Behavioral Economics and Household Finances of Low Income Families

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Goal for Today

DISCUSS RELEVANCE OF BEHAVIORAL ECONOMICS

– How might this help us push forward research on poverty?
– What do we know now?

EXAMPLES

– My own work on payday lending and check cashing
– Two studies by Bertrand and Morse on payday lending
What is Behavioral Economics?

This is not my view of behavioral economics, though I suspect it is often what people think of when they hear the term.
What is Behavioral Economics?

Behavioral economics increases the explanatory power of economics by providing it with more realistic psychological foundation...

Often these departures are not radical at all because they relax simplifying assumptions that are not central to the economic approach.

-- Camerer and Loewenstein
in Advances in Behavioral Economics

EXPANDING MODELS TO INCLUDE INSIGHTS ABOUT BEHAVIOR

- Parsimony still matters:
  - Focus on meaningful, widespread behaviors
  - The goal is not realism. The goal is more useful predictions, policy prescriptions, etc…
- This can be a slippery slope – Economics vs. Psychology
An example – Quasi-Hyperbolic Time Discounting

**STANDARD EXPONENTIAL DISCOUNTING**

\[ U_t = u_t + \delta u_{t+1} + \delta^2 u_{t+2} + \delta^3 u_{t+3} + \ldots \]

**HYPERBOLIC DISCOUNTING**

\[ U_t = u_t + \beta \delta u_{t+1} + \beta \delta^2 u_{t+2} + \beta \delta^3 u_{t+3} + \ldots \]

-- Time inconsistency (different “selves”)
-- Self-awareness matters
-- Can explain long-term procrastination
-- Understanding welfare becomes challenging
Key Ideas

NON-STANDARD PREFERENCES

– Time inconsistency and self-control problems
  – Procrastination
  – Overspending, under-saving
– Reference dependence
  – Loss aversion
  – Endowment effects
  – Framing matters
– Concern for fairness and “social preferences”
  – Charitable giving
  – Employment relationships
  – Reciprocity and revenge

MYOPIA

– Narrow bracketing
– Mental accounting
– “Limited attention” (bounded rationality)
Why Might this Matter?

Standard paradigm

Focus on information provision
Hey kids, stay in school. What would happen if we put this poster in every classroom?

Education pays:

<table>
<thead>
<tr>
<th>Unemployment rate in 2010 (%)</th>
<th>Median weekly earnings in 2010 ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral degree</td>
<td>1,550</td>
</tr>
<tr>
<td>Professional degree</td>
<td>1,610</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>1,272</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>1,038</td>
</tr>
<tr>
<td>Associate degree</td>
<td>767</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>712</td>
</tr>
<tr>
<td>High school diploma</td>
<td>626</td>
</tr>
<tr>
<td>Less than a high school diploma</td>
<td>444</td>
</tr>
</tbody>
</table>


Average: $782
Smoking seriously harms you and others around you
Cost of Borrowing

Alberta Resident Agreement

How much will your loan cost you?
Maximum charges permitted in Alberta for a payday loan: $23 per $100 lent.
National Money Mart Company charges $23 per $100 lent.

Example:

For a $300 loan for 14 days:

The Total Cost of Borrowing this loan is $69
The Annual Percentage Rate is 599.64%.

This information meets the requirements of the Payday Loans Regulation under the Fair Trading Act
Payday Loan Business License Number: 326940
Why Might this Matter?

Standard paradigm → Focus on information provision

Behavioral Economics → Broader range of considerations
Where has BE had greatest impact?
Where we are now

MOST WORK ON ISSUES RELEVANT FOR HIGHER INCOMES

– 401K savings
– Investment behavior
– Endowment effects in home prices
– Insurance choices for homeowners

NO SILVER BULLET, BUT LOTS OF POTENTIAL

– Can default effects help simpler types of savings?
– How to leverage idea that very small costs lead to large behavioral response?
– Framing of outcomes, products, etc… affects choices
Research for today

PAYDAY LENDING
- 2 studies by Bertrand and Morse
- Study of effect of loan length

