

Child Poverty, Income Volatility and The Next Income Experiment

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Pivot point: From war on poverty to war on the poor?

(Re)definitions of the poverty measure (Wimer et al., 2013)
 (Re)visiting the role of the social safety net
 (Re)examining employment given the new nature of the labor market
 (Re)alizing that today's demographic, political and economic environment is complex, fractured

Opportunity for science: Big data, new inter-disciplinary frameworks, and advanced empirical strategies.

Family economic resources (and, decision making)

Income is the most manipulatable public investment:

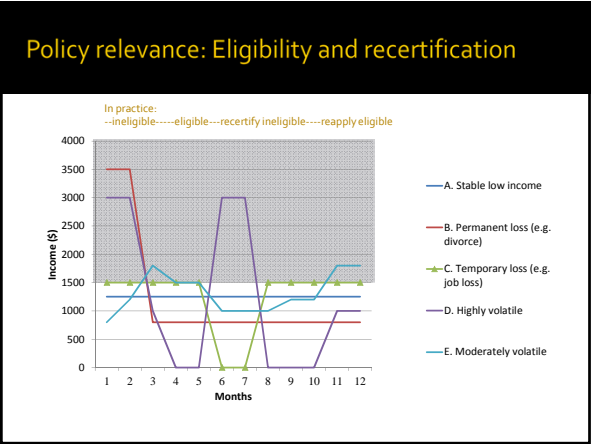
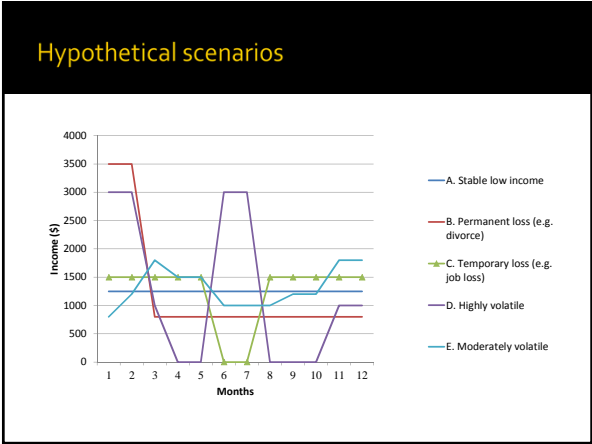
- Tax system: Tax credits and EITC
- Social assistance & income-supplementation
- Earnings platforms: Mandates, work incentives, exemptions, family leave, and related work support

Other frames but with alternative public investment implications:

- Quality early childhood education and care
- Positive, supportive, responsive parenting
- Productive and accountable schools & teachers
- Housing
- Safe, connected neighborhoods

Road map

- Income volatility as a theme of everyday life
- Child development view of poverty and income volatility
- A behavioral (economic) science view of poverty and income volatility
- The *Next Income Experiment*
 - Study design
 - NYC pilot



Patchwork income, daily hassles and juggling

Spikes & Dips, J. Morduch & R. Schneider. The Taylor's, Figure 9 and the Garza's Figure 2. U.S. financial diaries project

"It's always juggling," she says. "You know who you can pay late, and who you absolutely can't." Something as small as school pictures or a broken washing machine can keep her up at night. A Juggling Game for a Single Mom in the Middle, NPR. October 6, 2010.

- > Lack of financial slack = deeper consequences for the poor

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Child development view: Does income matter?

