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12 CFR Part 43 [Docket No. OCC–2011–0002] RIN 1557–AD40

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24 CFR Part 267 RIN 2501–AD53

Re: Credit Risk Retention

On April 29, 2011, in Vol. 76, No. 83 of the *Federal Register*, the OCC, Board, FDIC, Commission, FHFA, and HUD (the "Agencies") proposed rules to implement the credit risk retention requirements of section 15G of the Securities Exchange Act of 1934, as added by section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Proposed Rule"). In response to the Agencies' request for comments on the Proposed Rule, Fair Isaac Corporation (FICO) respectfully submits the following comments.

About FICO

FICO is a leading provider of analytics and decision management technology. The company offers a wide range of market leading products and services including the FICO® score that was first introduced in 1989. With over 10 billion FICO® Scores used annually worldwide to empower lenders to make credit decisions, the FICO Score has become the standard measure of credit risk. FICO Scores are used today in more than 20 countries on five continents, by all of the top 50 U.S. financial institutions, and by both the 25 largest U.S. credit card issuers and auto lenders. The latest FICO Score version, the FICO® 8 Score, has already been adopted by more than 3,000 lenders. In addition, FICO scores are the credit risk underwriting standard for all FHA-insured loans as well as all mortgage loans sold to Fannie Mae and Freddie Mac.

FICO is also committed to assisting in consumer education about credit matters. For several years FICO has supported its popular consumer education site, myFICO.com, and recently launched a non-commercial website called ScoreInfo.org, specifically designed to help consumers understand and benefit from the risk-based pricing and credit score disclosure notices they receive in the mail from U.S. lenders in accordance with federal regulations, including the Risk-Based Pricing Rule, effective January 1, 2011, and Section 1100F of the Dodd-Frank Wall Street Reform and Consumer Protection Act, effective July 21, 2011.

I. Summary of FICO's Comments

The Dodd-Frank Wall Street Reform and Consumer Protection Act amended the securities laws to require securitizers of asset-backed securities to retain five percent of the credit risk of the assets collateralizing the securities. The Proposed Rule would include an exemption from this credit risk retention requirement where the collateral meets the standards of a "qualified residential mortgage" (QRM). FICO is generally supportive of the legislative intent behind the Proposed Rule's QRM standard, based on the notion that some securities are relatively risk-free, and thus risk retention is unnecessary.

In our judgment, however, the Proposed Rule is fundamentally flawed in one significant respect: the "credit history" standards incorporated into the proposed definition of QRM are not sufficiently predictive of the risk of delinquency or default. In addition, the Proposed Rule takes a similarly flawed approach to defining a Qualifying Auto Loan (QAL): the Proposed Rule would include credit history standards very similar to those incorporated into the QRM definition, and the QAL credit history standards would also fail to adequately predict credit risk.

Key Problems

- Proposed standards select the wrong population of risks. As set forth in detail throughout the rest of this comment letter, FICO believes the proposed credit history standards exclude too many borrowers who are good credit risks, while at the same time failing to identify too many borrowers who are bad credit risks – that is, low risks fail to meet the QRM standards while high risks satisfy the QRM standards. As outlined in a swap set analysis of our research below, the proposed credit history standards would actually result in some of the riskiest borrowers being included in the QRM exemption, while excluding many of the least risky borrowers from the same exemption. These same low risk and high risk consumers could be easily identified by the empirically derived, demonstrably and statistically sound credit scoring models that have been used in the market for decades to manage credit risk and avoid unfair or illegal discrimination.

- A return to manual underwriting. The proposed credit history standards will mark an unwelcome return to manual underwriting while also proving to be difficult to implement. Requiring originators to conduct a manual review of the proposed credit history standards, i.e., the "derogatory factors", in the credit file will signal a shift away from automated underwriting, and will likely be accompanied by added costs, delays, errors and transparency concerns.
- Some data is unavailable or may be stale. Some of the data relied upon in the proposed standards, such as the timing of short sales and repossessions, is not readily available to lenders at the time of underwriting and, because the proposed standards permit lenders to determine QRM status on data that is up to 90 days old, many of these important decisions will be based on stale information.
- Check-the-box solution. As FICO has seen in other recent rulemakings where already overburdened financial institutions with scarce compliance resources are driven toward adopting check-the-box solutions in order to comply with an ineffective regulatory requirement, the proposed QRM standards could result in some institutions taking the disastrous step of substituting the proposed standards for sound underwriting practices.
- Imperils the securitization market. The purpose of the Dodd-Frank risk retention provisions is to protect the securitization and credit markets, and the clear solution is to require the use of credit scoring models to accurately predict the credit risk that is being assumed by securitizers. The benefits for these markets of using credit scoring were well articulated by the Federal Reserve Board in its landmark 2007 Report to Congress on *Credit Scoring and Its Effects on the Availability and Affordability of Credit*:

> Increased accuracy, access to credit, and market efficiency
> Finally, credit scoring is accurate; that is, individuals with lower (worse) credit scores are more likely to default on their loans than individuals with higher (better) scores. Credit scoring increases the efficiency of consumer credit markets by helping creditors establish prices that are more consistent with the risks and costs inherent in extending credit. Risk-based pricing reduces cross-subsidization among borrowers posing different credit risks and sends a more accurate price signal to each consumer. Reducing cross-subsidization can discourage excessive borrowing by risky customers while helping to ensure that less-risky customers are not discouraged from borrowing as much as their circumstances warrant. Finally, risk-based pricing expands access to credit for

> previously credit-constrained populations, as creditors are better able to evaluate credit risk and, by pricing it appropriately, offer credit to higher-risk individuals. [p. O-5]
>
> Decreased possibility of bias
> Credit scoring also increases the consistency and objectivity of credit evaluation and thus may diminish the possibility that credit decisions will be influenced by personal characteristics or other factors prohibited by law, including race or ethnicity. [p. O-5]

With respect to the question of bias, the FRB followed up its 2007 Report to Congress with a 2010 Staff Report titled "Does Credit Scoring Produce a Disparate Impact?" [2010-58, Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, October 12, 2010], which answered the title question in the negative:

> The widespread use of credit scoring in the underwriting and pricing of mortgage and consumer credit has raised concerns that the use of these scores may unfairly disadvantage minority populations. A specific concern has been that the independent variables that comprise these models may have a disparate impact on these demographic groups. By "disparate impact" we mean that a variable's predictive power might arise not from its ability to predict future performance within any demographic group, but rather from acting as a surrogate for group membership. Using a unique source of data that combines a nationally representative sample of credit bureau records with demographic information from the Social Security Administration and a demographic information company, we examine the extent to which credit history scores may have such a disparate impact. Our examination yields no evidence of disparate impact by race (or ethnicity) or gender.

- Proposed Rule is not a proxy for credit scores. The Proposed Rule explicitly acknowledges that the proposed QRM standards are intended to be a "reasonable proxy" for the empirically derived, demonstrably and statistically sound credit models that have been used in the market for decades to manage credit risk and avoid unfair or illegal discrimination. However, the proposed requirements do not serve as a proxy; indeed, establishing a linear, rules-based set of factors as a proxy for credit scores would not be possible. As illustrated below, the proposed credit history standards capture less than a third of the data elements considered by credit scoring models like those developed by FICO. The Proposed Rule should incorporate the same transparent and easily understood credit scores that have over the past two decades become widely accepted by lenders,

investors, regulators and consumers alike as the market standard for measuring credit risk.

FICO's Solution

The Agencies (OCC, FRB, FDIC, SEC, FHFA, HUD) should mandate the inclusion of credit scores as a QRM underwriting standard. This can be done under their existing regulatory authority and oversight power.

- Credit scores are the product of credit scoring models, which are built with depersonalized data pursuant to the rigorous requirements of Regulation B, which implements the Equal Credit Opportunity Act.
- Credit scores are already validated, revalidated and subject to comprehensive regulatory oversight, as evidenced by the recently published Federal Reserve/OCC Supervisory Guidance on Credit Risk Management, to ensure that they are fully predictive, and do not result in impermissible discrimination or exposure to unwarranted credit risk.
- Credit scoring models that meet these regulatory requirements can easily be calibrated to a standard set by regulators based on a specified percentage of the national population of residential mortgage loans that qualify under QRM or, alternatively, a specified national default rate.

A QRM definition that relies on industry standard credit scores will facilitate compliance for loan originators and investors, preserve access to credit for creditworthy consumers, and ease oversight of market participants by bank and non-bank regulators.

II. Analyzing Credit Risk: An Overview of Credit Scoring

Following World War II, the need to offer more credit faster and without discrimination to a mobile population led to the development of credit scoring models. The first commercial scorecard system was developed by Bill Fair and Earl Isaac in 1958 (i.e., Fair Isaac Corporation) for American Investment, a finance company based in St. Louis. Scoring made lending processes faster, fairer, more accurate and more consistent. Loan decisions could be made in

minutes versus days or weeks. The extension of credit could be based only on factors proven (not assumed) to relate to future repayment. Sophisticated scorecard models precisely weighted and balanced all risk factors – applying one consistent measure of risk to all applications. This made credit more accessible and affordable to millions of Americans.

Prior to the development of analytically derived scores, lenders employed rule-based systems for approving or denying credit applications— known as judgmental systems—which were often a series of hurdles or "knock out" criteria. Every application had to pass all the criteria to be approved. Because every factor was considered in isolation, there was no possibility for several "strengths" in an application to make up for one or more "weaknesses." In addition, when the loan application was considered by a human being, that person often put too much weight on different factors that represented essentially the same information. By contrast, a scoring system or scorecard is based on a rigorous, statistically sound understanding of the relationship between past or present behavior and future performance. A scorecard analyzes all available relevant information to deliver a single score: a number that represents the credit risk – or odds of timely repayment – for a particular individual. Unlike the series of knockout rules common to judgmental systems, scoring produces a balanced picture of an individual's risk. An individual may "lose points" in one area but gain them in another.

