## Second Annual

# Researcher Gathering on Advancing Financial Inclusion

## May 14, 2016

**Yale University**

Greenberg Conference Center

## Agenda

| | | |
|---|---|---|
| **8:30 AM** | **Registration and coffee** | |
| **9:00 AM** | **Research Gaps in Digital Finance** | |
| | Anna Gincherman, Women's World Banking | Rebecca Mann, Bill & Melinda Gates Foundation |
| | Salah Goss, MasterCard | Dean Karlan, Yale University |
| | - CHANGE ROOMS 5 MIN - | |
| **9:45 AM** | **Mobile Money & Agent Banking** | **Saving Nudges I** |
| | Catia Batista, Nova University of Lisbon | Merve Akbas, Aliya Financial Technologies |
| | Xavier Giné , World Bank | Kelly Jones , International Food Policy Research Institute |
| **10:45 AM** | **Coffee Break** | |
| **11:15 AM** | **Information & Salience** | **Saving Nudges II** |
| | Darragh Kelly, UK Financial Conduct Authority | Juan Saavedra , University of Southern California |
| | Paolina Medina, Northwestern University | José Tessada, Pontificia Univ. Católica de Chile |
| **12:15 PM** | **Lunch** | |
| **1:15 PM** | **Research Gaps in Consumer Protection** | |
| | Xavier Giné, World Bank | Ron Borzekowski, US Consumer Financial Protection Bureau |
| | Darragh Kelly, UK Financial Conduct Authority | Jonathan Zinman, Dartmouth College |
| | - CHANGE ROOMS 5 MIN - | |
| **2:00 PM** | **Cash Transfers** | **Credit** |
| | Giorgia Barboni, Harvard Kennedy School | Emily Breza , Columbia University |
| | Claudia Martínez, Pontificia Univ. Católica de Chile | Sean Hundtofte , Yale University |
| | Lore Vandewalle , Graduate Institute, Geneva | Lesley Turner, University of Maryland |
| **3:30 PM** | **Coffee Break** | |
| **4:00 PM** | **Financial Education I** | **Saving Nudges III** |
| | Jeremy Burke, RAND Corporation | Lasse Brune , Yale University |
| | Christina Plerhoples Stacy , The Urban Institute | Tarek Ghani, Princeton University |
| | - CHANGE ROOMS 5 MIN - | |
| **5:05 PM** | **Financial Education II** | **Weather Insurance** |
| | Nathan Fiala, University of Connecticut | Guilherme Lichand , Harvard University |
| | Bilal Zia, World Bank | Jeremy Tobacman , Wharton, University of Pennsylvania |
| | **Reception** | |

# 9:45 AM Sessions

## Mobile Money and Agent Banking

### Introducing mobile money in rural Mozambique: Evidence from a randomized field experiment

***Catia Batista*** *with Pedro Vicente* **Working Paper**

What is the economic impact of newly introducing mobile money in rural areas underserved by financial services? This study is, to the best of our knowledge, the first to use a randomized control trial to answer this research question. We use three years of administrative records of the mobile money provider to describe good levels of adoption after mobile money was introduced. Our experimental results show that the availability of mobile money translated into less overall vulnerability of rural households to adverse shocks, particularly to episodes of hunger. Additionally, we obtain evidence of reduced investment on agriculture and other businesses. We also find an increase in the remittances received (both at the extensive and intensive margins) by rural households, while savings and asset accumulation are kept basically unchanged. We interpret these results as evidence that mobile money acted as a channel for (informal) insurance that improved risk sharing between urban migrants and their rural family members. In a context where households face binding credit constraints, this additional insurance may have reduced the incentives for investment.

### Banking with agents: Experimental evidence from Senegal

***Xavier Giné*** *with Sinja Buri, Robert Cull and Sven Harten* **Working Paper**

This paper uses a randomized controlled trial to study the effects of access to agent banking. Individuals were encouraged to open an account and transact at either an agent or at a branch. We find that individuals directed to an agent increase the overall number of deposits and withdrawals compared to individuals directed to the branch. Since the number of transactions at the branch are the same for both groups, this increase in the number of transactions comes from more visits to the agent. Our results suggest that agents reduce transaction costs and can thus play a role in deepening financial inclusion.