- Body of work documenting the unfavorable associations of poverty with childhood development

Positive effects of increased income among poor children:

- Negative income tax experiments (Forget, 2011; Maynard & Murname, 1979; Maynard, 1977; Mallar, 1977)
- Quasi-experiments EITC, child tax credits and SNAP, Casino disbursement (Akee et al 2010; Dahl & Lochner 2012; Milligan & Stabile 2011)
- Experimental anti-poverty studies, ~\$1000/year improves achievement by 5-6% of a standard deviation

Income change, not just income level

Aims

- Deepen conceptual model to incorporate income dynamics
- Document incidence
- Estimate relations with family processes & child development
- Explore methodologies to identify causality

Data

- Survey of Income and Program Participation
- Opportunity New York City (conditional cash transfer) experiment

Team: Heather Hill (UW Seattle); Pamela Morris, NYU; and, Sharon Wolf, IRP; Chris Rodrigues; Carly Tubbs, NYU

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Documenting incidence of income volatility

Aims & Intuition

What is the incidence of income volatility among HHs with children? What are the right constructs to capture this? How does this vary by income level? How does this vary for children in Hispanic HHs?

Data

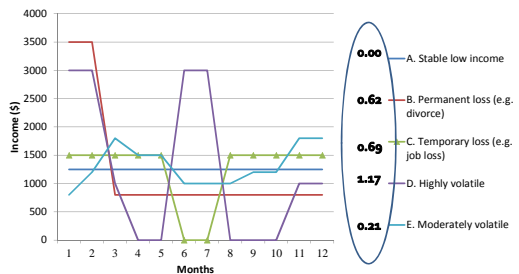
Children in HHs, SIPP (frequent measurement of income)

Outcomes & Method:

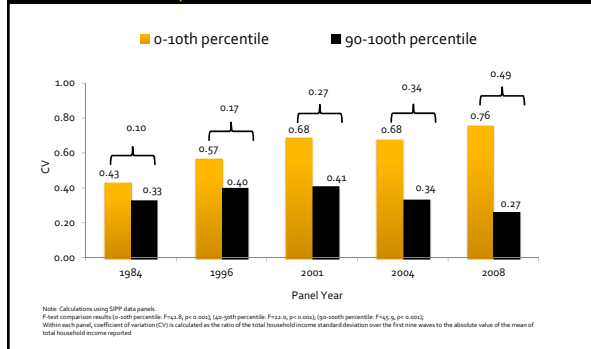
- Coefficient of Variation (CV)
- Average Percent Change
- Frequency: Total shocks greater than 33% (Elder, 1974)
- Magnitude: Abs. value average percent change (Dyner et al., 2007)
- Direction: Large drops in income between two waves

Descriptive, multivariate

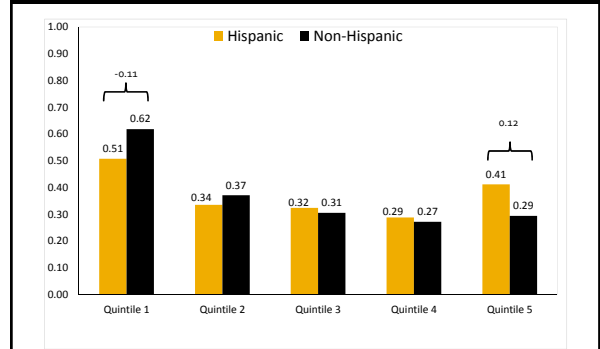
Coefficient of Variation (CV)



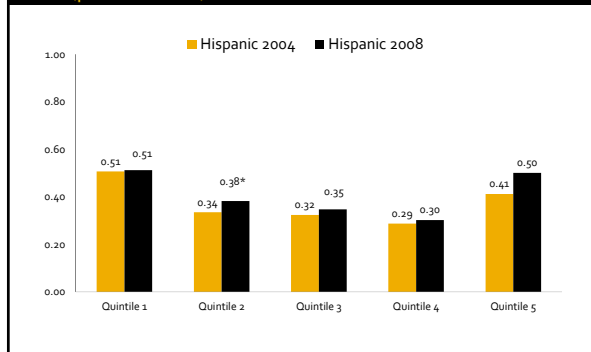
Lower income HHs experience less income stability; *and*, over time, higher income households have acquired more income stability



Hispanic children are more likely to be poor, *but also* have higher income stability than poor nonHispanic children



