

U.S. Consumer Payment Choice

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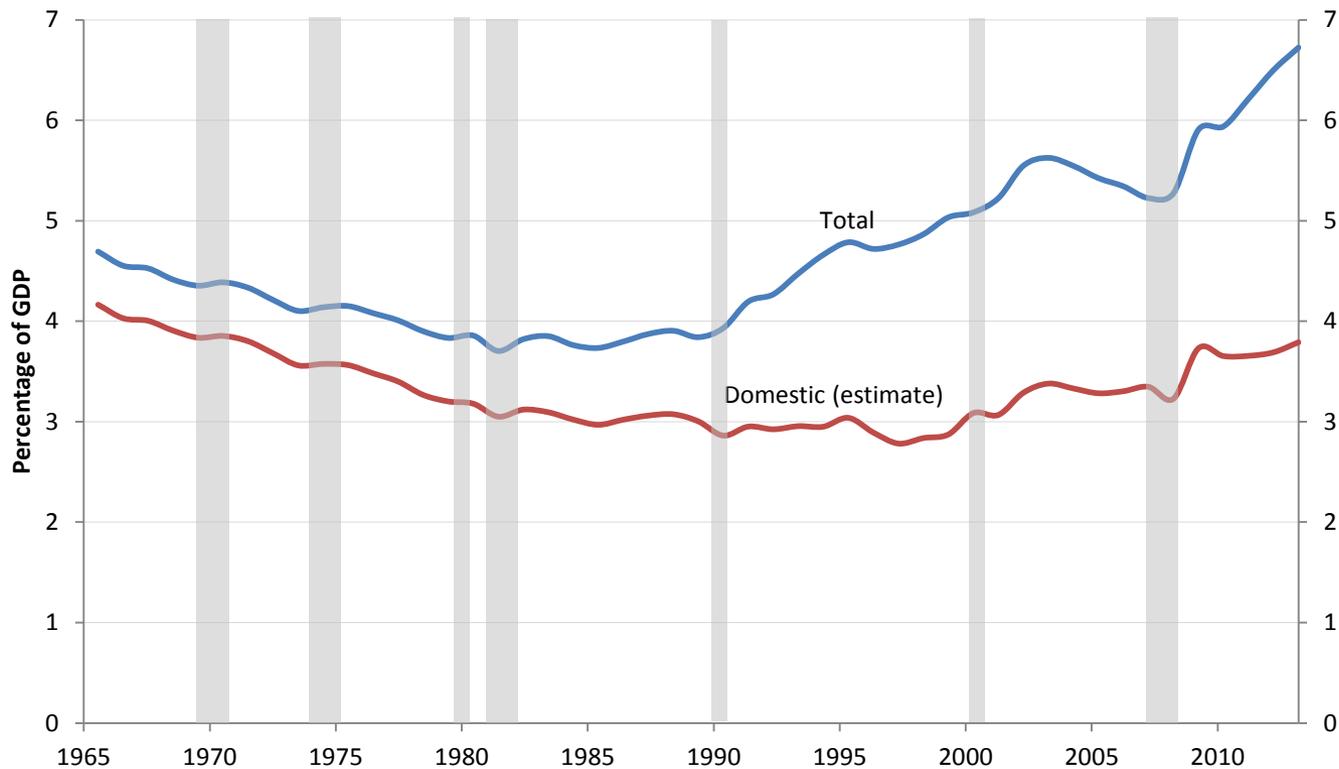


Presentation Overview

- Recent history of U.S. money and payments
- Consumer payment choices
 1. Adoption: “*This is What’s in Your Wallet...*”
 2. Use: “...and Here’s How You Use It”
- Determinants of consumer behavior
- Special topics
- Concluding remarks

U.S. Money and Payments

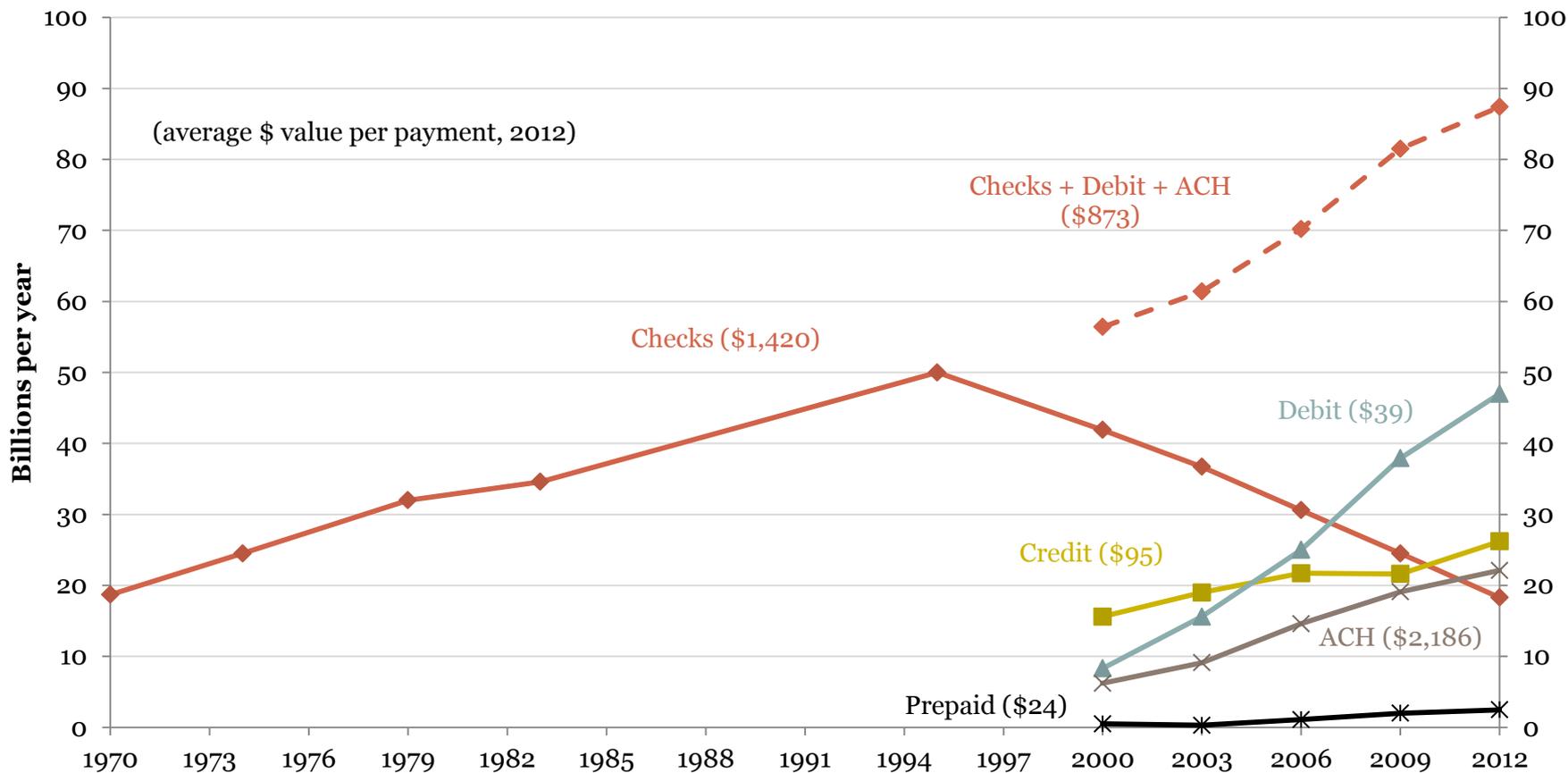
U.S. Currency in Circulation



Source: Bureau of Economic Analysis / Haver Analytics, Federal Reserve Board / Haver Analytics, authors' calculations.

