Regulating Consumer Financial Products: Evidence from Credit Cards

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  - Firms exploit behavioral biases, especially among the poor
  - Regulation and additional information can protect consumers
- Skeptics
  - Hard to transfer surplus from producers to consumers (Whac-A-Mole)
  - "The reduced revenue stream to lenders from these fees would mean that other rates and fees would be adjusted to compensate" (Mullainathan et al., 2009)
- How should regulation look like? Prohibiting certain products & behaviors? Providing additional information?

Credit Card Market

- Seen by many as particularly exploitative
  - "The whole business model of the **credit card industry is not designed to extend credit but to induce mistakes and trap consumers into debt.** This is an industry that has been thriving on misleading consumers." (Dodd, 2009)

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  - Provide information on cost of making minimum payment
- Pushback
  - "It appears that there have been significant trade-offs. Since the proposal and adoption of key provisions [...] average credit card interest rates have increased and credit card credit is less available, especially to subprime borrowers." (ABA, 2013)
- This Paper:
  - Analyze intended and unintended consequences of the CARD Act
  - Learn about consumer financial regulation going forward

Data

- OCC Credit Card Metrics dataset
- Account-level panel data on all credit cards issued at 8 largest US banks
    - 170 million credit card accounts (30% of market)
    - Monthly from April 2008 to December 2012
    - FICO score, contract terms, utilization, fees, interest charges and payments

Revenue and Cost Drivers by FICO: Pre-CARD Act

Expressed as annualized percent of borrowing volume (ADB)

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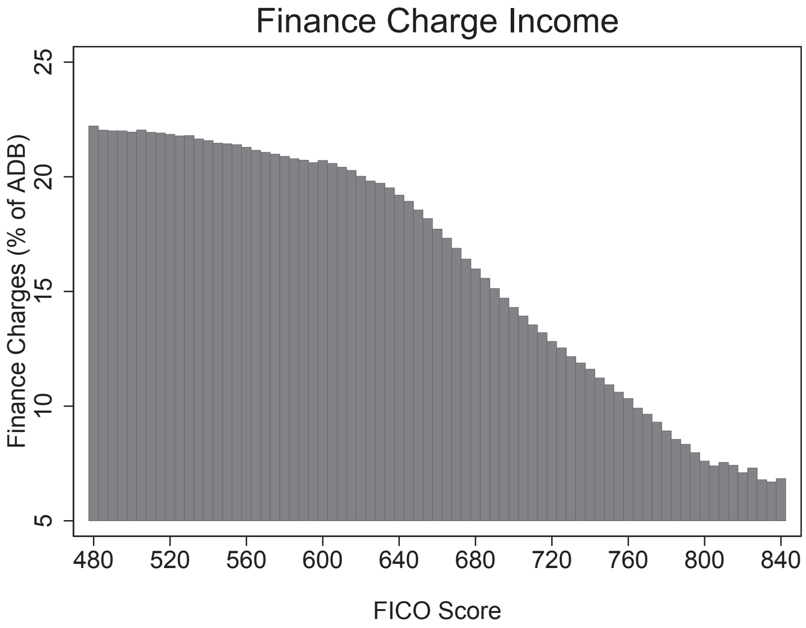

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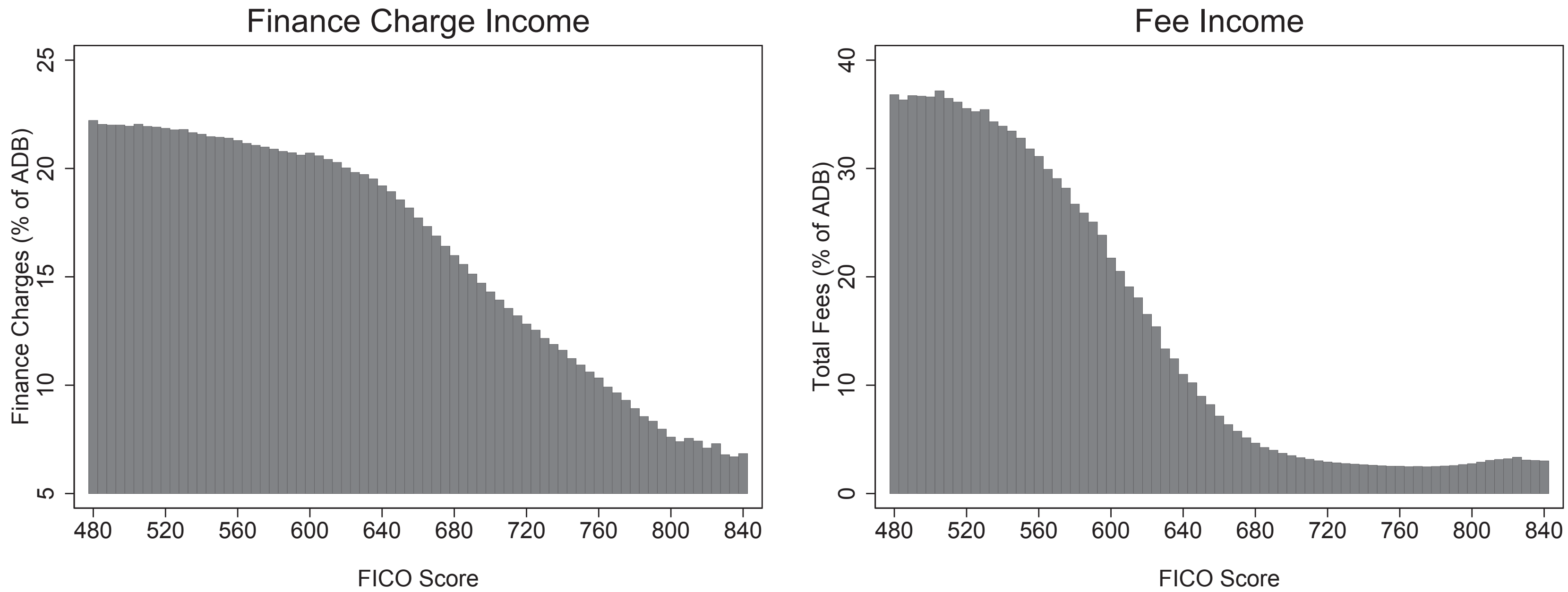

