Understanding Your Credit Score

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FEFE Conference, Baltimore, MD   April 30, 2010

A Good Credit Score is More Important Now Than Ever Before

- **Lenders are backing away from higher-risk applicants**
  - **Mortgage loans:**
    - **Purchase money loans now have higher standards, definitely higher downpayment requirements**
    - **Refinancings => homes are no longer an ATM for owners**
  - **Home equity lines**
    - **Much smaller business today, because most homeowners have less home equity to tap**
  - **Auto loans**
  - **Credit Cards**

A Good Credit Score is More Important Now Than Ever Before

- **Lenders are backing away from higher-risk applicants**

- **Risk-based pricing means a low credit score will cost you money – possibly big money**
  - Lenders typically quote an interest rate on your loan until they've examined your credit report and credit score. Then they adjust the interest rate to your level of risk.

Example of How Much a Low Score Can Cost You

Product: 30-year, fixed rate mortgage, $300,000 loan

FICO Score	Interest Rate	Monthly Payment
760	5.9%	$1,787
650	7.2%	$2,047
590	9.3%	$2,500

Source: Fair Isaac Co: www.myfico.com

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- Risk-based pricing means a low credit score will cost you money – possibly big money

- Credit scores have become an important screening tool for many firms other than lenders
  - Insurance (auto; homeowners; life)
  - Apartment rentals
  - Cell phone service providers
  - Utilities (electric, gas, water, cable)
  - Employers

To Understand Credit Scores, Let's Spend a Few Minutes in a Lender's Shoes

Example of Costs:
Source of Bank Credit Card Company Expenses, 2006
(Total = $87 billion)

Fraud
1%

Cost of Funds
33%

Marketing &
Operations
38%

Chargeoffs
28%
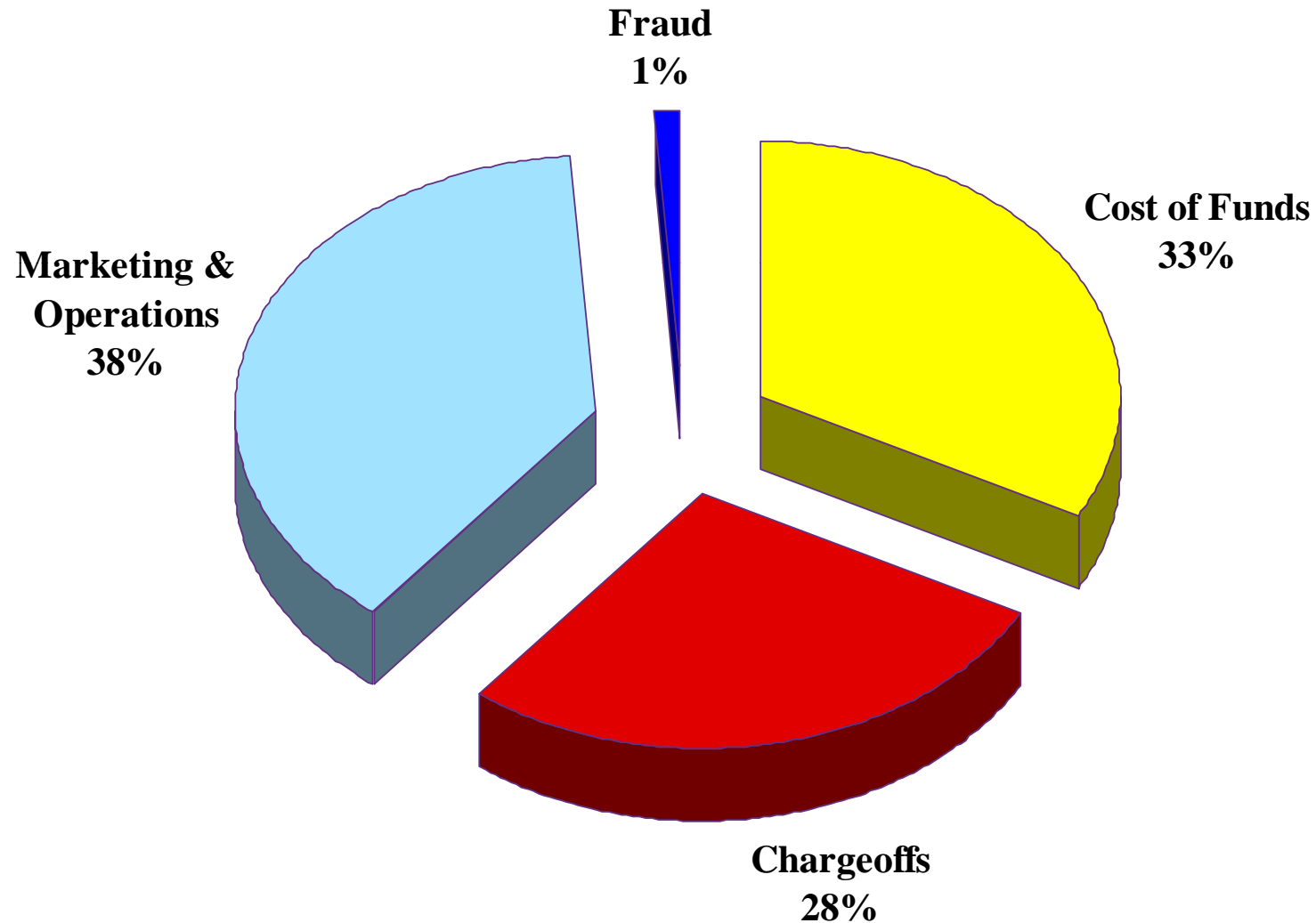
Source: Card Industry Director, 2007

