Debit vs Credit:
A Study of Self-Control in Shopping Behavior, Theory and Evidence

Marc Anthony Fusaro
Department of Economics
East Carolina University
June 2006
Credit < Debit

- 1998 – 2004
  - 10% annual growth

- 1998 – 2004
  - 22% annual growth

- 1998: 28% of market
- 2004: 45% of market
Credit > Debit

- Float
- Rewards
  - Cash Back
  - Airline Miles
  - Charitable Donation
- Convertible to Loan
- 5.25 Million locations

- No Float
- Fees
  - 14% charge $.10-$2.00
  - 20% overdraft
  - Some Retailers Dislike
- No Loan
- 3.9 Million terminals
Why Would Anyone Use Debit? Why Do So Many Use Debit?

- Credit Constrained (Zinman 2005)
- Convenience (Borzekowski, Kiser, Ahmed)
- Restrained Spending (This Paper)
  - Lack of Self Control
  - 30% according to Zinman
Payments Overview

- **Pay Now**
  - Cash
  - Check
  - Debit Card

- **Pay Later**
  - Credit Card
Outline

✓ Question – Why Use Debit?
  • Explaining Debit Use
  • Data
  • Evidence
  • Behavioral v Cost-based
Shopping

- Prices are variable
- Purchase if prices are favorable
- Variation in purchases

- Expenditure varies month-to-month
Budgeting

- Budgeting: requires effort
  - Due to variation spending this is not simple

- Or use debit card
  - Cost is loss of float, flexibility, and rewards

- Default: use intuition to estimate
  - maybe overspend, maybe underspend
Card Choice

- Underspend: debit or credit, does not matter
- Overspend: credit leads to cycle of debit
- Debit: pay cost for sure
- Credit: go into debt only if overspend
Card Choice

- If debt grows large enough:
  - Confirm overspending
- Debit becomes more attractive
Outline

✓ Question – Why Use Debit?
✓ Explaining Debit Use
   ❑ Data
   ❑ Evidence
   ❑ Behavioral v Cost-based
Data

- Small Depository Institution
- 2310 checking accounts
- 3 month sample
- All Debit Card Transactions
- Credit Card Payments (if electronic)
Data Definitions

- Debit User = more than 4 debit transactions
- Credit User = one payment to credit card
- Round Pmt = cc payment multiple of $10
- Same Pmt = two identical cc payments
- Locations = number of ATM locations used
- Income, Account Balance, Age, Gender
Outline

- Question – Why Use Debit?
- Explaining Debit Use
- Data
  - Evidence
  - Behavioral v Cost-based
Key Features

- Debit users have debt
- Debit users are less disciplined
- Debit users hold less cash
Key Features: Debt

- Debit users have more debt
  - They discovered overspending by accumulating debt
- Can not witness level of debt
  - Round payment
  - Same payment
- Results confirm debit users have debt
# Debit Users Paying Balances

<table>
<thead>
<tr>
<th></th>
<th>1a</th>
<th>1b</th>
<th>1c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>-1.50 *</td>
<td>-1.49 *</td>
<td>-1.48 *</td>
</tr>
<tr>
<td>CC User</td>
<td>.082 †</td>
<td>.088 *</td>
<td>.072 †</td>
</tr>
<tr>
<td><strong>Round Pmt</strong></td>
<td>.036 *</td>
<td></td>
<td>.018</td>
</tr>
<tr>
<td><strong>Same Pmt</strong></td>
<td></td>
<td>.172 *</td>
<td>.134 †</td>
</tr>
<tr>
<td>Age</td>
<td>-.010 *</td>
<td>-.010 *</td>
<td>-.010 *</td>
</tr>
<tr>
<td>Male</td>
<td>-.043 †</td>
<td>.042</td>
<td>.043 †</td>
</tr>
<tr>
<td>Income</td>
<td>.020 *</td>
<td>.020 *</td>
<td>.020 *</td>
</tr>
<tr>
<td>Obs</td>
<td>2310</td>
<td>2310</td>
<td>2310</td>
</tr>
</tbody>
</table>
Key Features: Discipline

- **Overspenders**
  - Spend frivolously
  - More stores

- **Underspenders**
  - Disciplined
  - Less stores

- Do not see stores for credit user
- See ATM withdrawals for both groups
- ATM withdrawals should be correlated with use
- Results confirm that debit users get around
### Debit Users Get Around

