



Pricing Payment Services: The Customer's Perspective

Scott Schuh, November 3, 2016

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- The views expressed here are those of the presenter and do not necessarily represent the views of the Federal Reserve Bank of Boston or the Federal Reserve System.



Overview



Overview of Consumer Payment Choice



Bank Revenues from Deposits and Payments



Pricing of Consumer Deposit Accounts



Pricing of Payment Instruments



Payments Policy Issues

INTRODUCTION AND MOTIVATION

Traditional banking is at a challenging crossroad



Market for Deposit/Payment Services

Market for Lending Services

Non-bank services

PayPal, NetSpend, Bluebird, Google Wallet, Amazon Payments, Square, Venmo, Apple Pay

Payment Card Networks and Processors

TRADITIONAL BANKS

Take Deposits
Make Loans
(fractional reserve)

Peer-to-peer brokers

Prosper, Kiva, SoFi, Lending Club, Avant, etc.

"Narrow" Banks

Green Dot, Moven Bank
(100% reserve)

???

VC/\$ payments networks

Ripple

VC DI's

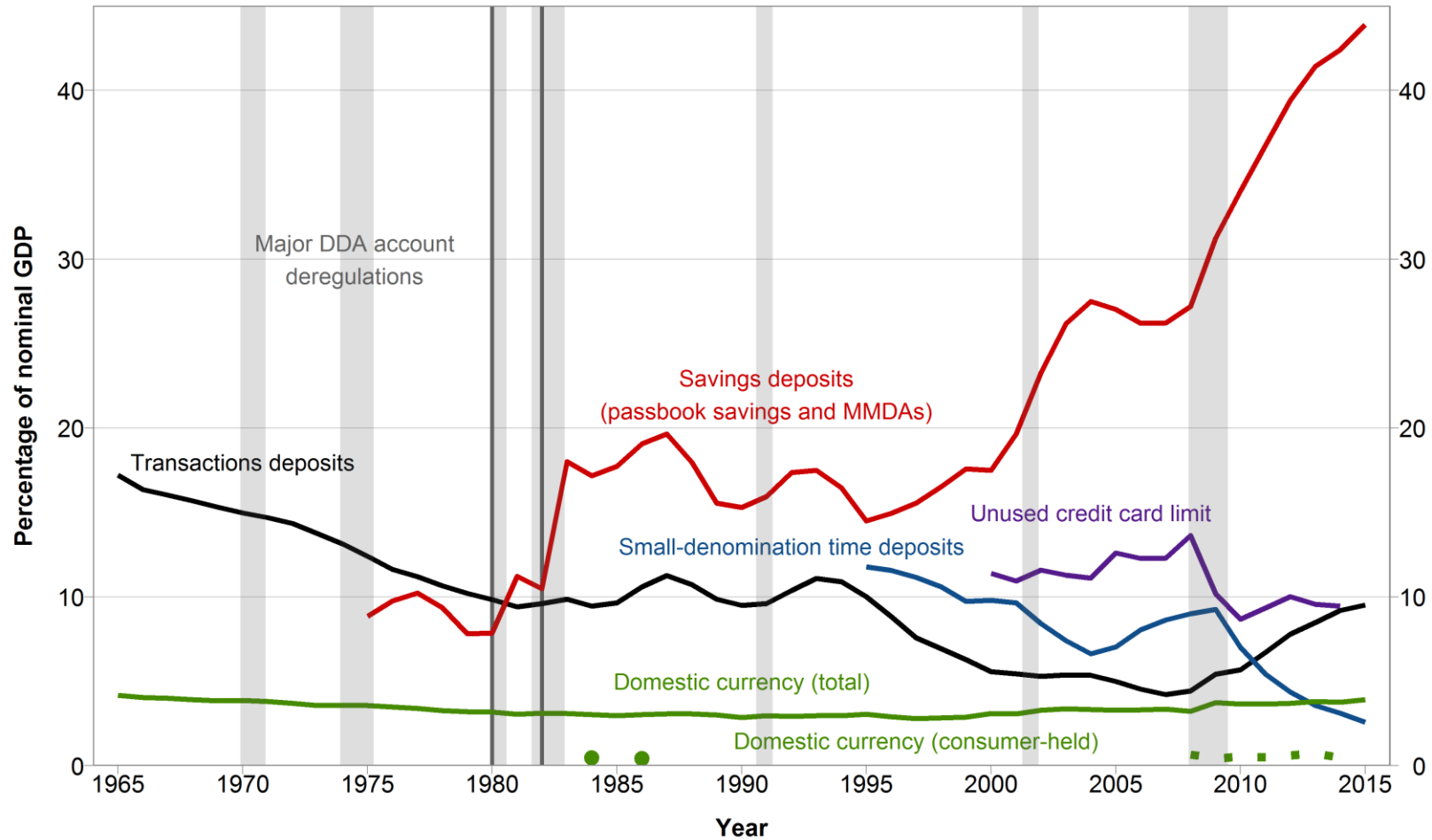
Coinbase, Circle, Bter, Coin-e itBit (bank)

???

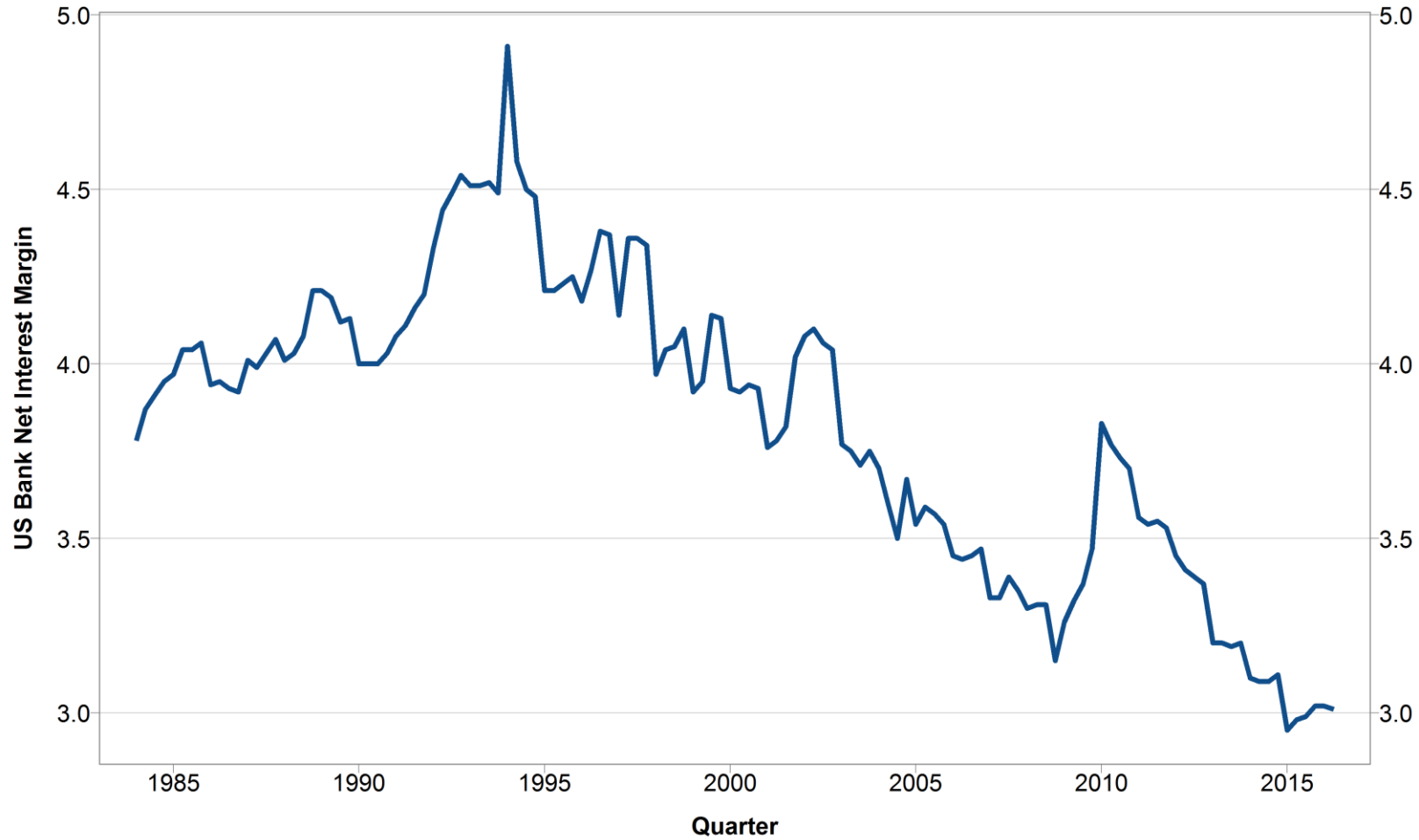
PUBLIC MONEY (\$)

PRIVATE MONEY

Sources of money and credit for payments

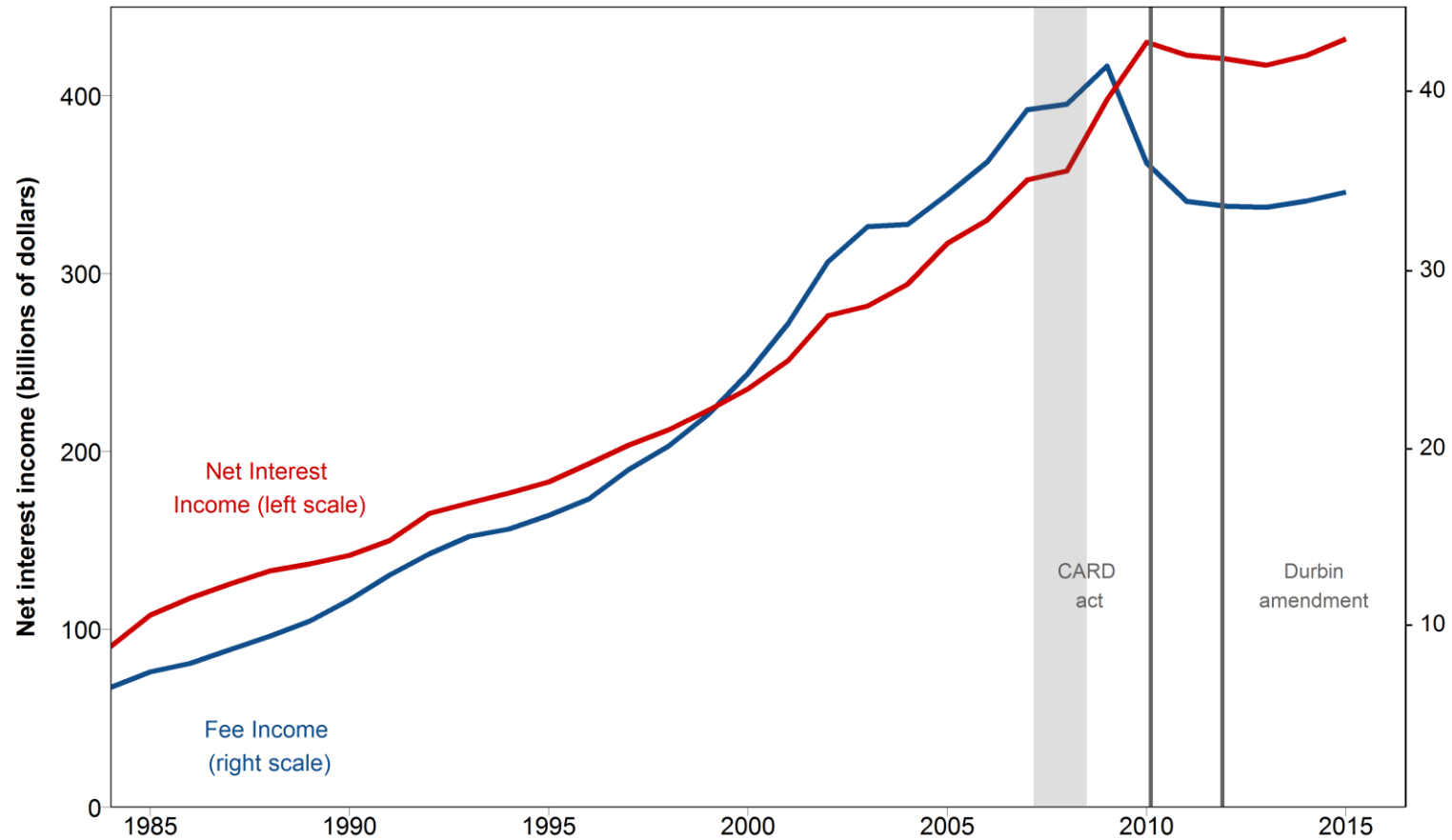


Net interest margin has been falling...



