

Trends in Consumer Payments

Presentation to Armored Carrier Managers

Oz Shy

October 3, 2012



Disclaimers

- The views expressed in this presentation are my own and 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) are preliminary and subject to change.

Outline

- Brief history of money and payments
- New **consumer** payments data results (2010-2011)
- Boston Fed Research
 - Economics of consumer payment choice
 - Analyses of recent public policies towards payments
- Questions?

Development of Money and Payments

Innovations in money

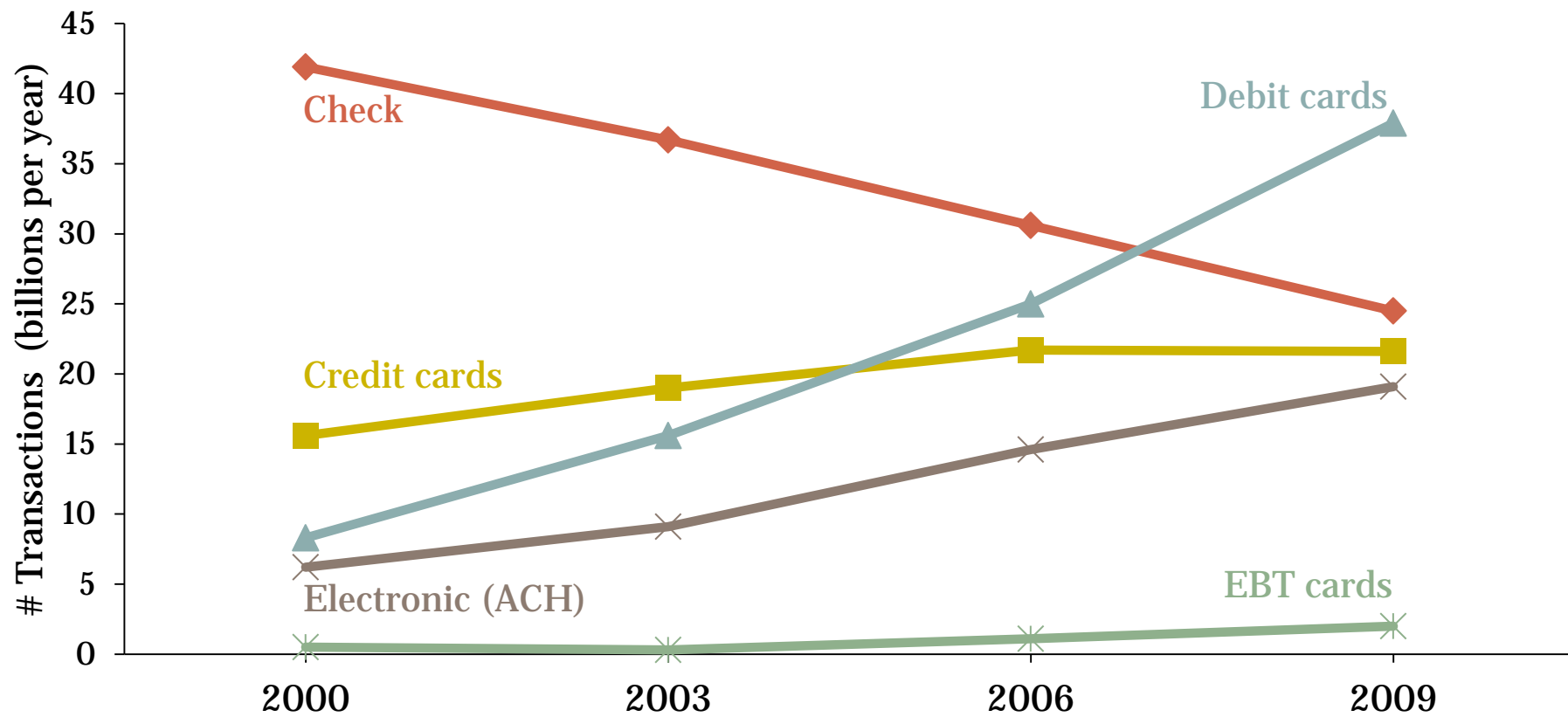
- I. Barter trade (“before” money)
- II. Commodity money* (metallic coins)
- III. Creation of “checks” (promise of future money)
- IV. Paper money linked to gold (gold standard)
- V. Creation of paper *fiat* (let-it-be) money
- VI. Emergence of electronic “money” (*Giro* networks in Europe, magnetic payment cards, cyber, cellular, etc...

* Still exists in modern time: R.A. Radford, *Economica* 1945 about Cigarettes as the liquid asset in POW camps.

The Payments Transformation

Cards and electronic payments are replacing checks in U.S. non-cash payments

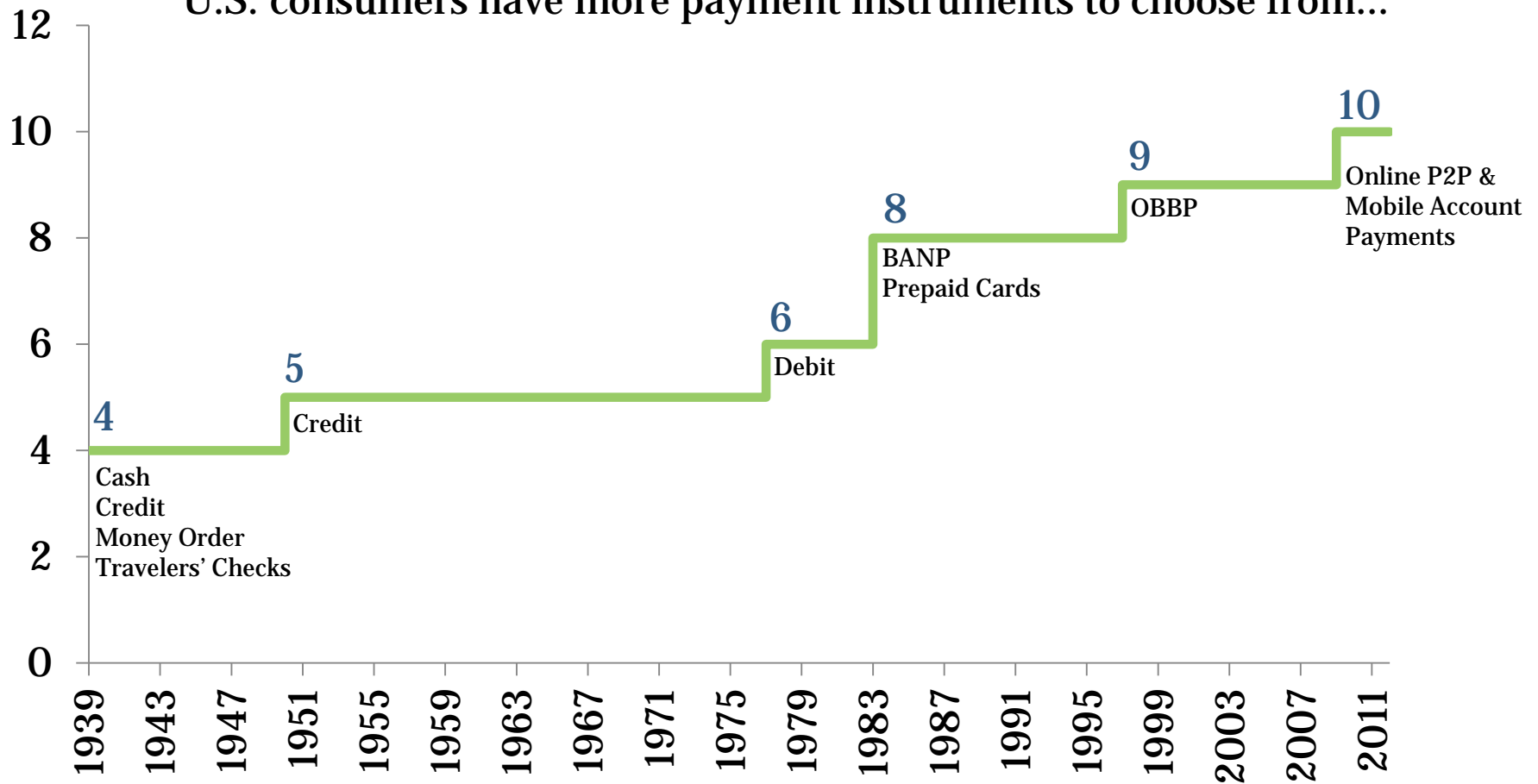
Number of U.S. payments by all sectors (household, business, government)