CHECK CASHING
- A few survey results
Addressing Myopia in Disclosures

How much it will cost in fees or interest if you borrow $300

<table>
<thead>
<tr>
<th>PAYDAY LENDER (assuming fee is $15 per $100 loan)</th>
<th>CREDIT CARD (assuming a 20% APR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you repay in:</td>
<td>If you repay in:</td>
</tr>
<tr>
<td>2 weeks</td>
<td>2 weeks</td>
</tr>
<tr>
<td>$45</td>
<td>$2.50</td>
</tr>
<tr>
<td>1 month</td>
<td>1 month</td>
</tr>
<tr>
<td>$90</td>
<td>$5</td>
</tr>
<tr>
<td>2 months</td>
<td>2 months</td>
</tr>
<tr>
<td>$180</td>
<td>$10</td>
</tr>
<tr>
<td>3 months</td>
<td>3 months</td>
</tr>
<tr>
<td>$270</td>
<td>$15</td>
</tr>
</tbody>
</table>

Out of 10 typical people taking out a new payday loan...

- 2½ people will pay it back without renewing
- 2 people will renew 1 or 2 times
- 1½ people will renew 3 or 4 times
- 4 people will renew 5 or more times

Bertrand and Morse (JF 2011)
Bertrand and Morse (AER 2009)

WHAT EFFECT DO TAX REBATES HAVE ON USE OF PAYDAY LOANS?

– 12% reduction in payday loan balances after receipt of 2008 tax rebate
– But effects are not overwhelmingly strong

UNDERSTANDING THE HETEROGENEITY

– Infrequent users have big response
– Those using payday to pay regular bills (chronic users) virtually no response
– Shocks and credit constraints vs. consistent self-control problems
Different perspectives on pay-day lending

Provides quick and accessible credit when needed.

High APR can lead to debt spiral as loans rolled over

Regulation

Ban pay-day loans
Cap interest rates
Cap loan amounts
Limit rollovers
Minimum durations

Stronger Weaker
What is the effect of longer loan durations?

LOWERS EFFECTIVE INTEREST RATE
– All else equal longer durations imply lower annual interest costs.
– If there are caps on rollovers, this may be second-order

MAY REDUCE FREQUENCY OF LOAN ROLLOVER
– More time to save and have funds to repay loan.

Standard paradigm: reasoned response to credit constraints and temporary shock

Behavioral economics: self-control problems and myopia would give this little effect
Stylized Model of Decision Making:

*Short Loan vs. Long Loan*

**SHORT LOAN**

- **BORROW**
  - $t = 1$
  - {Repay, Renew}
  - $t = 2$
  - {0, Repay + interest}
  - $t = 3$

**LONG LOAN**

- **BORROW**
  - $t = 1$
  - {Save, Spend}
  - $t = 2$
  - {Repay, Renew}
  - $t = 3$
  - {0, Repay + interest}
  - $t = 4$
Our Data

OVERVIEW OF LARGE DATA SET
– Provided by a payday loan company active in many states.
– All transactions at their stores between 2002 and 2004. (~ 2 million)
– Observe full loan files.

REDUCED SAMPLE FOR THIS STUDY
– Customers who have not had a loan from this company in the prior 90 days.
– States where: rollovers allowed; minimum loan duration is 7 days.
– Results in over 184,000 unique loans observations
Characterizing the data

**AVERAGE BORROWER**
- 37 years old
- 70% male
- 20% own home
- 5 years at residence
- $22K annual net pay
- 73% w/ direct deposit

**AVERAGE LOAN**
- $284 loaned
- $51 interest (18%)
- 14 days to repay
- 468% Implied APR
Distribution of Checking Balance Less Payday Loan

Density

Latest Checking Account Balance Minus Loan Amount

0

-1000 -800 -600 -400 -200 0 200 400 600 800 1000
Outcome of interest

New Loan Outcomes

- Repay: 40%
- Renew: 50%
- Default: 10%
Borrowers with Bi-Weekly Pay Periods: Loan disposition