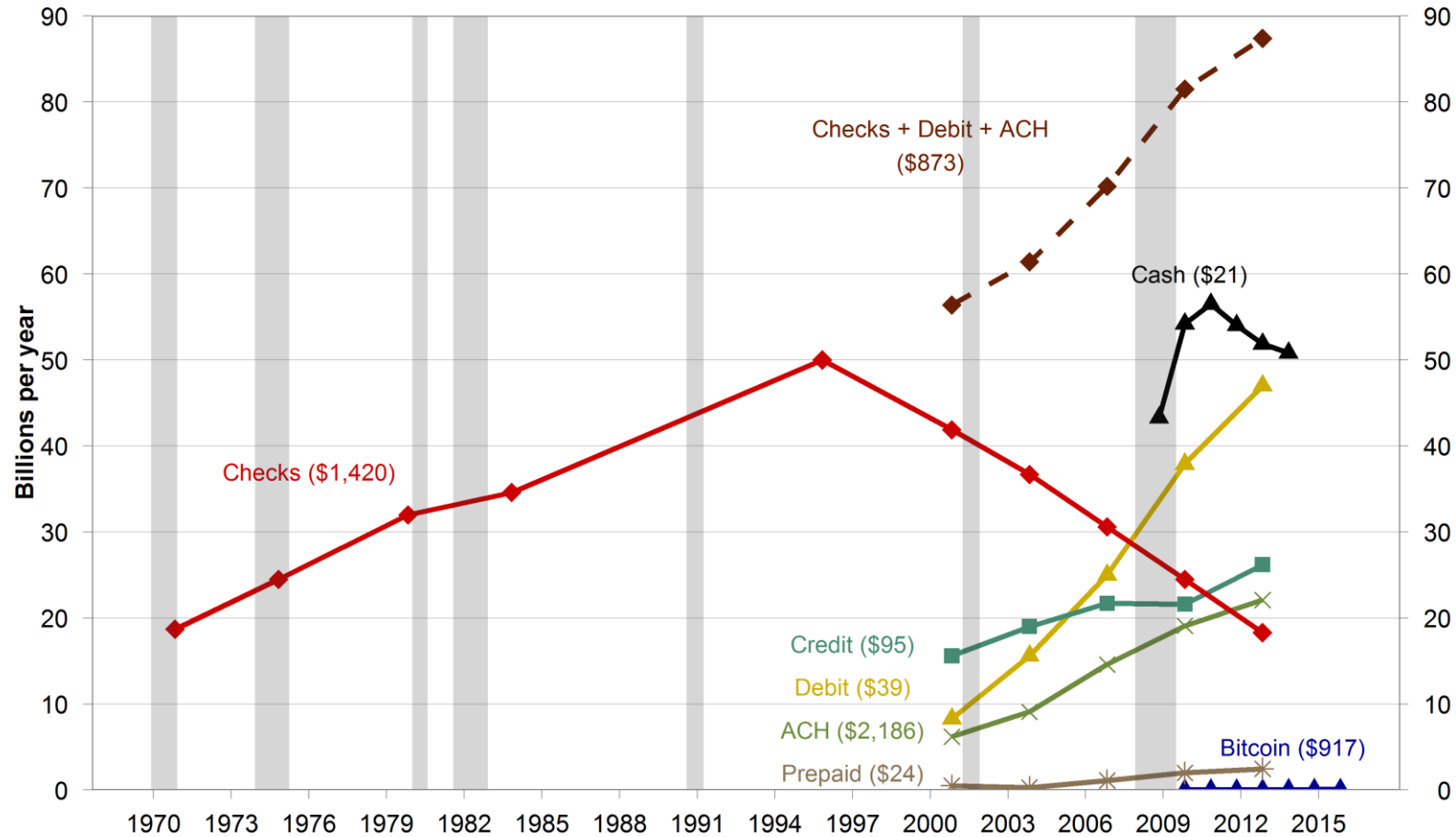
Source: FRED

...and deposit accounts fees dropped recently



PAYMENTS TRANSFORMATION: Consumer view

Transformation of U.S. Noncash Payments: From *checks* to electronics (#)



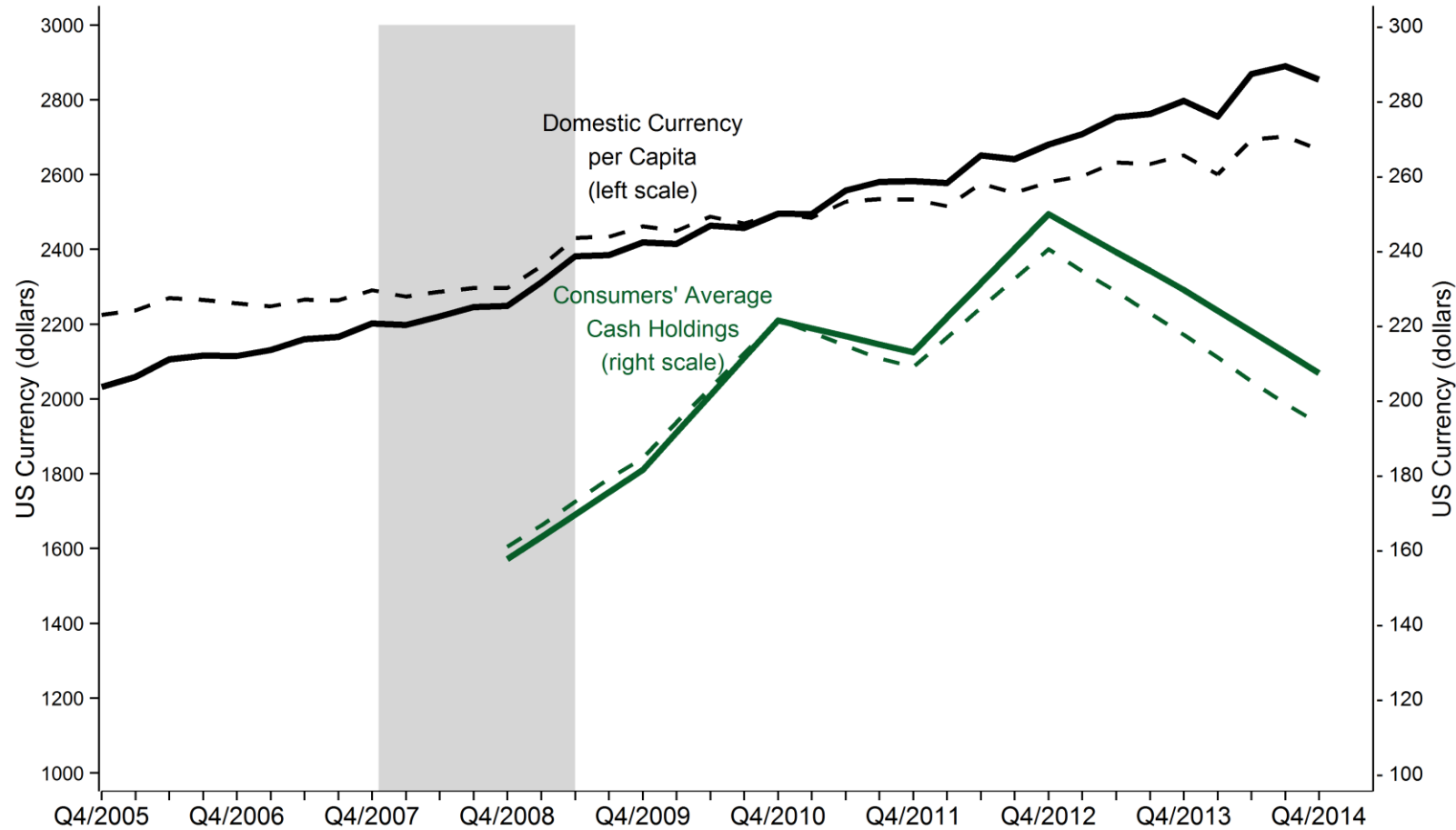
Source: Federal Reserve Payments Study and Survey of Consumer Payment Choice

Boston Fed consumer payment data



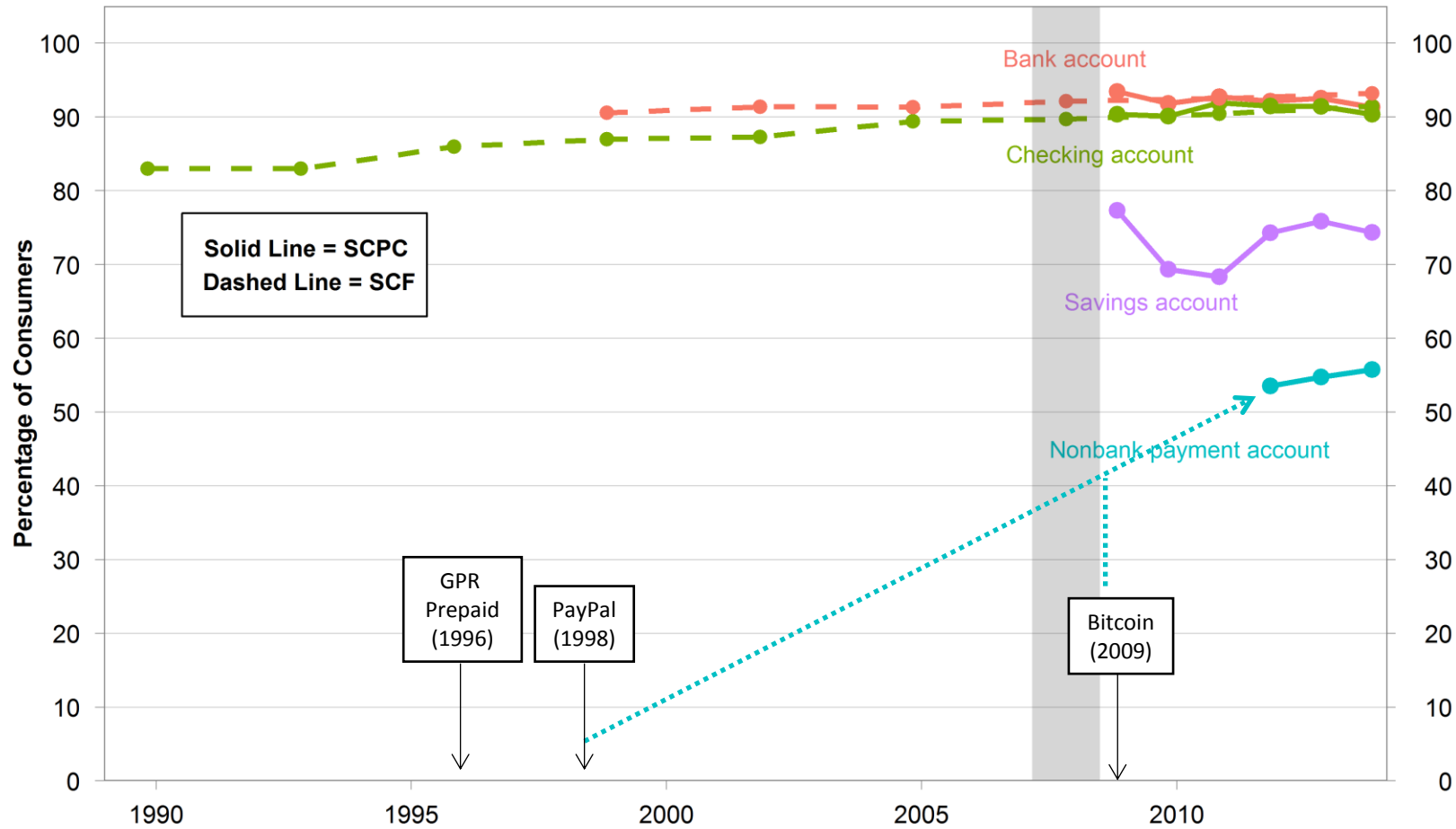
- Measuring consumers' total behavior with nationally representative samples
 - **Survey of Consumer Payment Choice, SCPC** (2008-2016)
 - Annual recall estimates of “typical month”
 - *Adoption of deposit accounts and payment instruments*
 - *Use (# per month) of payment instruments by seven payment types*
 - **Diary of Consumer Payment Choice, DCPC** (2012, 2015-2016)
 - Annual recording of estimates for three days in October (usually)
 - *Use (# and \$) of payment instruments for all payment types*
 - *Types of payees and consumer expenditures*
 - **SCPC/DCPC + Equifax** (2014-2016)
 - Credit bureau administrative data merged with SCPC and DCPC respondents

