

**MORRISON | FOERSTER**

2000 PENNSYLVANIA AVE., NW  
WASHINGTON, D.C.  
20006-1888

TELEPHONE: 202.887.1500  
FACSIMILE: 202.887.0763

WWW.MOFO.COM

MORRISON & FOERSTER LLP  
NEW YORK, SAN FRANCISCO,  
LOS ANGELES, PALO ALTO,  
SAN DIEGO, WASHINGTON, D.C.  
NORTHERN VIRGINIA, DENVER,  
SACRAMENTO, WALNUT CREEK  
TOKYO, LONDON, BRUSSELS,  
BEIJING, SHANGHAI, HONG KONG

April 14, 2010

Writer's Direct Contact  
202.778.1614  
OIreland@mofocom

***By Electronic Delivery***

Ms Jennifer J. Johnson  
Secretary  
Board of Governors of the Federal Reserve System  
20th Street and Constitution Avenue, NW  
Washington, DC 20551  
**Attention: Docket No. R-1384**

Ladies and Gentlemen:

This comment letter is submitted in response to the proposed rulemaking and request for public comment issued by the Board of Governors of the Federal Reserve System ("Board") and published in the Federal Register on March 15, 2010 ("Proposed Rule"). Pursuant to the Credit Card Accountability Responsibility and Disclosure Act of 2009 ("CARD Act"), the Proposed Rule would establish standards for assessing whether the amount of a penalty fee or charge is "reasonable and proportional" to the omission or violation.

This letter presents the results of a study ("Data Study") of the credit card accounts issued by 10 large credit card issuers. This data was collected on a confidential basis and was aggregated to create a set of data that we believe fairly represents credit card accounts generally, but that is not identifiable to any particular institution. We employed Argus Information & Advisory Services, LLC ("Argus"), a data processor familiar with the credit card industry, to analyze the card issuer data to determine the proportionate impact a late payment has on an issuer in terms of cost.

We also employed Argus to conduct a survey of 2,076 credit cardholders ("Survey") to determine the dollar amount of a fee that would be reasonably necessary to deter cardholders from making a late payment, and to model the effect of different late fee levels on subsequent delinquencies ("Modeling").

April 14, 2010

Page Two

### **Summary of the Results of Data Study, Survey and Modeling**

The results of the Data Study, Survey and Modeling are summarized below and detailed in the attached Appendix. As an overview, the Data Study found that the average fee amount required to recover a conservative estimate of the average costs of late payments would be \$28.40. A calculation that would include unrecovered fees as a component of the costs attributable to late payments would require a late fee of \$32.45. It is important to emphasize that these costs represent an average of issuer costs. These costs vary widely depending on the issuer, the nature of their products, their collection operations and their outstanding balances. The Survey found that a late fee charge of at least \$30 to \$34 would be required to deter a majority of cardholders from making late payments. To deter a significant majority of cardholders (80%) from making a late payment, a late fee of \$50 to \$54 would be required. Modeling also showed that lower fees should have a lower deterrent effect on late payments, with a late fee of \$28 or less having relatively little deterrent effect.

#### ***Overview of the Data Study Methodology***

This approach is based on identifying operating expenses that are associated with handling late payments and delinquent accounts and recovering those costs via late fee assessments.

#### ***Overview of the Survey Methodology***

This approach is based on surveys that asked credit cardholders to identify the late fee amounts at which they will be deterred from paying late.

#### ***Overview of the Deterrence Modeling Methodology***

This approach used the Argus Credit Card Payment Study (CCPS) dataset to determine whether there are “optimal” fee amounts that deter customers by minimizing the likelihood of a customer paying late or becoming delinquent.

### **The Late Fees in Perspective**

The Proposed Rule and the CARD Act provision on which it is based appear to be based on the assumption that fees, such as late fees, have become unreasonably high or are being assessed with increasing frequency. The Industry Data does not support either view.<sup>1</sup> The average late fee amount, adjusted for inflation, rose only \$0.77 from 2001 through 2009. In addition, the percentage of open accounts with a late fee in any one month was lower in 2007, 2008 and 2009 than in 2001 or 2004.

---

<sup>1</sup> The term “Industry Data” is used in this letter to refer to data developed in the course of the Data Study but that is not included in the Appendix.

April 14, 2010  
Page Three

### Fees Based on Costs

The Proposed Rule prohibits card issuers from imposing a fee for violating the terms or other requirements of a credit card account under an open-end consumer credit plan unless the dollar amount of the fee is determined in connection with one of the three methods articulated in the Proposed Rule. The first method permits a card issuer to impose a fee if the card issuer has determined that the dollar amount of the fee “represents a reasonable proportion of the total costs incurred by the card issuer as a result of that type of violation.” The Proposed Rule would exclude from this determination “losses and associated costs (including the cost of holding reserves against potential losses).”

We strongly believe that cost is a component in the pricing of financial services but that, as recognized by the CARD Act itself, cost is only one component.<sup>2</sup> Further, the Board has proposed to artificially limit the costs that may be considered in setting penalty fees by excluding losses and associated costs. Although late fees may generate revenue to offset losses, the Data Study found that in practice any such offset is generally very limited.

