



PAYMENTS
CONNECT 2016

March 7-9
San Diego

CONSUMER PAYMENT CHOICE: A CENTRAL BANK PERSPECTIVE

Presented by
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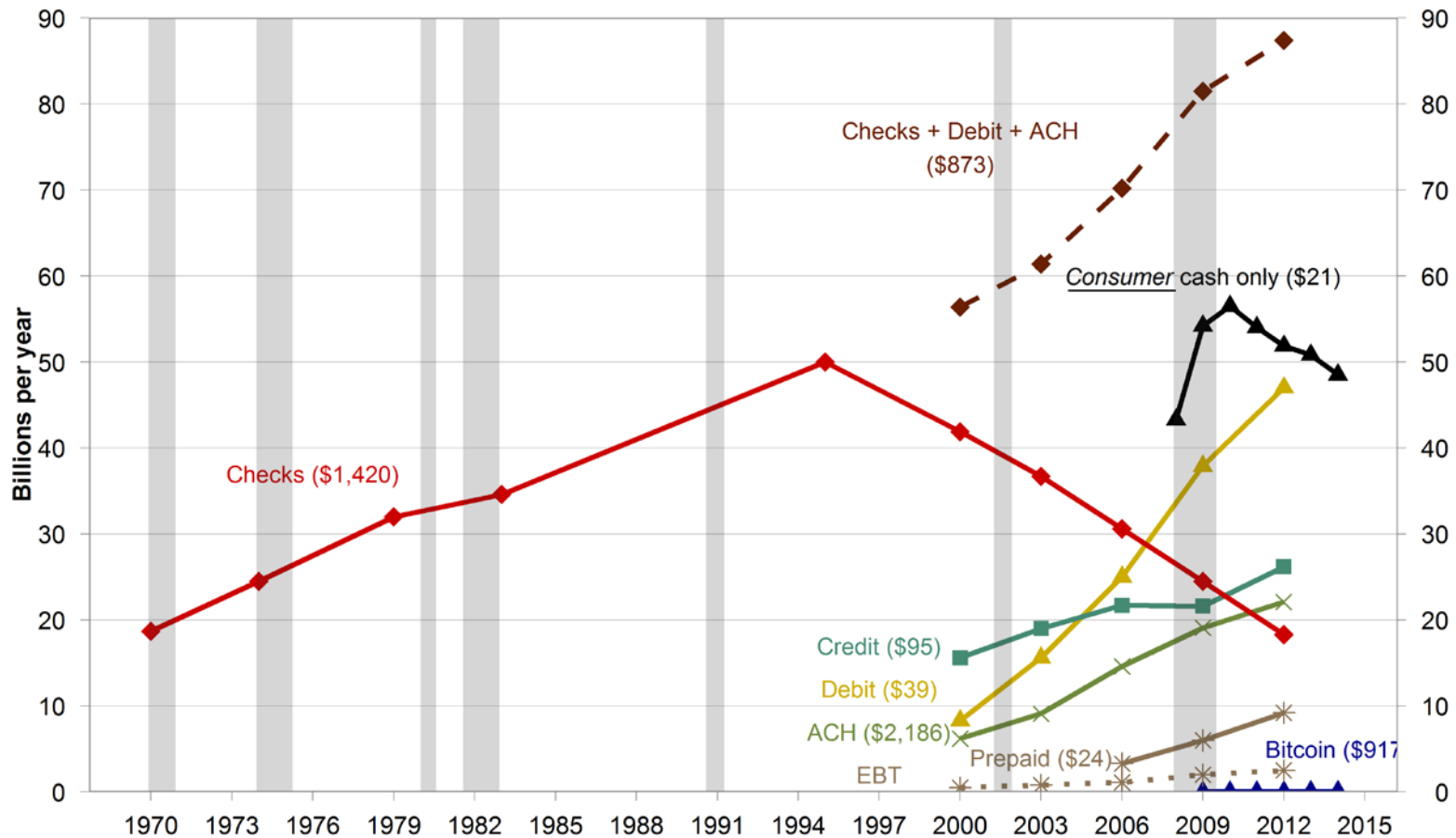


Overview

- The Big Picture: *Transformation of Payments*
- Consumer responses to the transformation
- Innovations in the payments market
- Traditional banking at a crossroad...
- Consumer financial management
- Takeaways and predictions

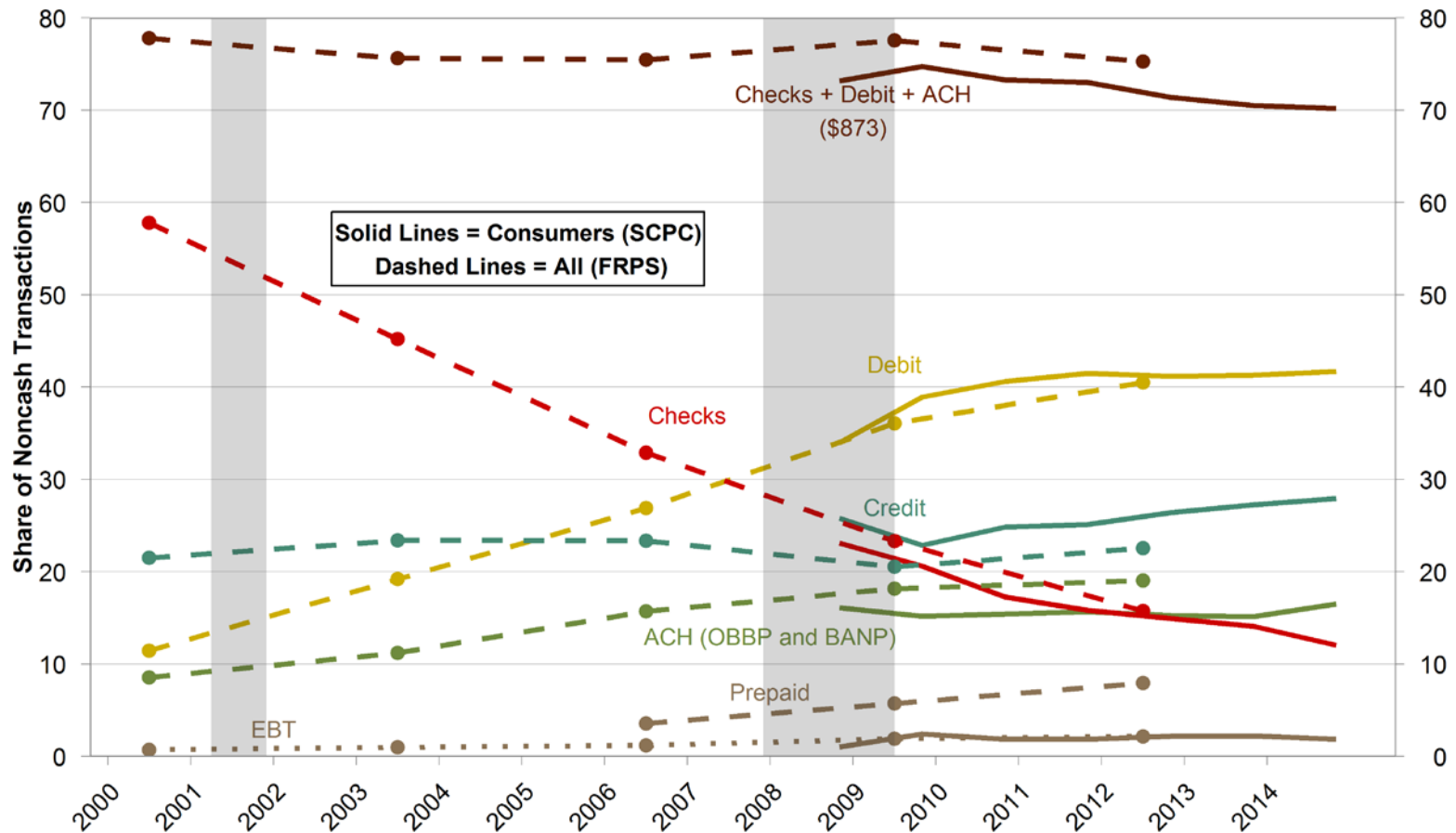
The Big Picture: *Transformation of Payments*

The transformation of U.S. payments (#) is primarily one from checks to electronics



Source: Federal Reserve Payment Study (FRPS), Survey of Consumer Payment Choice (SCPC).
Cash numbers are consumer only, and Bitcoin numbers are worldwide based on blockchain.info.

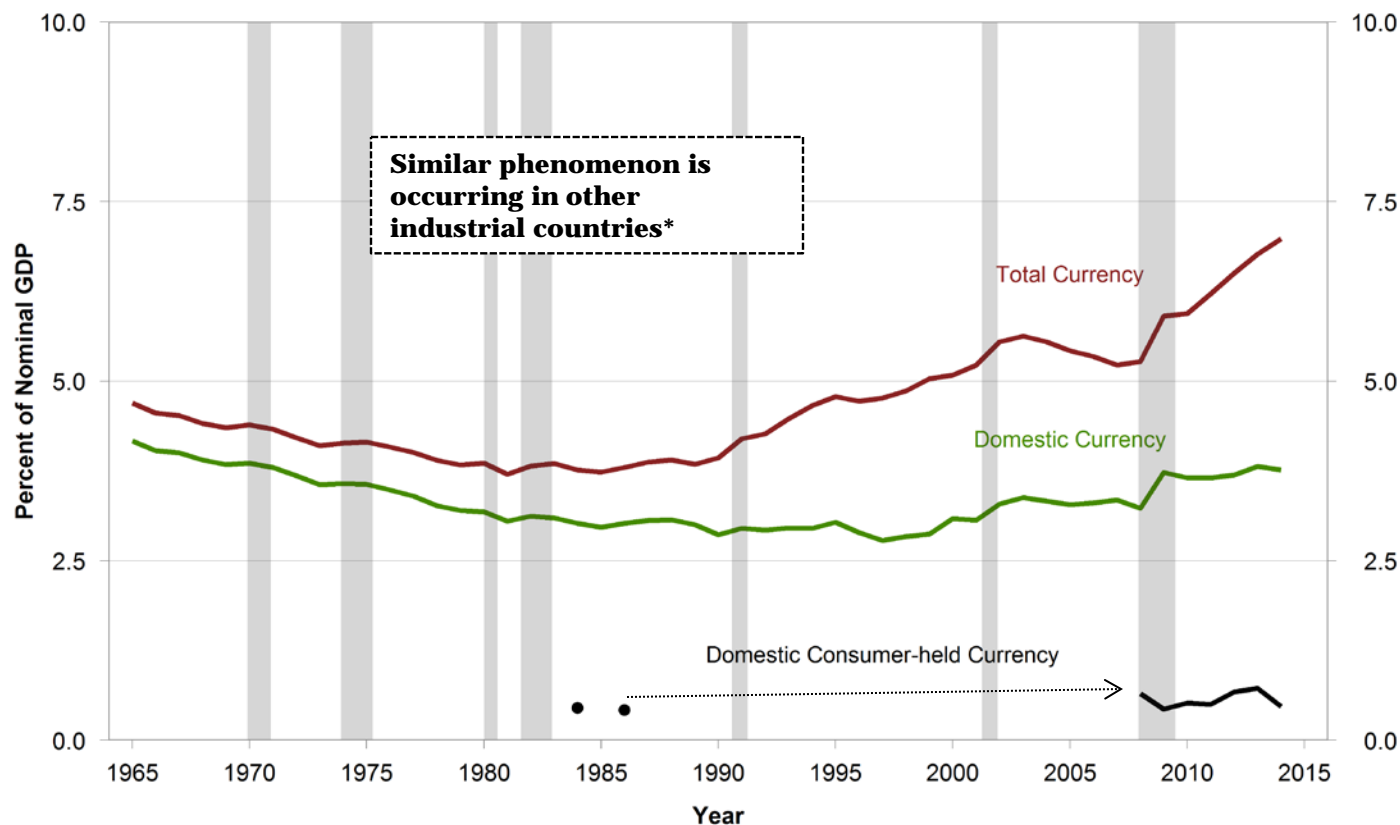
The **noncash** share of payments (#) from checking accounts has been roughly steady for all



Source: Federal Reserve Payment Study (FRPS); Survey of Consumer Payment Choice (SCPC).