And, Hispanic children experienced similar stability of income in 2008-11 (during/post Great Recession) as 2004-06 (pre-recession)



Income volatility unfavorably associated with adolescent schooling behavior

	School engagement is High (12-18 year olds)			Ever expelled/suspended (12-18 year olds)		
CV	0.72*	0.85	0.85	3.0***	1.5*	1.6*
Total # income shocks	0.95***	0.96*	0.97*	1.1***	1.04	1.0
No covariates	X			X		
+ avg mos income		X			X	
+both			X			X

Source: SIPP 2004. Gennetian, Hill, Morris & Wolf (2015).

No detectable variation by quintile for school engagement; Low and unstable income associated with higher rates of suspensions/expulsions.

	Q1	Q2	Q3	Q4	Q5
School engagement is high					
CV	0.78	0.95	1.3	0.59	0.70
Shocks	0.96	1.0	0.98	0.92*	0.93*
Ever suspended/expelled					
CV	2.3*	1.3	1.3	1.5	0.41
Shocks	1.1*	0.97	1.0	1.0	0.96

Source: SIPP 2004. Gennetian, Hill, Morris & Wolf (2015).

Causality: Opportunity NYC

Aims & Intuition

Is it low income, low and unstable income, or unstable income? (or, something else associated with low or unstable income?)

Data

- CCT in NYC 2007-2010
- Targeted low-income families in 6 high poverty communities
- Variation in types and amount of financial rewards

Qual data: Three waves, longitudinal N. Program induced instability, money management

Admin data: Up to 5 years of student level and various income data

Surveys: Two waves with measures of family processes and children's well-being

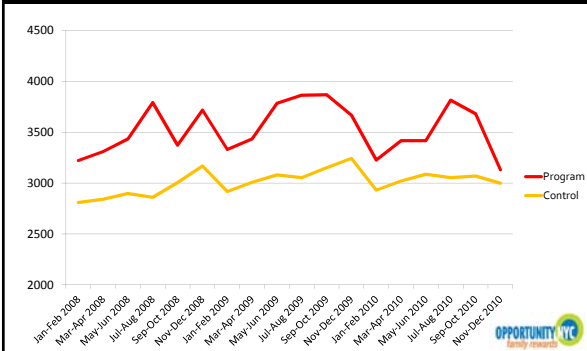
Outcomes & Method

Student attendance, credits, proficiency scores

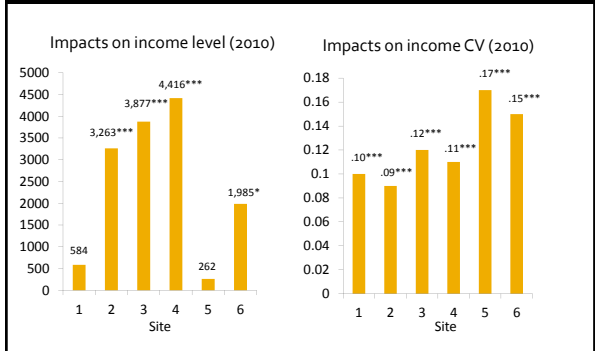
Quasi-experimental: matching, regression discontinuity, D-in-D

Instruments through experimental exogenous variation

ONYC increased income ~\$3000/year on average



Variation in income and Income CV by site



Re-cap

- Frequent, unpredictable, negative income change predicted to be unfavorable
- Increasing income volatility among the poor; income is more stable among poor children in Hispanic households
- Income volatility descriptively distinguishable influences on children's developmental outcomes
- Untangling income level from income change is challenging
 - Limited data with solid & frequent measures of income and credible/meaningful measures of child outcomes