Number of U.S. Noncash Payments

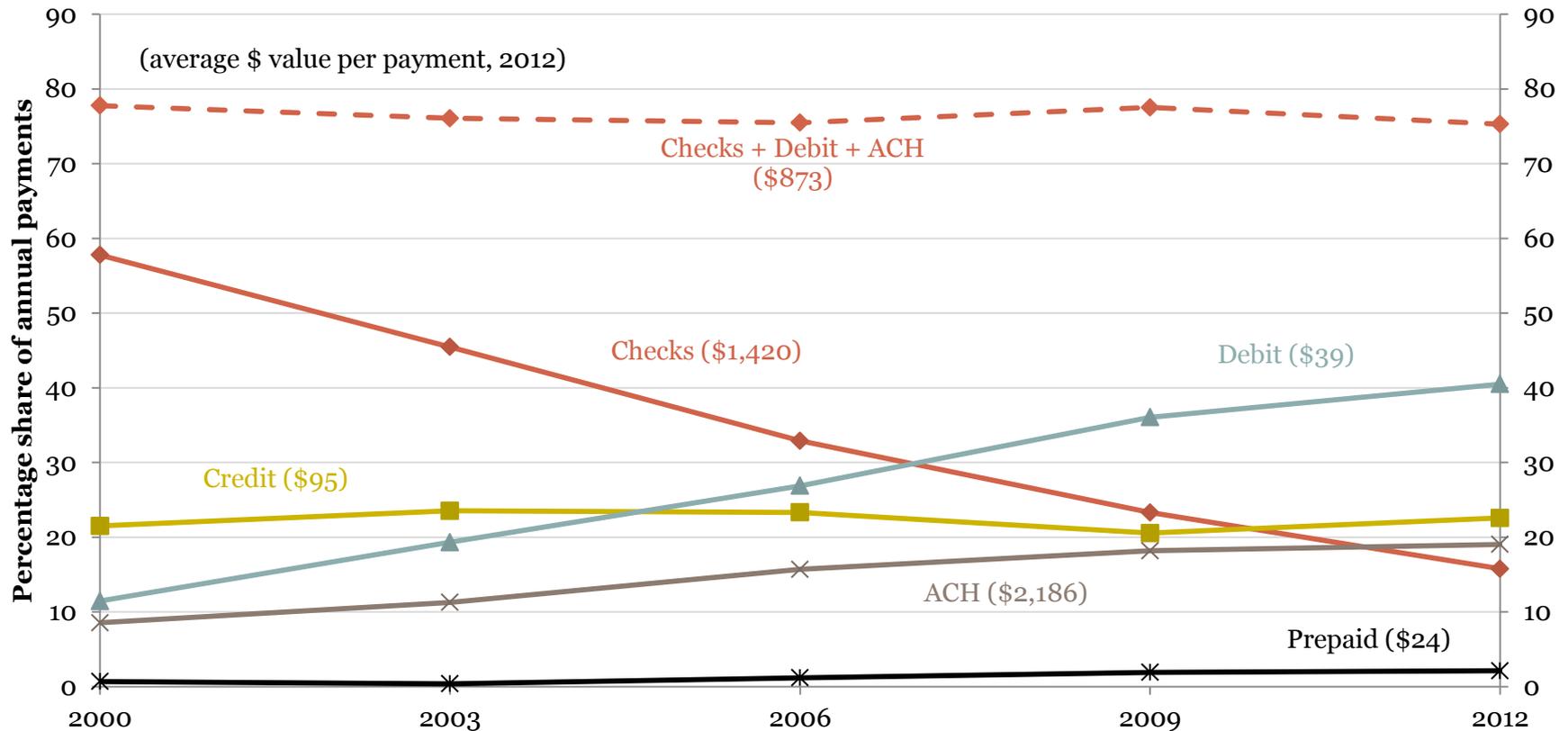
All sectors (household, business, government)



Source: Federal Reserve Payment Study (FRPS)

Share of U.S. Noncash Payments

All sectors (household, business, government)



Source: Federal Reserve Payment Study (FRPS).

This Is What's in Your Wallet....
(consumers only)

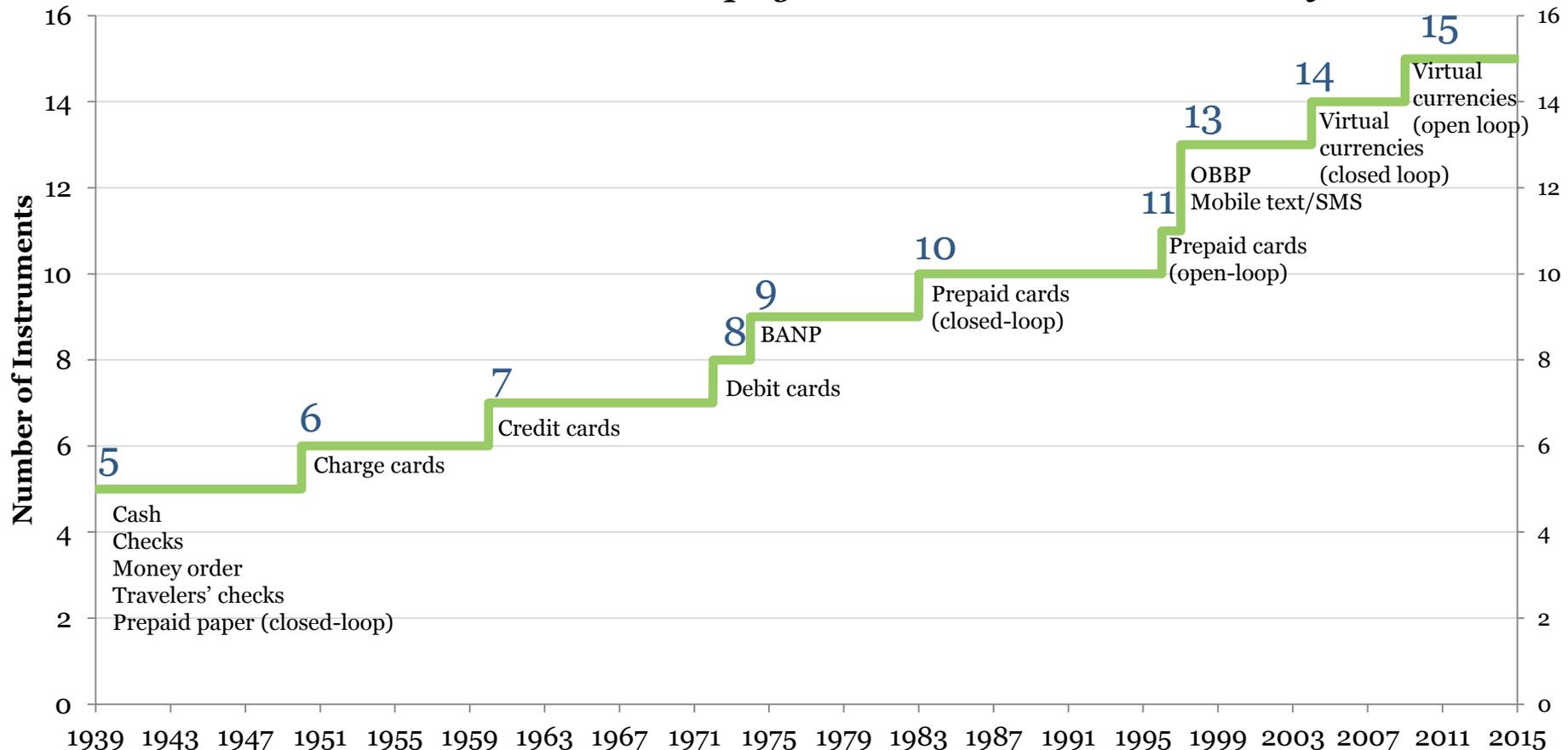
Cash Holdings

	Mean	Median
Total	464	69
On person (“wallet”)	73	29
On property	401	10
Excluding large-value holdings (>\$1,200)	174	62
On person (“wallet”)	61	25
On property	117	5