We believe that the costs issuers incur as a result of late payments include collection and directly attributable costs. These costs include technology hardware and software costs, and employment, training and facilities costs, among others (“Attributable Operating Expense”). We also believe that the Board should consider the loss of the use of the funds that the customer has not paid (“Cost of Funds”). As detailed in the Appendix, the Data Study found the average cost of the combination of the Attributable Operating Expense and the Cost of Funds to be \$28.40 for late payments.<sup>3</sup>

It is important to put this number in the proper context. This cost varies widely depending on the issuer, the nature of the issuer’s products and collection operations, and the level of outstanding balances. In addition, we believe that this cost number is unreasonably low because it does not include any component of losses in the cost of late payments. By excluding losses, issuers will not be fully reimbursed for the cost of a late payment. We believe that in determining to exclude all losses from consideration in the costs of late payments the Board may have relied on a less than complete analysis of available information. For example, the Board cited to Table 1a from data that was submitted by a group of issuers in response to a 2008 joint agency rulemaking on unfair or deceptive acts or practices, stating that “93% of accounts that were over the credit limit or delinquent twice in

---

<sup>2</sup> We note that the Federal Reserve itself prices its own financial services on factors that include, but are not limited to, costs. *See* 12 U.S.C. § 248a(c)(3).

<sup>3</sup> Significantly, this cost number is an average cost. Credit card issuers with customers who carried higher balances tended to have higher costs associated with each late payment than credit card issuers with lower balances. This is in part a function of the process on spreading the monitoring and collections costs numerator over a smaller denominator of events. This means that if the Board were to adopt a safe harbor based solely on average costs, higher-cost issuers will either have to perform their own cost analyses or incur losses on the operating costs in administering late fees.

April 14, 2010

Page Four

a twelve month period did not charge off during the subsequent twelve months” and therefore, “most violations of the account terms do not actually result in losses.” This statement fails to recognize that the same Table shows that this charge off rate is more than double the charge off rate for accounts that were current in the same month. In dollar terms, the loss rate difference between the accounts that were current and the rate cited by the Board if applied to total revolving credit would translate into over \$30 billion a year in credit losses.<sup>4</sup>

Similarly, the Board refers to statements by the United Kingdom’s Office of Fair Trading (OFT) in 2006. We believe that reliance on statements of the OFT can be misleading. The OFT generally limited credit card default charges to either 12 pounds sterling or a “fair default fee,” which an issuer would ascertain by following the guidance set forth by the OFT. This section and the statements supporting it cannot be viewed out of context. The rules for pricing and administration of credit card accounts in the United Kingdom differ from those under U.S. law both in details and philosophy. For example, under the CARD Act, rates on existing balances cannot be increased to reflect an increased likelihood of charge off, except in limited circumstances. Earlier this year the United Kingdom Department for Business Innovation and Skills rejected a ban on repricing existing balances stating that “initial evidence shows that a ban on the re-pricing of existing debt such as that adopted in America could lead to worse outcomes for consumers through higher interest rates for new customers, annual fees and some people finding it impossible to obtain a card at all.”<sup>5</sup> Accordingly, we do not believe that reference to United Kingdom practices is appropriate in implementing U.S. statutory requirements.

A reasonable portion of losses should be allocatable to late payments as a component of the cost of late payments. The data submitted to the Board in 2008, some of which was referred to by the Board in the Proposed Rule, shows that late payments correlate positively with losses. While we do not believe that there is any “right” answer to the amount of losses that should be allocated to late payments as a cost, one possible approach would be to include in the calculation of cost those late fees that are either (1) reversed as part of an issuer’s payment plans, or (2) not recoverable because they are assessed on accounts that eventually write off. When these two costs are added to the Attributable Operating Expenses and Cost of Funds, the Data Study found that such a calculation would lead to an average cost of \$32.45 for late fees. Nevertheless, we note that this figure does not account for higher cost issuers, nor does it account for deterrence, and thus does not necessarily represent the full spectrum of factors that should be considered in setting an appropriate safe harbor.

---

<sup>4</sup> Based on FRB G.19, 4th quarter 2009, Revolving Credit.

<sup>5</sup> *A Better Deal for Consumers, Review of the Regulation of Credit and Store Cards: Government Response to Consultation*, Paragraph 42, March 2010.

April 14, 2010  
Page Five

### Fees Based on Deterrence

The Proposed Rule would permit a card issuer to impose a fee for violating the terms or other requirements of an account if the card issuer has determined that the dollar amount of the fee is “reasonably necessary” to deter that type of violation using an empirically derived, demonstrably and statistically sound model that reasonably estimates the effect of the amount of the fee on the frequency of violations.

The Survey found that a fee of \$30 to \$34 is necessary to deter a majority of cardholders (over 50%) from making late payments, and a fee of \$50 to \$54 is required for the late fee itself to deter a significant majority (80%) of cardholders from paying late.<sup>6</sup> Historically, late fees have been supplemented by a periodic rate increase on both existing and future balances to deter late payments. This helps to explain the fact that current late fees are below the level that appears to be necessary to form an effective deterrent to late payments. In the current environment, and in the future, with the ability to raise rates on both existing balances and on future balances limited by the CARD Act, the role of late fees in portfolio risk management may be even more important than it has been historically.