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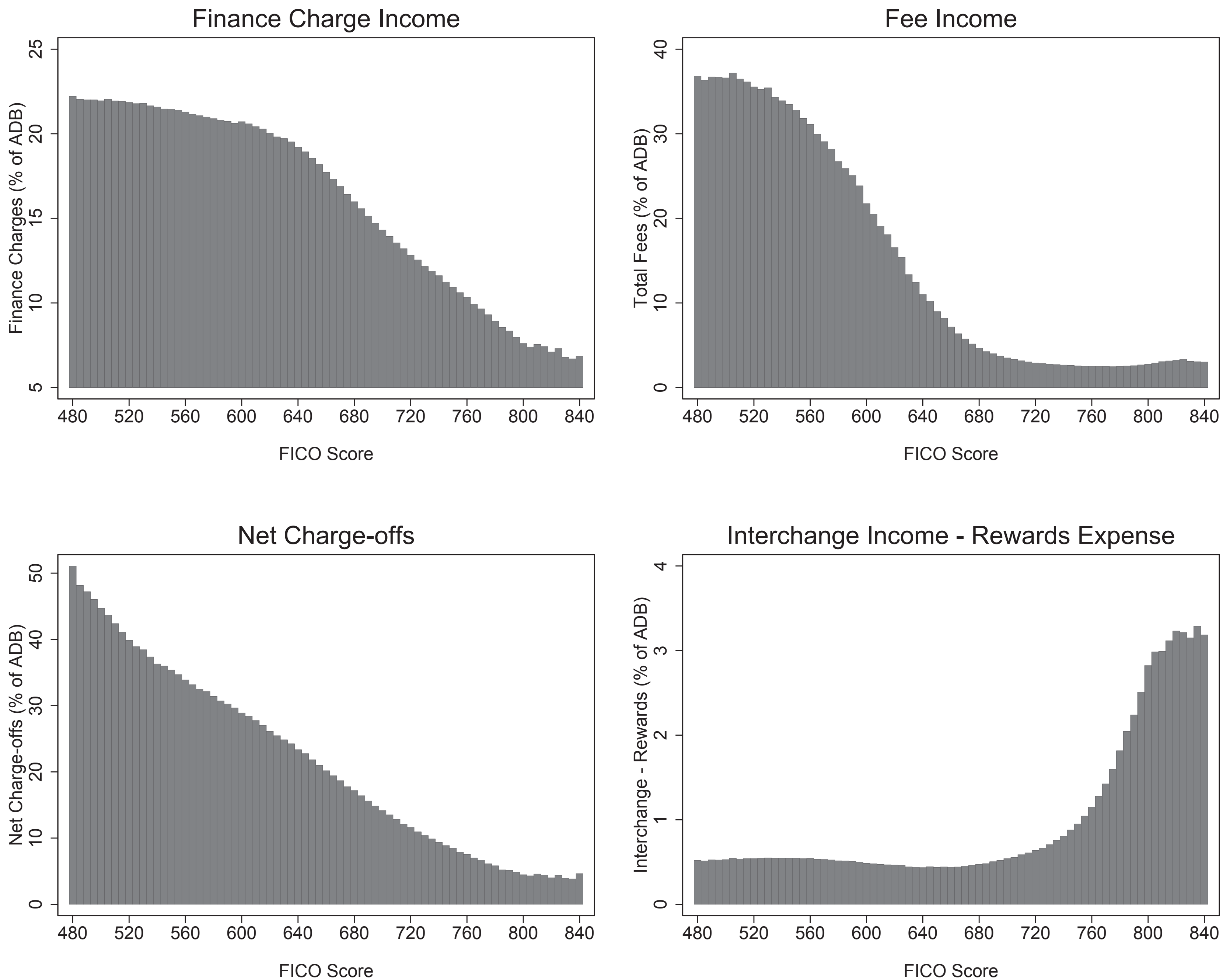
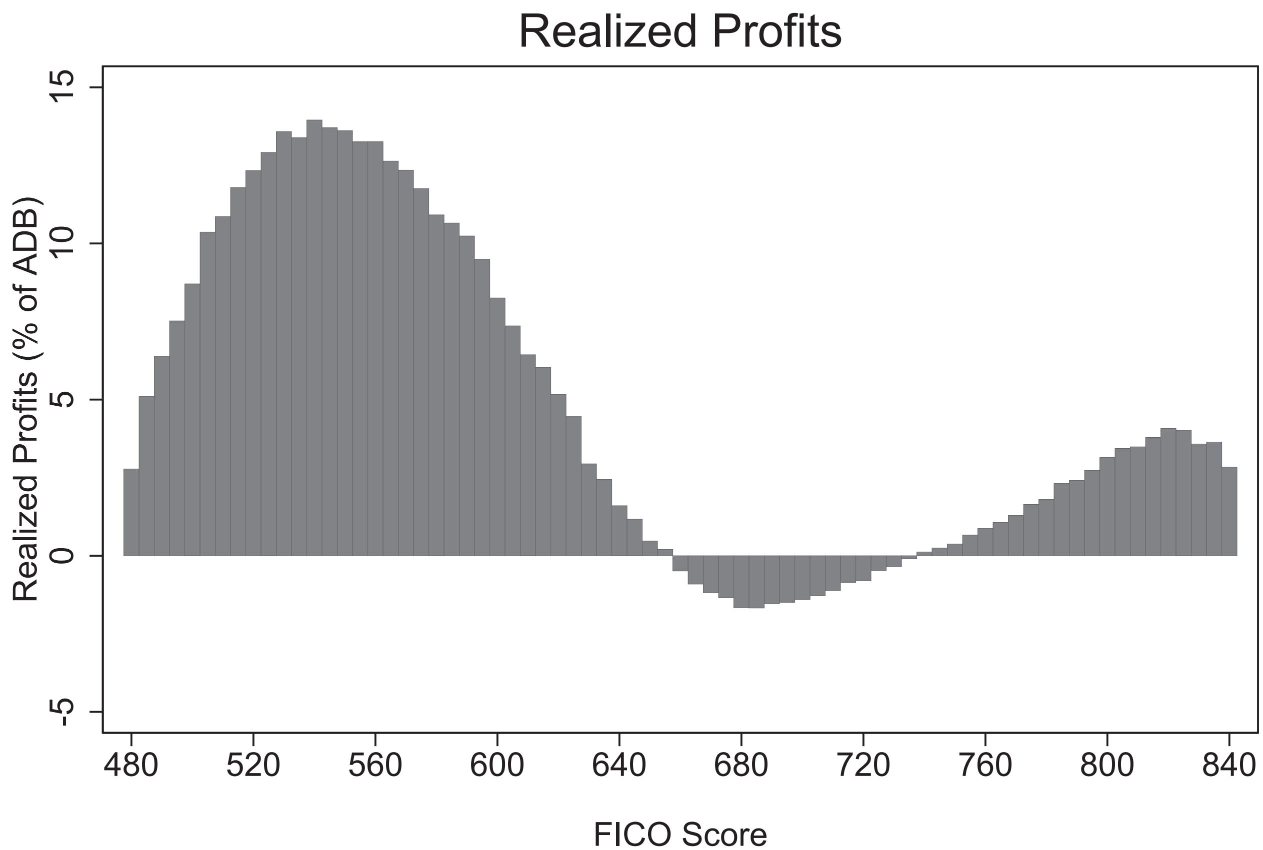


Profits: Pre-CARD Act (April 2008 - February 2010)



- Also includes cost of funds, operational expenses, marketing, etc.
- Credit card lending highly profitable (1.3% of ROA)
  - Low-FICO score segment most profitable, significantly driven by fees
  - Not risk-adjusted, but bad realization of draw (Financial Crisis)

Impact of CARD Act

- **Research design**
- Intended effects
  - Fees
  - Payoff nudge
- Unintended consequences
  - Theory: Surplus transfer vs. offset
  - Evidence

Identification of CARD Act Effect

- Challenging because of potentially confounding macroeconomic trends
- Difference-in-differences
  - Small business cards excluded from CARD Act (control group)
- Identifying assumption is parallel trends
  - Parallel pre-CARD Act trends
    - Many months, all outcome variables
  - Institutionally similar
    - Guaranteed by personal assets, underwritten on personal FICO score
    - Issued by same business units / jointly assessed by regulators

Econometric Model

- Consumer $\times$ month-specific coefficients

$$y_{it} = \sum_{t \neq \text{May 2009}} \beta_t I\{ConsumerCreditCard_i\} + X'_{it}\delta_X + \delta_t + \epsilon_{it}$$

  - X_{it}: Vector of covariants, including consumer card indicator
  - δ_t: Month FE
  - Cluster standard errors by bank $\times$ product type

- Today: Also show you means of outcomes over time $\rightarrow$ Transparency

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Over Limit Fees: FICO <660

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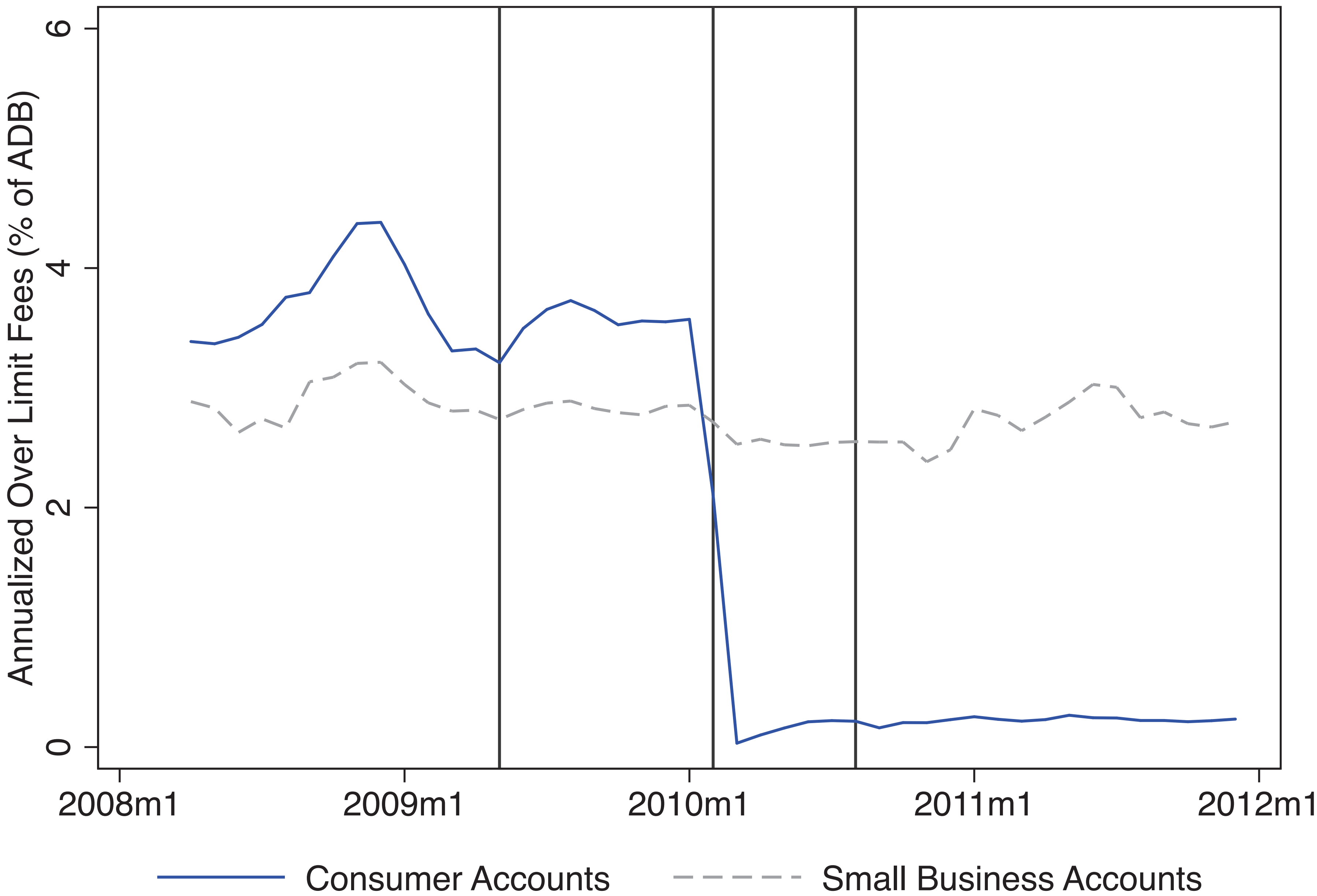