"A Lender Wants to Lend" – and other fundamentals of consumer lending

- It is true that every loan carries a positive probability of a loss

- Generally speaking, the more you lend, the higher the losses, and the higher the loss as a percentage of dollar lending volume

- Bad Debt costs can be driven to zero only if loan volume is very low or zero

- But, wait! …….. lenders make money only when loans are generating interest payments

- So ….. the art of risk management is to improve risk evaluation prior to making the loan so as to say "yes" to applications as often as possible, at the same time minimizing growth in bad debt costs

So, What Do Lenders Rely on to Improve Risk Evaluation? Credit Scoring? Why Did It Become So Important?

- **Begin with the Five "C"s of consumer lending**

  – **Character (Willing to repay? Demonstrated by past track record?)**

  – **Capacity   (Income? Amount of debt already owed?)**

  – **Capital   (Savings? Other financial assets?)**

  – **Collateral   (Downpayment, or asset to pledge against loan?)**

  – **Conditions   (How will economic climate influence repay risk?)**

- **Until the late-1960s, most consumer loans were based on the personal judgment of a loan officer**
  – **No credit scores, just intuition and experience**

By the 1960s, the lending industry needed a way to automate the knowledge stored inside a loan officer's head

- Growing need to speed up the processing of applications, and lower the cost

- Have consistent, company-wide standards for accepting risk
  - Example: accept loans with probability of default of 5% or less

- Estimate losses for a portfolio of new loans, to establish proper reserves to cover losses and to better manage company-wide risk

Statistical credit scoring automated the evaluation of the Five "Cs"

Premise: The patterns observed in the past regarding characteristics of accounts that pay as agreed ("good accounts") and accounts that pay late ("bad accounts") will be repeated

- Loan officers instinctively let this guide their "manual" decisions => judgmental underwriting

- Credit scoring harnesses statistical models to study the same patterns and predict future account performance

    => Automated Underwriting

How Scoring Models Work

What is the point?   Reduce the "fog of uncertainty" that surrounds a pool of loan applicants.

- **The lender wants to find and use readily observable characteristics to sort (i.e., help to predict) the "good" borrowers from the "bad" borrowers.**

- **So, the design objective is to create a numerical index that:**

  - **Makes accounts that exhibit "good" behavior score higher than accounts that exhibit "bad" behavior**

  - **Maximize the "separation" in scores between the distribution of "goods" and "bads"**

How a Lender Builds a Loan Application Scoring Model

- **Decision to be made: Accept vs. Reject a loan application**

- **Decide what constitutes a "good" outcome vs. a "bad" outcome so that a model that predicts one vs. the other can be built.**
  - Typical definition in an application scoring model:
    - "Bad" account = A newly opened account that becomes 90 days delinquent or worse within 2 years of opening.