Consumer holdings of cash are rising



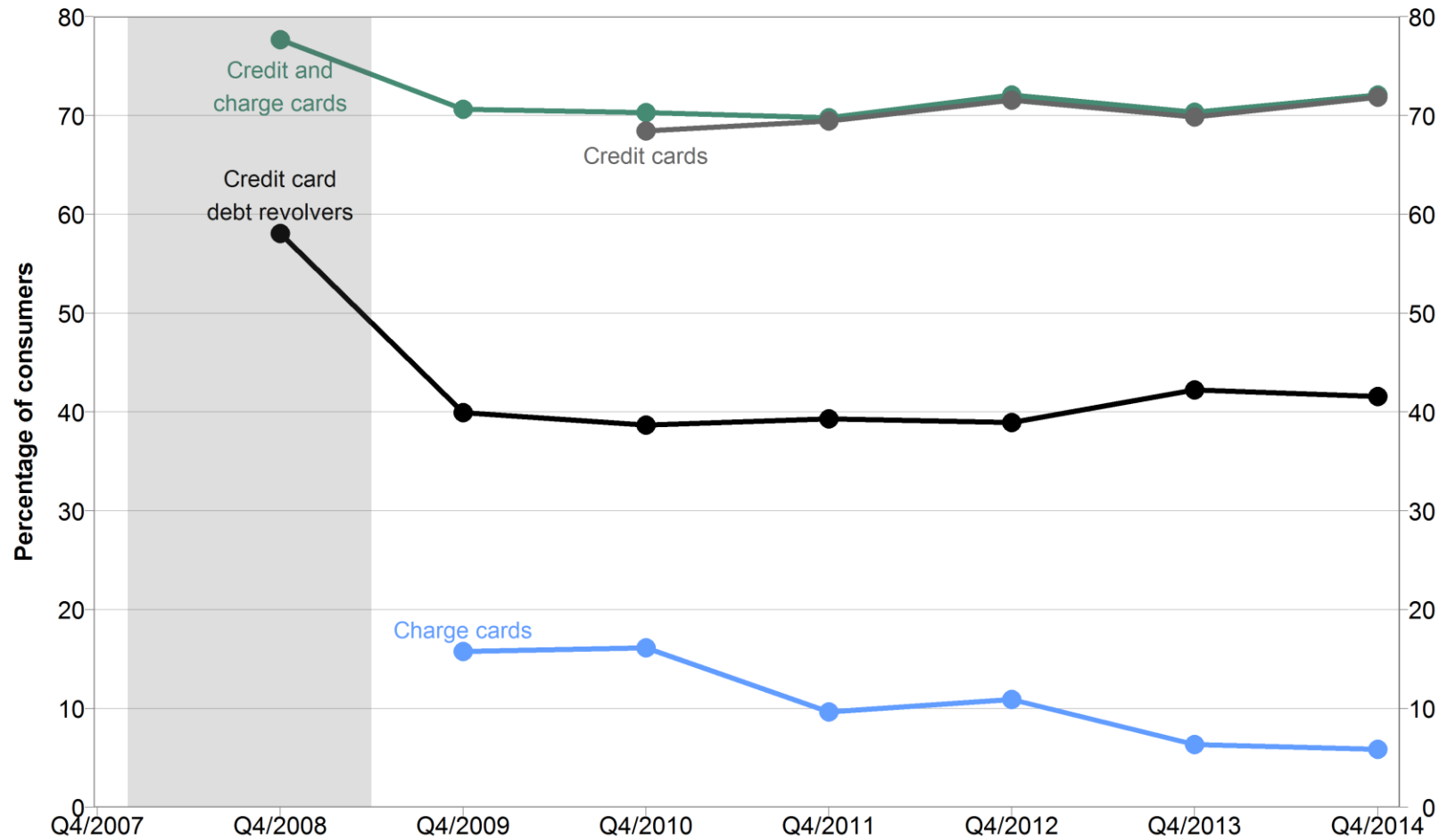
Note: average cash holdings exclude large value holdings.

Adoption of non-bank deposit accounts is rising

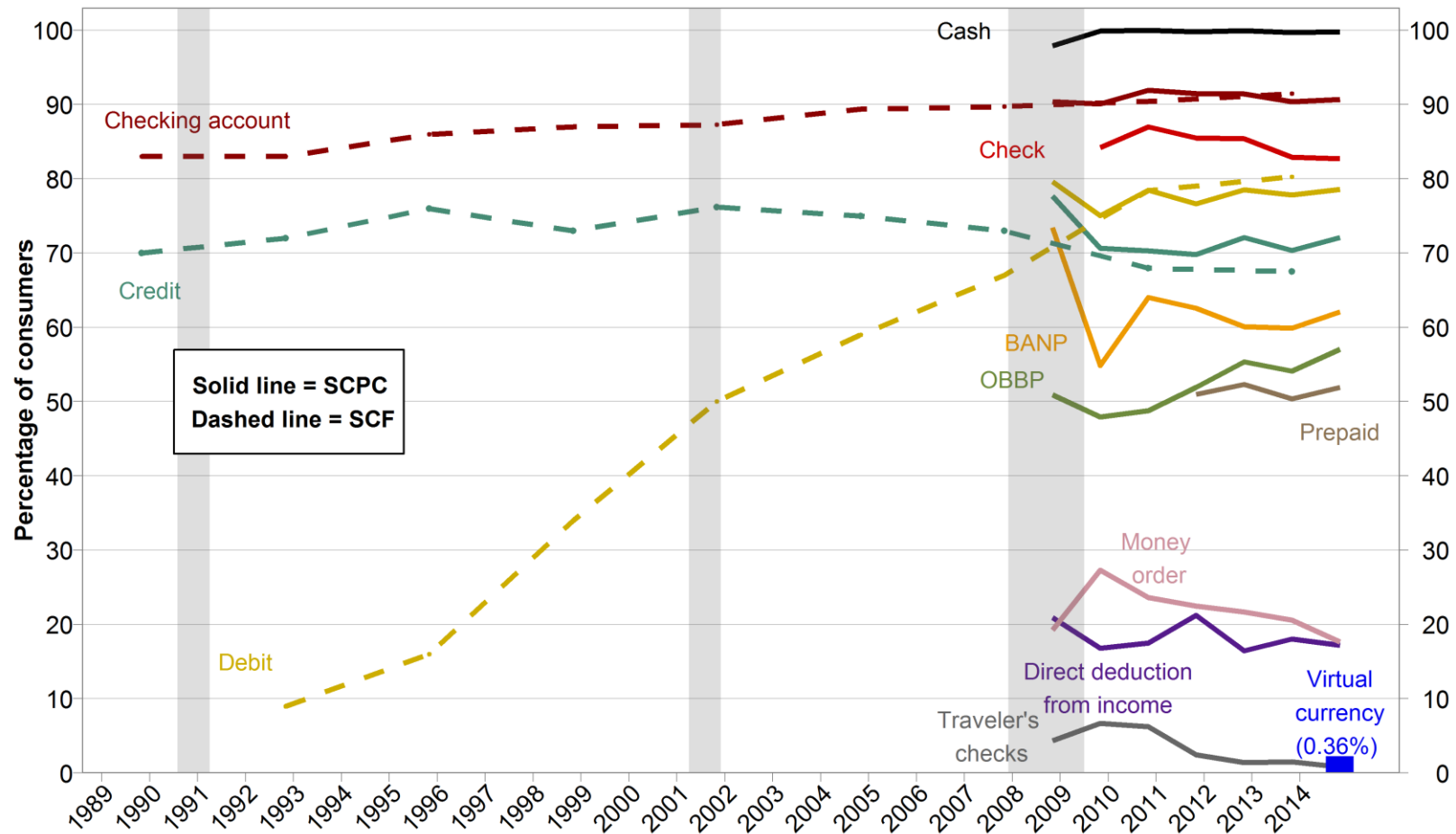


Source: 2009-2014 Survey of Consumer Payment Choice, 1989-2013 Survey of Consumer Finances, authors' calculations.

Adoption of credit accounts is about flat

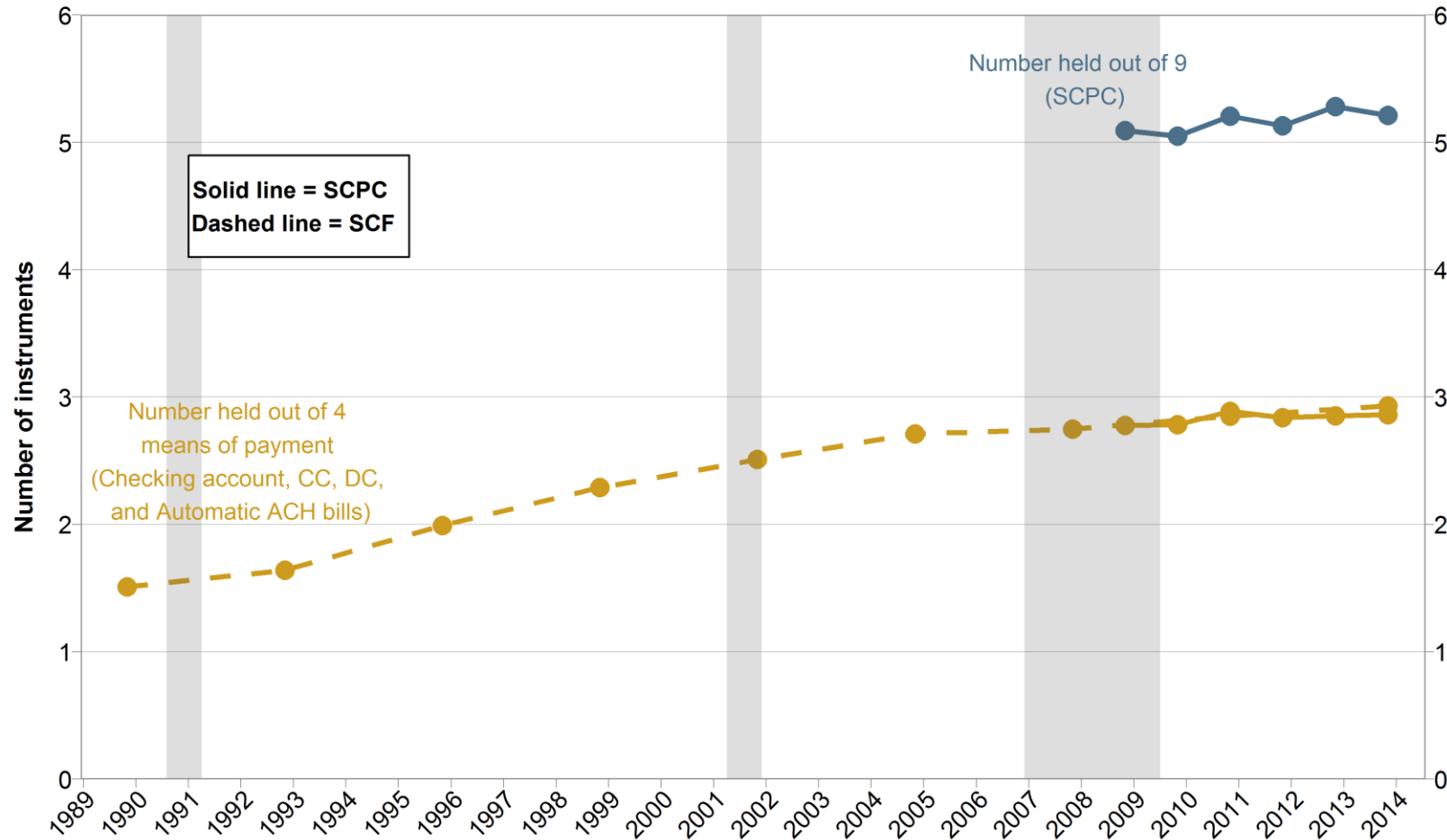


Consumers adopted new payment instruments...