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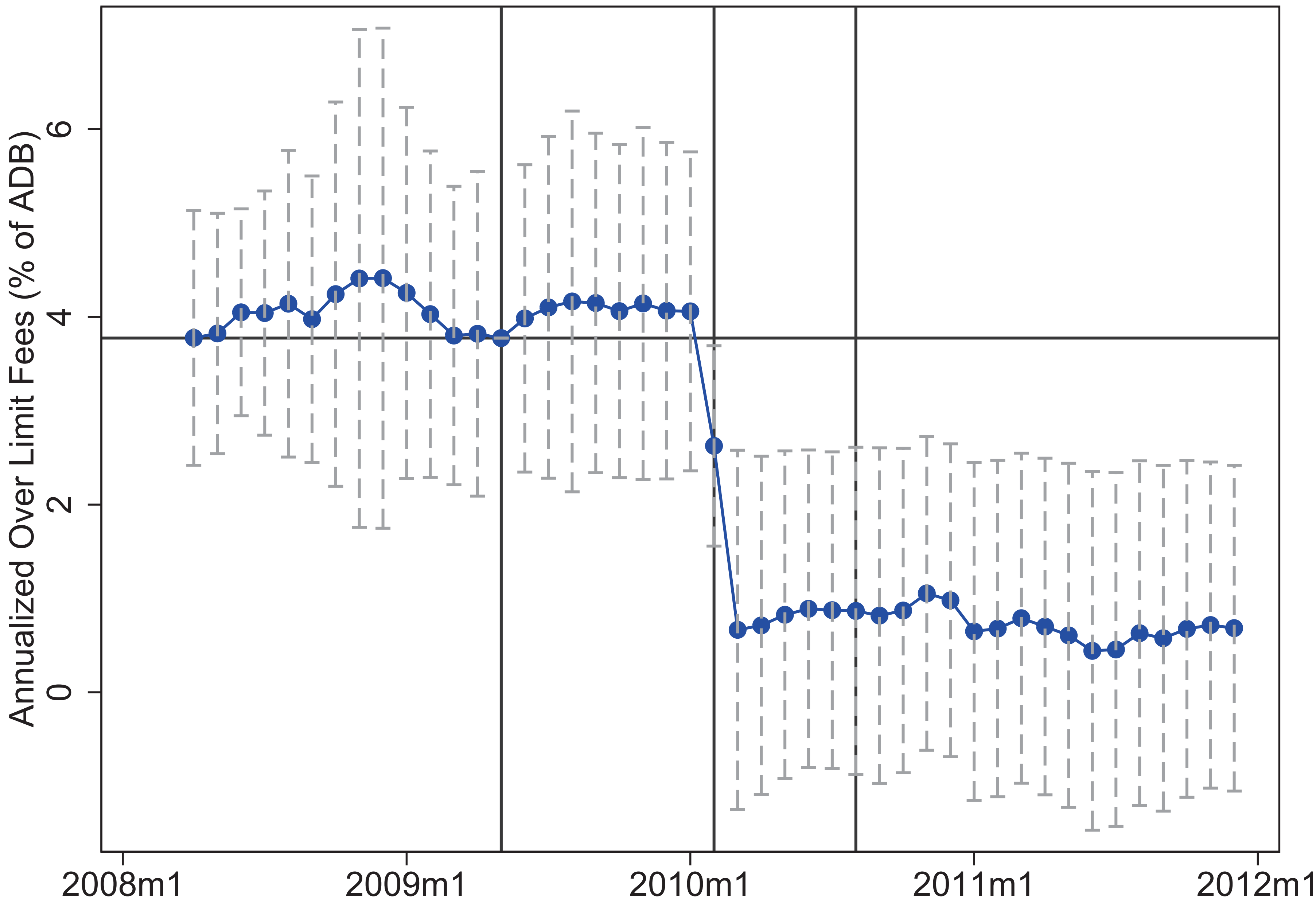

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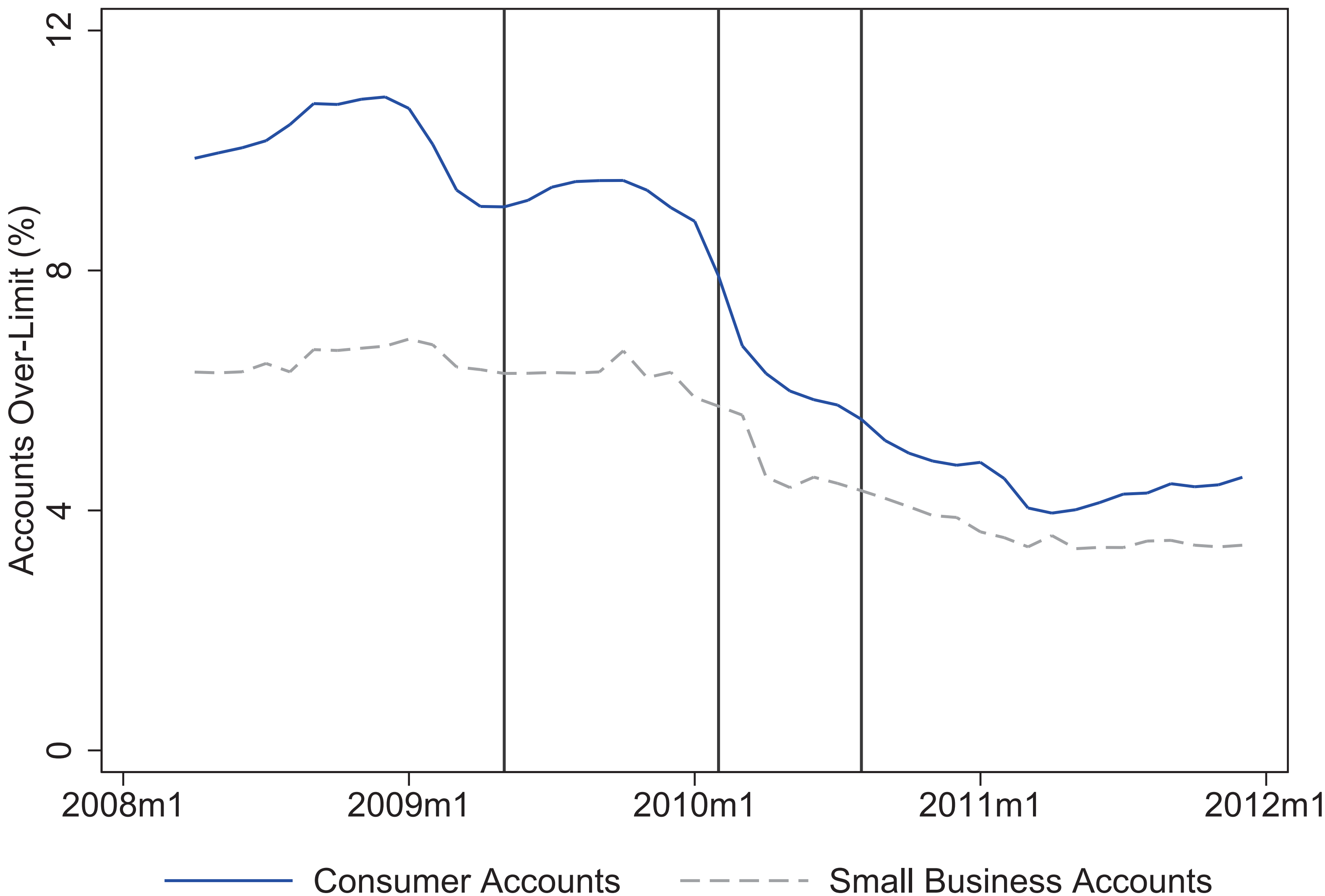

Conclusion on Fees

Late and Other Fees

- Late fees also decline
- No increase in other fees (e.g., annual fees)

