

# Consumers' Use of Debit Cards: Patterns, Preferences and Price Response

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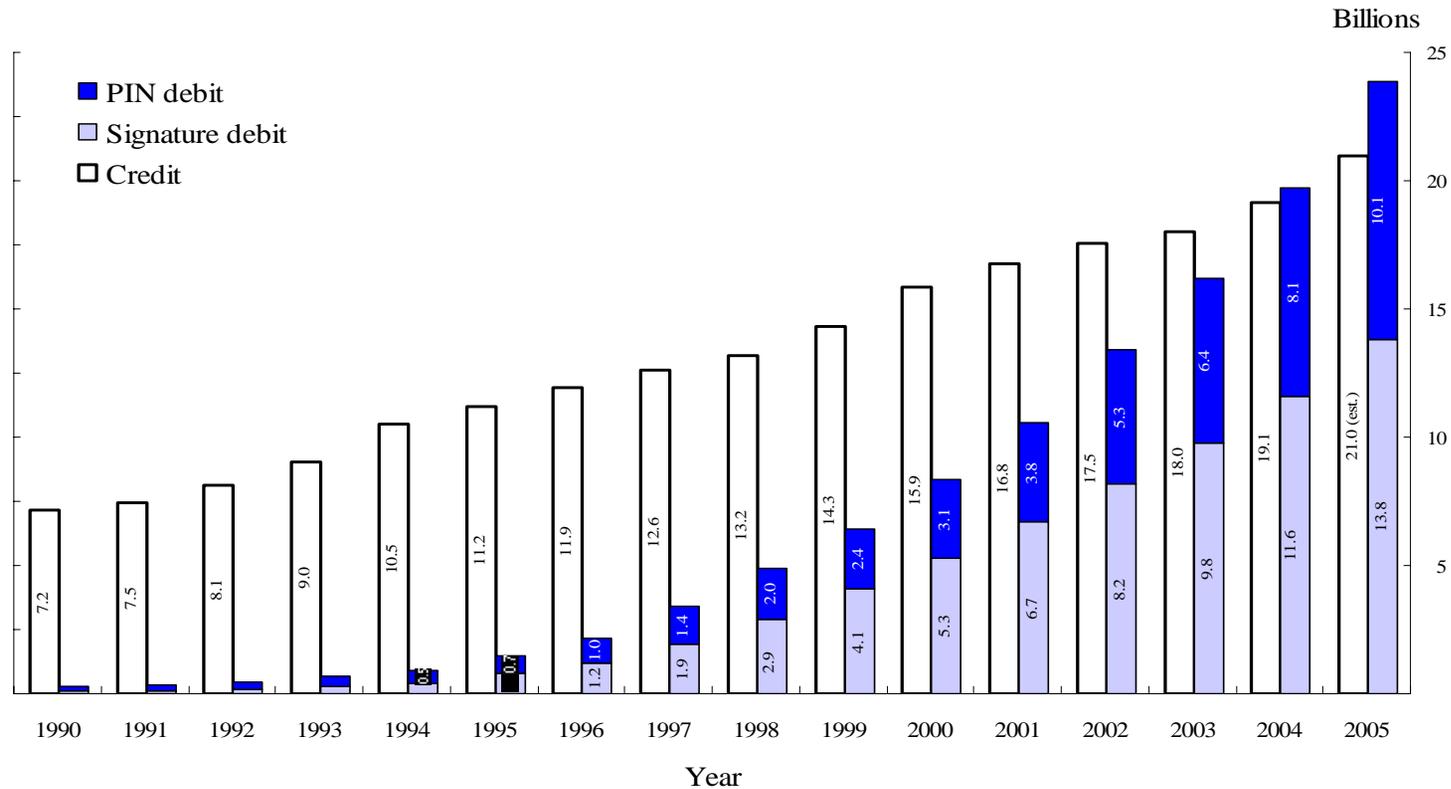
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# Motivation

- Rapid growth in point-of-sale (POS) debit
  - Maturing technology
  - Displacing other payment methods

# Card Payment Transactions



Source: Nilson Report and authors' estimates  
(Includes store card transactions)

# Motivation, cont.

- Controversy surrounds payment card industry
  - Litigation over interchange fees paid by merchant acquirers to card issuers
  - Industry outcomes driven by consumer choice

# Research Questions

- Who uses debit cards? How often?
- Substitute for what?
- What consumer preferences does debit satisfy?
- How do consumers respond to fees?

