

Consumer Payment Choice: A Central Bank Perspective

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May 9, 2013

Presented to PULSE Financial Institution Oversight
Committee, Washington, DC

The views expressed in this presentation do not necessarily represent the views of the Federal Reserve Bank of Boston or the Federal Reserve System. Results from the 2011 Survey of Consumer Payment Choice (SCPC) and 2012 Diary of Consumer Payment Choice (DCPC) are preliminary and subject to change.

Agenda

- Recent Consumer Payment Choices
- Consumer Assessments
- Understanding Consumer Payment Behavior
- Debit, Prepaid and Mobile Payments
- Looking Ahead – Policies and Predictions

Consumer payments data program

Year	Survey of CPC (Boston Fed)	Diary of CPC (3 Fed Banks)	Transactions Data (TBD)
2003	524 (Boston Fed employees)		
2004	4,631 (Fed employees)		
2005	--		
2006	1,500*		
2007	--		
2008	1,010		
2009	2,169		
2010	2,102	353	
2011	2,151	389	
2012	3,176	2,547	
2013	October	?	?

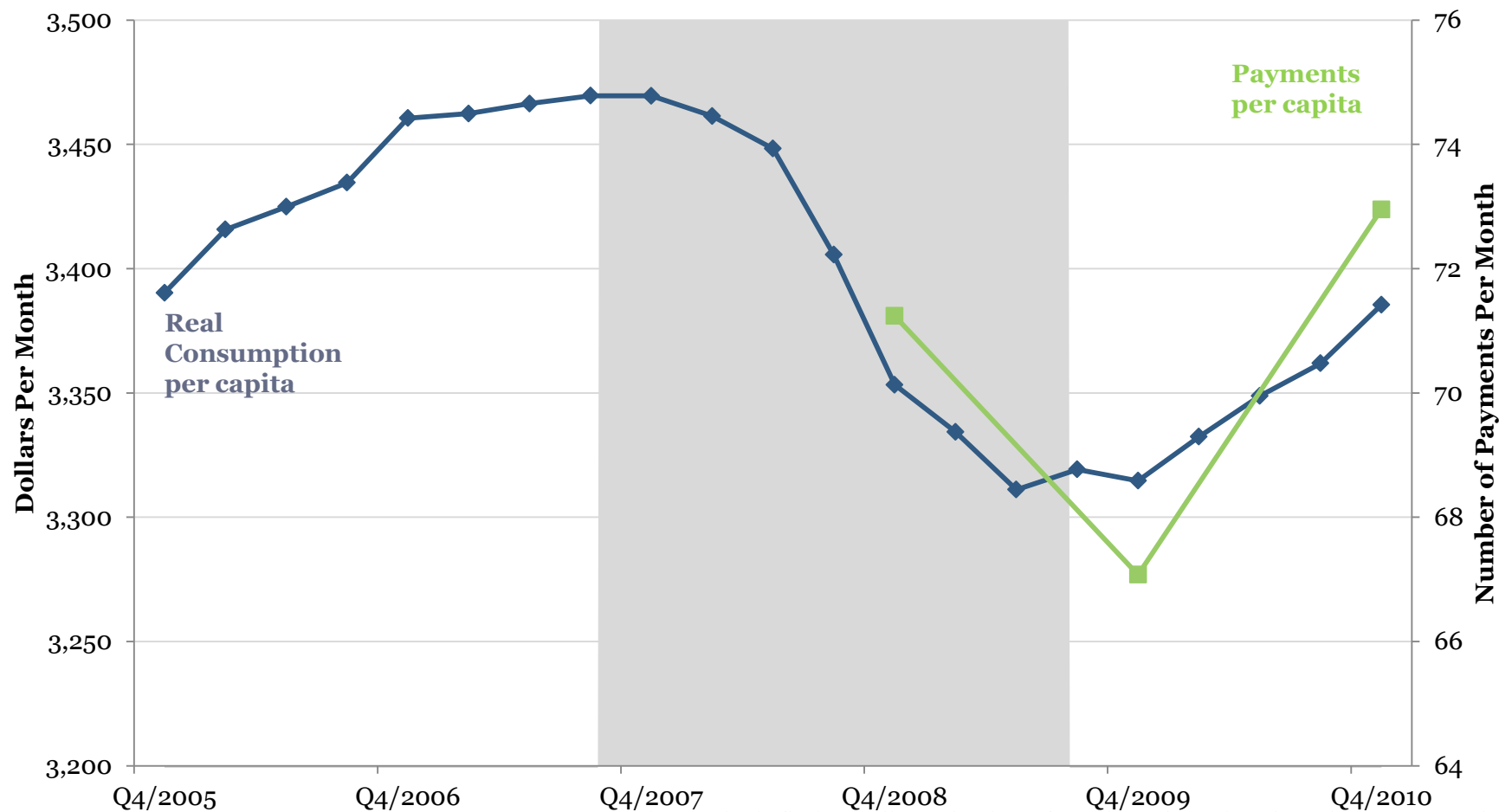
* Sponsored by the AARP. Red indicates pilot studies. All samples are U.S. consumers except where noted.

Comparison of Survey and Diary

Feature	Survey (monthly activity)	Diary (3-day activity)
Financial responsibility	X	
Assess payment instruments (PI)	X	
Adoption of PI	X	X (implied)
Incidence of use of PI	X (month, year)	X (3-day)
Cash activity	X	X
Frequency of use of PI	X	X
Dollar value of payment activity		X

Note: Diary data can be linked to Survey panel data from 2008-2012 (and beyond).

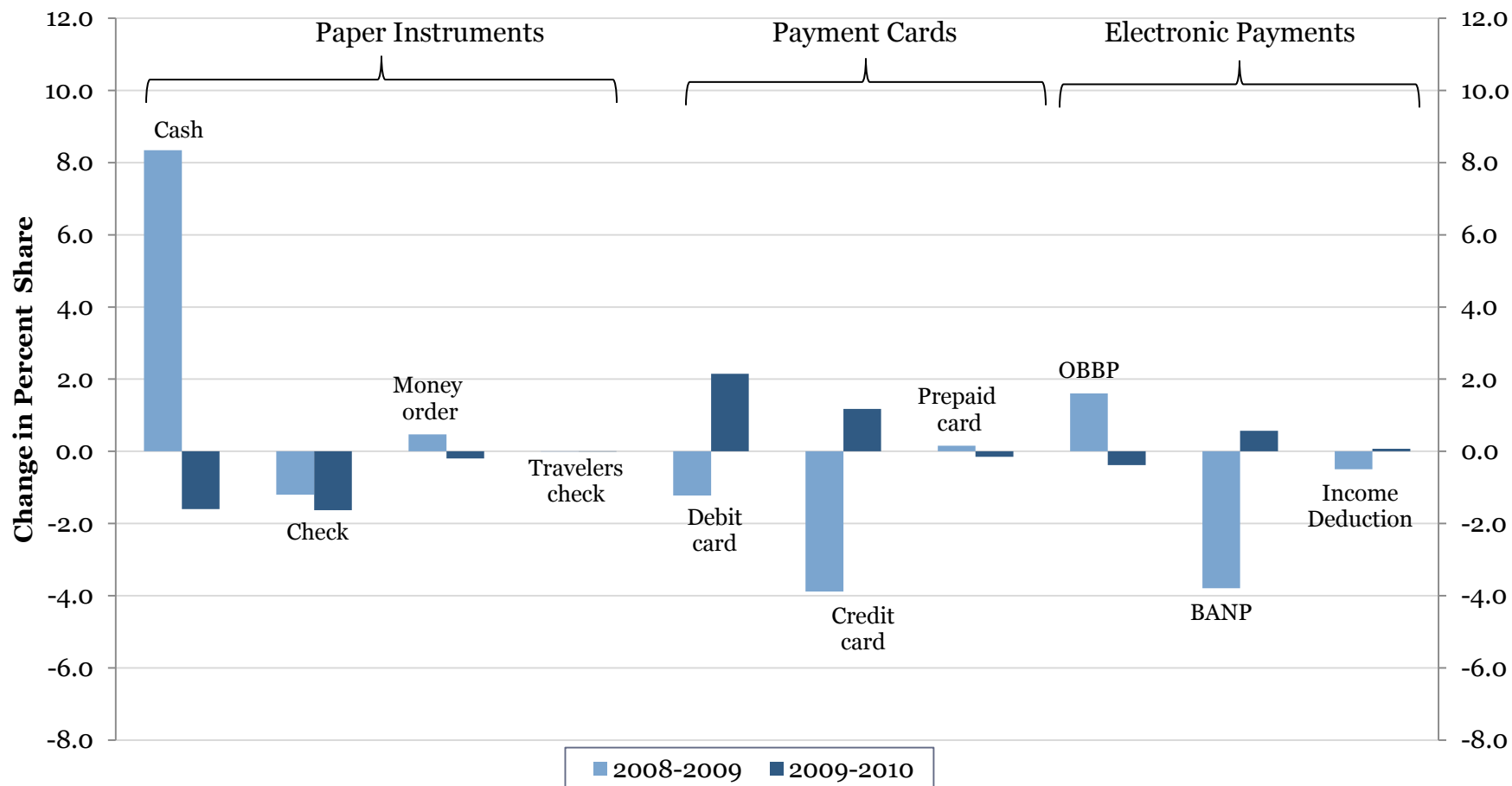
Consumer payments and consumption



Notes: Consumption is the inflation-adjusted value of goods and services bought. Payments is the number of times consumers made a payment for consumption and non-consumption transactions.

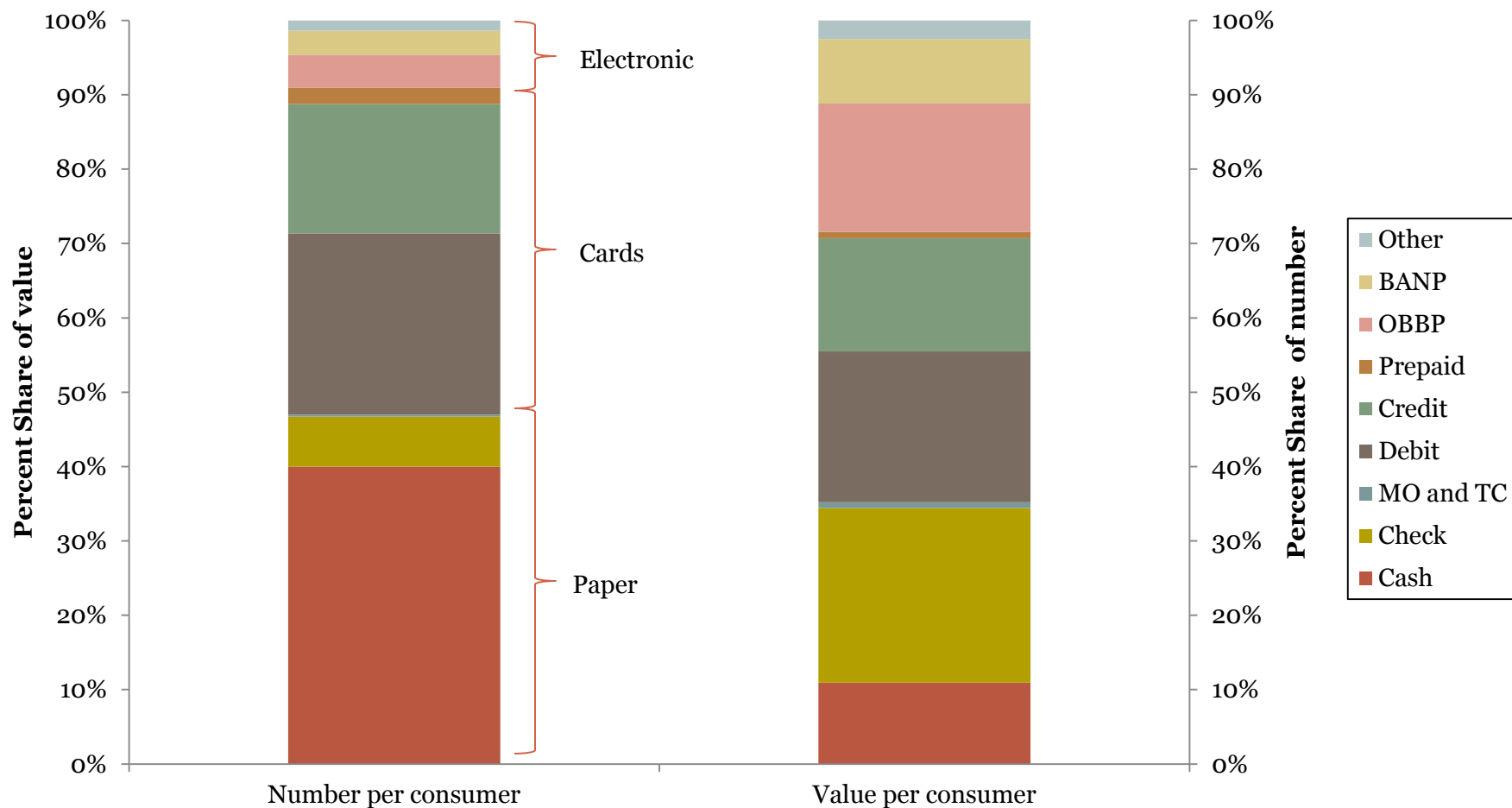
Sources: Survey of Consumer Payment Choice; Haver Analytics.