Source: 2012 Survey of Consumer Payment Choice

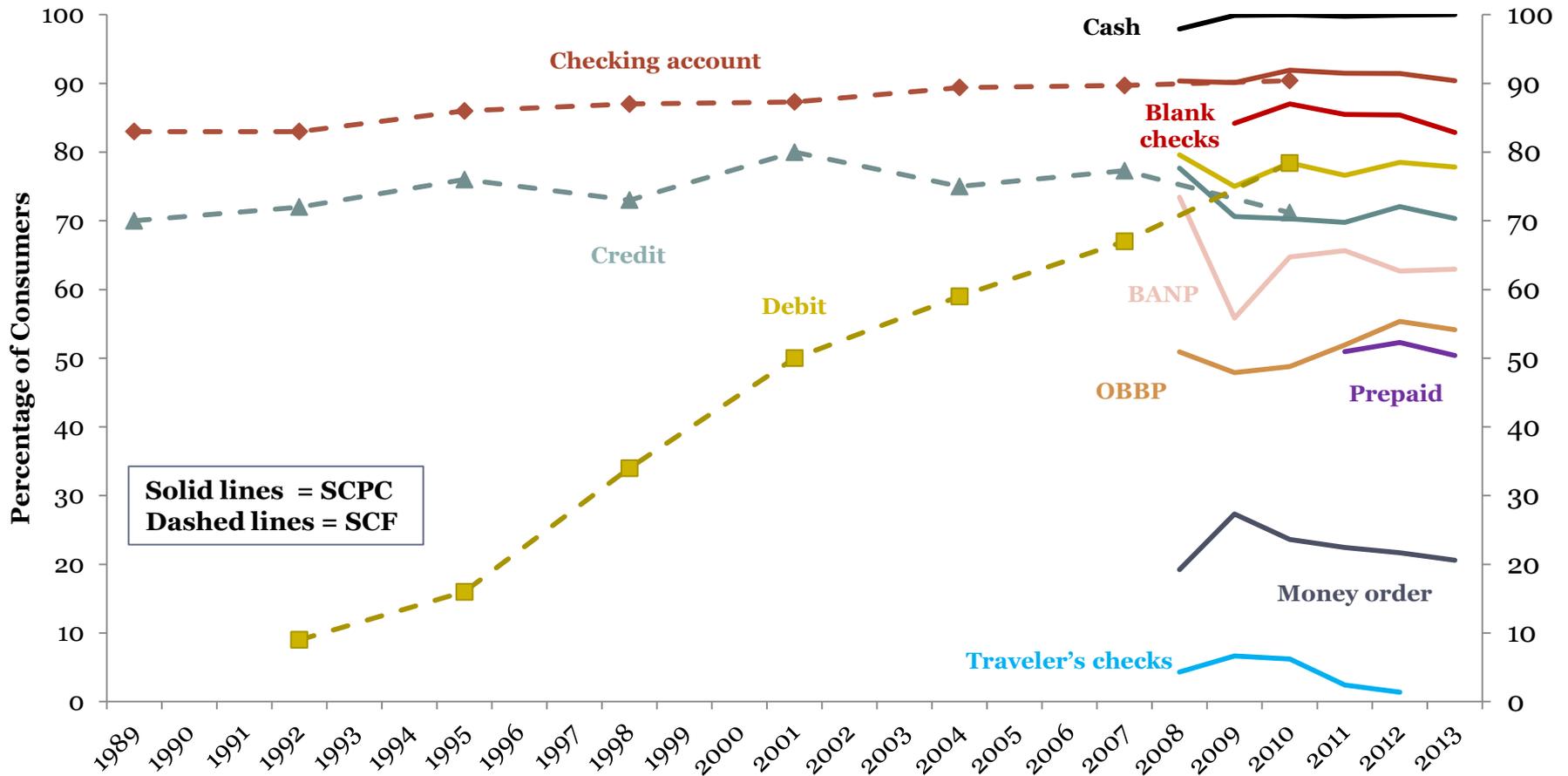
Availability of Payment Instruments

U.S. consumers have more payment instruments to choose from



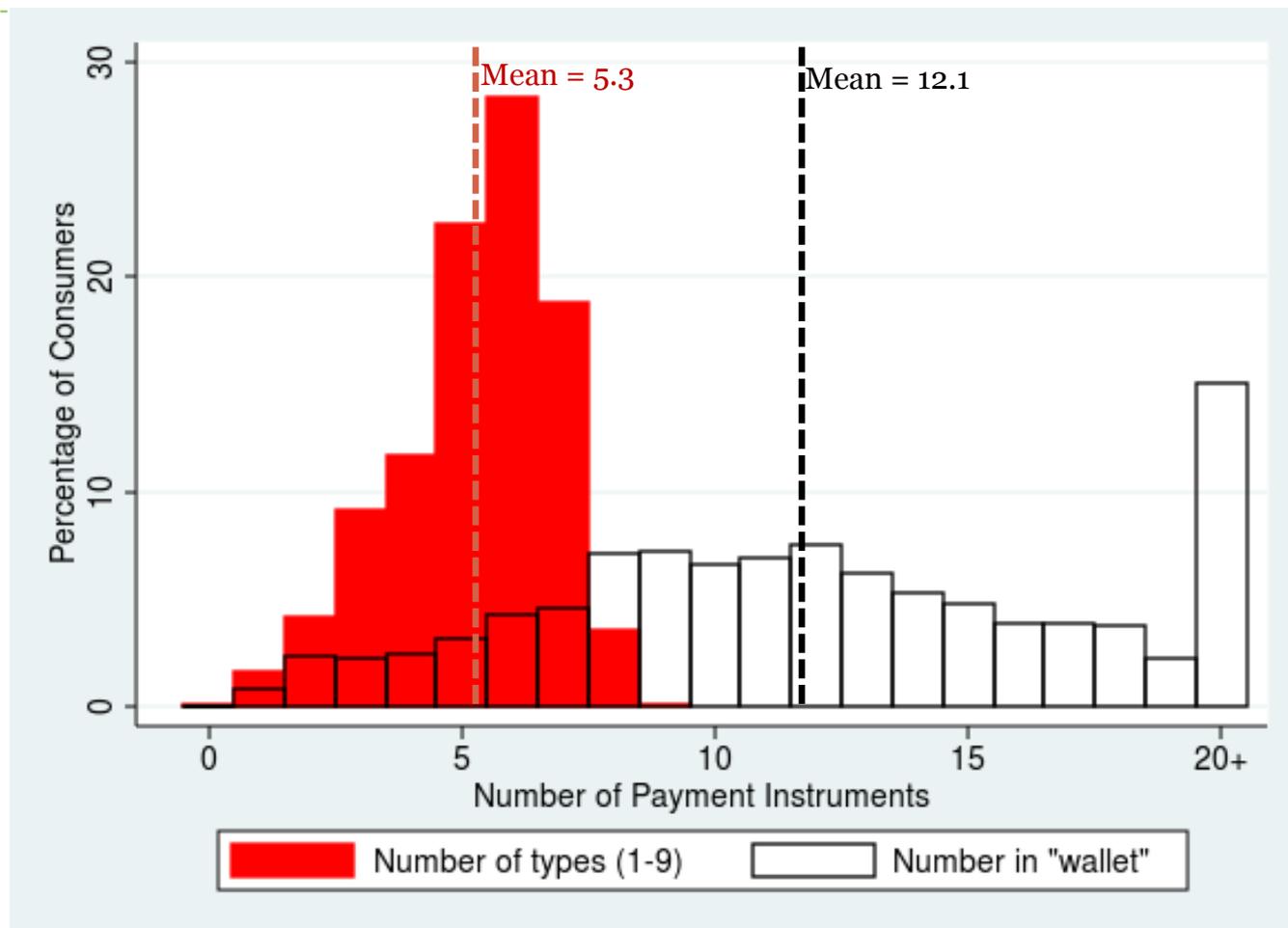
Source: Author's research.