Modeling confirmed that there is a positive correlation between the amount of late fees and deterring delinquency. We asked Argus to analyze its Credit Card Payment Study (CCPS) database using two distinct statistical modeling techniques (“Modeling”). The Modeling found that the point-of-inflection of the relationship curve between late fee level and probability of subsequent delinquency is about \$28. Stated another way, the Modeling found that, in practice, late fees begin to deter delinquency at \$28 with the deterrent effect increasing as the amount of the fee increases.<sup>7</sup> Below \$28, the deterrent effect of late fees drops off rapidly. This finding is generally consistent with the Survey results, which indicate that a late fee of \$28 would deter less than 50% of cardholders from making late payments and that below that level the deterrent effect decreases rapidly.

Finally, the effectiveness of late fees as a deterrent raises important portfolio risk management issues. The effective management of credit risk is critical to the long-term success of any banking organization. The goal of credit risk management is to maximize a

---

<sup>6</sup> Moreover, the results of a separate survey by one card issuer demonstrate that consumers do not want to pay for the cost of another consumer’s late payment. In that survey, 82% of those surveyed agreed that it would be better for those who are late to bear the costs of being late. Furthermore, 60% of late payers in the survey agreed with that statement. An additional survey conducted by Argus of the 2,076 cardholders asked cardholders what late fee structure was most fair of the following options: a flat rate, a percentage of the minimum monthly payment, or a percentage of the total amount owed. A majority of the respondents (58%) indicated that a flat rate fee would be preferable.

<sup>7</sup> These results are consistent with, but go beyond, the findings of the February 2008 paper titled *Learning in the Credit Card Market* by Agarwal, et al, published by the Federal Reserve Board of Chicago. Specifically, the Modeling further establishes the minimum fee level below which late fees are not a significant deterrent.

April 14, 2010  
Page Six

bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters.<sup>8</sup> Previously, because of the penalties and rate increases that effectively deterred most consumers from paying late, a bank would be able to make a judgment about the credit risk of a consumer who did pay late. However, if the Board sets the amount of the late fee at such a low point that it will not adequately deter a consumer from paying late, a bank's ability to effectively manage credit risk will be limited, as it will not know whether a consumer is paying late because the consumer cannot repay at all, or because the consumer is paying late for other reasons.

### Safe Harbor

The third method articulated in the Proposed Rule permits a card issuer, with certain exceptions, to charge a fee that does not exceed the greater of "five percent of the dollar amount associated with the violation provided the dollar amount of the fee does not exceed \$[XX.XX]." In the Commentary to the Proposed Rule, the Board states that the dollar amount associated with a late payment is the amount of the required minimum payment. The Board provides an example of a card issuer who is permitted to impose a late payment fee of \$23 on a consumer who fails to make a minimum payment of \$450 on time.

The Industry Data indicates that the Board's safe harbor proposal of a late fee based on five percent of the typical minimum payment would result in an insignificant fee of \$2.53. Such a fee would not be sufficient to cover the associated costs or effectively deter the consumer from making another late payment. Moreover, the example provided in the Commentary would not apply to a majority of card accounts. In order for a customer to have a \$450 minimum payment based on typical industry minimum payment requirements, the customer would have to have a balance of \$ 18,000.<sup>9</sup>

In addition to the percentage number discussed above, the Board indicated that it planned to adopt a single number that issuers can rely upon as a safe harbor for late fees and other fees. The deterrence model will require difficult and costly analysis. As noted above, the Proposed Rule permits an issuer to determine a dollar amount for the fee by using an empirically derived, demonstrably and statistically sound model. It will be difficult for many institutions to create such individualized analyses based on existing data. In addition, going forward the limitations on fees themselves would inhibit the development of information that would meet the Board's standards. In light of the difficulties of the final rule, we would urge the Board to allow issuers to use other techniques and general industry data to establish deterrent levels. There is no reason to believe that late fee deterrent levels are card issuer-specific. Even if the Board allows the use of other techniques and general industry data to determine deterrence, in order for the industry to have the certainty that it is complying with this rule, thereby avoiding new scrutiny during regulatory reviews and challenges from state

---

<sup>8</sup> *Principles for the Management of Credit Risk*, Basel Committee on Banking Supervision, 2009.

<sup>9</sup> Assumes the calculation of the minimum payment as 2.5% of the new balance.

April 14, 2010

Page Seven

attorneys general and plaintiffs' attorneys, the safe harbor should be a realistic amount that can be used broadly by credit card issuers.

The Board also states that some community bank issuers and credit unions may charge "significantly lower" late payment fees. We would caution against relying on the ability of some of the participants in the industry to charge lower-than-average fees as evidence that all members of the industry could charge such fees. It is not appropriate to generalize the cost point for one segment of the industry across the entire industry. Credit union customers typically have a higher median income than bank customers and as such, credit union customers present a lower risk of loss.<sup>10</sup> Accordingly, the demographics of the credit union membership are not representative of the entire revolving credit marketplace.