- **Identify a <u>large</u> sample (think 50,000 accounts or more) of existing accounts that have data on applicant characteristics at the time of opening <u>and</u> at least two years of account performance experience**

- **Use statistical models to find a set of "predictive" variables that do the best job of distinguishing goods from bads in that sample**

A Hypothetical and Simple Scoring Model for a New Loan Application

Characteristic	Value	Assigned Points
Type of Housing	Rent	0
	Lives with parents	15
	Owns	38
Household Income	Less than $25,000	7
	>$25K but, < $50K	35
	> $50,000	61
# of accounts 60 days past due	0	120
	1	34
	2	13
	3 or more	0
Number of bankcards	0	0
	1 - 2	37
	3 or more	20
Minimum possible score = 7	Maximum score = 256	

Next: A Graphical Illustration of How A Scoring Model Helps A Lender Evaluate Loan Applicants

- **Every borrower is evaluated by the scoring model and is assigned a score**

- **Higher scores indicate lower risk (more desirable borrowers)**

- **The distributions of the two types of borrowers along the credit score axis are different.**
  - "Bad" borrowers (i.e., higher risk) generally have lower scores
  - But, there is always some overlap in the distribution of scores for good borrowers and bad borrowers

- **The lender picks a "cutoff" score. Applicants with scores above the cutoff are accepted. Those with scores below the cutoff are rejected.**