Source: Federal Reserve Payment Study (FRPS)

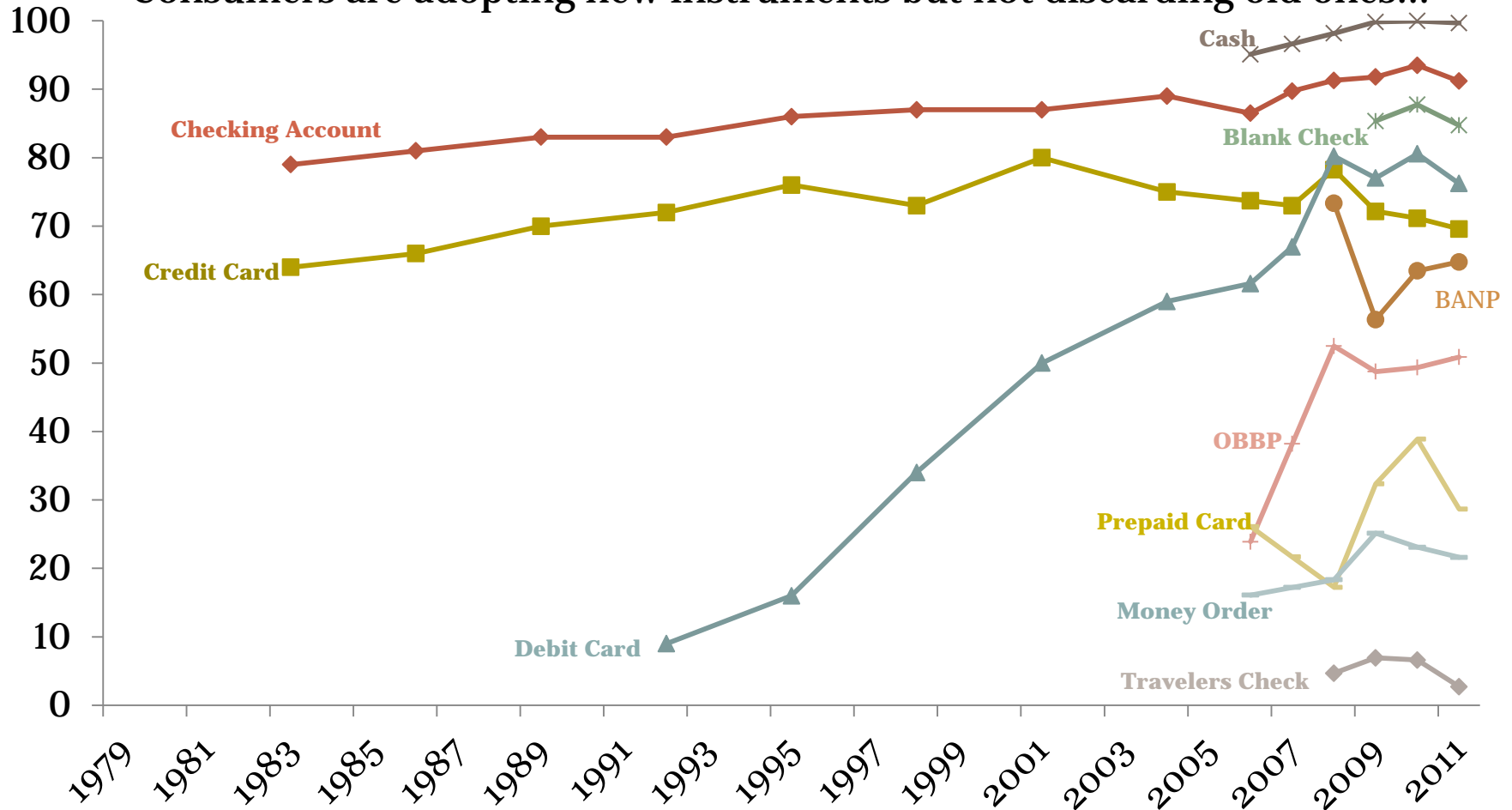
Consumer Payment Choices

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



Consumer Adoption of Payments

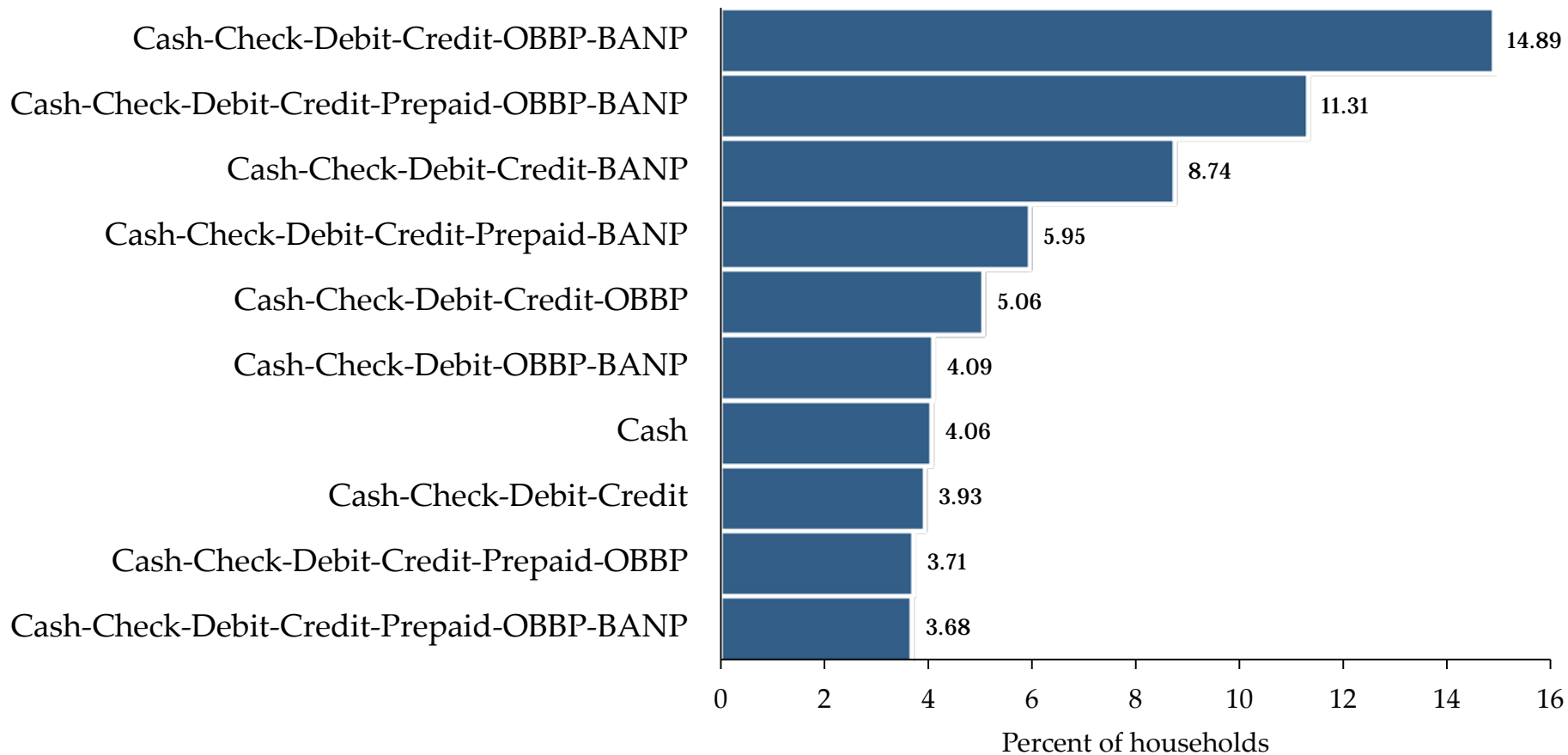
Consumers are adopting new instruments but not discarding old ones...