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Science of decision making

- | | |
|--|---|
| <p>Economics:</p> <ul style="list-style-type: none"> ▪ Stable preferences ▪ Well informed ▪ Self interested ▪ Maximize utility subject to some constraints ▪ Compare costs with benefits ➢ Levers: Prices, costs, budget constraints and transaction costs (search/info, bargaining, enforcement) | <p>Psychology:</p> <ul style="list-style-type: none"> ▪ Malleable preferences ▪ Myopic ▪ Impulsive ▪ Social ▪ The easy and short way out-wins the rational way ➢ Levers: Context matters (defaults, frames, anchors) |
|--|---|

Science of decision making

- Alerts:**
- Mind is a muscle not a computer (bounded rationality, Simons 1951; Kahneman and Tversky)
 - Attention and self-control can be strained and depleted (moving gorilla, Mischel's marshmallow tests)
 - Decisions can be shaped by our environment

Mis-thinking is easy



- A toy bat and a ball cost \$1.10 in total.
- The bat costs \$1.00 more than the ball.
- How much does the ball cost?

Frederick, S. (2005) Cognitive Reflection and Decision Making. *Journal of Economic Perspectives* 19(4): 25-42.

Existing frameworks

For simplicity, let's say existing frameworks of poverty reflect:

The human capital investment view: invest in education, training & employment; and, do so early in human development

The choice view, i.e. improve the quality of choices through: altering culture, social norms; carrots and sticks to encourage and reinforce desired behavior (employment, savings, etc); building infrastructure such as schools, housing, neighborhoods

Jennifer



Making ends meet:

- Unpredictable work hours
- Limited family support
- Hardly any savings
- Patchwork child care
- Without a stable partner

Augmented framework

- Is (poor) decision making the cause of poverty?
- Or, does the experience of poverty and income volatility influence decision making?

Mullainathan & Shafir (2013). *Scarcity: Why Having too Little Means so Much*.

Gennetian & Shafir (2015). Behavioral Perspectives on Poverty and Economic Instability. *Journal of Policy Analysis and Management*

Gennetian, Darling & Aber (2015). Behavioral Economics Insights and Early Childhood Interventions

Empirical:
Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. *Science*, 344, 976-980.

Shah, A., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science*, 338, 682-685.

Augmented view of Jennifer



Low and volatile income
Lack of economic slack
Daily hassles/juggling

- The financial tightrope:
Cognitive/psychic taxes
- Attention
 - Self-control
- Economic taxes
- Late Fees
 - Use of alt. fin. services

One slip and....missed appointments, high cost loans, distracted parenting, spiral into poverty

Building (quasi-experimental) evidence

Does being poor and financially unstable affect "mental bandwidth?" Leverage policy inducing income shocks with "mental bandwidth" mechanisms:

- Negative income shocks at end of month, thru timing of benefit payments (less sleep, more parenting stress, more acting out by children).
- Receipt of the earned income tax credit as a positive income shock, less stress, and higher incidence of male births.

Food stamp benefit cycles & school disciplinary events

Aim & Intuition

- SNAP families run out of food at the end of the month
 - Hungry & financially constrained, depletes self-control and attention, possible secondary effects on children
- Hungry students have lower show-up rates, poorer performance and act out in school

Data

- Chicago Public School Administrative Records, all 5th-8th graders
 - Semi-annual enrollment records
 - Daily disciplinary records
- IL SNAP Enrollment Records

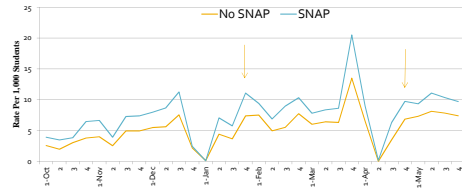
Measures & Method

- Severe disciplinary events (level 4+)
- D-in-D natural experiment:

$$\delta = (\bar{y}_{snap, wk4} - \bar{y}_{snap, wk1}) - (\bar{y}_{nonsnap, wk4} - \bar{y}_{nonsnap, wk1})$$
- Student and school level fixed effect