Aggregate Adoption of Payment Instruments



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

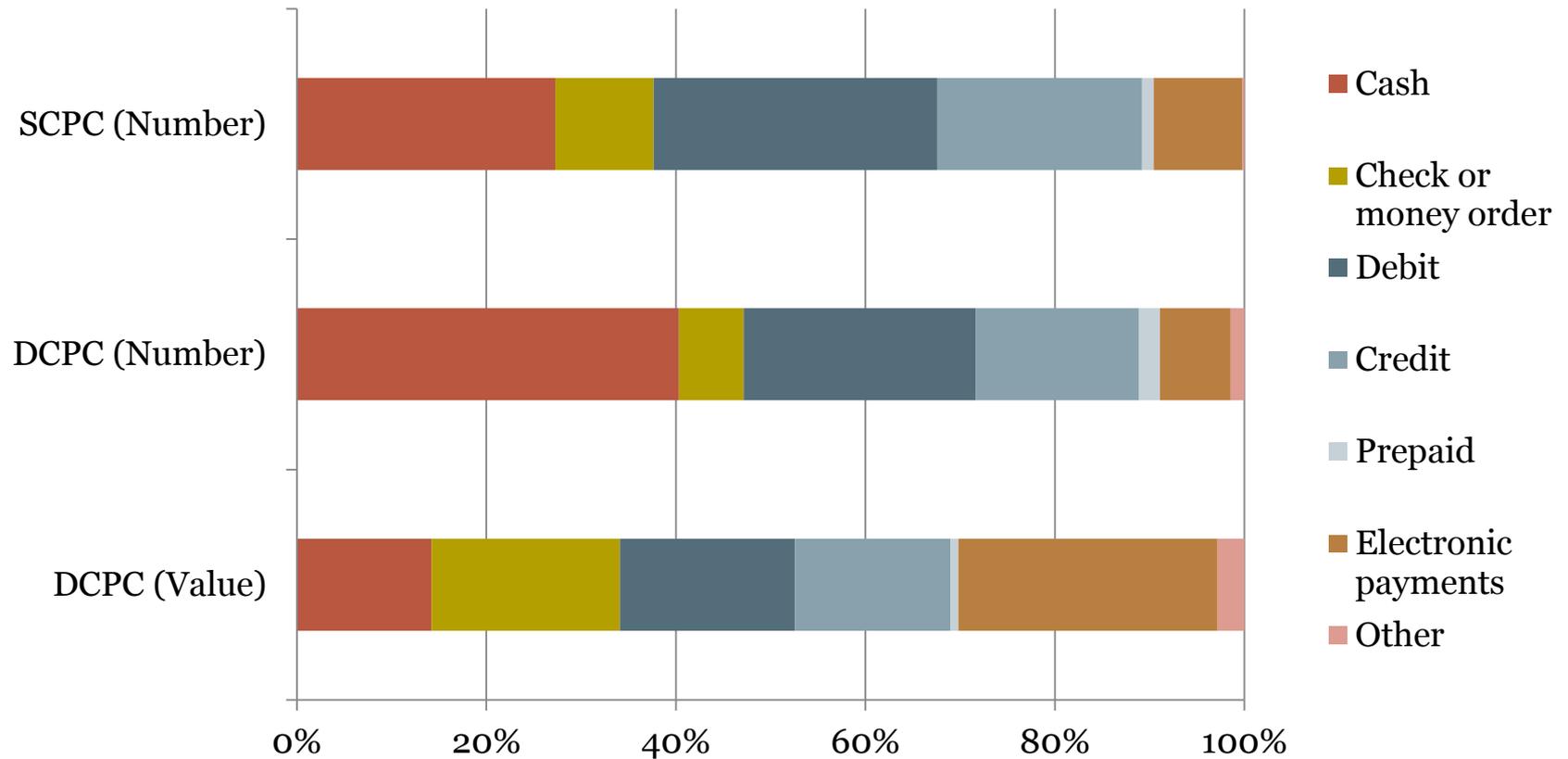
Individual Adoption of Payment Instruments



Source: 2012 Survey of Consumer Payment Choice

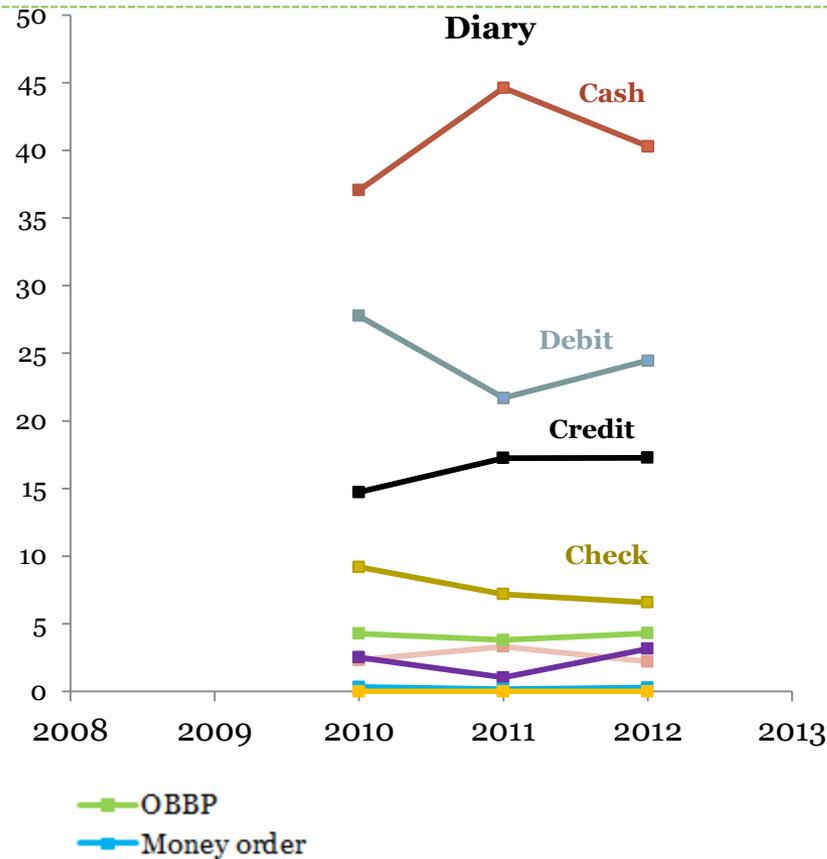
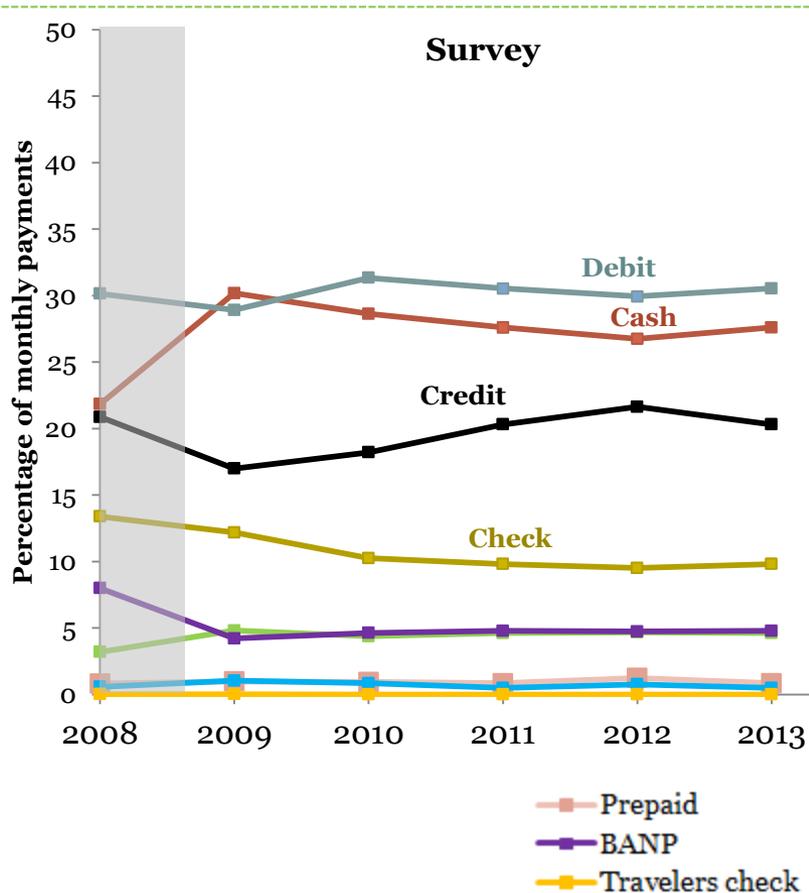
...and Here's How You Use It