Key Take-Aways

- Total decline in fees: Annualized 1.7% of ADB ($12.6 billion annually)
- Biggest decline for low-FICO consumers
  - FICO $<$ 660: Approximately 5.5% of ADB

Outline

- Data
  - Pre-CARD Act market overview
- Research design
- **Intended effects**
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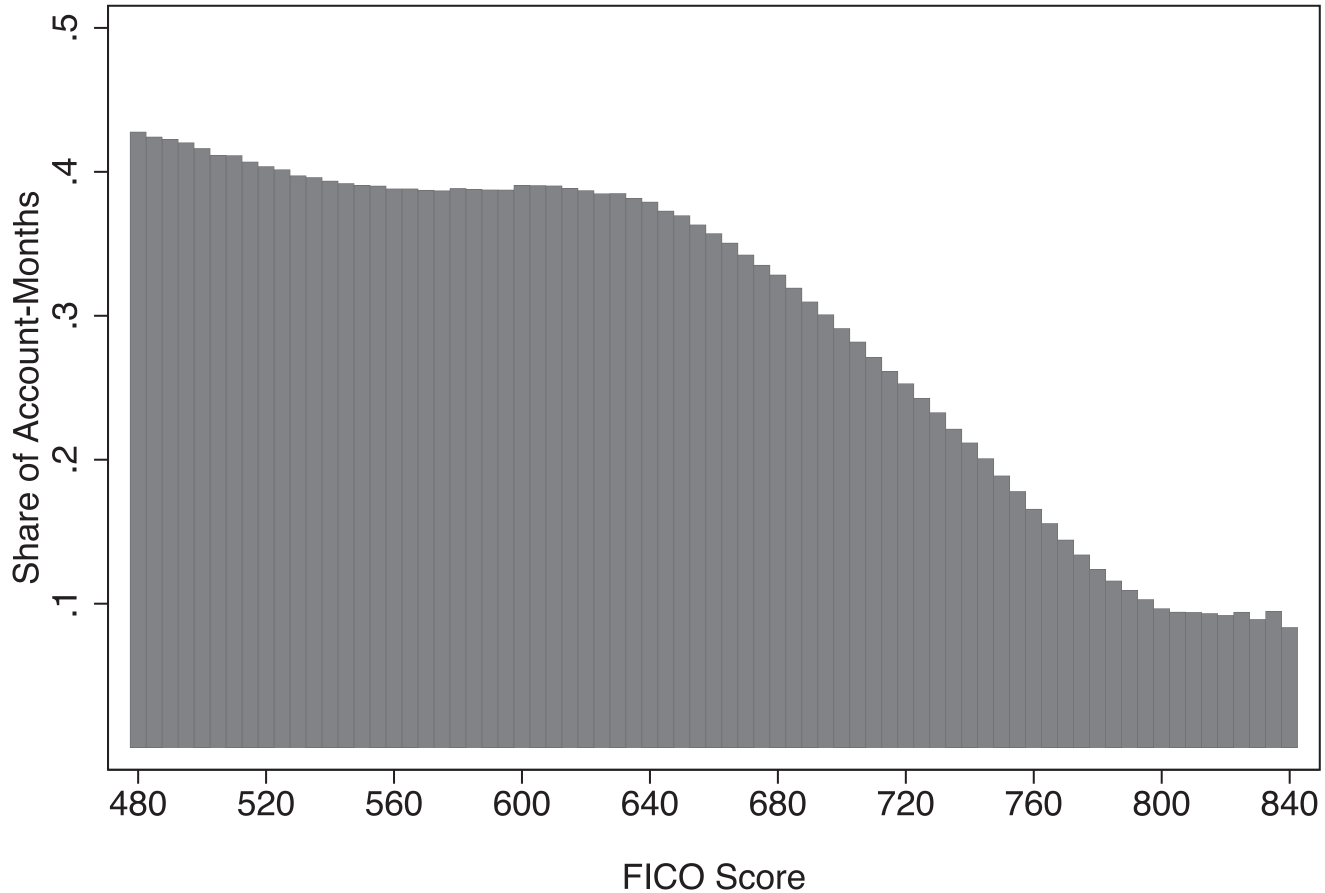
Payoff Nudge

- About 28% of people make only minimum payment or less



- Idea: Provide information about cost of this repayment behavior.

Payoff Nudge

If you make no additional charges using this card and each month you pay ...	You will pay off the balance shown in this statement in about ...	And you will end up paying an estimated total of ...
Only the minimum payment	10 years	$3,284
$62	3 years	$2,232 (Savings of $1,052)

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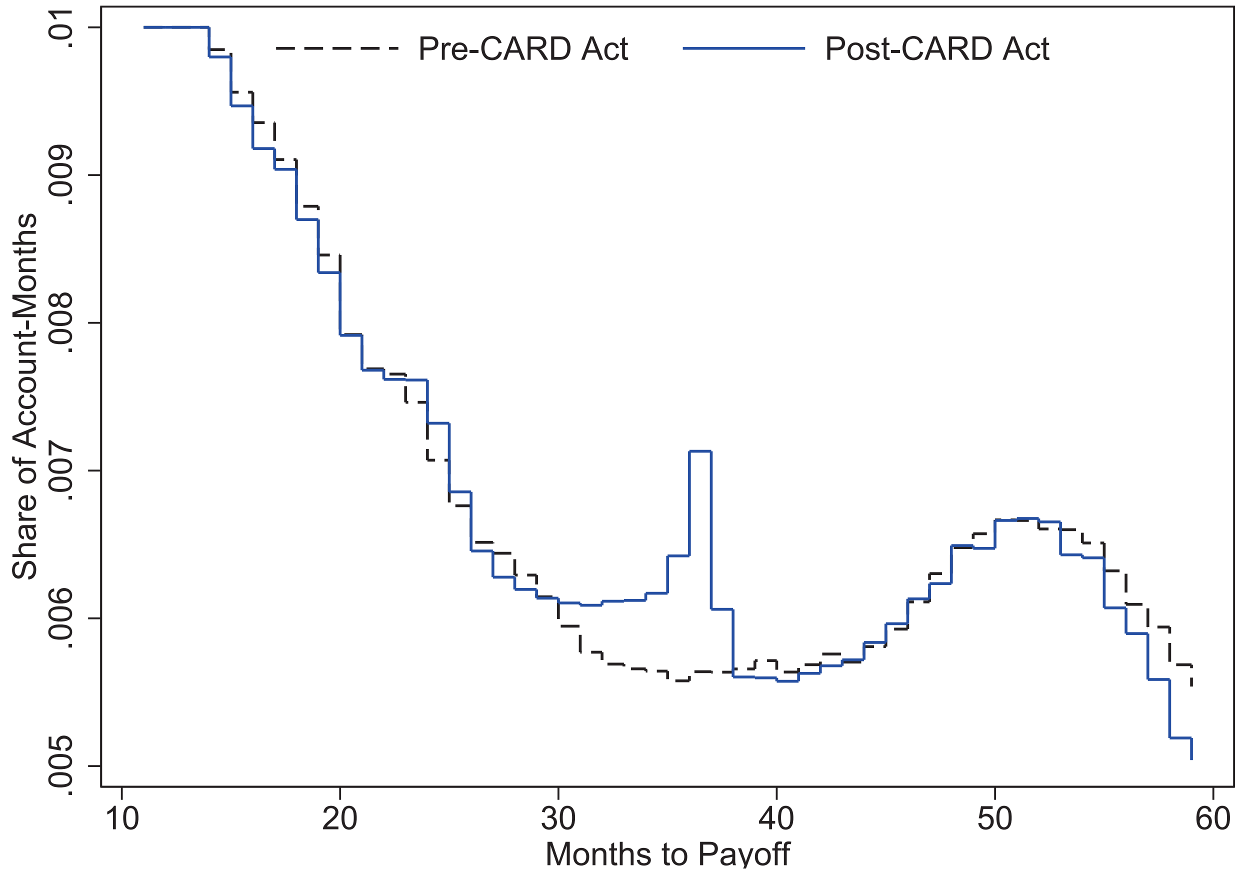
$$T = 1 - \frac{\ln\left(1 - \frac{\text{APR}}{12}\frac{\text{Cycle Ending Balance} - \text{Payment}}{\text{Payment}}\right)}{\ln(1 + \frac{\text{APR}}{12})}$$

