Household income imputed (log)	7.190 (0.005)	0.018*** (0.007)	6.869 (0.005)	-0.034*** (0.007)	-0.053*** (0.010)
Per capita income imputed (log)	5.625 (0.003)	0.022*** (0.007)	5.295 (0.003)	-0.036*** (0.007)	-0.060*** (0.010)
<b>Household head income</b>					
Head has no income	0.689 (0.007)	0.008 (0.012)	0.226 (0.008)	-0.006 (0.014)	-0.012 (0.019)
Head has irregular income	0.295 (0.007)	-0.011 (0.012)	0.724 (0.008)	-0.015 (0.015)	-0.005 (0.020)
Head has regular income	0.016 (0.002)	0.003 (0.003)	0.049 (0.004)	0.020** (0.009)	0.017* (0.009)
<b>Employment</b>					
Household head works	0.236 (0.006)	-0.005 (0.011)	0.595 (0.009)	0.022 (0.017)	0.029 (0.020)
Head is in irregular employment	0.222 (0.006)	-0.010 (0.010)	0.541 (0.009)	0.011 (0.017)	0.022 (0.020)
Head is a business owner	0.010 (0.001)	0.004 (0.003)	0.042 (0.004)	0.014* (0.008)	0.011 (0.008)
Nr. regular income sources in HH	0.329 (0.009)	-0.043*** (0.015)	0.491 (0.012)	-0.069*** (0.022)	-0.034 (0.027)
Observations	4,585	9,170	3,086	6,172	15,342

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Note:* The results for household income are expressed as percentages, and all other results are expressed as percentage points, as the outcome variable is binary, except the number of regular income sources, which is expressed in absolute values.

**Table A.11:** Difference-in-differences: assets and schooling (round 2 baseline)

	Control		Treatment		DiD
	Baseline Mean	Difference Coef	Baseline Mean	Difference Coef	Coef
<b>Assets</b>					
Household has no assets	0.528 (0.007)	-0.037*** (0.013)	0.554 (0.009)	0.038** (0.016)	0.078*** (0.021)
Household has assets with revenue	0.246 (0.006)	0.003 (0.011)	0.242 (0.008)	-0.025 (0.016)	-0.026 (0.019)
Household has any assets	0.472 (0.007)	0.037*** (0.013)	0.446 (0.009)	-0.038** (0.016)	-0.078*** (0.021)
<b>Indicators in proxy-means test</b>					
Household owns land	0.225 (0.006)	-0.001 (0.011)	0.228 (0.008)	-0.020 (0.015)	-0.019 (0.019)
Household cultivates land	0.222 (0.006)	-0.003 (0.011)	0.225 (0.008)	-0.021 (0.015)	-0.017 (0.019)
Household owns car	0.317 (0.007)	0.067*** (0.013)	0.294 (0.008)	-0.019 (0.015)	-0.087*** (0.020)
Household owns property	0.058 (0.003)	0.004 (0.006)	0.057 (0.004)	-0.004 (0.009)	-0.008 (0.011)
PMT asset index	0.165 (0.004)	0.005 (0.006)	0.164 (0.005)	-0.014 (0.009)	-0.019* (0.011)
<b>Children's school attendance</b>					
All children are enrolled	0.475 (0.010)	-0.008 (0.018)	0.936 (0.005)	-0.033*** (0.010)	-0.030 (0.021)
Number of non-enrolled children	1.069 (0.023)	0.041 (0.044)	0.182 (0.011)	0.124*** (0.022)	0.153*** (0.051)
Any child dropped out of school	0.353 (0.016)	0.233*** (0.027)	0.504 (0.013)	0.133*** (0.022)	-0.101*** (0.035)
Number of children who dropped out	0.702 (0.020)	0.334*** (0.033)	0.883 (0.017)	0.253*** (0.031)	-0.086* (0.046)
Observations	4,585	9,170	3,086	6,172	15,342