Type 1 Error: "Good" Applicants Rejected
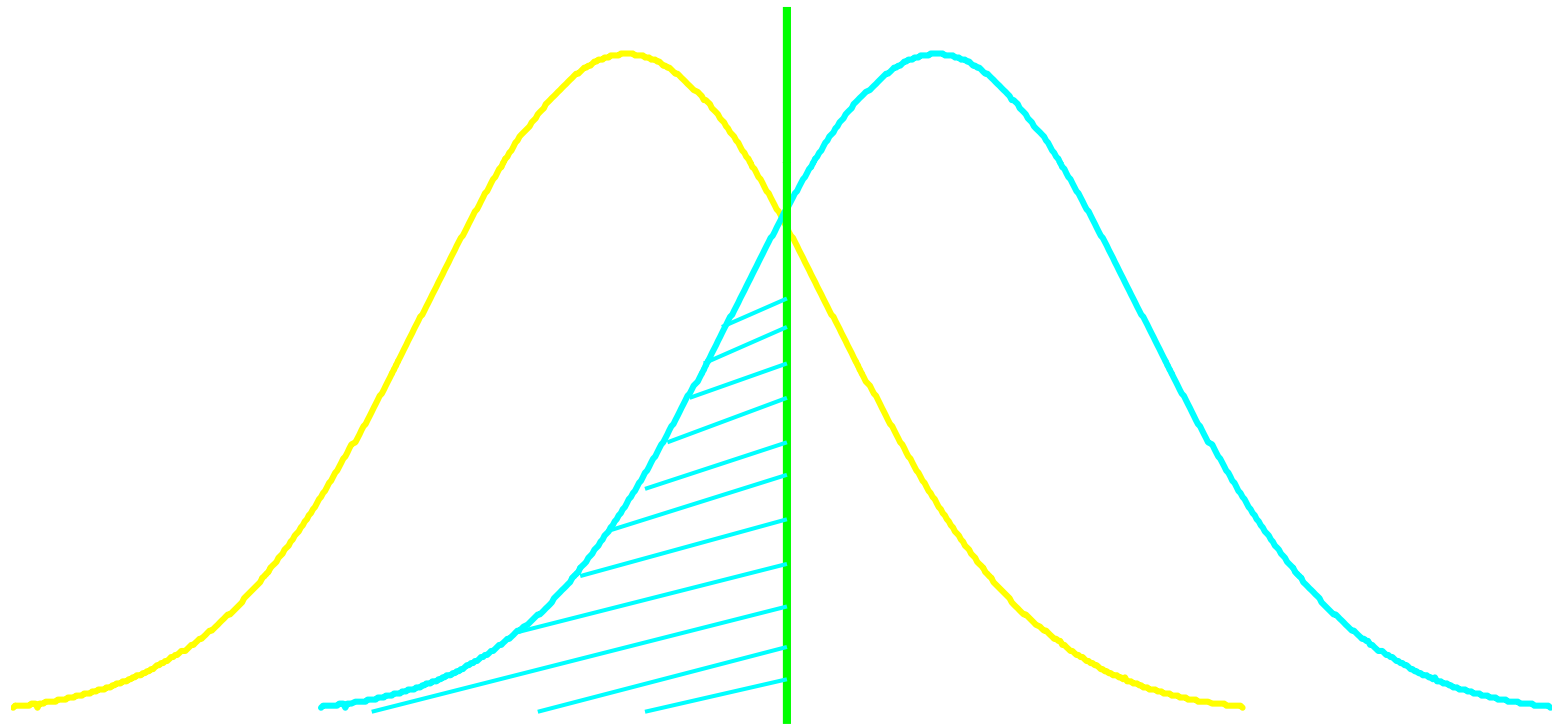
Type 2 Error: "Bad" Applicants Accepted