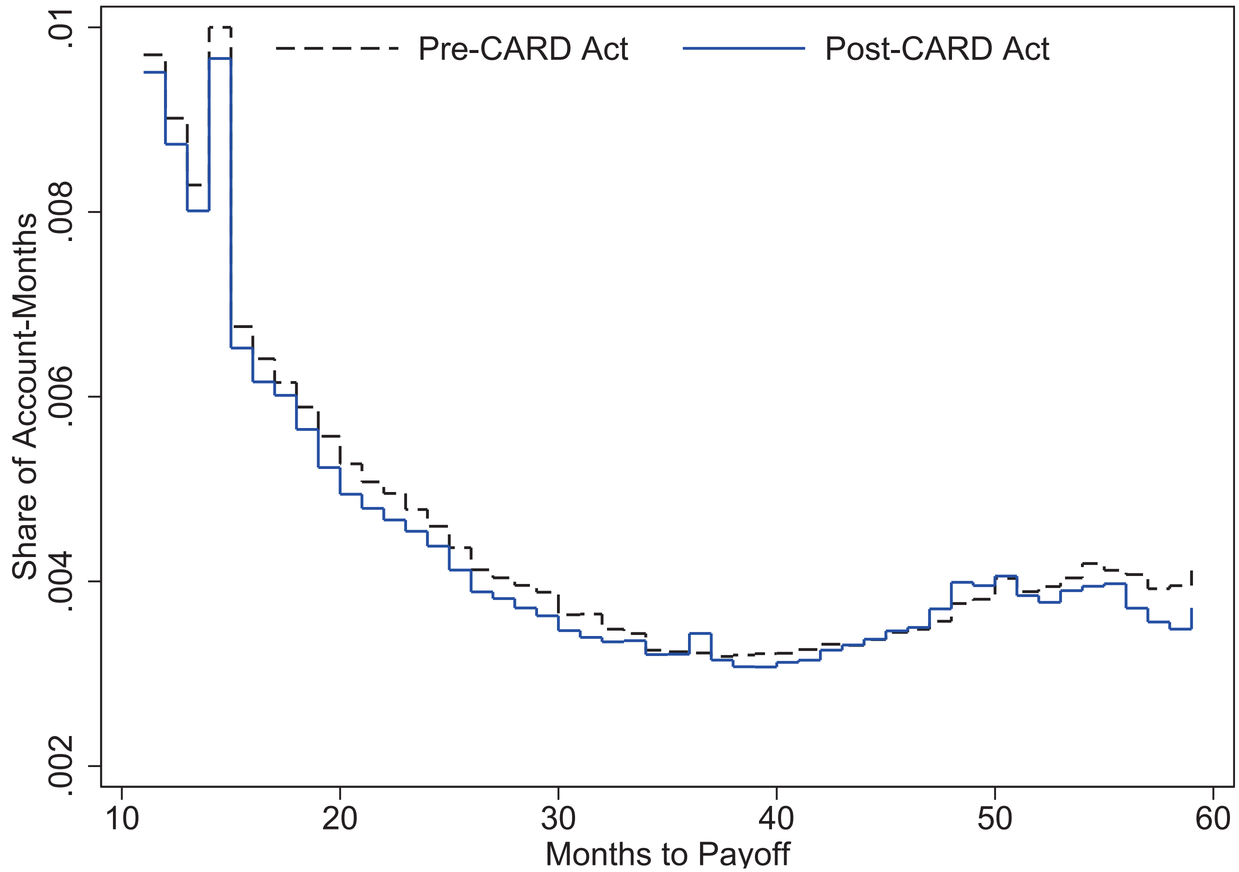
- $T = 1$: full repayment
- $T = 36$: approximately 3.5% of balance

Change Around 36-Months Target: Consumer Accounts



- 0.5% of people shift behavior (intent-to-treat effect)
- Seasonality makes it hard to detect where they come from
  - No evidence that nudge increased overall payments
- Maximum aggregate annualized savings of $71 million

Change Around 36-Months Target: Small Business Accounts



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  - Theory: Offset vs. transfer
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Offset Model - Intuition

- When would we expect perfect pass-through?
  1. Price = Marginal Cost
     - Pre-CARD Act industry profits
     - No observed pass-through of cost shocks (Cost of Funds)
  2. Fees are Perfectly Salient
     - Experimental evidence suggests unlikely
- Paper has formal model

Interest Charges: FICO < 660

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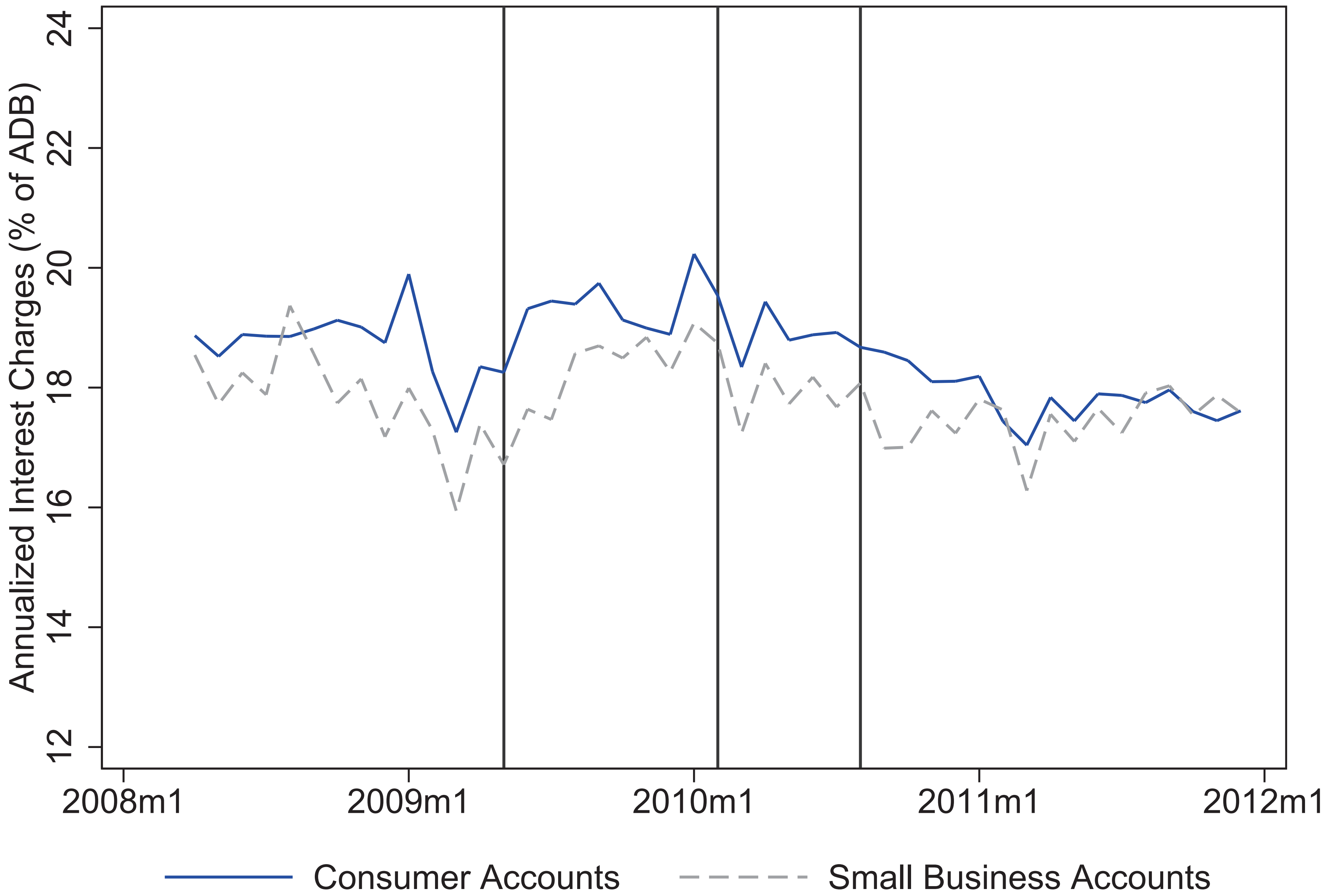