Use of Payment Instruments, 2012



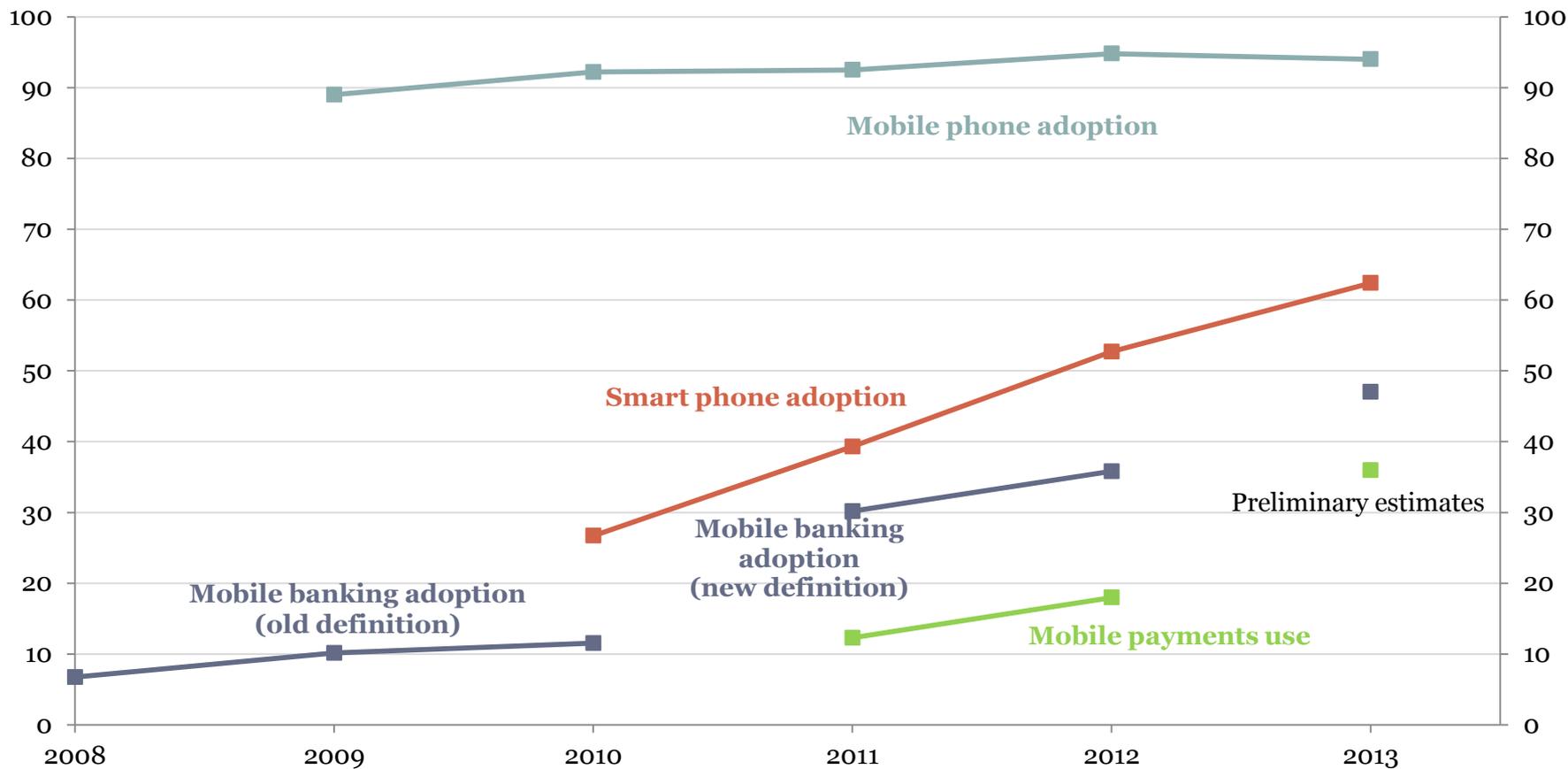
Source: 2012 Survey of Consumer Payment Choice; 2012 Diary of Consumer Payment Choice

Historical Use of Payment Instruments



Source: 2008-2013 Survey of Consumer Payment Choice (2013 numbers preliminary); 2010-2012 Diary of Consumer Payment Choice

Mobile Banking and Payments



Source: 2008-2013 Survey of Consumer Payment Choice

Determinants of Consumer Payment Behavior

Relationship Between Money and Payments

Macro/monetary view

Micro/IO view

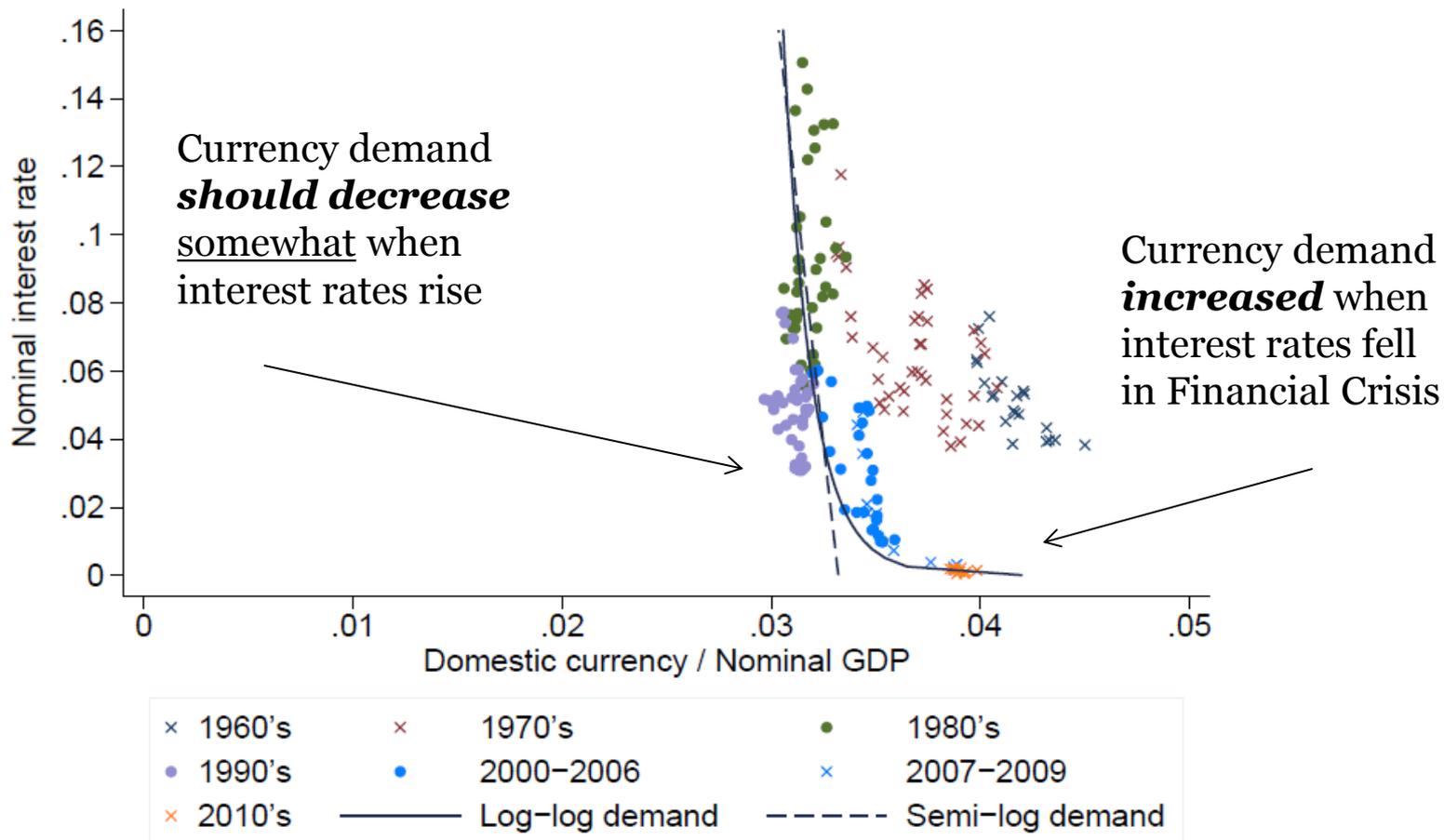
Asset or Liability	Basic Money or Debt	Instrument (derivative media)	Physical trait	
Money (M1)	Currency in circulation	Currency	Paper / metal	
	Travelers check	Travelers check		
	Demand deposit accounts & Other checkable deposits	Checks (Personal, Certified, Cashiers)		
		Money order		
		Online banking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

Source: Author's analysis.