## Saving Nudges I

### How to help the poor to save: Evidence from a field experiment in Kenya

***Merve Akbas,*** *with Dan Ariely, David Robalino and Michael Weber* **Working Paper**

Partnering with a savings product provider in Kenya, we tested the extent to which behavioral interventions and financial incentives can increase the savings rate of individuals with low and irregular income. Our experiment lasted for six months and included a total of twelve conditions. The control condition received one reminder and one balance reporting text message every week, sent out on different days. The treatment conditions received in addition one of the following interventions: (1) reminder text message framed as if it came from the participant's kid (2) a golden-colored coin with numbers for each week of the trial, on which participants were asked to keep track of their weekly deposits (3) a match of weekly savings: The match was either 10% or 20% up to a certain amount per week. The match was either deposited at the end of each week or the highest possible match was deposited at the start of each week and was adjusted at the end.

Among these interventions, the most effective was the coin. Participants in the coin condition saved on average the highest amount and more than twice as much as the control condition. Furthermore, only the three conditions which involved the coin saved statistically significantly higher than the control condition. We also find suggestive evidence that the coin operated at least partially through a memory effect: Coin and match conditions increased the number of daily deposits in a similar magnitude on the day the reminder messages were sent off. However, coin condition increased the number of deposits on every other day of the week as well, while the match conditions did not on any of the other days of the week.

### Study of a savings intervention among vulnerable women in Kenya

***Kelly Jones,*** *with Erick Gong and Felipe Dizon* **Early Results**

We propose an aggregated presentation of three papers, drawn from a single research study. The study investigates the potential to change risk-coping behaviors by increasing precautionary savings. We worked with a population of vulnerable women in Kenya, including commercial sex workers, widows, divorced women and single heads of households in a nearby rural area. All 600 participants received group training on increasing savings; a randomly assigned half of the participants additionally received a new M-PESA account earmarked for savings, a savings goal-setting exercise, and weekly SMS reminders of savings goals. We first document that the intervention changed savings behavior and increased savings balances. We then show that commonly-realized health shocks lead to higher rates of transactional sex in both our urban and rural sample, and that our savings intervention led to reductions in this behavior. We speculate that increased access to precautionary savings is leading to a reduction in transactional sex. We also investigate the impact of increased savings on participation in informal risk sharing arrangements (IRSAs) and find that potential and realized transfers are reduced as a result of the treatment. In particular, the latter finding is driven by reductions in shock-induced transfers. Finally, we examine the savings constraints that our intervention is relieving and provide suggestive evidence that the labeled M-PESA account is reducing temptation spending and leading to sustained increases in savings.

# 11:15 AM Sessions

## Information and Salience

### Limited attention and credit card delinquency: A personal finance management platform in Brazil

***Paulina Medina*** Early Results

This paper looks at the treatment effect of sending reminders about credit card future payments and due dates to users of a Financial Management Platform in Brazil. The intervention consists of exposing cardholders to “attention shocks” about future credit card payments at different stages of the credit card billing cycle, in the form of smart-phone push notifications. The experimental pool is made up of users of a personal finance management platform in Brazil that collects, for each of its users, transactional level data from both checking accounts and credit cards. The results show that reminders sent at different moments of the billing cycle reduce delinquency 1.53 to 3.17 percentage points, from a basis of 27.9%, accounting for a reduction of up to 11.3% in delinquency. In particular, sending messages not only when the due date is close, but also earlier in the cycle, leads to the largest effects. One of the main reasons seems to be that that instead of waiting til the very last day to pay, users that receive reminders up to 20 days before their due date pay when they receive the reminders: the fraction of payments made in the days when reminders were sent increases by 20pp from a basis of 63.95% that took place in the same days in the control group. I further look for potential overreaction to the “attention shocks”: could it be that by avoiding late payment fees on their credit cards, individuals incur overdraft fees on their checking accounts? When considering the full set of users, I don't find differences between the fraction of users incurring overdraft fees in treatment and control groups. However, when looking specifically at users considered more prone to incurring overdraft (those that paid overdraft fees during the baseline period), I find a small but significant increase of 2pp in the fraction of people incurring overdraft fees, from a basis of 51%. Finally, I present the results from a mobile satisfaction survey sent to users participating in the trial that shows that 77.7% of respondents are interested in continuing to receive reminders, and while the results suggest that the most effective way to reduce delinquency is with an intense treatment that involves 5 messages over the billing cycle, an overwhelming majority of respondents report a preference for 1 to 2 messages per month.