FICO scores were first recommended for use in mortgage lending by Fannie Mae and Freddie Mac in 1995. With that encouragement, mortgage lenders increased their use of credit scoring and automated underwriting. FICO scores became the mortgage industry standard because of their many benefits (outlined below) and accessibility to all parties in the lending process – brokers, correspondent lenders, residential mortgage originators, wholesale lenders, mortgage insurance companies, rating agencies and investors – creating the much needed transparency of credit risk to support the securitization process.

<u>Benefits of Credit Scoring:</u>

- *Accuracy*. First and foremost, scoring provides a more accurate assessment of risk. Credit scores rank order individuals by their relative credit risk. A lender using scoring can choose the specific odds of repayment they are willing to accept, resulting in lower losses and increased volumes.
- *Speed, efficiency and cost*. Scoring is automated, enabling lenders to make decisions more quickly and more efficiently, which leads to significant cost reductions passed on to consumers in terms of more affordable access to credit.
- *Fairness*. Scoring does not consider factors such as gender, race, religion, nationality and marital status. In contrast, any of these factors can indirectly influence decisions in judgmental lending through a credit officer's conscious or unconscious bias.
- *Compliance*. The increased objectivity and consistency of a credit scoring system means that creditors who use it are more likely to be in compliance with laws such as the Equal Credit Opportunity Act (ECOA), Fair Housing Act and other anti-discrimination regulations and have enabled originators to lend to a wider array of customers.
- *Reliability*. Credit scores have proven so reliable that even regulators, including federal bank examiners, rely on their accuracy and predictiveness to help ensure the safety and soundness of the financial system. The focus of these regulatory exams tends to be on reliability and usage of credit scores, as well as fair lending/compliance concerns.
- *Consistency*. Regardless of which credit officer is making the decision, use of credit scores helps ensure that a consistent decision will be reached with regard to a particular applicant. This is a significant advantage over judgmental lending.
- *Lower Price*. Scores also make credit more affordable in many ways: reducing losses, reducing the cost of managing credit portfolios, enabling the systematic use of risk-based pricing, encouraging competition, and cutting the cost of capital with securitization. These savings are passed along to consumers in the form of lower prices.

Adoption of Credit Scoring Models. Twenty years ago, prior to the earliest credit risk scoring analytics to be widely used for this purpose, lenders relied on judgmental systems that were observation-based, unreliable, and inefficient, and often led to inconsistent and unfair treatment

of consumers. By 1995, these assumptions were replaced at the GSEs and FHA by predictive scoring analytics in the form of *Desktop Underwriter* and *Loan Prospector*. These credit risk scoring models were developed using empirically derived, demonstrably and statistically sound mathematical algorithms. Today the two GSEs and the FHA have automated underwriting systems that include the use of credit scores as a qualifying factor for accepting loans. As mentioned above, the Federal Reserve Board's 2007 Report to Congress on *Credit Scoring and Its Effects on the Availability and Affordability of Credit* was generous in its praise of the benefits of credit scoring:

> Credit scoring is a statistical technology that quantifies the credit risk posed by a prospective or current borrower. The technique is widely used to evaluate applications for credit, identify prospective borrowers, and manage existing credit accounts. The large savings in cost and time that have accompanied the use of credit scoring are generally believed to have increased access to credit, promoted competition, and improved market efficiency. . . . The credit history scores evaluated here are predictive of credit risk for the population as a whole and for all major demographic groups. That is, over any credit score range, the higher (better) the credit score, the lower the observed incidence of default. [p. S-1]
>
> * * *
>
> The limited available evidence, including from public comments and previous research, suggests that credit scoring has increased the availability and affordability of credit. The basic reason is that credit scoring allows creditors to quickly and inexpensively evaluate credit risk and to more readily solicit the business of their competitors' customers regardless of location. Credit scoring likely increases the consistency and objectivity of credit evaluation and thus may help diminish the possibility that credit decisions will be influenced by personal characteristics or other factors prohibited by law, including race or ethnicity. Credit scoring also increases the efficiency of consumer credit markets by helping creditors establish prices that are more consistent with the risks and costs inherent in extending credit. By providing a low-cost, accurate, and standardized metric of credit risk for a pool of loans, credit scoring has both broadened creditors' access to capital markets and strengthened public and private scrutiny of lending activities. [pp. S.3-S.4]
>
> * * *
>
> In recent decades, consumer credit markets in the United States have become increasingly national in scope as lenders have been better able to expand their geographic reach. These trends have been facilitated by the development of statistically derived credit-scoring models to mechanically evaluate credit risk, help establish loan prices, and manage consumer credit accounts. As a cost-saving technology, credit scoring has greatly affected consumer credit markets by allowing creditors to more inexpensively and

> readily gauge credit risk and expand their reach to consumers beyond the limits of their local offices. [p. O-1]
>
> * * *
>
> Credit scoring also increases the consistency and objectivity of credit evaluation and thus may diminish the possibility that credit decisions will be influenced by personal characteristics or other factors prohibited by law, including race or ethnicity. In addition, quicker decision-making also promotes increased competition because, by receiving information on a timelier basis, consumers can more easily shop for credit. Finally, credit scoring is accurate; that is, individuals with lower (worse) credit scores are more likely to default on their loans than individuals with higher (better) scores. Credit scoring increases the efficiency of consumer credit markets by helping creditors establish prices that are more consistent with the risks and costs inherent in extending credit. Risk-based pricing reduces cross-subsidization among borrowers posing different credit risks and sends a more accurate price signal to each consumer. Reducing cross-subsidization can discourage excessive borrowing by risky customers while helping to ensure that less-risky customers are not discouraged from borrowing as much as their circumstances warrant. Finally, risk-based pricing expands access to credit for previously credit-constrained populations, as creditors are better able to evaluate credit risk and, by pricing it appropriately, offer credit to higher-risk individuals. [p. O-5]

In short, more than two decades of research, analysis, and commercial use have demonstrated that analytically-derived and statistically-sound credit scoring systems are the most accurate, efficient and fair way to reliably predict mortgage credit risk.

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III. Proposed Rule – Skin in the Game

The Proposed Rule implements the credit risk retention requirements of section 15G of the Securities Exchange Act of 1934, as added by section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Section 15G generally requires the securitizer of asset-backed

securities to retain not less than five percent of the credit risk of the assets collateralizing the asset-backed securities. The Proposed Rule includes an exemption from the section 15G credit risk retention requirement for asset-backed securities that are collateralized exclusively by mortgage loans if the loans meet the standards of a "qualified residential mortgage" (QRM).

> The risk retention requirements added by section 15G are intended to help address problems in the securitization markets by requiring that securitizers, as a general matter, retain an economic interest in the credit risk of the assets they securitize. As indicated in the legislative history of section 15G, "When securitizers retain a material amount of risk, they have 'skin in the game,' aligning their economic interest with those of investors in asset-backed securities. By requiring that the securitizer retain a portion of the credit risk of the assets being securitized, section 15G provides securitizers an incentive to monitor and ensure the quality of the assets underlying a securitization transaction, and thereby helps align the interests of the securitizer with the interests of investors. Additionally, in circumstances where the assets collateralizing the ABS meet underwriting and other standards that should ensure the assets pose low credit risk, the statute provides or permits an exemption. [p. 24096]

The proposed rule would also recognize that the 100 percent guarantee of principal and interest provided by Fannie Mae and Freddie Mac meets their risk-retention requirements as sponsors of mortgage-backed securities, since it results in Fannie Mae and Freddie Mac retaining more credit risk on the underlying mortgages than the 5 percent minimum required by the statute. This treatment is applicable for as long as Fannie Mae and Freddie Mac are in conservatorship or receivership with capital support from the U.S. government.

Section 15G requires a similar credit risk retention approach for asset-backed securities (ABS) collateralized solely (excluding cash and cash equivalents) by one or more auto loans. Like the QRM exemption in section 15G for ABS collateralized by residential mortgage loans, the Proposed Rule provides for an exclusion from the risk retention requirements that apply to these auto loan-backed securities if such ABS meet the standards of a "qualifying automobile loan" (QAL).

<u>Qualified Residential Mortgage (QRM)</u>. The goal of the QRM exemption is to establish underwriting standards that ensure QRMs are of very high credit quality consistent with their exemption from the section 15G risk retention requirements. The Proposed Rule establishes the

terms and conditions under which a residential mortgage would qualify as a QRM. A QRM must meet certain minimum standards for down payment, loan-to-value, and the borrower's debt-to-income ratio, and would exclude, for example, mortgages with risky terms such as negative amortization, interest-only payments, or significant interest rate increases.

In addition, the definition of QRM would include a set of credit history standards that are intended to simulate credit risk, in lieu of credit risk modeling. These proposed credit history standards, similar to the "knock out" criteria used by lenders more than 20 years ago, specify a series of "derogatory factors": a mortgage cannot qualify as a QRM if the borrower is currently 30 days or more past due; has been 60 days or more past due within the prior two years; or, within the prior three years, has been a debtor in a bankruptcy proceeding, been foreclosed upon, has had a debt reduced to judgment, has had property repossessed, or has owned property subject to a short sale, foreclosure or deed-in-lieu of foreclosure. Yet, the Agencies evaluated the effectiveness of their own derogatory factors by comparing it to the FICO score. In fact, the Agencies described their derogatory factors to be a proxy for the FICO score:

> . . . the proposed rules define a set of so-called "derogatory factors" relating to a borrower that would disqualify a mortgage for such borrower from qualifying as a QRM. The Agencies considered how these derogatory factors related to the credit scores observed in the data. A 2007 report to Congress by the Board found that, among all persons with a FICO score, 42 percent had scores below 700, 18 percent had scores between 700 and 749, and 40 percent had scores of 750 or above. Thus, the median FICO score is somewhere between 700 and 749. The analysis of the LPS data found that borrowers with prime fixed-rate mortgages with FICO scores below 700 were substantially more likely than the average of such borrowers to default. The Board's report to Congress also found that any major derogatory factor, including being substantially late on any debt payment (not just a mortgage), as well as bankruptcy or foreclosure, would push a borrower's credit score down substantially. Thus, the relatively stringent set of credit history derogatory factors set forth in §__.15(d)(5) of the proposed rules is designed to be a reasonable proxy for the credit score thresholds associated with low delinquency rates in the data [emphasis added].
>
> Specifically, under the proposal, a mortgage loan could qualify as a QRM only if the borrower was not currently 30 or more days past due, in whole or in part, on any debt obligation, and the borrower had not been 60 or more days past due, in whole or in part, on any months. Further, a borrower must not have, within the preceding 36 months, been a debtor in a bankruptcy proceeding, had property repossessed or foreclosed upon, engaged in a short sale or deed-in-

> lieu of foreclosure, or been subject to a Federal or State judgment for collection of any unpaid debt. [pp. 24121-24122]

Although the definition of "qualified residential mortgage" (QRM) will apply directly to securitizers, its impact will be felt by every aspect of the mortgage lending industry, including real estate agents, mortgage brokers, mortgage lenders, the secondary market, the securitization market, institutional investors, and prospective homebuyers.

