

The Evolution of Credit Card Contracts: Risk-Based or Bias-Based?

Ben Keys –University of Chicago Harris School

Jialan Wang – Consumer Financial Protection Bureau



The views expressed are those of the authors and do not necessarily represent those of the Director of the Consumer Financial Protection Bureau nor those of the staff.

Credit Card Market is Crucial for Consumers

- Over 400 million open accounts in the United States
- Over \$680b in outstanding debt as of 2013:Q4
- Most common credit market households use to smooth consumption
- Yet costs of borrowing are far from straightforward
 - Promotional offers
 - Multiple interest rates
 - Penalty fees and other fees
 - \$15b per year according to White House

Credit Card Contracts Have Changed Sharply

- Our paper: Document changes in contract structure over the 2000s
- Issuers substantially raised penalty and overlimit fees from 2000 to 2009
 - Increased by 40% on average
- In contrast, APR spreads were flat over most of the period
- What can explain these contractual changes?

Testable Hypotheses

- Issuers may have used increased risk-based pricing, or were reacting to a change in the riskiness of the pool of issued credit cards
 - → Risk-based response should lead to greater dispersion of fees correlated with default risk (Edelberg 2006, Furletti 2003)
- Alternatively, fee increases could be driven by efforts to identify and exploit consumer biases
 - E.g. overoptimism (Ausubel 1991)
 - Inattention or myopia (Gabaix and Laibson 2006; Ko and Williams 2013)

Relation to Prior Literature

- Han, Keys, and Li (2013) use the Mintel data to show that expansion of the credit card market was driven by growth in the subprime segment of the market
- Agarwal et al. (2014) show that issuers' profits from the subprime portion of the market were almost entirely fee-based prior to the passage of the CARD Act
 - CARD Act's effects are consistent with existence of consumer biases and increased consumer welfare
- Keys and Wang (2014) present evidence of consumer biases in credit card repayments
 - Minimum payment amount (and suggested amount) operate as “anchors”

Overview of Empirical Approach and Results

- Use offer data from Mintel Comperemedia and account-level data from the CFPB CCDB to document the evolution of contracts and consumer responses to those contract changes
- Find that APR levels are correlated with risk, whereas fee levels are uncorrelated (or negatively correlated) with default risk
- Furthermore, fee increases occur simultaneously with increases in fee complexity
 - Fee increases occur unilaterally across an issuer's entire portfolio, not sensitive to product or consumer-specific risk
- Consistent with issuers targeting behavioral biases

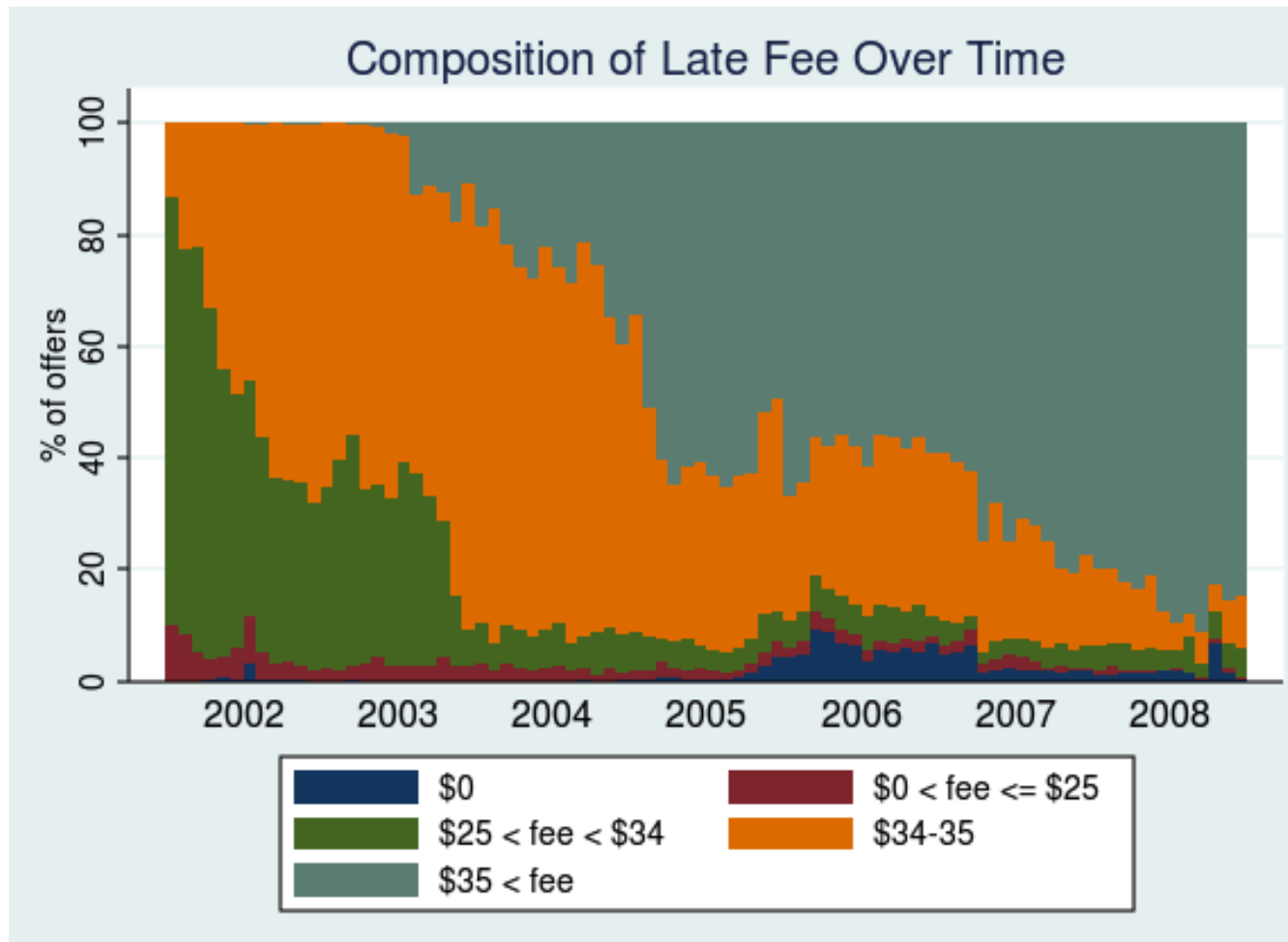
Outline

- Data
- Time-Series Results
- Cross-Sectional Results
- Estimated Elasticities of APR and fees w/r/t risk
- Implications