Cash is not “dead”!

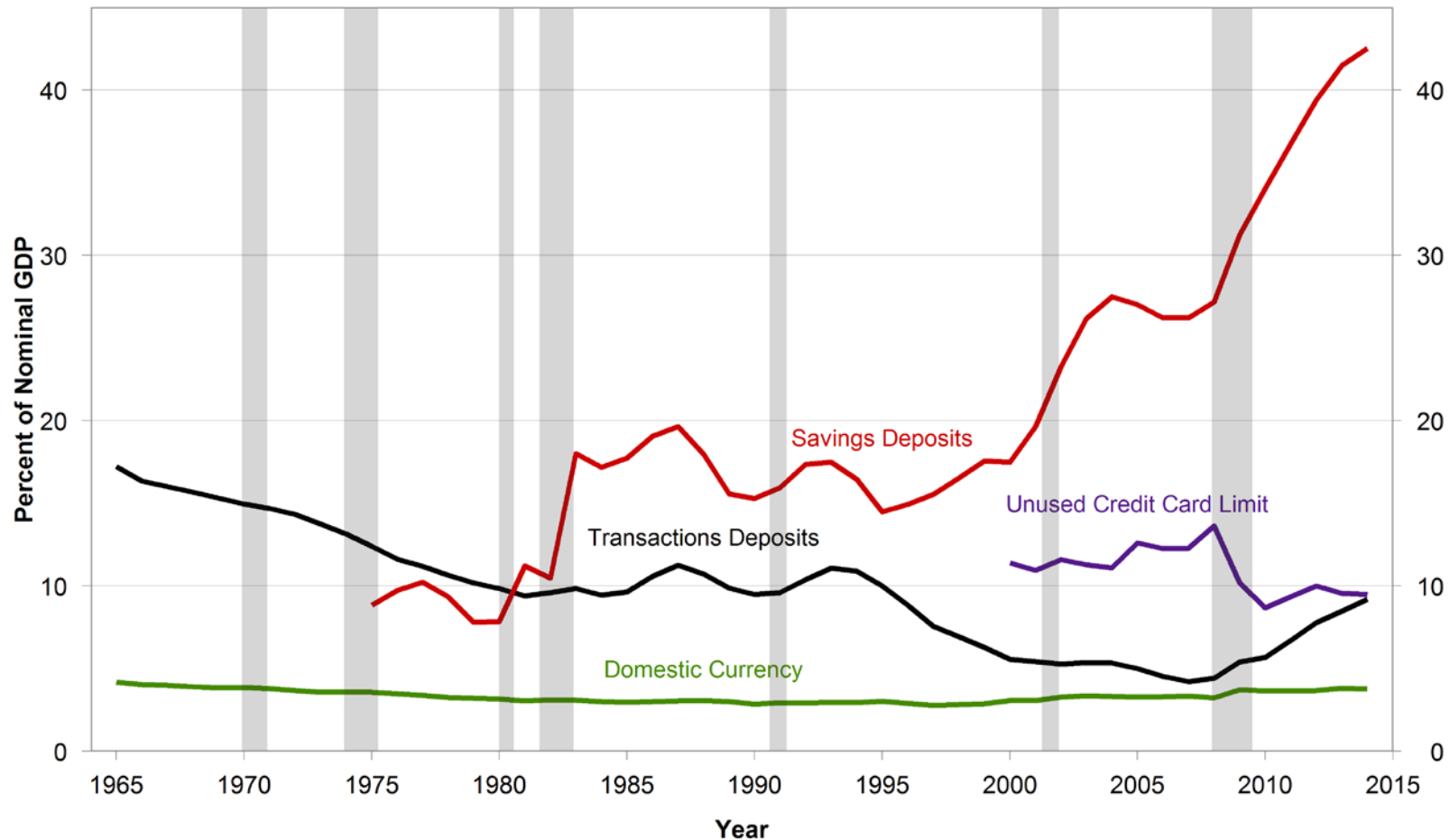
U.S. currency in circulation has been rising....



Source: Bureau of Economic Analysis, Federal Reserve Board, Survey of Consumer Payment Choice, authors' calculations.

* Bagnall et al (forthcoming). "Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data ". *International Journal of Central Banking*.

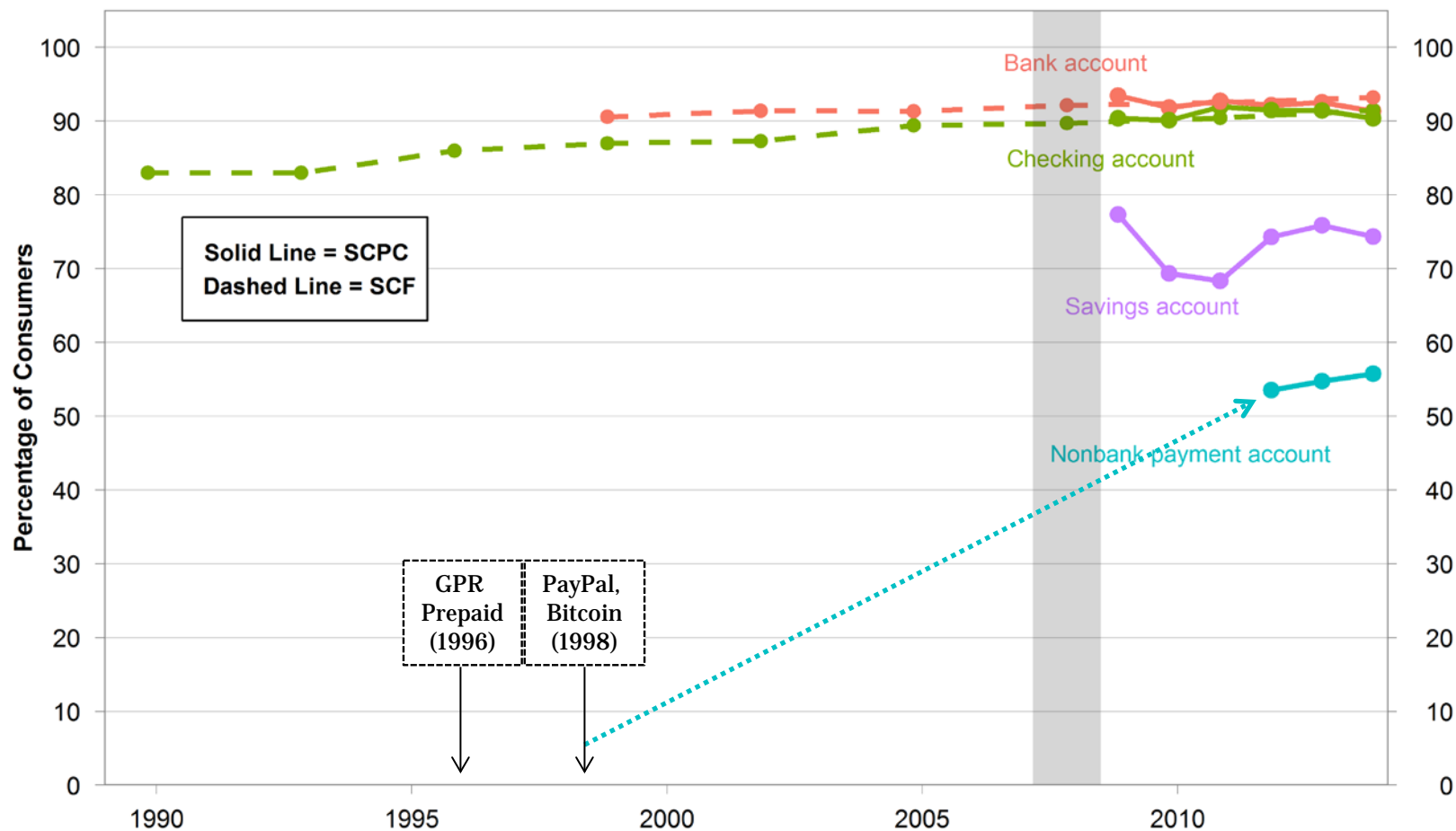
But cash is still small relative to all liquid assets and liabilities used to make payments



Source: Federal Reserve Board, Equifax Credit Panel, authors' calculations.