\* \* \* \*

We would be happy to discuss the results and implications of the Data Study, Survey and Modeling with you at your convenience.

Sincerely,



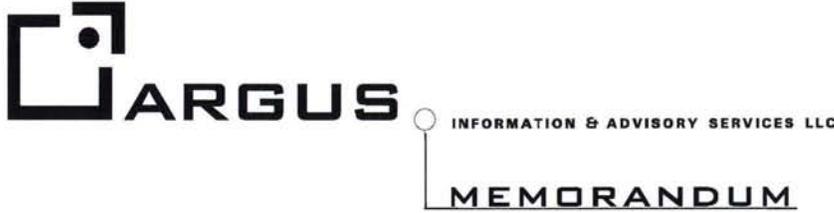
Oliver I. Ireland

Attachment

dc-599353

---

<sup>10</sup> See *CREDIT UNIONS Greater Transparency Needed on Who Credit Unions Serve and on Senior Executive Compensation Arrangements*, United States Government Accountability Office, GAO 07-29 (Nov. 2006)(53).



To: Oliver Ireland, Morrison Foerster  
 From: Argus  
 Date: April 14, 2010  
 Subject: Attention: Docket No. R-1384

**I. Cost Approach**

**The consortium’s approach is based on identifying operating expenses that are associated with handling late payments and delinquent accounts and recovering those costs via late fee assessments.**

Consortium issuers were asked to provide 2009 operating costs by category and to determine the proportion of those costs attributable to late payment behavior. Morrison Foerster worked with each of the consortium members to ensure that the cost methodologies were reasonable.

Attributable operating expenses include:

- Directly attributable expenses, such as collections costs and call centers
- Indirectly attributable expenses that can be shown analytically, or otherwise through cost centers, to be related to collections activities or direct management of late payment behaviors, such as a proportion of:
  - Risk management
  - Audit/compliance
  - Senior management expense
  - Collections IT expense

The results of the cost analysis indicate that the average issuer costs range from \$29 to \$33 for late payments. Two specific calculations of costs were used to support this range:

	<b>Approach One</b>	<b>Approach Two</b>
Components of Cost (ie, numerator components)	<ul style="list-style-type: none"> <li>• Attributable operating expense</li> <li>• Six months funding costs for written off balances</li> </ul>	<ul style="list-style-type: none"> <li>• Attributable operating expenses</li> <li>• Six months funding costs for written off balances</li> <li>• Fee and finance charge reversals associated with payment plans</li> <li>• Non-recoverable fees (assoc. with writeoffs)</li> </ul>
Cost Recovery Events (ie, denominators)	<ul style="list-style-type: none"> <li>• Net late fee assessments (net of waived fees and of fees assessed to writeoffs)</li> </ul>	<ul style="list-style-type: none"> <li>• Net late fee assessments (net of waived fees)</li> </ul>
Result of calculation	<b>\$28.40</b>	<b>\$32.45</b>

## II. Survey Approach

2,076 credit cardholders were surveyed online from March 22nd to March 25, 2010 as to their credit attitudes and behaviors. Demographic characteristics were gathered and used to balance the online sample to the national population

The Van Westendorp methodology was used to identify at what fee point consumers are likely to be deterred from paying their credit card bills after the due date. Respondents were asked a series of three questions in which they volunteered what they perceived to be fees that are too low to deter payment, may/may not deter late payment, and high enough to deter late payment. The text of these questions was as follows:

- Please think about your credit card statement and its due date. If a credit card company were to charge a fee for making a late payment, what fee would you consider to be so low that it would not deter you from paying late?
- What fee might deter you from paying your credit card bill late, but you would consider paying late when you felt you needed to?
- What fee might be so high that you would never want to pay late?

Respondent perceptions were then aggregated and plotted on line charts in order to assess the points of inflection in terms of encouraging on-time payment. Survey results indicate that late fee amounts of \$50 to \$54 are required to yield reasonable levels of deterrence – see Figures 2 and 3 below.