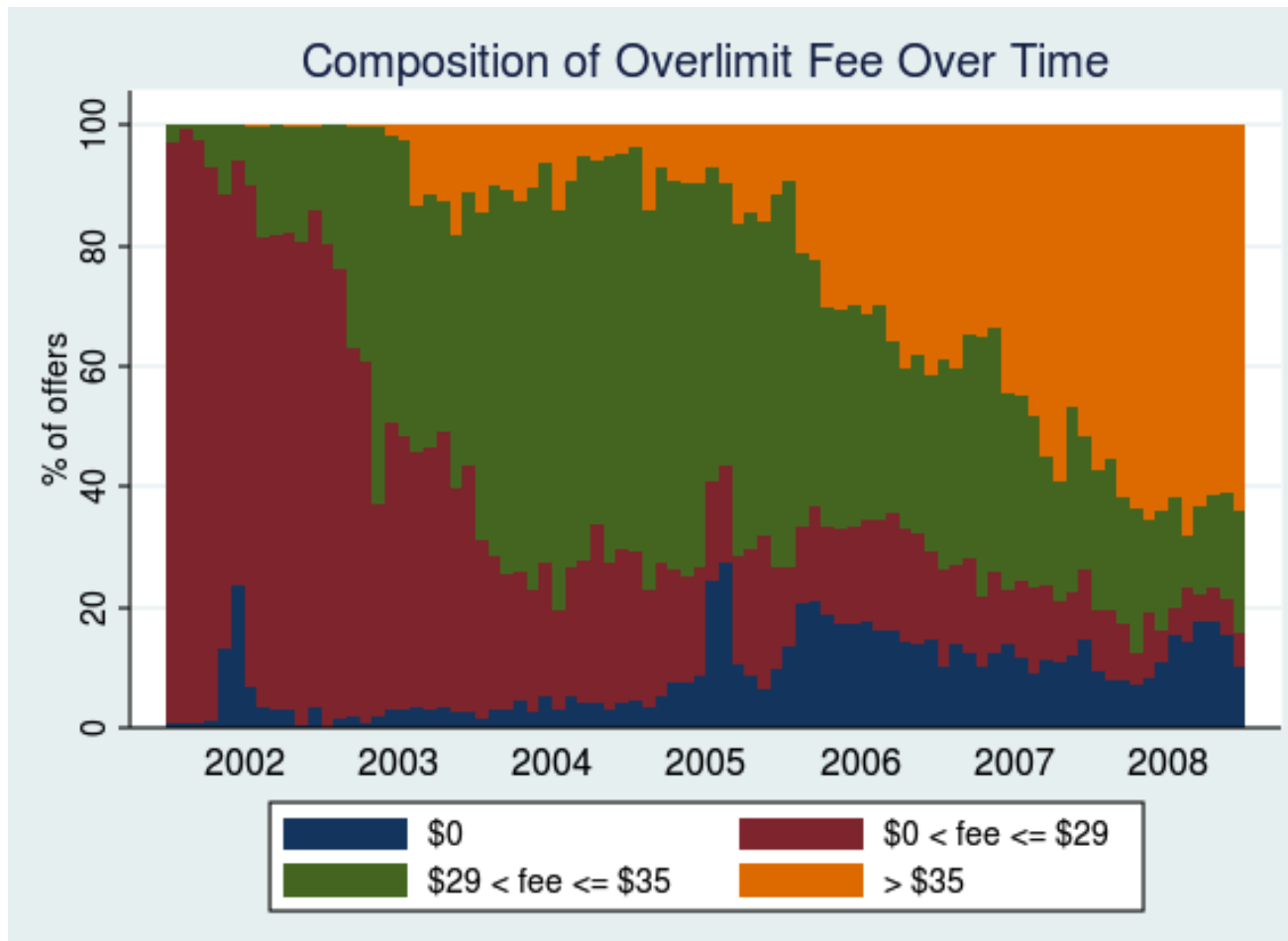
Data

- Mintel Comperemedia – 2002 - 2013
 - Collects monthly mail offers to a representative sample of U.S. households
 - Characteristics of offers are matched with demographics and risk scores of surveyed households
 - Scans (and stores) every mail offer for terms and features
- CFPB Credit Card Database (CCDB) – 2008-2013
 - Monthly panel of card activity for large fraction of the market
 - Use to look at frequency of interest vs. fee charges
 - Measure incidence of default and chargeoff
- Currently focus on pre-CARD Act period (before 2009)