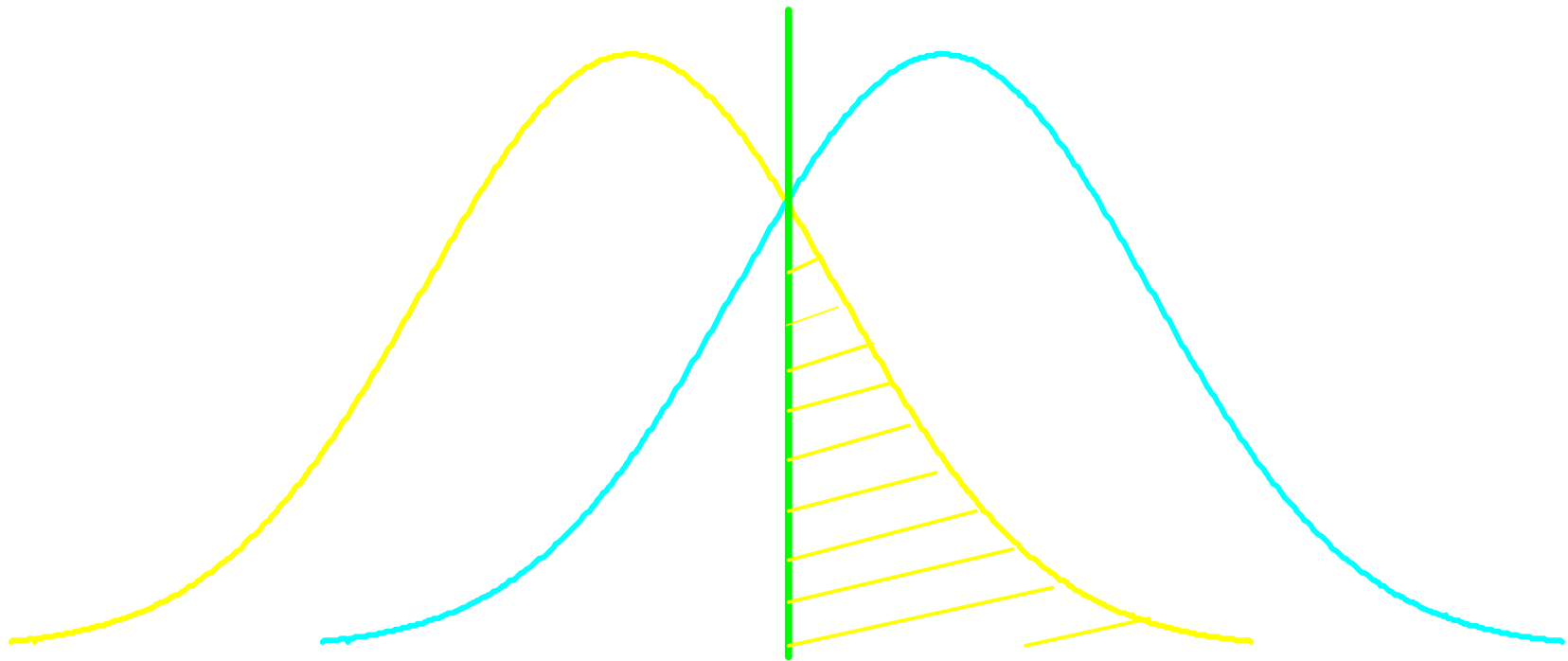
Important Sidenote:
Federal Law Imposes a Limitation on Scoring Model Development

