Thick description in empirical economics

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ABCDE, World Bank
June 20, 2016
$2.00 a Day
LIVING ON ALMOST NOTHING IN AMERICA
Kathryn J. Edin & H. Luke Shaefer
Thick description:
Explains context of behavior, to give it meaning.

Observe actions and, from those, piece together meanings

Immersive Interpretive
[Inductive]

(Geertz 1973, Ryle 1971)
Paradox of social science

• We are becoming more “scientific”
  – Causality
  – Heterogeneity, LATE, the contingency of results
  – Pre-analysis plans, protocols
  – “High-altitude data”

• Need complementary data that explains context
  – Systematic, clear economic definitions
  – Probe aggregation
  – Preferences, constraints and mechanisms
  – “Low-altitude”
Opportunity

• Researchers are in the field more than ever
• How to best exploit that opportunity?
How do you live on $1.90 a day?
$2...

Can’t even buy a small coffee
If you earn $2 a day, it’s easy to assume...

You live hand-to-mouth

You can’t plan for the future

You can’t save

You can’t have much of a financial life
PORTFOLIOS OF THE POOR

How the World’s Poor Live on $2 a Day

By Daryl Collins, Jonathan Morduch, Stuart Rutherford and Orinda Ruthven
US Financial Diaries

Principal Investigators

• **Jonathan Morduch**, Professor of Public Policy and Economics, New York University

• **Rachel Schneider**, Senior Vice President, Insights and Analytics, Center for Financial Services innovation

The US financial diaries were created jointly by the NYU Financial Access Initiative, the Center for Financial Services Innovation, and Bankable Frontier Associates.
Leadership support for the project is provided by the Ford Foundation and the Citi Foundation, with additional support and guidance from the Omidyar Network.
U.S. Financial Diaries

CALIFORNIA
San Jose & environs
Urban & rural
46 hh; 78 adults

EASTERN MISSISSIPPI
Rural
50 hh; 87 adults

OHIO/KENTUCKY
Cincinnati & environs
Small town & rural
69 hh; 130 adults

NEW YORK CITY
Brooklyn & Queens
Urban
79 hh; 158 adults

PRELIMINARY DATA - DO NOT CITE
235 households allowed us to track every dollar they earned, saved, borrowed, shared, and spent for a full year.
Financial Diaries

- Atlanta
- Glasgow
- Tokyo
- NYC, Mississippi, Kentucky, Ohio, California
- Indian SME
- Bangladesh (Hrisipara)
- Myanmar
- Kenya
- Mexico

- Bankable Frontier Associates
- Microfinance Opportunities
- Independent researchers
Methodology and Data
Why digital data aggregation would miss a lot
Fed Cash Product Office (April 2014)
Diary of Consumer Payment Choice

USFD: 40% on average

Figure 2
Shares of Transactions by Payment Instrument

<table>
<thead>
<tr>
<th>Payment Instrument</th>
<th>Number of Payments</th>
<th>Value of Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>40%</td>
<td>14%</td>
</tr>
<tr>
<td>Check</td>
<td>7%</td>
<td>19%</td>
</tr>
<tr>
<td>Credit</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Debit</td>
<td>25%</td>
<td>18%</td>
</tr>
<tr>
<td>Electronic</td>
<td>7%</td>
<td>27%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>5%</td>
</tr>
</tbody>
</table>

USFD: 50% on average
US Financial Diaries

High-frequency data
Households surveyed every 2-4 weeks

INCOME

ASSETS

CASH FLOW

244 Households
316,763 cash flows
100 spending categories
38 income types
69 financial instruments
Village studies

• **ICRISAT Village-level studies.** 6 villages. 1974-85, 2001-4

• **Palanpur, 1 village in Uttar Pradesh.** 112 households. 1957/58, 1963/64, 1974/5, 1983/84, 2008-10

• **Townsend Thai monthly village surveys.** 1998 onward

• Insight: agricultural household model
• Utility (home-grown good, market good, leisure) maximized subject to
  – Cash income constraint
  – Time constraint
  – Production function
Structure

• Corporate financial tools
  – Balance sheets
  – Income statements
  – Cash flow statements