### Message received? Annual summaries, text alerts and mobile apps on consumer behavior in the UK

***Darragh Kelly,*** *with Stefan Hunt and Fabian Garavito* Published Paper

Using rigorous statistical analysis of data from two large banks, including granular data on 500,000 customers from one bank, we show that annual summaries have no effect on consumer behavior in terms of incurring overdraft charges, altering balance levels or switching to other current account providers. In contrast, signing up to receive text alerts or mobile banking app notifications reduces the amount of unarranged overdraft charges incurred by 5% to 8%, and signing up for both services has an additional effect, resulting in a total reduction of 24%. The additional impact of the combination of both services shows the benefit of receiving information upon automatic triggers, without having to actively acquire it, as well as having the facility to act quickly upon receiving information. Text alerts and mobile banking apps also reduce current account balances by 17% to 24%, which is beneficial for consumers as they reduce the cost of holding funds in accounts with low interest rates. These services also appear to encourage consumers to switch without closing their original account.

## Saving Nudges II

### Nudging youth to develop saving habits: Experimental evidence using SMS in Colombia

***Juan Saavedra,*** *with Catherine Rodriguez* Working Paper

We report on a field experiment articulating financial information via cellphone text messages and financial decisions among low-income youth in Colombia.  For twelve months, youth accountholders are randomly assigned to receive either: i) monthly financial education messages, ii) monthly savings reminders, iii) semimonthly reminders or iv) control. After twelve months, account balances in monthly and semimonthly reminders groups increase by 28 and 43 percent, respectively, relative to controls.  Financial education messages do not increase balances.  Over two thirds of balance increases in reminder groups are net savings.  Savings effects of reminders last even eight months after youth stop receiving messages.

### Personalized information to boost retirement savings in Chile

***José Tessada,*** *with Jeanne Lafortune , Olga Fuentes, Julio Riutort, Pamela Searle, and Felix Villatoro* Early Results

We randomly offered individuals in a government service center attending low- to middle-income individuals in Chile personalized information about their pension, including a simulation of their projected pension.  The control group received generic information reminding them that saving for one's pension is very important and simple tips on how to improve their pension in three generic ways. The treatment group received specific information on how much they could improve their projected outcome based on their current history of pension contributions and cumulated savings.  We find that, on average, the treatment group significantly increased their voluntary contributions up to 8 months after the intervention while we see no impact on mandatory contributions.  Once we divide our sample by whether the individuals over-, under- or correctly estimated their pension, we find that the impact is concentrated among those who overestimated how much pension they would receive from the system.  Those who underestimated it, on the other hand, appear to slightly decrease their mandatory contribution and to increase their probability of retiring, particularly if they were close to retirement age.  We complement these administrative results with a phone survey where we find no evidence that the pension system crowded out savings outside it: if anything, the treatment group increased their total savings.

# 2:00 PM Sessions (1/2)

## Cash Transfers

### Natural calamities and social safety nets: Mobile cash transfers to vulnerable populations in Bangladesh

***Giorgia Barboni,*** *with Parul Agarwal and Abu Shonchoy* **Ongoing Study**

Cash transfers are an important component of welfare programs, and become even more relevant when they are used to help vulnerable populations cope with the consequences of natural disasters. The aim of this project is to evaluate the effectiveness, both in terms of costs and impact, of using mobile money (bKash in Bangladesh) to deliver unconditional cash transfers to households affected by natural calamities. Our target population consists of poor households in Northern Bangladesh (including the “chars” region), who are recurrently subject to severe natural disasters that heavily undermine the local economy (seasonal food shortages, periodical floods). In particular, our objective is twofold: first, we want to assess the supply of, and the demand for bKash among our target population. Second, we want to study the impact of delivering electronic cash transfers on recipients' consumption, health, and savings, as well as on their bargaining power within the household. At present, we are conducting a 6-month feasibility study. With the feasibility study, we want to understand what impact we should reasonably expect in terms of take-up and usage rates from our target population if a social safety net program, implemented as an emergency response to the *monga* or a flood, is delivered through bKash. Conditional on satisfactory results of the pilot, we will then design and set-up an RCT.