Demand for Money and Payments

- **Money/transaction balances (M1 + M2 “sweeps”)**
 - Income (individual and household)
 - Interest rates/asset returns (opportunity cost)
 - Uncertainty, volatility, etc.
- **Cash/currency (in addition to above)**
 - Withdrawal labor/effort (transaction cost)
 - Risk of theft/loss
- **Noncash payment instruments**
 - Two-step process: 1) adoption; 2) use
 - Acceptance
 - Cost (price)
 - Other characteristics (e.g., convenience, security, speed, records)
- **All instruments**
 - Demographics (age, gender, race, marital status, HH, etc.)
 - Financial literacy (education, math, experience, etc.)

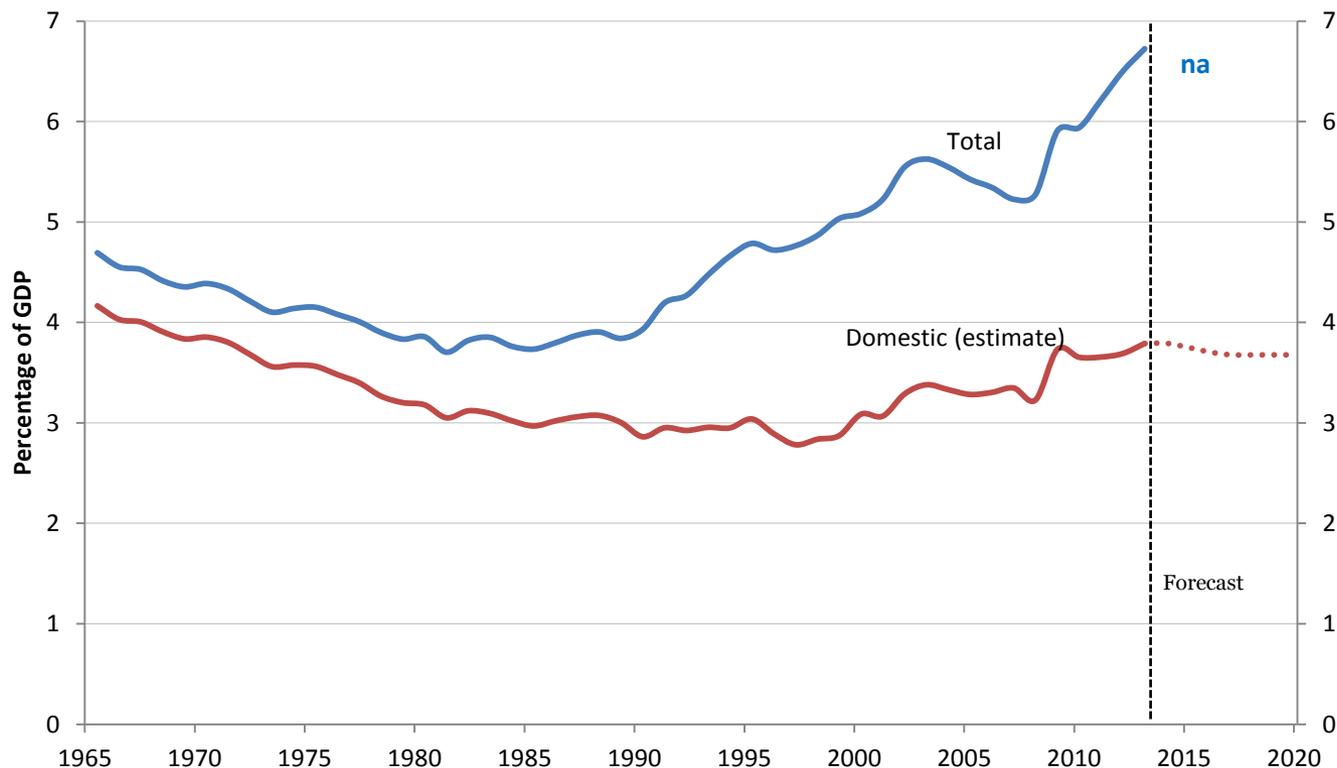
U.S. Domestic Currency and Interest Rates



Source: Briglevics and Schuh (2012).