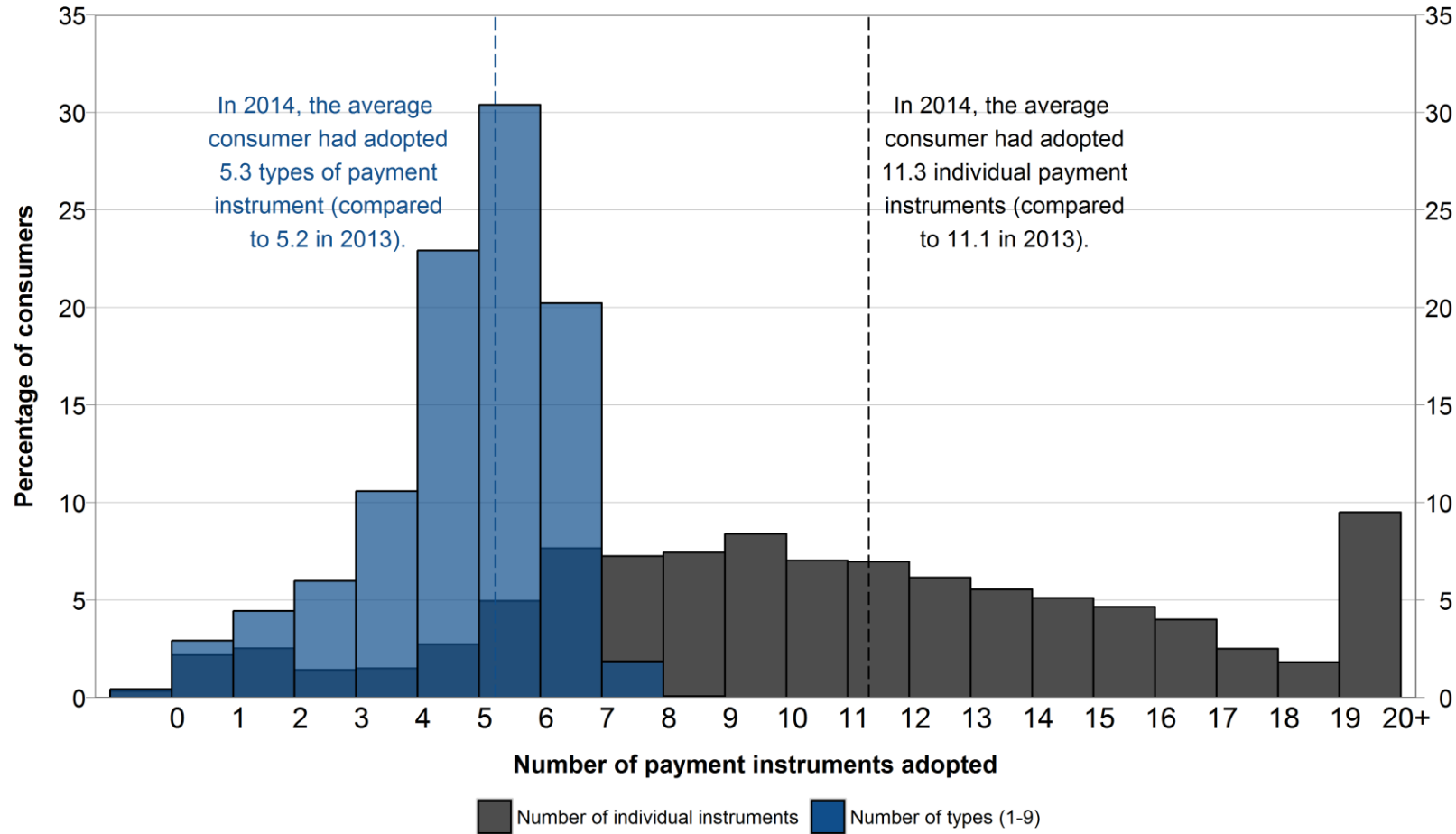


Source: Survey of Consumer Payment Choice and Survey of Consumer Finances

...and increased their “wallets” (avg. # of instruments)



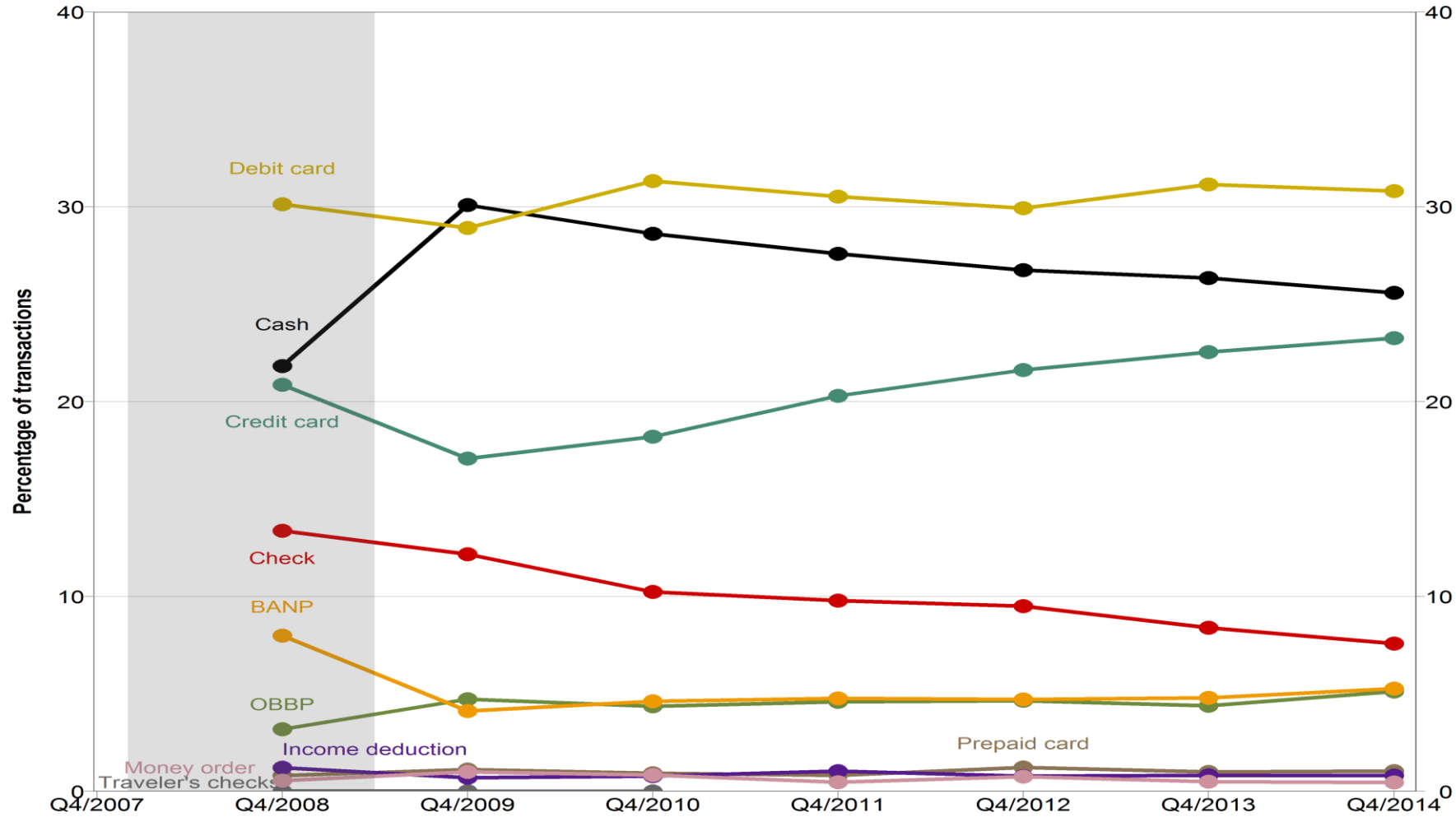
Wallet sizes vary widely (# of instruments/wallet)...



...and “what’s in your wallet” is quite diverse

Number of Payment Instruments	Cash	Check	Traveler’s check	Money order	Credit card	Debit Card	Prepaid card	OBBP	BANP	Percentage 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
All other combinations										56.9

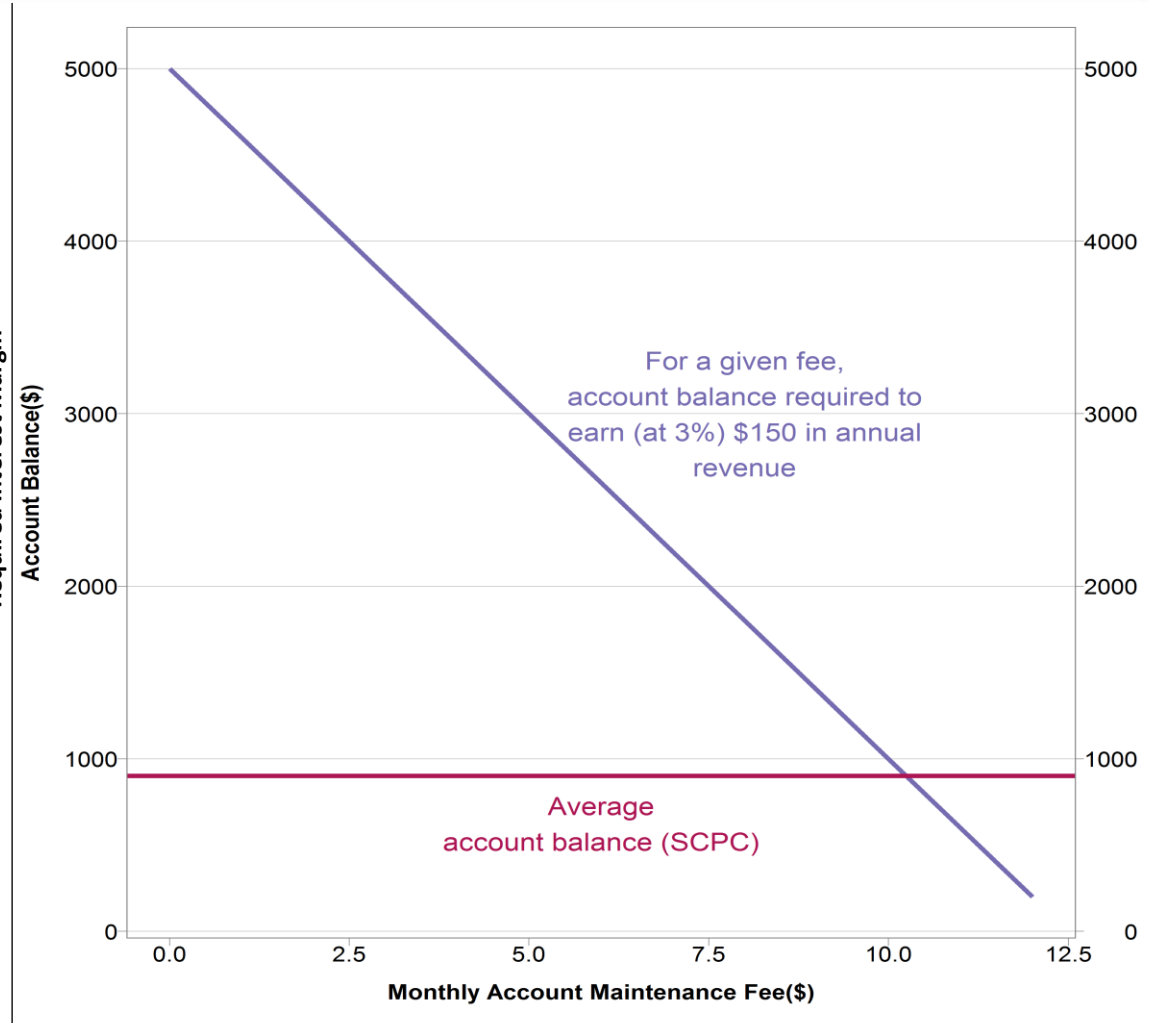
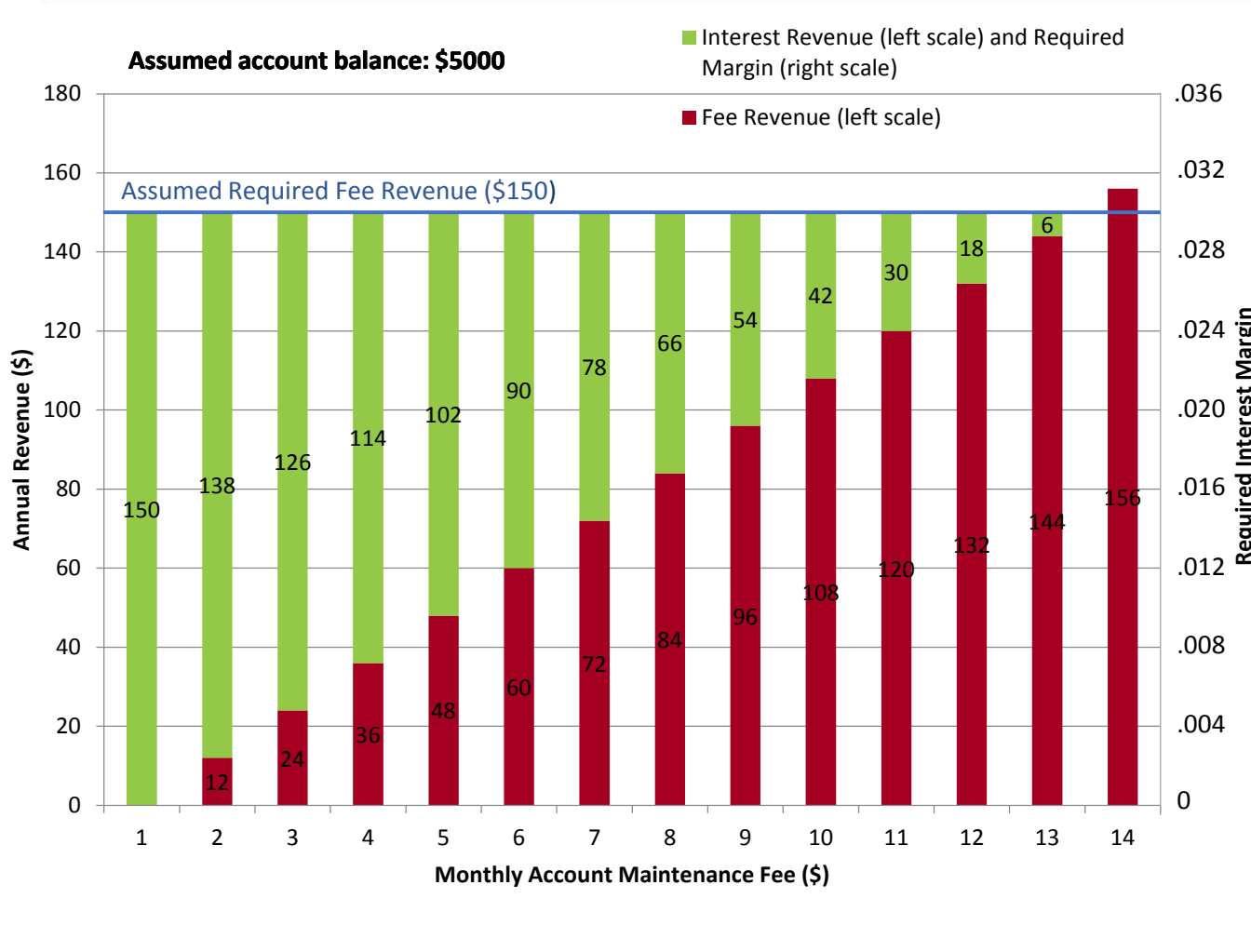
Consumers mostly use debit, cash, and credit to pay