> The Agencies also have sought to make the standards applicable to QRMs transparent to, and verifiable by, originators, securitizers, investors and supervisors. As discussed further below, whether a residential mortgage meets the definition of a QRM can and will be determined at or prior to the time of origination of the mortgage loan. For example, the DTI ratio and the LTV ratio are measured at or prior to the closing of the mortgage transaction. The Agencies believe that this approach should assist originators of all sizes in determining whether residential mortgages will qualify for the QRM exemption, and assist ABS issuers and investors in assessing whether a pool of mortgages will meet the requirements of the QRM exemption. [p. 24118]

The purpose of section 941 of the Dodd-Frank Act is to protect the financial stability of the entire mortgage market, the secondary market, and the securitization market. QRM is a macroeconomic tool that will be used to measure credit risk by (1) bank regulators, which have safety and soundness duties to assure banks demonstrate fiscal responsibility; (2) the secondary market, which provides capacity in and stabilizes the U.S. housing market; and (3) the securitization market, which provides alternative, low cost funding for financial institutions, creates liquidity in the housing market, and offers investment opportunities for other companies. To support the legislative intent of section 941, the definition of QRM must therefore add to the stability of these markets, and to the stability of the entire mortgage lending industry.

> When properly structured, securitization provides economic benefits that lower the cost of credit to households and businesses. However, when incentives are not properly aligned and there is a lack of discipline in the origination process, securitization can result in harm to investors, consumers, financial institutions, and the financial system. During the financial crisis, securitization displayed significant vulnerabilities to informational and incentive problems among various parties involved in the process. [p. 24095]

<u>Qualifying Auto Loan</u>. The Proposed Rule would incorporate the QRM underwriting approach where the securitization transaction is collateralized solely (excluding cash and cash equivalents) by one or more auto loans. While there is a difference in the requirement for conducting a credit

report review of the derogatory factors (30 days for QAL vs. 90 days for the QRM), the QAL credit history requirements are very similar to those required to be eligible for QRM status:

> (A) The borrower was not currently 30 days or more past due, in whole or in part, on any debt obligation;
> (B) Within the previous twenty-four (24) months, the borrower has not been 60 days or more past due, in whole or in part, on any debt obligation;
> (C) Within the previous thirty-six (36) months, the borrower has not: (*1*) Been a debtor in a proceeding commenced under Chapter 7 (Liquidation), Chapter 11 (Reorganization), Chapter 12 (Family Farmer or Family Fisherman plan), or Chapter 13 (Individual Debt Adjustment) of the U.S. Bankruptcy Code; or (*2*) Been the subject of any Federal or State judicial judgment for the collection of any unpaid debt;
> (D) Within the previous thirty-six (36) months, no one-to-four family property owned by the borrower has been the subject of any foreclosure, deed in lieu of foreclosure, or short sale; or
> (E) Within the previous thirty-six (36) months, the borrower has not had any personal property repossessed; [§__.20 *Underwriting standards for qualifying auto loans*, p. 24171]

This solution attempts to make the auto loan underwriting process consistent with the mortgage loan underwriting process, but results in both processes being less effective. The Agencies have again attempted to simulate the credit history component of a credit risk analysis by incorporating a number of "derogatory factors" into the definition of a qualifying auto loan. Our comments with respect to this solution are the same as with respect to QRM. See further, **Exhibit 1 QAL Credit History Standards**.

Predictiveness Assures Confidence in the Market. The securitization market must have QRM and QAL standards that instill confidence in investors that the credit risk on the mortgage loans that comprise the assets backing ABS securities have been accurately assessed. If the credit history standards adopted are not highly effective predictors of credit risk, investors will remain on the sidelines or be required to accept loans where the actual credit risk is unknown. Unfortunately, the proposed credit history standards are not as predictive as they need to be.

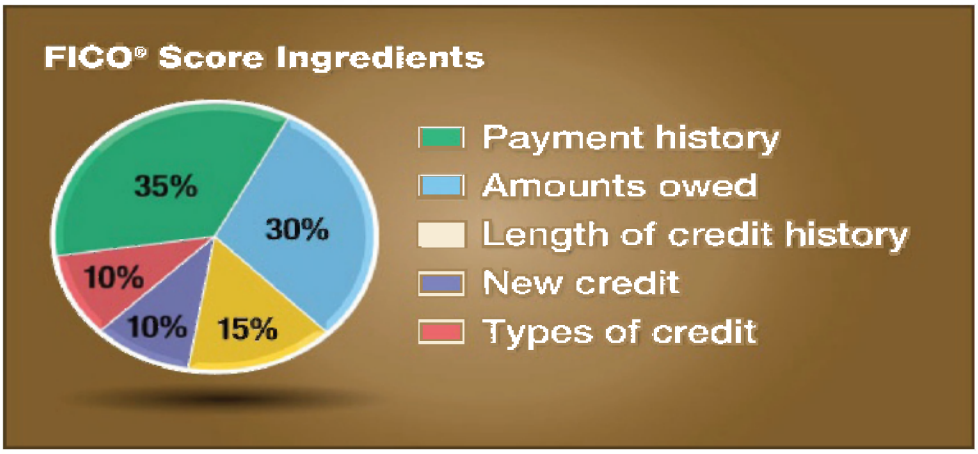
IV. Proposed Derogatory Factors Do Not Adequately Predict Credit Risk

The Agencies themselves recognize that credit scores are used effectively today by originators, the secondary market, and the securitization market. Indeed, the Agencies justified their own

"derogatory factors" (credit history) approach by benchmarking their analysis against the existing FICO® credit risk score.

> The Agencies' own analysis, as well as work published in academic journals, indicates that borrower credit history is among the most important predictors of default. In many datasets, credit history is proxied using a credit score, often the FICO score determined under the credit scoring model devised by Fair Isaac Corporation. Among the residential mortgage loans in the LPS dataset described above, 13 percent of all loans defaulted (defined as ever having missed three or more consecutive payments or ever being in foreclosure). However, 24.5 percent of residential mortgage loans taken out by borrowers with a FICO score of 690 or below defaulted, compared to a default rate of 7.7 percent among residential mortgage loans taken out by borrowers with a FICO score greater than 690. Even among the higher-FICO group, differences remained: borrowers with FICO scores of 691 to 740 had a default rate of 11.4 percent, while borrowers with FICO scores above 740 had a default rate of 4 percent. Thus, in these data, mortgage borrowers with a FICO score of 690 or below were more than six times as likely to default as borrowers with FICO scores of above 740. [p. 24121]

Although the proposed derogatory factors are indicators of risky credit behavior, they are insufficient for a complete credit risk analysis. These factors represent less than 35% of the analytical inputs used by FICO in its credit risk models. The proposed derogatory factors are part of the payment history information that is considered by the FICO scoring model, but the proposed derogatory factors, which comprise only negative payment information, are therefore less predictive than the positive and negative payment data considered by the FICO model. Other factors not considered by the QRM credit history standards include amounts owed, length of credit history, new credit, types of credit, utilization of current credit, and recent credit-seeking activity. The proposed risk factors simply do not serve as an effective proxy for the empirical factors actually used in a predictive analysis of credit risk; the proposed factors will not predict repayment risk as accurately as an empirically derived credit risk score. The following chart roughly approximates the factors that comprise a FICO credit risk score:



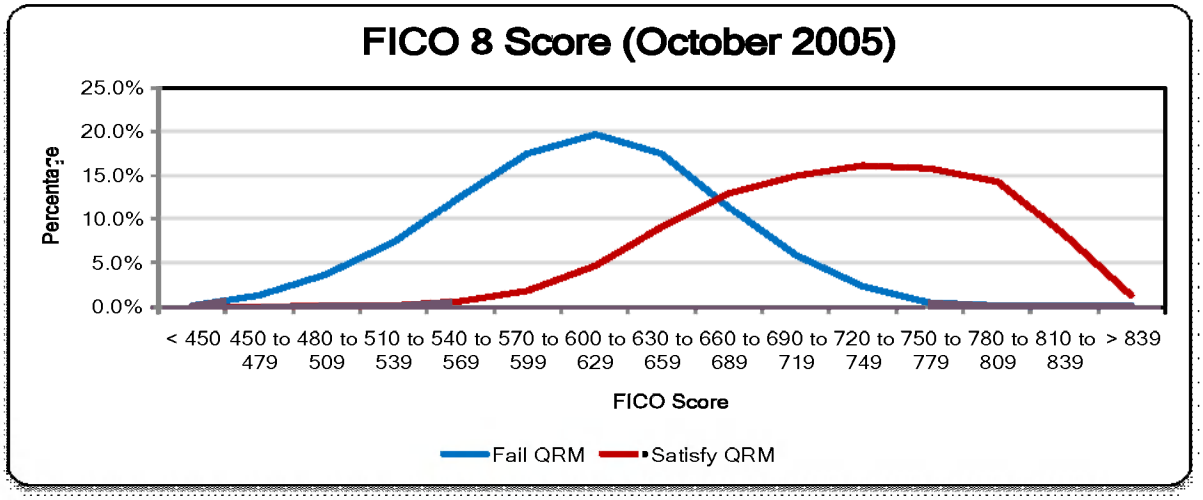
The proposed rule would consider only a small subset of a consumer's credit history, and the proposed factors could only be considered in a binary fashion – the consumer's credit history would meet these factors or not. This approach is unfair to consumers whose actual credit history can often be distorted by this simplistic analysis.