Gennetian, Seshadri, Winn, Hess & Goerge, in revision *Education Finance and Policy*, funded by WK Kellogg Foundation

Figure 1. Student Disciplinary Events, Grades 5 to 8 in 2005-2006



Note: Rates are unadjusted and have not been weighted to for the number of eligible school days per week/month

δ D-in-D estimate = 8%age points

Table 4. Difference in Difference Results. Disciplinary Events per Thousand Student Weeks, by Week by SNAP family status, Grade 5-8, Chicago Public Schools, 2005 to 2006

	SNAP			No SNAP			Diff in Diff
	Week 1	Week 4	Diff	Week 1	Week 4	Diff	
All Schools	0.603	0.909	0.506 (0.021)	0.602	0.840	0.395 (0.017)	0.080 (0.014)
Females Only	0.227	0.387	0.706 (0.029)	0.219	0.346	0.580 (0.033)	0.080 (0.021)
Male Only	1.292	1.866	0.444 (0.027)	1.287	1.725	0.341 (0.021)	0.078 (0.019)
Non-ASM Schools	0.523	0.824	0.576 (0.030)	0.482	0.705	0.462 (0.022)	0.078 (0.021)
ASM schools	0.672	1.027	0.528 (0.033)	0.703	0.992	0.412 (0.027)	0.082 (0.019)
Controlling for Time on SNAP	0.537	0.904	0.499 (0.021)	0.648	0.900	0.390 (0.016)	0.078 (0.014)

Note: Standard errors in parentheses. Estimates derived from multivariate poisson models with student, family, and school-level control variables as presented in Appendix Table 1. Coefficient estimates converted to means to be interpreted as percent change, derived directly from the full multivariate model. Diff, and Diff in Diff estimates are converted and presented as relative percentage change. Estimates by student sex and presence of an after school snack program (ASM) were derived by inclusion of interaction terms in the main model.

Implications for program & policy design

Address or minimize impact on cognitive load (reduce cog tax)

- Directly address income volatility
 - Safety net fast-pass
 - Earnings insurance
 - Flexible income disbursement schemes
- Create financial buffers
- Acknowledge the demands of income volatility
 - Modular training programs, menu of training options
 - Express lane eligibility
 - Time recertification with typical milestones (follow school calendar)

Re-cap

Looking beyond income as a static condition
Thinking about the context of poverty not just the causes

- Affects children's developmental outcomes
- And, parent's decision making (cognitive load e.g. attention, self control, that also influence parent engagement)

Next steps:

Building an evidence base, address causality

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The Next Income Experiment

Social Scientists: Katherine Magnuson (Univ of Wisconsin), Hiro Yoshikawa (NYU)

Neuroscientists: Kimberly Noble (Columbia University), Nathan Fox (University of Maryland) and Charles Nelson (Harvard University)

*Greg Duncan, University of California at Irvine

April 23, 2015

Motivation

- Limited evidence of income's effects across developmental stage, and on early childhood
- Neuroscience research suggests SES disparities in language, memory & executive function (Farah, Noble). And, brain structure/surface area (Noble et al, 2015).

Open questions about the role of income:

- Rewards of targeting plasticity of the early brain (ingredient for enduring positive effects?)
- Smart parents "have" or "raise" smart kids?
- Target the adverse consequences or enable parents with economic resources

First RCT of (predictable) unconditional cash for poor families of infants and toddlers

	Experiment Description
Sample	1000 poor mothers (NYC, Omaha, Minneapolis, New Orleans, maybe Detroit)
Intervention	\$4K/year for three years
Control	\$240/year for three years
Assignment	Random assignment to control/treatment
Payment	Monthly reload on debit card with text message reminder
Data Collection	Birth, age 1, 2 and 3