Source: Survey of Consumer Finances (SCF) and Survey of Consumer Payment Choice (SCPC)"

Payment Instrument Portfolios

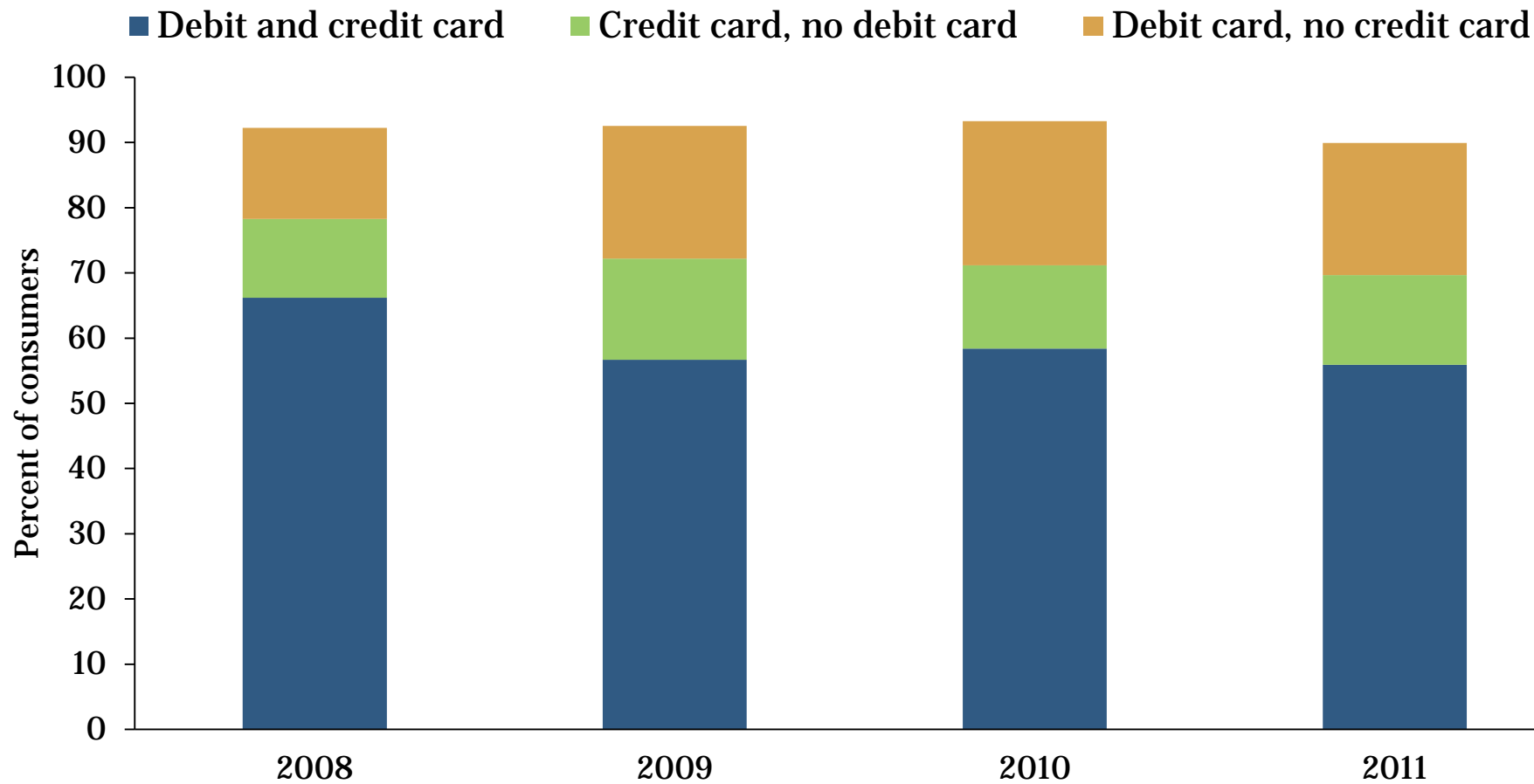
Top 10 Combination of Payment Instruments Adopted