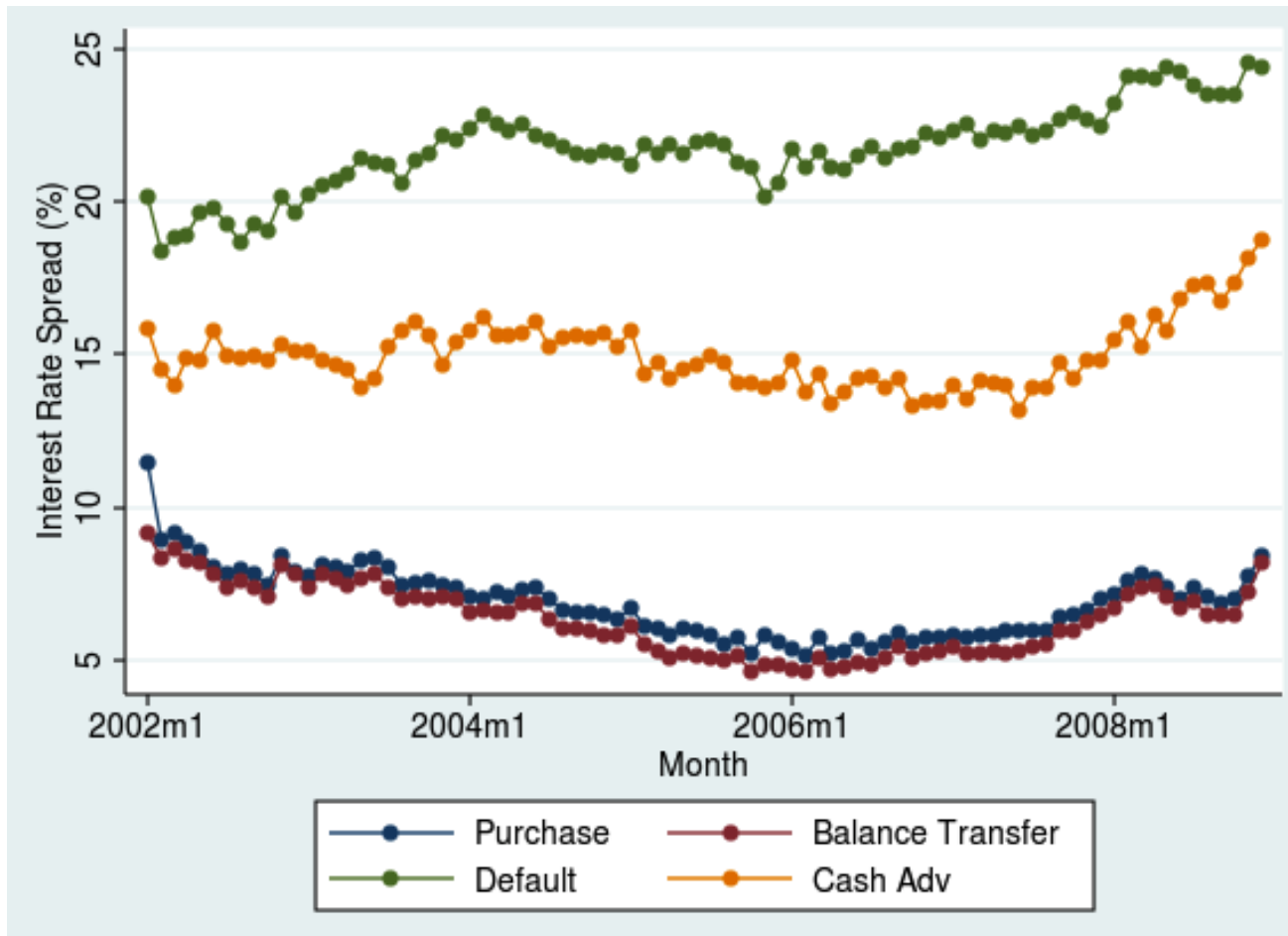
Time-Series Results – Late Fees Rising



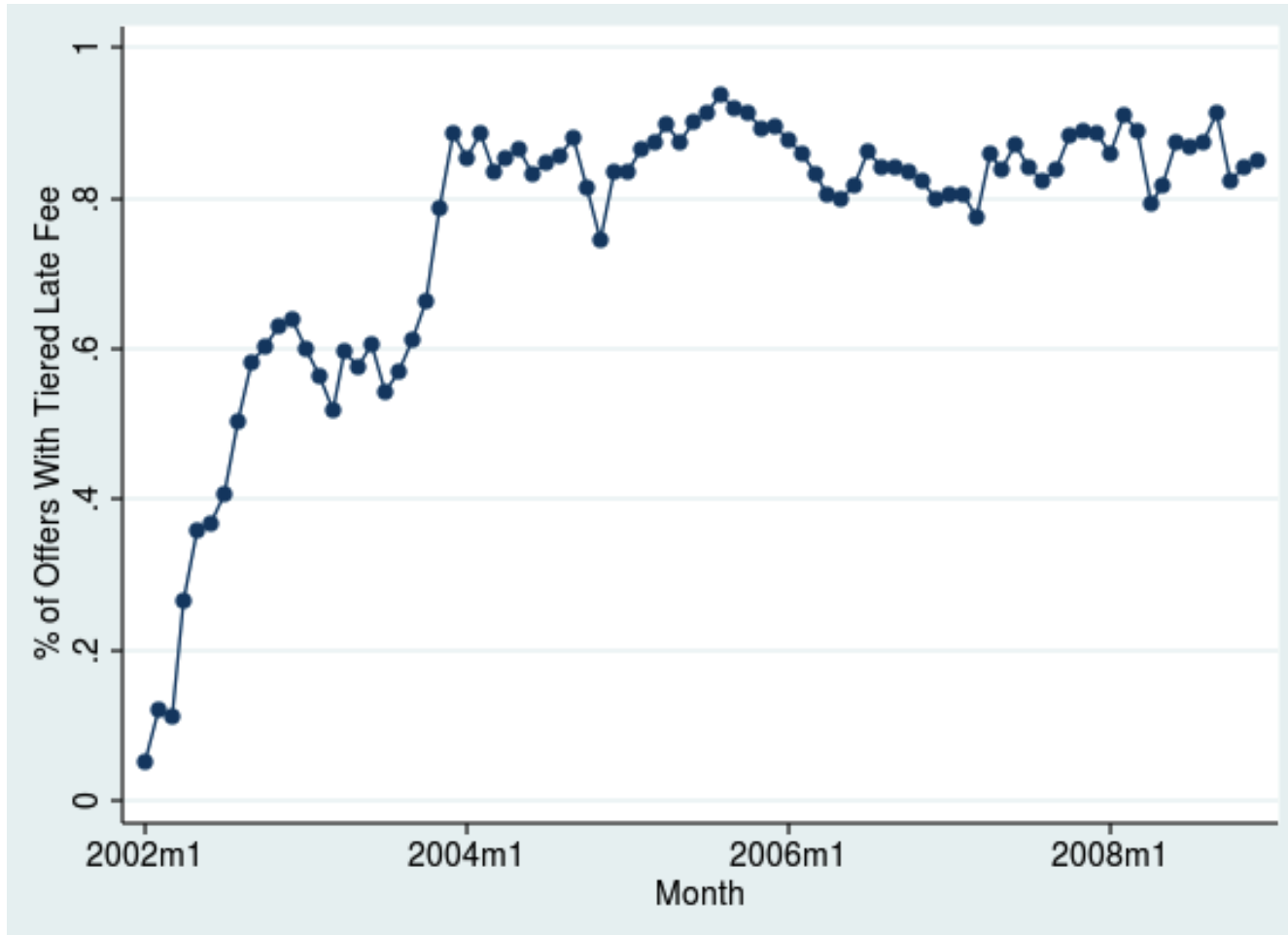
Time-Series Results – Overlimit Fees Rising