# Data

- Michigan Surveys of Consumers
  - Nationally representative
- March, April, May 2004
- 1501 households
- Questions on
  - Debit card use and frequency
  - Reasons for using debit (or not)

# Debit Card Holdings and Use

- Of 1501 households, 1316 (88%) have a checking account
- Of these, 783 (60%) have a debit card (52% of sample)
- Of these, 674 (86%) use a debit card at point of sale (45% of sample)

# Who has a debit card?

- Probability of having a debit card
  - Decreases monotonically with age
  - Increases with education
  - => Possibly a reporting issue

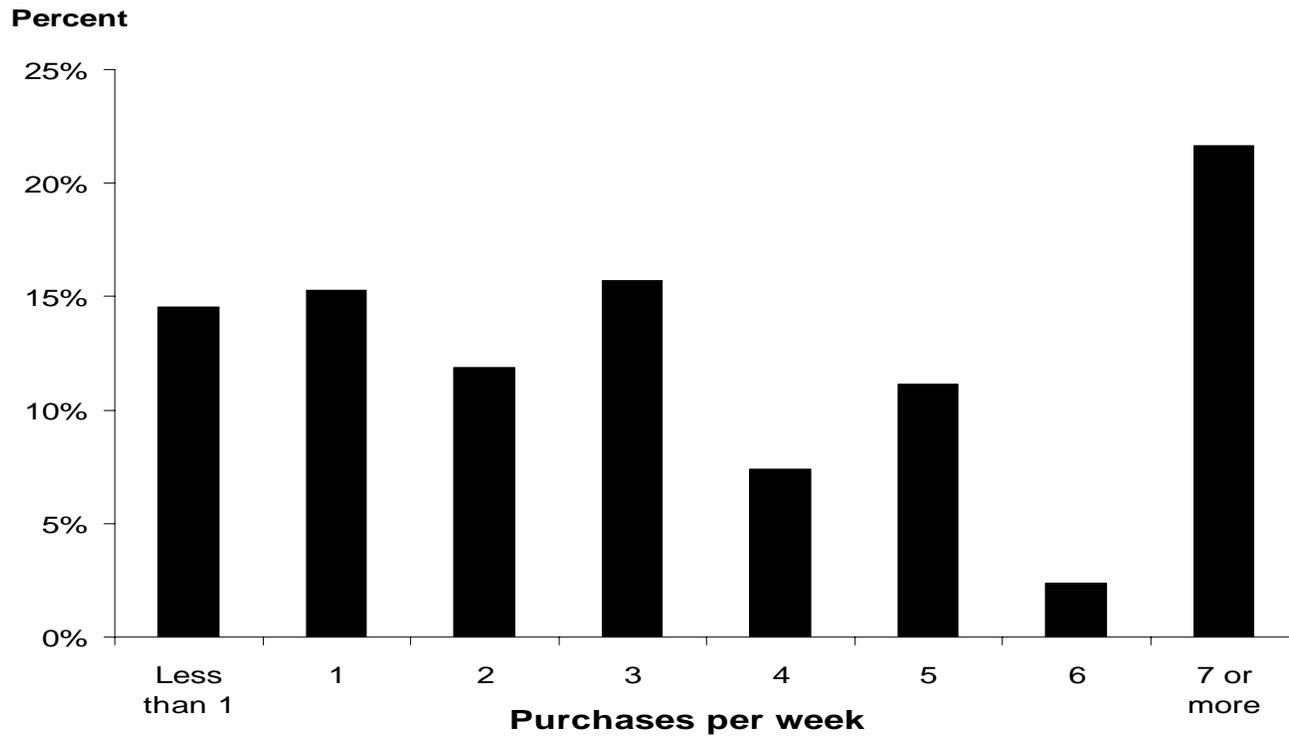
# Who uses debit cards?

- Young people
- Women
- People with kids
- College grads
- All income levels
- Singles
- Non-homeowners

Age	18-24	78%
	65+	21%
Gender	Women	55%
	Men	47%
Family Structure	Kids in HH	62%
	No kids	46%

- Computed among checking account holders
- These patterns also apparent in probit regressions

# Frequency of Debit Card Use



# Ordered Probit: Frequency of Debit Card Use

- Frequency of Use
  - Decreases with age
  - Greater for middle income categories
  - Greater if children present

# Why (or Why Not) Use Debit?

- Open-ended questions asked of both users and non-users
- Could give more than one reason
- Lets us get inside the black box
- We can code responses using multiple “filters”

# Coding responses to open-ended questions

Two “filters”:

- Substitution Patterns
  - What payment methods is debit displacing (or not)?
  - Cash, Check, Credit
- Payment Choice Drivers
  - What consumer desires does debit satisfy (or not)?
  - Time, Convenience, Money, Restraint, Tracking, Acceptance, Other
- Categories NOT mutually exclusive

# Coding responses to open-ended questions

“It's faster than writing a check.”