Source: 2010 Survey of Consumer Payment Choice (SCPC), preliminary results

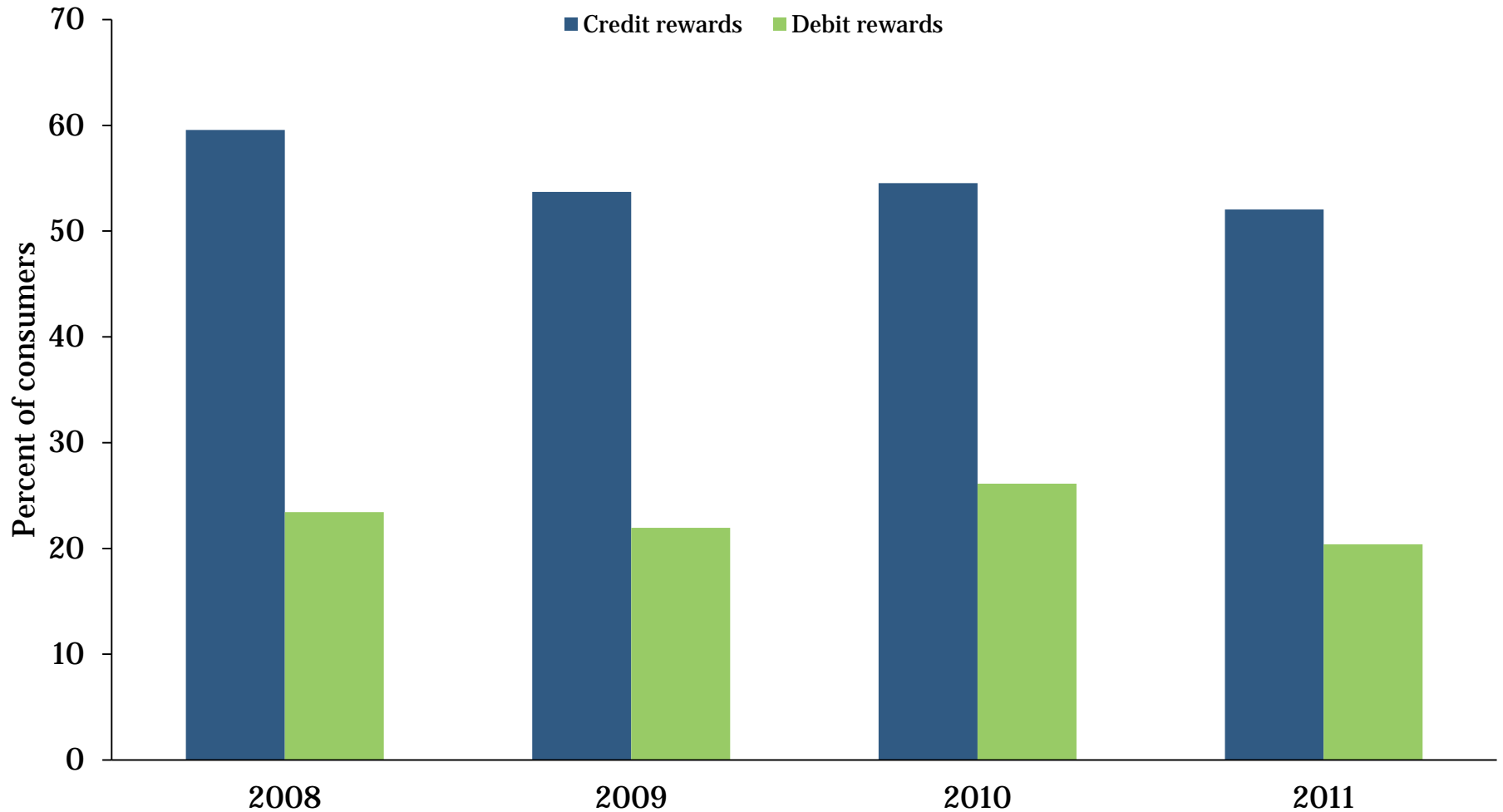
Adoption of Debit and Credit Cards

Most consumers have a card and more than half have both



Source: 2008, 2009, 2010 and 2011 Survey of Consumer Payment Choice (SCPC), preliminary results

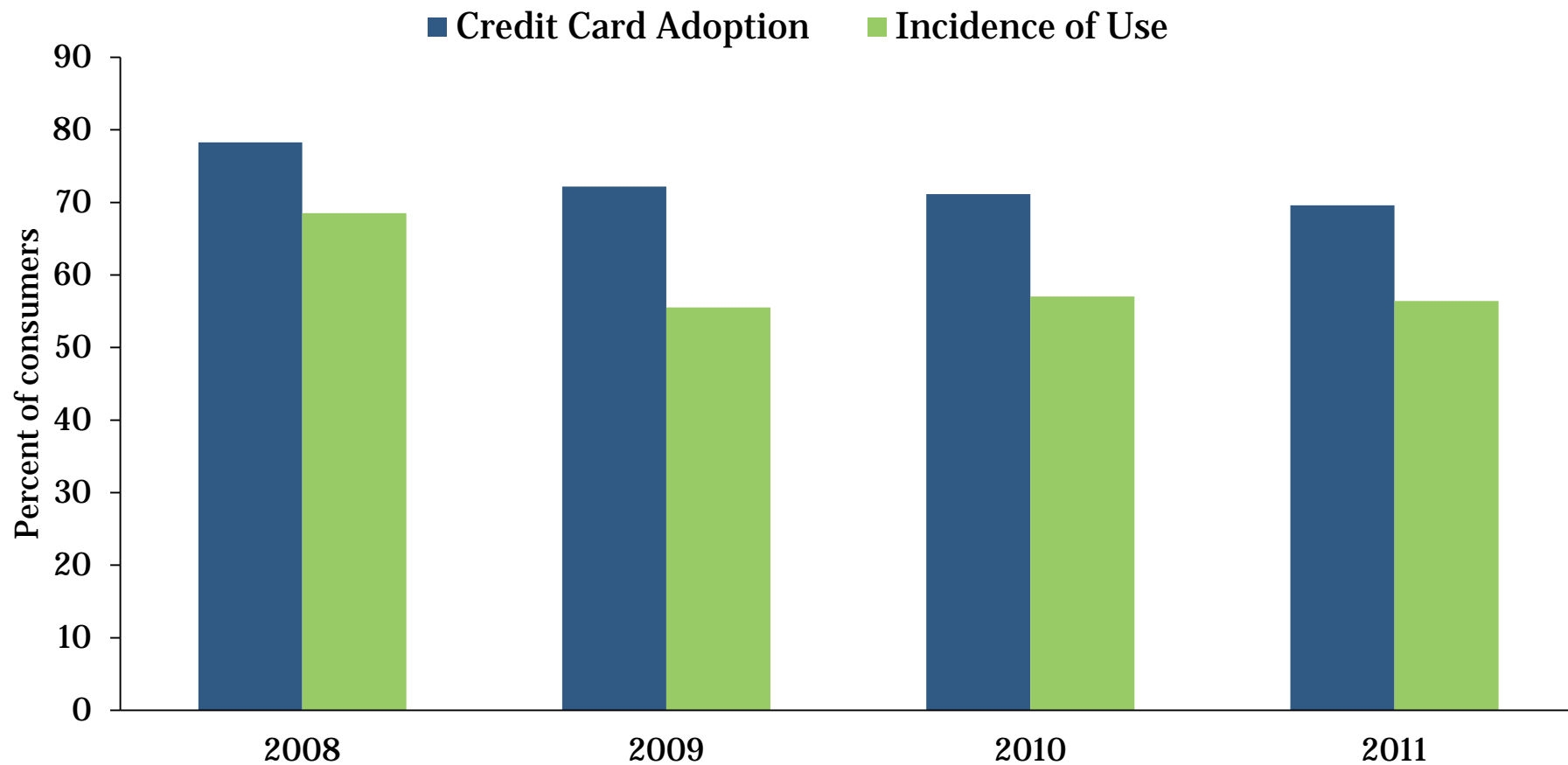
Adoption of Rewards Cards



Source: 2008, 2009, 2010 and 2011 Survey of Consumer Payment Choice (SCPC), preliminary results