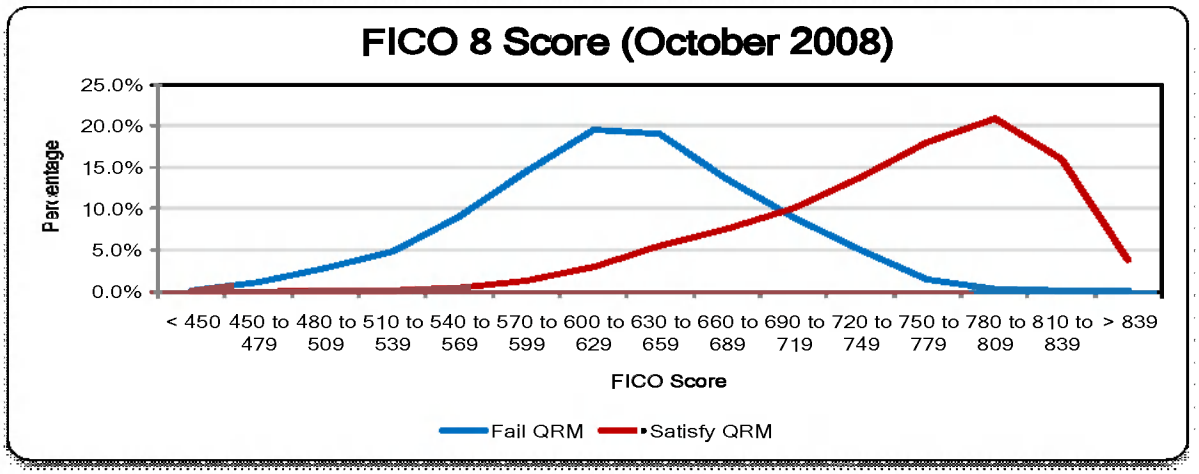
The Agencies themselves recognize the shortcomings in their proposed credit history standards, but assert that any alternative would be too complex.

> Any set of fixed underwriting rules likely will exclude some creditworthy borrowers. For example, a borrower with substantial liquid assets might be able to sustain an unusually high DTI ratio above the maximum established for a QRM. As this example indicates, in many cases sound underwriting practices require judgment about the relative weight of various risk factors (*e.g.*, the tradeoff between LTV and DTI ratios). These decisions are usually based on complex statistical default models or lender judgment, which will differ across originators and over time. However, incorporating all of the tradeoffs that may prudently be made as part of a secured underwriting process into a regulation would be very difficult without introducing a level of complexity and cost that could undermine any incentives for sponsors to securitize, and originators to originate, QRMs.
>
> The Agencies recognize that many prudently underwritten residential mortgage loans will not meet the proposed definition of a QRM. [p. 24118; emphasis added]

FICO believes that a thorough, predictive analysis of a borrower's credit history must include far more varied factors than those proposed by the Agencies, and those factors must be considered in an empirically derived, multivariate analysis. See further, **Exhibit 2 The 5 FICO® Score Ingredients**

Wide Disparity Among Loans That Qualify. FICO conducted research comparing the proposed credit history standards to analytically derived FICO credit scores. FICO utilized a national, representative sample of 10 million, depersonalized credit files over two distinct market cycles, 2005 and 2008. The graphic below illustrates the percentage of population that both fails and satisfies the QRM criteria at each FICO 8 Score range. As the graphic demonstrates, there is a significant percentage of the higher FICO score borrowers that do not qualify for QRM as well as lower FICO score borrowers that do qualify. There is also a substantial overlap of consumers who will both qualify and not qualify for QRM in the 640 to 720 score range, leading to the potential for unfair treatment of this group of borrowers.





Another approach to analyzing the data is to quantify the minimum, maximum, mean and median FICO score that will both fail and pass the QRM criteria under the credit history component of the QRM definition, which is highlighted in the table below. For mortgage borrowers in 2005, the maximum FICO 8 Mortgage Score that would have failed the QRM criteria is an 850 FICO score (the highest score possible), and the minimum score that would have satisfied the QRM criteria is a 375 FICO score. Similar results are noted for the New Mortgage Population 2008: the maximum FICO 8 Mortgage Score that would have failed the QRM criteria is a 850 FICO score, and the minimum FICO score that would have satisfied the criteria is a 405 FICO score.

New Mortgages 2005

New Mortgages 2005	Files that Fail QRM "Credit" Criteria			
Score Version	*Min*	*Max*	*Mean*	*Median*
FICO 8	409	845	610	611
FICO 8 Mortgage	300	850	593	596
Prior FICO	381	787	595	599

New Mortgages 2005	Files that Satisfy QRM "Credit" Criteria			
Score Version	*Min*	*Max*	*Mean*	*Median*
FICO 8	472	850	727	730
FICO 8 Mortgage	375	850	718	720
Prior FICO	455	818	723	729

New Mortgages 2008

	Files that Fail QRM "Credit" Criteria			
Score Version	*Min*	*Max*	*Mean*	*Median*
FICO 8	424	842	626	627
FICO 8 Mortgage	300	850	618	620
Prior FICO	385	803	614	619
	Files that Satisfy QRM "Credit" Criteria			
Score Version	*Min*	*Max*	*Mean*	*Median*
FICO 8	483	850	753	765
FICO 8 Mortgage	405	850	754	767
Prior FICO	454	818	746	763

This demonstrates that proposed credit history standards include high credit risk borrowers and exclude others who are excellent credit risks. This is not a surprising result as the proposed derogatory factors would take into account less than 35% of the credit history information considered by the FICO scoring model.

Cut-Off Analysis: Volume Based Approach and Corresponding Delinquency Rates. In analyzing the percentage of mortgage borrowers in the 2005 time period that would have qualified under the proposed QRM credit history rules, FICO determined that 77% of the population would have qualified or was "Above the Cut-off", while 23% would not have qualified or would have been "Below the Cut-off" as noted in the table below. FICO then determined the corresponding FICO Scores that would allow for a similar percentage of the population Above and Below the Cut-off. These FICO scores are also noted below.

Cut-Off Analysis on Mortgage Loans Originated November 2005 – January 2006

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	77%	23%
FICO 8	640	76%	24%
FICO 8 Mortgage	615	77%	23%
Prior FICO	635	76%	24%

FICO then compared the corresponding delinquency rates for the proposed QRM criteria to the analytically derived FICO Scores.

Cut-Off Analysis on Mortgage Loans Originated November 2005 – January 2006: 90+ DPD Rate

QRM/Score	Above Cut-off	Below Cut-off
QRM Criteria	3.4%	12.5%
FICO 8	2.5%	15.1%
FICO 8 Mortgage	2.4%	16.3%
Prior FICO	2.7%	14.6%

The table directly above shows that borrowers passing the QRM credit history standards have a 3.4% 90+ days past due ("dpd") rate, or "bad rate", while borrowers passing a 640 FICO 8 score cutoff have a 2.5% 90+ dpd rate. The delta between 3.4% and 2.5% is 36%, which means that using QRM rather than a 640 cut off results in 36% more bads in the "above cut-off" population. This analysis shows that by holding the size of the "above cut-off" population constant, the currently proposed QRM rules will result in a significantly larger number of high risk borrowers above the cut-off than would result by using the FICO score.

To perform its analysis reflected in the table above, FICO studied a portfolio of 311,000 loans originated in 2005. In addition to a diminished ability to predict loans that would go 90+ days past due, the QRM criteria alone also were less able to predict foreclosures. Specifically, using the FICO® credit risk score instead of the QRM criteria, there were ~1370 fewer bads above the cut off in the 2005 population studied. Assuming the industry average loss of $50,000 per foreclosure, this corresponds to a reduction of losses of $68.5M for a portfolio of 311,000 loans. To extrapolate these results to the total origination volumes for 2005 (~15M) the proposed rules would have resulted in an additional <u>$5 billion in additional losses</u>.

<u>The Predictive Value of Proposed QRM Criteria</u>. FICO used a swap set analysis, a standard statistical methodology, to determine the predictive value of the proposed QRM criteria on a

portfolio of loans originated in 2005. The swap set analysis compares two differing approaches to managing credit risk to determine under what conditions the two approaches agree on the credit risk assessment, and under what conditions they would diverge. The performance of each approach is measured by the resulting 90+ dpd rate of the borrowers assessed. The 2005 mortgage loans were first analyzed to determine the percentage of the population that would either fail or satisfy the QRM criteria and the subsequent 90+dpd percentage. The percentage of population that would have passed the QRM credit criteria in 2005 was 77%, which equates to a 640 FICO score, as noted above.

Sample #1 (October 2005)				
		FICO 8 <= 640	FICO 8 > 640	Total
Fail QRM "Credit" Criteria	90+ dpd % population	16.00% 16%	4.50% 7%	12.50% 23%
Satisfy QRM "Credit" Criteria	90+ dpd % population	13.30% 8%	2.30% 69%	3.40% 77%
Total	90+ dpd % population	15.10% 24%	2.50% 76%	5.50% 100%

Starting at the top left cell of Sample #1, when a consumer would both fail the QRM criteria and score below a 640 there is a 16% bad rate. In the cell where the consumer satisfies the QRM credit criteria and has a FICO score greater than 640, the consumer would have a 2.3% bad rate. Comparing the cells where the FICO Score and QRM criteria do not agree, for the consumers that fail the QRM criteria and have a FICO score of greater than 640, there is a 4.5% bad rate; conversely, the consumers that satisfy the QRM criteria and have a FICO score below 640, there is a 13.3% bad rate. Clearly, the QRM criteria are not as predictive as analytically derived credit scores. We can see the virtually same results for the 2008 data below with a 14.7% bad rate for those that satisfied the QRM criteria but have a FICO score below 640.

Sample #2 (October 2008)				
		FICO 8 <= 640	FICO 8 > 640	Total
Fail QRM "Credit" Criteria	90+ dpd % population	18.20% 8%	5.80% 5%	13.10% 13%
Satisfy QRM "Credit" Criteria	90+ dpd % population	14.70% 6%	2.10% 81%	2.90% 87%
Total	90+ dpd % population	16.80% 14%	2.30% 86%	4.20% 100%

This is not surprising, as the credit history standards incorporate only a fraction of the predictive data used to calculate the FICO® credit risk score, and credit scores also consider positive payment data which can be weighed against derogatory data.