Changes in consumer payments by instrument 2009 and 2010



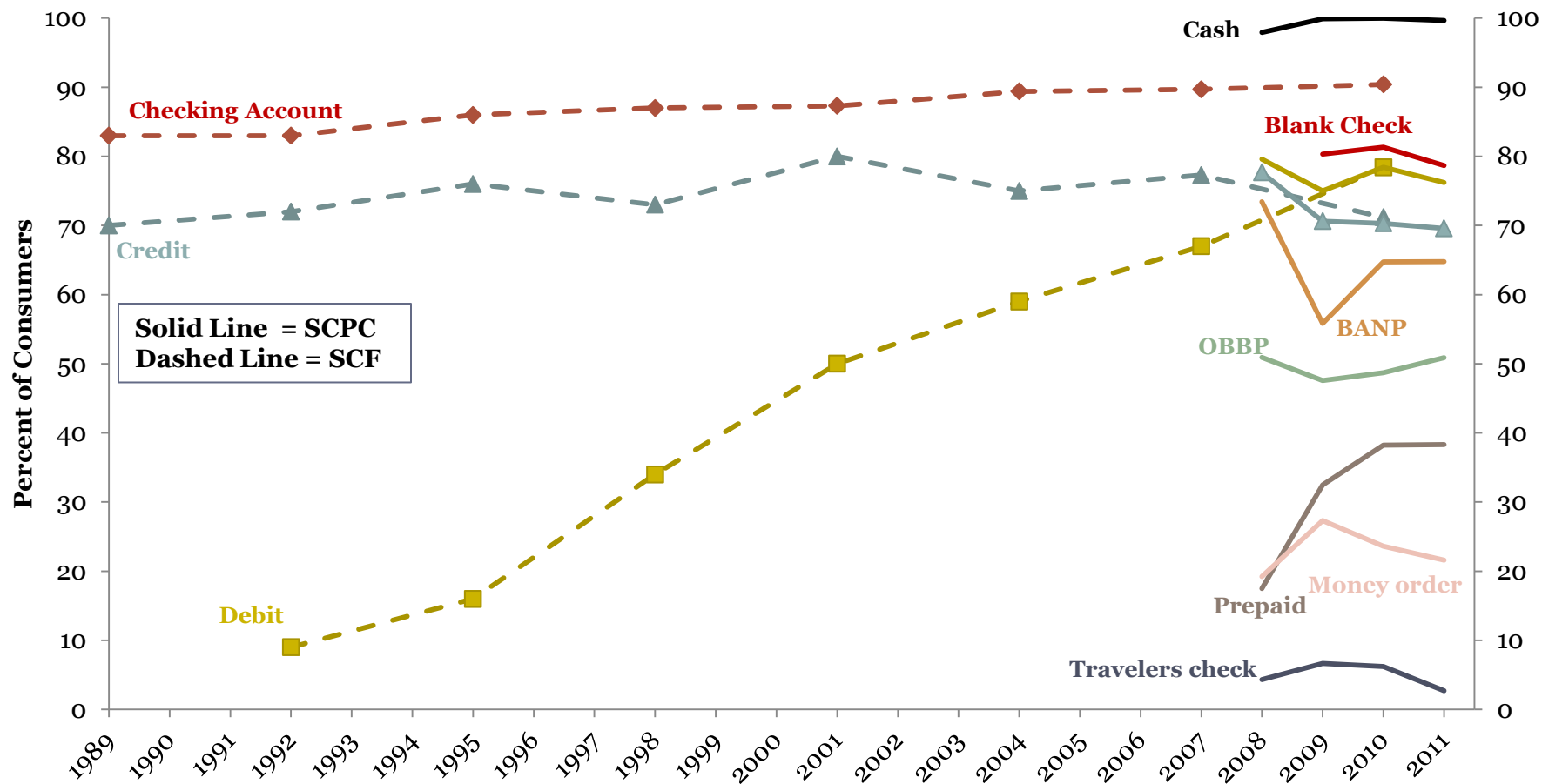
Source : 2010 Survey of Consumer Payment Choice

Consumer payments by instrument, 2012



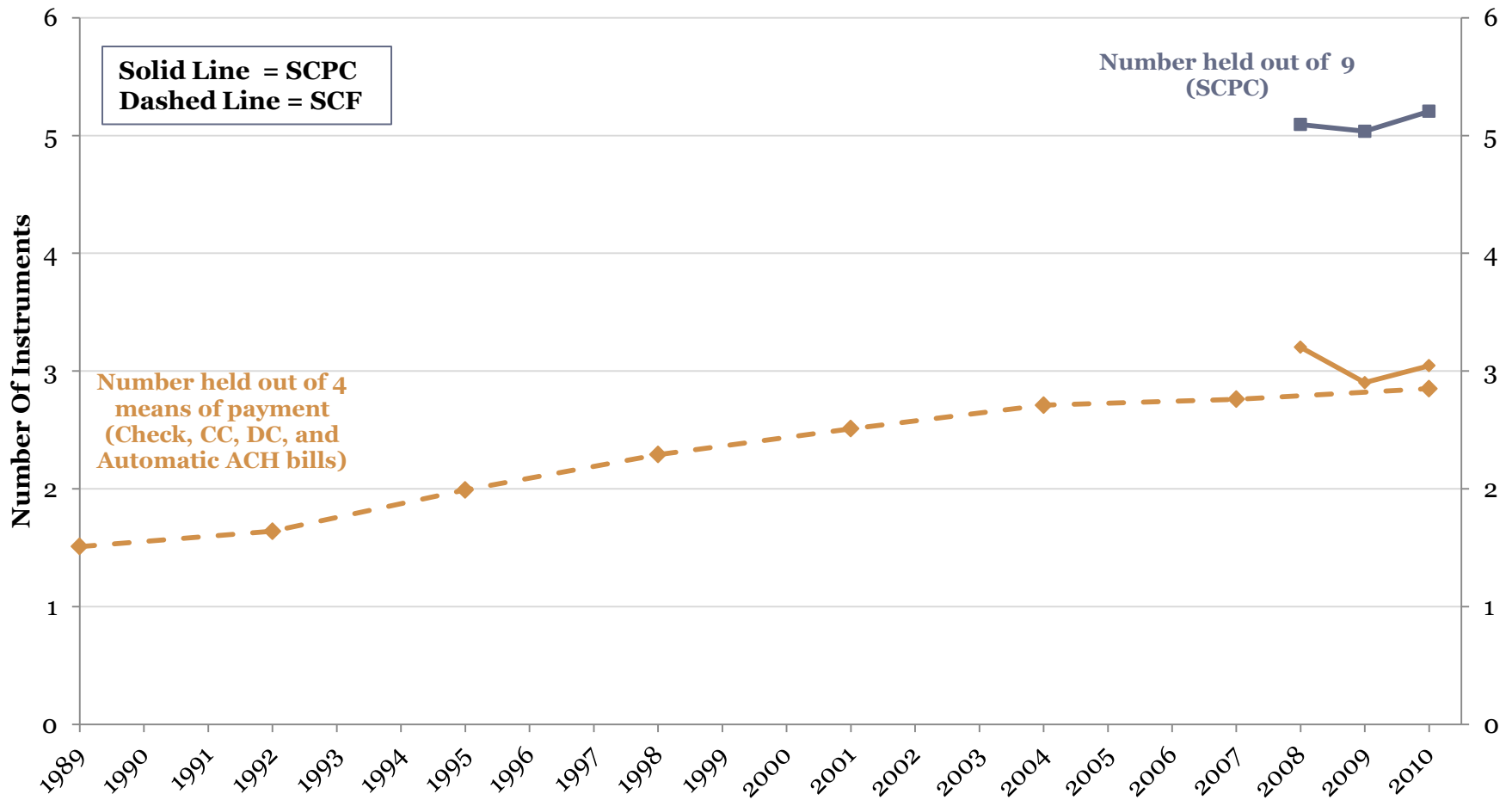
Source: 2012 Diary of Consumer Payment Choice **unofficial and preliminary.**

Consumer adoption of payment instruments



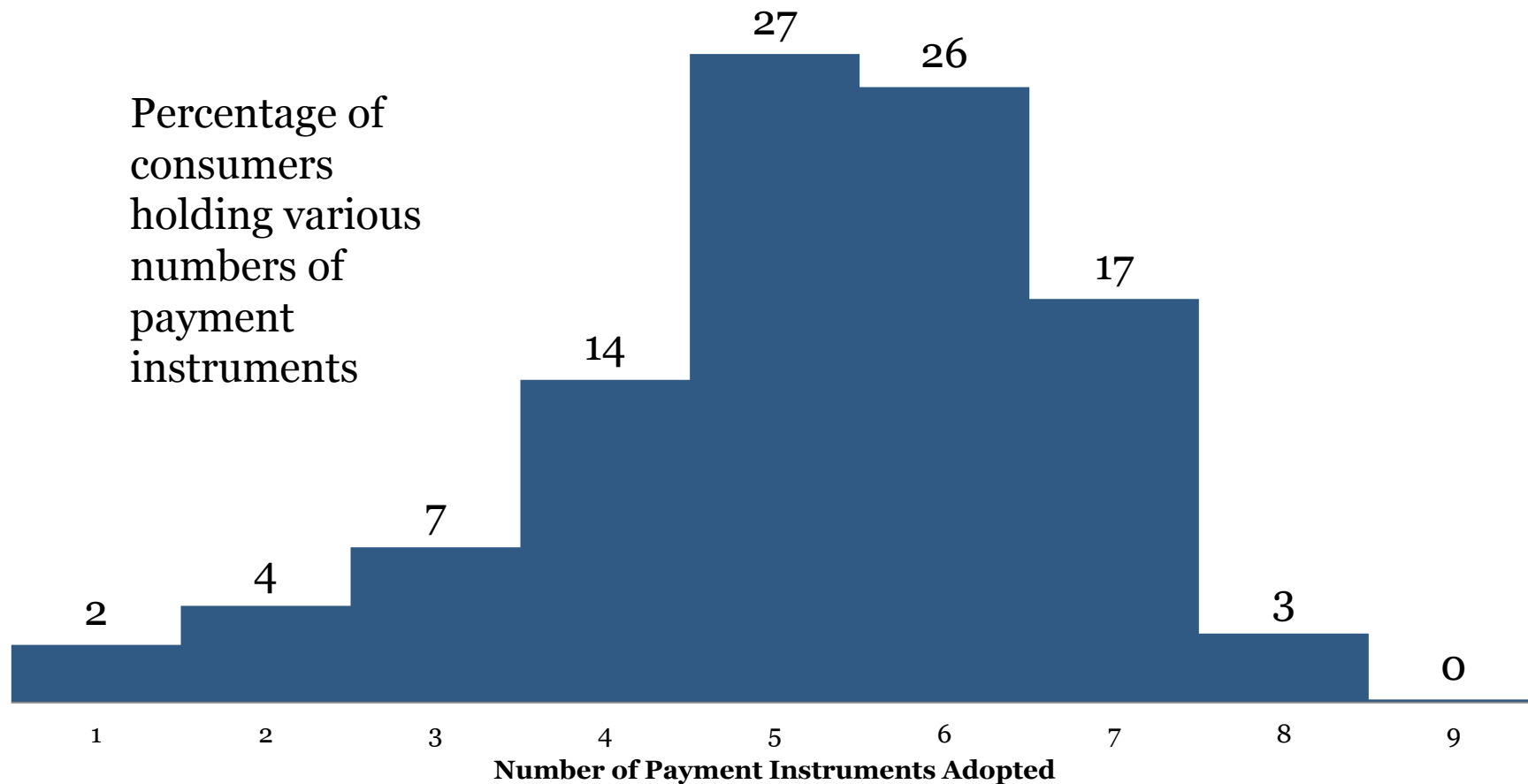
Source: Survey of Consumer Payment Choice; Survey of Consumer Finance

Number of payment instruments per consumer



Source: Survey of Consumer Payment Choice ; Survey of Consumer Finance

Consumer holdings vary greatly



Source: 2010 Survey of Consumer Payment Choice

Selected portfolios of payment instruments

Most popular bundles...