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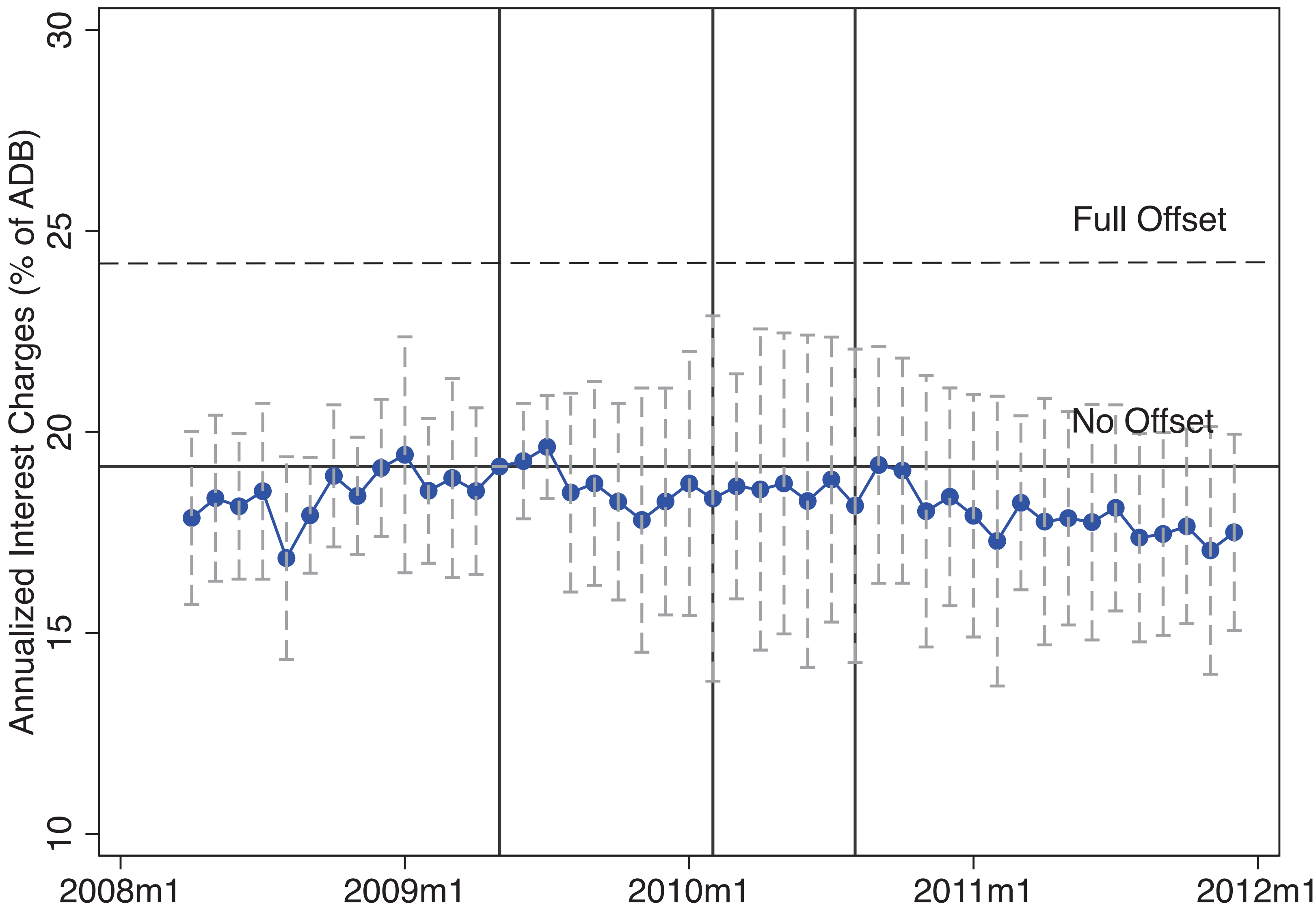
Differences in Differences: β_t coefficient



Conclusion: Cost of Borrowing

- Overall profitability of lending declined as a result of the CARD Act
- Fees declined by an annualized 1.7 percentage points of ADB; aggregate savings of $12.6 billion
- Point estimate for offset is zero
  - Can rule out offset of more than 57% with 95% confidence
- Consistent with low fee salience and limited competition

Credit Limits: FICO < 660

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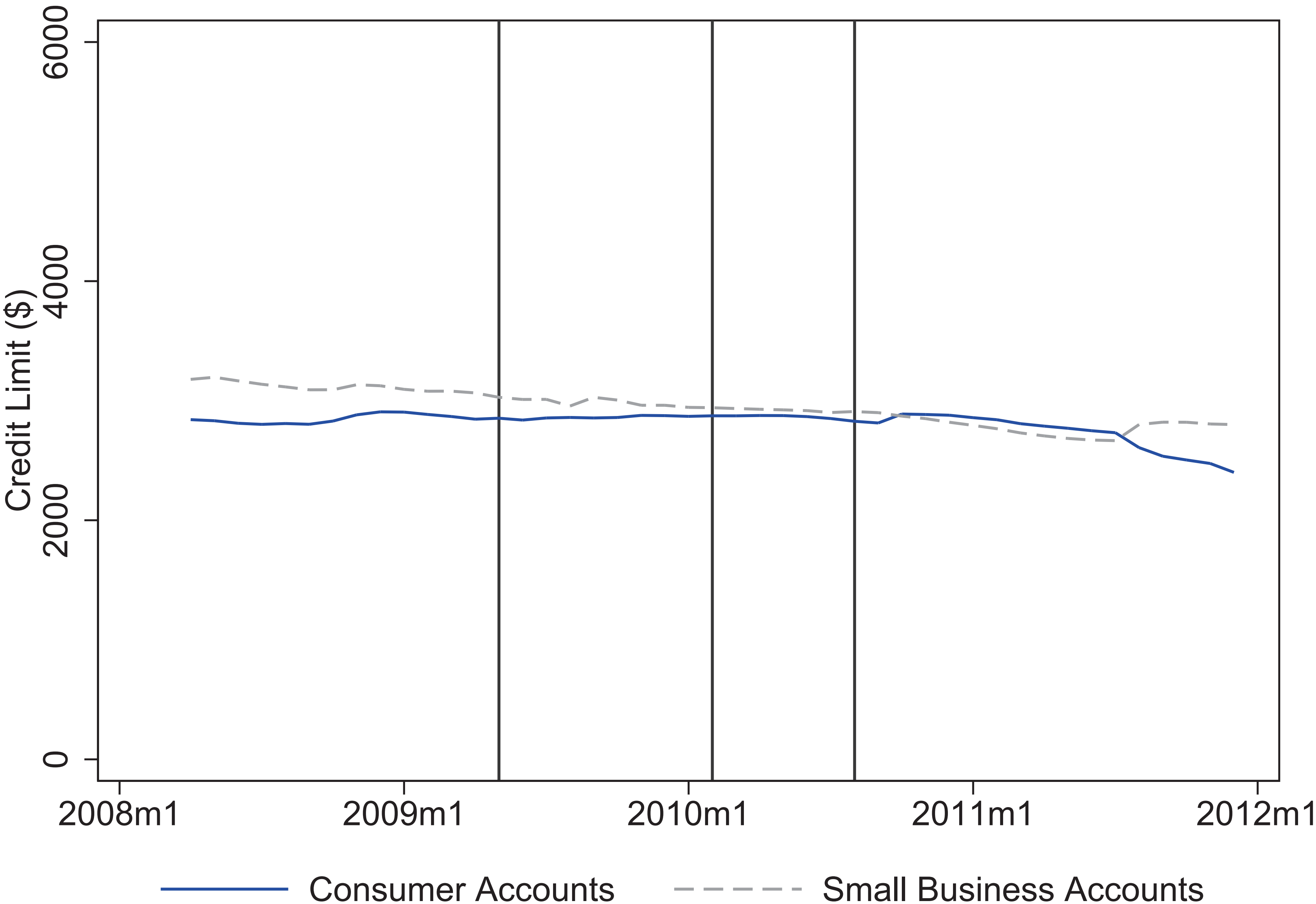

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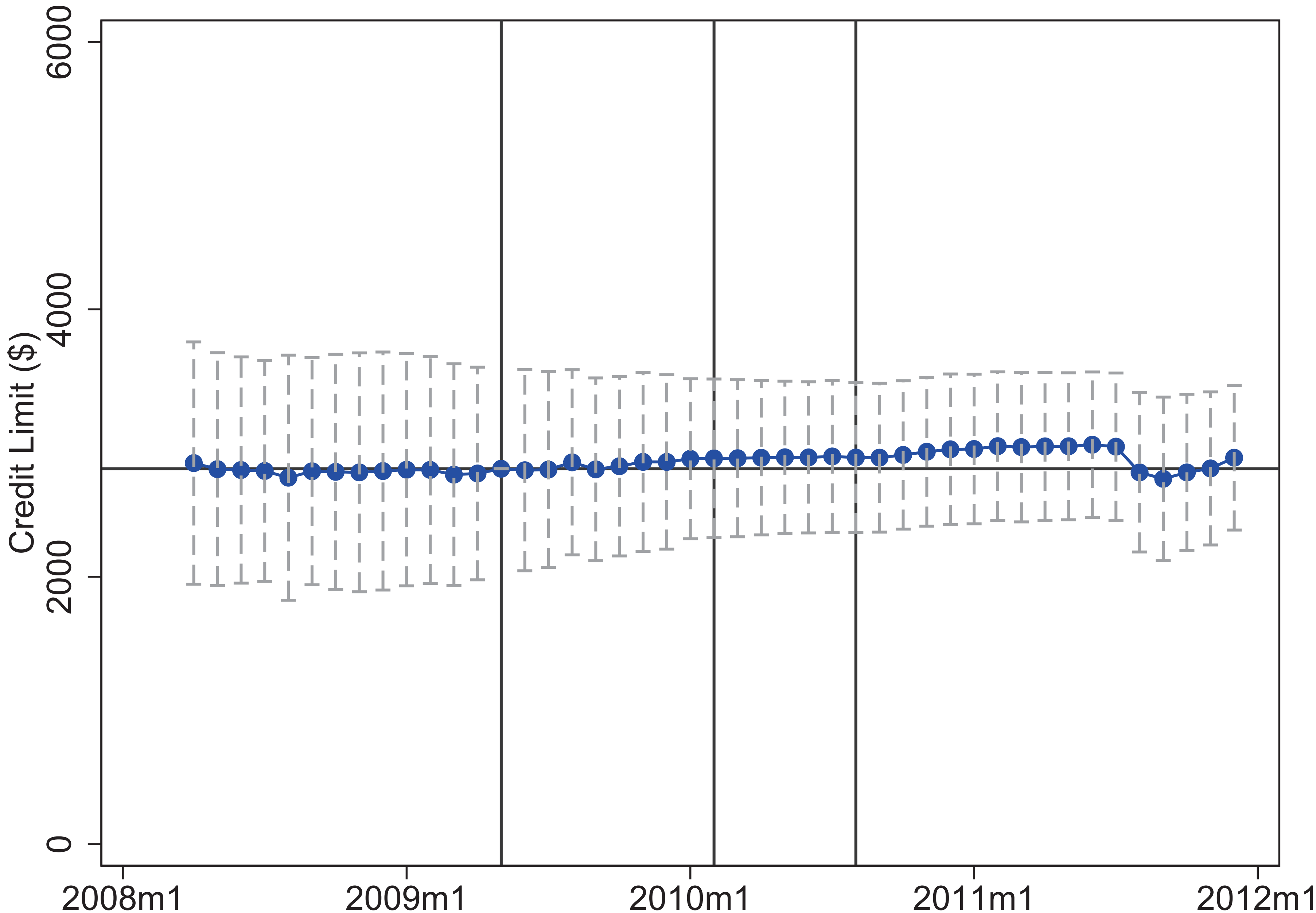