Individual Anomalies. As another way of illustrating how the proposed QRM credit history standards do not accurately predict the appropriate subset of mortgage loans that should be exempt from the credit risk retention provisions, consider the following examples of how low risk borrowers could be excluded from the QRM while high risk borrowers could qualify:

> High FICO score, but fails QRM. Assume a 62 year woman with no history of collections; no adverse public records; never missed a payment on a mortgage account; demonstrated history of successfully paying a variety of different types of credit obligations (revolving, auto, mortgage, etc.); low revolving balances; very low revolving utilization ratio; long credit history (25+ years); and few recently opened accounts. However, this woman had an unexpected health problem that caused her to have a 60 day delinquency 23 months ago, which she paid off in full a few days thereafter. She could have a FICO score above 800, but would not be eligible for a QRM.
>
> Low FICO score, but passes QRM. Assume a 23 year old man, recently graduated from college; he was very recently, but not currently, 30 days past due on several accounts; no 60+ day delinquencies in the past 2 years, but 90-180 days past due just over 2 years ago; numerous 3rd party collections accounts; maxed out on several revolving accounts; relatively short credit history (less than 10 years); and a large number of recent new accounts and applications for credit. This man could have a FICO score below 500, but under the proposed rules, he would be eligible for a QRM.

V. Proposed QRM Standards Do Not Adequately Predict Credit Risk

In addition to its research on whether the QRM proposed credit history factors would be adequately predictive of credit risk (they would not), FICO also conducted research on whether the total package of proposed QRM underwriting standards, i.e., the *eligibility criteria* (the non-credit history underwriting standards) plus the *derogatory factors* (the credit history underwriting standards) would be adequately predictive of credit risk. The research showed that by combining the eligibility criteria with the derogatory factors, a much smaller percentage of borrowers would qualify under the QRM standards, but again the results revealed the same pattern of including low scoring borrowers under the QRM, while excluding a significant number of high scoring borrowers. In short, the full QRM underwriting standards are still unable to sufficiently identify the right group of low risk borrowers to qualify for the exemption from the QRM risk retention requirements. Securitizers will have to make credit risk decisions with less accurate risk profiles, and borrowers will face unfair lending treatment by originators.

FICO used a dataset from CoreLogic®* to examine a pool of new mortgages opened between 2005-2008 for the purpose of determining the credit risk profile of consumers that would qualify under the proposed QRM definition – i.e., including both the eligibility criteria and the derogatory factors (credit history standards). The process was to merge loan-level information from CoreLogic with data from the consumer reporting agency.

The QRM eligibility criteria applied to the dataset were:

1. Back-end DTI ≤ 36%
2. Origination Loan-to-Value
    a. Purchase ≤ 80%
    b. Refinance ≤ 75%
    c. Cash out Refinance ≤ 70%

* CoreLogic (NYSE: CLGX) provided loan characteristics and performance data for this study. The CoreLogic LoanPerformance databases contain information on more than 45 million loans, representing more than 85 percent of all outstanding mortgage loans. The study dataset was constructed by identifying the loans within data that CoreLogic had authorization to utilize for analysis purposes, could be linked to loans identified by FICO, and had sufficient information to calculate the proposed QRM logic.

3. Owner occupied

4. First lien

The QRM derogatory factors applied to the dataset were that within 90 days prior to the closing of the mortgage transaction:

- Borrower is not currently 30 days past due
- Borrower has not been 60 days past due within previous 24 months
- Within the previous 36 months
  - No bankruptcy filings or judicial judgments
  - No repossessions
  - No 1 to 4 family property owned by borrower has been subject of foreclosure, deed-in-lieu, or short sale

After applying the QRM "non-credit" criteria, approximately 29% of new mortgages originated between 2005-2008 met the criteria. After layering on the credit history standards, 14% of that population was disqualified, and 86% of that population still qualified. Thus, 25% (29% x 86%) of the tested population qualified under the full QRM definition. All analyses that follow in this section---as well as those found in exhibit 3---were calculated on the population of new mortgage loans which satisfied the full QRM definition.

The following chart shows the results of comparing the QRM standards (i.e., eligibility criteria plus derogatory factors) against a comparable FICO score cut-off with the volume held fixed. The proposed QRM eligibility criteria allowed for 86% of the new mortgage population to qualify for the QRM exemption. The corresponding FICO® 8 Score that would allow for the same percentage of population to qualify for QRM is a 650. The resulting 90+ dpd rate for the QRM credit standards is 2.4% vs. 2.0% for the FICO® 8 650 Score. Applying a FICO 8 Score rather than the QRM standards on the ~47.8 million new mortgages booked between 2005-2008 would have resulted in ~48,000 fewer 90+ dpd accounts qualified for the QRM exemption. Assuming ~$50k loss per bad mortgage, use of a Score would correspond to a reduction in losses of ~$2.4 billion within the QRM qualified loans.

Corresponding FICO Score Cut-off Analysis

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	86%	14%
FICO 8	650	86%	14%
FICO 8 Mortgage	635	86%	14%
Prior FICO	645	86%	14%

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.4%	9.5%
FICO 8	650	2.0%	11.8%
FICO 8 Mortgage	635	1.7%	13.4%
Prior FICO	645	2.0%	12.0%

Overall 90+ Bad Rate on New Mortgage Accounts – 3.4%

The following chart shows the results of comparing the QRM standards against a comparable FICO score cut-off with the bad rate held fixed. The proposed QRM standards would result in an overall 2.4% 90+ dpd rate for the QRM qualified population. The corresponding FICO 8 score that would result in the same 90+ dpd rate is a 620. Applying FICO® 8 score of 620 instead of the QRM standards on the ~47.8 million new mortgages booked between 2005-2008 would have resulted in ~832,000 more QRM qualified consumers while still holding the bad rate of the QRM qualified population fixed at 2.4%.

90+ Bad Rate on New Mortgage Accounts

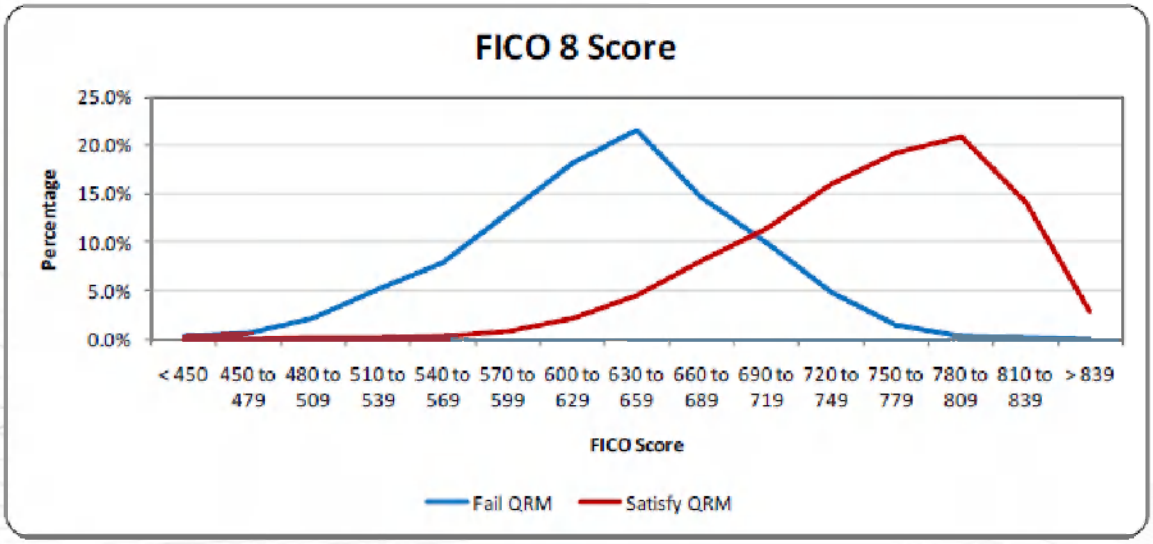
QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.4%	9.5%
FICO 8	620	2.4%	15.2%
FICO 8 Mortgage	580	2.4%	20.1%
Prior FICO	620	2.4%	14.0%

Overall 90+ Bad Rate on New Mortgage Accounts – 3.4%

Resulting Volumes by FICO Scores

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	86%	14%
FICO 8	620	92%	8%
FICO 8 Mortgage	580	95%	5%
Prior FICO	620	91%	9%

The following chart shows the interval FICO® 8 score distributions of two groups of consumers with new mortgage accounts: those borrowers that satisfy the proposed QRM standards, and those borrowers that do not. The area of overlap between the two score distributions reveals those cases where the proposed QRM standards returns an assessment of risk that is inconsistent with the FICO® 8 score.



The following chart shows that the proposed QRM standards (for purposes of this chart, "credit criteria") will result in consumers with good credit not qualifying for the QRM exemption, while some with poorer credit will qualify. This wide range of credit scores that both qualifies and fails under the proposed rules means that consumers could be faced with inapposite pricing and terms.

	Files that Fail QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	438	827	630	634	481	523	727	760
FICO 8 Mortgage	332	850	624	630	409	475	749	791
Prior FICO	396	782	619	625	470	509	710	738

	Files that Satisfy QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	493	850	752	761	598	644	833	848
FICO 8 Mortgage	407	850	752	761	561	616	850	850
Prior FICO	492	818	746	760	599	642	809	816

The following chart shows swap sets between QRM and FICO score cut-off. Approximately 16% of the new mortgage loans originated between 2005 and 2008 with a FICO score greater than 690 would have failed the QRM standards. Applying the proposed QRM standards to the 47.8 million new mortgage loans originated between 2005 and 2008, the result is that over 300,000 consumers* fail QRM due solely to the proposed QRM standards, and despite the borrower having a FICO score above 690.