### Conditional cash transfers and bank accounts in Chile

***Claudia Martínez,*** *with Abhijit Banerjee, Esteban Puentes* **Early Results**

Many beneficiaries of social welfare programs around the world receive benefits in cash or by check. Can distributing welfare benefits through electronic transfers directly into bank accounts help some of these low-income individuals enter the formal financial sector? We partnered with the Chilean Government and National State Bank to evaluate the impact of a social welfare program’s transition from cash distribution to electronic transfers to individual bank accounts. As the program rolled out, we randomly selected 3,232 beneficiaries in and around Santiago to participate in the study. Three quarters of these beneficiaries were randomly selected to receive an offer for a bank account and direct deposit of their welfare payments into the account. The remaining beneficiaries continued to receive their payments by check, serving as a comparison group. We measure the effect of electronic transfers on financial inclusion, employment and networks using a follow-up survey.

### Saving by default: Evidence from a field experiment in rural India

***Lore Vandewalle,*** *with Vincent Somville* **Working Paper**

We document that the method of payment - in cash or in a bank account - is an important determinant of savings behavior. In rural India, we conducted the first randomized control trial that studies the effect on savings of allocating identical weekly payments to a bank account (treated) or in cash (control). The villagers are free to deposit or withdraw the amount they want, the transaction costs are negligible, and the bank is located at their doorstep. The impact of introducing transfers to a bank account is huge: savings on the account increase by 111 percent within three months of weekly payments, and the effect is long-lasting. Villagers paid in cash do not save more in other assets such as cash at home, but they increase consumption. Therefore, we infer that being paid in a bank account has a net positive impact on total savings. We later twist the original design and pay everyone in cash, and see that the saving and consumption patterns of the treated and control no longer differ. We interpret these findings as the outcome of the default option, and we further discuss plausible mechanisms. We provide evidence that the treatment impacts can be explained by (i) transaction costs, (ii) lack of self-control, and (iii) mental accounting. We argue that they are not due to (iv) a higher trust and a better relationship with the banker, (v) experimenter demand effects, nor (vi) redistributive pressures.

# 2:00 PM Sessions (2/2)

## Credit

### Measuring the average impacts of credit: Evidence from the Indian microfinance crisis

***Emily Breza,*** *with Cynthia Kinnan* **Working Paper**

In October 2010, the state government of Andhra Pradesh, India issued an emergency ordinance, bringing microfinance activities in the state to a complete halt and causing a nation-wide shock to the liquidity of lenders, especially those lenders with loans in the affected state. We use this massive dislocation in the microfinance market to identify the causal impacts of a reduction in credit supply on consumption, entrepreneurship, and employment. Using a proprietary, hand-collected district-level data set from 27 micro-lenders matched with household data from the National Sample Survey, we find that district-level reductions in credit supply are associated with significant decreases in casual daily wages, household wage earnings and consumption. In contrast to many experimental studies of microfinance, our estimates capture the average impacts on households, inclusive of general equilibrium effects.

### No such thing as a free option? Evidence from a debt forgiveness program in the US

***Sean Hundtofte*** **Working Paper**

The study finds that offers of debt forgiveness can financially hurt borrowers while benefiting lenders. Defaulted mortgage borrowers are randomly assigned offers to modify their loan in return for completing three payments and legal paperwork. These offers increase the fraction of borrowers making a repayment over the next four months from 1% to 14%. Dollar repayments also increase. However, 72% of responding borrowers do not complete the terms of the modification, fail to modify their mortgage, and are worse off than had they not responded. On average, offer recipients do not benefit financially, I hypothesize owing to a lack of financial sophistication.