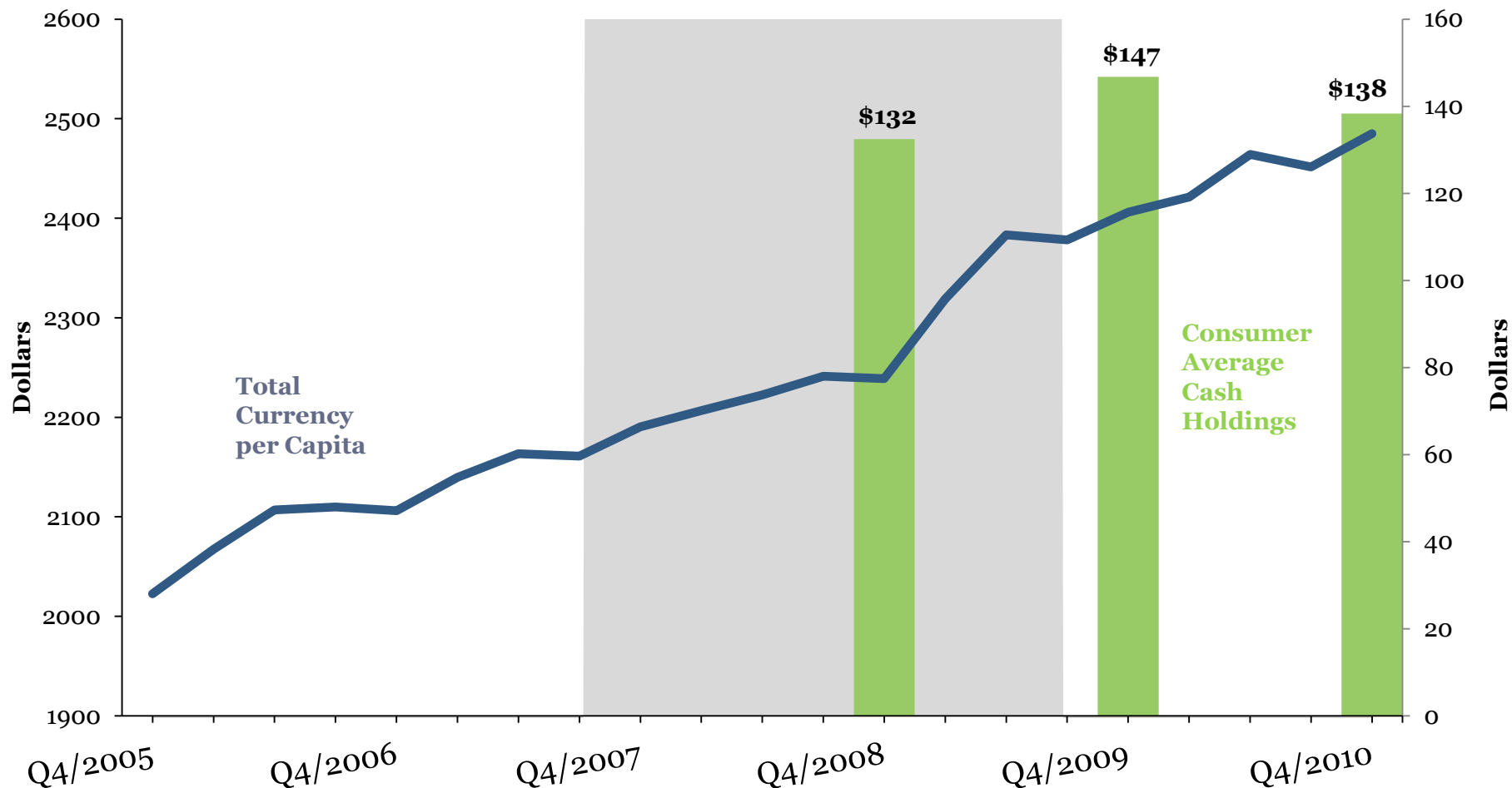
Number of PI	Cash	Check	Travelers Check	Money Order	Credit Card	Debit Card	Prepaid Card	OBBP	BANP	Percent of Consumers
6	X	X			X	X		X	X	11.8
7	X	X			X	X	X	X	X	9.1
5	X	X			X	X			X	7.2
5	X	X				X		X	X	3.9
4	X	X			X	X				3.7

Most popular bundle when specified PI is not adopted...

PI Not Adopted	Cash	Check	Travelers Check	Money Order	Credit Card	Debit Card	Prepaid Card	OBBP	BANP	Percent of Consumers Without PI
Check	X			X						19.4
Credit	X	X				X		X	X	12.7
Prepaid	X	X			X	X		X	X	19.1
OBBP	X	X			X	X			X	13.9

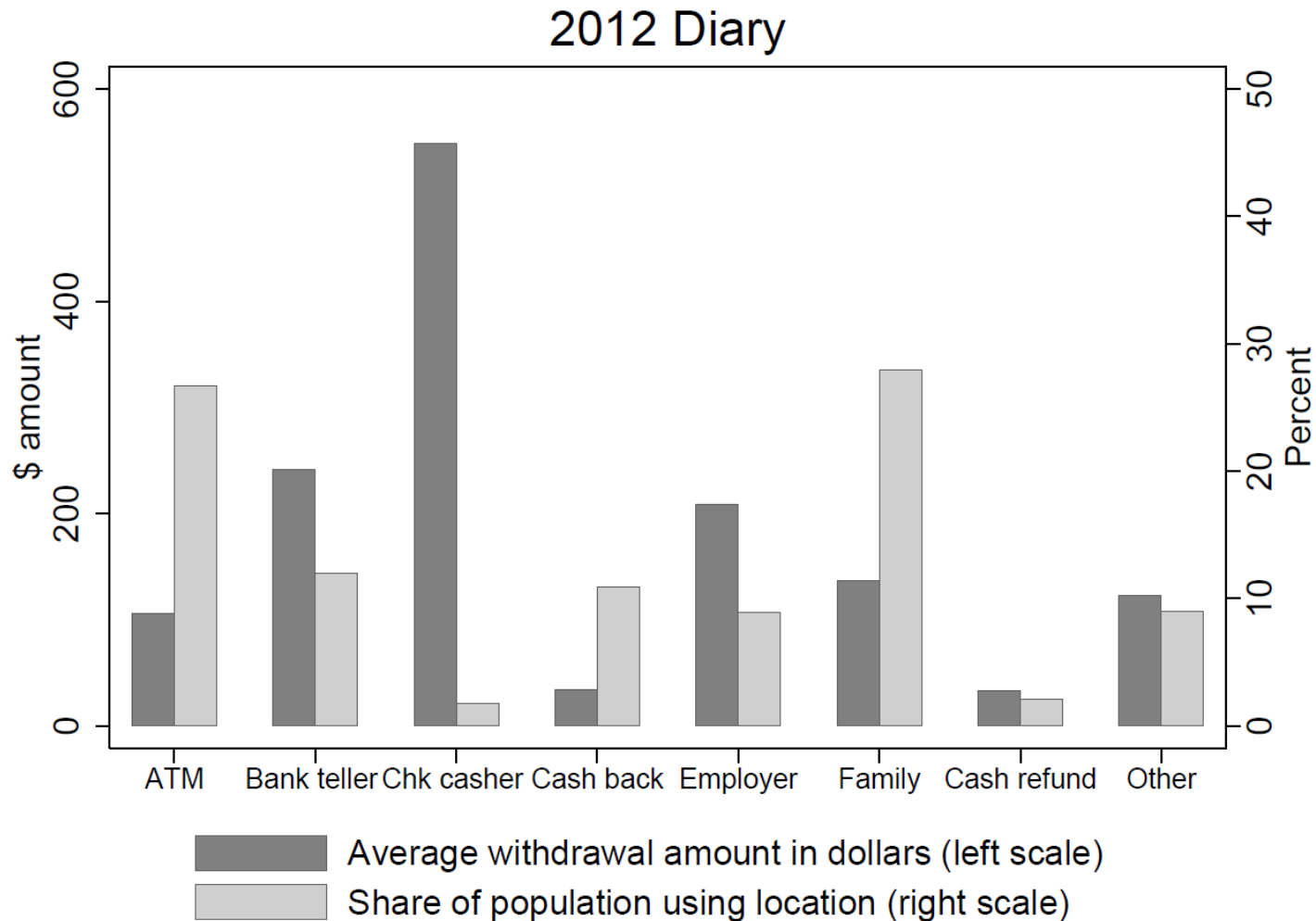
Source: 2010 Survey of Consumer Payment Choice

U.S. domestic currency in circulation



Note: Capita is defined as 18+ non-institutionalized civilians. Cash holdings exclude large values.
Source: Federal Reserve Statistical Release, 2008-2010 Survey of Consumer Payment Choice (SCPC)