“Mostly to save on hassle of getting checks. Sometimes it's quicker, I guess.”

“Usually when I'm at a gas station that doesn't accept credit cards.”

“So I won't get charged ATM fees.”

“You don't have to buy checks.”

“You don't have to worry about building up credit card debt.”

“Provides a record of the purchase.”

# Substitution Patterns

	Debit Users (N=674)	Debit Non-Users (N=109)
	% who say they use debit as a substitute for* ...	% who say <i>instead of</i> debit they use* ...
Cash	48.5	22.9
Check	31.9	31.2
Credit	19.4	55.1
Indeterminate	21.4	22.9

# Substitution Patterns

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# Substitution Patterns

- Debit serves mainly as a substitute for cash and checks
  - Consistent with networks' marketing programs
- For those who don't use debit, most prefer credit
- For more on substitution, see
  - Borzekowski and Kiser (2006), "The Choice at the Checkout: Quantifying Demand Across Payment Instruments," FEDS Working Paper 2006-17.

# Payment Choice Drivers: Reasons for Using Debit

<u>Driver</u>	Percent of Users (N=674)	Percent of Non-Users (N=109)
Time	14.1	5.5
Convenience	88.1	8.3
Money	11.7	21.1
Restraint	5.8	5.5
Tracking	10.2	40.4
Acceptance	4.9	0.0
Other	3.0	35.8

# Payment Choice Drivers: Reasons for Using Debit

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# Payment Choice Drivers: Reasons for Using Debit

- Restraint important for only a small share
- Convenience mentioned overwhelmingly
- More convenient than what?
  - Look at cross tabs with substitutes...

# Substitution by Drivers: Debit Users

Percent who **substitute** debit for:

Among respondents who  
report this driver:

<u>Driver (N)</u>	<u>Cash</u>	<u>Credit</u>	<u>Check</u>	<u>Indeterminate</u>
Time (95)	50.5	23.2	44.2	19.0
Convenience (595)	51.9	15.8	33.2	21.4
Money (76)	40.5	31.7	51.9	3.8
Restraint (39)	48.7	69.2	23.1	2.6
Tracking (69)	42.0	33.3	42.0	15.9
Acceptance (33)	21.2	60.6	36.4	12.1
Other (20)	35.0	15.0	10.0	45.0

# Substitution by Drivers: Debit Users

Percent who **substitute** debit for:

Among respondents who report this driver:

<u>Driver (N)</u>	<u>Cash</u>	<u>Credit</u>	<u>Check</u>	<u>Indeterminate</u>
Time (95)	50.5	23.2	44.2	19.0
Convenience (595)	51.9	15.8	33.2	21.4
Money (76)	40.5	31.7	51.9	3.8
Restraint (39)	48.7	69.2	23.1	2.6
Tracking (69)	42.0	33.3	42.0	15.9
Acceptance (33)	21.2	60.6	36.4	12.1
Other (20)	35.0	15.0	10.0	45.0

# Behavioral Restraint

- Only 5.8 percent of respondents with a debit card report restraint explicitly
- Among these, 69 percent use debit instead of credit
- Age profile is consistent with credit constraint as a reason for using debit

# Effects of Fees on Debit Card Use

- Interchange fee controversy:
  - Interchange fee higher for credit and signature debit, lower for PIN debit
- Network rules prevent merchants from surcharging card payments:
  - “No-surcharge rule”
- What would happen if merchants did surcharge?
  - Measure response to bank-imposed fees

# Effect of Fees on Debit Card Use: Data and Estimation

- In mid-2004, about 10-15 percent of issuers charged fees for PIN debit
  - “Steering” customers to signature debit
- Survey asked respondents with a debit card whether their bank charges a debit card fee
- Probits: Debit card use and PIN vs. sig. use
  - Include fee dummy or fee level as regressors

# Effects of Fees on Debit Card Use: Results

- Consumers more likely to use solely signature if PIN fee is charged
  - Steering is effective
- PIN fee makes consumers less likely to use debit cards overall
  - Likely an unintended effect
- Fee level matters only as interaction with fee dummy
- Frequency of use unaffected by fees

# Effects of Fees on Debit Card Use: Implications

- Big response to issuer fees
  - Fee is, on average, about 1.8 percent of transaction amount
  - Model predicts 12% decrease in likelihood of using the card
- Merchant surcharging would decrease card use
- Threat of surcharging could place downward pressure on interchange fees
- Surcharging could cause consumers to switch to paper methods – less efficient