### Default bias in borrowing: Evidence from a field experiment on federal student loans in the US

***Lesley Turner,*** *with Benjamin M. Marx* **Early Results**

Nearly half of all college students in the U.S. attend community colleges. All students enrolled in participating higher education institutions are eligible for federal loans, and the majority of community college students are also eligible for subsidized loans that do not accrue interest while the borrower is in school. While eligibility for subsidized loans is determined at the federal level, colleges are allowed to offer students different loan amounts, including $0. Approximately half of all community colleges default students into the maximum subsidized loan (with unsubsidized loans added in some cases) while the remainder offer their students $0 in loan aid (even those with eligibility for subsidized loans). In previous work, we show that a $0 loan default offer creates a fixed cost of borrowing, which leads to substantially lower loan take-up and potentially reduces educational attainment.

In the first phase of our study, we conducted a field experiment at one large community college. Students were randomly assigned to a default loan offer of either $0 or a positive amount that included the student's maximum subsidized loan. Using the actual loan amounts chosen by these students, we identify and examine default bias. We compare the distributions of loan amounts under the two information regimes and quantify the excess share of students who will accept the default loan amount. Defaulting students into the loan program increased the share of borrowers by over 40 percent. We examine heterogeneity by student resources, dependency status, year of school, and past experience of borrowing or attending the same school. We find evidence of strong default bias across all types of students. Among nontraditional students, we find suggestive evidence that those induced to borrow by a positive loan offer attempted and earned more credits in their fall semester.

# 4:05 PM Sessions

## Financial Education I

### Randomized evaluation of a credit building loan product in the US

***Jeremy Burke,*** *with Julian Jamison Dean Karlan, Kata Mihaly and Jonathan Zinman* **Ongoing Study**

We are partnering with a credit union in the mid-west to conduct a randomized controlled field trial of a credit builder loan and examine its impact on credit, savings, and financial stability amongst the economically vulnerable. Randomly selected participants in the study were required to complete financial education prior to opening the loan. Early results on the impact of financial education requirements on financial product uptake and the impact of the product on credit outcomes will be discussed.

### An evaluation of the impact of two "rules of thumb" for credit card revolvers in the US

***Christina Plerhoples Stacy,*** *with Brett Theodos, Devlin Hanson and Julian Jamison* **Working Paper**

Rules of thumb–based education techniques have been proposed as a way to simplify financial education and make it more effective by providing simple, easily implemented decision guidelines. Presumably, rules of thumb are easier, cheaper, and more effective at engaging consumers than many other types of financial education. They can be delivered closer in time to the desired behavior change than classroom or counseling based education.

In this study, we perform the first rigorous test of rules of thumb–based financial education on consumer financial behavior using a randomized controlled trial. We deliver two rules of thumb to 13,957 credit card revolvers from Arizona Federal Credit Union over the span of six months (mid-December 2014 to mid-June 2015). The two rules were: "Don't swipe the small stuff. Use cash when it's under $20" and "Credit keeps charging. It adds approximately 20% to the total." We deliver the rules via email, online banner, and/or physical mailer to different treatment groups.

Results indicate that rules of thumb can be effective at altering consumer behavior and that they can be delivered at a very low cost. Although effect sizes were relatively modest, the fact that any effect was found for such a minimally invasive and inexpensive intervention is a testament to the potential usefulness of rules of thumb-based interventions.

## Saving Nudges III

### Deferred wages, savings constraints and labor supply in Malawi

***Lasse Brune,*** *with Jason Kerwin and Eric Chyn* **Ongoing Study**

Financial market frictions and behavioral constraints leave many people struggling to buy durable goods or make investments. In response, a popular mechanism to generate lump sums, particularly in developing countries, is to defer receipt of income. Ongoing financial innovations are increasing the availability of automatic deductions from wages and other commitment products that reduce constraints to the generation of lump sums. An understudied but potentially important consequence of this approach to making savings goals more attainable is its effects on labor supply. Accounting for labor supply effects could be important for determining the benefits of better savings technologies for welfare and economic growth. We study the effect of reducing saving constraints on financial behavior, labor supply and household well-being using an experiment with a large agricultural firm in Malawi. Our design will offer mobile money based direct deposit and deferred compensation schemes that allow workers to receive part of their pay into mobile as delayed lump sum.