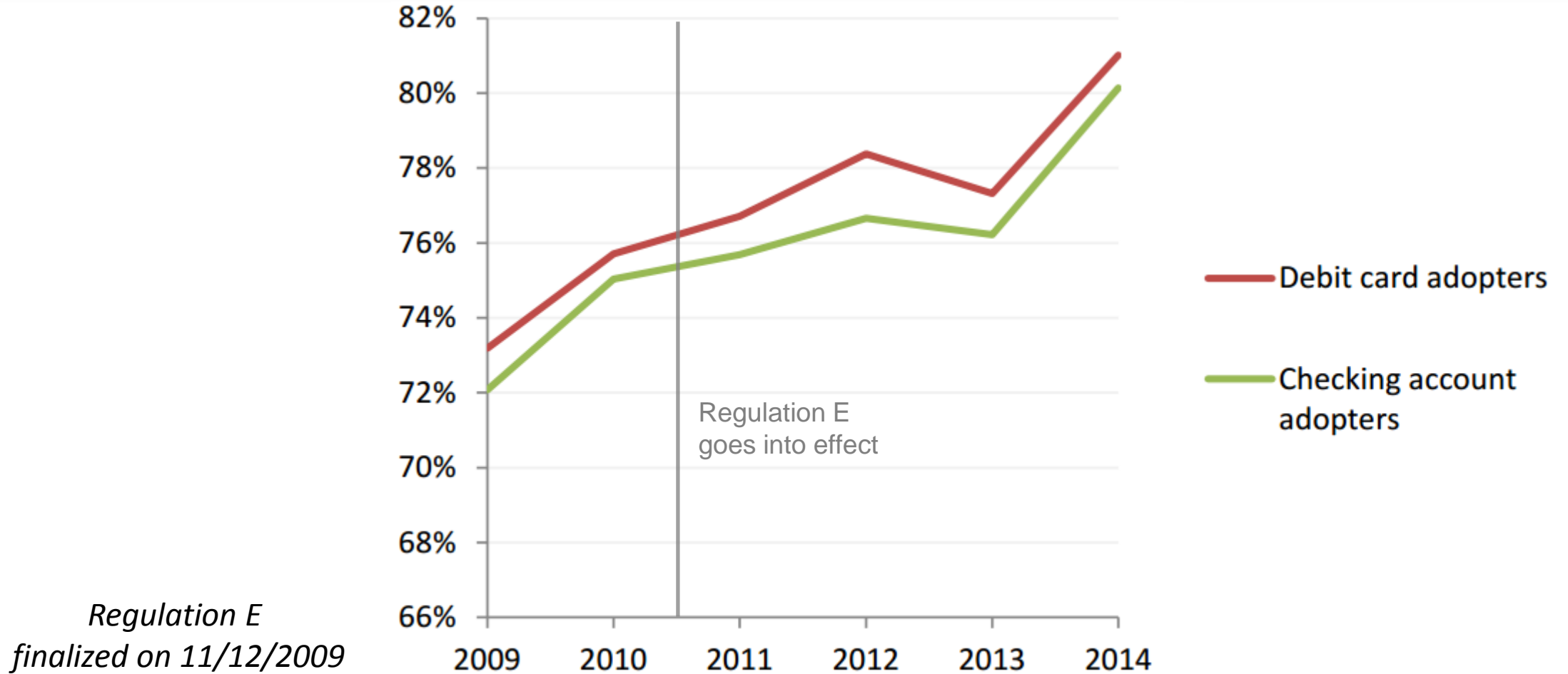
Source: Survey of Consumer Payment Choice

DEPOSIT PRICING: Consumer view

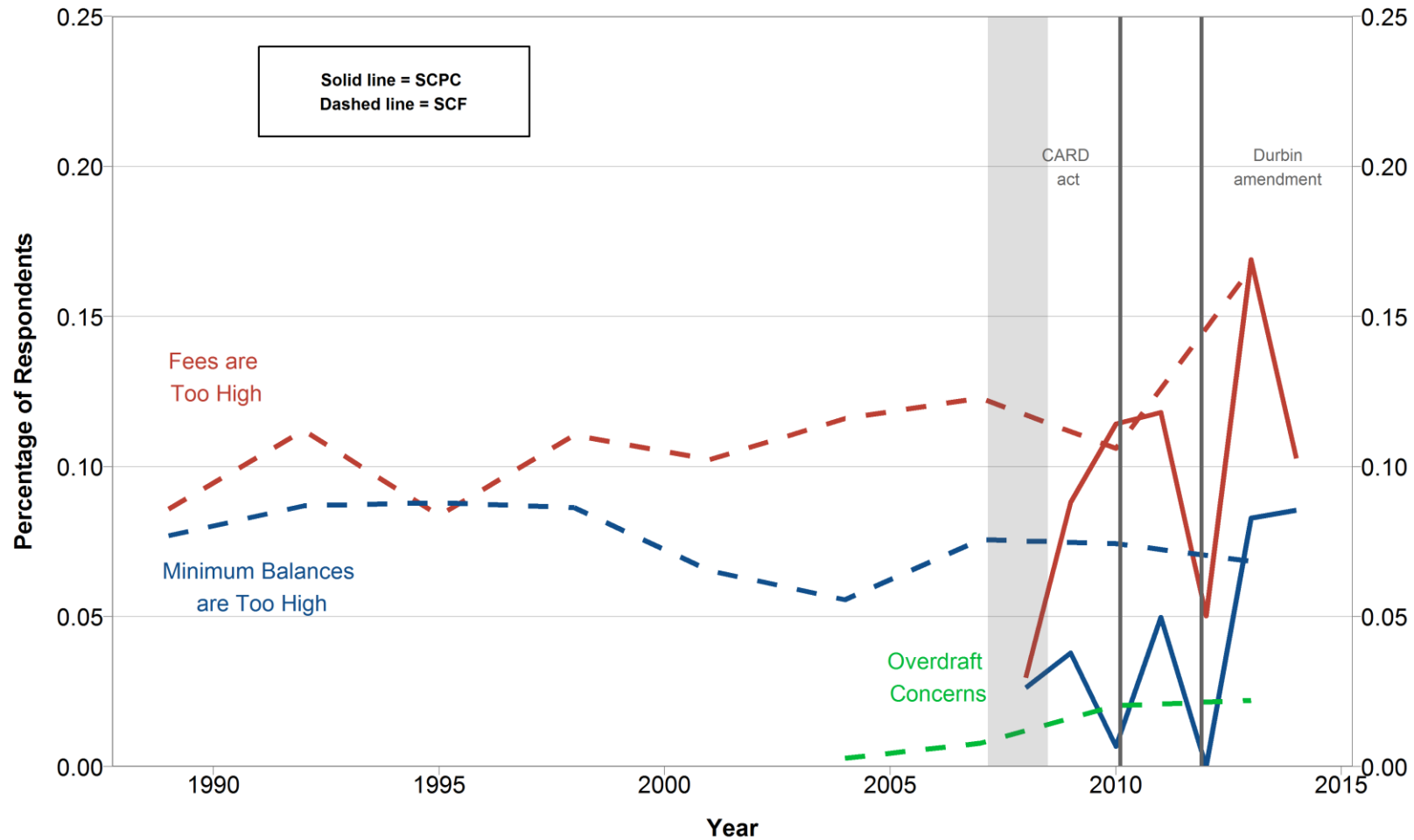
Basic pricing dilemma for consumer DDAs (0 profits)