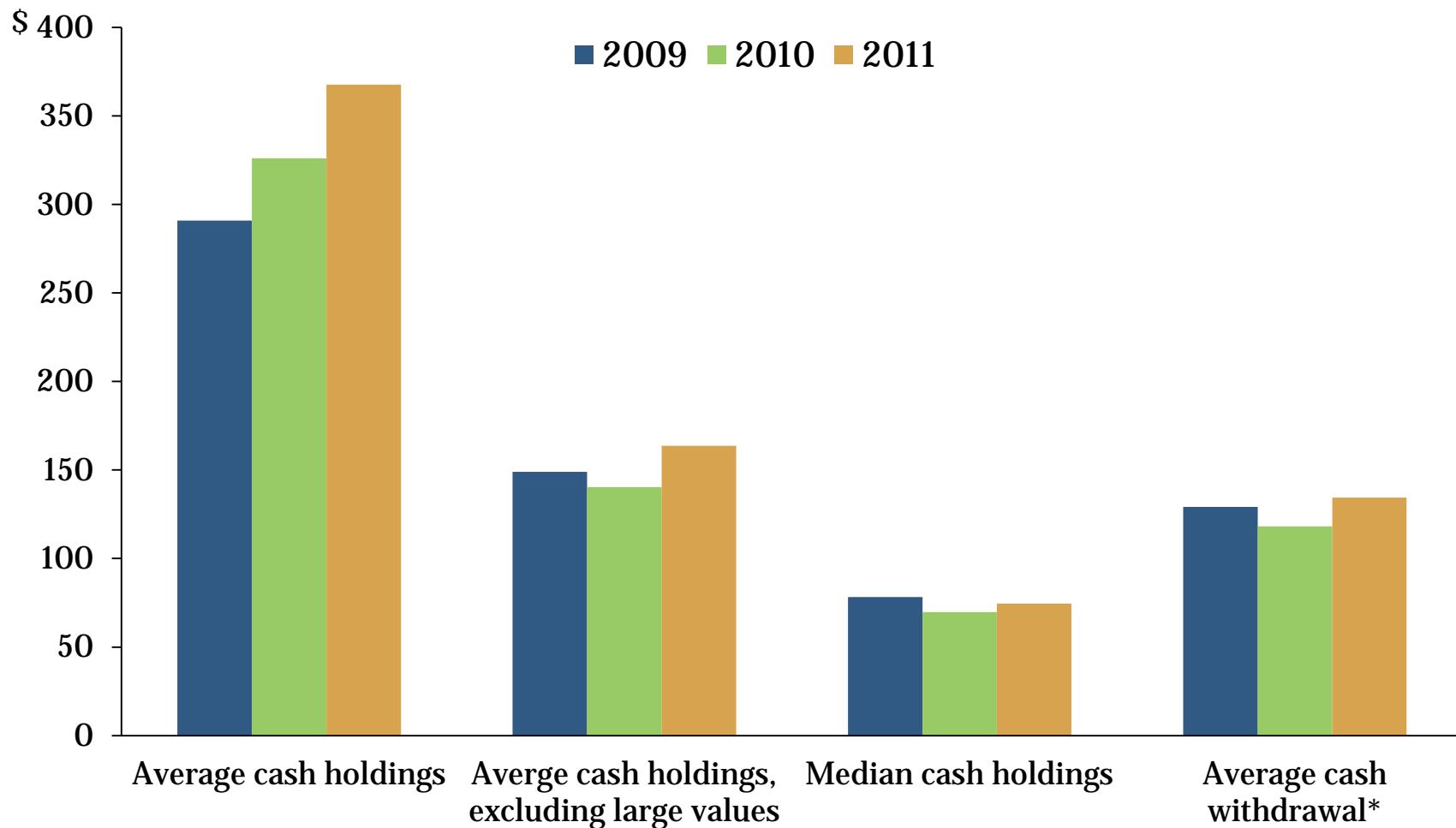
Incidence of Use of Credit Cards

Activity is down from 2008, but steady since 2009.



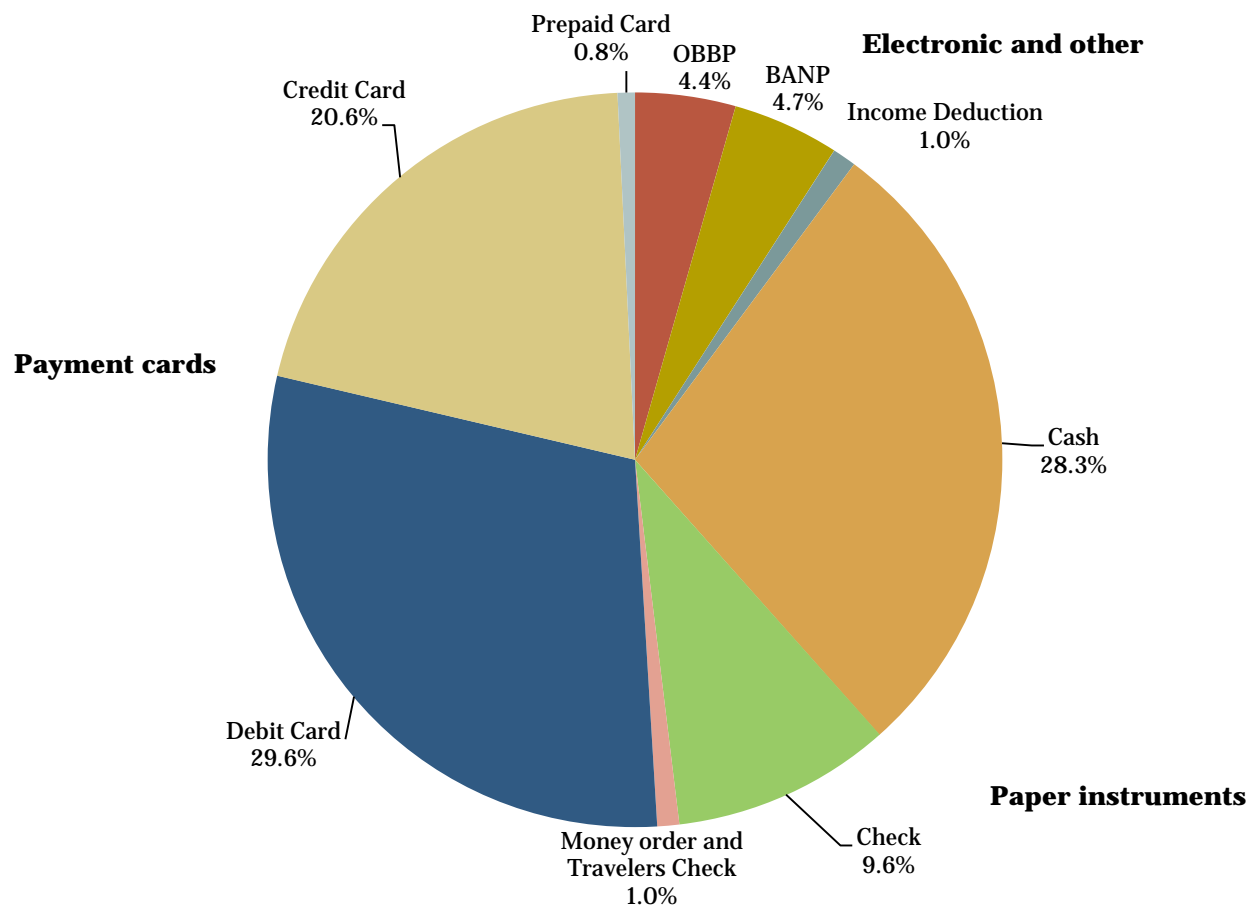
Source: 2008, 2009, 2010 and 2011 Survey of Consumer Payment Choice (SCPC), preliminary results and subject to change.