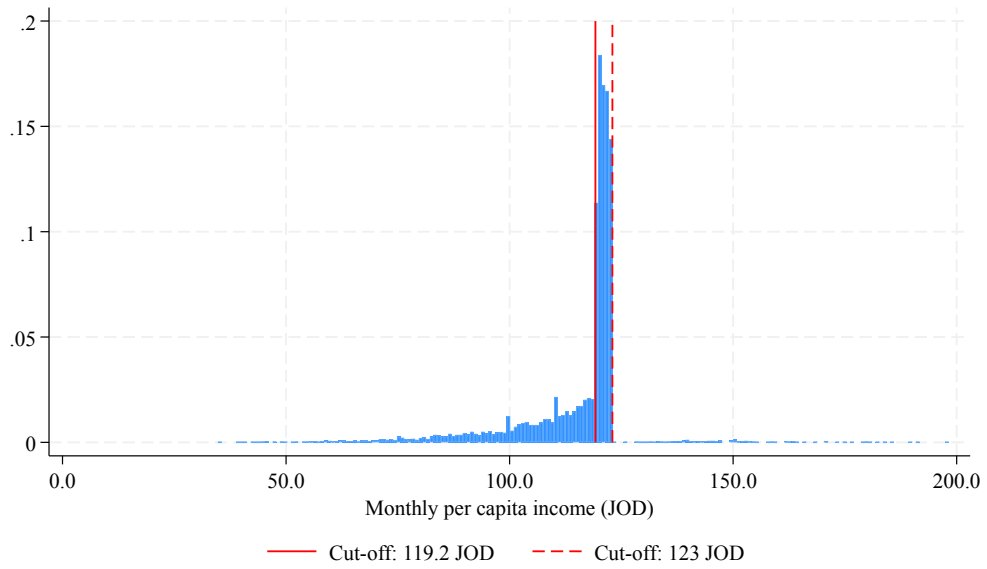
Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Note:* The results for assets and indicators in the proxy-means test are expressed as percentage points, as the outcome variable is binary, except for the PMT asset index, whose coefficient is expressed in absolute values. The results for children's schooling are expressed in percentage points, except the number of non-enrolled children or children who dropped out, which are expressed in absolute values.

<sup>1</sup>This PMT asset index was constructed by the authors to analyse changes in only the structural, non-demographic aspects in the PMT model. We construct this index through principal-component factor analysis using the indicators on livestock ownership, land ownership, land cultivation, car ownership, property ownership and stock ownership.

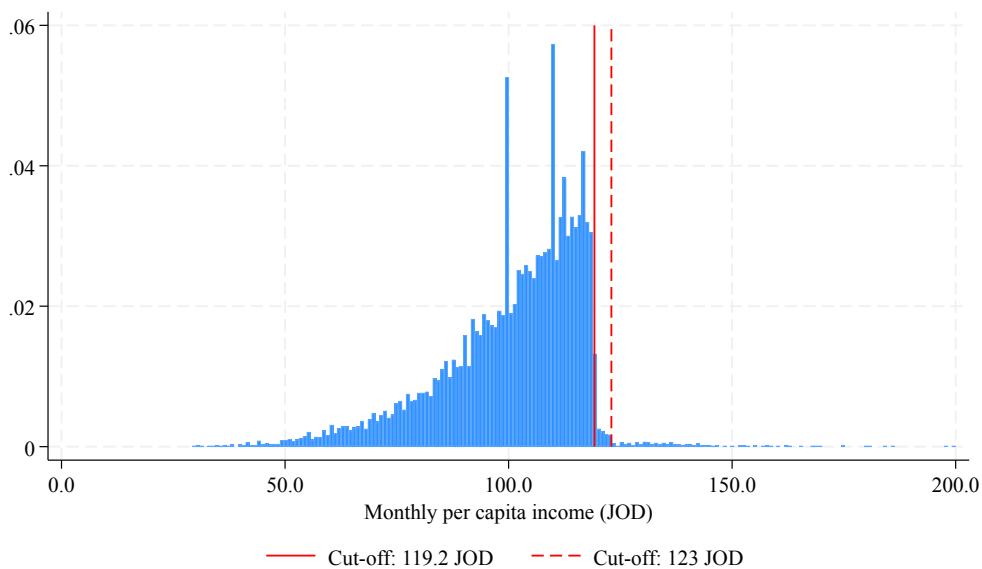
## B Appendix

**Figure B.1:** Histogram of households deemed eligible in round 1 but did not receive UCT



*Note:* We limit the range of the running variable to monthly per capita incomes of 200 or less as data become relatively sparse for larger monthly per capita incomes.

**Figure B.2:** Histogram of households deemed eligible in round 1 who received 1-6 payments but were excluded from UCT in September 2022



*Note:* We limit the range of the running variable to monthly per capita incomes of 200 or less as data become relatively sparse for larger monthly per capita incomes.