Adoption of overdraft protection has increased

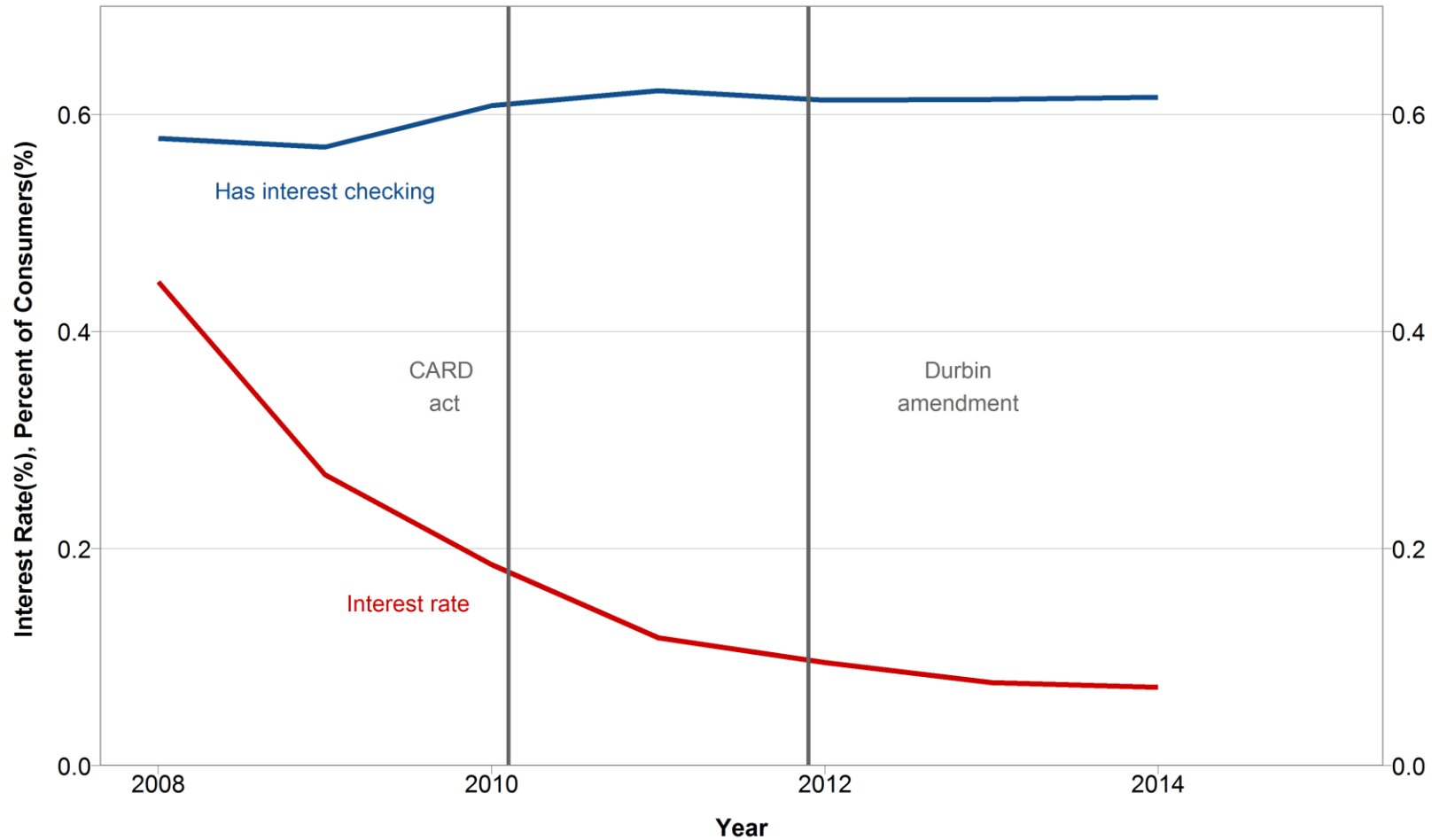


High fees concern unbanked consumers



Source: Survey of Consumer Payment Choice and Survey of Consumer Finances

More people have interest bearing checking accounts



Comparison of bank v. nonbank account fees



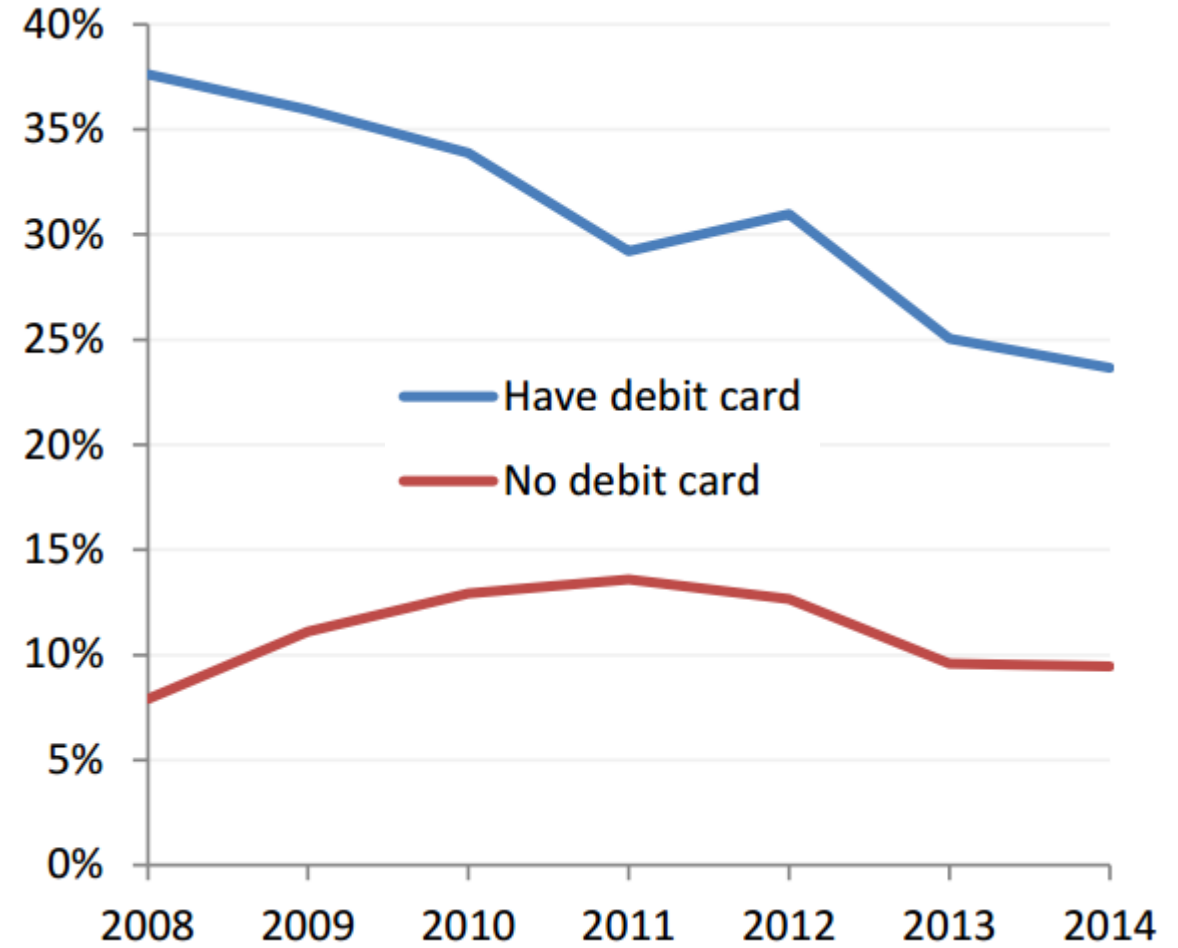
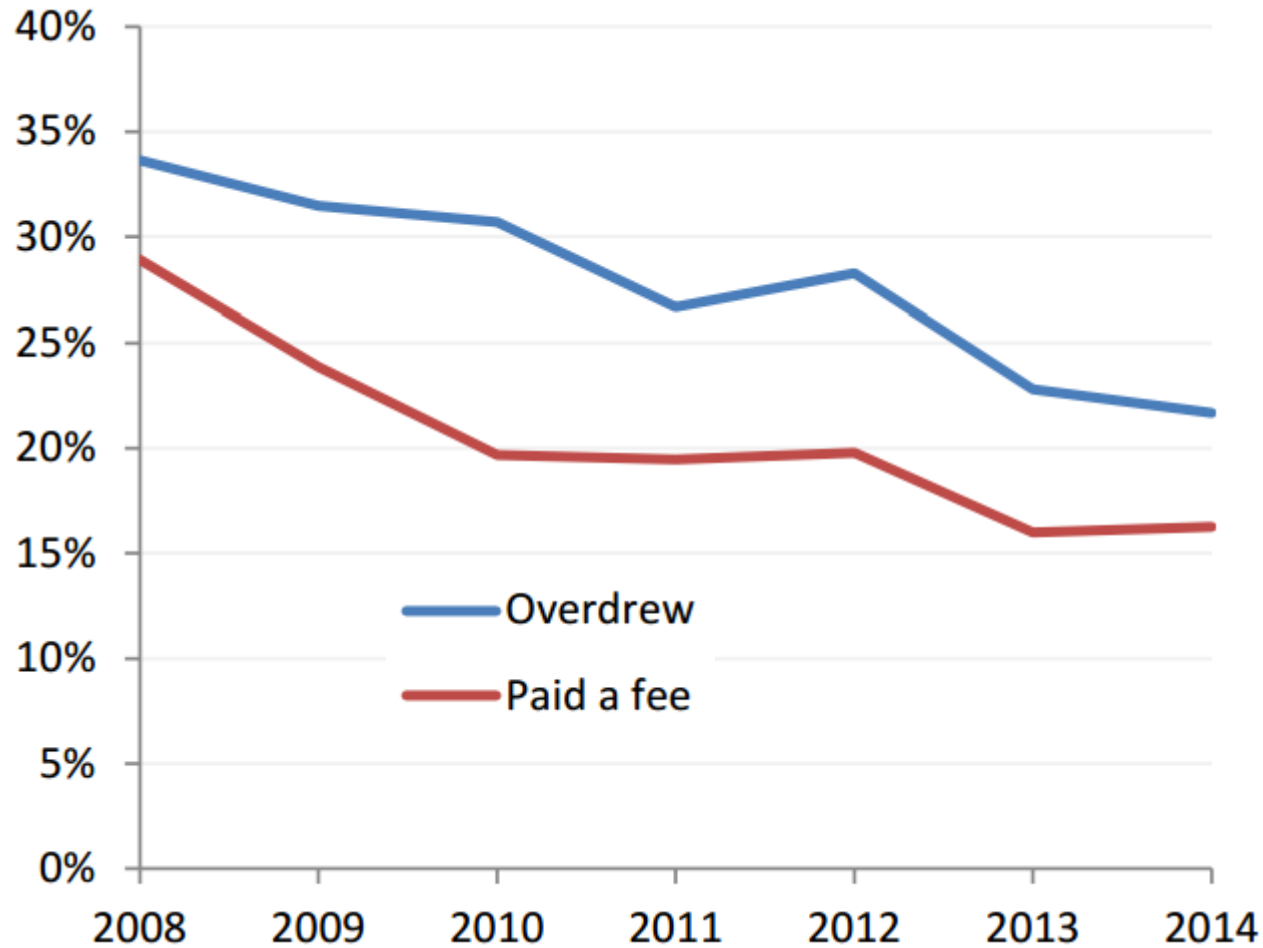
	NetSpend pay-as-you-go	Green Dot Visa	Bank of America Core Checking
Monthly maintenance	\$0, or \$5.95-\$9.95 if not used for 90 days.	\$7.95, or waived for any billing cycle with \$1000 loaded or 30 qualifying purchases	\$12, or waived with regular direct deposits/minimum balance
Domestic cash withdrawal	Fees vary "in-network" \$2.50 per withdrawal at ATMs \$1.00 decline fee	None at MoneyPass ATMs \$2.50 at non MoneyPass ATMs \$2.50 at Teller	Free at BoA ATMs \$2.50 at non-BoA ATMs
Overdraft	\$15	\$0	\$35
Additional card/replacement card	\$9.95	\$4.95	\$5
Stop payment	\$10	Service unavailable	\$30
Balance inquiry	Free online or by text, \$0.50 by telephone	\$0.50	\$0
Transactions	\$1.00 per, for signature \$2.00 per, for PIN	\$0	\$0

PAYMENT PRICING: Consumer view

Consumer ratings of payment characteristics

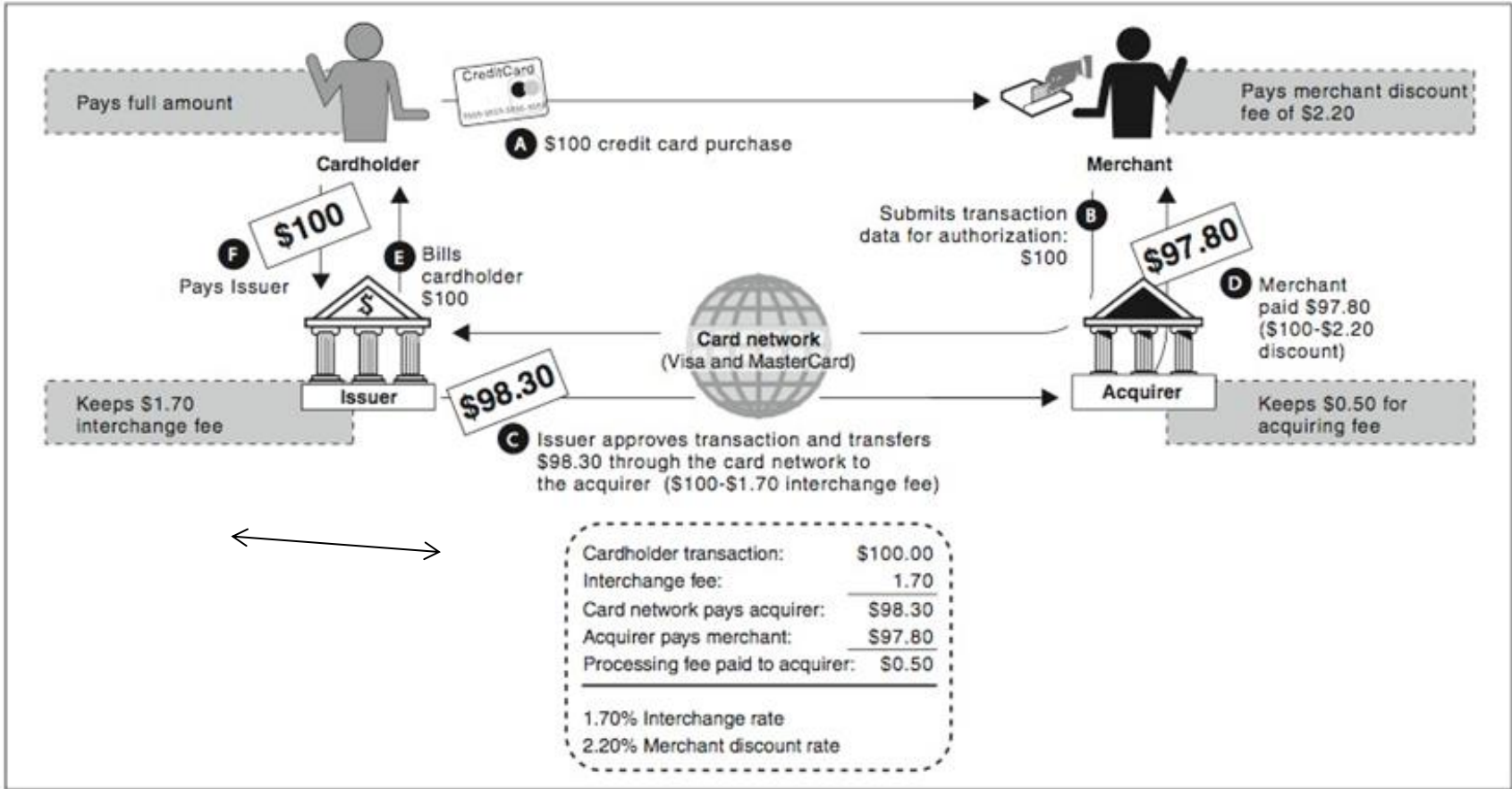


Unexpected fees (OD) declined after regulations



Hidden/opaque fees occur in payment card networks

Figure 2: Transfer of Fees in a Credit Card Transaction



Sources: GAO (analysis); Art Explosion (images).