Cash Holdings and Withdrawals



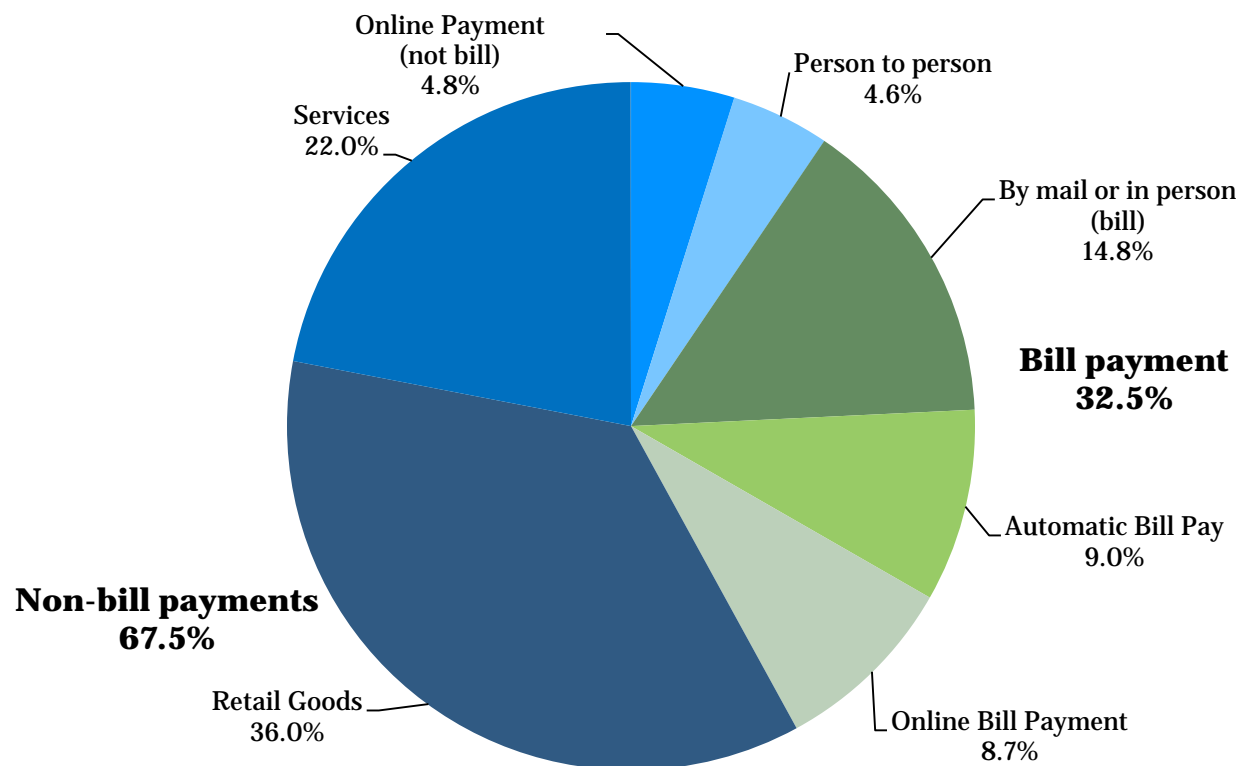
Source: 2009, 2010, and 2011 Survey of Consumer Payment Choice (SCPC), preliminary results and subject to change

Number of Payments by Instrument, 2011



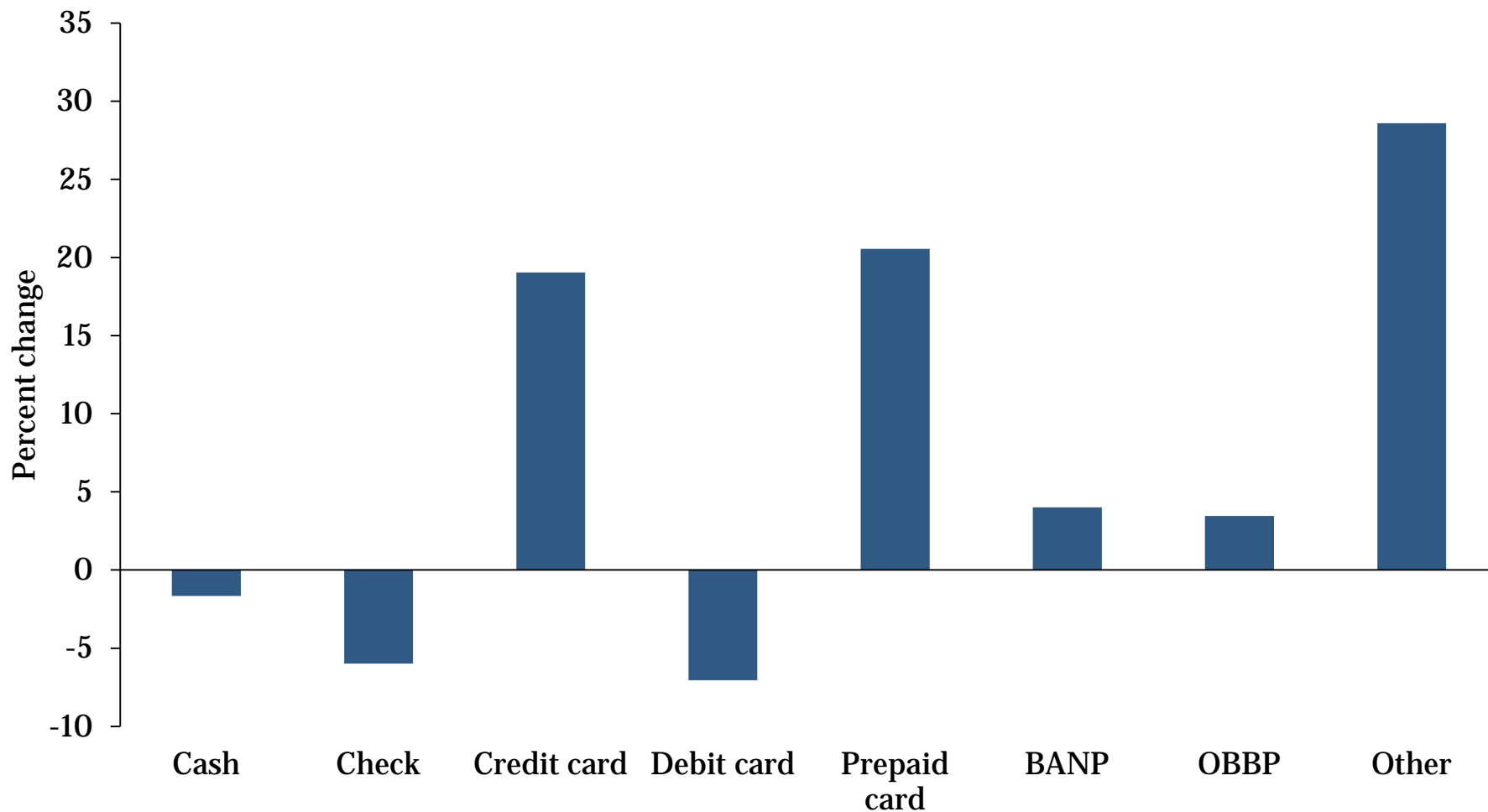
Source: 2011 Survey of Consumer Payment Choice (preliminary result).

Percent Share of Payments by Transaction, 2011



Source: 2011 Survey of Consumer Payment Choice (preliminary result).