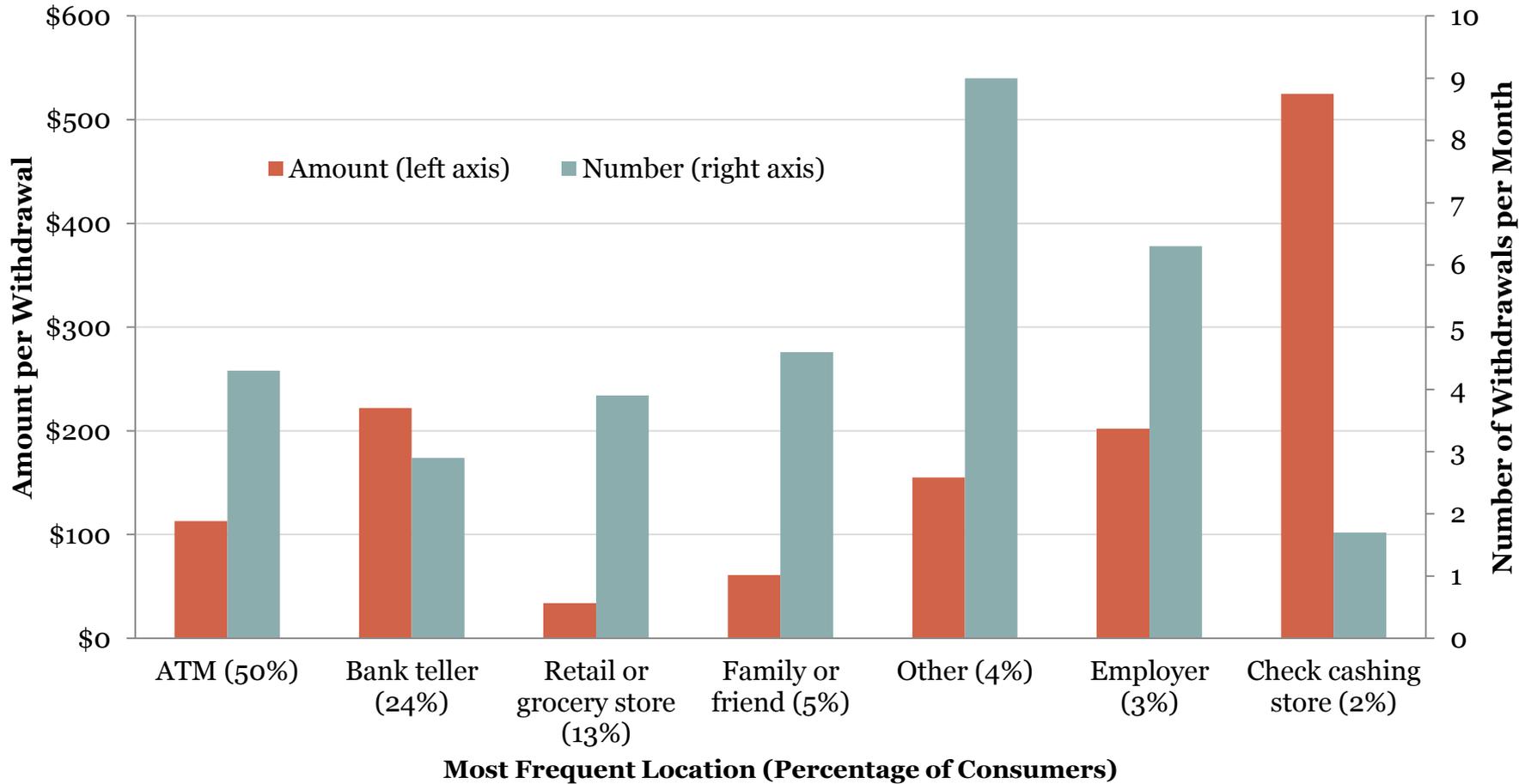
U.S. Domestic Demand for Cash

Should return to its long-run average share of GDP as interest rates rise

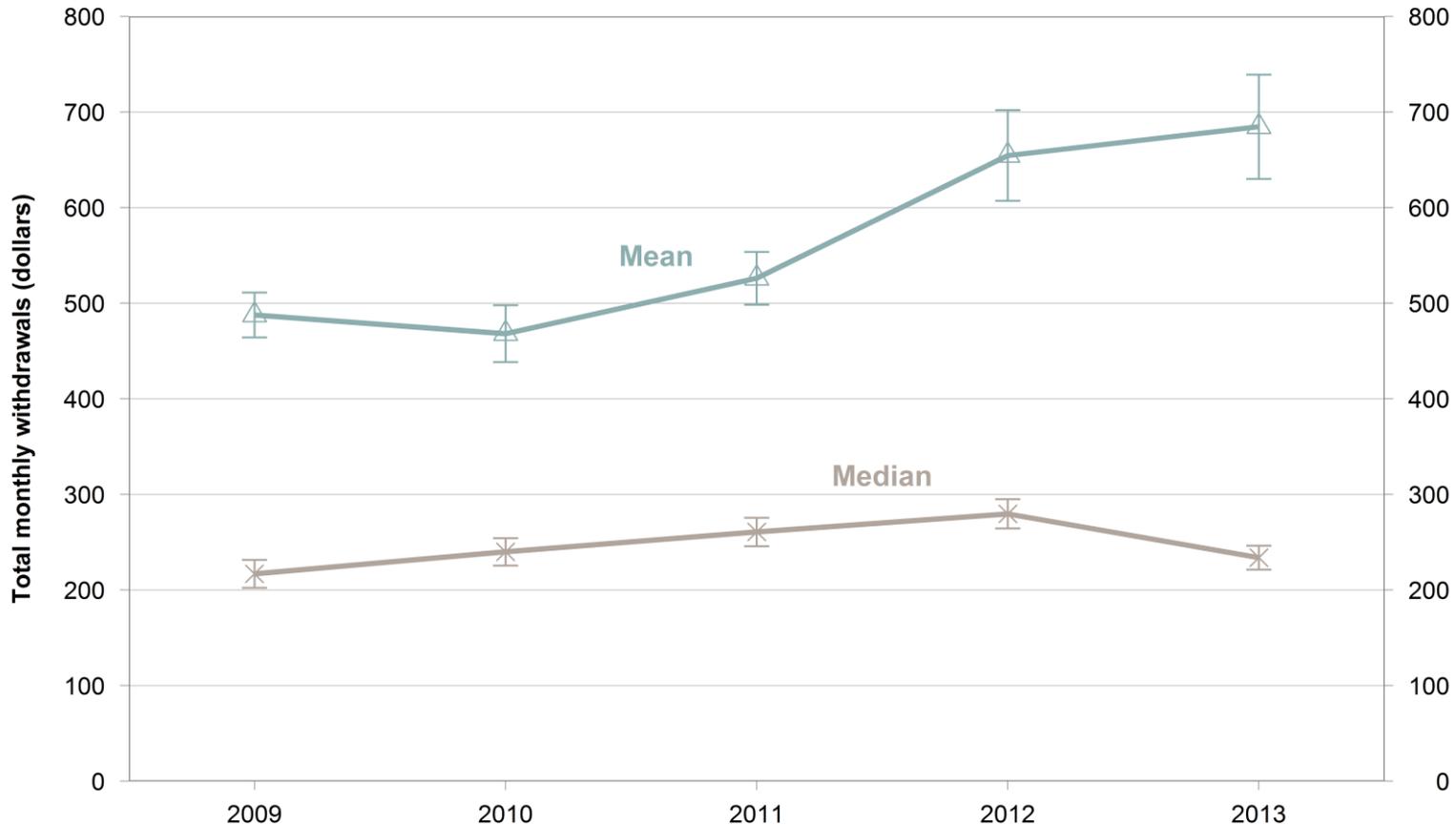


Source: Bureau of Economic Analysis / Haver Analytics, Federal Reserve Board / Haver Analytics, authors' calculations.

Consumer Cash Withdrawals

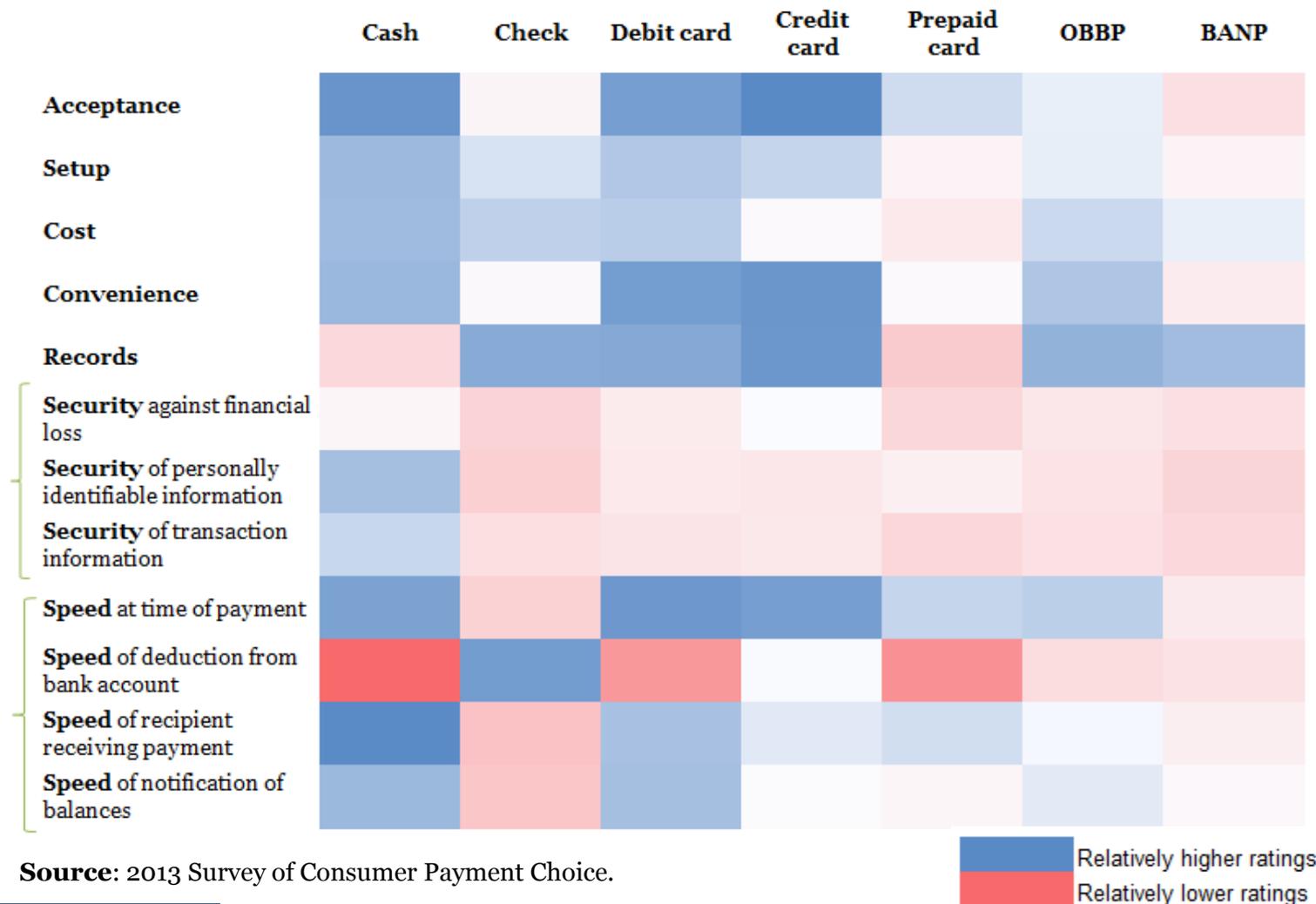


Consumer Cash Withdrawals



Source: 2009–2012 Survey of Consumer Payment Choice

Consumer Ratings of PI Characteristics



Source: 2013 Survey of Consumer Payment Choice.