Time-Series Results – APRs Flat

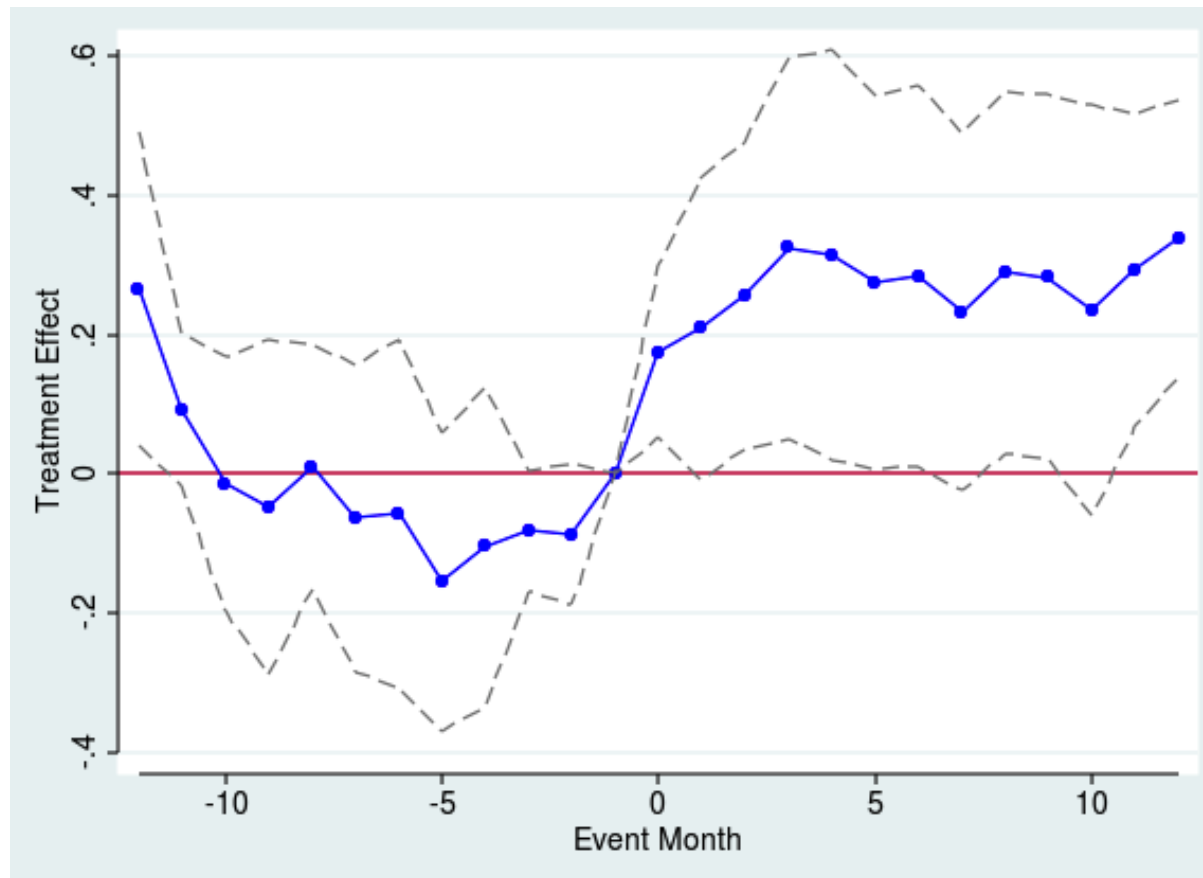


Time-Series Results – Increased Complexity



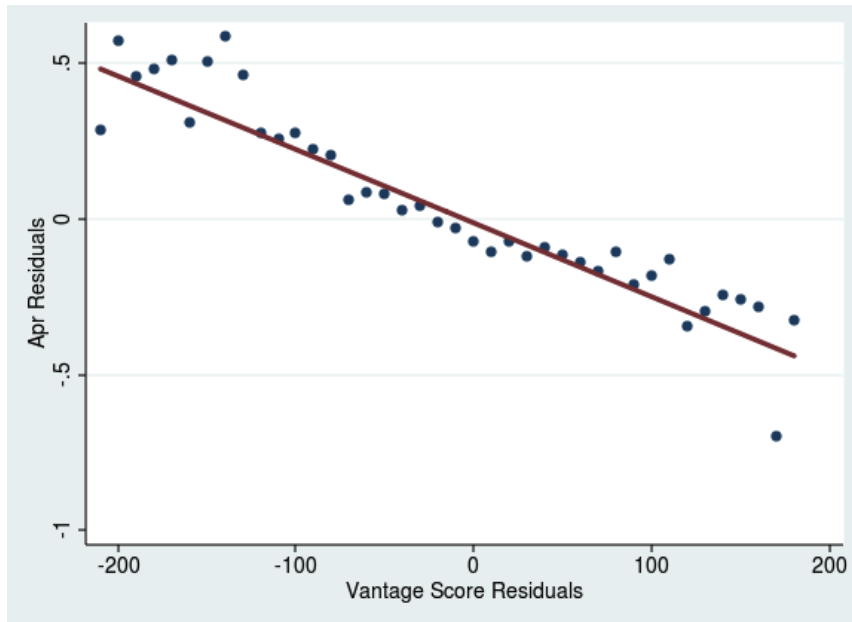
Event Study Result – Increased Complexity When Fees Increase

Outcome=
% with
Tiered
Late
Fee
Structure

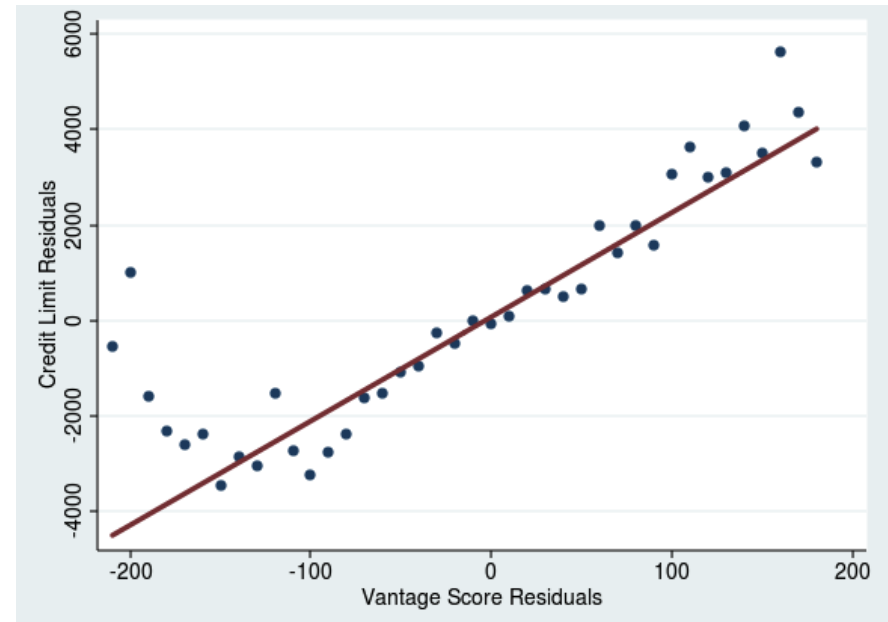


Cross-Sectional Results – Estimated Elasticities

- Conditional on lender and product type,
 - APR and credit limit **vary significantly** with measures of risk



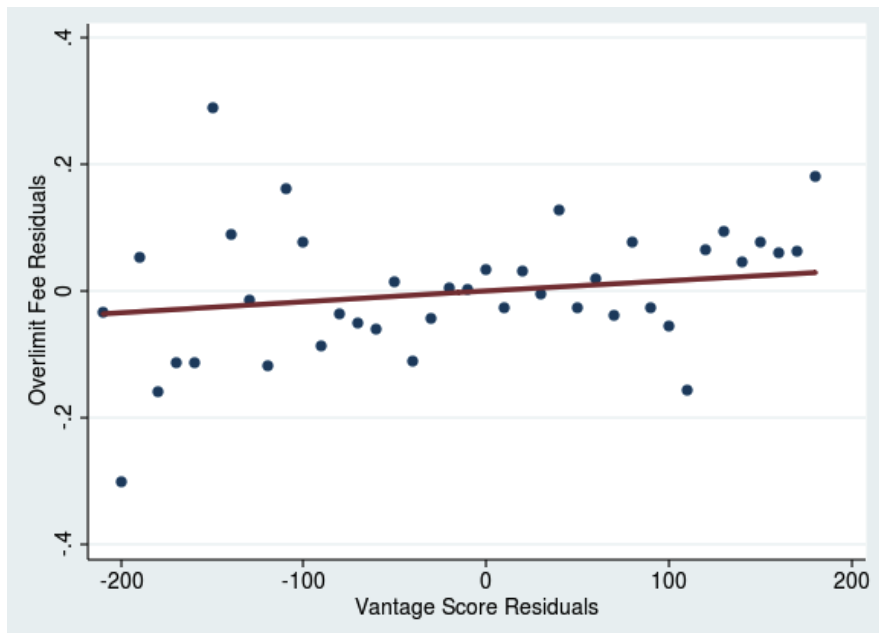
APR varies by 100BP



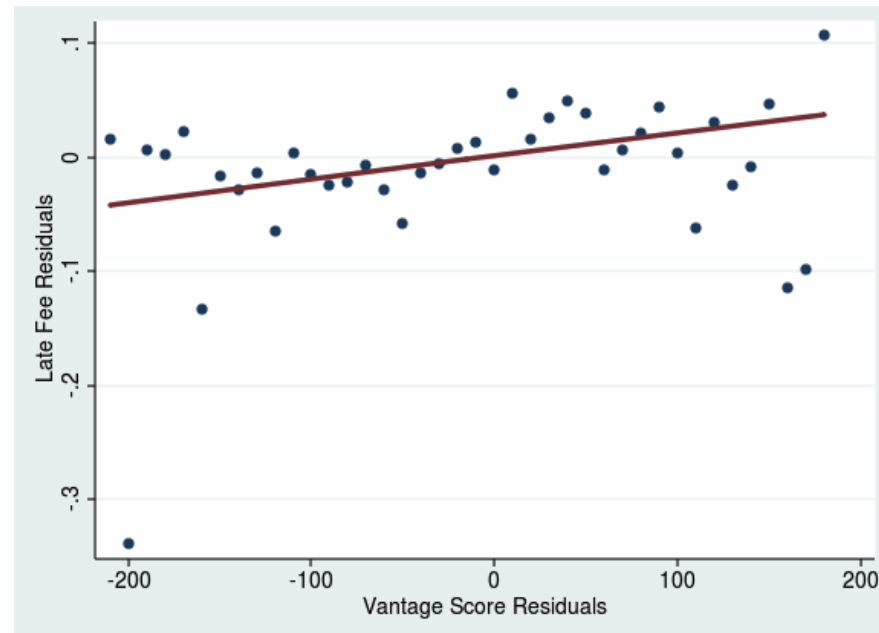
Credit Limit varies by \$8,000

Cross-Sectional Results – Estimated Elasticities

- Conditional on lender and product type,
 - Overlimit and late fees **do not vary** with measures of risk