• Adding up constraint: inflows vs outflows

# Tracking the “Modes” of Payments

**Household Example:**
“Jan and Richard” from June 1 to June 30

<table>
<thead>
<tr>
<th>First Weekend in June 1st-3rd</th>
<th>Jan received a paycheck and cashed it the same day</th>
<th>Richard received wages onto prepaid card</th>
<th>EBT card balance increased automatically</th>
<th>Paid rent</th>
<th>Paid vehicle loan, rent-to-own, recreation, alcohol</th>
<th>Bought food, gasoline, clothing, cigarettes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Full Week (Mon 4th – Sun 10th)</td>
<td>Received child care payment and cashed it</td>
<td>Bought food</td>
<td>Paid for vehicle maintenance</td>
<td>Bought gasoline, food</td>
<td>Bought clothing</td>
<td></td>
</tr>
<tr>
<td>Second Week</td>
<td>Jan received a paycheck and cashed it the same day</td>
<td>Richard received wages onto prepaid card</td>
<td>Paid loan, utilities</td>
<td>Paid loan, insurance, bought food, prescription drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Week</td>
<td>Received money from mother</td>
<td>Bought cigarettes, gasoline</td>
<td>Bought food, housekeeping supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Week</td>
<td>Received money from friend</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payroll Deduction</th>
<th>Check Cashed</th>
<th>Direct Deposit</th>
<th>Prepaid Card</th>
<th>EBT Card</th>
<th>Gov. Benefits Card</th>
<th>Gift Card</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$470</td>
<td></td>
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<tr>
<td>$20</td>
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</tr>
</tbody>
</table>
Margin of error
US Financial Diaries

It took 6 interviews (3+ months) to bring margin of error down substantially.

Missing outflows + inflows divided by total outflows
Precision over time

Income Distributions Earlier and Later in the Study

25%-37% increase

25th Percentile  Median  75th Percentile

Initial Questionnaires
End-of-Study Cash Flow...
$0.78 per person per day
x 2.67 = $PPP
2.08 per person per day
Microfinance savings account

Saving with a moneyguard

Home savings

Life insurance

Loans to others

Cash in hand

Saving with a moneyguard

Wage advance

Rent arrears

Savings held for neighbors

Shopkeeper credit

Remittance to home village

Interest free loan from neighbor
Volatility
$2 a day is just an average......

Seasonal variations in monthly income
Pumza, South Africa

Net cash flows, aggregated weekly, US$
The challenge of living on $2 a day is that $2 a day is just an average.
Spikes and Dips
Few families have steady income

Average Income

+ 25%

- 25%
Five spikes/dips per year on average

US Financial Diaries

Average Income

+ 25%

- 25%

2.7 Spikes

2.7 Dips
Self-reported month to month income variability

SHED - Federal Reserve, 2013 Survey of Household Economics and Decisionmaking (7/14)

“Often varies quite a bit from one month to the next”

“Some unusually high or low months”

SHED: Implemented in 9/2013. Nationally-representative sample. Online panel of 50,000 individuals sampled randomly. 6,912 asked to take the survey. About 60% (4,134) agreed. Quick survey (19 minutes median time)
Q: Which of the following is more important to you?

A. Financial Stability
B. Moving up the income ladder
Portfolios of the Poor: The triple whammy

Low incomes

Lack of financial tools

Irregular and unpredictable incomes
Poverty
## Volatility in Palanpur
Poverty assessed in different ways

<table>
<thead>
<tr>
<th></th>
<th>Apparent Prosperity</th>
<th>Current income</th>
<th>Permanent income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular job</td>
<td>24%</td>
<td>13%</td>
<td>30%</td>
</tr>
<tr>
<td>Agricultural laborer</td>
<td>76</td>
<td>64</td>
<td>59</td>
</tr>
<tr>
<td>Landless</td>
<td>70</td>
<td>44</td>
<td>55</td>
</tr>
</tbody>
</table>

Poverty is often a condition of volatility (With opportunities And challenges)
The Streets are coloured according to the general condition of the inhabitants, as under—

- **Lowest class. Vicious, semi-criminal.**
- **Very poor, casual. Chronic want.**
- **Poor. 18s. to 21s. a week for a moderate family.**
- **Mixed. Some comfortable, others poor.**
- **Fairly comfortable. Good ordinary earnings.**
- **Middle-class. Well-to-do.**
- **Upper-middle and Upper classes. Wealthy.**

A combination of colours—such as dark blue and black, or pink and red—indicates that the street contains a fair proportion of each of the classes represented by the respective colours.
<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dark Blue</strong></td>
<td>Casual earnings: &quot;very poor&quot; (below 18s. per week for a moderate family). The labourers do not get as much as three days work a week, but it is doubtful if many could or would work full time for long together if they had the opportunity. Class B is not one in which men are born and live and die so much as a deposit of those who from mental, moral and physical reasons are incapable of better work.</td>
</tr>
<tr>
<td><strong>Light Blue</strong></td>
<td>Intermittent earnings. 18s to 21s per week for a moderate family. The victims of competition and on them falls with particular severity the weight of recurrent depressions of trade. Labourers, poorer artisans and street sellers. This irregularity of employment may show itself in the week or in the year: stevedores and waterside porters may secure only one of two days' work in a week, whereas labourers in the building trades may get only eight or nine months in a year.</td>
</tr>
</tbody>
</table>
Most of the volatility is within job