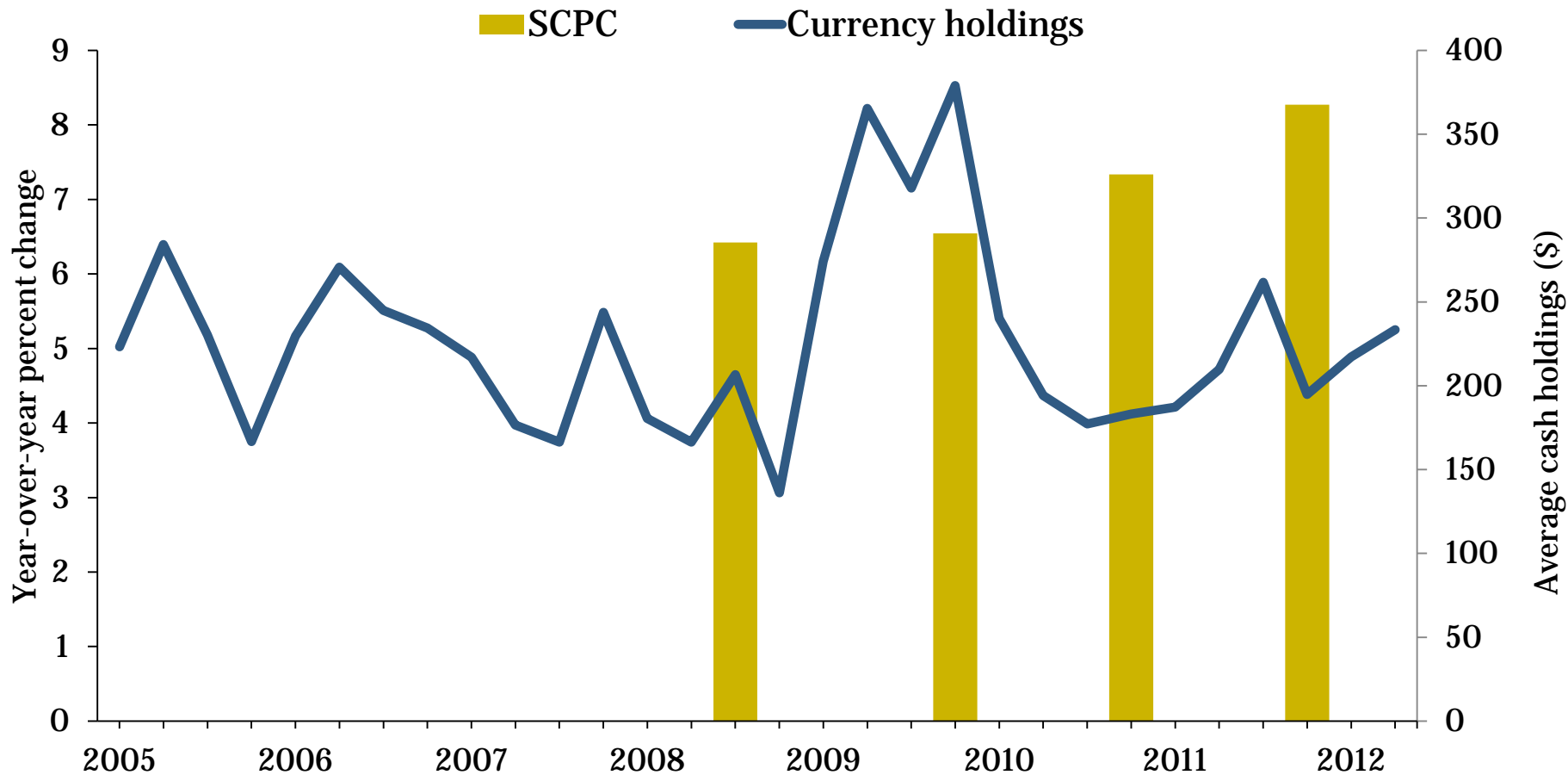
Change in Use by Instrument, 2010-2011



Source: 2010 and 2011 Survey of Consumer Payment Choice (SCPC), preliminary results and subject to change.

Currency in Circulation

Currency in circulation continues to rise, even more sharply in the recession



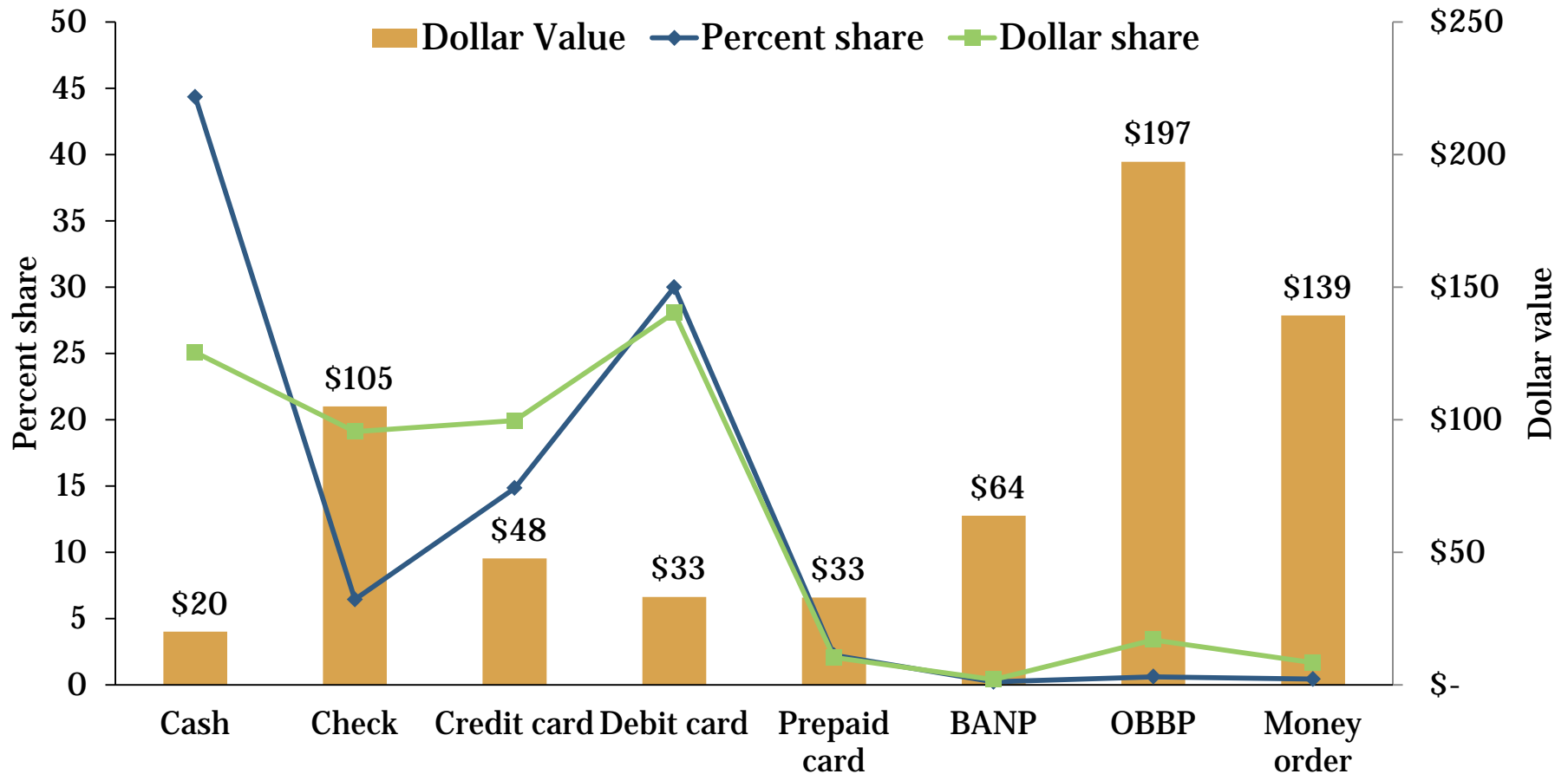
Source: Federal Reserve Statistical Release, 2008, 2009, 2010, and 2011 Survey of Consumer Payment Choice (SCPC)

How Consumers Rate Payments

| | | Ranked by average of 6 factors | Acceptance for payment | Acquisition & setup | Cost | Convenience | Record keeping | Security |
|--|--|--------------------------------------|---------------------------|------------------------|------|-------------|-------------------|----------|
| Viewed most favorably overall | Debit card | 4.0 | 4.4 | 4.0 | 4.0 | 4.3 | 4.1 | 3.1 |
| | | | | | | | | |
| Viewed favorably | Credit card | 3.8 | 4.5 | 3.7 | 2.9 | 4.3 | 4.3 | 3.1 |
| | Cash | 3.7 | 4.6 | 4.3 | 4.5 | 4.0 | 2.3 | 2.7 |
| | Online banking bill pay | 3.7 | 3.5 | 3.5 | 4.0 | 3.9 | 4.2 | 3.2 |
| | Check | 3.6 | 3.5 | 3.8 | 3.9 | 3.1 | 4.2 | 2.9 |
| | | | | | | | | |
| Viewed least favorably | Prepaid card | 3.2 | 3.8 | 3.4 | 3.4 | 3.4 | 2.8 | 2.7 |
| | Bank account number | 3.2 | 2.5 | 3.4 | 3.7 | 2.9 | 3.9 | 2.6 |