Figure 2

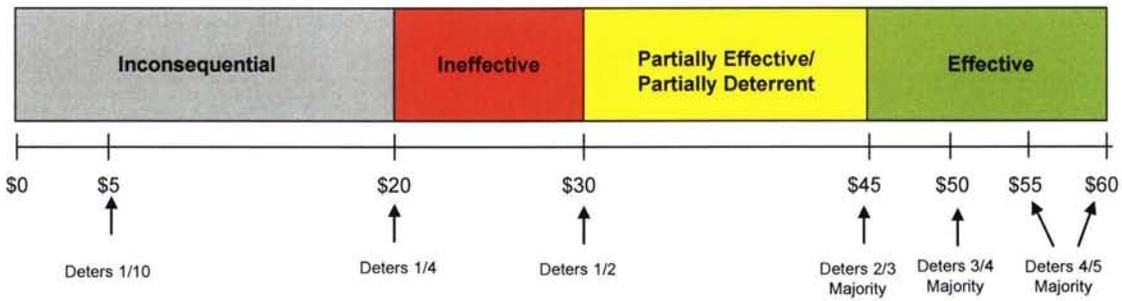
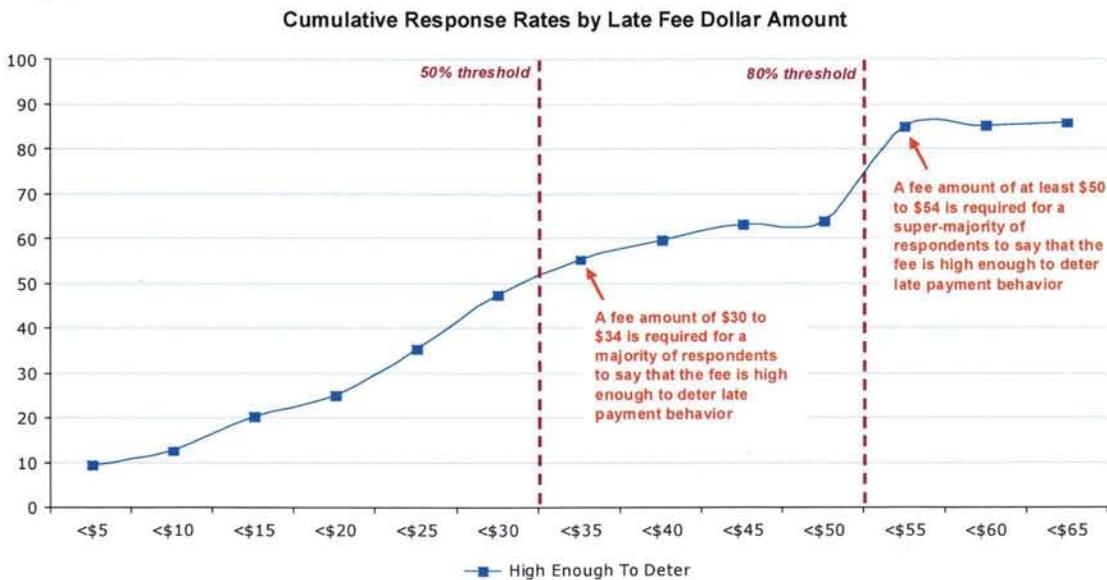


Figure 3



In addition to the fee-related questions noted above, survey respondents were also asked about their opinions regarding the most appropriate type of late fees. As shown in the graphic below, the majority of respondents felt that a “flat” late fee was preferable to one based on a proportion of account balances.

**Most Fair Fee Structure – Survey Results**

<b>Methodology</b>	<b>Percentage of Respondents*</b>
Flat rate	58%
Based on a % of the minimum monthly statement amount	23%
Based on a % of the total balance owed	18%

\* Numbers may not sum to 100% due to rounding.

**III. Deterrence Modeling Approach**

This approach leverages the Argus CCPS dataset to determine whether there are “optimal” fee amounts that deter customers by minimizing the likelihood of a customer paying late or becoming delinquent.

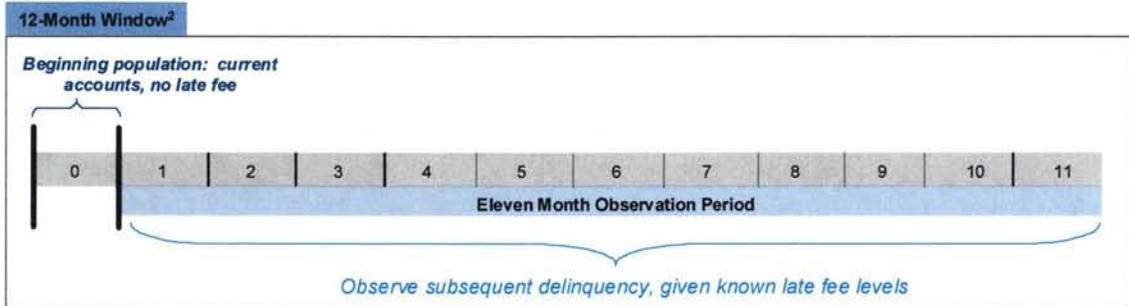
Statistical models were developed from Argus’s consumer credit card industry data to establish the relationship between late fee levels and customers’ subsequent delinquency. In particular, the goal is to determine the dollar fee amount that is reasonably necessary to deter customers from becoming delinquent in the future.

To explore the underlying relationship between late fee levels and customer repayment behaviors, Argus analyzed its Credit Card Payment Study (CCPS) database using two distinct statistical modeling techniques. The CCPS database comprises of a cross-issuer longitudinal times-series data from 1998 to 2009, with detailed account level information including product, pricing, repayment, due-date/late payment and risk attributes. The CCPS data includes credit card performance data from all the leading US credit card issuers – including all the participants of the Consortium.

Both of the modeling methods used for the analysis, ie, logistic regression and structural equation modeling (SEM), suggest that the implied and explicit covariance between late fee levels and the propensity of a customer in current status becoming delinquent in a subsequent 11 month period is statistically significant and negative. In other words, analysis of the representative and comparable times-series data indicates that higher late fee levels are a statistically significant contributor to ensuring sustained lower levels of delinquent behavior (ie, a significant deterrent to poor repayment behaviors).