New Accounts: FICO < 660

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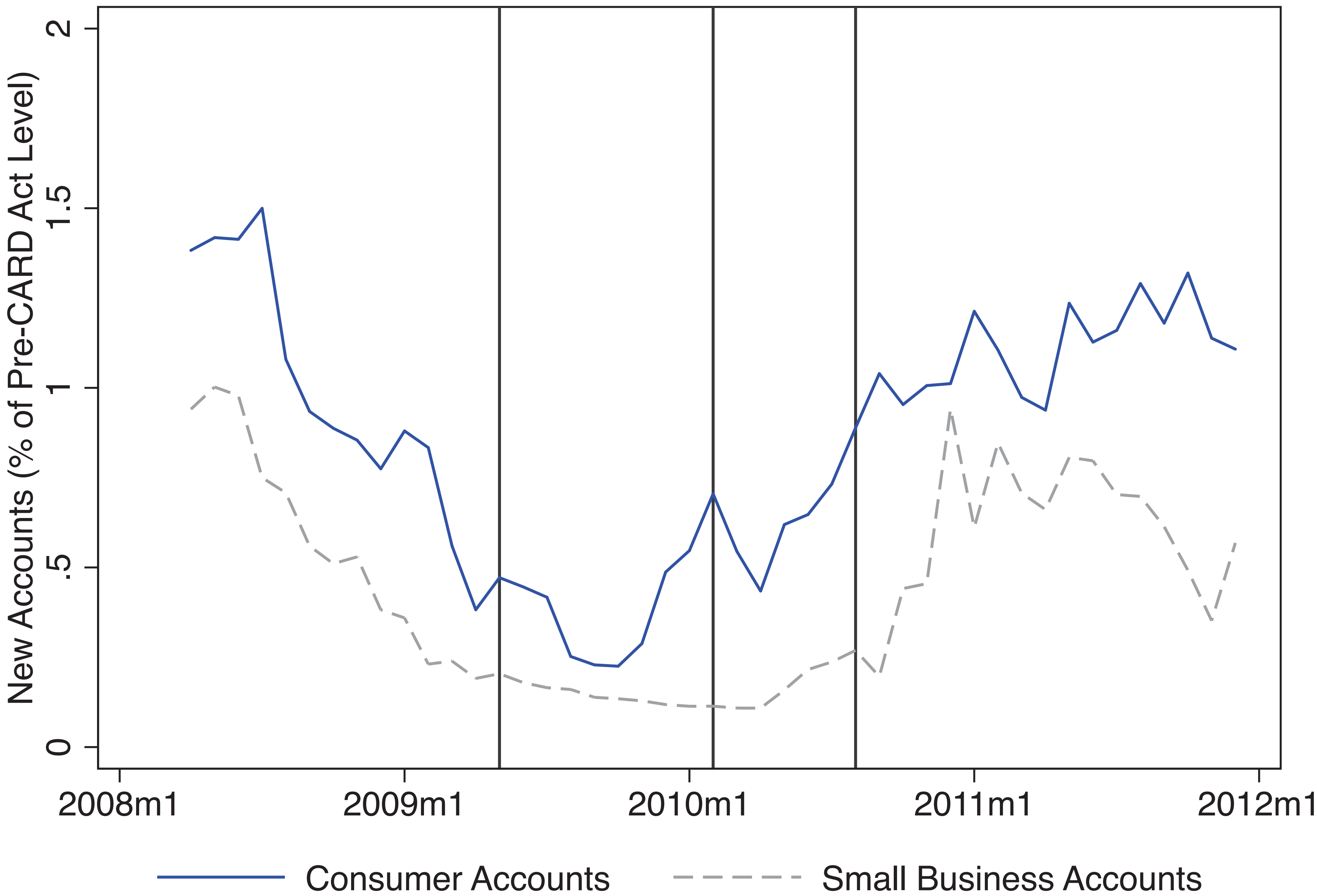

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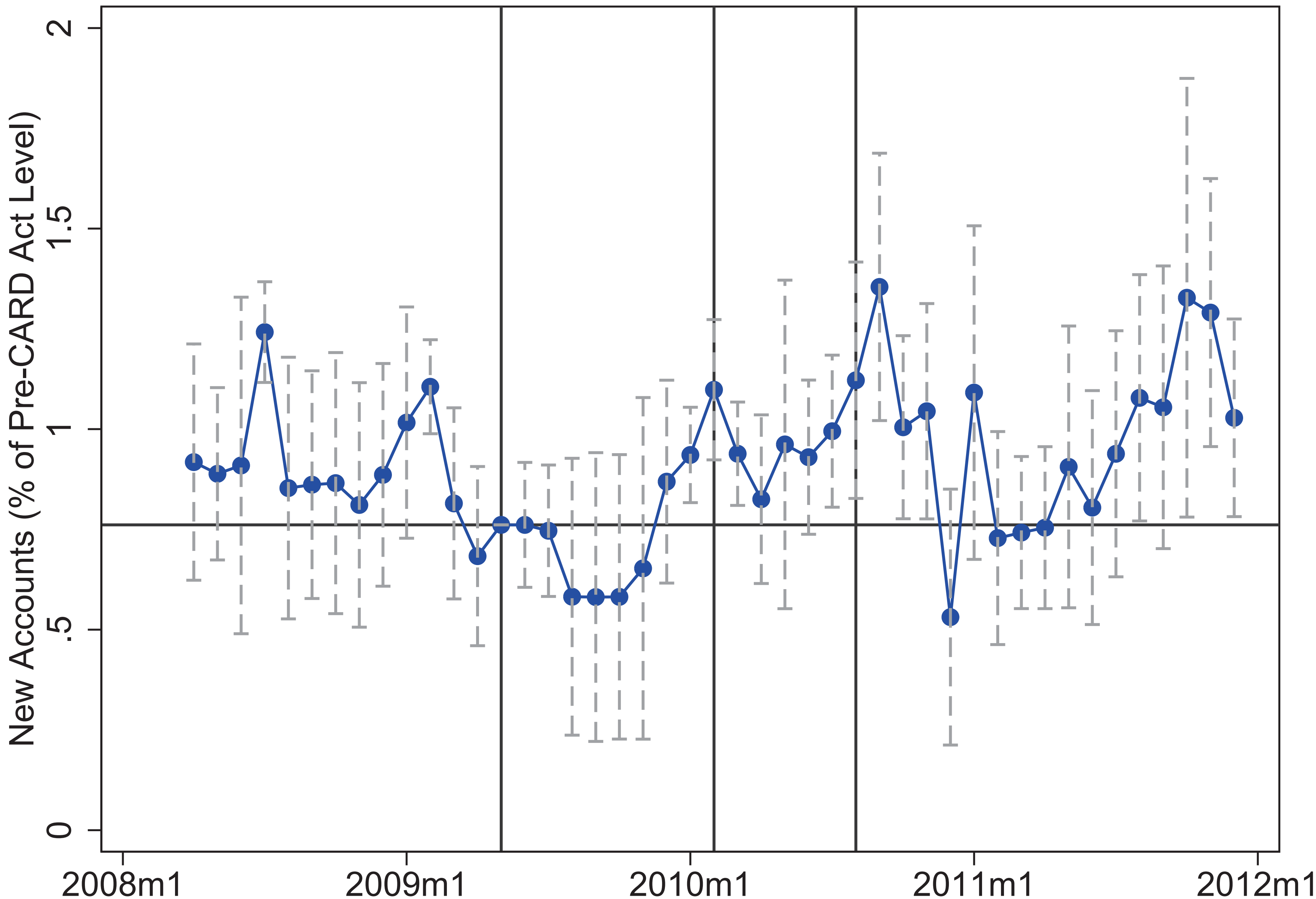

