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It's all in the timing: Cash transfers and consumption smoothing in a developing country $\stackrel{\star}{\sim}$



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1. Introduction

ABSTRACT

We use a large-scale unconditional cash transfer program in Indonesia to investigate the importance of timing in shaping household consumption responses to fiscal interventions. Timely receipt of transfers yields no expenditure change relative to non-recipients. However, delayed receipt reduces expenditures by 7.5 percentage points. Ignoring heterogeneous timing leads to sizable underestimates of expenditure impacts. After considering several data-driven explanations, we reconcile these findings with models of consumption smoothing in which liquidity constraints imply asymmetric responses to positive and negative shocks. Our results parallel findings on government transfers in rich countries and yield new implications for program evaluation.

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cash transfers are increasingly viewed also as a potential vehicle for stimulating or sustaining household consumption, often in the process of introducing policy reforms or coping with economic downturns.¹ Understanding how household consumption responds to transfer income is critical to public policy. A large body of work evaluates this question in developed countries through the lens of the life-cycle/permanent income hypothesis (PIH). These studies often find that expenditure

Cash transfer programs are a popular policy tool in developing countries. Beyond incentivizing human capital investment,

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¹ For example, Coady et al. (2010) discuss the use of cash transfers to transition away from regressive fuel subsidies across a number of developing economies. Hur et al. (2010) discuss the use of cash transfers to low-income households in Asian countries during the global recession of 2008.

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impacts depend on the timing and expected duration of transfers.² Despite numerous evaluations of cash transfer programs, there is limited evidence on whether and how the effectiveness of fiscal interventions in low-income countries hinges on similar factors.

We aim to fill this gap by incorporating timing and expectations into an evaluation of a large-scale cash transfer program in Indonesia. In particular, we investigate the evolution of household expenditures over the course of an unconditional cash transfer (UCT) program that provided 19 million households with quarterly transfers of around 30 USD – roughly 15% of quarterly expenditures for the average recipient at baseline. The program was launched abruptly in the wake of fuel subsidy cutbacks and lasted for a period of one year. Using nationally representative household-level panel data, we examine the impact of the UCT program on consumption growth over two time horizons: (i) a short-term period spanning early 2005 to early 2006 during which time the program was introduced and widely publicized and (ii) a medium-term period spanning a few months after the program ended in early 2007.

Our identification strategy leverages variation in the incidence, timing, and scale of transfer income. First, many non-poor households received the UCT while many poor did not, largely due to the logistical difficulties of implementing the country's first large-scale targeting scheme in such a short time frame – two months between program conception and rollout. We exploit these targeting outcomes to construct counterfactual recipients based on a difference-in-difference reweighting approach (Abadie, 2005). Second, due to administrative delays, nearly 30% of all recipients were still awaiting their second transfer at the time of enumeration in early 2006. We show that this staggered rollout across regions is unrelated to a range of observables correlated with pre-program consumption growth trajectories.³ Third, all households received the same transfer amount per disbursement, which implies considerable variation in transfers *per capita*.⁴

Our main empirical results point to the importance of timing and suggest that households respond asymmetrically to positive and negative shocks. Recipient households still awaiting their second quarterly transfer in early 2006 report per capita expenditure growth rates that are roughly 7.5 percentage points lower on average than both non-recipient households and UCT beneficiaries that had already received the second transfer. The shock from delayed disbursement translates to a consumption loss of around USD 1.35 per person per month, which implies a marginal propensity to consume (MPC) out of transitory transfer income of 0.55.

Meanwhile, we find no mean differences in expenditure growth between non-recipient households and UCT beneficiaries that had received the two transfers by early 2006. Although the program was unforeseen as of early 2005, timely receipt of UCT disbursements between survey rounds had no economically significant effect on consumption growth. Moreover, by early 2007, several months after the final transfer was received by all beneficiaries, we find no differences in consumption growth across recipient groups or between recipients and non-recipients. These null effects are found for the long-difference between 2005 and 2007, a period spanning the life of the program, as well as between 2006 and 2007.

Taken in isolation, these muted responses to transitory cash transfers do not rule out consumption smoothing behavior consistent with standard permanent income models with perfect credit markets. However, given the negative consumption shock associated with delayed disbursement, we can be more confident that the null treatment effects of receiving the full set of disbursements (on time) are suggestive of some degree of precautionary savings behavior motivated by borrowing constraints (rather than solely by prudence, for example).⁵ As noted by Zeldes (1989), borrowing constraints can change consumption dynamics even if they never bind. Although it is difficult to separately identify precautionary savings from liquidity constraints (Deaton, 1991), the plausibly exogenous variation in transfers allows us to highlight both types of behavior in a single population without having to split the sample *ex ante* between presumptively constrained and unconstrained households – a common practice criticized by Carroll and Kimball (2001). If all households receive transfers on time *and* exhibit small consumption responses, it would not be possible to disentangle unconstrained consumption smoothing from credit-constrained, precautionary savings behavior.

The positive transitory shock associated with the arrival of the UCT program had a smaller expenditure impact than the negative shock associated with delayed disbursement of the second quarterly transfer. Like others looking at data from the United States, we infer that the asymmetric response to positive and negative shocks is consistent with consumption smoothing behavior in the presence of liquidity constraints (e.g., Altonji and Siow, 1987; Shea, 1995). In the absence of borrowing options, positive shocks encourage precautionary savings that dampen the expenditure response, whereas negative shocks amplify that response. Our findings suggest some of the first transfer may have gone to precautionary savings but that those savings were an insufficient buffer against the negative shock imparted by the delayed arrival of the second transfer. An alternative interpretation that we cannot rule out is that the delay caused an increase in uncertainty about future payments, leading to even greater precautionary savings and further declines in consumption.

² Two recent surveys provide excellent background on the vast literature on the PIH (Jappelli and Pistaferri, 2010; Meghir and Pistaferri, 2011). Below, we discuss studies within this literature that are most relevant to our own work.

³ Throughout the paper, we use consumption and expenditures synonymously.

⁴ Janvry and Sadoulet (2006) make use of similar variation in treatment intensity imposed by the cap on total transfers in the *Progresa* program in Mexico, and Kaboski and Townsend (2011, 2012) analogously exploit fixed financial transfers across Thai villages that vary in population size.

⁵ The precautionary motive may have been especially strong in this setting with high inflation and uncertainty about future subsidy reforms. The government cut fuel subsidies twice in 2005, and a sustained ban on rice imports enacted in 2004 led to considerable inflation and volatility in prices of the main food staple. During this same period, public discussions were underway to cut fertilizer subsidies for agriculture.

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