<table>
<thead>
<tr>
<th>Locations</th>
<th>All Accts</th>
<th>Plastic Users</th>
<th>Credit Users</th>
<th>All Accts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>-.069 *</td>
<td>-.012</td>
<td>-.377 *</td>
<td>-.130 †</td>
</tr>
<tr>
<td>Credit User</td>
<td>.068 *</td>
<td></td>
<td></td>
<td>Dep Var</td>
</tr>
<tr>
<td>Debit User</td>
<td>Dep Var</td>
<td>.038 *</td>
<td>.162 *</td>
<td>.050</td>
</tr>
<tr>
<td></td>
<td>.286 *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.0041*</td>
<td>-.0007</td>
<td>-.0026</td>
<td>-.0009</td>
</tr>
<tr>
<td>Male</td>
<td>-.015</td>
<td>.011</td>
<td>.035</td>
<td>-.007</td>
</tr>
<tr>
<td>Income</td>
<td>-.006</td>
<td>-.0034*</td>
<td>-.0004</td>
<td>.024 *</td>
</tr>
<tr>
<td>Obs</td>
<td>1488</td>
<td>1238</td>
<td>360</td>
<td>1488</td>
</tr>
</tbody>
</table>
Key Features: Cash Holding

- They use debit card to restrain spending
- Maybe they also use their cash holding to restrain spending

- Results confirm that debit users have
  - More ATM withdrawals
  - Smaller ATM withdrawals
## Debit Users Get Around

<table>
<thead>
<tr>
<th></th>
<th>All Accts</th>
<th>Plastic Users</th>
<th>Credit Users</th>
<th>All Accts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance</strong></td>
<td>-.056 †</td>
<td>-.0081</td>
<td>-.032 *</td>
<td>-.136 *</td>
</tr>
<tr>
<td><strong>Credit User</strong></td>
<td>.077 *</td>
<td></td>
<td>.0040 †</td>
<td>.093 *</td>
</tr>
<tr>
<td><strong>Debit User</strong></td>
<td></td>
<td></td>
<td>.0011</td>
<td></td>
</tr>
<tr>
<td><strong>No. withdr</strong></td>
<td>.0057 *</td>
<td>.0015 *</td>
<td>.0030</td>
<td>.087</td>
</tr>
<tr>
<td><strong>Withdr size</strong></td>
<td>-.264 †</td>
<td>-.035</td>
<td>-.185</td>
<td>-.0012</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>.0044 *</td>
<td>.0006</td>
<td>.0003</td>
<td>.0018</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>-.025</td>
<td>.0008</td>
<td>.0013</td>
<td>.025 *</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>-.0013</td>
<td>-.0046 †</td>
<td>.0013</td>
<td>.025 *</td>
</tr>
<tr>
<td><strong>Obs</strong></td>
<td>1488</td>
<td>1238</td>
<td>360</td>
<td>1488</td>
</tr>
</tbody>
</table>
Outline

✓ Question – Why Use Debit?
✓ Explaining Debit Use
✓ Data
✓ Evidence
 Behavioral v Cost-based
Behavioral v Cost-Based

- Cost-Based
  - People respond to price incentives
    - Credit constrained
    - Balance revolvers
  - Zinman (2005), Borzekowski & Kiser (2006)

- Behavioral
  - People are not rational
    - People know they can’t afford it, but buy anyway
Spending Control—Survey Evidence

- Borzekowski, Kiser, Ahmed
  - Table 4
- Debit and Credit are Similar
  - Time, Convenience, Tracking
- Money
  - Likely to avoid ATM fees
- Acceptance
  - Credit is better
- Open Ended Survey

<table>
<thead>
<tr>
<th>Why use debit</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>14.1</td>
</tr>
<tr>
<td>Convenience</td>
<td>88.1</td>
</tr>
<tr>
<td>Tracking</td>
<td>10.2</td>
</tr>
<tr>
<td>Money Restraint</td>
<td>11.7</td>
</tr>
<tr>
<td>Acceptance</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>4.9</td>
</tr>
</tbody>
</table>
Borzekowski, Kiser, Ahmed:

- Debit for Spending Control: 5.8% (39)
- Debit is Alternative to Credit: 24.7% (166)
  - Accounted for those alternative not mentioned

23.5% of people saying they use debit card as alternative to credit cite spending control

Not Insignificant
Conclusion

- Debit Cards are used to constrain spending

Evidence
- Debit card users do have credit card debt
- Debit card users seem to be free spenders
- Debit users make more, smaller ATM withdrawals.

- It could be perfectly rational to do this