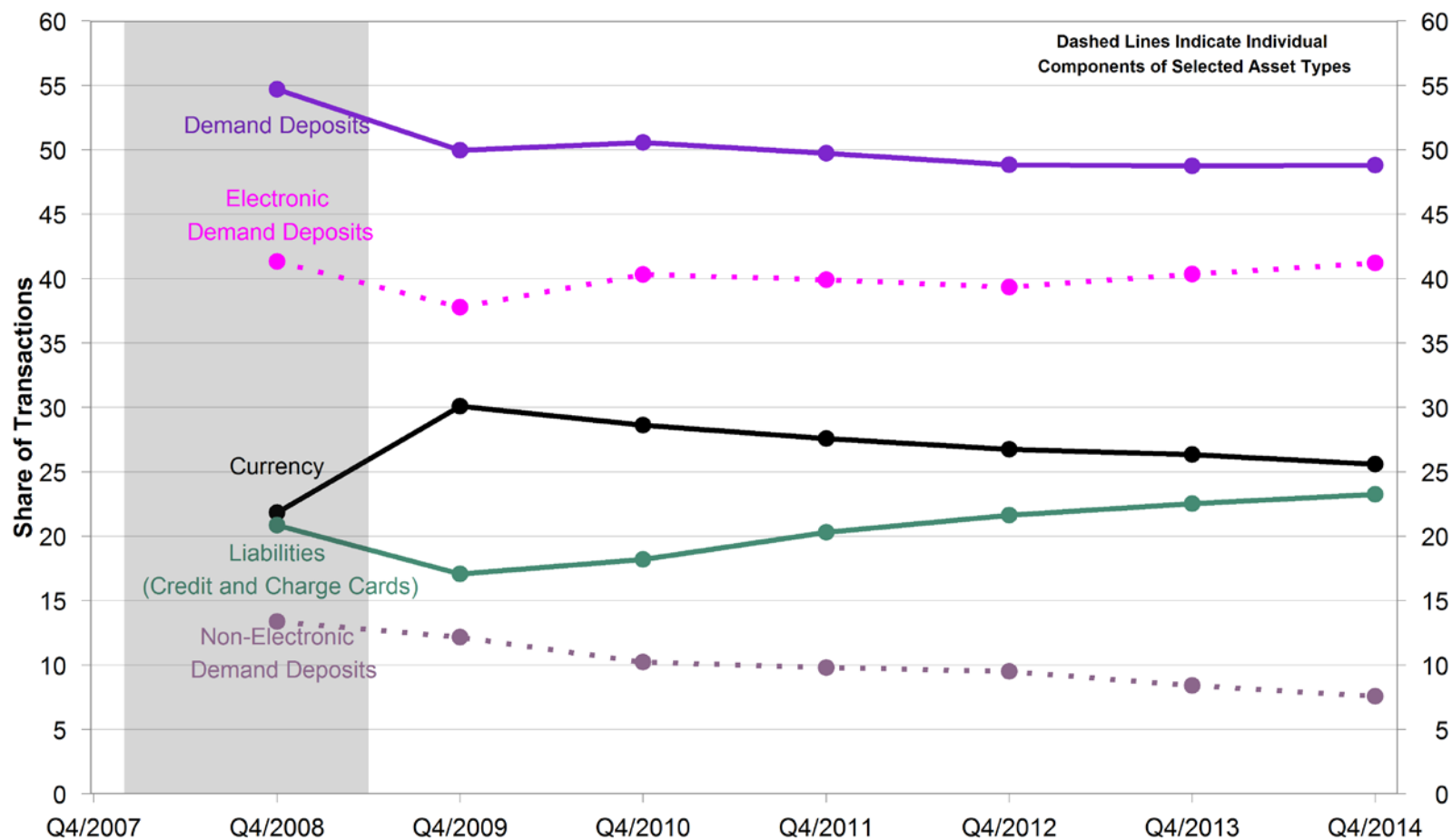
Consumer response(s) to the *Transformation of Payments*

Consumers are adopting more nonbank deposit accounts to fund payments



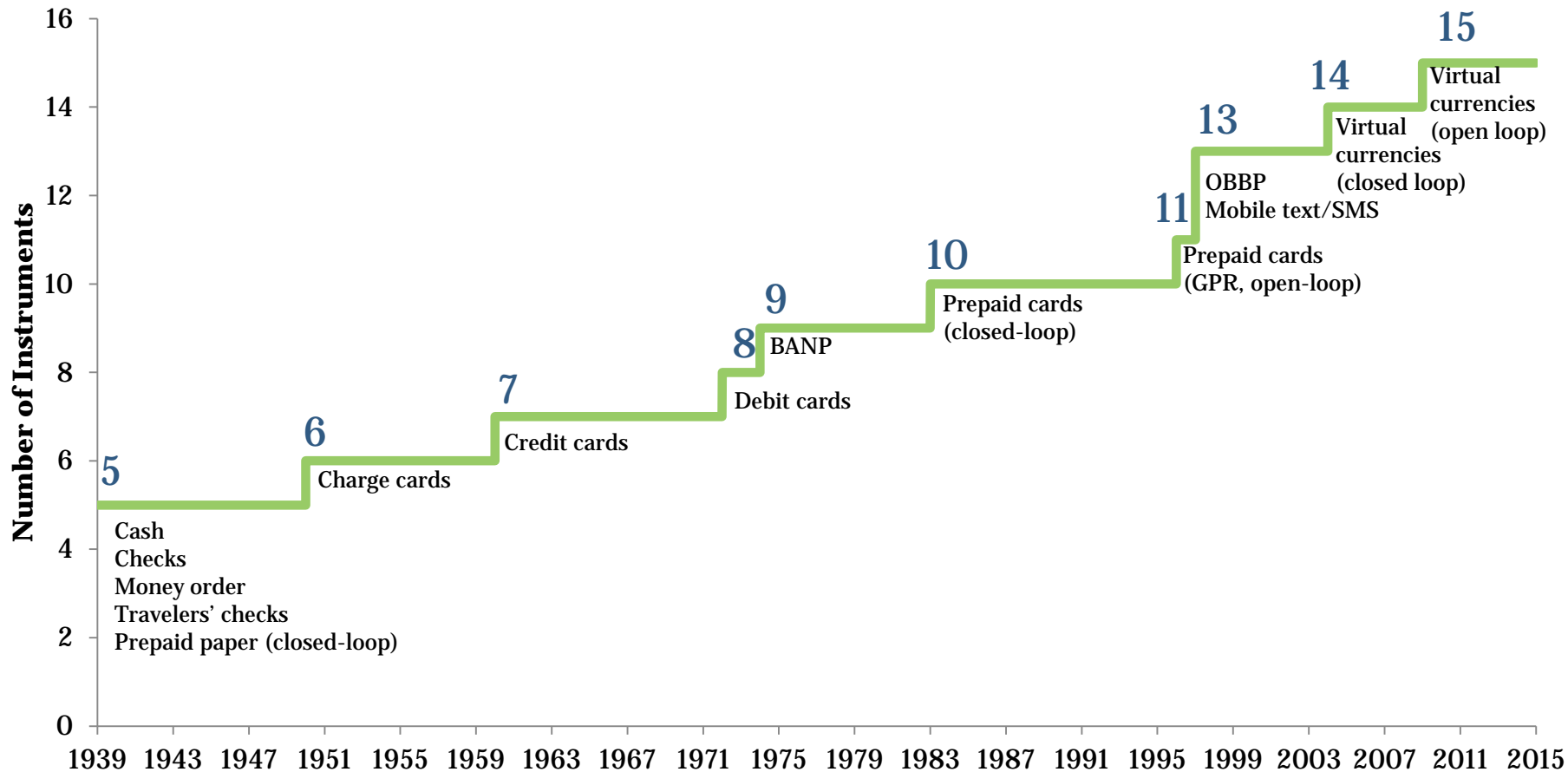
Source: 2009-2014 Survey of Consumer Payment Choice, 1989-2013 Survey of Consumer Finances, authors' calculations.

Consumer mostly pay from their bank accounts; cash and credit payments varied after recession



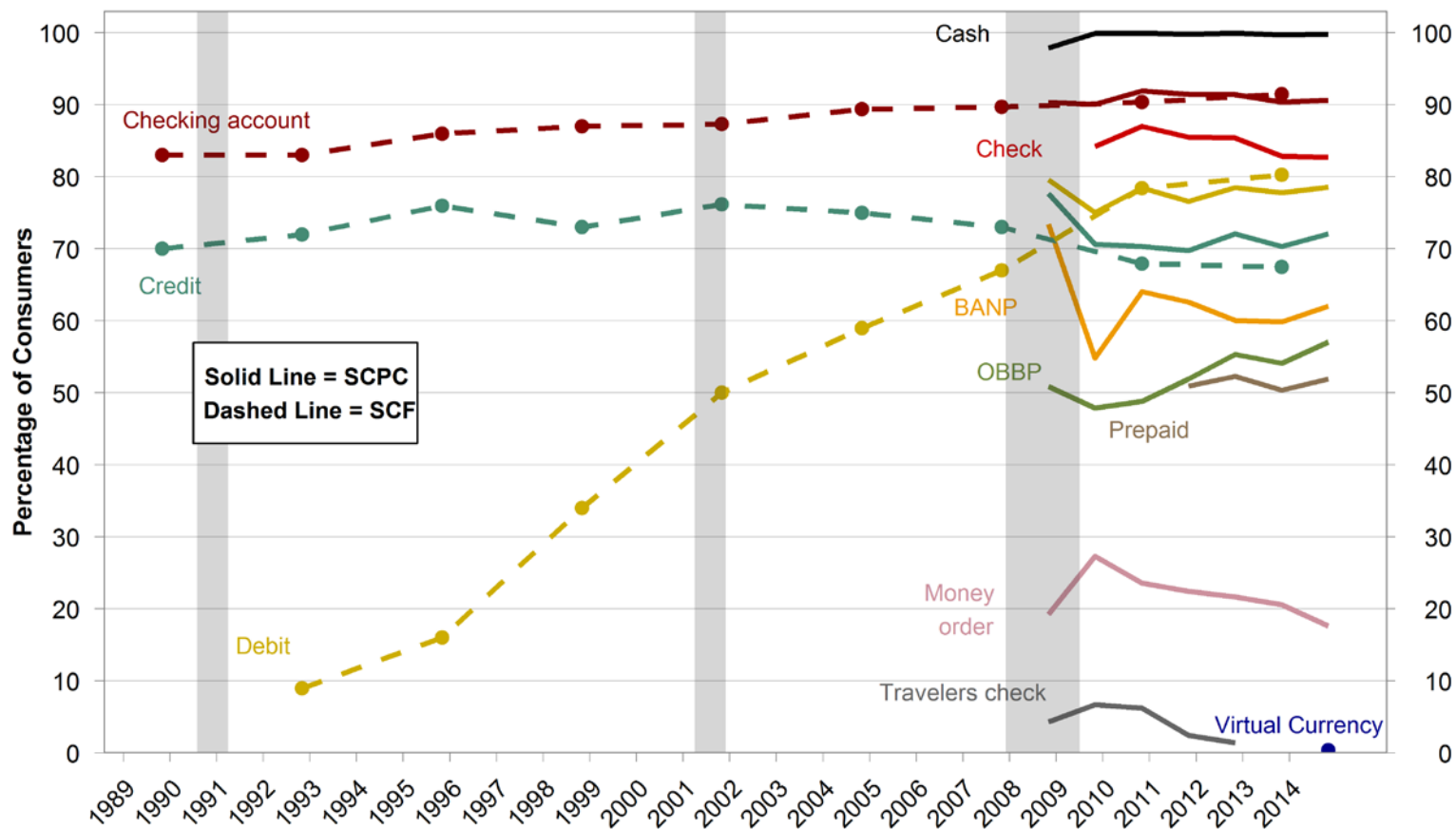
Source: 2008-2014 Survey of Consumer Payment Choice .

Over time, consumers have many more payment instruments to choose from....