- **Equal Credit Opportunity Act of 1974 (ECOA) and ECOA amendments of 1976**
- **Intended to prohibit, or at least sharply restrict, discrimination in lending**
- **Federal Reserve Board was tasked with developing and enforcing the ECOA, which it did under what is known as Regulation B**
- **Prohibits the use of certain borrower attributes in the underwriting process**
  - **Race**
  - **Nationality**
  - **Gender**
  - **Marital status**
  - **Age**

Emergence of Credit Scores as a Commercial Product

- **During the 1970s and 1980s, most large national lenders invested in developing proprietary, custom application scoring models**

  – Example: the Sears, Roebuck model used only data from Sears own customers, as provided on the credit card application.

- **Advantage:**

  – Predicts default risk with greater accuracy and consistency than individual loan officers

- **Disadvantage:**

  – Expensive to develop
  – Need large numbers of accounts to properly develop the statistical models => <u>only the very large lenders found this worthwhile</u>

Emergence of the FICO Score

- **1980s: A new idea is born: build a model that only uses credit report data**

  - Model could be built on millions of consumers, so long as each one had a credit report. No need for a creditor to have a huge loan portfolio of its own to build a model.

  - Developers found such a model could predict default risk very accurately, using only credit report data (didn't even need borrower income data in some applications)

  - Any lender (of any size) could purchase a score on a borrower and use it to make credit decisions

- **1989: Fair, Isaac Corp introduces the first FICO score**
  - The FICO score is a "generic bureau score". Translation: It uses only information in a credit report – nothing more

Details of the FICO Score

- **The FICO Score is one of many types of credit scores, but is the most widely used**
  - Leading competitor: Vantage Score, introduced in 2006 as a joint venture by the three major credit bureaus

- **Components of the FICO score:**
  - Account information
  - Inquiries
  - Collections activity
  - Public records related to debt or non-payment

- **Not included: age, address, income, gender or employment information**

- **Classic FICO score product: scale 300 – 850, where higher number indicates lower risk**
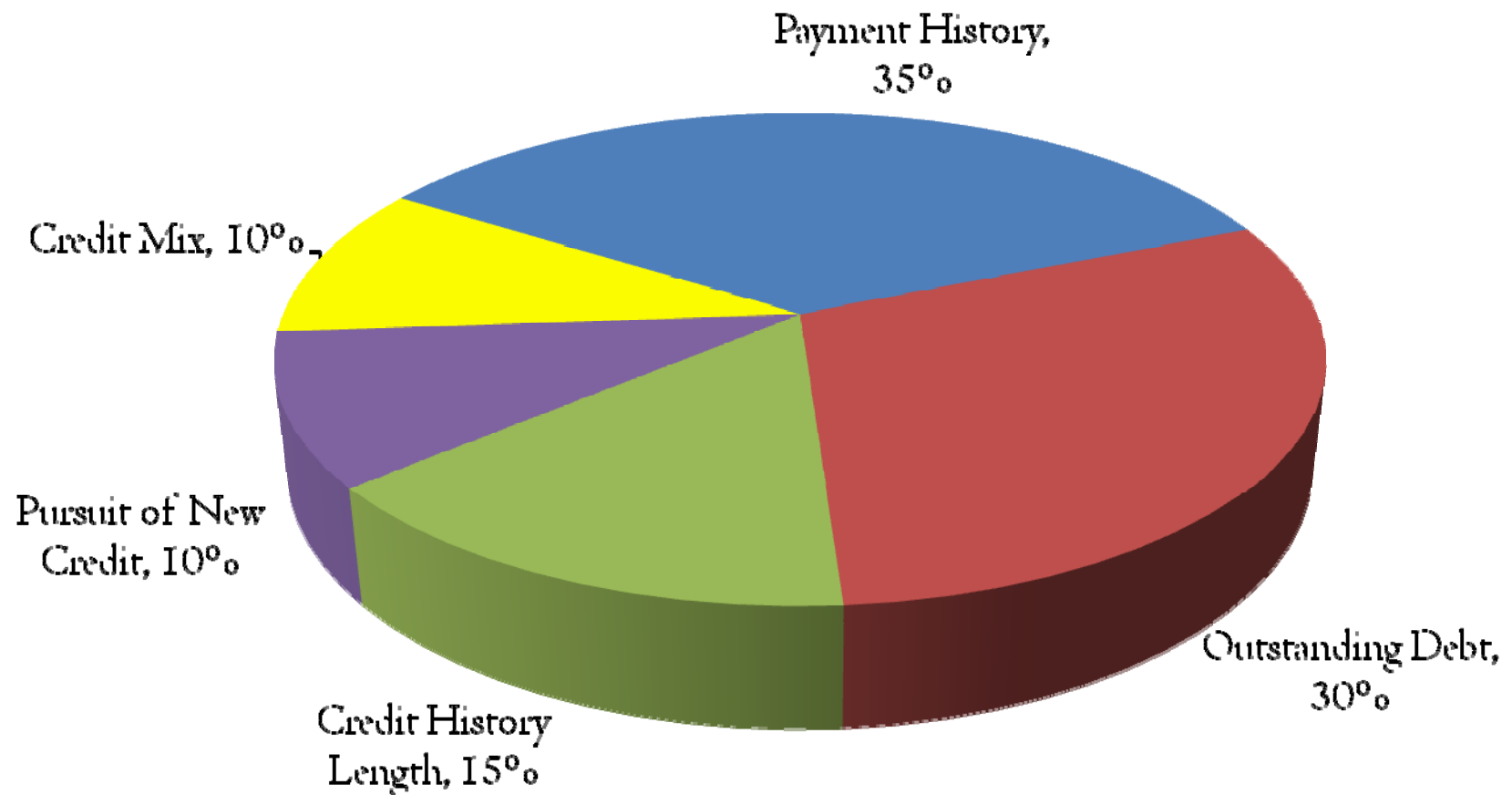
Available Data from a U.S. Credit Report