Fraction of Borrowers

Fraction of Borrowers

Loan Length

Repay
Renew
Default
Borrowers Paid Bi-weekly on Fridays

Friday Payday

Friday between paychecks

Similar borrowers with 13 day difference in loan duration
Borrowers Paid Bi-Weekly on Fridays

Fraction who repay

Days until next paycheck
Borrowers Paid Bi-Weekly on Fridays

Fraction who repay

Days until next paycheck

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1
Borrowers Paid Bi-weekly on Thursdays

Days to repay the loan

Days until next paycheck

Thursday Payday

Thursday between paychecks
Borrower Paid Bi-weekly on Thursdays

Fraction who Repay

Days until next paycheck
Borrower Paid Bi-weekly on Thursdays

Fraction who Repay

Days until next paycheck

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1

0.42 0.44
Borrowers Paid Semi-Monthly

Days to repay the loan

Day of the month
Borrowers Paid Semi-Monthly

Fraction who repay

Day of the month
Conclusions from Payday Study

SMALL EFFECT OF LONGER DURATIONS ON REPAYMENT
– Each week increases probability of repayment by 1-2 pct points

SHEDS SOME LIGHT ON THEORIES OF LOAN DEMAND
– Lack of response to longer durations consistent with many borrowers who have chronic budgeting problems, impatience, inattention, etc…

POLICY IMPLICATIONS
– Case for longer minimum durations only in annual interest-rate reduction
– This policy not appropriate to deal with debt spirals.
  – Policies focused on rollovers directly likely are more appropriate
– Rethink how regulation interacts with behavior
Stylized Model of Decision Making:

*Short Loan vs. Long Loan*

What if we require a partial payment at $t = 2$?
Our Pilot Survey on Check Cashing Customers
LOCATIONS AND ACCESS TO BANKS
- Generally low access to traditional banks in these areas
- However, some check-cashing outlets located near banks
What Types of Accounts?

- Checking: 20%
- Savings: 10%
- Check + Save: 18%
- None: 52%
Do we want to transition people to banks?

CHECK CASHING COSTS
- Average yearly cashed checks: $6,790
  - $124 in cc fees
  - Another $30 in money orders, etc…

COST OF BANK SERVICES
- Free… but only with direct deposit, minimum balance, etc…
- If not, then estimate $100 - $130 in monthly fees, ATM fees, etc…

CHECK CASHING AS KEY FINANCIAL-SERVICE PROVIDER
- Many services, regular customers with relationships.
- Maybe we should be trying to support and improve these places.
Effect of Myopia and Inability to Save

CONSUMPTION SMOOTHING
– Standard paradigm: borrowing constraints but rarely savings constraints
– BE paradigm: inability to save may be just as important for behavior

HYPOTHETICAL SCENARIO
We’d like you to imagine that you had a choice between one of two jobs that are the same, except that they pay differently. Which job would you choose (Please circle one)?

A) Job A has a regular paycheck of $300 every week.

B) Job B requires the same work and hours as Job A, but has a paycheck that varies. Each week you would have a 50/50 chance of getting either $X or $Y pay (like a coin flip), but you would never know ahead of time whether that particular week would be high or low.

Group A: $x = 200$ and $y = 500$
Group B: $x = 250$ and $y = 450$
If CC offered a “Rainy Day” Account where you could save some money from bigger checks you cash and take it out later when you need it, would that interest you?

Desire for simple savings?
Last thoughts

BEHAVIORAL ECONOMICS AND POVERTY RESEARCH

– Research/policy on economic opportunity and environment still first order
– On the margin, better understanding of behavior may help

– We have underinvested so far in research on behavioral econ and poverty

MY VIEW OF HOW TO PROCEED

– Behavioral econ can be part of the serious efforts on these topics
  – Strong empirics, informed by theory … not just cute examples
– Behaviorally informed policy is hard, but I think important
  – Welfare questions and scope of regulation? (ban payday loans?)
  – Nudges and libertarian paternalism: nice but somewhat limited