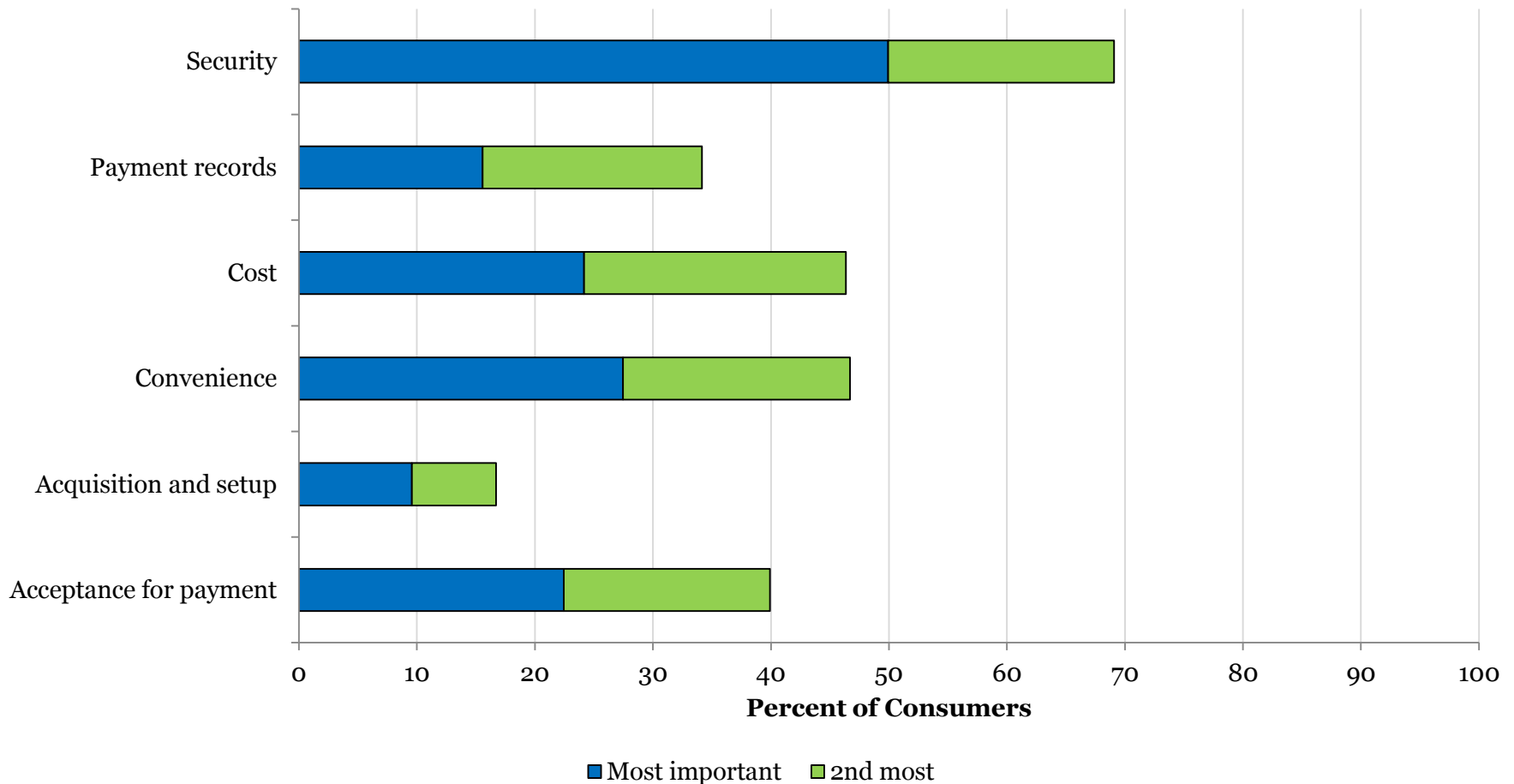
Cash withdrawals by location



Agenda

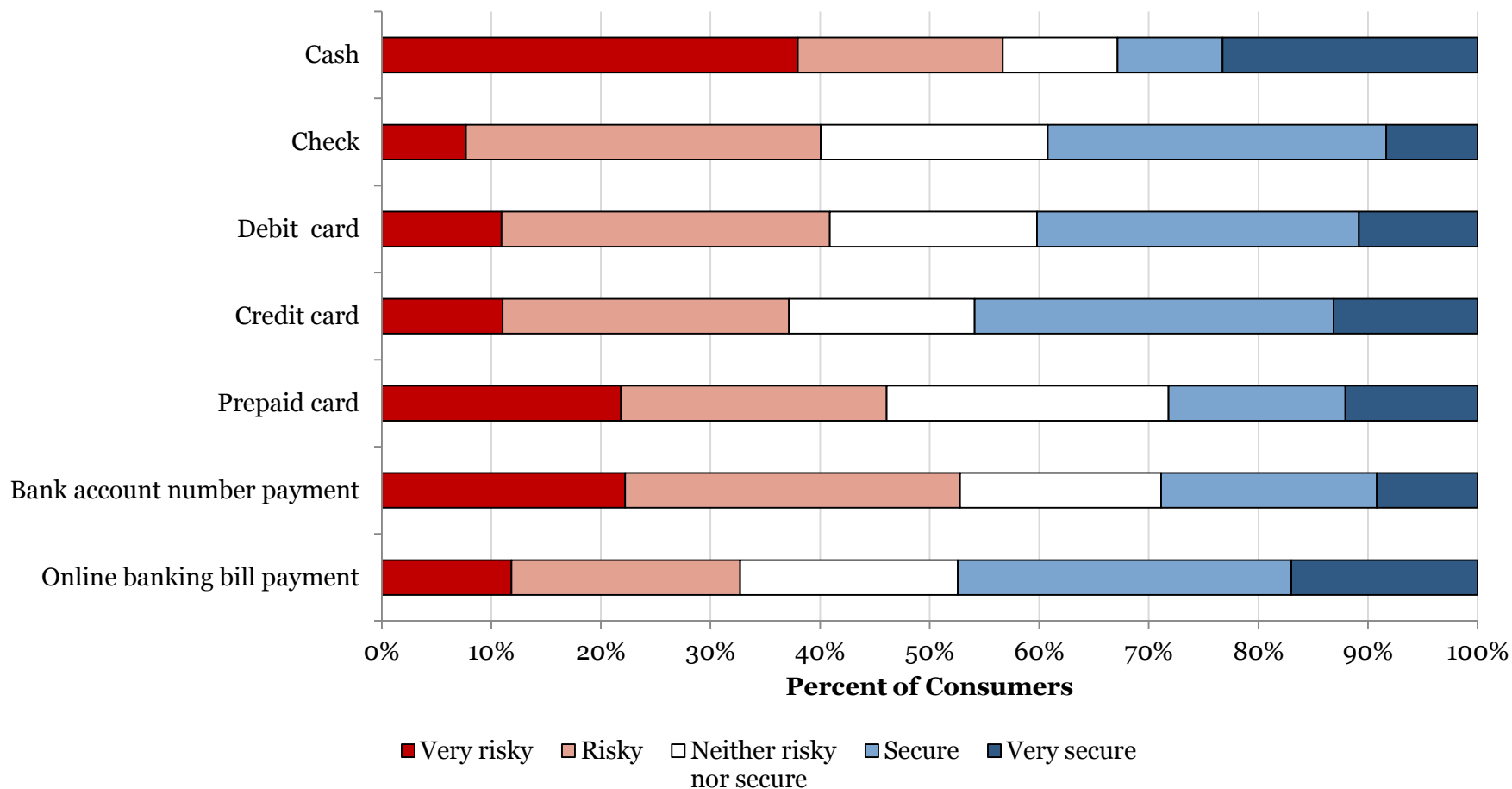
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Importance of payment instrument characteristics



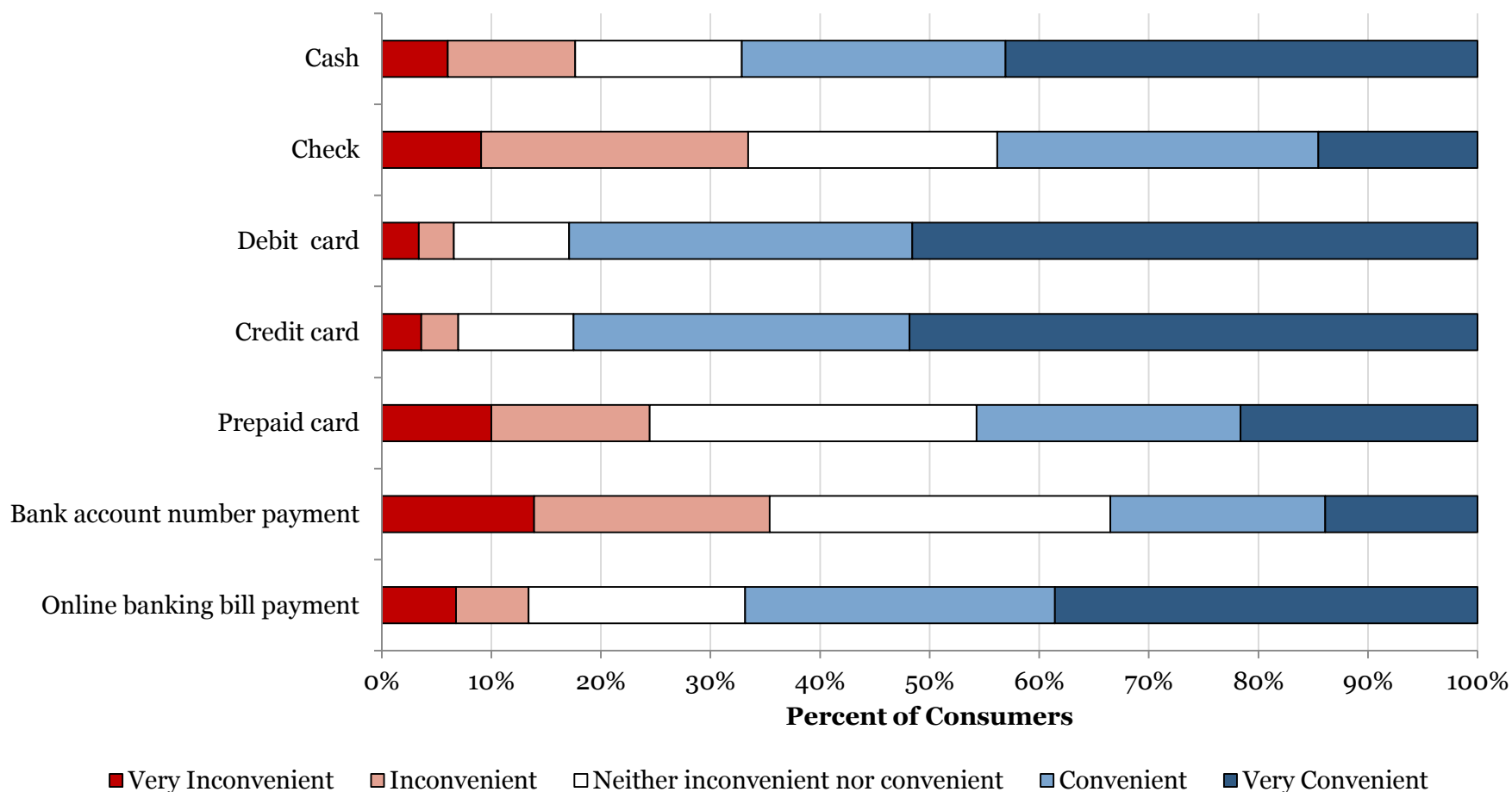
Source: 2011 Survey of Consumer Payment Choice, results **unofficial and preliminary**.

Security ratings by payment instrument



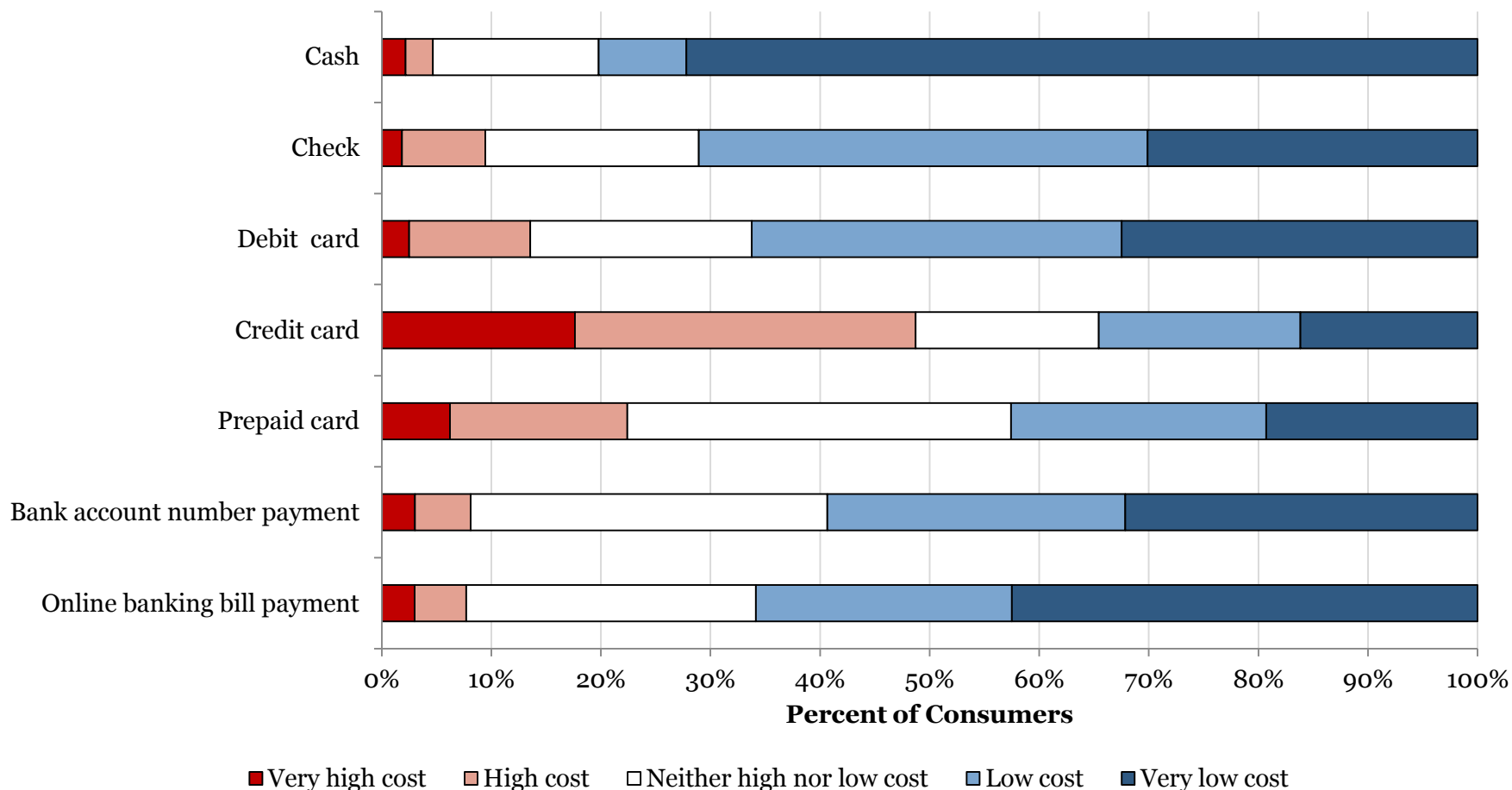
Source: 2011 Survey of Consumer Payment Choice, results **unofficial and preliminary**.

Convenience ratings by payment instrument



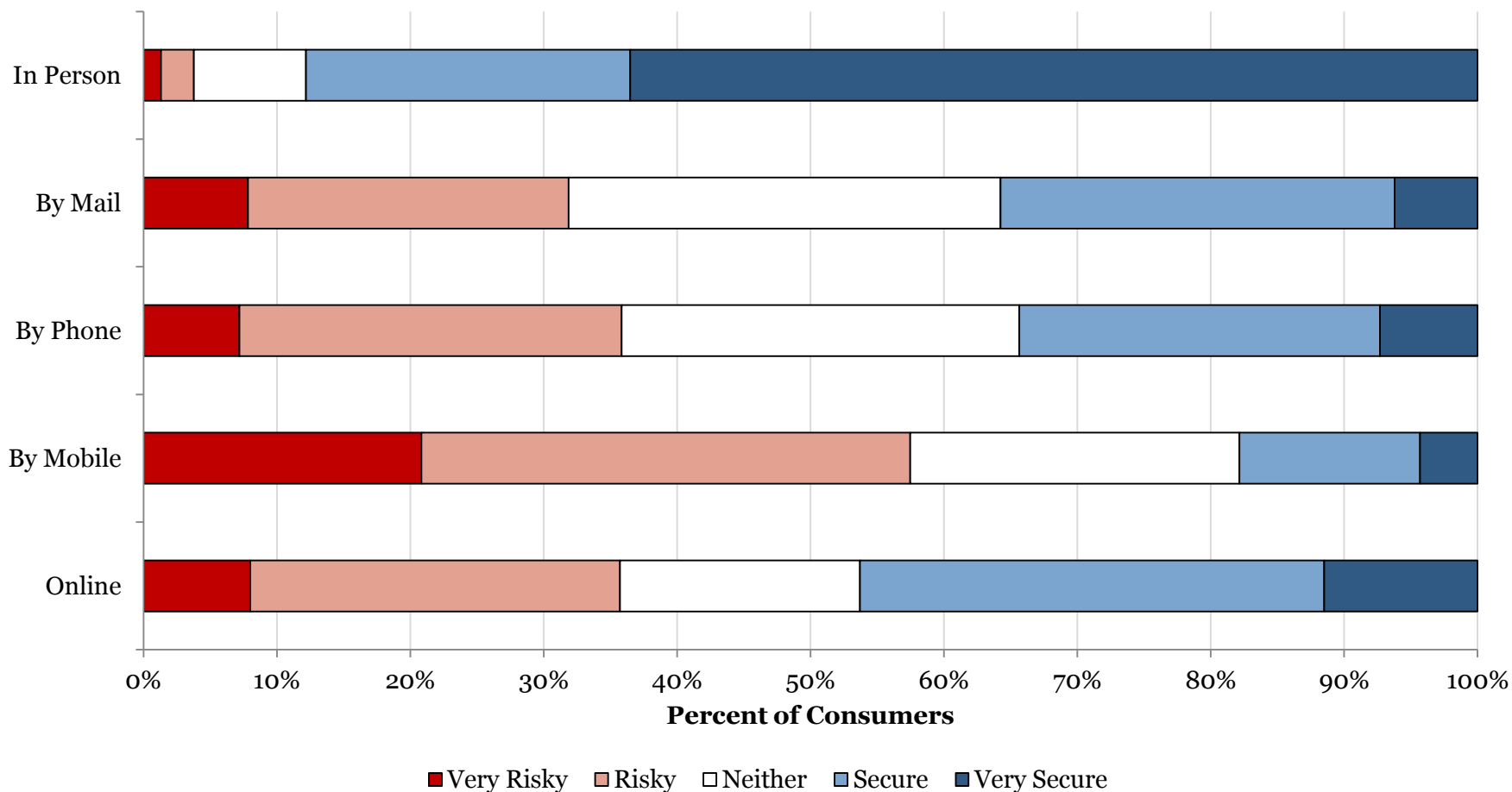
Source: 2011 Survey of Consumer Payment Choice, results **unofficial and preliminary.**

Cost ratings by payment instrument



Source: 2011 Survey of Consumer Payment Choice, results **unofficial and preliminary**.