Special Topics

\$100 Bills in Pocket, Purse, or Wallet

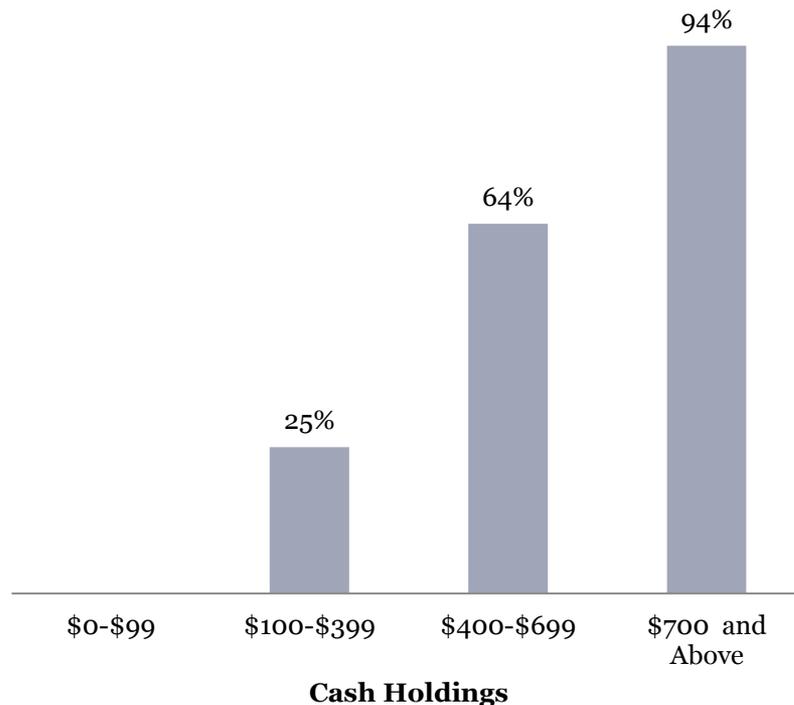
5% of U.S. adults carry 1 or more \$100 bills....

- ...but only 22% carry \$100 or more. Key factors:
 - Higher income
 - Got cash from wages/employer
 - Have CC but not CC debt

Demand for \$100 bill...

- ...is much harder to identify from five \$20s, ten \$10s, etc.
 - “Thin wallet?” (see Fig →)
 - Got cash from bank teller
 - Young (≥ 25 years)
 - Zero interest checking acct?

Probability of Carrying a \$100 Bill, by Cash on Person

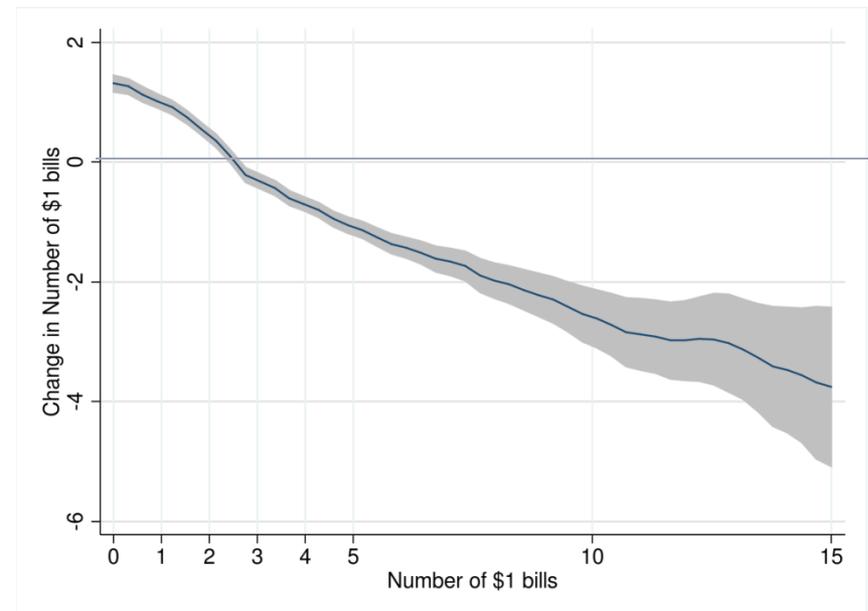


Source: 2012 Diary of Consumer Payment Choice

\$1 Bills in Pocket, Purse, or Wallet

- 2-3 singles suffice
 - On any given day, 37% of U.S. adults carry no singles
- Changes in \$1 bills:
 - Those with few or no 1s tend to acquire some
 - Those with many 1s tend to use (or lose) some
- Relationship appears independent of total cash carried.

Change in number of \$1s



Source: 2012 Diary of Consumer Payment Choice

U.S. Consumers and Virtual Currency, 2014

% of Respondents (unweighted responses)	All Virtual Currency	Bitcoin Only	Other Virtual Currency Only
Heard of virtual currency	47	43	1
Ever owned virtual currency	1.4	0.1	0.1
Currently own	0.8	0.1	0.1
Previously owned	0.6	0.0	0.0
Used in last 12 months	0.4 ^s	0.04 ^s	0 ^s
\$ per owner			
Value of virtual currency owned, mean	850 ^s	1250 ^s	266 ^s
Value of virtual currency owned, median	69 ^s	1250 ^s	30 ^s

^s Fewer than 5 observations.

Source: 2013 Survey of Consumer Payment Choice, preliminary and unofficial results.

Concluding Remarks

Key Conclusions and Policy Implications

- **Cash is not dead!**
 - Won't "die" soon. With higher interest rates, may return to long-run average share of GDP
 - Long-run forecast is less clear, depends on many unpredictables....
- **Two transformations in payment markets**
 1. Physical → electronic
 - ✦ *Ultimately decided by consumer preferences, technology*
 - ✦ *Technology is changing fast but money & payments are not!*
 2. Public (govt.) → private
 - ✦ *Should move to the "optimal" payment system*
 - Lowest transaction costs; universal access; not regressive
 - Proper risk sharing across agents (consumers, businesses, governments)
 - Non-distortionary to consumption-saving decisions
- **Battle over payment card revenues ("rents"?)**
 - Up to \$100 billion annual banking revenue tied to payment cards
 - ✦ *Serious headwind for new noncard systems (e.g., U.K.-type FPS)*
 - Reg II forced Fed to regulate price of private sector payment market

Future Research Agenda

- **Data expansion projects**

- Synthesize and extend Survey/Diary (consumption/saving)
 - ✦ *Add coins?*
- Conduct Diary at higher frequency (quarterly)
- Merge CPRC data with other data sources:
 - ✦ *Credit bureau information (Equifax)*
 - ✦ *Housing prices (Zillow)*
- Synchronize SCPC/DCPC with other surveys:
 - ✦ *Survey of Consumer Finances (Board of Governors)*
 - ✦ *National Survey of Unbanked/Underbanked Consumers (FDIC)*

- **Top research project**

- Build frontier structural models to estimate with CPRC data