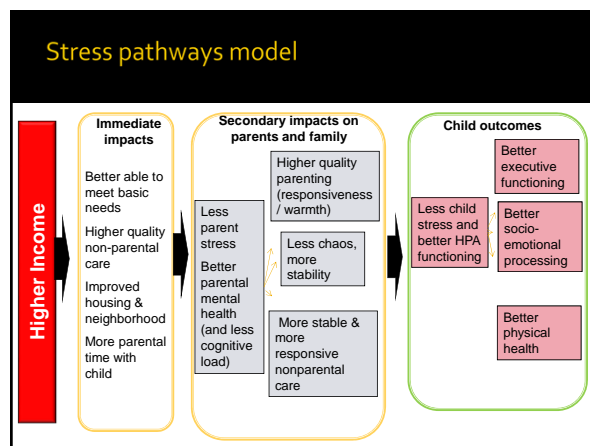
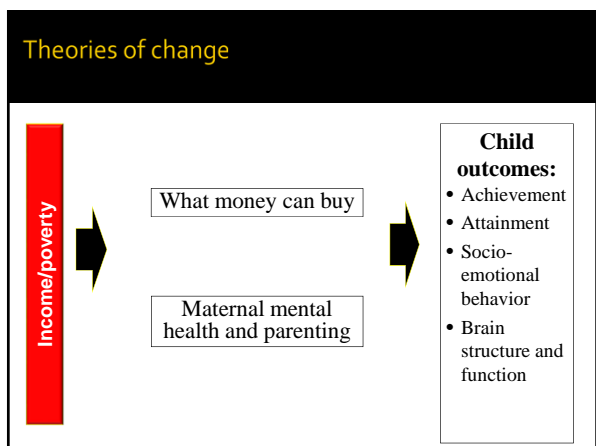
Informing public investment choices?

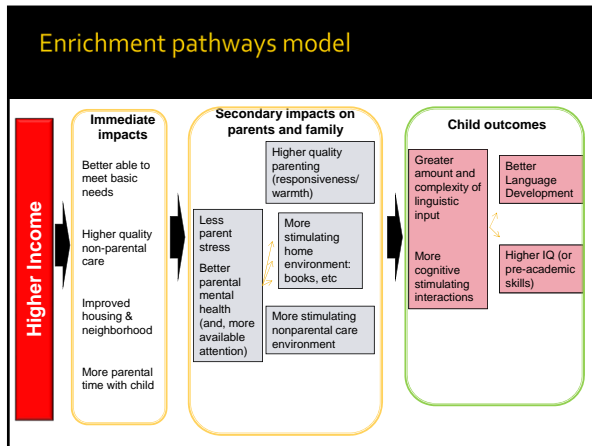
Yes!
 \$\$ value is on par with current U.S. programs—what effects are or could they be having on early childhood?

Is "free" money the best way to alleviate poverty?

- GiveDirectly and experiments in developing world. (Haushofer & Shapiro, Kenya)
- Monday evening cash raffles among soup kitchen visitors
- Homeless in London, \$4,500/year. 11 out of 13 had roofs over their heads, enrolled in classes, etc.
- \$382/yr ~ one year of income to Ugandans, 2/3^d more likely to be practicing a trade and earnings 40% higher

Giving vs lending to the poor: Debate on micro-lending. Chris Blattman says "cash beats credit."





Data Collection

	Birth	Age 1 phone interview	Age 2 home visit	Age 3 lab visit
Household economic behavior	X	X	X	X
Housing and neighborhoods	X	X	X	X
Parental employment	X	X	X	X
Nonparental care		X	X	X
Parenting		X	X	X
Maternal relationships	X	X	X	X
Maternal physical and mental health	X	X	X	X
Home environment		X	X	X
Complexity of linguistic input (videotaped interaction)			X	
Maternal working memory			X	X
CHILD OUTCOMES: Language, memory, executive functions, socio-emotional, pre-academic, brain function (high density EEG/ERP)				X