	New Mortgage Population							
	Fail QRM & score greater than				Satisfy QRM & score less than			
	660	690	710	720	660	690	710	720
FICO 8	31%	16%	9%	6%	8%	16%	23%	27%
FICO 8 Mortgage	33%	19%	13%	10%	13%	22%	28%	32%
Prior FICO	27%	11%	5%	3%	8%	17%	25%	29%

FICO performed similar studies on CoreLogic data sets, with 85% LTV, 90% LTV, and 95% LTV. The results are set forth in **Exhibit 3: Eligible Loans Under QRM Criteria With LTVs of 85%, 90%, and 95%.**

VI. Implementation Challenges

In addition to the problems for the securitization market created by the inadequacy of the proposed QRM derogatory factors in predicting credit risk, the mortgage industry will have significant problems trying to implement the credit history standards of QRM.

- The standards include a requirement that issuers ensure a borrower has not had a short sale or repossession in the past three years. The issuers will rely on originators to discover such short sales or repossessions, but credit reports at the national credit bureaus do not provide readily identifiable dates for these actions. Originators are not able to determine this factor without a manual investigation, which would substantially increase costs. Moreover, it would not be a sound underwriting practice for originators to rely on unverified representations made by the borrowers in the application process.

* (i) 47.8 million mortgages, times (ii) 29% of new mortgages that satisfy QRM eligibility criteria (i.e., LTV, DTI, etc…), times (iii) 14% of those mortgages that fail proposed QRM credit history standards, equals (iv) ~1.9 million new mortgages that satisfy QRM eligibility criteria, but fail QRM credit history standards, times (v) ~16% of this population who have FICO scores > 690, equals (vi) just over 300,000 consumers.

- The disqualifying factor that no mortgage applicant can have a 60+ day delinquency within past 24 months could apply unfairly to (i) a person who had an extraordinary medical debt 22 months ago that was unpaid for 60 days, but then paid off a couple of weeks later; (ii) a business-traveling borrower who was overseas and missed paying a non-recurring bill 23 months ago, then made payment upon her return; or (iii) a new college graduate who failed to pay a $20 credit card bill 20 months ago until 65 days after it was due. Under the proposed rule, there would not be a way to mitigate the unfortunate impact of situations like these.
- Originators can qualify for QRM if they obtain, up to 90 days before the closing of the mortgage transaction, credit reports from at least two nationwide consumer reporting agencies. The Agencies say this would verify that the borrower met the credit history standards. However, in actual practice, originators would not be properly underwriting the mortgage risk if they relied on the 90 day safe harbor, which is in sharp contrast to current practices where credit reports and credit scores are pulled only days before funding. Consumer credit reports can change quickly, and become stale in a short period of time. The proposed requirement that credit reports can be verified as much as 90 days from the date of closing may entice some originators not to pull updated credit reports, and thus unnecessarily expose the securitization market and its investors to increased credit risk exposure.

VII. Check-The-Box Concerns

FICO believes the Proposed Rule is a *check-the-box solution*, which allows and perhaps even encourages securitizers and originators to rely on the QRM standards, i.e., check the box, even though the solution inadvertently results in adverse consequences to the mortgage market. A check-the-box solution is sometimes imposed by federal agencies when they attempt to implement amorphous statutory mandates imposed by Congress, while at the same time recognizing the operational complexities that would be imposed on companies trying to comply

with the solution. The result is often a prescriptive, bright line test that sometimes does not provide the most effective solution.

Adverse Consequences of Check-the-Box Solutions. Federal agencies have the difficult task of implementing the "will of Congress", and trying to craft a solution that does not overly burden these companies. Drawing this balance can result in adverse consequences for those covered by the rulemaking, and FICO believes the Proposed Rule is such a solution that would plunge some mortgage lenders back into the era of linear, manual underwriting with unproven demographic assumptions.

FICO has observed the adverse consequences of similar check-the-box solutions. One recent example is the Federal Reserve's ability-to-pay regulation mandated by the Credit CARD Act of 2009. This regulation prescribed that in order to comply with the ability-to-pay standard, lenders should apply a "debt to income or assets" test to assess the credit card applicant's ability to pay back the credit card debt she was about to incur. However, it is well-known in the industry that a borrower's income is not a reliable predictive factor, even if the actual income of the applicant were known. Moreover, under that regulation, credit card issuers were permitted to use "income estimators" or rely on the applicant's self-reported income figures. The impact of the ability-to-pay rule was to add cost and complexity to the underwriting process, with little appreciable value; at worst, the rule has caused a return to manual, observation-based underwriting for some smaller credit card issuers. This was, of course, the opposite of its intended effect.

FICO has also observed that larger lenders incorporated this check-the-box solution into their underwriting procedures, but kept their existing risk models for actual risk management. However, smaller issuers with limited resources were forced to choose between the check-the-box solution or their current underwriting procedures, and some are using the safe harbor, check-the-box solution as a proxy for proper underwriting. When faced with the increased cost of maintaining existing underwriting standards and complying with the new solution, smaller lenders shut down some or all of the their automated underwriting systems, and reverted to manual underwriting. Adding an income estimator into their existing automated services was too

complicated, expensive, and required too many resources to accomplish. Smaller issuers stopped offering automated line increases altogether, using manual underwriting instead. Many began segmenting risk for their credit line strategies using far simpler, less effective criteria. This was, of course, not its intended effect. The proposed QRM credit history standards threaten to impose the same unwelcome choices on small to medium size lenders, which could result in a shift away from the use of predictive analytics and lead to greater credit risk exposure.

Increased Cost of Compliance. In order to comply with the proposed QRM credit history standards under the Proposed Rule, securitizers (and originators) will have to add an additional step to their underwriting process in order to check the box. However, responsible originators will likely continue to make credit risk decisions with the use of credit scoring systems. This additional step would increase the lenders' burden of compliance, and thereby increase the lenders' costs, without adding any value to the underwriting process. The increased expenses will get passed on to consumers in the form of higher prices or reduced access to mortgage credit. There is even the potential in these financially hazardous times that this increased cost could drive smaller or marginal lenders out of the market.

VIII. Response to Agencies' Request For Comments #115-#117

Request For Comment #115-#117. In response to the Agencies' request for comments about its proposed credit history derogatory standards, FICO believes that adoption of these standards would create an untenable situation for lenders, the secondary market, and investors in the securitization market.

115. Are the proposed credit history standards useful and appropriate indicators of the likelihood that a borrower might default on a new residential mortgage loan?

A: The proposed credit history standards are not appropriate indicators of default. They are not as predictive as empirically derived credit risk scores, and will not properly separate mortgage loans into those that should qualify for the QRM exemption and those that should not.

116. Are there additional or different standards that should be used in considering how a borrower's credit history may affect the likelihood that the borrower would default on a new mortgage?

A: In order to be predictive, the standard must require a multivariate analysis of the credit factors that are most predictive of credit default. The impact of simply adding or subtracting factors into the analysis is not linear. There are, of course, many more factors than the Agencies have considered in the proposed rule that have been shown empirically and statistically to be predictive of default risk. The best standard is the existing industry standard, i.e., the use of credit risk scores.

117(a). Should the Agencies include minimum credit score thresholds as an additional or alternative QRM standard?

A: Definitely, yes, but not as an alternative. The credit score thresholds should replace the Agencies' proposed derogatory factors under the QRM definition. By including the proposed credit history derogatory standards together with minimum credit score thresholds, the proposed rule would make the resulting standards less predictive because the resulting standards would double count certain factors, which are already accounted for in the credit score models. Also, this combined approach would not solve the problem of having high FICO scoring consumers who will be excluded from QRM status.

117(b). If so, how might the rules incorporate privately developed credit scoring models in a manner that (i) ensures that borrowers, originators, and investors have adequate notice, and an opportunity to comment on, changes to scoring methodologies that may affect a borrower's eligibility for a QRM, (ii) maintains a level competitive playing field for providers and developers of credit scores, and (iii) ensures that any credit scoring methodology used for QRM purposes is and remains predictive of a borrower's default risk?

A: See Section IX below.

IX. Solution: Mandate the Use of Privately Developed Credit Scoring Models on a Vendor-Neutral Basis, Within the Existing Regulatory Structure

FICO also proposes an alternative solution for maintaining predictiveness in measuring credit risk. The inclusion of credit scores as part of the QRM definition can be implemented on a

vendor-neutral basis and within the existing regulatory structure that governs the residential mortgage marketplace today. Specifically, this solution would replace the Agencies' "derogatory factors" used to approximate borrower credit history, with a measurement of the borrower's actual credit history, derived through the use of credit scoring models that meet certain rigorous regulatory standards. The credit history component of the QRM standards must be derived through the use of valid credit scoring models that meet certain rigorous regulatory standards. For ease of adoption and administration, those regulatory standards should be (i) in existence today and (ii) hereafter be capable of rigorous regulatory oversight and examination, but (iii) without adding a new layer of bureaucratic complexity. Mandating the use of such credit scoring models would address the Agencies' concerns in the Proposed Rule about adopting a credit score threshold:

> The Agencies are aware that credit scores are used often by originators in the loan underwriting process. However, the Agencies do not propose to use a credit score threshold as part of the QRM definition because such a standard would require reliance on credit scoring models developed and maintained by privately owned entities and such models may change materially at the discretion of such entities. There also may be inconsistencies across the various credit scoring models used by consumer reporting agencies, as well as among different scoring models used by a single provider. Consequently, in order to ensure that creditors could continue to choose among different credit score providers, the Agencies would have to determine a cutoff score under multiple scoring models and periodically revise the regulation in response to new scoring models that might arise. [p. 24121]

The threshold question is how to set the level at which mortgage loans qualify for the QRM exemption from the 5% skin-in-the-game retention requirements. Setting the QRM threshold requires the Agencies to consider the future of the securitization market. On one hand, the higher percentage of mortgage loans that are subject to section 15G's skin in the game provisions, the more incentive originators have to underwrite high quality mortgage loans. By aligning originators' economic interests with those of investors in asset-backed securities, the securitization market is better protected. On the other hand, if the percentage is set too high, the mortgage market may be unnecessarily restricted; the QRM definition must be narrow enough that there will be many relatively safe mortgage loans that do not meet the QRM standards.