US Financial Diaries

Mean regular earnings CV with each component evened out

- CV of regular earnings (N=169) = 0.45
- CV of regular earnings, within-jobs smoothed (N=169) = 0.22
- CV of regular earnings, between-jobs smoothed (N=169) = 0.32

excludes households with any $0 income months or with tax-smoothed income CV >1
Janice is not poor on average, but, based on income, she is poor 5 months of the year.
Sometimes poor

permanent income = x, consumption = c

Episodic poverty, transient poverty, poverty spells
Sometimes poor

% of USFD households with annual income above the (supplemental) poverty line that spent 1+ month with income under the poverty line
Chronic and Episodic poverty, 2009-11

Figure 3.
Chronic and Episodic Poverty by Selected Characteristics: 2009 to 2011

- Chronic Poverty
- Episodic Poverty
- Not statistically different from the total population

Percent

- White: 3%
- White, non-Hispanic: 9%
- Black: 29%
- Hispanic: 45%
- Non-Hispanic
- Under 18 years
- 18 to 64 years
- 65 years and over
- Married-couple families
- Female-householder families
- Male-householder families
- Unrelated individuals

10 million
All people, chronic

90 million
All people, episodic

Note: Federal surveys, including the SIPP 2008 Panel, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." This figure shows race using the first method. Because Hispanics may be of any race, data for Hispanics are not mutually exclusive with race. Female householder refer to female householders, no husband present; male householders refer to male householders, no wife present.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel. For information on confidentiality protection and sampling and nonsampling error, see <www.census.gov/sipp/source.html>.
 Spell duration, 2009-11

Figure 9.

Duration of Poverty Spells: 2009 to 2011

- 2 to 4 months: 44.0%
- 5 to 8 months: 18.7%
- 9 to 12 months: 9.4%
- 13 to 16 months: 5.9%
- 17 to 20 months: 3.6%
- 21 to 24 months: 3.2%
- 25 months or more: 15.2%

Percent of spells in interval, excludes spells underway in January 2009

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel. For information on confidentiality protection and sampling and nonsampling error, see <www.census.gov/sipp/source.html>.
Smoothing
Friedman: Permanent Income
Little effect of stimulus

Diagram showing the relationship between income, spending, save, and dis-save.
Dynamic stochastic consumption, saving/consumption choice

\[
\max E \left[ \sum_{t=0}^{T-1} (1 + \delta)^{-t} U(C_t) \right| 0 \right]
\]

subject to:
\[
A_{t+1} = (A_t + Y_t - C_t)(1 + r_t)
\]

\[
A_t \geq 0, \quad Y \in I_t
\]

\[
C_t > 0
\]
Euler equation

Along the optimal path, the marginal value of financial wealth = marginal utility of consumption

\[
U'(C_t) = E[U'(C_{t+1})(1 + r_t) | t] / (1 + \delta)
\]

Next month

\[
= E[U'(C_{t+12})(1 + r_t) | t] / (1 + \delta)^{12}
\]

Next year

\[
= E[U'(C_{t+120})(1 + r_t) | t] / (1 + \delta)^{120}
\]

Next decade

Households may be smoothing on some margins but not on others
Now Soon Later
Overspending now

Saving for Soon

Saving for Later
Most savings are spent soon
US Financial Diaries

Checking: 92% spent within a year
Savings: 61% spent within a year

- Checking accounts (87% of households have)
- Savings accounts (65% of households have)
Microfinance loan

Microfinance savings account

Life insurance

Saving with a moneyguard

Home savings

Cash in hand

Shopkeeper credit

Remittance to home village

Wage advance

Savings held for neighbors

Rent arrears

Loans to others
From *Portfolios of the Poor* (2009)

3 needs that drive much of the financial activity:

1. **Managing basics:** Cash-flow management to transform irregular income flows into a dependable resource to meet daily needs.

2. **Coping with risk:** Dealing with the emergencies that can derail families with little in reserve.

3. **Raising lump sums:** Seizing opportunities and paying for big-ticket expenses by accumulating usefully large sums of money.
Final thoughts

- Not an argument to abandon science, or that qualitative work should be considered more scientific than it is.
- Argument: data collection and qualitative work as **theory-building**
- Argument: much research is increasingly narrowly scientific but not broadly scientific
- Big data needs little data