## Logit Regression Model

The modeling dataset consists of accounts that were current and had no late fee in January from 2002 to 2009 and their behavior in the next eleven months, as shown below:



With a starting population of all open accounts from 2002-2009, two modeling populations were created. Population A consists of all current accounts in the beginning period (month 0) with the following filters:

Filter	Rationale
Account does not roll into 6+ CPD, charge-off or bankrupt status, and is neither tagged fraud, lost, nor stolen	Ensures that the population of interest does not include accounts that are already severely delinquent, fraud, lost or stolen
Must be open 6 months prior to month 0	Ensures that the account existed in the past six months to account for certain behavior during that period (late fee assessments, repricing, etc.)
Must be current and have no late fee in month 0	To capture only "good" accounts in order to isolate the impact of card terms and conditions on future delinquency
Must have a balance greater than \$646 in month 0	The FRB stated that late fees can not be greater than the minimum payment going forward. To ensure relevance of late fees as a result, we focused only on accounts with balance greater than \$646 calculated with the following logic: lowest late fee level observed of \$15 / average minimum payment rate of 2.32%

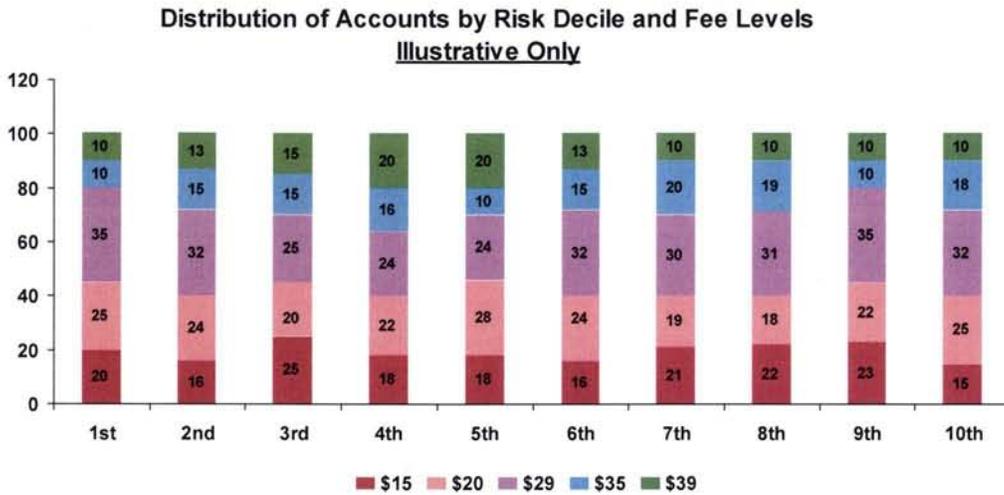
For Population B, no balance cut-off criterion was applied, although the other filters remained in place.

In order to appropriately capture the effects of fee levels on account performance, it is important to have comparable populations of accounts at each fee level. This minimizes the variance caused by issuer strategies in account management and the changing customer behavior over time.

The three crucial drivers of account performance Argus controlled for were risk, vintage and credit lines. Argus first segmented the credit card accounts into alternative groups based on their associated late fee levels and terms, and then statistically re-weighted the groups to ensure that the risk, age and credit line profiles of each of these groups were comparable.

Argus rebalanced the modeling population by these three dimensions across fee levels.

- For each dimension, the starting population of accounts was segmented into deciles, and each decile split by the main fee levels of \$15, \$20, \$29, \$35 and \$39
- For each decile of each dimension, Argus randomly sampled the same number of accounts for each fee level. This method ensures that for each level, the account distributions by risk, vintage, and credit lines are relatively similar
- Argus then ran a non-parametric test to confirm that distributions by each dimension were comparable across fee levels.

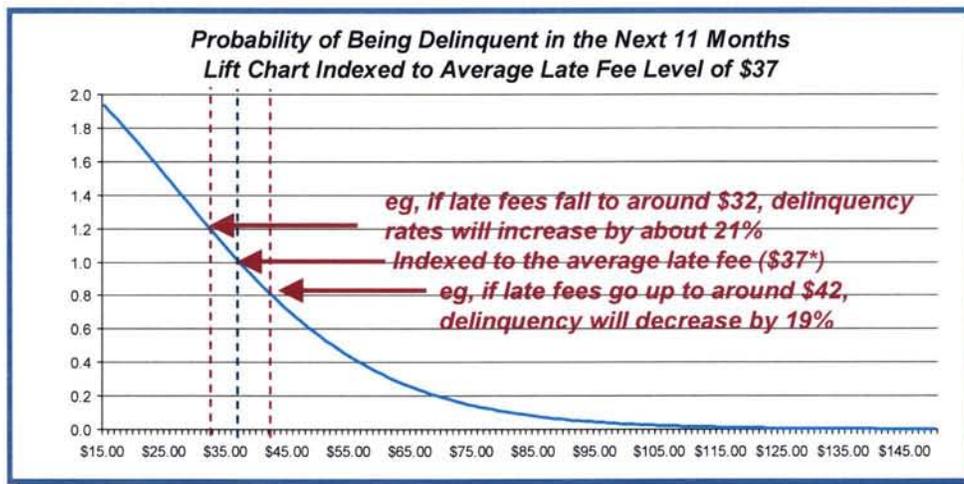


Argus utilized a logistic modeling approach to estimate the relationship between late fee levels and future delinquency. The variables used in the modeling were as follows:

Model Variables	Descriptions
Dependent Variable	Whether or not an account went delinquent (1+ CPD) in the next 11 months (binary: 1=Yes, 0 = No)
Independent Variables	<ul style="list-style-type: none"> <li>• <b>Account Characteristics at Month 0:</b> account status, average daily balance, annual fee, BT transactions, BT fees, cash advance transactions, cash advance fees, change in credit limit, credit limit, finance charge, late fee, loan loss provision, months on books, fee waivers, net income, net purchase amount, other fees, other revenue, overlimit fees, payment amount, product type (Cobrand Air, Non-Air Cobrand, Rewards, Non-Rewards, and unknown), retail APR, revolving balance, risk score, and total revenue</li> <li>• <b>Past 6-Month Performance:</b> number of late fees, number of late fee waivers, number of overlimit fees, number of overlimit fee waivers, number of months accounts were 1+CPD, number of months accounts were behavioral repriced, number of months accounts were penalty repriced, and number of late fees</li> <li>• <b>Macroeconomic Indicators:</b> GDP, GDP change, prime rate, consumer price index, disposable income per capita, and unemployment rate</li> </ul>

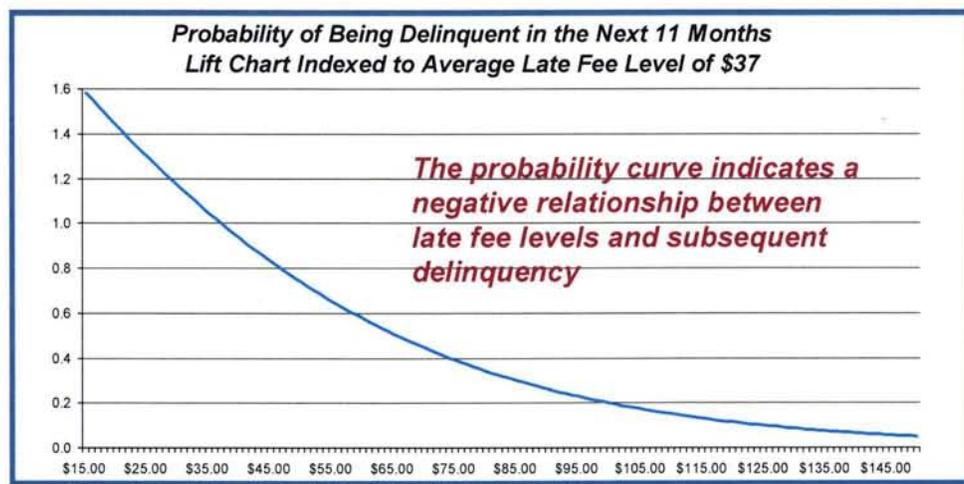
For Population A, the model showed that the point-of-inflection of the relationship curve between late fee level and probability of subsequent delinquency, representing the specific point at which delinquency levels start to slow down, is about \$28:

- Late fee levels are statistically significant in explaining whether or not an account will become delinquent
- Decreasing average late fees from \$37 to \$32 will increase delinquency rates by 21% for this population



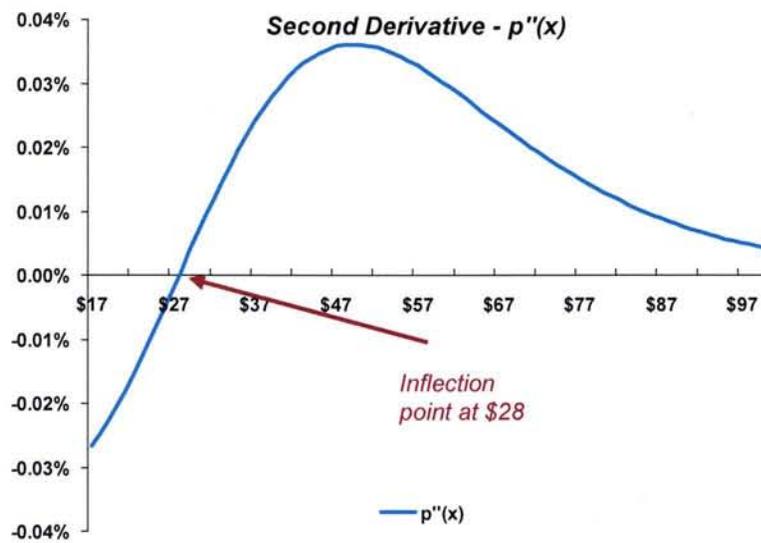
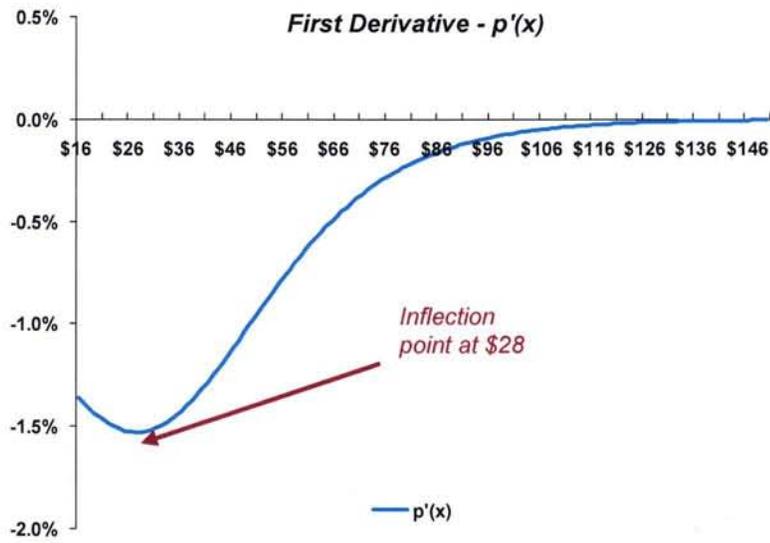
For Population B, the model showed a negative relationship between fee levels and subsequent delinquency:

- Late fee levels are statistically significant in explaining whether or not an account will become delinquent
- Higher fee levels decrease the likelihood of an account having a subsequent delinquency
- Decreasing average late fees from \$37 to \$28.50 will increase delinquency rates by 20%



Taken on a combined basis, the models for Populations A and B illustrate that late fees are significant in determining whether a current account will become delinquent in the subsequent 11 months.

The point-of-inflection of the relationship curve between late fee level and probability of subsequent delinquency, representing the specific point at which delinquency levels start to slow down, is about \$28 as shown in the two graphs below:



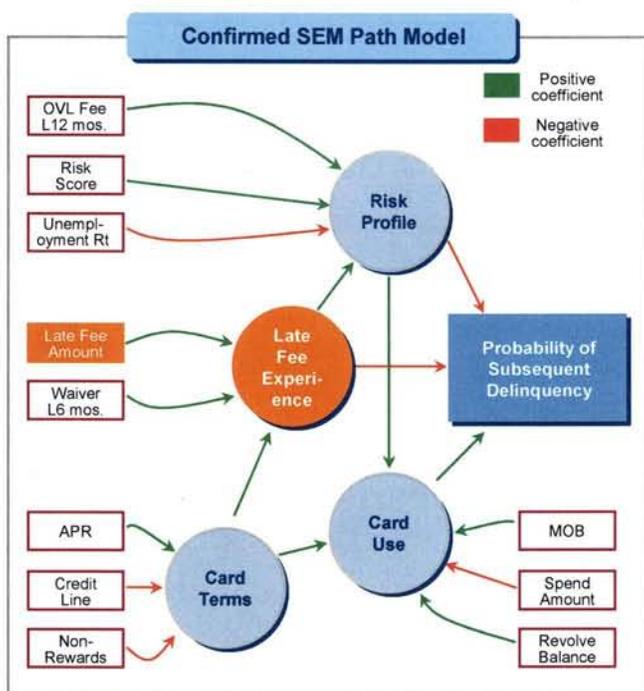
## Structured Equation Model

The SEM model approach enables testing and estimating causal relationship using a combination of statistical data and quantitative causal assumptions. Further, it allows both confirmatory and exploratory modeling – suited to both theory testing and theory development. Its strengths include its ability to construct latent variables: variables not measured directly, but via measured variables – each of which is predicted to “tap into” the latent variable (explicitly capture unreliability in model)<sup>1</sup>

The findings of Argus’s structured equation modeling were as follows:

- Increase in late fee levels have an indirect (*via card terms*), yet significant causal deterrence effect against recurrence of late paying behaviors
- Customers with better *risk profiles* show higher level of deterrence against late fees
- Customers with higher levels of *card use* have lower level of deterrence against late fees
- Card use has a positive effect on late fee level (due to tiered nature of most late fees assessments)

The form of the model was as follows:



• Explored variables: Risk score, balance, product type, macro-economic indicators, and account characteristics at time of initial late fee assessment  
 • Data: Argus CCPS database (1999-2009), balanced for risk, vintage & credit lines  
 • Selection: Account was current in month 0, no delinquency in prior 6 months, and went 1-6 CPD (but did not charge-off) in the following 11 months performance period

<sup>1</sup> Analysis based on AMOS-SPSS software.

- \* Simon, Herbert (1953), "Causal ordering & Identifiability," *Studies in Econometric Method*, New York: Wiley, pp 49-47
- \* Pear, Judea (2000), "Causality: Models, Reasoning and Inference." Cambridge University Press.

### Final Modeling Conclusions

- Our logit and SEM models support the conclusion that late fees are significant in deterring delinquency
- The point-of-inflection of the relationship curve between late fee level and probability of subsequent delinquency, representing the specific point at which delinquency levels start to slow down, is about \$28
- Increase in late fee levels have an indirect (*late-fee experience*), yet significant causal deterrence effect against future delinquency
- The results of Argus' analysis are consistent with the findings of the February 2008 paper titled *Learning in the Credit Card Market* by Agarwal, et al, published by the Federal Reserve Board of Chicago, and further establishes the minimum fee level below which late fees are not a significant deterrent