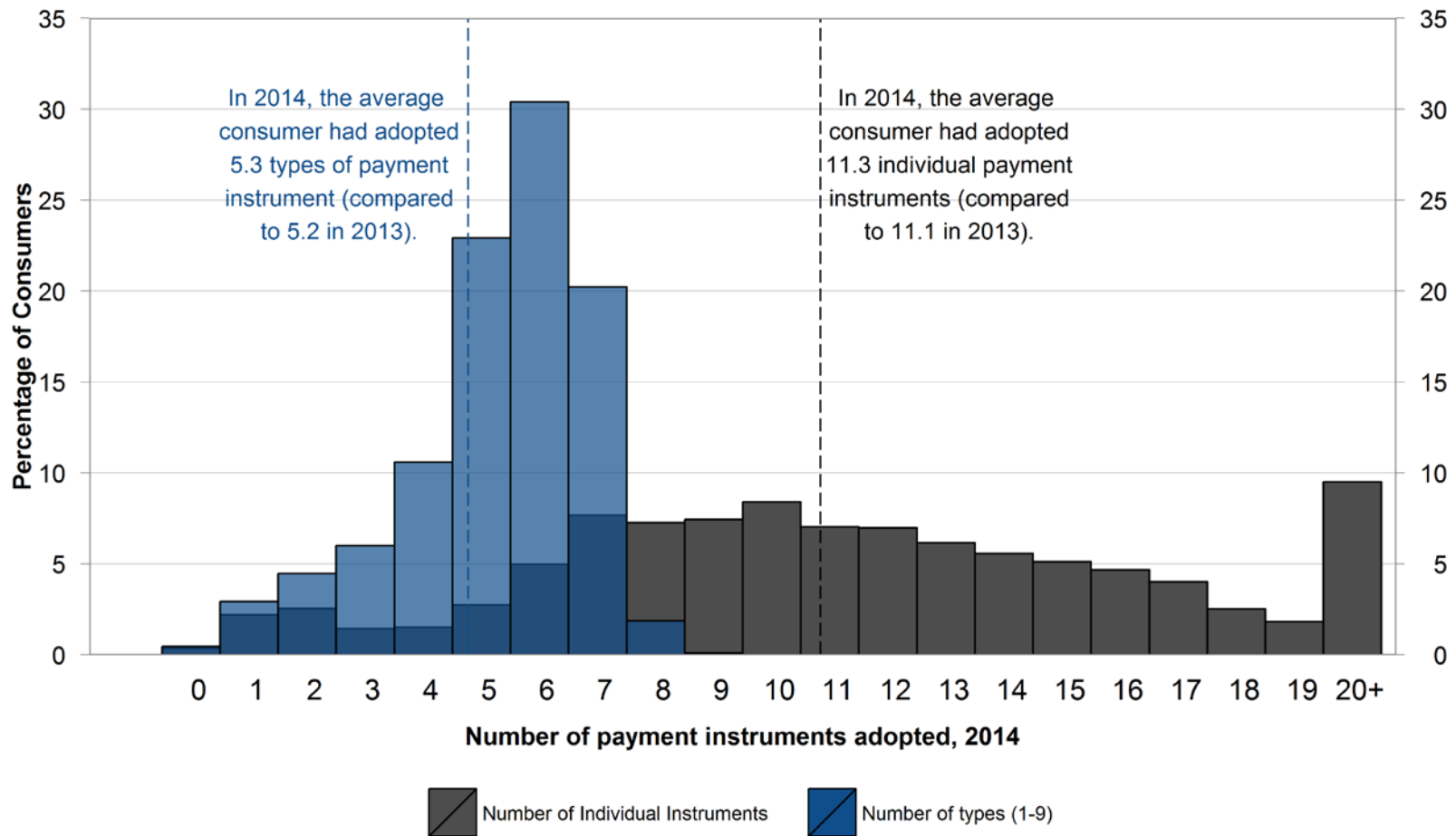
Source: Author's research.

...and consumers choose to adopt newer payment instruments without discarding older ones



Source: 2008-2014 Survey of Consumer Payment Choice (SCPC), 1989-2013 Survey of Consumer Finances (SCF).

“What’s in your wallet?” The average consumer has 5 types of instruments and 11 total in 2014



Source: 2014 Survey of Consumer Payment Choice (SCPC)

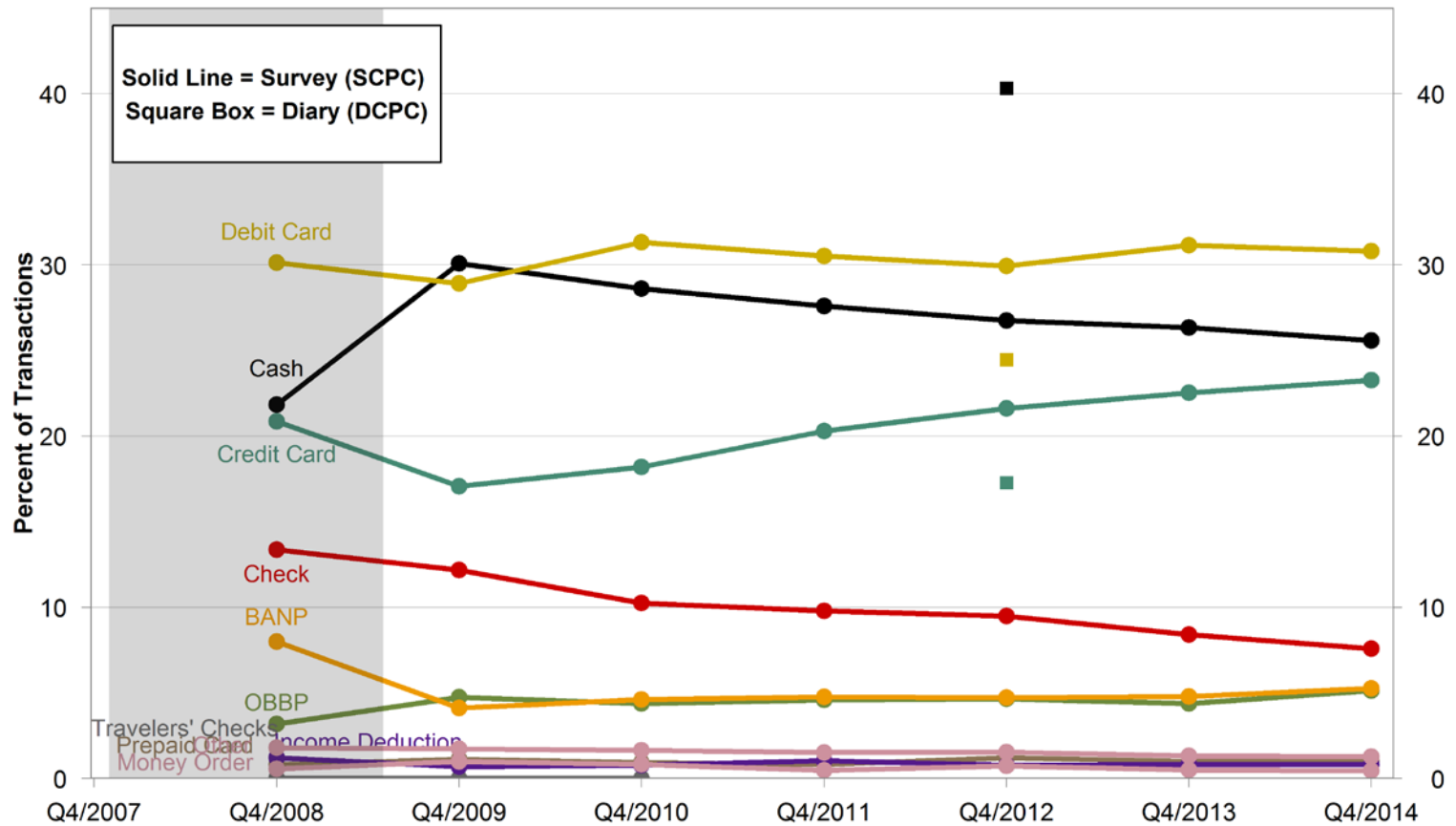
There is no “typical” wallet! Consumers mix and match instruments to fit their specific needs

Most popular bundles...

Number of PI.	Cash	Check	Travelers Check	Money Order	Credit Card	Debit Card	Prepaid Card	OBBP	BANP	Percent of Consumers
7	X	X			X	X	X	X	X	14.9
6	X	X			X	X		X	X	12.1
6	X	X			X	X	X		X	6.0
5	X	X			X	X		X		5.3
5	X	X			X	X			X	4.8
6	X	X			X	X	X	X		2.9
1	X									2.9
2	X						X			2.4
4	X	X			X	X				2.4
5	X	X			X		X		X	2.1
6	X	X				X	X	X	X	2.0
0										2.0
										59.7

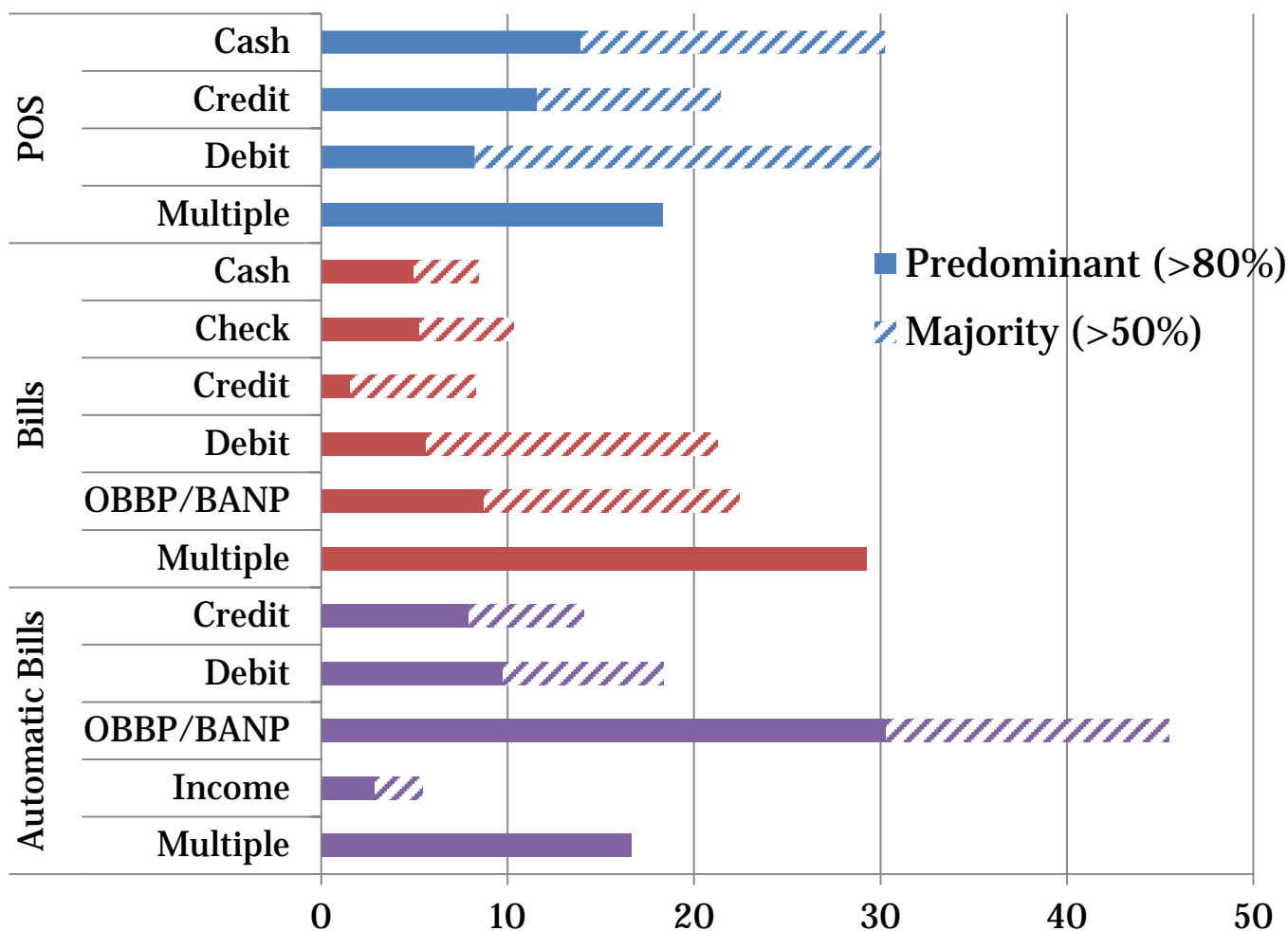
Source: 2014 Survey of Consumer Payment Choice

Overall, consumers use cash, debit, and credit for most of their payments



Source: 2008-2014 Survey of Consumer Payment Choice (SCPC)
2012 Diary of Consumer Payment Choice (DCPC).