Overlimit Fee varies by <\$0.10



Late Fee varies by <\$0.20

Estimated Elasticities w/r/t Risk

- While certain features such as APR and Credit Limit are determined based on bank proprietary measures of risk, fees are generally not priced based on consumer risk.
 - That is, there is a specified late fee for everyone regardless of their propensity to incur these fees.
 - However, it is possible that the incidence of fees is correlated with default risk, so the level of fees does not need to be.
- One explanation for this is that customers may be unable to adequately and accurately determine their risk of incurring these fees, hence accepting whatever fee exists.
- Another explanation is that these fees are purposely hidden away from the consumer to get them to shop on other features.

Credit Card Offers and Contract Salience

- Certain terms are almost always mentioned on the first page of the advertisement (or sooner!):
 - Annual Fee of \$0 (Most cards, yet still explicitly stated)
 - Introductory APR (Purchase/Balance Transfer)
 - Regular Purchase APR (Sometimes)
- However, other fees are omitted until the section where they are required by law to display them (second or third page, smaller font)
 - Late Fee
 - Overlimit Fee

What's Salient? Platinum MasterCard Example

- Start with envelope – Intro Rate and No Annual Fees:

Presorted
Standard
U.S. Postage
PAID
BCUS

Save with a Great **LOW INTRO RATE**
on Purchases and Balance Transfers¹

ACCEPT INSTANTLY!
Online or by phone

- No annual fee¹
- No over limit fee¹
- Five great card designs
- Accept online...or accept by phone!

¹Details enclosed

First Page – Mentions Intro and Regular APR

0% Introductory APR...for the first six months

After that your APR will be a Variable rate of 14.99%

Save now with a
Great Low Intro Rate
on Purchases and Balance Transfers for 6 Months

•No annual fee! •No over limit fee •Accept online...or accept by phone!

DON'T MISS THIS GREAT SAVINGS OPPORTUNITY!

ACCEPT INSTANTLY!
online or by phone

Accept Your Pre-Qualified Platinum MasterCard Credit Card Now!

FASTEST RESPONSE!

www.Juniper.com/7756

1-800-570-1402

Dear [Name],

Here's the card you've been waiting for -- our Platinum MasterCard® credit card with a 0% introductory APR on Purchases and Balance Transfers for the first six months after your account is opened! After that your APR will be a variable rate of 14.99%! You'll save big on your purchases and even more when you transfer your balances from high-rate credit cards. It's easy...just complete the Balance Transfer section below.

Cover Your Credit Needs and Enjoy Platinum Benefits!
Enjoy a competitive credit line* and lots of valuable benefits like 100% fraud protection, automatic credit line reviews and great super-saver discounts. Plus, you'll enjoy valuable MasterCard perks like MasterCard's Extended Warranty Coverage, Master RoadAssist and MasterRental Insurance that you only get with a Platinum MasterCard credit card. Get all of these amazing benefits and pay no annual fee!

Accept Instantly!
Visit us online at www.Juniper.com/7756 or call us at 1-800-570-1402 to **Accept Instantly!** Or, fill out the quick 30-second reply form below.

Sincerely,
Rachel Rice
Rachel Rice
Director of New Accounts

P.S. **REPLY BY February 27, 2010** to take advantage of this great offer!

FIVE EXCITING CARD DESIGNS! Choose your favorite.

Second Page – Terms and Conditions

APR at top of the page in larger font:

Terms and Conditions	
Interest Rates and Interest Charges	
Annual Percentage Rate (APR) for Purchases	0% introductory APR for the first six billing cycles after account opening. After that, your APR will be 14.99% . This APR will vary with the market based on the Prime Rate.

Fees at bottom of the page in smaller font:

Penalty Fees:	
Late Payment	\$39.95
Over-the-Credit-Line	\$0
Returned Payment	\$39.95

Estimated Elasticities w/r/t Behavior

- We found that consumers are generally sensitive to changes in their APR, in that they will carry a smaller balance on their card when the APR is higher.
- In contrast, the fee level does not seem to affect the rate of consumers incurring late fees
 - [after taking seasonal adjustments into account]

More Evidence on Elasticities w/r/t Behavior

- Big takeaway:
- APR is made very salient in offers, and consumers are responsive
- Overlimit and late fees are “shrouded” in offers, and consumers are not responsive
- Over the 2000s, there was a big shift toward higher fees of *exactly* the type that are shrouded that cannot be explained by changes in risk

Implications

- The credit card market in the United States is known for its aggressive marketing and explicitly advertising certain terms/features of contracts
- However, issuers do not seem to be competing on price in regards to certain terms
 - Consistent with “shrouded attributes” framework of Gabaix and Laibson 2006
- “Unshrouding” unlikely to occur within the market → requires external intervention
 - Ko and Williams (2013) show that price constraints along with disclosures are (weakly) welfare-improving
 - CARD Act of 2009 capped fees, placed restrictions on others, seems to have benefited consumers (Agarwal, et al. 2014)

Conclusions

- We document how fees arise and the role of competition in how they evolve over time (prior to the CARD Act)
- We show how firms have responded to behavioral biases in a dynamic context:
 - Our results suggest that risk-based pricing cannot explain the increases in penalty fees in the credit card market during the 2000s
 - Instead, issuers appear to target consumer biases by increasing fees in conjunction with increased complexity of offers and the increased use of promotional offers

BONUS SLIDES

Bonus: Example of Offer that highlights Salience Issues

DISCLOSURE

Annual Percentage Rate for Purchases	Other APRs	Variable rate information	Grace Period for repayment of the balance for Purchases	Method of computing the balance for Purchases	Annual Fee	Minimum Finance Charge
<p>• 0% introductory APR for purchases during the first six months of Cardmembership. Then, a variable rate of 4.0%.</p>	<p>• Balance transfer APR: a fixed APR of 3.99% for life of the balance on balance transfer requests submitted on the enclosed application.* Then, Balance Transfers will receive the standard purchase APR. Cash Advance APR: 18.99%. Default APR: fixed APRs of 17.99% for delinquent accounts, 23.99% for seriously delinquent accounts.**</p>	<p>• Your APR may vary. The APR for purchases may vary monthly and will be based on the Prime Rate plus 0%. The APR for Cash Advances is determined monthly by adding 14.99% to the Prime Rate. See explanation below.††</p>	<p>• 20 days for Purchases if full balance is paid by the due date.</p>	<p>• Average daily balance (including new Purchases)</p>	<p>• None</p>	<p>• \$0.50</p>

Other Fees: Late Payment Fee: \$15 on balances less than \$100, \$25 on balances of \$100 to \$1,000, and \$35 on balances greater than \$1,000. Overlimit Fee: \$29. Balance transfer fee: There is no balance transfer transaction fee associated with this offer. However, future balance transfers may incur a fee of 3% of the amount transferred with a minimum of \$5 and a maximum of \$50. Fee for Cash Advances through Express Cash: 3% of each withdrawal with \$5.00 minimum and no maximum. The line of credit offered with Blue from American Express® is from \$1,000 to \$50,000.