> [T]he Agencies have sought to provide sponsors with several options for complying with the risk retention requirements of section 15G so as to reduce the potential for these requirements to disrupt securitization markets, including those for non-QRM residential mortgages, or materially affect the flow or pricing of credit to borrowers and businesses. Moreover, the amount of non-QRM residential mortgages should be sufficiently large, and include enough prudently underwritten loans, so that ABS backed by non-QRM residential mortgages may be routinely issued and purchased by a wide variety of investors. As a result, the market for such securities should be relatively liquid, all else being equal. Indeed, the broader the definition of a QRM, the less liquid the market ordinarily would be for residential mortgages falling outside the QRM definition. [p. 24118]

Setting a Percentage of Loans That Are QRM. The Agencies could set the QRM factors so that a specific *percentage of loans* qualifies for QRM status; say 20% of all residential mortgages issued by mortgage originators would be targeted for QRM status. The credit history component of the QRM calculation could be set to complement the other (non credit history) eligibility criteria, and target the predetermined percentage of loans acceptable to the Agencies. First, the Agencies would determine the percentage of loans that should achieve QRM status on a nationwide basis, and work backwards from there to determine what percentage of the national loan population should satisfy the credit history component of QRM. Each securitizer would then set its QRM score threshold to be the score that captures the targeted percentage of the national loan population. For example, if the Agencies determined that the QRM score threshold should capture the least risky 20% of the total scoreable U.S. population, then the securitizer would be required to set its QRM score threshold at that score value which captured the least risky 20% of the total scoreable U.S. population based on the credit score being used by that securitizer. The credit score would have to be derived from an approved credit scoring model, which was created, used, and validated in accordance with current laws and regulations.

Securitizers would be required to verify and document that within a few days (certainly less than the 90 days currently proposed in the Rule) prior to the closing of the mortgage transaction, the borrower had a credit score that was greater than or equal to her calculated QRM score threshold. The securitizers would also be required to document their methodology for arriving at the QRM score threshold used, and to retain evidence that the QRM score threshold they used did indeed capture the targeted percentage of the national loan population.

This percentage of loans approach was used recently by the Agencies in their recent Risk-Based Pricing Rule (16 CFR Parts 640 and 698; RIN 3084-AA94), in which lenders were required to bifurcate their loan portfolios into those customers who received materially less favorable terms, and those who did not; generally, this was a 60%-40% split.

> The first alternative method is the credit score proxy method. A credit score is a numerical representation of a consumer's credit risk based on information in the consumer's credit file. The final rules permit a creditor that uses credit scores to set the material terms of credit to determine a cutoff score, representing the point at which approximately 40 percent of its consumers have higher credit scores and 60 percent of its consumers have lower credit scores, and provide a risk-based pricing notice to each consumer who has a credit score lower than the cutoff score. [Federal Register, Vol. 75, No. 10/ p. 2725]

Nevertheless, the QRM score threshold that corresponds to the targeted percentage should be determined based on a national population. Since each lender has unique underwriting standards, if the targeted percentage of loans were applied at the level of each lender's book of business, the results would favor lenders with more risky books of loans. This approach is similar to the current approach taken by the GSEs and FHA, which currently use a FICO score cut off derived from a model populated with nationwide data.

This approach of targeting a specific percentage of the population that satisfies the credit history component of QRM is consistent with the currently proposed QRM credit history criteria. FICO's research has found that the percentage of the total national population satisfying the currently proposed QRM credit history rules was remarkably constant between samples of loans from 2005 and 2008 (in both instances, approximately 70% of the total population satisfied the proposed QRM credit history rules). Thus, defining a fixed percentage of the total population that should satisfy the credit history component of QRM is similar in spirit to the currently proposed QRM credit history rules.

<u>Setting a Default Rate That is QRM</u>. A second approach would be for the Agencies to set the acceptable credit history component of the QRM standard at a specific *default rate* that would

qualify for QRM status. The default rate would set a permissible *odds ratio* that would qualify for QRM status, say 100 goods to 1 bad. The odds ratio would be measured over a specified period of time (e.g., 18 months) and be based on a specified level of delinquency (e.g., 90 days past due or worse). The Agencies would set the odds ratio required to achieve QRM status, and securitizers would be required to set their QRM score thresholds to the score which corresponded to the specified odds ratio.

Securitizers would be required to verify and document that within X (certainly less than 90) days prior to the closing of the mortgage transaction, the borrower had a credit score that was greater than or equal to the QRM score threshold. The securitizers would also be required to document their methodology for arriving at the QRM score threshold used, and to retain satisfactory evidence (e.g., proof that the odds-to-score threshold calibration had been conducted on "recent" data) that the QRM score threshold they used did indeed correspond to the targeted odds ratio. The credit score would have to be derived from an approved credit scoring model, which was created, used, and validated in accordance with current laws and regulations.

Regulation B Standards for Approved Credit Scoring Models. The proposed rule should mandate that in order for a mortgage loan to qualify for QRM status, the lender must use an approved credit scoring system to determine whether the applicant meets the prescribed default rate set by the Agencies. An approved credit scoring system would be one that is "empirically derived, demonstrably and statistically sound", as defined in section 202.2(p) of Regulation B. This standard is well-established, and there would be no need to invent a new test or determine how the regulatory oversight would work.

> (1) A credit scoring system is a system that evaluates an applicant's creditworthiness mechanically, based on key attributes of the applicant and aspects of the transaction, and that determines, alone or in conjunction with an evaluation of additional information about the applicant, whether an applicant is deemed creditworthy. To qualify as an empirically derived, demonstrably and statistically sound, credit scoring system, the system must be: (i) Based on data that are derived from an empirical comparison of sample groups or the population of creditworthy and noncreditworthy applicants who applied for credit within a reasonable preceding period of time; (ii) Developed for the purpose of evaluating the creditworthiness of applicants with respect to the legitimate business interests of the creditor utilizing the system (including, but not

> limited to, minimizing bad debt losses and operating expenses in accordance with the creditor's business judgment); (iii) Developed and validated using accepted statistical principles and methodology; and (iv) Periodically revalidated by the use of appropriate statistical principles and methodology and adjusted as necessary to maintain predictive ability.
>
> (2) A creditor may use an empirically derived, demonstrably and statistically sound, credit scoring system obtained from another person or may obtain credit experience from which to develop such a system. Any such system must satisfy the criteria set forth in paragraph (p)(1)(i) through (iv) of this section; if the creditor is unable during the development process to validate the system based on its own credit experience in accordance with paragraph (p)(1) of this section, the system must be validated when sufficient credit experience becomes available. A system that fails this validity test is no longer an empirically derived, demonstrably and statistically sound, credit scoring system for that creditor.

Note that the Federal Reserve Board recently reiterated this Regulation B solution when faced with the question of whether to allow credit card issuers to use an *income estimator* when determining their applicants' ability-to-pay under the Credit CARD Act of 2009.

> Finally, in order to provide flexibility regarding consideration of income or assets, the final rule permits issuers to make a reasonable estimate of the consumer's income or assets based on empirically derived, demonstrably and statistically sound models. (Federal Register, Vol. 75, No. 34, p. 7660.)

Avoiding Discrimination. Meeting the Regulation B definition of "empirically derived, demonstrably and statistically sound" has the added advantage that it helps the lender avoid problems of disparate treatment. [Official Staff Interpretations, §202.2 2(p)-4.] Under the proposed rules, there would be a shift away from credit scores, which threatens a return to the days marked by discrimination claims. The mortgage industry's adoption of credit scores not only improved the industry's ability to predict credit risk, but also removed the subjectivity and bias that too often was associated with the lending process. In fact, a recent 2010 Federal Reserve study (See Avery, Brevort and Canner, "Does Credit Scoring Produce a Disparate Impact?") confirmed the objectivity and unbiased impact of credit scores.

> Our results provide little or no evidence that the credit characteristics used in credit history scoring models operate as proxies for race or ethnicity. The distributions of credit scores for different racial or ethnic groups or across genders are essentially unaffected by the re-estimation

> or redevelopment of the baseline credit scoring model in any of the race- or gender-neutral environments. This suggests that credit scores do not have a disparate impact across race, ethnicity, or gender. [p. 26]

Empirically derived, demonstrably and statistically sound credit scores are built with depersonalized data and, as the 2007 Federal Reserve study (referenced hereinabove at page 9) demonstrates, credit scores are not strongly correlated to any of the prohibited factors in Regulation B. FICO research also shows that a person's income is not highly correlated to credit risk as measured by the FICO score. A credit score is not a proxy for any prohibited factor or income; this means there is a level playing field for all consumers, who only need to demonstrate good credit management skills to achieve a high FICO score and thereby have access to good credit. In contrast, the proposed QRM credit history standards will bring an element of subjectivity back into the process, which will result in inconsistent treatment for consumers.

Model Risk Management Supervision. Such credit scoring models should be subject to standards similar to the Supervisory Guidance on Model Risk Management, OCC 2011-12, published by Federal Reserve Board and the Office of the Comptroller of the Currency on April 11, 2011. The Agencies could incorporate the Guidance by reference into its rule, or propose a variation of OCC 2011-12. The Guidance explains the role of risk models and sets compliance standards.

> Banks rely heavily on quantitative analysis and models in most aspects of financial decision making. They routinely use models for a broad range of activities, including underwriting credits; valuing exposures, instruments, and positions; measuring risk; managing and safeguarding client assets; determining capital and reserve adequacy; and many other activities. In recent years, banks have applied models to more complex products and with more ambitious scope, such as enterprise-wide risk measurement, while the markets in which they are used have also broadened and changed. Changes in regulation have spurred some of the recent developments, particularly the U.S. regulatory capital rules for market, credit, and operational risk based on the framework developed by the Basel Committee on Banking Supervision. Even apart from these regulatory considerations, however, banks have been increasing the use of data-driven, quantitative decision-making tools for a number of years.
>
> The expanding use of models in all aspects of banking reflects the extent to which models can improve business decisions, but models also come with costs. There is the direct cost of

> devoting resources to develop and implement models properly. There are also the potential indirect costs of relying on models, such as the possible adverse consequences (including financial loss) of decisions based on models that are incorrect or misused. Those consequences should be addressed by active management of model risk. [p. 1]

The Guidance prescribes the need for banks that rely on quantitative analysis and models to demonstrate expertise in model development, implementation, use, and validation. Under the Guidance, banks must establish a process of governance, policies, and controls over its own models, and those it uses from third party vendors and contractors. The Guidance, which is a compilation and update of past statements by the OCC on model risk management, would seamlessly apply to the credit risk score requirement proposed above, and would not impose new burdens on banks or require a new regulatory structure by the bank regulators and the Consumer Financial Protection Bureau (CFPB) to administer and audit for compliance.