But most individual consumers use one favorite payment instrument more than others



Source: 2012 Survey of Consumer Payment Choice (SCPC).

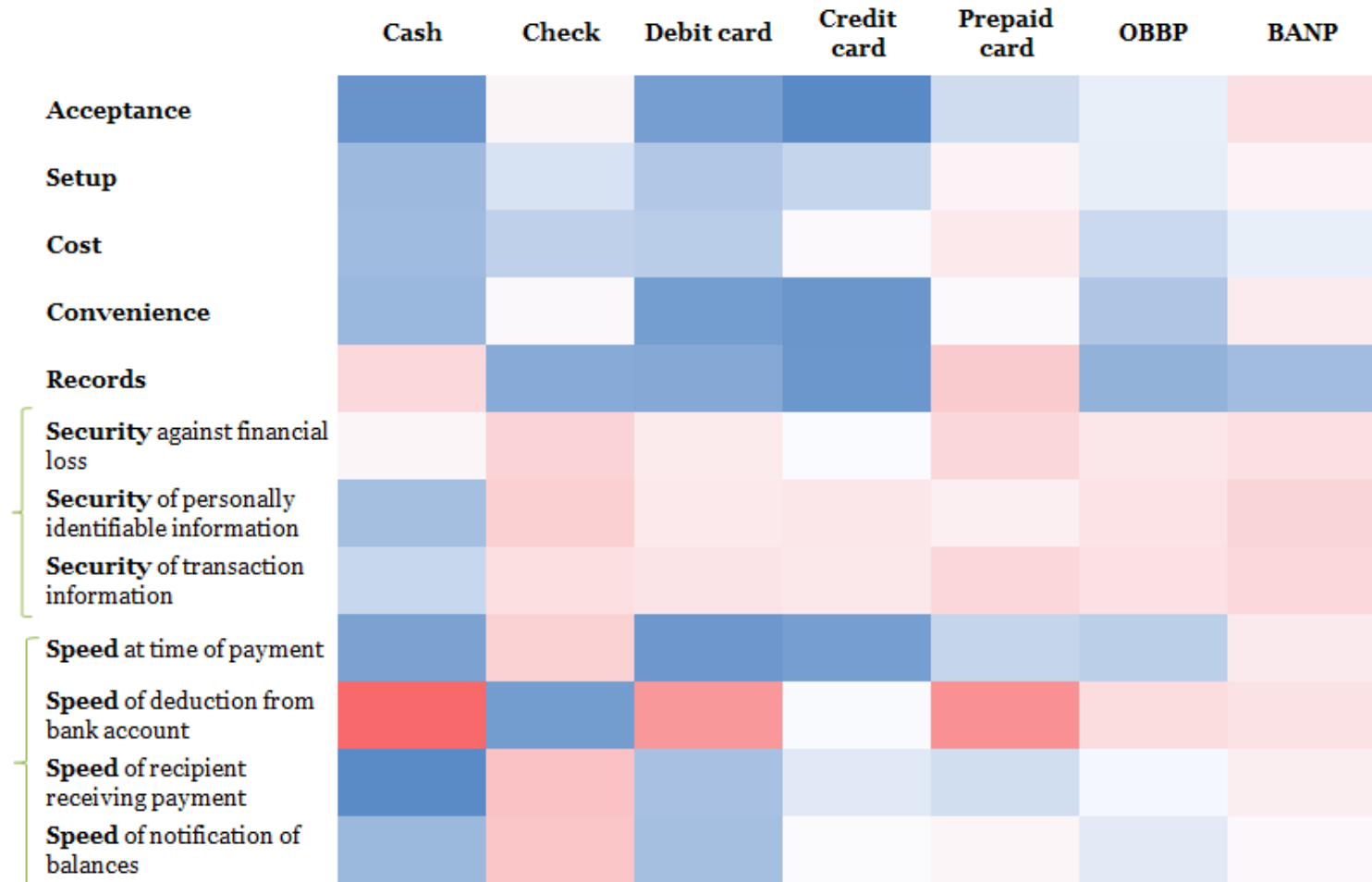
Percent of consumers

Key Determinants of Consumer Payment Choices



First, consumers must decide how to fund their payments, then choose an instrument

Ownership	Asset or Liability	Basic Money or Debt	Instrument (derivative media)	Physical trait
Private	Virtual Currencies	"Coins in circulation"	e-Coins	Electronic
Sovereign	Money (M1)	Digital	e-Dollar	
		Currency in circulation	Currency (Physical)	Paper / metal
		Travelers check	Travelers check	
		Demand deposit accounts & Other checkable deposits	Checks (Personal, Certified, Cashiers)	
			Money order	
			Online banking bill pay (OBBP)	Electronic
			Bank account number payment (BANP)	
			Direct deduction from income	
			Debit	Card
			Prepaid	
	Credit	Revolving	Credit	
		Nonrevolving	Charge	
			Text/SMS	Electronic
	Unknown/unspecified	???	<u>Nonbank</u> money order or prepaid card	Mixed

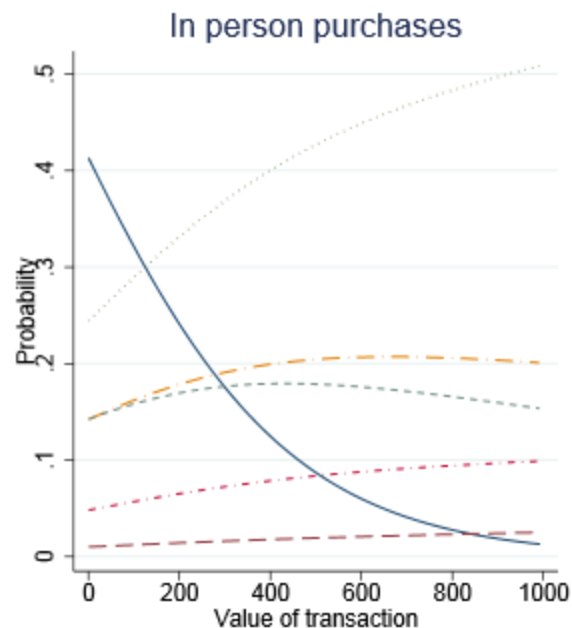
Consumers pick instruments based on the relative characteristics (and cash does well!)



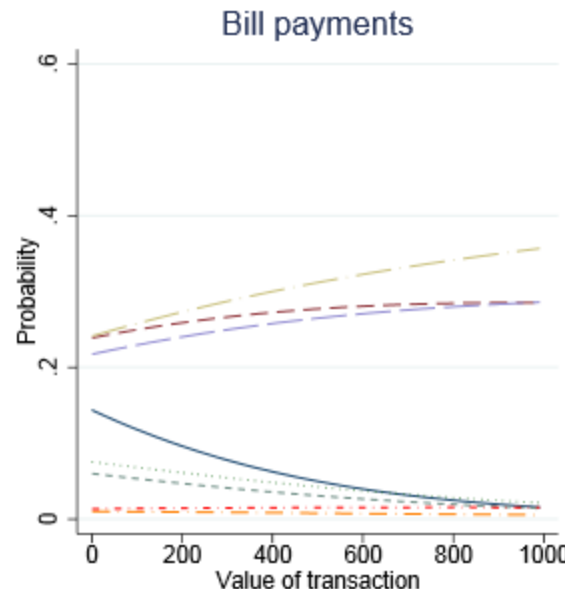
Source: 2013 Survey of Consumer Payment Choice.

 Relatively higher ratings
 Relatively lower ratings

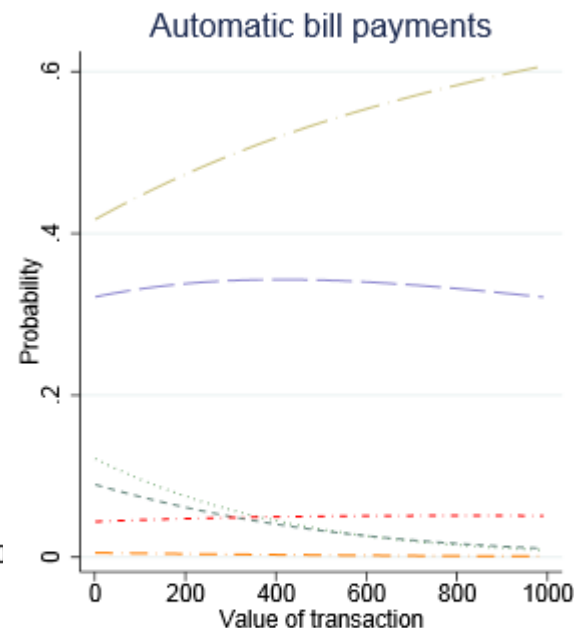
Overall, consumers vary their instrument choices by the type and value of each payment



Other category includes: prepaid, BANP, OBBP, money order, travelers' check, text message and other payments.



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



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

Source: Briglevics and Schuh (2014). "This is what's in your wallet... and here's how you use it". *Boston Fed Working Paper 14-5*.