Assessments of payment location security

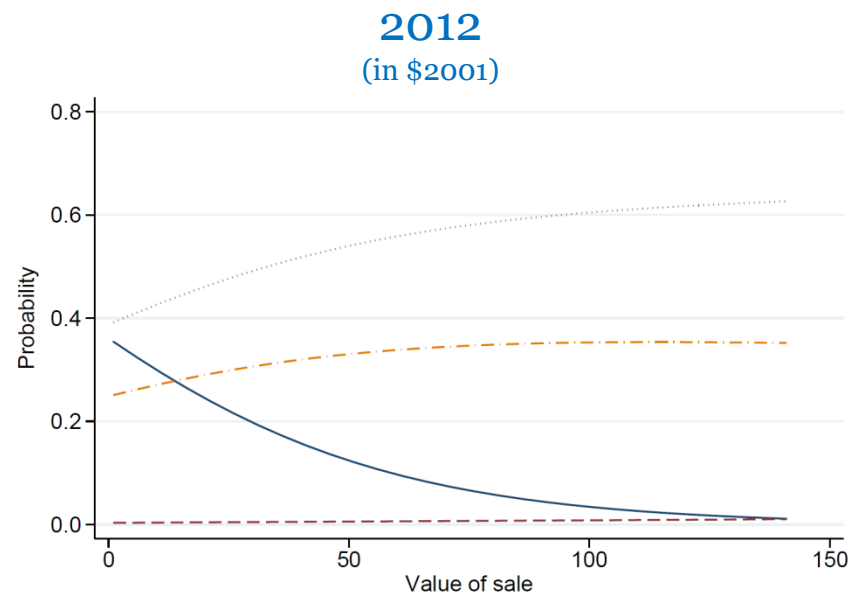
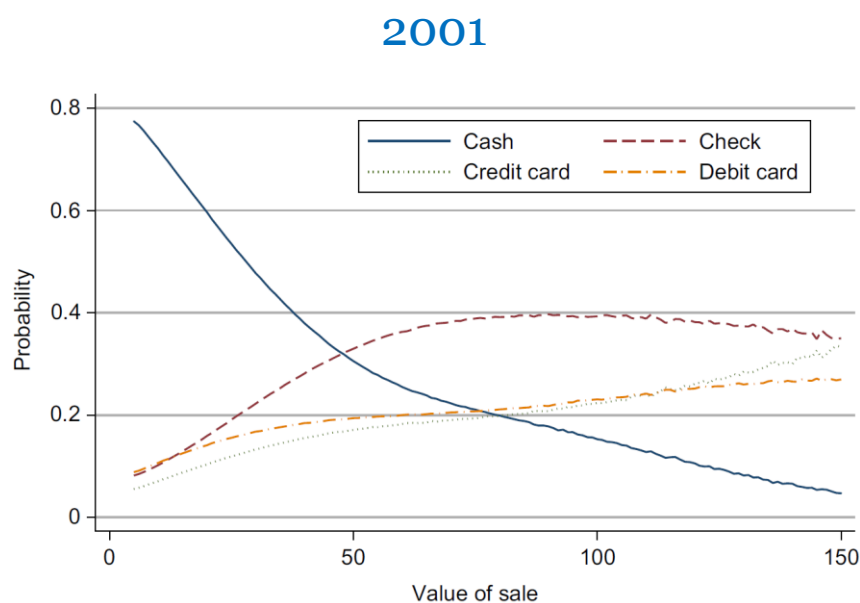


Source: 2011 Survey of Consumer Payment Choice, results **unofficial and preliminary**.

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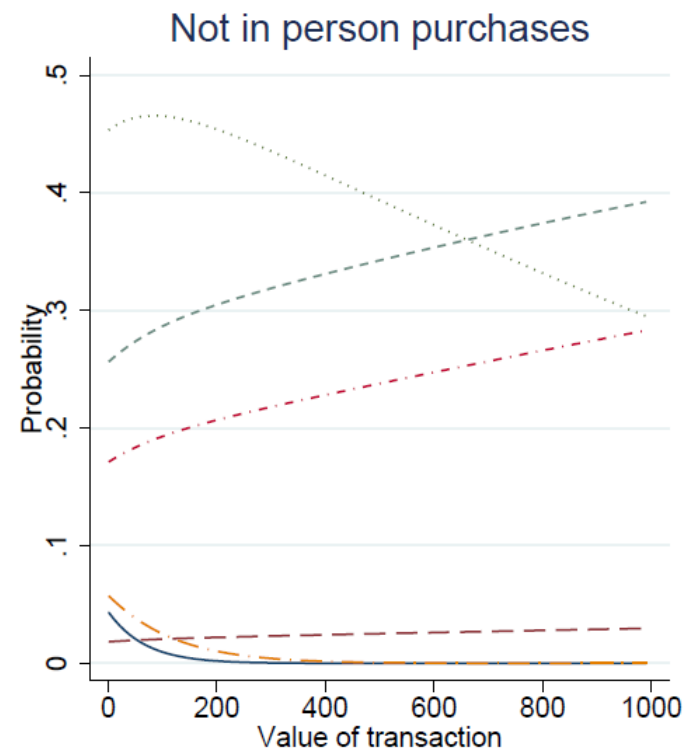
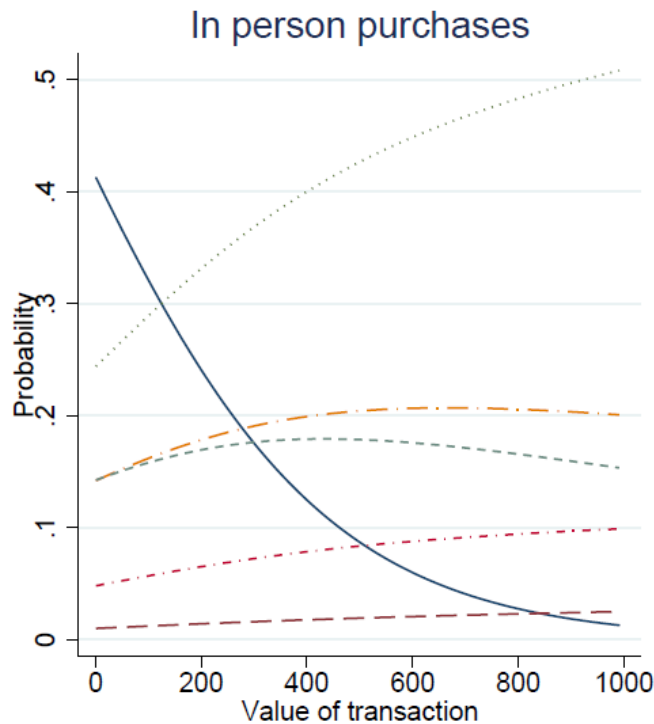
Grocery payments: then and now



Notes: Graphs include same four payments instruments. Credit card includes signature debit.

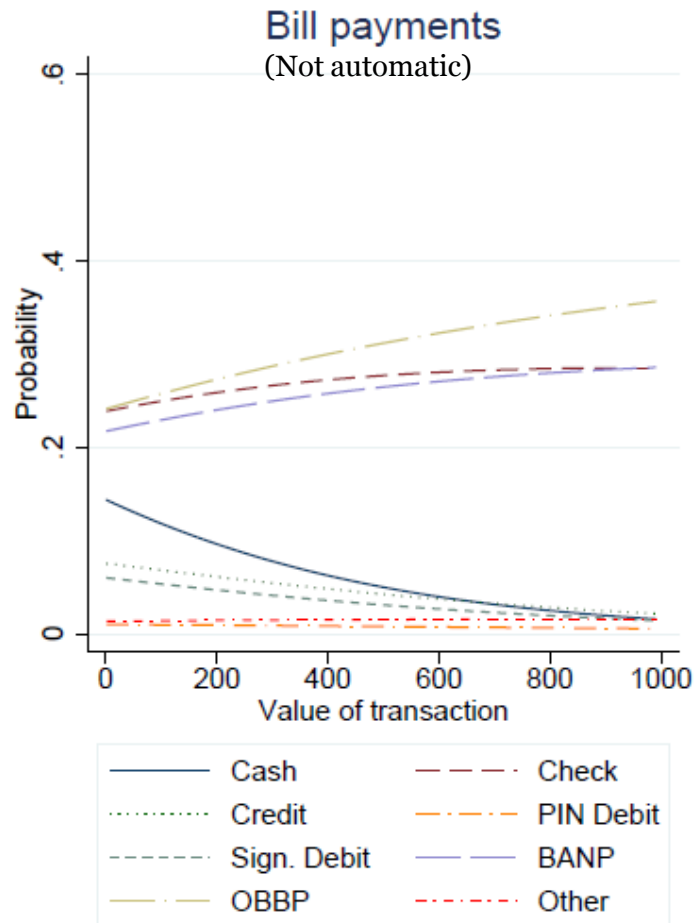
Source: Klee, E. (2008). "How people pay: Evidence from grocery store data." *Journal of Monetary Economics*, 55 , 526-541.

Non-Bill payments, 2012

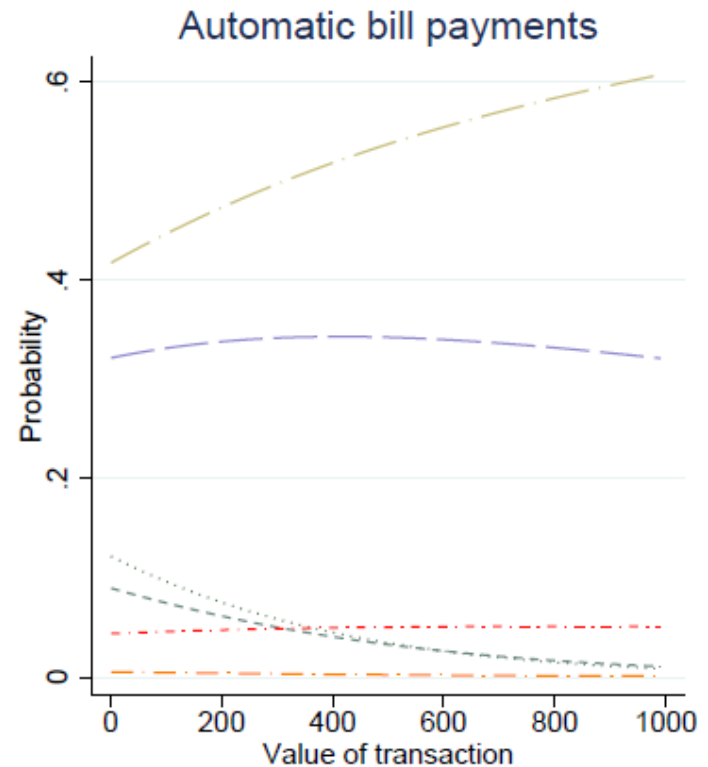


Other category also includes: prepaid, OBBP, money order, travelers' check and text message payment.

Bill payments, 2012



Other category also includes: prepaid, money order, travelers' check and text message payment.



Modeling consumer payment behavior

- Boston Fed research (WP #12-14) provides new technical model of consumer payment choices:
 - Adoption of individual payment instruments
 - Given bundle of instruments, estimate payment choices:
 - ✦ By payment instrument
 - ✦ By location/context of payments
 - Controls for consumer demographic characteristics
 - Accounts for consumer assessments of characteristics of payment instruments (cost, security, convenience, etc.)
- **RESULT** = Estimates of consumer “utility”

Consumers benefit least from prepaid cards

Table 6: Relative Utility by Context and Payment Instrument (1.00 = most preferred by consumers)

	Automatic bill pay	Online bill pay	In person bill pay	Online pay	Essential retail	Non- essential retail	Other non- retail
cash			0.63		0.97	0.78	0.88
check			0.90	0.71	0.69	0.63	0.83
debit card	0.71	0.69	0.66	0.74	1.00	0.82	0.86
credit card	0.67	0.64	0.64	0.72	0.89	0.78	0.83
online banking bill pay		0.87					
electronic bank account deduction	0.84	0.78		0.74			
store value card			0.50	0.53	0.64	0.56	0.57
direct deduction from income	0.85						

Source: Sergei Koulayev, Marc Rysman, Scott Schuh, and Joanna Stavins (2012), [“Explaining Adoption and Use of Payment Instruments by U.S. Consumers,”](#) Federal Reserve Bank of Boston Working Paper No. 12-14.