AmEx Blue Advertisement from December 2003, back page

SAY YES TO THE CARD SMART ENOUGH TO BE BLUE.

Dear _____,

Back in the days when you saw how technology was changing the way people do things. So we set out to create a smarter kind of credit card. One designed for the way you live — today. Meet Blue from American Express®.

Yes, Blue is an American Express® Card. But there's **no annual fee**, and you'll pay **no interest charges for the first six months** of Cardmembership on purchases. After that, you'll enjoy a **low variable rate of 4.0% APR** for purchases when you choose to carry a balance.* Plus, when you use the enclosed acceptance certificate to move high-rate balances to Blue, you can save even more with a **3.99% fixed APR on balance transfers for the life of the balance.****

But Blue is more than just financially smart — it comes equipped with some of the most intelligent technology available, including a built-in Smart Chip to help make everything you do on the Internet secure. Blue lets you check your balance, manage your account, and pay your bill online. Anytime. What's more, Blue's Smart Chip was made to be updated over time — so no matter how fast the world changes, Blue will help you keep up.

Use Blue, and both you and your purchases are automatically protected by a range of smart benefits. Like our Online Fraud Protection Guarantee, which promises you won't be held liable for any unauthorized charges. And the Purchase Protection Plan,[†] which safeguards covered purchases against damage and theft.

Plus, Blue is eligible for the Membership Rewards Options® program, a flexible, **fee-free** rewards program. Virtually all your Blue purchases can earn you points toward great retail and travel rewards.[†] Just check the box on your acceptance certificate to enroll.

So say yes to Blue, and get the Card that started with a vision of how we'd live today, and tomorrow.

Sincerely,

 Gordon A. Smith
 President, Consumer Cards

P.S. Accept Blue today — simply complete the acceptance certificate now, and return it in the envelope provided.

0% APR FOR 6 MONTHS THEN 4.0% VARIABLE APR

3.99% FIXED APR ON BALANCE TRANSFERS

NO ANNUAL FEE

BUILT-IN SMART CHIP FOR INTERNET SECURITY

ONLINE FRAUD PROTECTION GUARANTEE

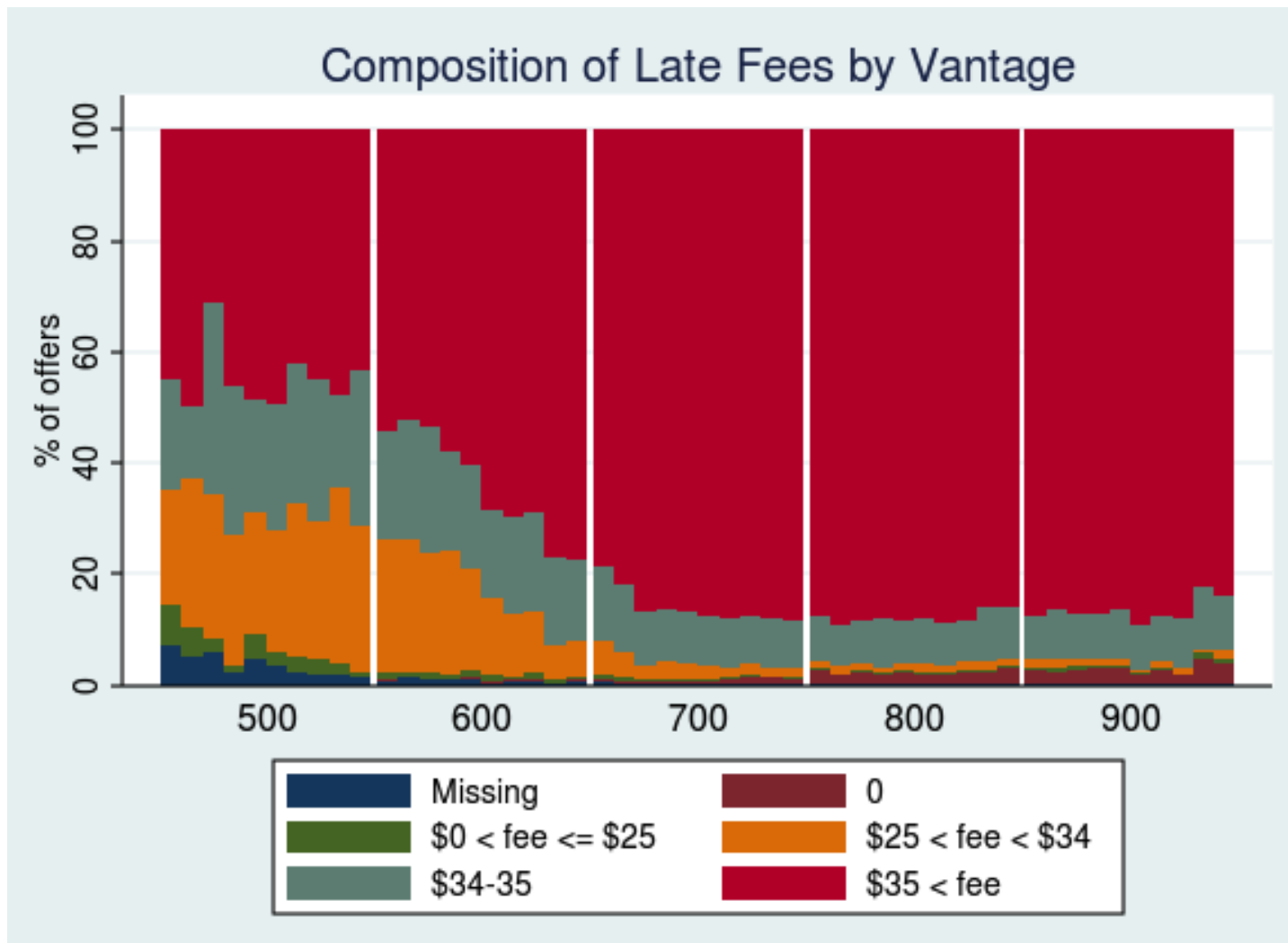
CHECK YOUR BALANCE AND PAY YOUR BILL ONLINE