- **Account information**
  - Industry/account type
  - Date reported
  - Date account opened (month and year)
  - Highest balance or account limit
  - Current balance
  - Current payment status
  - Delinquency history (up to 7 years)

- **Inquiries**
  - Date (day, month, year)
  - Industry and company

- **Public record items (only credit-related, e.g., bankruptcy, foreclosure, tax liens, legal collection judgments)**
- **Collection items (accounts referred to collection agencies)**

A Peek Inside the "Black Box" of the FICO Score

- **FICO scores have only been available for the public to view since 2001**

- **Since then, they have developed a very informative website that explains credit scores and offers credit advice**
  - **www.myfico.com**

Categories of predictive characteristics, Classic FICO Score

Payment History, 35%

Outstanding Debt, 30%

Credit History Length, 15%

Pursuit of New Credit, 10%

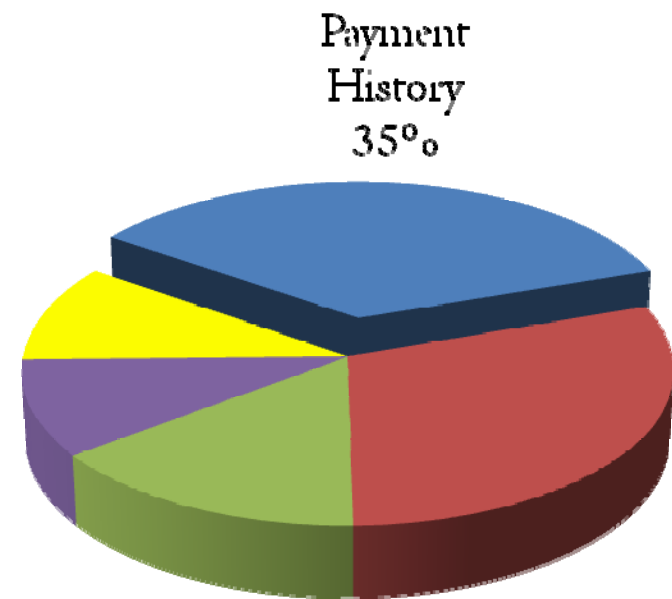Credit Mix, 10%

Payment History (35%)
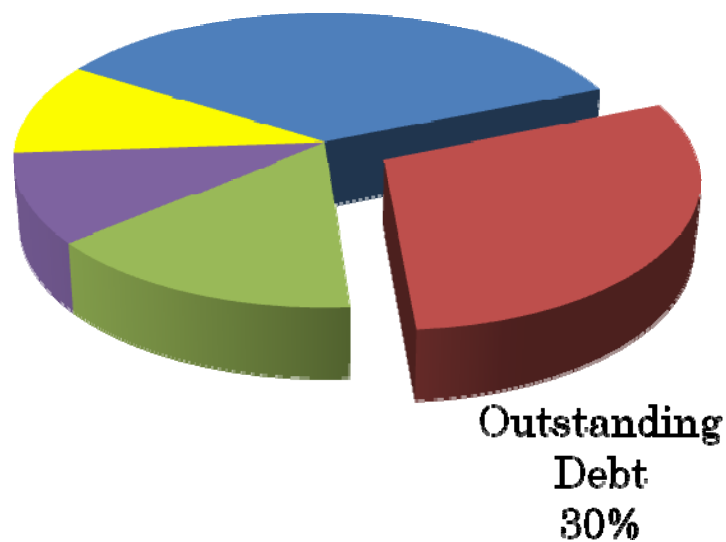
Key Factors:

- <u>How recent </u>is the most recent delinquency, collection or public record item?

- <u>How severe </u>was the worst delinquency – 30 days, 90 days, etc.?

- <u>How many </u>credit obligations have been delinquent?

Payment
History
35%

Outstanding Debt (30%)

Key Factors:

- How much does the consumer owe creditors?

- What percentage of available credit card limits is the consumer using?

- What percentage is outstanding on open installment loans?

Outstanding
Debt
30%

# Credit history length (15%)

Key Factors:

- How long have accounts been established – <u>average</u> number of months accounts have been open

- New accounts – number of months since most recent account opening

Credit History Length 15%
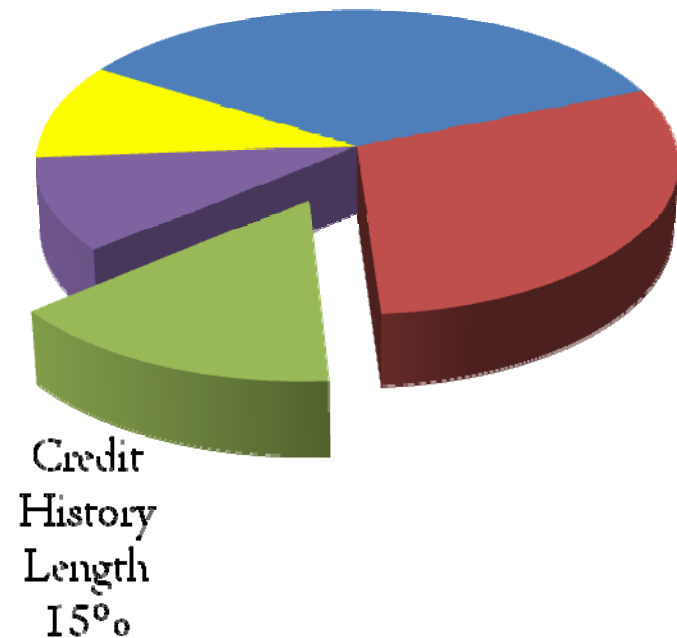
Pursuit of new credit (10%)

Key Factors:

- Inquiries: number of recent inquiries (12 months)

- New accounts – number of trade lines opened in last year

Pursuit of
New Credit
10%
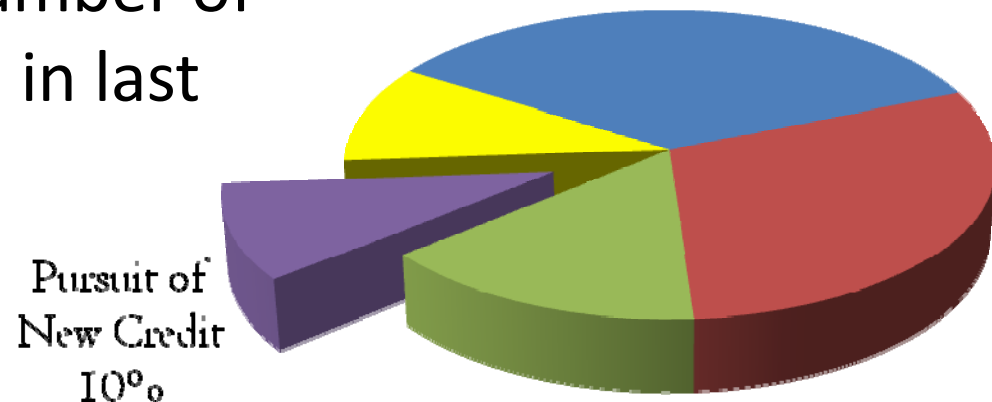
Inquiries
Which inquiries affect scores?