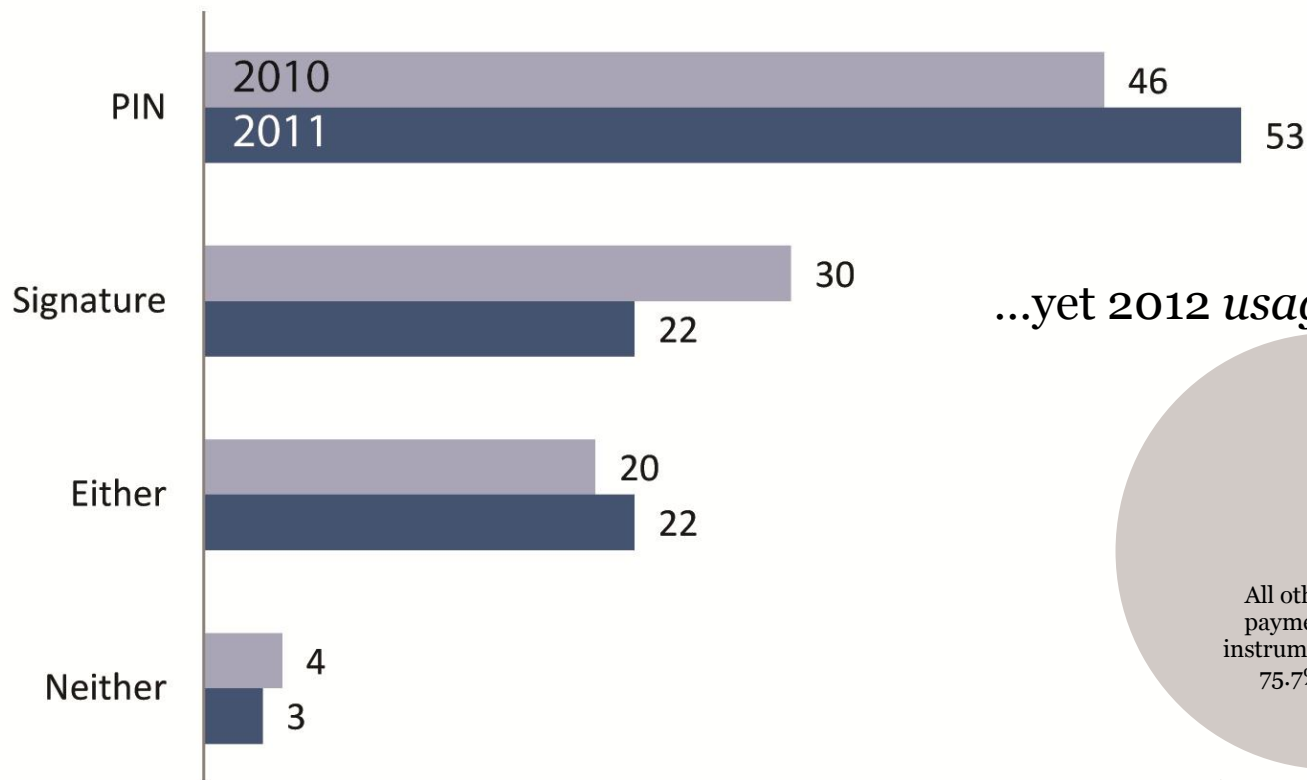
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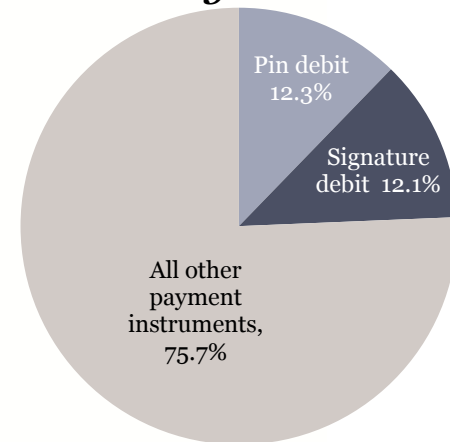
Comparison of money and instruments

Feature	Assets		Cards	
	Cash	Bank Account	Debit	Prepaid
Medium of exchange	✓	✓	✓	✓ (GP > other)
Unit of account	✓	✓	X	X
Store of value	✓	✓	X	X
Fees	Non-network ATMs only	Maybe	Rare	Many

Consumers prefer PIN debit payments...



...yet 2012 *usage* is almost even



Source: 2010-2011 Survey of Consumer Payment Choice; 2012 Diary of Consumer Payment Choice, **preliminary data**

Consumers prefer debit to prepaid

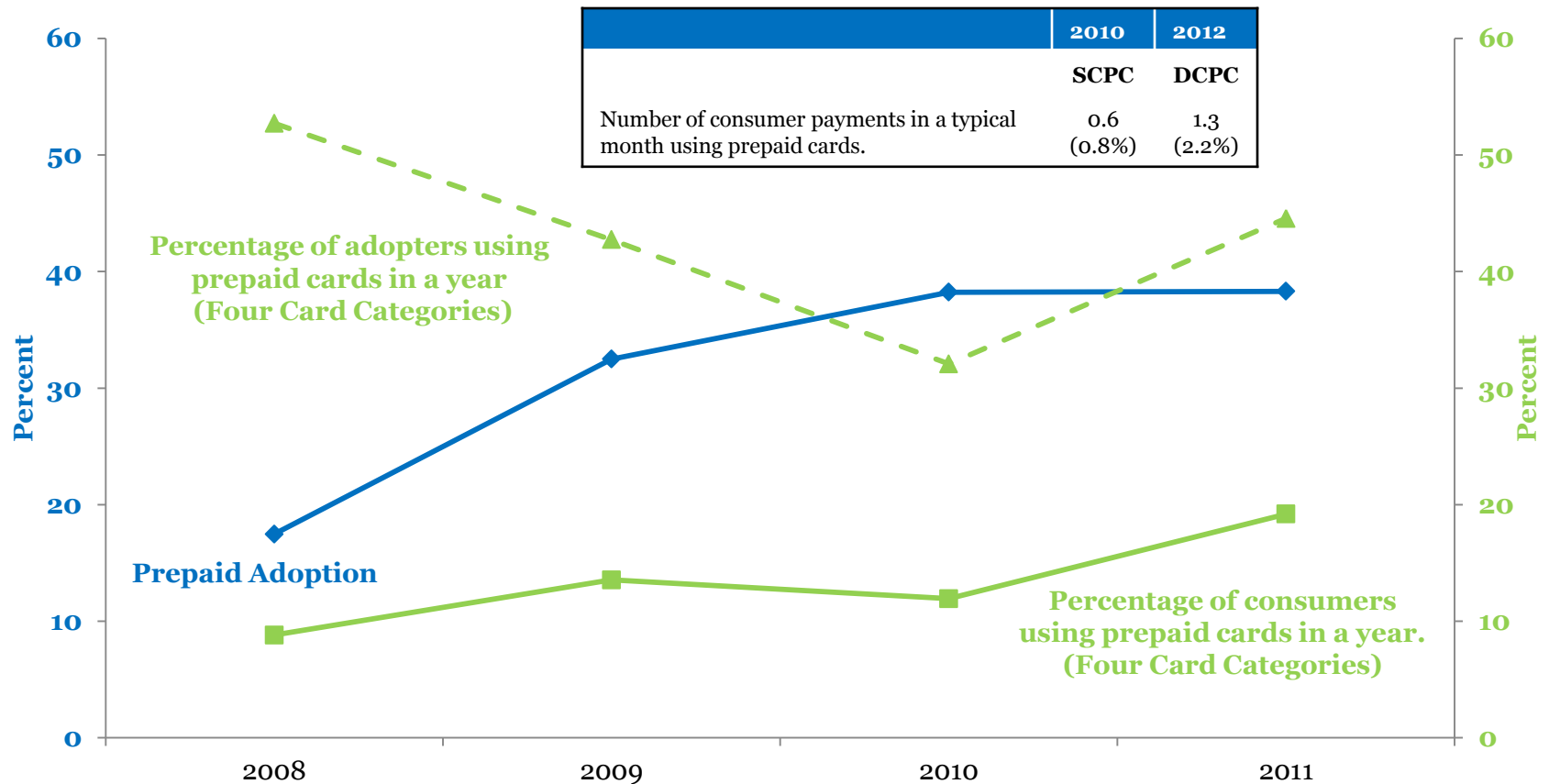
Economic Theory High \leftrightarrow Low

Opportunity Cost	Cash, Prepaid , TC, MO [Negative]	<	OBBP, BANP [Zero]	<	DC, Check	<	CC, Mobile Text/SMS
Transaction Cost	Prepaid	<	Cash	<	All Other Instruments		

Consumer Assessments, Survey Data Worse \leftarrow \rightarrow Better

Acceptance	BANP	<	Check, Prepaid , OBBP	<	DC, CC, Cash
Cost	Cash	<	DC, Check, BANP, OBBP, Prepaid	<	CC
Records	Cash, Prepaid	<	BANP	<	DC, Check, CC, OBBP
Security	BANP, Cash, Check, Prepaid			<	OBBP, DC, CC
Convenience	BANP	<	Cash, Check, OBBP, Prepaid	<	DC, CC
Get/set up	Prepaid , OBBP, BANP	<	DC, CC, Check	<	Cash

Adoption and use of prepaid cards



Notes: Prepaid use is defined as the share of consumers or adopters using a prepaid card in a given year.

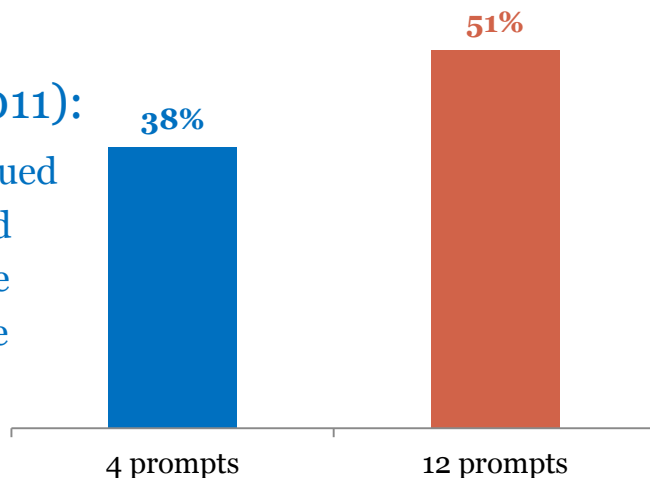
Source: 2010 and 2011 Survey of Consumer Payment Choice **unofficial and preliminary.**

Consumers are still unfamiliar with prepaid cards

2011 Survey of Consumer Payment Choice indicates that questionnaire design and prepaid card definitions can influence estimates of rates of adoption...