FREE-FEE MEMBERSHIP REWARDS OPTIONS PROGRAM

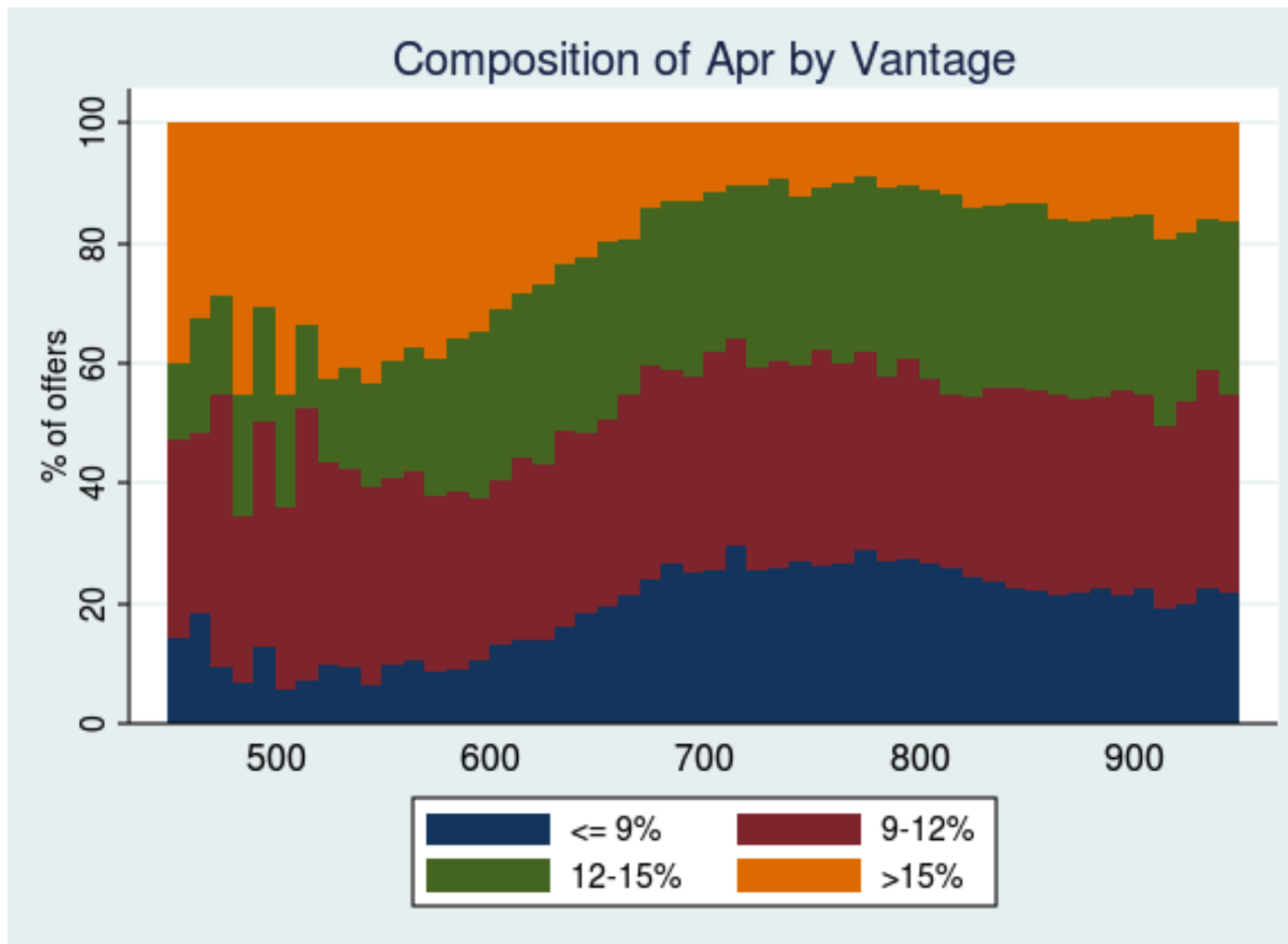
JUST COMPLETE AND MAIL THE ATTACHED ACCEPTANCE CERTIFICATE TODAY [Forward](#)

Front page of advertisement

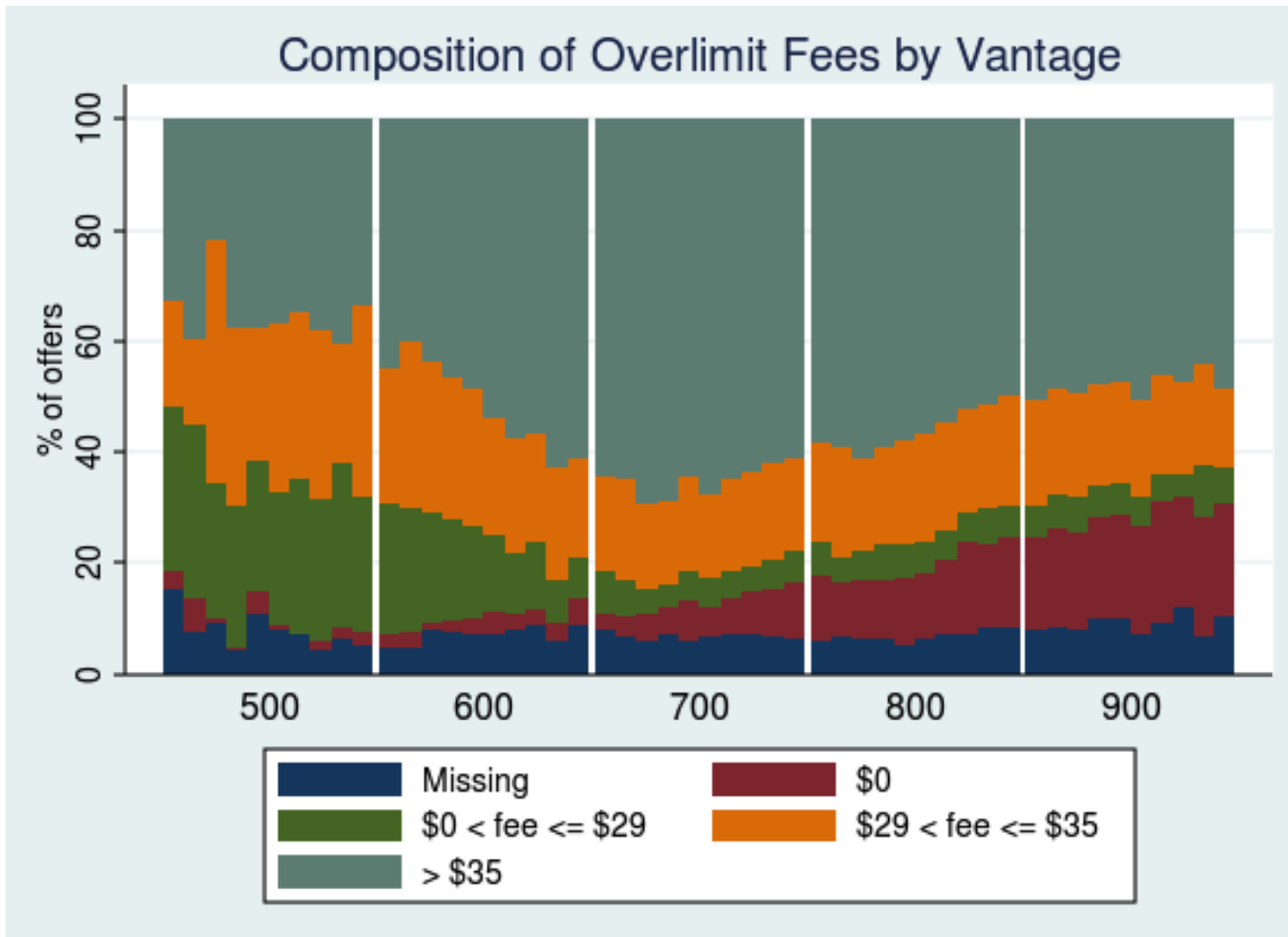
Bonus: Cross-Sectional Result: Late Fees *FALL* with risk