**Figure B.3:** Regression discontinuity manipulation test

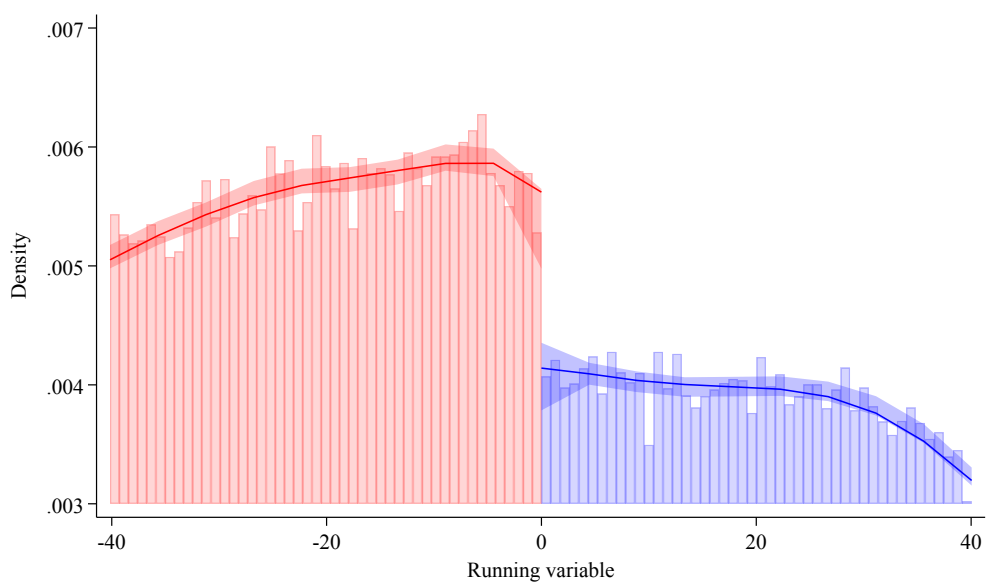
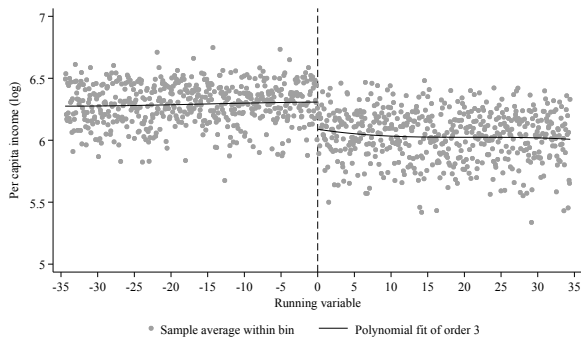
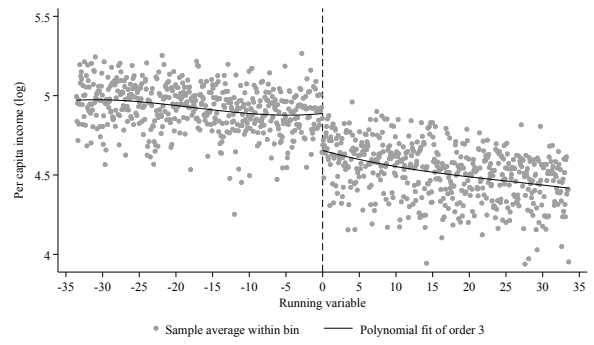


Figure B.4

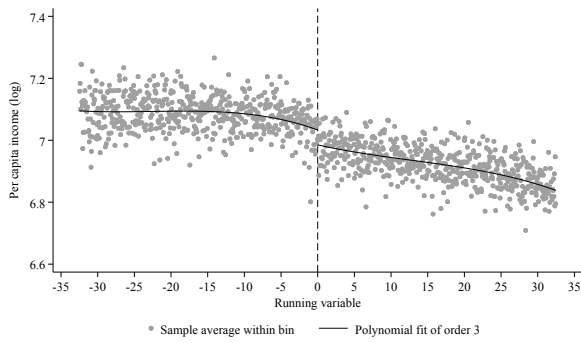
(a) Household (reported)