Once in a while, consumers may be influenced by merchant effort to “steer” payment choice

US Merchant steering, 2012

- Cash discount: 1.7%
- Debit discount: 1.8%
- Credit surcharge: 1.2%

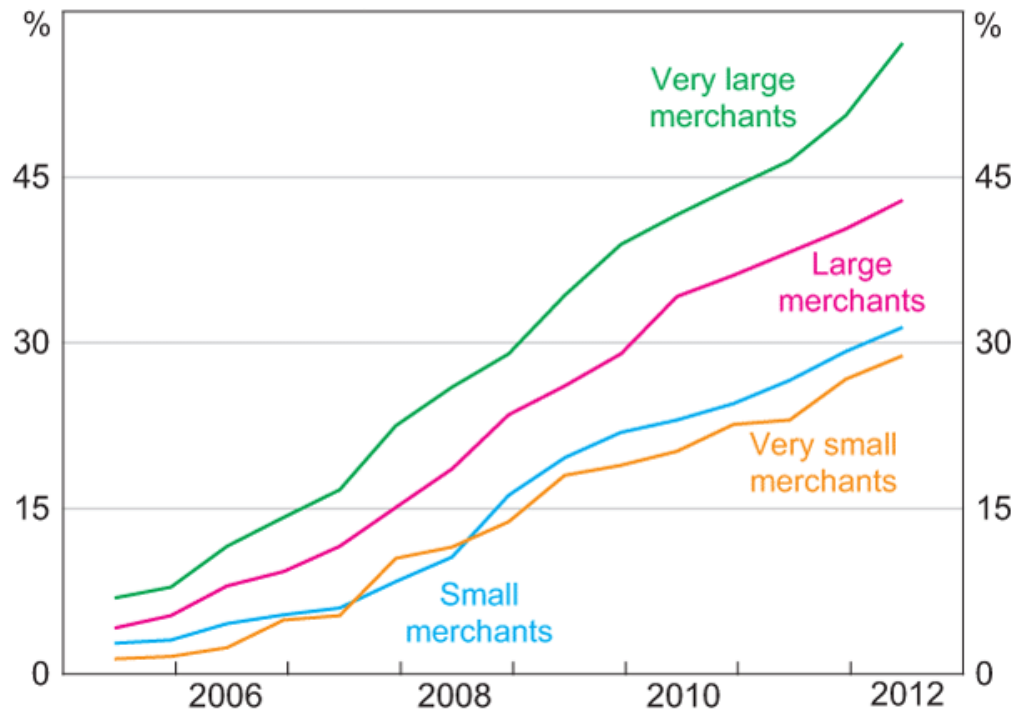
Source: Shy and Stavins (2014). "Merchant Steering of Consumer Payment Choice: Evidence from a 2012 Diary Survey." *Journal of Behavioral & Experimental Economics* 55.

IKEA UK Experiment, 2004

- Fixed fee surcharge of 0.7 pound per transaction.
- 37% of credit card transactions moved to debit.

Source: Schuh, Shy, Stavins, and Triest (2012). "An Economic Analysis of the 2010 Proposed Settlement between the Department of Justice and Credit Card Networks." *Journal of Competition Law & Economics* 8(1).

Australia credit card surcharging over time



Source: Reserve Bank of Australia, 2012

Consumers may respond to bank fees or steering in unintended ways (e.g. Reg II effect on debit)

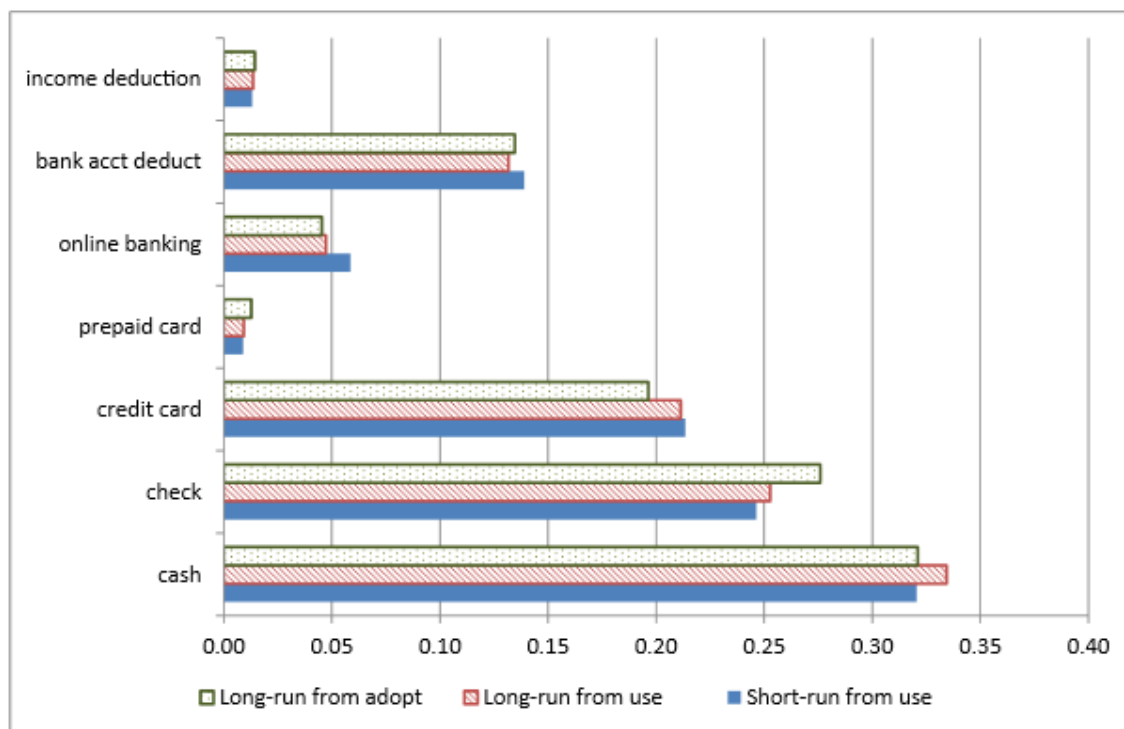


Figure 1: Changes in use of each payment instrument, measured in market share percentage points, in response to an increase in debit card use cost and adoption cost, by adoption adjustment (short-run or long-run).

Source: Koulayev, Rysman, Schuh, and Stavins (forthcoming). "Explaining adoption and use of payment instruments by US consumers." *RAND Journal of Economics*.

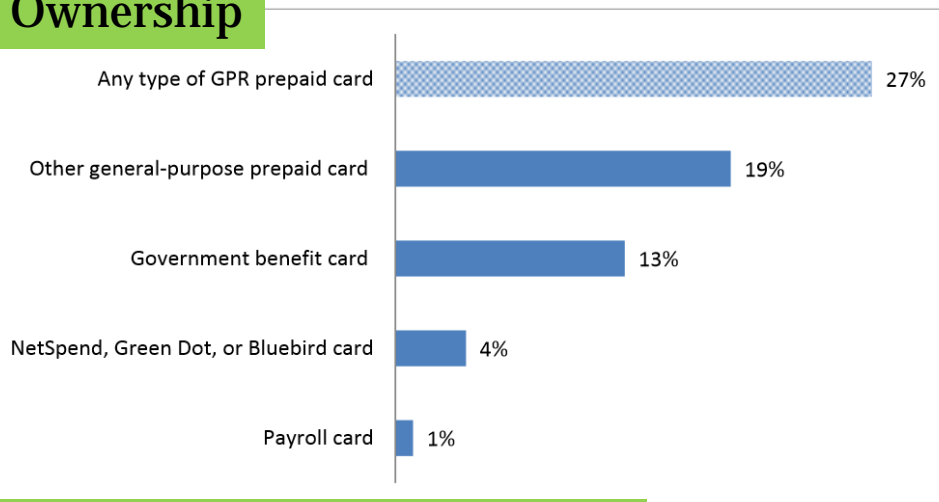
Innovations in the payments market

Consumers face a wide array of technologies that use multiple types of payment Instruments

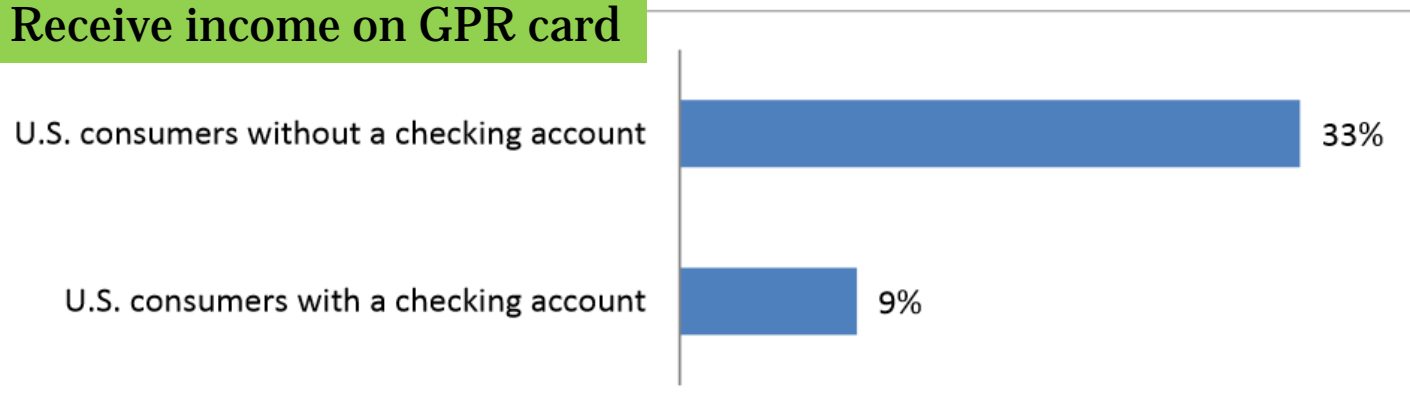
	Bank			Non-Bank			
	Debit	A2A	Credit	Debit	Prepaid	A2A	Credit
PayPal	✓		✓	✓		✓	
Bank Mobile App	✓	✓					
Mobile text/SMS							✓
Google Wallet	✓		✓		✓	✓	
Square	✓	✓	✓		✓		
Apple Pay	✓		✓		✓		
Android Pay	✓		✓		✓		
Venmo	✓		✓		✓	✓	
FB Messenger	✓	✓	✓		✓		
LevelUp	✓		✓		✓		
Dash	✓		✓		✓		

Some consumers are turning to GPR prepaid cards for payments...and “simple banking”