Fees for speed >> costs (electronic A2A transfers)



Time for settlement	ACH* (A2A)		clearXchange	FedWire	UK FPS	Western Union	
	Within bank	Between banks	A2A within the five banks	A2A	A2A any banks	A2A bank-to-bank	bank-to-pickup
<1 day	\$0			\$25-\$40	\$0 (future unknown)		
1 day		\$10					
3 days		\$3					\$2-\$30
5 days			\$0			\$5	

Send \$200 to Mexico



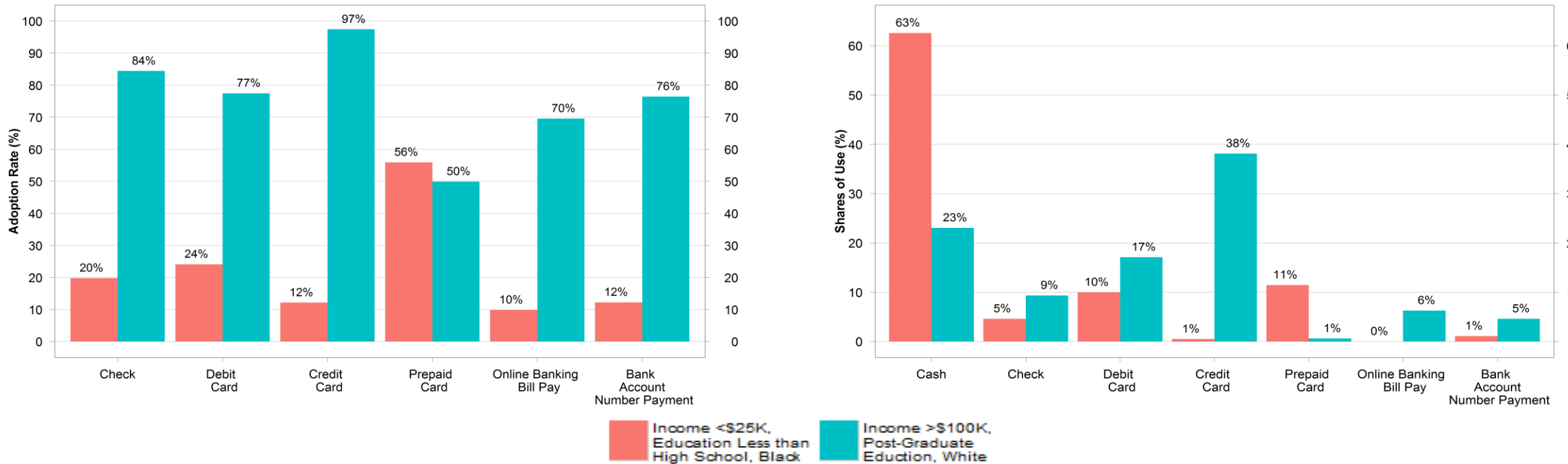
Firm	Payment instrument	Transfer speed	Receiving method	Fee	Exchange rate margin (%)	Total cost (USD)
Wells Fargo	Bank account	Next day	Bank account or cash	3.00	2.22	7.44
Money Gram	Bank account	3-5 days	Cash	4.00	2.91	9.82
Western Union	Bank account	3-5 days	Bank account	2.99	3.49	9.98
Xoom	Bank account	2 days	Cash	4.99	2.96	10.92
Western Union	Cash	< 1 hour	Cash	8.00	2.01	12.02
Citibank	Bank account	2 days	Citibank account	0.00	12.70	25.40

DISTRIBUTIONAL IMPACT ON CONSUMERS

SCPC Demographics



Adoption and Use of Payment Instruments: low income, low education, black consumers versus high income, high education, white consumers (2009-2013 weighted average):

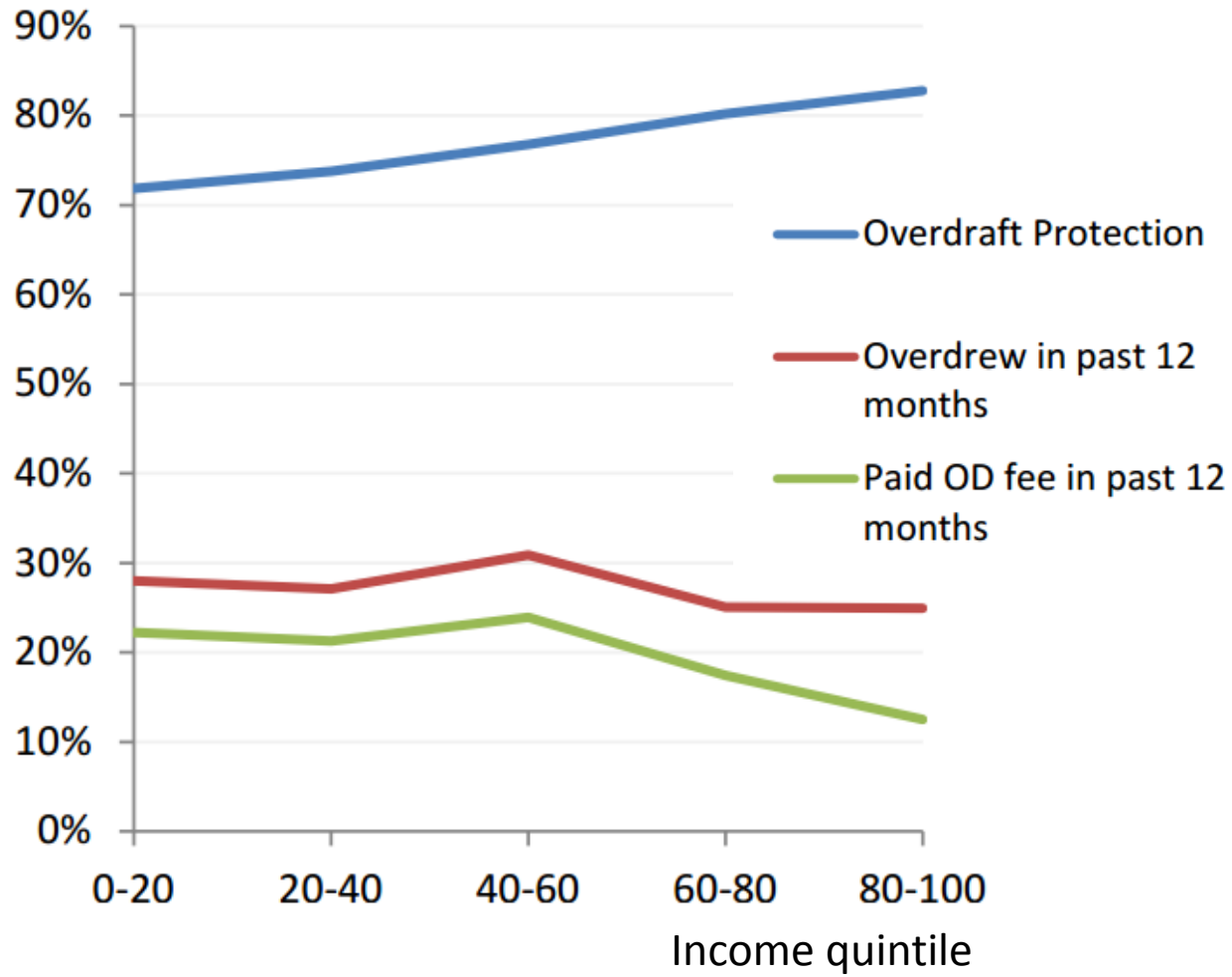


- Age, income, race, and education are consistent predictors of payment behavior
- First paper descriptive, second paper uses regression analysis
- Demographic effects are consistent across time, but less strongly so when using regressions which control for other attributes

Source: Stavins (2016). "The Effect of Demographics on Payment Behavior: Panel Data with Sample Selection." *Boston Fed Working Paper 16-5*

Stavins and Connolly (2015). "Payment Instrument Adoption and Use in the United States, 2009-2013, By Consumers' Demographic Characteristics." *Boston Fed Working Paper 15-6*

Overdraft adoption and incidence by income quintile



- **\$34**: median overdraft fee
- **\$14.7**: median debit card overdraft amount covered by bank
- **3 days**: median negative balance period
- **Implied 17,000% APR**
- *Typical payday loan APR: 400%*
- *Typical credit card APR: 12%*

Source: CFPB, Federal Reserve Board of Governors

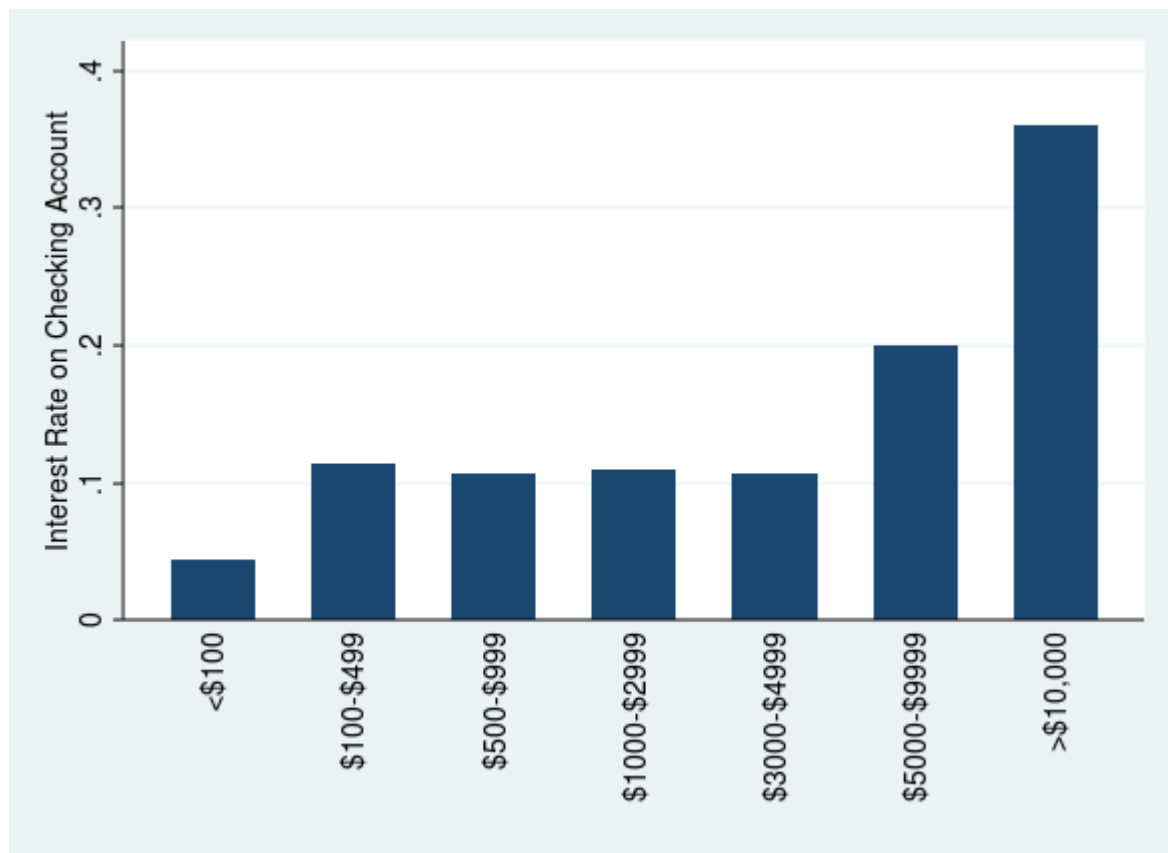
Source: Greene and Luo (2015). "Consumers' Use of Overdraft Protection." *Boston Fed Working Paper 15-8*

Bakker, Kelly, Leary and Nagypal (2014). "Data Point: Checking Account Overdraft." Consumer Financial Protection Bureau publication