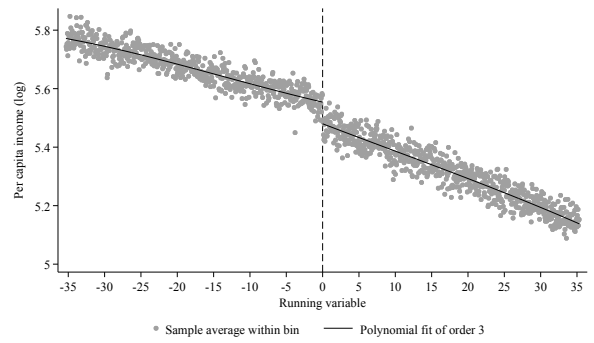
(b) Per capita (reported)



(c) Household (imputed)

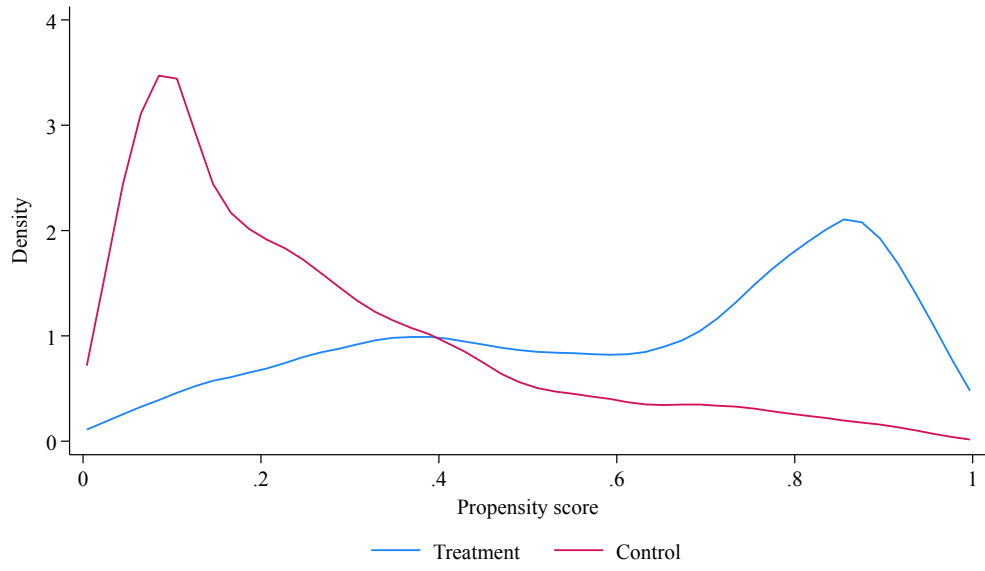


(d) Per capita (imputed)