Methodology

- Intent to treat estimates
- Instrumental variables
- Exploiting wrinkles: Do predictable positive income shocks affect maternal working memory/attention/self control? Timing of income payment (on child's birth day) randomly varies by family and within month and relative to timing of other sources of income

Potential threats to validity:

- Differential treatment response to data collection
- Noncompliance
 - Cash gets sent elsewhere
 - Cash exchanges hands across treatment groups

Operational challenges

- Ethical concerns with enrolling participants
- Debit card implementation (Greenphire)
- Claw back issues
- Ethnic/racial/cultural sensitivity
- Fundraising: \$\$ for the cash payments & research
- Coordination across up to 11 investigators, 8 institutions, 2 large subcontractors (data collection and debit card)

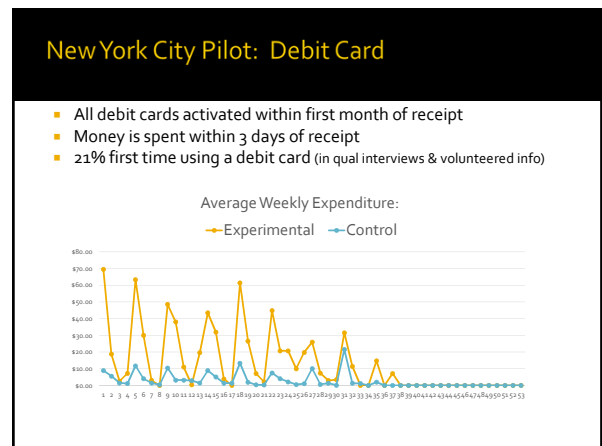
New York City Pilot

Handing out free cash is complex!

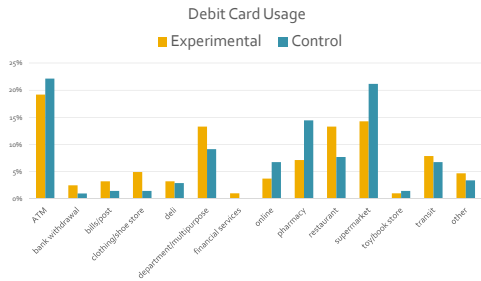
- 30 low income mothers
- Randomized to an income supplement of \$100 or \$20
- ~6 month qual interviews; 9-12 month in person survey

Objectives:

- Recruitment & enrollment
- Baseline data procedures
- Debit card implementation
- Tracking & attrition
- Inform project management needs (e.g. project manager that can handle debit card issues and interface with survey firm)



New York City Pilot



New York City Pilot: Mothers voices

Cash is "for the baby."

Most difficult expenses are "pampers and wipeys."

Have the option of asking friends or family for financial support if needed to, but most say they do not want to do so

Try to save the funds for an unexpected expense or planned future expense. (But, we know the cash payment is being spent)

Little emergencies are common occurrences: food scarcity when food stamps/WIC benefits run out or arrives late; needing additional minutes for a phone plan or replacing lost Metrocards

New York City Pilot: Mother's Voices

- This is her first debit card; she enjoys the experience. She asked if money can be added to her card. Mom thinks about the money when it arrives at which point she will see what is missing, then go out to buy it.
- When she first found out about the money, Mom knew she'd spend it on her kids. From clothes to bills, it'd all be "for my girls."
- When her daughter had school pictures, she was able to go that very day to get her hair done. Because of the money, she "rarely" runs out of diapers. Although she thought she'd spend the money on mostly clothes, it has mostly been used on food since the money arrives right before the stamps typically run out.

Discussion

Comments. Critiques. Skepticism.

- 50 years later, call to action, adapting science to new theory building, capitalizing on data and methods to get closer to depicting the reality of economic life, capitalizing on practitioner collaborations
- Income level to income change
- Poverty to context of poverty and income volatility
- Evidence building
 - Tradeoffs of internal vs. external validity
 - Benefits to scientific & policy knowledge > study costs