Pre-Analysis Plan: Implementing Helicopter Money: A Randomized Policy Evaluation[*]

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1 Introduction

In his 1969 essay on the "Optimum Quantity of Money", Milton Friedman coined the term "helicopter money" by proposing the thought experiment of a central bank printing new banknotes and dropping them from a helicopter over a city, thereby increasing the quantity of money in the economy and directly distributing the newly created money to households. Until recently, the idea of directly distributing money to households was seen as impractical: central banks had shifted to interest rate targets rather than money supply targets.

More recently, with nominal interest rates hitting zero in the aftermath of the financial crisis, calls for direct monetary transfers have resurfaced (Muellbauer, 2014, 2016, Sahm, 2019). The call for direct transfers became louder, culminating in June 2016 in a letter from 18 members of the European Parliament to the ECB, asking them to explore monetary transfers as a policy tool ("QE for the people"). In doing so, they cite surveys according to which the majority of respondents in Europe are in favour of direct monetary transfers to households, rather than large-scale asset purchases, which directly benefit the holders of these assets, mostly financial institutions. Central banks, however, preferred large-scale asset purchase programs ("quantitative easing", or "QE") over monetary transfers to households, in the hope that lower bond yields would stimulate bank lending to firms and investment. Whether these policies have been successful is contested; certainly, the recovery was slow and increases in lending, investment, and inflation were rather modest (Taylor, 2013). More recently, following the drop in demand due to the Coronavirus pandemic, calls for direct stimulus have become even more vocal. Even prominent economists that have previously expressed reservation about helicopter money transfers have now advocated their use.[1]

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[*]This study has been approved by the Research Ethics Committee of the Paris Institute of Political Studies (Sciences Po), Opinion 2021-018.

[1]For example, Gali (2020) writes: *"Money-financed fiscal interventions are a powerful tool. [...] policymakers should resort to them only in emergency situations, when other options are bound to be ineffective or trigger undesirable consequences, current or future. Unfortunately, that emergency is currently upon us, provoked by the coronavirus. If ever, the time for helicopter money is now."*

From a practical perspective, however, the best way to stimulate demand using direct transfers is not clear. Evaluations of direct transfers during the recent Coronavirus epidemic have found a lower marginal propensity to consume out of the transfer than in previous crises (Parker et al., 2022). These transfers usually took the form of stimulus checks that could be easily converted into cash, implying a zero interest rate on the transferred money. In contrast, transfers with negative interest rates could potentially yield a larger consumption response. How could such negative interest rates be implemented?

To make progress on this question, this research project proposes specific forms of direct monetary transfers to households and evaluates their impact on households' consumption and saving decisions using a randomized controlled trial. The transfers take the form of a debit card linked to an account with an initial balance of 300 Euros. The card can be used as a means of payment in retail outlets or on the Internet, but recipients cannot withdraw cash at cash machines or transfer money from it to another account. All treatment participants receive a letter of instructions and explanations at the start of the trial, and are contacted by their bank advisor.

Participants receiving the funds are selected at random from the pool of clients of the bank. Allocation across framing groups and treatment types is also random. There are six distinct treatment groups, depending on the card type (denoted G1, G2, G3) and the framing treatments (denoted F1, F2). The card types G1, G2, and G3 differ as follows:

- G1 participants receive a payment card linked to a newly created account with an initial account balance of EUR 300. The card expires six months after the date when card and instructions have been mailed, at which point any unspent value on the account is transferred to the participants' main checking account.

- G2 participants receive a payment card linked to a newly created account with an initial account balance of EUR 300. The card expires three weeks and a half after the date when card and instructions have been mailed, at which point any unspent value on the account is lost to these participants.

- G3 participants receive a payment card linked to a newly created account with an initial account balance of EUR 300. Every Monday the remaining balance decreases by the following amounts:[2] by 30 euros if the balance is in the interval (200, 300]; by 20 euros if the balance is in the interval [100, 200], by 10 euros if the remaining balance is below 100. Thus, treatment in group G3 approximates a 10% negative interest rate, at a weekly frequency. The money lost in this way cannot be retrieved by the participants.

Within each of the treatment groups G1, G2, and G3, we have two framing groups, F1 and F2. In the baseline group (F1), the participants are told in the instructions letter that they are free to use the money as the please. In the framing treatment groups (F2),

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[2]Except the first Monday after the card and instructions have been mailed, so that participants have time to receive the card and understand how it works.

the letter contains an additional paragraph with the framing treatment. This framing treatment explains that, although the participants are free to spend the money as they pleased, they are encouraged to (i) spend quickly, (ii) spend on French-made goods or services, and (iii) spend on items they would not have purchased otherwise, so that the overall increase of their spending and their impact on the French economy is maximized.

There are 1,000 households across the six treatment groups, with 400 households with card type G1, 300 households with card type G2, and 300 with card type G3. For each card type, the framing groups F1 and F2 account for 50% of the sample.[3]

At the end of the first round of the experiment, some funds will be returned to the experimenters: the weekly deductions in G3, as well as the unspent balance in G2. The entirety of these funds will be redistributed in an additional round of treatment several months after the main round; the treatment takes the same form as those in G1, with no framing treatment. The number of treated individuals in this round will depend on the amount of funds returned in the first round.