Cross-Sectional Results – APR varies by Credit Score



Cross-Sectional Results – Fees Do Not



Contract Changes at Particular Issuers: Increased Complexity

American Express Blue Card, March 2003

DISCLOSURE

Annual percentage rate for purchases	Other APRs	Variable rate information	Grace period for repayment of the balance for purchases	Method of computing the balance for purchases	Annual fee	Minimum finance charge
<ul style="list-style-type: none"> A fixed APR of 9.99%. 	<ul style="list-style-type: none"> Balance transfer APR: 5.99% APR Fixed for the life of the balance on balance transfer requests submitted on enclosed application. Then the standard 9.99% Fixed APR for purchases will apply. Cash Advance APR: 17.24%. Fixed APRs of 17.99% for defaulted accounts; 23.99% for seriously defaulted accounts.* 	<ul style="list-style-type: none"> Your APR may vary. The APR for cash advances is determined monthly by adding 12.99% to the Prime rate.** 	<ul style="list-style-type: none"> 20 days for purchases if full previous balance is paid by due date. 	<ul style="list-style-type: none"> Average daily balance (including new purchases). 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> \$0.50

Over-limit and late-payment fees: \$0 to \$30 as determined by applicable law. There is no balance transfer transaction fee associated with this offer. However, future balance transfers may incur a fee of 3% of the amount transferred with a minimum of \$5, and a maximum of \$50. Fee for Cash Advances through Express Cash: 3% of each withdrawal with a \$5.00 minimum and no maximum. The minimum yearly income required to qualify for Blue is \$25,000, and the lines of credit offered are from \$2,000 to \$100,000.

Contract Changes at Particular Issuers

American Express Blue Card, December 2003

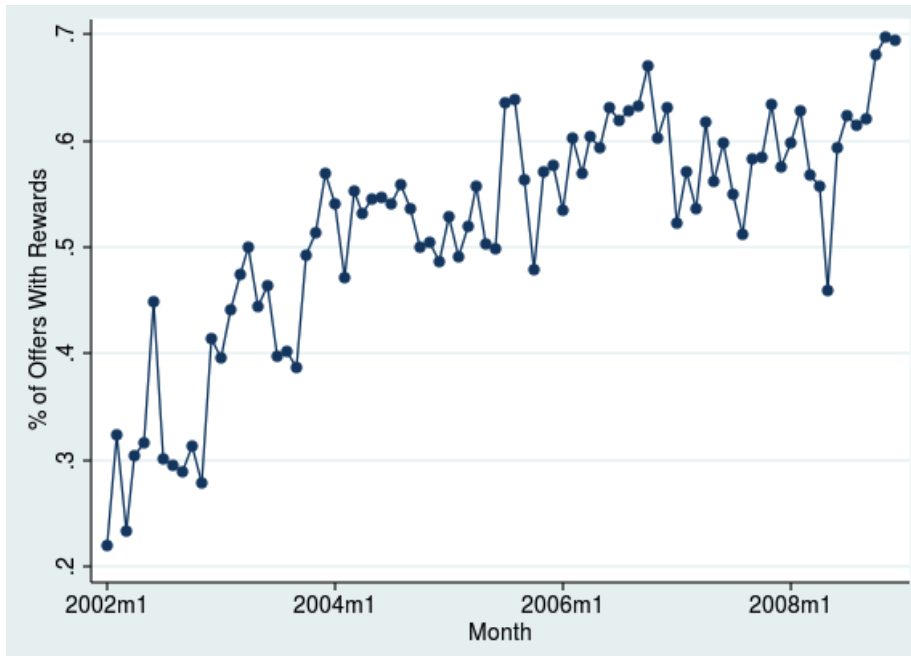
DISCLOSURE

Annual Percentage Rate for Purchases	Other APRs	Variable rate information	Grace Period for repayment of the balance for Purchases	Method of computing the balance for Purchases	Annual Fee	Minimum Finance Charge
<p>• 0% introductory APR for purchases during the first six months of Cardmembership. Then, a fixed APR of 7.99%, 9.99%, 12.99% or 14.99% depending on our review of your application and credit history.</p>	<p>• Balance transfer APR: a fixed APR of either 3.99% or 7.99%, depending on our review of your application and credit history, for life of the balance on balance transfer requests submitted on the enclosed application.* Then, the ongoing APR for purchases will apply. Cash Advance APR: 18.99%. Fixed APRs of 17.99% for defaulted accounts; 23.99% for seriously defaulted accounts.**</p>	<p>• Your Cash Advance APR may vary. The APR for Cash Advances is determined monthly by adding 14.99% to the Prime Rate. See explanation below.†</p>	<p>• 20 days for Purchases if full balance is paid by the due date</p>	<p>• Average daily balance (including new Purchases)</p>	<p>• None</p>	<p>• \$0.50</p>

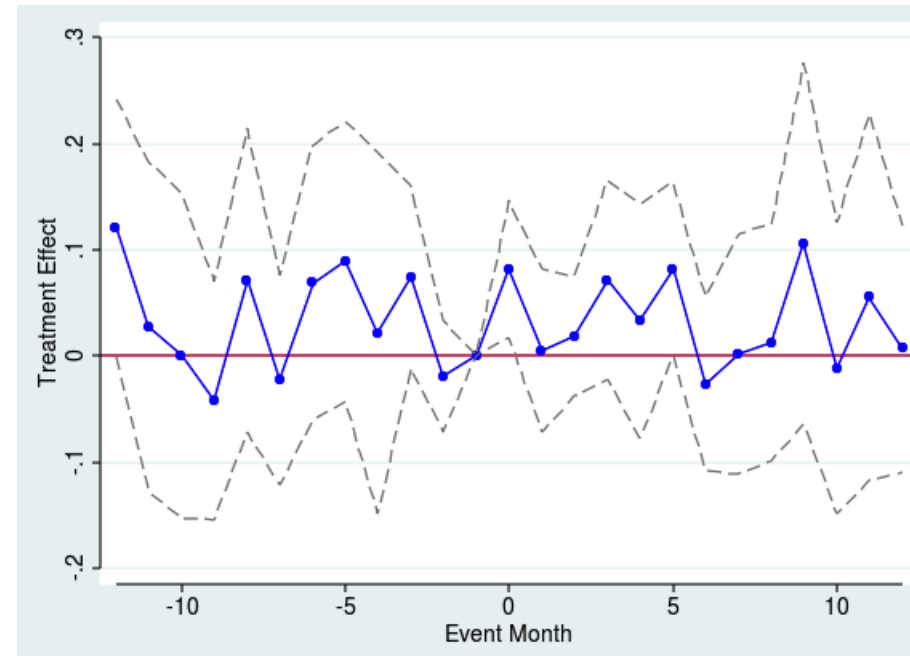
Other Fees: Late Payment Fee: \$15 on balances less than \$100, \$29 on balances of \$100 to \$1,000, and \$35 on balances greater than \$1,000. Overlimit Fee: \$29. Balance Transfer Fee: There is no balance transfer fee associated with this offer. However, future balance transfers may incur a fee of 3% of the amount transferred with a minimum of \$5 and a maximum of \$50. Fee for Cash Advances through Express Cash: 3% of each withdrawal with \$5.00 minimum and no maximum. The minimum yearly personal income required to qualify for Blue is \$20,000. The lines of credit offered with Blue are from \$2,000 to \$100,000.

- From one APR to four potential purchase APRs
- Other APRs more complex (“depending on review”)
- Cash Advance APR up 2% from March to December
- Fees now depend on balance

Time-Series Results – Rewards More Common



Over 2/3rds of offers have rewards



But growth unrelated to timing of rising fees