Group 1 (2008-2011):

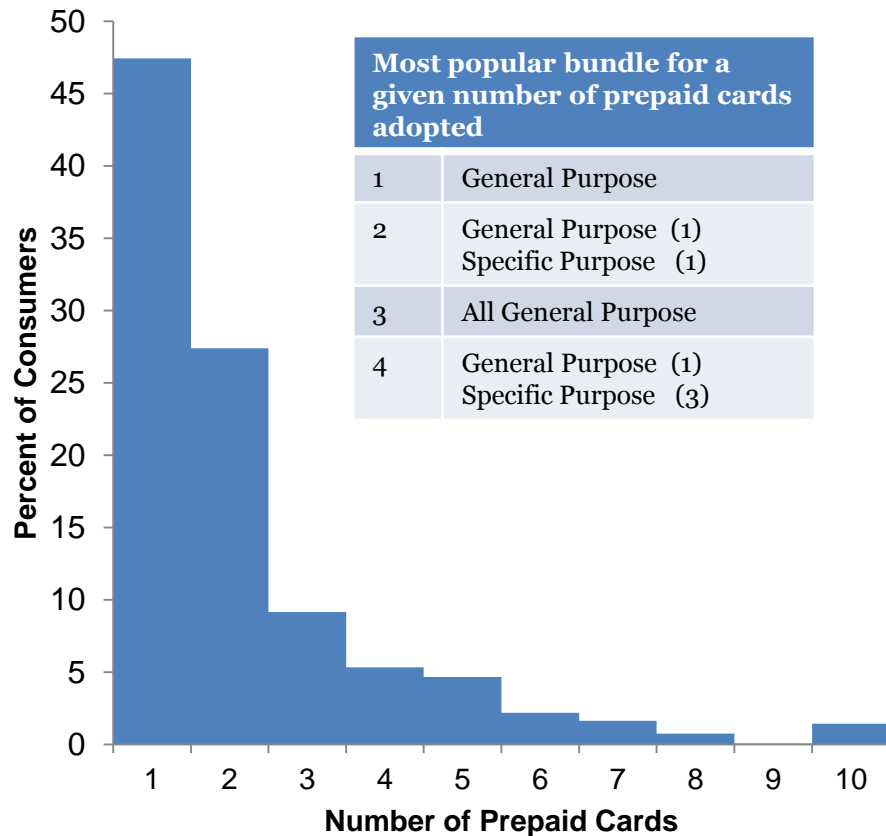
1. Government issued
2. Employer issued
3. General purpose
4. Specific purpose



1. Gift card
2. General purpose prepaid card
3. Public transportation card
4. Phone card
5. Direct Express
6. EBT
7. Payroll card
8. Incentive card from employer
9. Benefit card
10. Overseas remittance card
11. Merchant rebate card
12. Location specific card

Source: 2011 Survey of Consumer Payment Choices **unofficial and preliminary.**

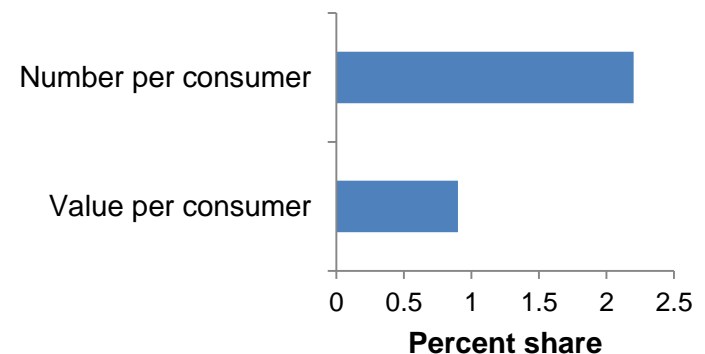
Fun facts about prepaid cards



Source: 2010 Survey of Consumer Payment Choices.

	2009	2010
Percent of Consumers Reloading Prepaid Card	15.2 %	14.1 %
Median Amount per Reloading, (reloaders only)	\$47	\$49
Median Number of Reloads per Month, (reloaders only)	0.8	0.9
Discard Rate	28.8 %	27.0 %

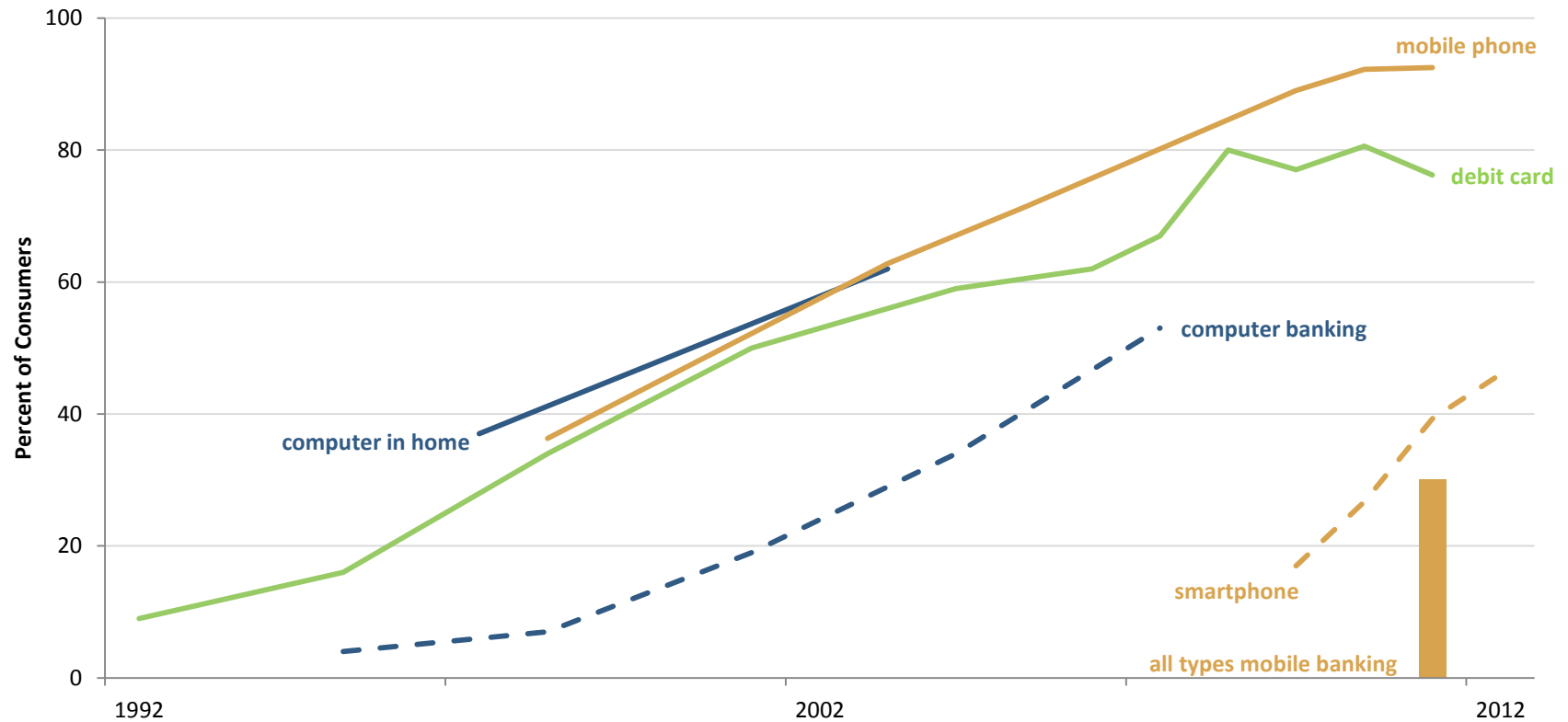
Source: 2010 Survey of Consumer Payment Choices



Note: Percent share of dollar value and transactions per consumer.

Source: 2012 Diary of Consumer Payment Choice; unofficial and preliminary.

Adoption of mobile phones and banking



Evolution of mobile payment survey questions

	Oct 2008	Oct 2009	Oct 2010	Oct 2011	Dec 2011- Jan 2012*	Oct 2012	Nov 2012*
Payment made using text message		✓	✓	✓	✓	✓	✓
Contactless payment via tapping or waving your phone		✓	✓	✓	✓	✓	✓
Used your phone to scan a barcode to make a payment			✓	✓	✓		✓
Scanned a QR code						✓	✓
Used your mobile phone's web browser to make a mobile payment				✓	✓	✓	✓
Used a downloadable app to make a mobile payment				✓	✓	✓	✓
Swiped a credit, debit, or prepaid card in a device attached to the mobile phone						✓	
Made an online purchase							✓
Transferred money directly to another person's bank, credit card, or PayPal account (i.e., friend, relative, babysitter)							✓
Percentage of U.S. consumers making any of the above mobile payments		3.4	4.0	11.7	11	TBD	15

Note: Number in table represent the share of consumers making a mobile payment by specified method. Sources: 2011 Survey of Consumer Payment Choices **unofficial and preliminary**. *Consumers and Mobile Financial Services, Federal Reserve Board.

About mobile banking and payments....

- Mobile banking and bill payments are essentially the same as on a laptop or tablet...
- Mobile (non-bill) payments are:
 - Essentially the same as a laptop or tablet online (internet)
 - Advantageous in other situations:
 - ✦ More portable, efficient, and convenient
 - ✦ Better P2P choices
 - ✦ Can make text/SMS payments
 - Not a payment instrument (uses existing instruments)
 - ✦ EXCEPT: text/SMS payments backed by cell provider (credit!)

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New Public Policies toward Payments

2010

- Opt-in overdraft protection (Fed)

2011

- Debit interchange fee limits (Fed)
- Discounting and card fee disclosure (DoJ)
- Some banks propose fees on debit cards

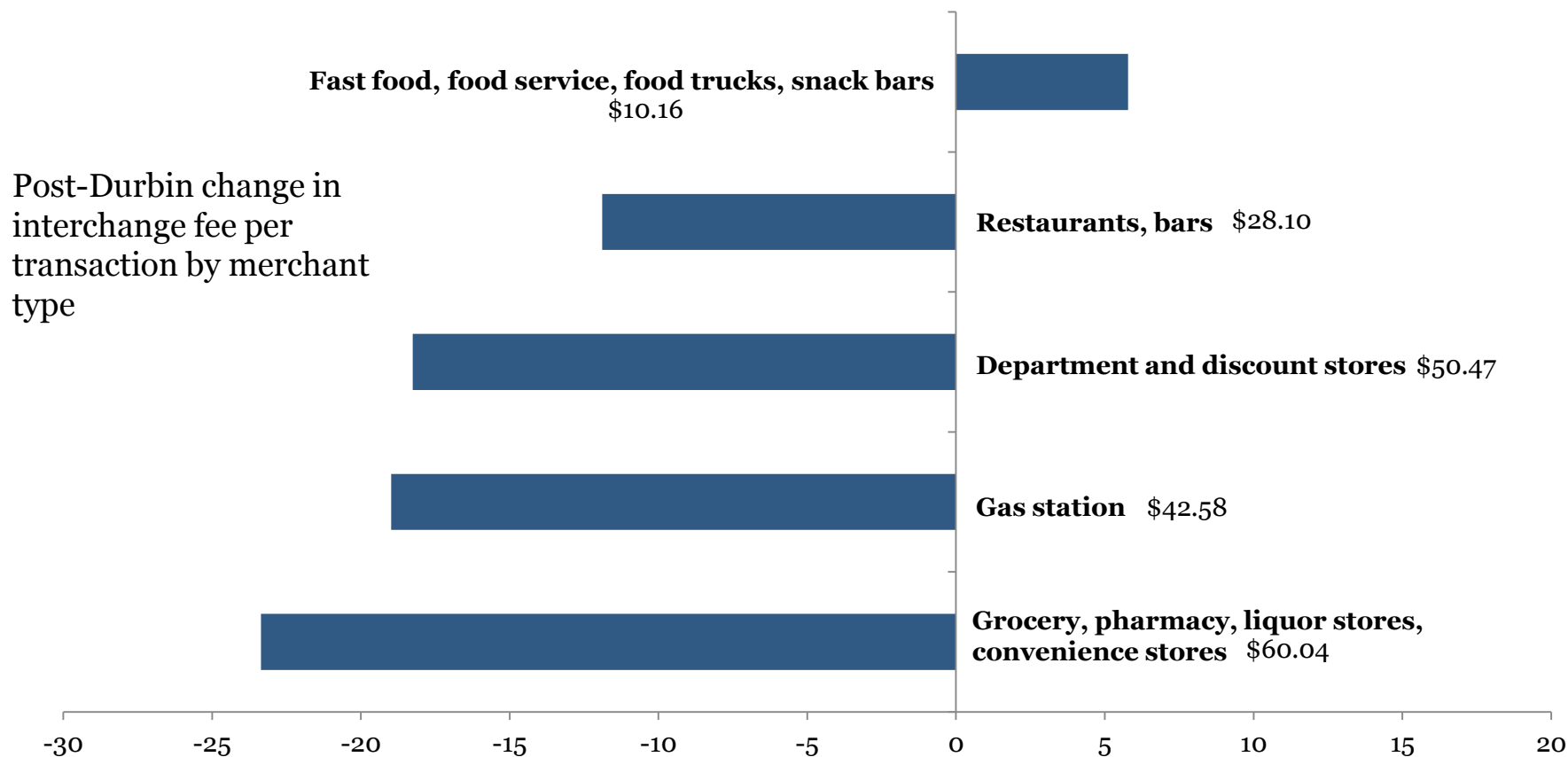
2012

- Proposed rulemaking, prepaid cards (CFPB)

2013

- Proposed rulemaking, student cards/accounts (CFPB)
- Credit card surcharging (DoJ)

Debit card fee cap estimated to increase fees paid by merchants with small-dollar transactions



Note: Selection based on most number of debit card payments. Dollar values are average transaction for merchant.