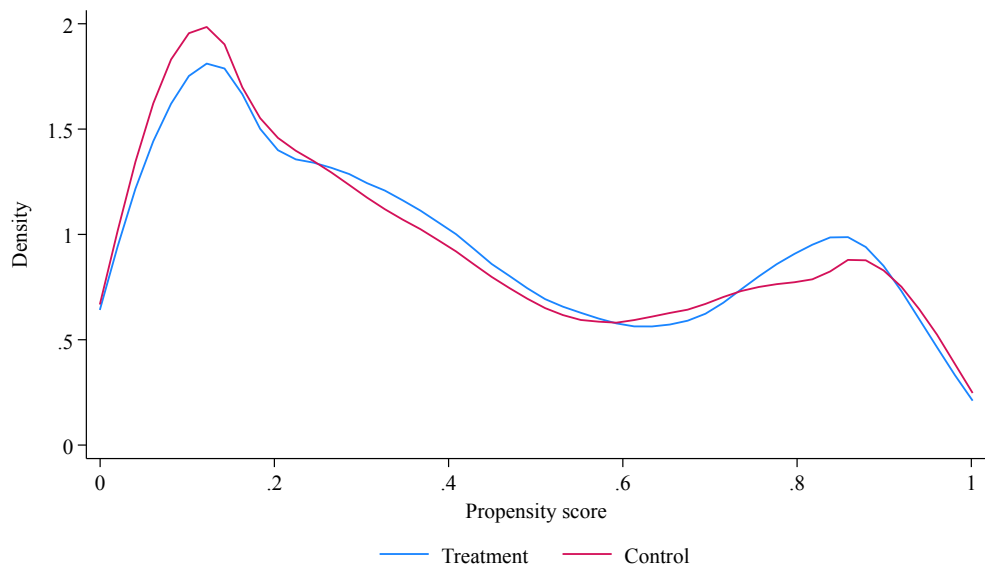


**Figure B.5:** Kernel density smoothing of propensity score across treatment and control group

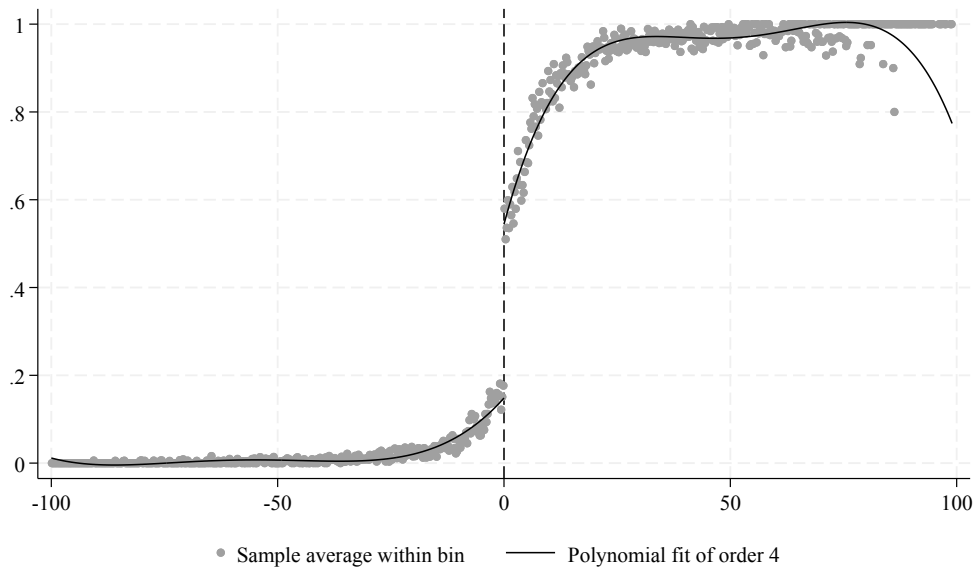
**(a) Unweighted**



**(b) Weighted**

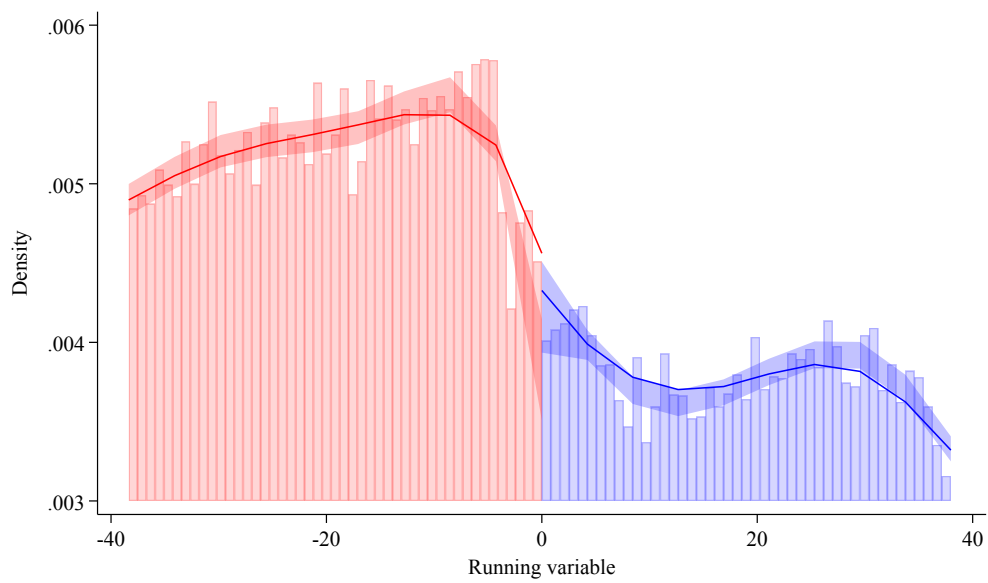


**Figure B.6:** Regression discontinuity plot: treatment take-up at round 2



*Note:* We limit the range of the running variable to monthly per capita incomes of 100 or less (in absolute terms) as data become relatively sparse for larger incomes. The eligibility threshold is JOD 119.175 monthly per capita income (imputed).

**Figure B.7:** Regression discontinuity manipulation test (round 2 baseline)



*Note:* x