Average Daily Balances: FICO < 660

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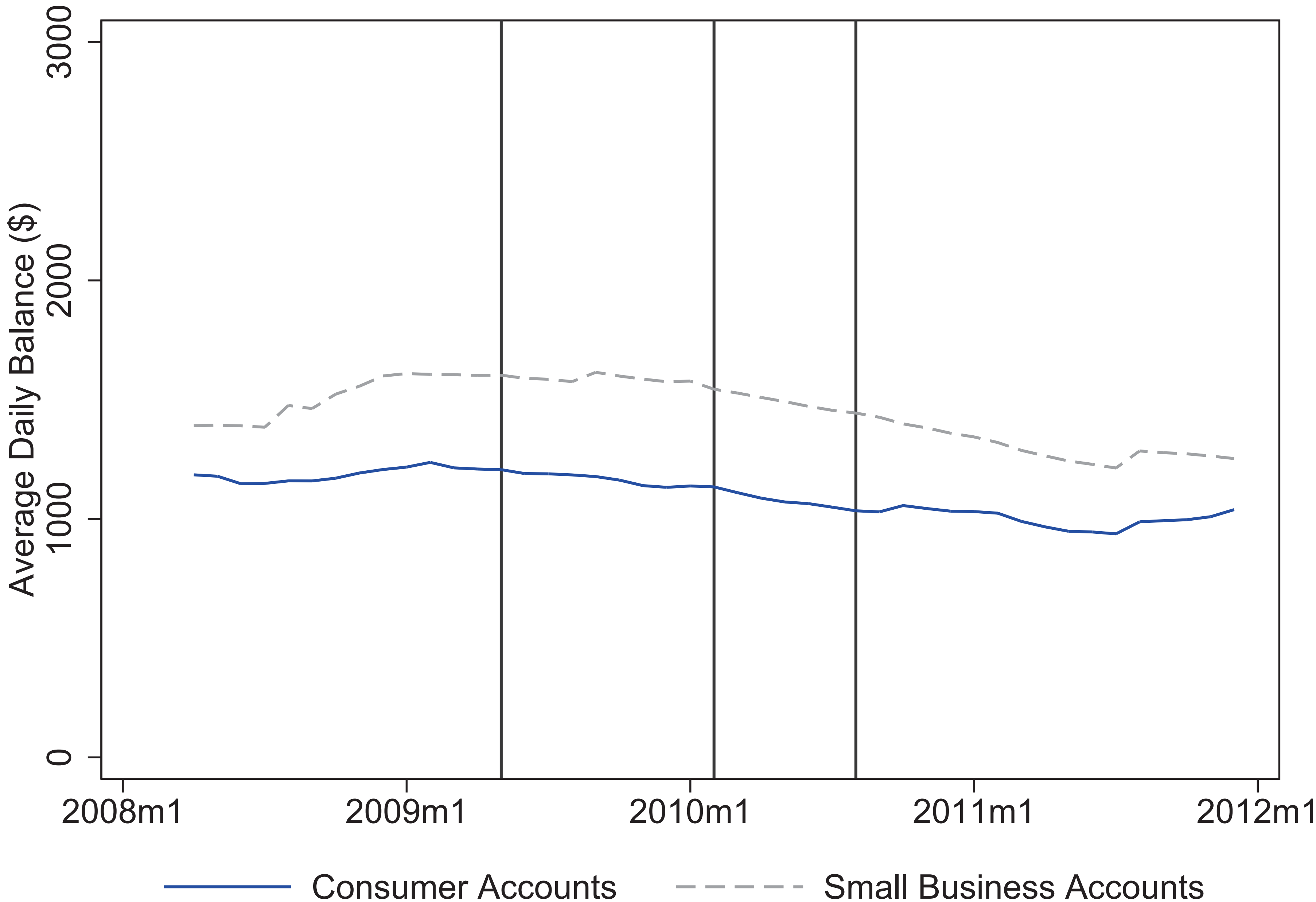

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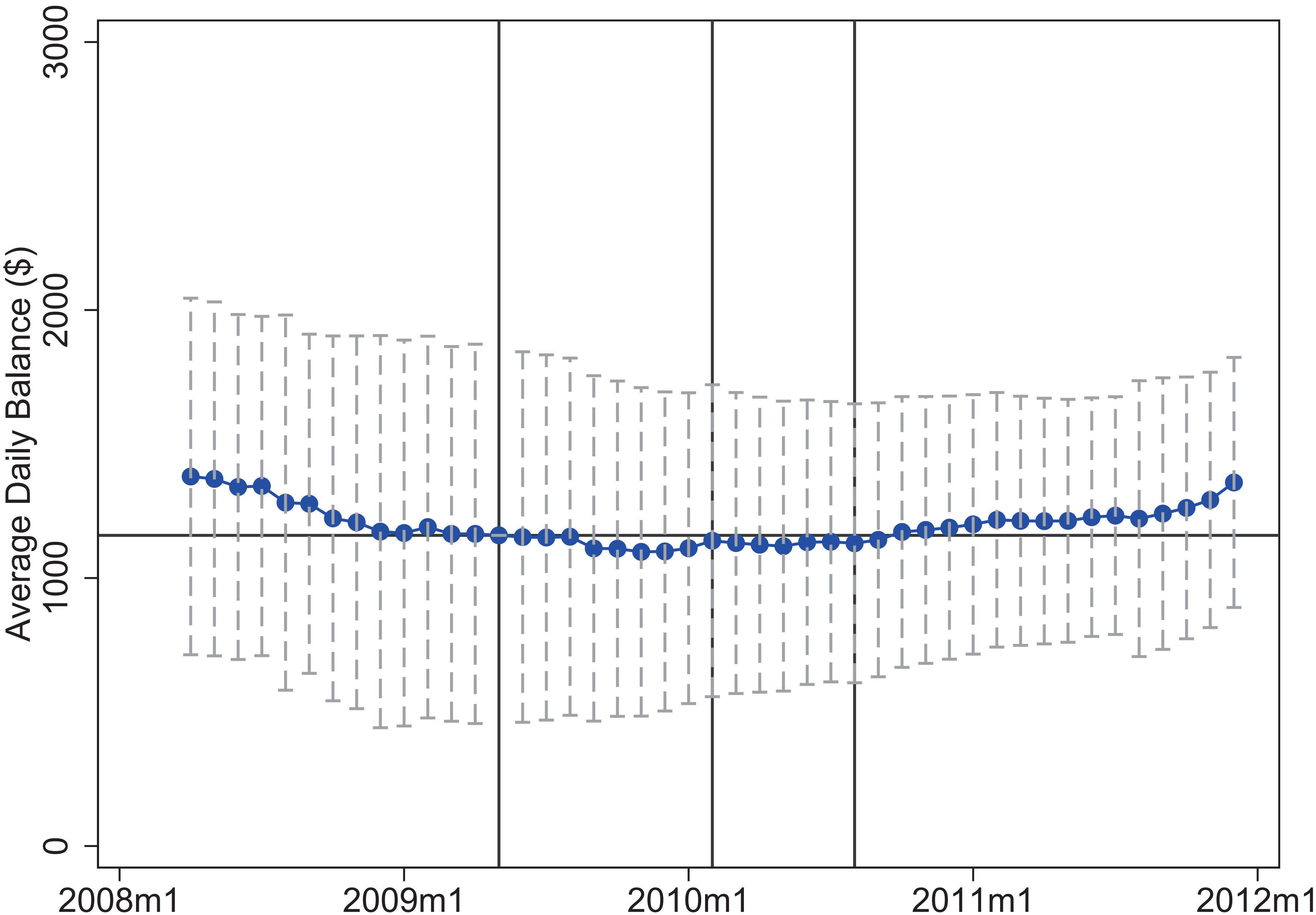

Conclusion: Volume of Credit

- No effect on credit limits, new accounts, or ADB
  - New accounts effect less precisely estimated
- Consistent with model and limited price offset
  - Salient prices do not change
  - Consumer demand unaffeced

CARD Act Conclusion

- Intended effects:
  - Fee limits reduced costs by 1.7 ppt of ADB ($12.6 billion)
    - Reduction of 5.5 ppt of ADB for low-FICO borrowers
  - Nudge had small but noticeable effect on payoff behavior
    - No evidence that it increased aggregate payments
- Unintended consequences:
  - No offsetting increase in interest rates, no reduction in credit volume

$\Rightarrow$ Regulation can transfer surplus to consumers

  - In particular in setting with non-salient fees and imperfect competition