Ownership

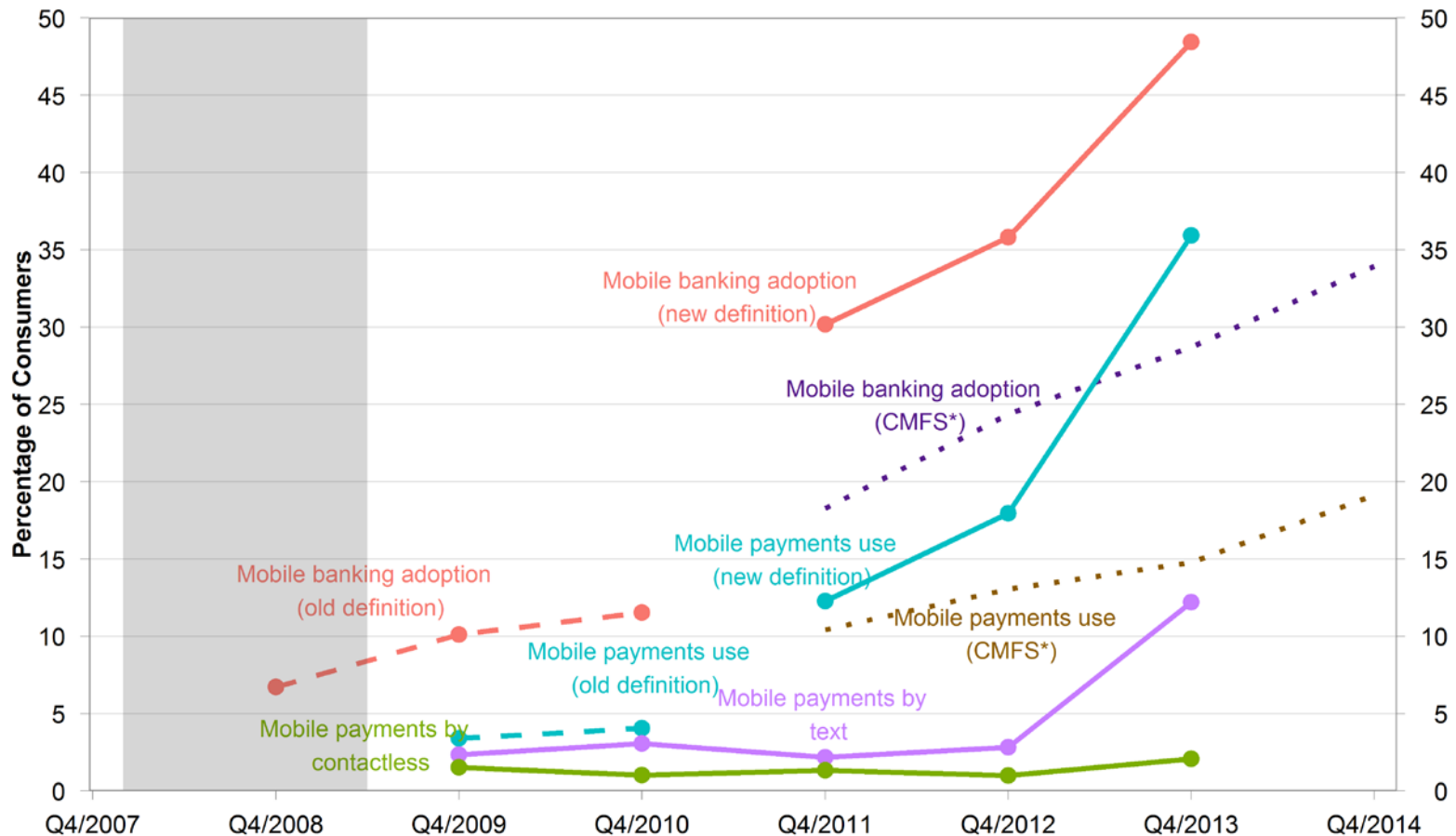


Receive income on GPR card



Source: Greene and Shy (2015). "Explaining adoption and use of payment instruments by US consumers." *Boston Fed Research Data Report 15-3*.

Mobile banking and payments started slowly, but many consumers are now using them



Source: 2008-2014 Survey of Consumer Payment Choice;
*Consumers and Mobile Financial Services, Federal Reserve Board.

Consumers now face complex innovations: what is Bitcoin and “virtual currency”?

Electronic money (e-money)

“...is broadly defined as an electronic store of monetary value [sovereign currency issued and controlled by the government] on a technical device that may be widely used for making payments to entities other than the e-money issuer. The device acts as a prepaid bearer instrument which does not necessarily involve bank accounts in transactions. E-money products can be hardware-based or software-based, depending on the technology used to store the monetary value.” (European Central Bank)

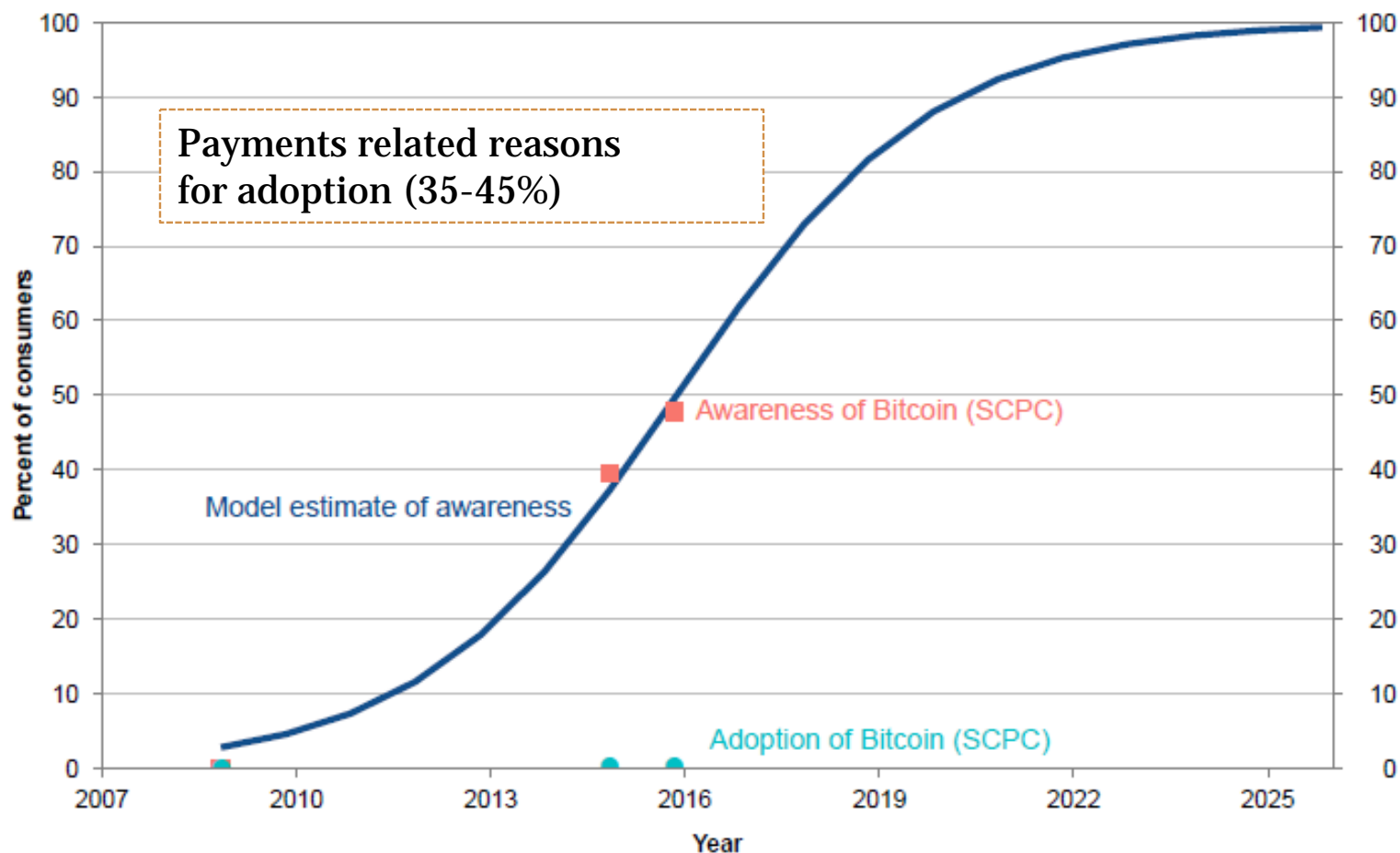
Virtual currency (VC), e.g. Bitcoin

“...is a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.” (European Central Bank)

NOTE: Electronic payment (\$)

Authorization of payment with currency (\$) via electronic networks using an instrument such as a debit card, prepaid (“debit”) card, online banking, or BAN that is tied to a DDA or other “checkable” deposit account. (SS)

Only half of consumers have heard of Bitcoin, and very few adopt and use it for payments



Method: Bass (1969). "A new product growth for model consumer durables". *Management Science* **15** (5).

Source: 2014-2015 Survey of Consumer Payment Choice with Virtual Currency Oversample.

Traditional banking at a crossroad

Banking competition and virtual currency

Market for Payment Services

Market for Lending Services

Non-bank payment services

PayPal,
NetSpend,
Bluebird,
Google Wallet,
Amazon Payments,
Square,
Venmo, etc..

TRADITIONAL BANKS

Take
Deposits

(fractional reserve)

Make
Loans

Peer-to-peer brokers

Prosper, Kiva, Lending Club, etc.

Payment Card
Networks

Narrow Banks

GreenDot BHC:
Prepaid, Bank
(100% reserve)

???

VC/\$ payments networks

Ripple

VC/\$
exchanges
(and DI's)

Coinbase,
Circle, Bter,
Coin-e
itBit (bank)

???

PRIVATE MONEY

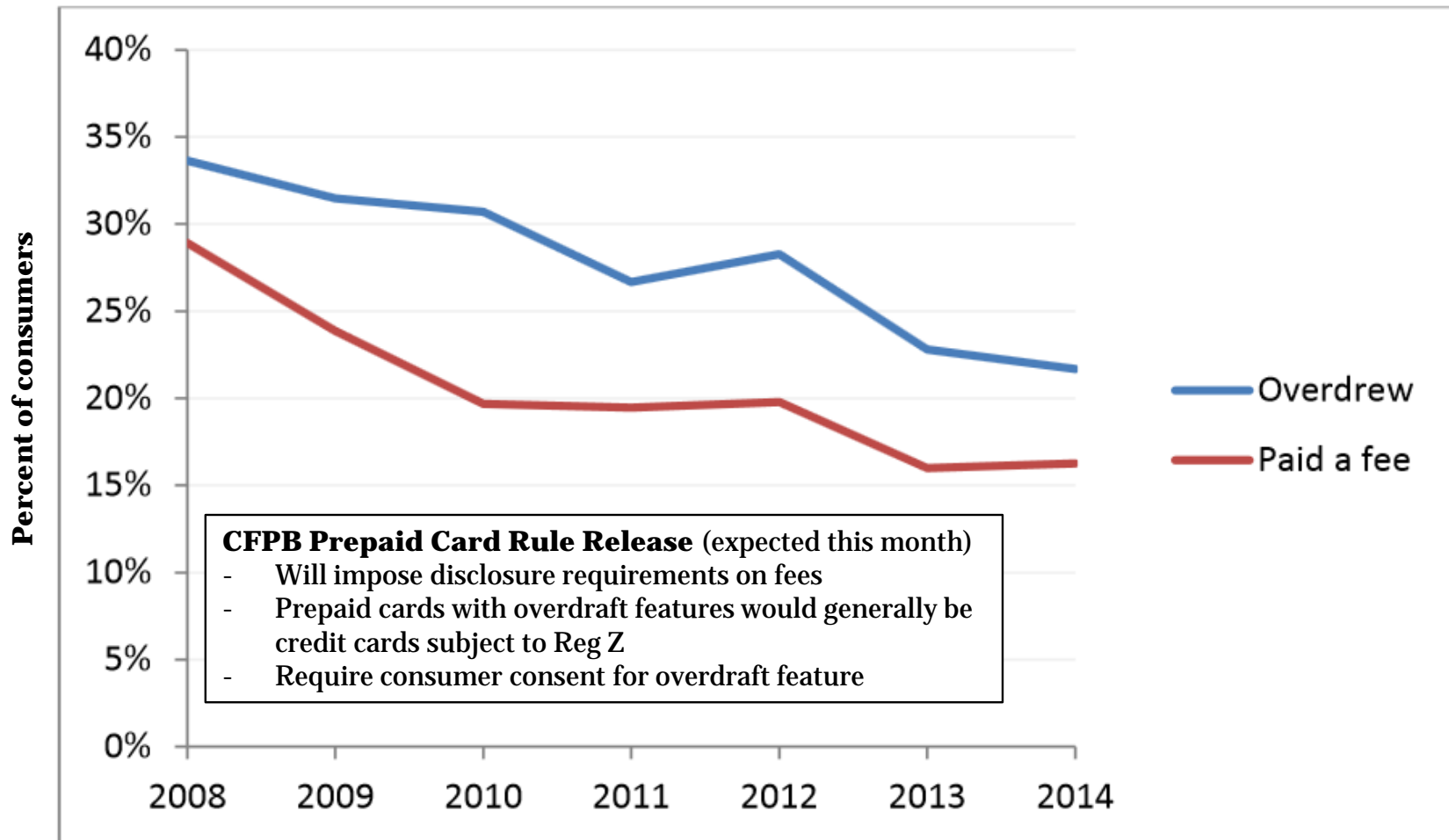
Consumer Financial Management

Banks generate large revenues (estimated) from cards but not other types of payments