- **Only consumer-initiated inquires posted in last 12 months are considered by the score**

- **Model incorporates De-duplication logic to account for mortgage and auto rate shopping**

- **Scores do not consider the following:**
  - **Inquiries by insurance companies**
  - **Promotional inquiries**
  - **Account review inquiries**
  - **Consumer disclosure inquiries**
  - **Employment inquiries**

Credit mix (10%)

Key Factors:

- What is the mix of credit product types?
- Installment credit – percent of trade lines that are installment loans

Credit Mix 10%
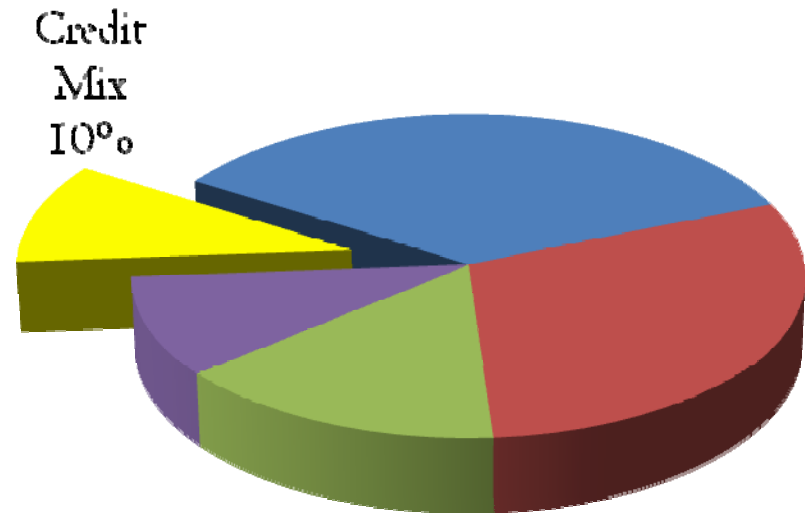
Do's and Don'ts In Managing Your Credit Score

- **DO:**
  - **Order credit report and search for errors**
  - **Pay all bills on time (credit and utilities and all other accounts)**
  - **Be patient if you do slip and have a late payment**
    - All negative items roll off credit report after 7 years (except bankruptcy, which stays for 10 years)
    - Importance in credit score can decline after as little as 2 years

  - **Maintain a healthy mix of credit (blend of credit cards, installment loans, mortgage loans)**

Do's and Don'ts In Managing Your Credit Score

- **DON'T**

  – **Max out your available credit**

  – **Open multiple accounts in short period just to establish a credit history or boost available credit**

  – **Close old credit card accounts**

  – **Dally when shopping for credit**

    - **Shop when you need it, but don't apply multiple times over an extended period (more than 30 days)**

Credit Utilization: Be Careful in Offering, or Accepting, Advice

- **Utilization: Sum of all credit card balances / Sum of credit limits**
- **Example:**
  - Consumer owns 2 Visa cards, each with $10,000 credit line
  - Has a balance of $5,000 on one card, $0 on the second card
  - Utilization rate = 5,000/20,000 = 25%

- **Generally, the FICO model associates higher utilization with higher risk (and it is a powerful predictor)**

- **But, this is a factor that is tricky for the consumer to try and manipulate**

Perils of Over-managing your Utilization Rate

- **Opening new credit card accounts does boost available credit, and therefore lowers the utilization rate, and raises your credit score. . . But,**

- **New account openings in a short period (past 12 months) lowers your credit score**

- **Closing unused accounts may not be a good idea because it lowers available credit, and therefore raises the utilization rate (if you have any balances) and lowers your credit score . . But,**

- **Having multiple accounts with balances also lowers your credit score**

So, What is the Best Advice Regarding Utilization Rates?

- **Don't max out your available credit**

- **Don't open multiple accounts to boost your score**

- **Don't close old credit card accounts**

- **ALWAYS pay your accounts on time**

Questions?