The experiment will be implemented in cooperation with Credit Industriel et Commercial S.A. (henceforth "CIC") a French retail bank, and its FinTech company Euro-Information S.A.S. Both companies share ownership ties with Credit Mutuel Alliance Federale. The participants will be drawn from among CIC's customer base, and Euro-Information will provide the research team with access to anonymized data on pre- and post-treatment variables. The funds distributed will be financed from a grant from the Agence Nationale de la Recherche to the researchers, and CIC/Euro-Information are paid a fee for their work done as part of this project. CIC/Euro-Information do not have any financial interest in the outcomes of this project.

2 Objectives

The main objectives of this work will be the following:

- Estimating the MPC of a helicopter-money type of transfer

- Estimate the effect of the different treatment groups (card type in groups G1, G2, G3; and framing groups F1, F2) on the total MPC, the timing of the spending and the type of spending (across product categories, etc.)

- Documenting the heterogeneity in MPCs across household types and testing whether it is consistent with standard theories of MPC heterogeneity in macroeconomics

- Understanding the mechanism explaining the estimated spending response

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[3]As the eligibility filter will be applied again shortly before the full experiment, the number of participants may be slightly lower.

3 Specifications

1. Baseline event study regressions:

$$y_{it} = \sum_{g \in \{G1, G2, G3\}} \sum_{\tau=-T}^{T} \beta_\tau^g 1(\tau \text{ periods since } i \text{ treated})_{it} + \alpha_i + \alpha_t + \varepsilon_{it}$$

where y_{it} are different measures of consumption, i indexes households, g treatment group (i.e., card types G1, G2 and G3), and t time periods (weekly or monthly). $\sum_{t=0}^{T_1} \beta_\tau^g$ gives the cumulative spending response to the transfer in group g up to time T_1. We will also implement a specification pooling all treatment groups together, i.e. β_τ^g does not vary across groups indexed by g.

2. Heterogeneity analysis:

$$y_{it} = \sum_{g \in \{G1, G2, G3\}} \sum_{\tau=-T}^{T} \beta_\tau^g 1(\tau \text{ periods since } i \text{ treated})_{it}$$

$$+ \sum_{g \in \{G1, G2, G3\}} \sum_{\tau=-T}^{T} \gamma_\tau^g 1(\tau \text{ periods since } i \text{ treated })_{it} C_i + \alpha_i + \alpha_t + \varepsilon_{it}$$

tells us about heterogeneity in the treatment effect by time-invariant characteristic C_i of individual i. Characteristics C_i are demeaned such that coefficients β_τ^g are identical to the results from the baseline regression. Characteristics C_i are selected to either test standard theories of heterogeneity in marginal propensities to consume in macroeconomics (namely: the role of permanent income; idiosyncratic risk and the role of precautionary savings; illiquid assets and the role of the "wealthy hand to mouth"; credit constraints; age) or behavioral theories (role of framing, role of consumption plans):

- Proxies for permanent income
- Proxies for idiosyncratic income risk (i.e., household-level income volatility)
- Illiquid wealth, liquid wealth, total gross wealth and total net worth
- Proxies for credit contraints for household i
- Age
- Framing treatment dummies for groups F1, F2[4]
- Proxies for the likelihood of purchasing durable goods. For this step, we will use the fitted value $\hat{d}_{it*}$ of an auxiliary regression

$$d_{it}(a) = f\left(\{\mathbf{c}_{i\tau}\}_{\tau<t}\right) + \varepsilon_{it}$$

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[4]In this case, we will study total consumption as the outcome but also the share of domestically produced goods in spending (using a classification of each MCC into domestically produced vs imported products).

where $d_{it}(a)$ denotes the probability of making a durables consumption purchase of at least a eur during period t and f is an unknown function to be estimated. $\{\mathbf{c}_{i\tau}\}_{\tau < t}$ denotes the expenditure information of i prior to t. The objective of this regression is to evaluate whether recipients that have "consumption plans" at the time of treatment, as captured by the predicted value of the auxiliary regression, have a different consumption response. As our objective in this auxiliary regression is to obtain a good prediction, we will choose a parameterization of f that can produce a good fit. For this choice, we are constrained by the software and hardware available on Euro-Information's secure server environment.

The above specifications constitute the core set of regressions that we will run. We reserve the right to run more specifications in order to further investigate the mechanisms at play.

4 Timeline

The timeline of the experiment will be as follows:

1. The prepaid credit card will be made and sent on April 27th 2022

2. Participants will receive the cards and the explanation text around Monday 2nd May.

3. On May 9th, G3 participants will experience the first weekly deductions (if not all the money was spent)

4. On May 11th, another letter will be sent via mail to act as a reminder to all participants

5. On May 16th, a second weekly deduction will occur for G3 participants (and so on every week from then onward)

6. On May 23rd, the card for G2 participants will expire

7. In mid-June, a survey will be sent to all participants

8. On October 3rd, all remaining cards will expire

9. Depending on total funds remaining available after the first wave of the expirement, a second and final round will be launched in October 2022 with new G1 participants