### Mobile-izing savings: Experimental evidence on dynamic inconsistency and the default effect in Afghanistan

***Tarek Ghani,*** *with Michael Callen and Joshua Blumenstock* **Working Paper**

Automatic payroll deductions represent one of the most effective means of increasing savings in developed countries. We design and experimentally evaluate a mobile phone-based automatic payroll deduction system in Afghanistan, a country with limited formal financial infrastructure. We find that employees initially assigned a default contribution rate of 5 percent are 40 percentage points more likely to contribute to the account than individuals assigned to a default contribution rate of zero. We also randomize employer matches, and estimate that a 50 percent match would be required to replicate the default effect on participation through financial incentives alone. To better understand why the default effect is so pronounced, we conduct several additional experimental interventions designed to induce employees to make a non-default election, including randomizing the timing of a financial consultation designed to eliminate the cost of changing plan contributions, and using behavioral protocols to elicit measures of present bias. We find evidence that the default effect is driven largely by time-inconsistent preferences that cause the employee to procrastinate in making a non-default election.

# 5:00 PM Sessions

## Financial Education II

### Financial education and savings behavior: Evidence from a randomized experiment in India

***Nathan Fiala,*** *with Margherita Calderone, Florentina Mulaj, Santadarshan Sadhu and Leopold Sarr* **Working Paper**

Financial literacy programs are popular, despite recent research showing few changes to savings behavior. We experimentally test the impact of financial literacy training on clients of a branchless banking program that offers doorstep access to banking to low income households. The intervention had significant impacts: savings in the treatment group increased by 29% ($27) within a period of one year. The increase in savings is due in part to decreases in expenditures on temptation goods. These results suggest that financial education interventions, when paired with banking experience, can be successful in changing savings outcomes.

### The ABCs of financial education: Experimental evidence from India

***Bilal Zia,*** *with Fenella Carpena ,Shawn Cole and Jeremy Shapiro* **Working Paper**

This paper uses a large-scale field experiment in India to study attitudinal, behavioral, and cognitive constraints that stymie the link between financial education and financial outcomes. The study complements financial education with (i) participant classroom motivation with pay for performance on a knowledge test, (ii) intensity of treatment with personalized financial counseling, and (iii) behavioral nudges with financial goal setting. The analysis finds no impact of pay for performance but significant effects of both counseling and goal setting on real financial outcomes. These results identify important complements to financial education that can bridge the gap between financial knowledge and financial behavior change.

## Weather Insurance

### Insurance against cognitive droughts in Brazil

***Guilherme Lichand,*** *with Anandi Mani* **Working Paper**

This paper tests whether uncertainty about future rainfall affects farmers' decision-making through cognitive load. Behavioral theories predict that rainfall risk could impose a psychological tax on farmers, reducing the quality of their decisions and, in turn, leading to material consequences at all times and across all states of nature – even when negative rainfall shocks do not materialize down the line. Using a novel technology to run lab experiments in the field, we combine survey experiments and recent rainfall shocks to estimate the effects of rainfall risk on farmers' cognition. We find that worries about rainfall increase farmers' cognitive load and their susceptibility to a variety of behavioral biases. In theory, insurance could mitigate those effects by alleviating the material consequences of rainfall risk. To test this hypothesis, we randomly assign offers of an index insurance product, and find that it does not affect farmers' worries about rainfall, cognitive load, or susceptibility to biases. These results suggest that farmers' anxiety might be relatively difficult to alleviate.

### Impacts of formal insurance against weather shocks in India

***Jeremey Tobacman,*** *with Daniel Stein, Vivek Shah, Laura Litvine, Shawn Cole and Raghabendra Chattopadhyay* **Working Paper**

This paper presents results from an eight-year-long randomized evaluation of the impacts of a new financial product, rainfall index insurance, on farmer investment and well-being. Poor but not catastrophic rainfall characterized the study period, and insured farmers earned more from policy payouts than they spent on insurance premiums. We contribute some of the first estimates of the impacts of index insurance on financial outcomes, consumption, and well-being. In our main specifications we estimate statistically insignificant negative effects of insurance coverage and payouts on farmer investment and well-being. These qualitative results hold in dozens of alternative specifications, including those that separate short- and long-run impacts, and those that incorporate or isolate within-village spillover effects. We find more statistically reliable evidence that insurance payouts cause farmers to receive fewer informal transfers from peers. Taken together these estimates suggest limited prospects for subsidized, small-scale, retail rainfall insurance.