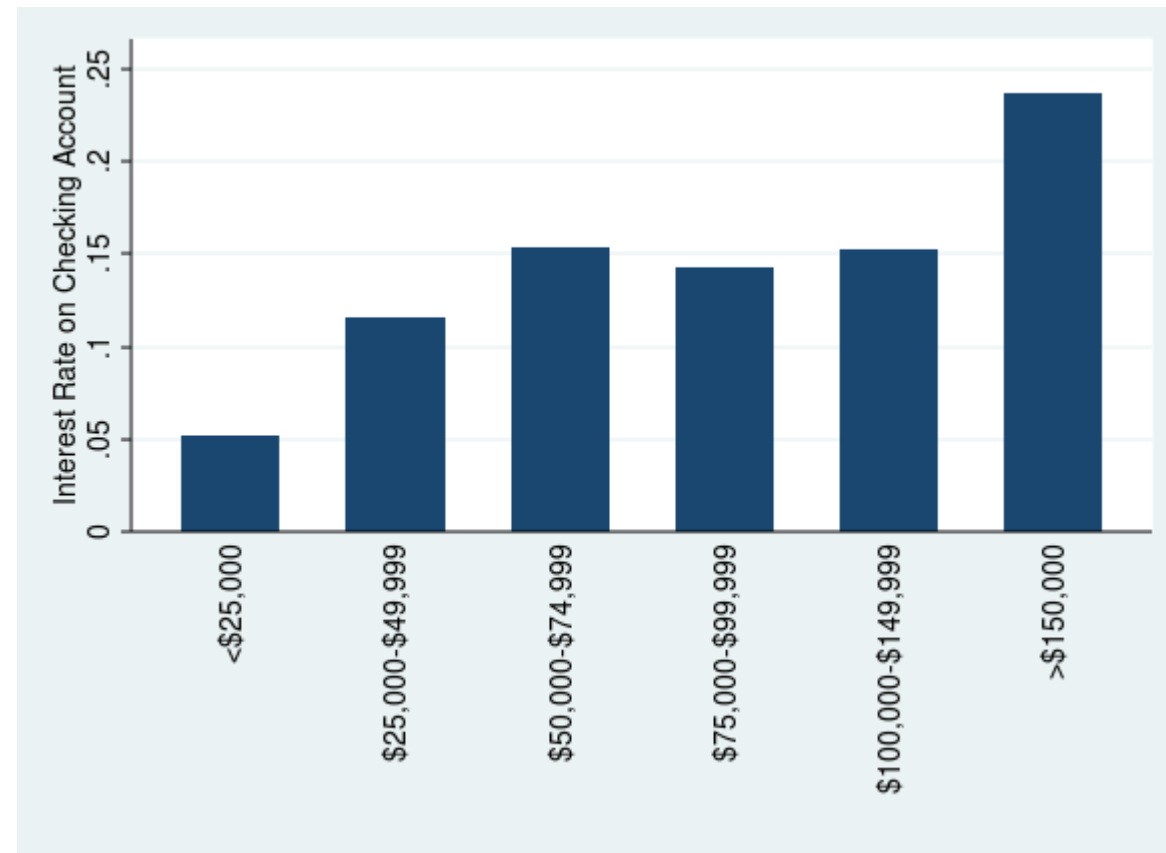
Checking interest rates increase with wealth & income



By checking account balance



By household income



Credit card rewards transfers are regressive



	Net transfers per household (\$)		
	Low Income	High Income	Average
Total	-83	361	0
Cash users	-69	52	-50
All credit card users	-162	1058	240
<i>Convenience users</i>	<i>331</i>	<i>1567</i>	<i>833</i>
<i>Revolvers</i>	<i>-647</i>	<i>-63</i>	<i>-511</i>
Cash users and revolvers	-114	38	-89

IMPLICATIONS FOR BANKS

Payment card revenues are large and high margin



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

Policy challenges to bank pricing strategies

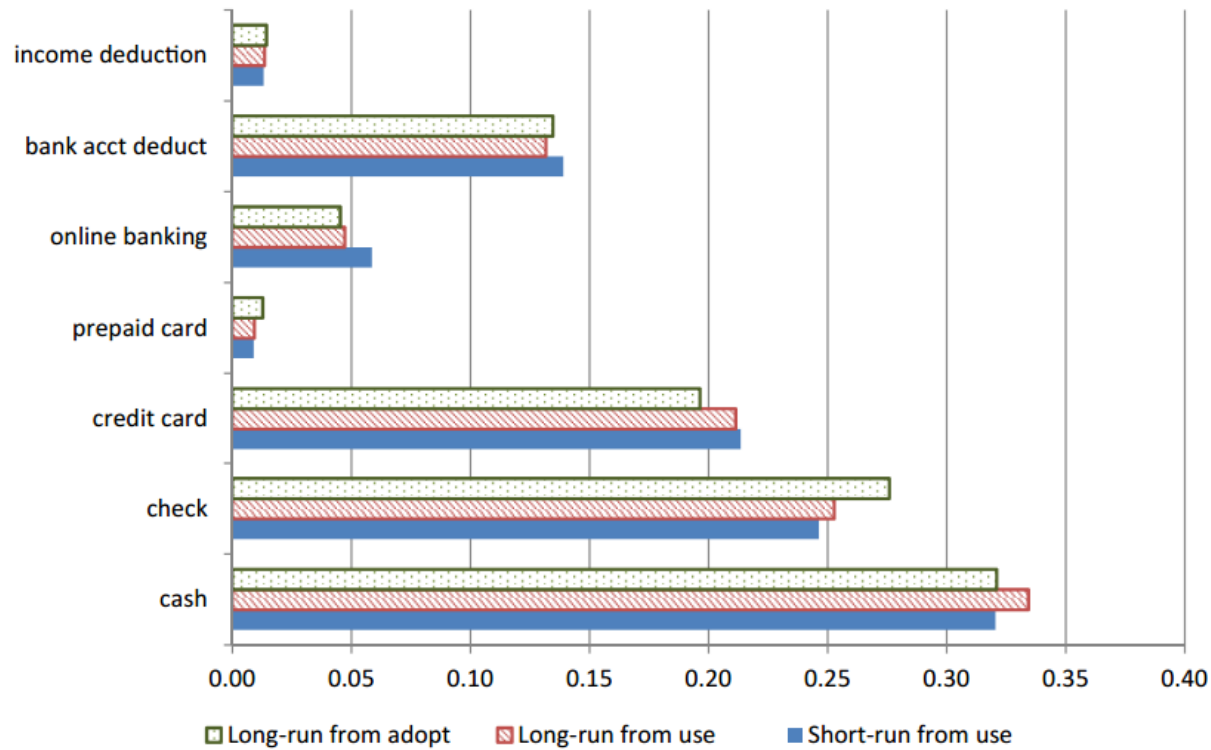


Year	Policy	Relevant Payment Instruments
2003	Check 21	Checks
2009	CARD act	Credit cards
2010	Durbin Amendment Regulation II DOJ v Visa and Mastercard Regulation E	Debit cards Debit cards Credit cards, Debit cards Debit cards
2012	Visa and Mastercard Surcharge Settlement	Credit cards, Debit cards
2014	IRS virtual currency ruling	Private virtual currency
2015	Federal Reserve Strategies for Improving the U.S. Payment System	Potentially all
2016	CFPB Prepaid card regulations	General purpose reloadable prepaid cards

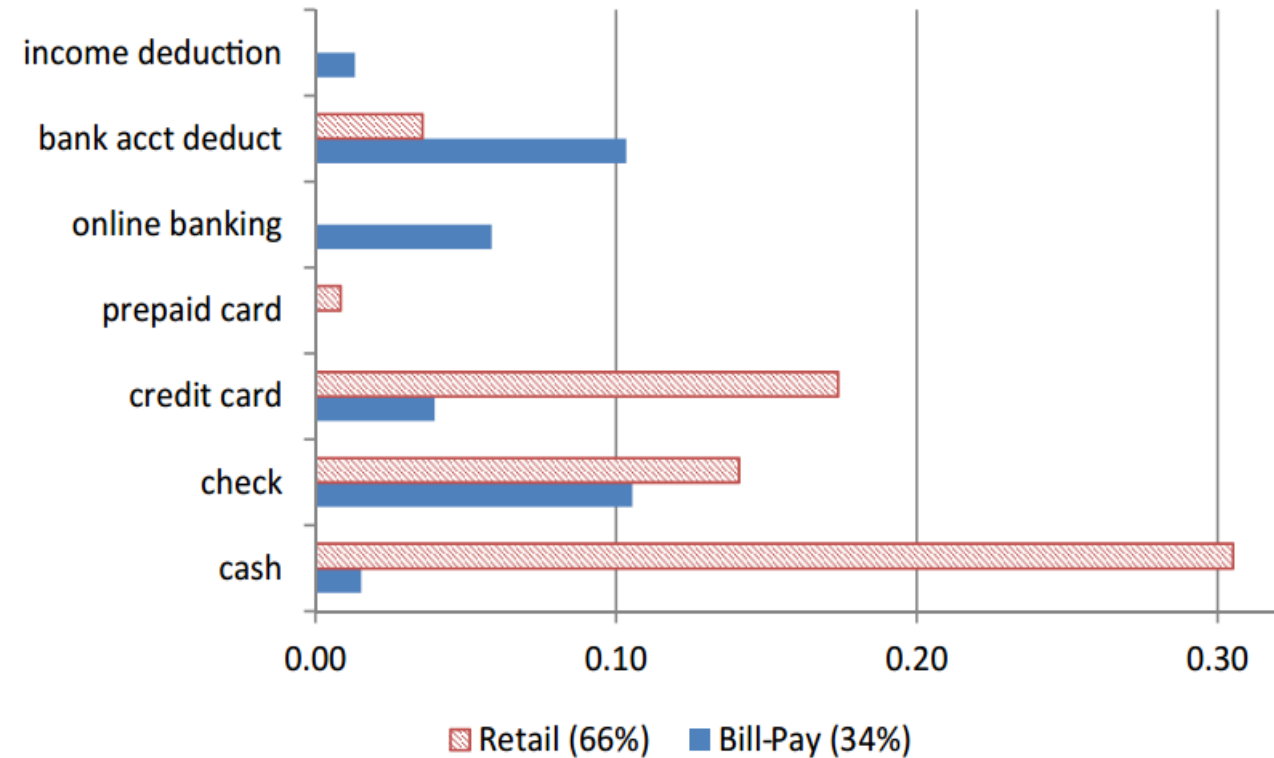
Simulated consumer response to debit card fee



By adoption/use and time horizon



By type of payment



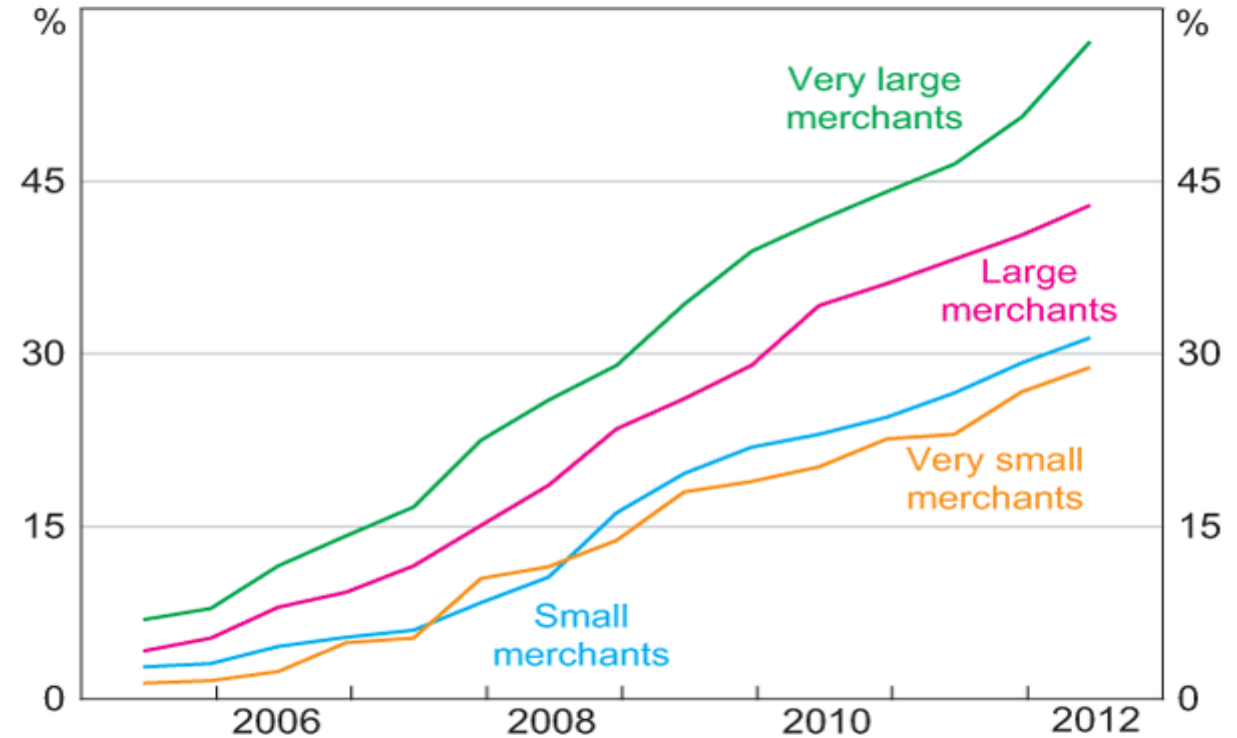
Merchants steer payments w/discounts & surcharges



United States

	Cash	Debit	Credit		
Percent of...	Discount	Discount	Discount	Fee	Minimum
Consumers	1.9	2.2	4.9	0.9	1.9
Transactions	5.0	6.7	12.9	2.7	4.4

Australia





Questions ?

For a copy of today's presentation please contact (**Claire.M.Greene@bos.frb.org**)



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