Source: Oz Shy (2013), "Measuring some Effects of the 2011 Debit Card Interchange Fee Reform," updated version of ["Who Gains and Who Loses from the 2011 Debit Card Interchange Fee Reform?"](#) Federal Reserve Bank of Boston Public Policy Discussion Paper

No. 12-6

Faced with fee for debit, consumers want to switch mostly to cash and check

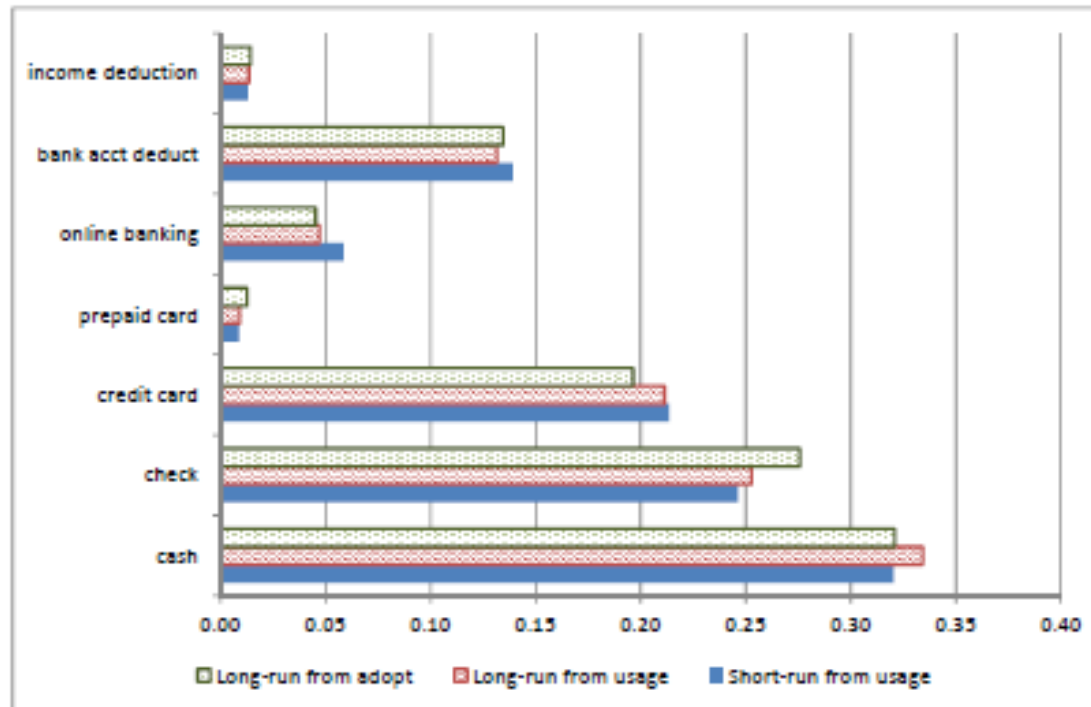


Figure 1: Changes in use of each payment instrument, measured as market share percentage points, in response to an increase in debit card use cost and adoption cost, by adoption adjustment (short run or long run).

Source: Sergei Koulayev, Marc Rysman, Scott Schuh, and Joanna Stavins (2012), [“Explaining Adoption and Use of Payment Instruments by U.S. Consumers,”](#) Federal Reserve Bank of Boston Working Paper No. 12-14.

Faced with surcharge on credit cards, consumers want to switch to cash and check – and debit

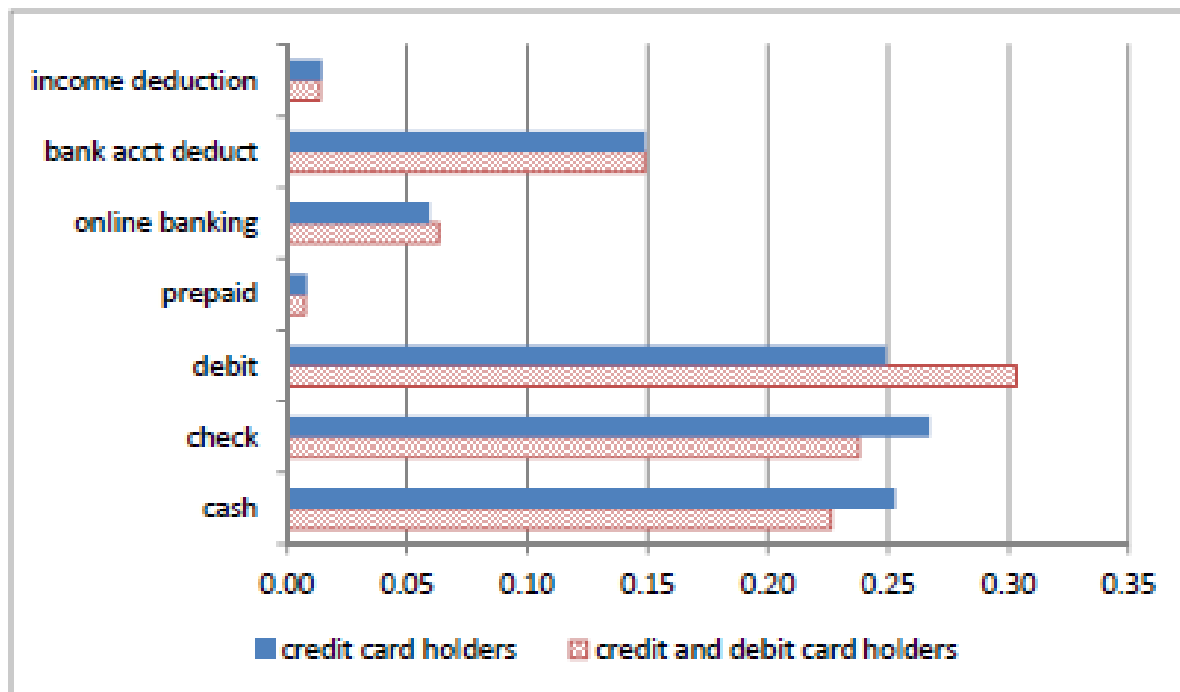
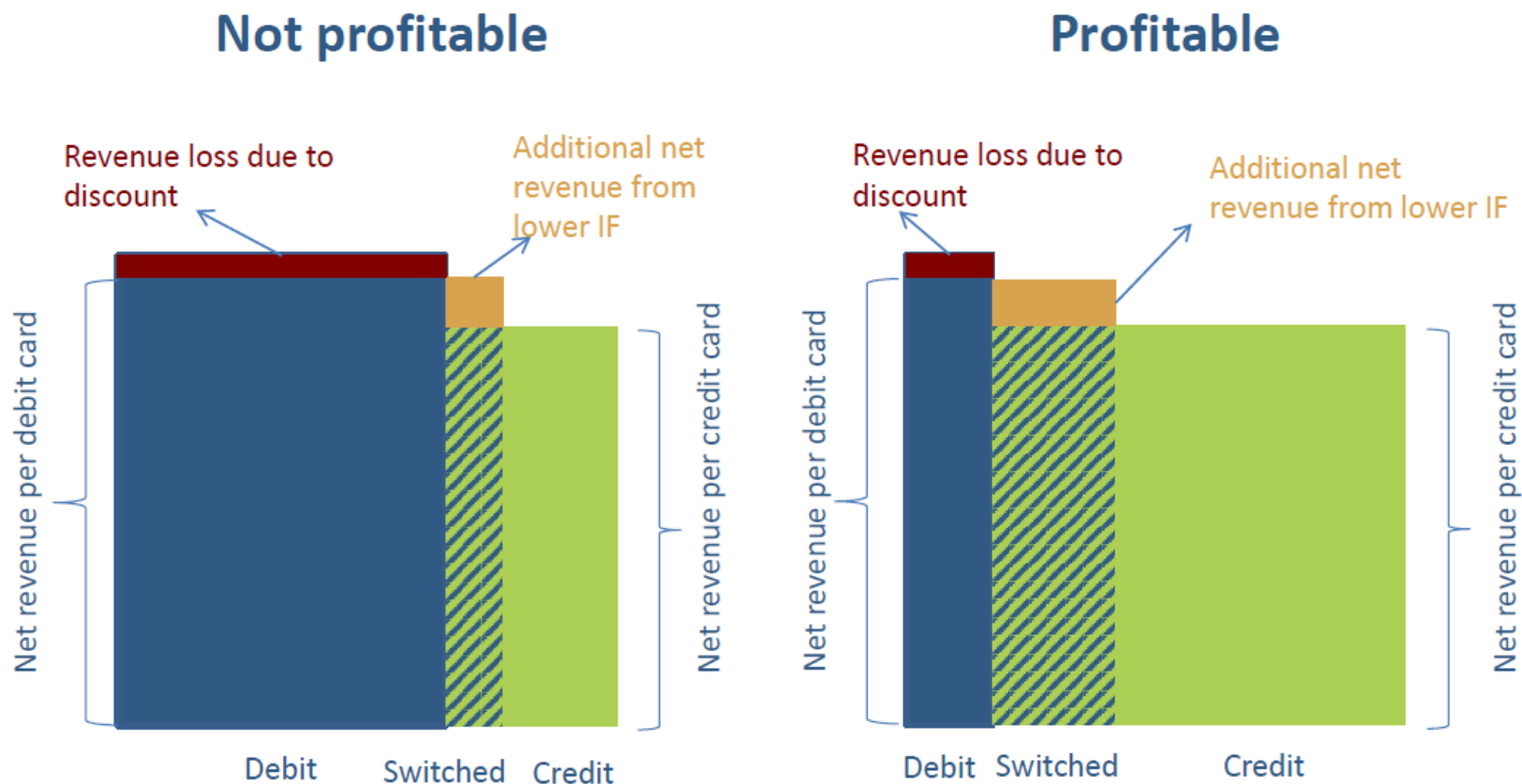


Figure 5: Changes in market share percentage points in response to an increase in the use cost of credit cards.

Source: Sergei Koulayev, Marc Rysman, Scott Schuh, and Joanna Stavins (2012), [“Explaining Adoption and Use of Payment Instruments by U.S. Consumers,”](#) Federal Reserve Bank of Boston Working Paper No. 12-14.

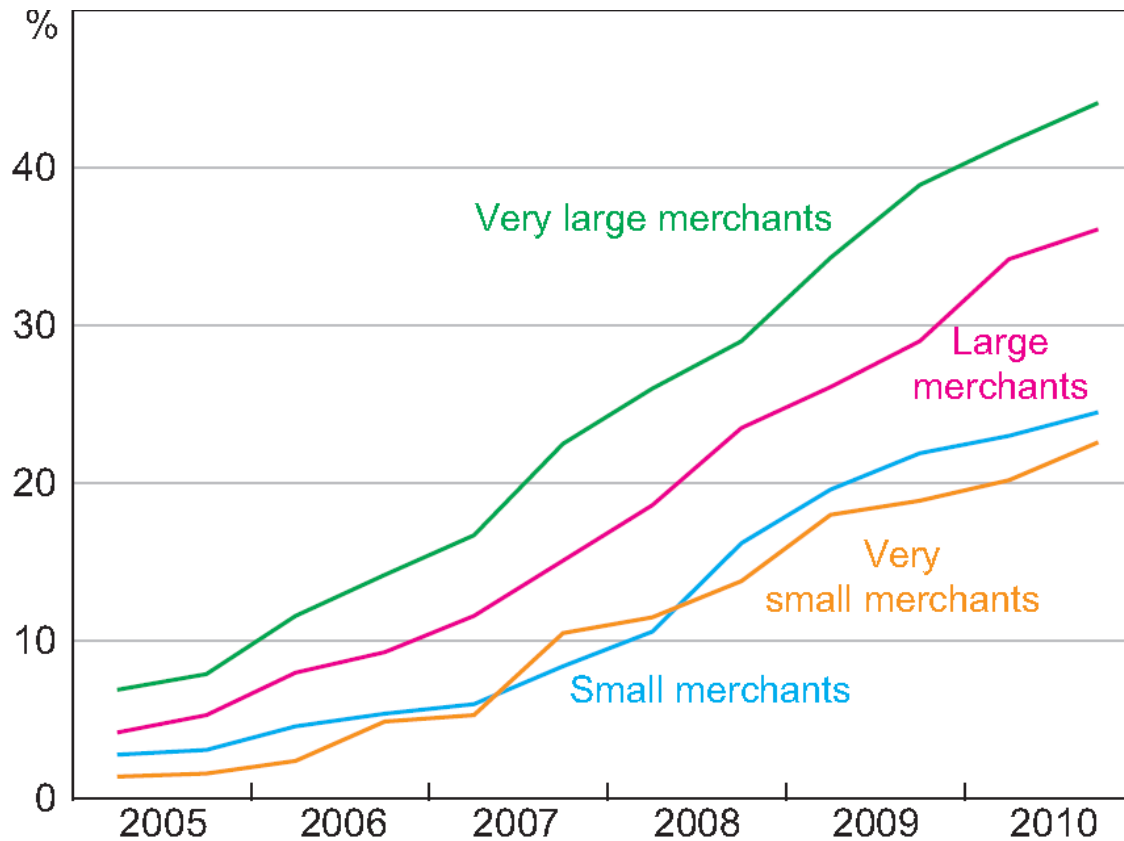
Merchant steering of consumer payments



Source: Tamas Briglevics and Oz Shy (2012), "Why Don't Most Merchants Use Price Discounts to Steer Consumer Payment Choice?" FRB Boston PPDP 12-9

Will U.S. merchants surcharge credit?

Australian experience suggests “yes” (over time)



[Reserve Bank of Australia, 2010](#)

2012-13 CFPB proposed rules for prepaid

General purpose reloadable prepaid cards (GPRPC)

- ✦ Should GPRPC be subject to Regulation E (electronic funds transfers)?
- ✦ Require standard disclosures?
- ✦ Protect consumers from unauthorized transactions?
- ✦ Regulate fees and information in GPRPC?
- ✦ Inform/teach consumers about GPRPC?
- ✦ Require deposit insurance on card balances?
- ✦ Regulate overdraft situations on card balances?
- ✦ Force provision of savings for card holders?