Instrument	Consumer Cost To Pay (\$)	Merchant Cost to Receive (% of sale)	Bank Revenue (\$ per year)
Cash	0 to 6 each for ATM fees	½	7½ billion
Check (personal)	< 1	1¼	?
Certified & cashier's checks, money orders, traveler's checks	0 to 8 each	1¼	?
Debit card	0 for card 0 to 50 for OD fees	< ¼ to 5 (varies by \$ paid)	Interchange = 15 billion OD fees = 13-32 billion
Credit/charge cards	0 to 100 for annual fees [-¾ to 30 percent for interest]	1½ to 3½	Interchange = 60 billion Interest = 25 billion Fees = 8 billion
Prepaid card	5/month	1½ to 3½	Interchange = 5½ billion Fees = 5-10 billion
OBBP	0	0	0
BANP	0	0	0
ACH (between banks)	0 to 25 (varies by delivery speed)	0	1½ billion
FedWire	25 to 40	[\$17 to \$25]	1½ billion

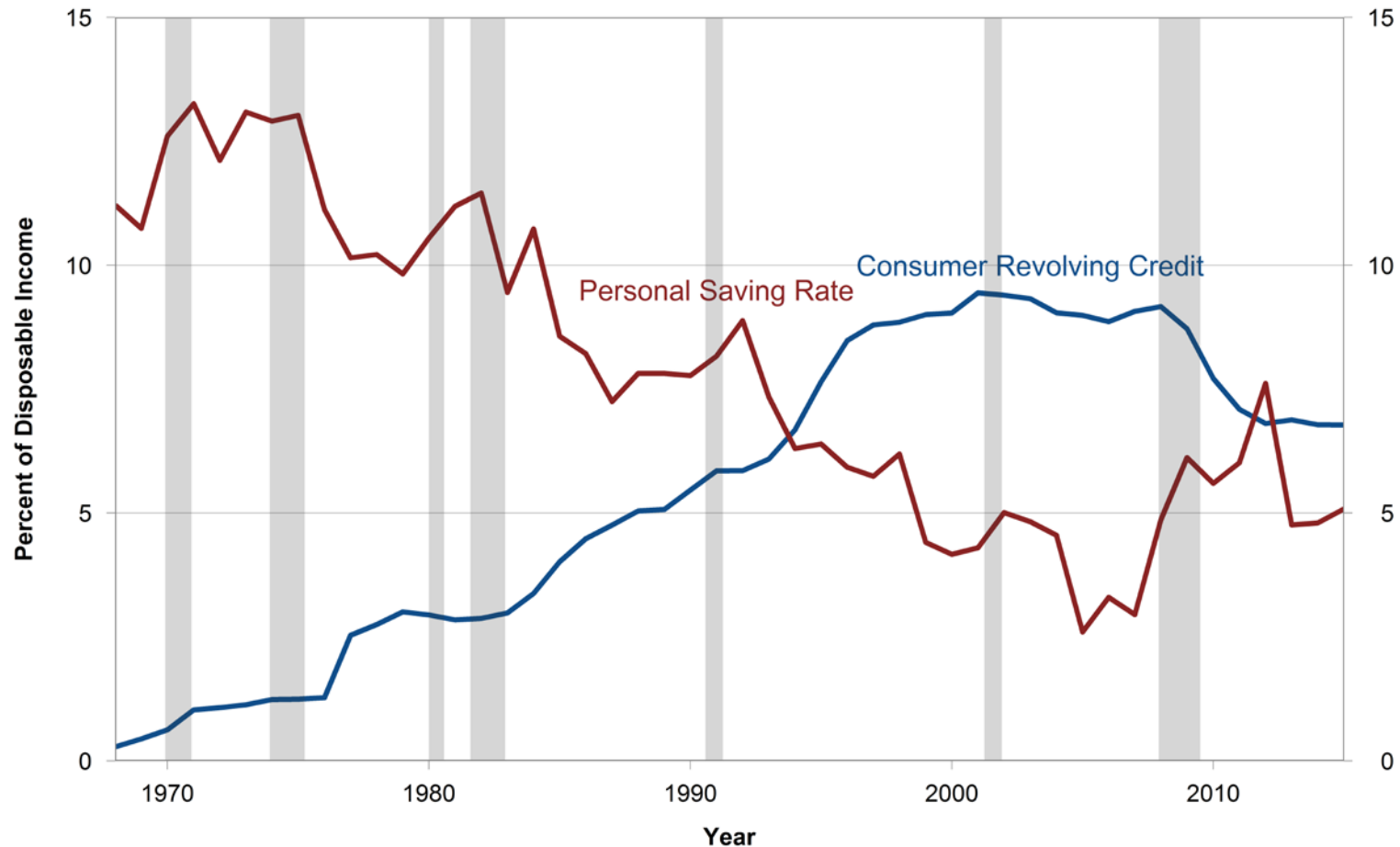
Source: Authors's calculations and estimates from multiple sources, 2014 (available on request).

Some consumers are still paying overdraft fees despite recent regulatory reforms...



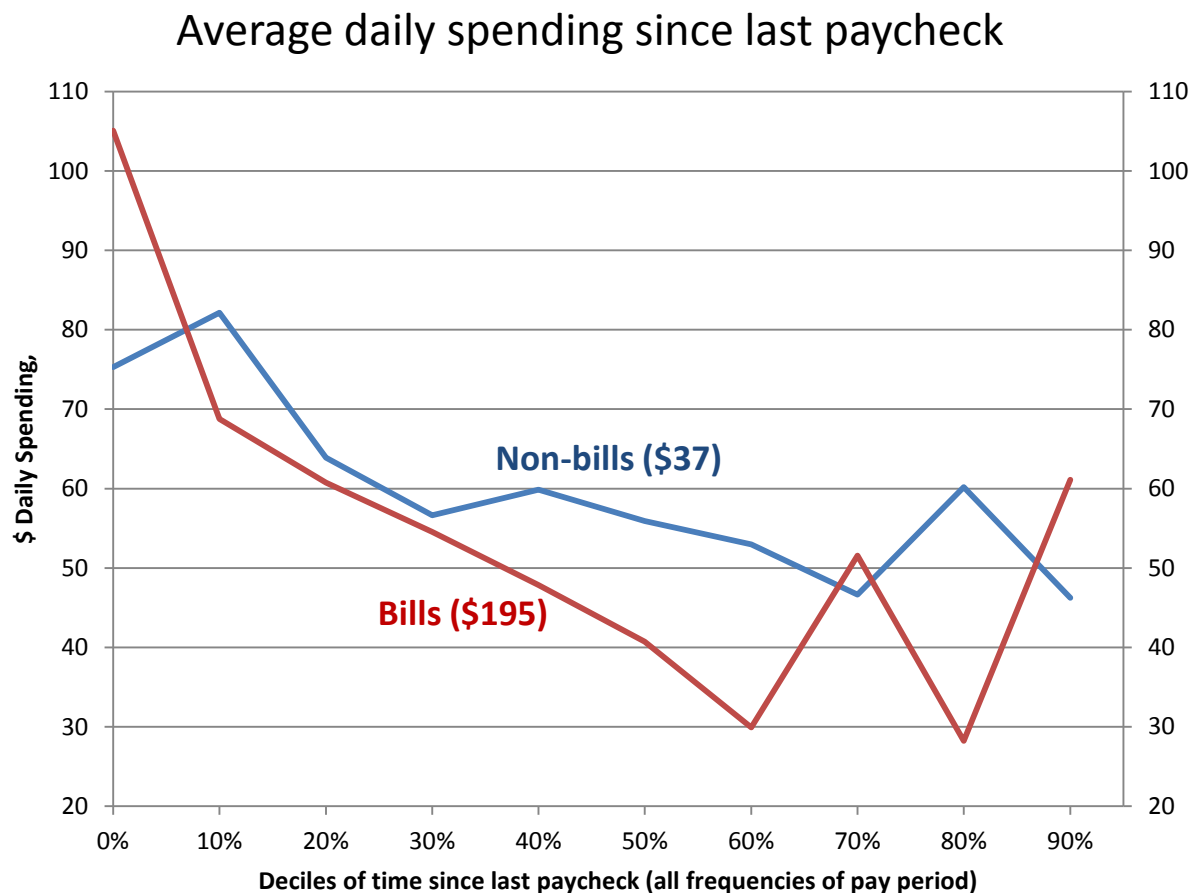
Source: Greene and Luo (2015). "Consumers' Use of Overdraft Protection". *Boston Fed Research Data Report 15-8*.

...and credit card debt still is high despite reforms and financial crisis



Source: Federal Reserve Board/Haver Analytics.

For some reason, consumers tend to spend more money right after they receive their income



Source: 2012 Diary of Consumer Payment Choice.

Apparently, consumers could use help managing their personal finances better!

- www.mint.com
 - “Mint is great! *Every bank should have this...*” (customer review on former home page)
 - “***Budgets that work*** – Create budgets you can actually stick to, and see how you are spending your money.”
- Other personal financial management (PFM) tools
 - YNAB (You Need a Budget); GnuCash; MoneyDance; BudgetSimple; Personal Capital; BillGuard; Key Ring; RetailMeNot; PriceGrabber; PriceBlink

Takeaways and predictions

Takeaways

1. **It's not the money, it's the technology...**

- *For consumers, the Payments Transformation is primarily about technology, not economic or financial improvements (except virtual currency and non-bank credit payments?)*
 - ✦ *Consumers want more tech options and “convenience” – but without having to pay for it!*

2. **May need a new business model for payments?**

- *The economics of electronic networks and public policies are disrupting banks' traditional business models*
 - ✦ *“Faster payments” may add even more pressures*

3. **PFM services would be a good start**

- *Consumers may need more help with personal financial management of their money than another convenient way to pay*

Predictions

1. Cash is not dead and will not “die” anytime soon because consumers and merchants like it so much.... *unless others succeed in “killing” it*
 - ✦ ➔ Embrace cash and reduce cash costs to raise profits!
2. Bitcoin and other private monies likely will not become widespread.... *because of opposition to their disruptive forces*
 - ✦ ➔ But don’t overlook the value of distributed ledger technology!