Diary Results for Non-bill Payments

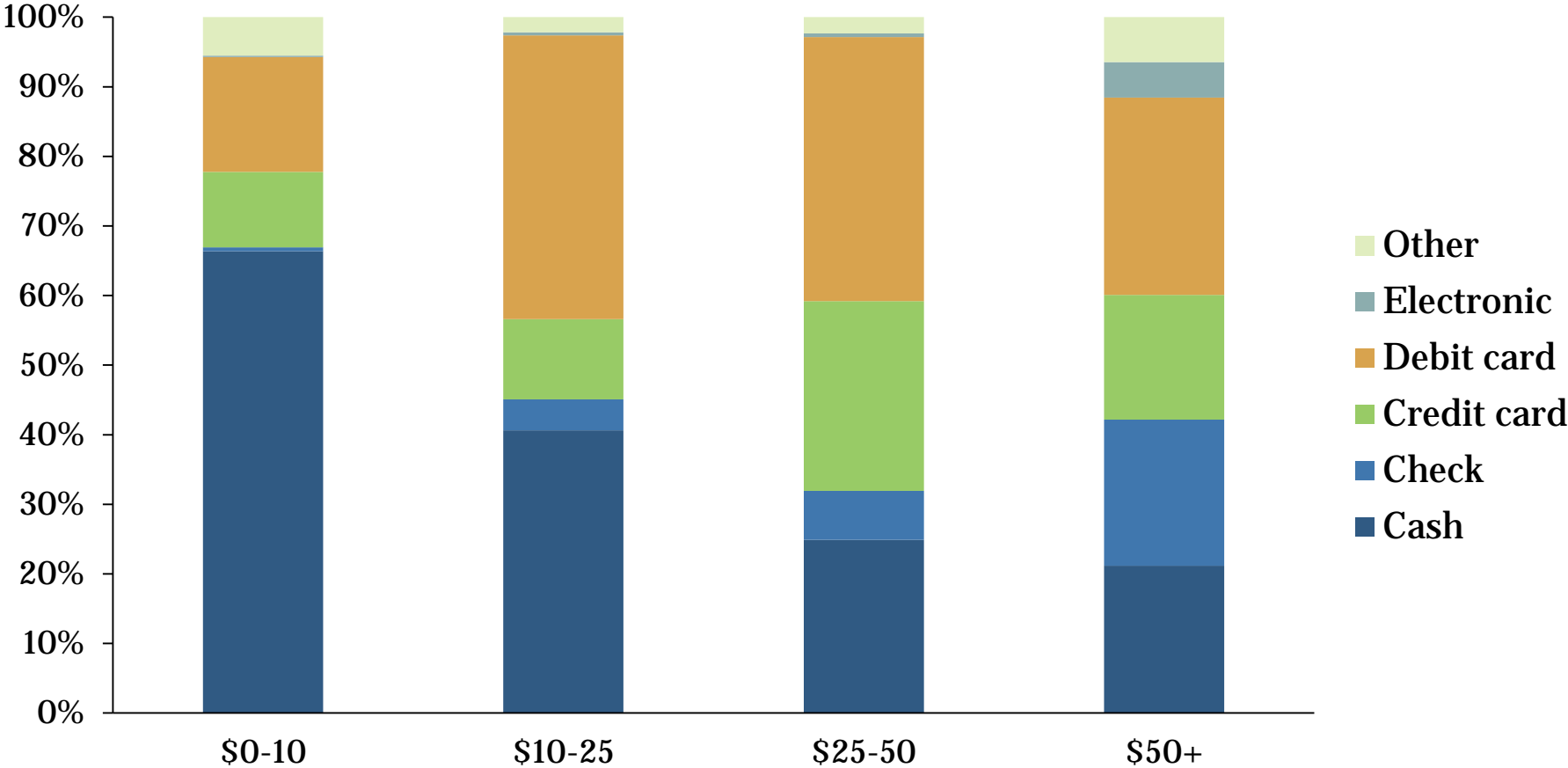
Shares and average values of each payment instrument



Source: 2010 Diary of Consumer Payment Choice (DCPC), preliminary results

Payment Amount Versus PI Choice

Payment instrument shares by transaction dollar values



Source: 2010 Diary of Consumer Payment Choice (DCPC), preliminary results and subject to change.

The Use of Coins

- Over the course of the diary, respondents started the day with coins in their pocket, wallet or purse on 49.6 percent of the days.
- They used coins to pay for part or all of a cash transaction on 13.4 percent of the days.
- Respondents used coins in 5.7 percent of all cash payments.

Source: 2010 Diary of Consumer Payment Choice (DCPC), preliminary results and subject to change

Example of Research That We Do

Using data from the “Diary of Consumer Payment Choice”

- Merchants pay higher fees on credit card transactions compared with debit card and cash transactions.
- Recent legislation and court settlements in the U.S. allow merchants to steer customers to pay with less-costly payment methods.
- Merchants are now allowed to give price discounts to buyers who pay with debit cards and cash (allowed before).
- Our research calibrates for the maximum percentage debit and cash discount that merchants can give without losing profit. Next slide focuses on cash discounts....

| Merchant Fees | | | Cash Discount by Merchant Type (%) | | | | | |
|--|------------------------|---------------------|------------------------------------|-------|-------|-------|-------|------|
| $\phi^p(\text{\$})$ | $100 \times \mu^c(\%)$ | $\phi^h(\text{\$})$ | M1 | M2 | M3 | M4 | M6 | M7 |
| 0.10 | 2 | 0.05 | 1.05 | 1.13 | 1.34 | 1.45 | 1.05 | 1.12 |
| 0.10 | 3 | 0.05 | 1.34 | 1.46 | 1.85 | 2.04 | 1.38 | 1.30 |
| 0.10 | 4 | 0.05 | 1.63 | 1.79 | 2.36 | 2.62 | 1.71 | 1.48 |
| 0.20 | 2 | 0.05 | 1.24 | 1.37 | 1.46 | 1.60 | 1.26 | 1.60 |
| 0.20 | 3 | 0.05 | 1.53 | 1.70 | 1.98 | 2.18 | 1.59 | 1.77 |
| 0.20 | 4 | 0.05 | 1.81 | 2.03 | 2.49 | 2.77 | 1.92 | 1.95 |
| 0.10 | 2 | 0.10 | 0.96 | 1.01 | 1.27 | 1.38 | 0.94 | 0.89 |
| 0.10 | 3 | 0.10 | 1.25 | 1.34 | 1.78 | 1.96 | 1.27 | 1.06 |
| 0.10 | 4 | 0.10 | 1.54 | 1.67 | 2.30 | 2.55 | 1.61 | 1.24 |
| 0.20 | 2 | 0.10 | 1.14 | 1.25 | 1.40 | 1.52 | 1.15 | 1.36 |
| 0.20 | 3 | 0.10 | 1.43 | 1.58 | 1.91 | 2.11 | 1.49 | 1.54 |
| 0.20 | 4 | 0.10 | 1.72 | 1.91 | 2.43 | 2.69 | 1.82 | 1.71 |
| $\frac{\textit{cash}}{\textit{credit} + \textit{debit} + \textit{cash}}$ | | % of volume | 40.7 | 46.8 | 28.9 | 46.3 | 57.2 | 64.1 |
| | | % of value | 18.1 | 28.5 | 12.7 | 14.4 | 36.8 | 49.9 |
| Avg. Cash Trans. Val. (\\$) | | V^h | 14.32 | 13.77 | 24.33 | 11.49 | 13.04 | 5.91 |