Option to Reduce Weight of Eligibility Criteria in the QRM Definition. In addition to including credit history criteria, the proposed definition of QRM also would include certain "eligibility criteria," such as down payment amount or loan-to-value ratio. The use of credit scoring models to measure the credit history component need not replace the other eligibility criteria proposed by the Agencies in response to the statutory language that directs regulators to include in the QRM definition product features indicating a lower risk of default. Those eligibility criteria include eligible loans, first lien, no subordinate liens, original maturity and written application requirements; payment terms; loan-to-value ratio; down payment; qualifying appraisal; ability to repay; points and fees; assumability prohibition; and default mitigation. Indeed, regulators have known for more than 15 years that certain non-credit history eligibility criteria can be used together with credit scores to be strong predictors of credit risk. See Robert B. Avery, Raphael W. Bostic, Paul S. Calem, and Glenn B. Canner, ''Credit Risk, Credit Scoring, and the Performance of Home Mortgages,'' *Federal Reserve Bulletin* vol. 82, no. 7 (July 1996), pp. 621–48.

> Credit score and, to a lesser extent, loan-to-value ratio appear to be much stronger predictors of foreclosure rates than income. The performance patterns by credit score and loan-to-value ratio are very similar for borrowers at all income levels. For example, among borrowers with high

> incomes, those with low credit scores and high loan-to-value ratios still have a foreclosure rate almost 50 times higher than those with high credit scores and low loan-to-value ratios.
>
> The data consistently show that credit scores are useful in gauging the relative levels of risk posed by both prospective mortgage borrowers and those with existing mortgages. Although the absolute levels of delinquency and default are low in all score categories, the proportion of problem loans increases as credit scores decrease. That relationship puts the focus of business concern on the prospective and existing borrowers with low scores because even small increases in the rate of default may mean the difference between profit and loss.

Moreover, FICO is sensitive to the regulators' desire to avoid complexity and cost in the secured underwriting process:

> Any set of fixed underwriting rules likely will exclude some creditworthy borrowers. For example, a borrower with substantial liquid assets might be able to sustain an unusually high DTI ratio above the maximum established for a QRM. As this example indicates, in many cases sound underwriting practices require judgment about the relative weight of various risk factors (*e.g.*, the tradeoff between LTV and DTI ratios). These decisions are usually based on complex statistical default models or lender judgment, which will differ across originators and over time. However, incorporating all of the tradeoffs that may prudently be made as part of a secured underwriting process into a regulation would be very difficult without introducing a level of complexity and cost that could undermine any incentives for sponsors to securitize, and originators to originate, QRMs. [p. 24118]

Nevertheless, another advantage of requiring credit scoring as the credit history component of the QRM definition is that the Agencies could deflect the inevitable criticism that the QRM definition relies too heavily on certain "eligibility criteria", such as down payment and loan to value. The Agencies could diminish the role currently assigned in the QRM definition to certain (non-credit history) eligibility criteria. The Agencies could reduce the proposed thresholds for some of the non-credit history eligibility criteria described above, and calibrate the credit history component of the QRM definition so that it plays a larger role in the test for QRM qualification. This would ease securitizers' and originators' compliance burdens, expand the mortgage market, while at the same time, allowing regulators to set the credit scoring standard as tightly as necessary to have the required level of loans that meet QRM standards.

The Need for Coordinated Regulation Among the Agencies. Similar to the regulatory approach in the data privacy area, the Agencies should expect each securitizer to appropriately manage its relationships with the originators of the mortgage loans that are collateralized by these asset-backed securities. The securitizers may have to monitor and audit, where appropriate, the loan origination processes of originators whose loans are being securitized by those securitizers. Since securitizers will be liable for securitizing mortgage loans that do not meet QRM standards, originators may be required by securitizers to comply with the QRM standards. Originators ultimately control the quality of the loans, and securitizers presumably will look to originators to guarantee the accuracy of the credit risk assumed by the securitizer. Securitizers may demand contract representations and warranties, require a guaranty or surety bond, or otherwise monitor or audit originators for compliance with QRM standards and internal underwriting guidelines. This will link the originators and securitizers, and assure compliance for the benefit of consumers.

At the same time, banking regulators should expect originators to have policies and procedures in place to assure compliance with the QRM standards. Specifically, originators are in the best position to assure the "origination risk" of a mortgage loan, which is a subset of credit risk. Credit risk includes systemic (macroeconomic), diversifiable (individual) and origination risks (risk of breaches of underwriting standards, misrepresentations, fraud, poor data quality, and legal violations). Systemic and diversifiable risks can be held and managed by third parties; origination risk can only be reduced by improving the loan production process.

Populating the Model With Mortgage Data. For the past 15+ years, the approved rating standard in the industry, and by far the most effective method of setting credit risk tranches, involves the use of credit scoring models, specifically the FICO credit risk model or the FICO mortgage model. In order to make the credit scoring models as predictive as possible, there should be an additional requirement that the approved credit scoring models be built and validated with empirical mortgage data. The use of a standard credit risk model that has been developed with aggregate loan data will not produce a level of predictiveness equal to models built with

mortgage data. Note that the credit history standards in the Proposed Rule do not make that distinction; the proposed language states that QRM status is denied for 60+ day delinquency on "any debt obligation", or judgment for collection of "any unpaid debt".

Applicability to Non-Banks. Under the Proposed Rule, all originators, banks and non-banks alike, will be covered by the QRM standard. This is because the section 15G "skin-in-the-game" requirement is an indirect approach to controlling origination risk; it relies on the securitizer to manage its exposure to originators, presumably by transferring the risk in its contracts with the originators (note: the Proposed Rule would prohibit the securitizer from buying insurance to cover the risk). The QRM standard, however, has a direct bearing on origination risk when the originator is the securitizer.

Bank regulators will have the authority to review the loan production process of banks within their regulatory purview, and non-banks will be overseen by the CFPB. The Agencies' discussion in the Proposed Rule about the different definitions of QRM and QM indicate the regulators are aware of the need to coordinate regulatory efforts in this area. All originators, bank and non-bank, and their respective loan production processes, should be subject to examination for compliance with the Regulation B credit scoring system standards, and the OCC 2011-12 model usage and validation standards.

X. Conclusion

The proposed QRM credit history standards will not adequately predict credit risk, and the impact of adopting these standards will be to instill skepticism into the securitization market, which undermines the legislative intent of Dodd Frank. FICO's position is that in order to instill confidence in the private securitization market, the credit risk rules must not only be proven to be highly predictive over market cycles but also must be transparent. To this end, FICO urges the Agencies to adopt a vendor-neutral approach that requires mortgage originators to use credit risk

models that comply with the requirements of Regulation B and the Guidance set forth in OCC 2011-12, as a QRM underwriting standard.

Respectfully submitted,

Mark R. Scadina

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FICO

EXHIBIT 1

QAL Credit History Standards

Who Qualifies under QAL?

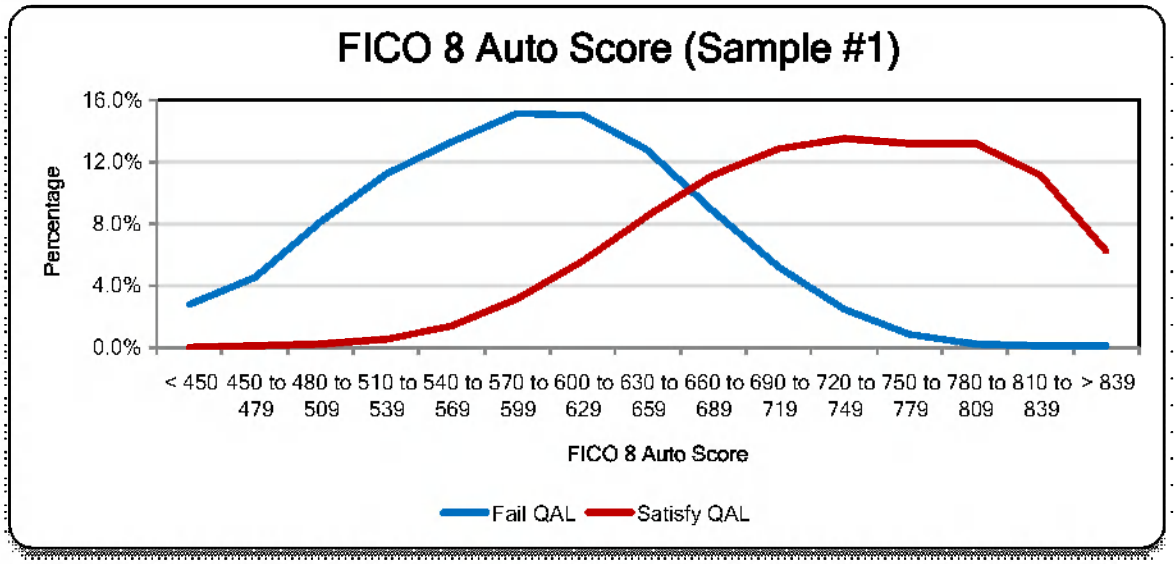
FICO examined the proposed credit history standards for Qualified Auto Loans (QAL) for two time periods, 2005 and 2008, to understand the predictive nature of the proposed QAL credit delinquency rules. FICO research included consumers who obtained an auto loan during the first three months of the specified years, and analyzed their performance over the next 24 months. The proposed QAL credit history standards were benchmarked against the FICO 8 Auto Score, which is the industry standard and is designed to specifically rank order the risk of the consumer paying their auto trade line. Note that the FICO® 8 Auto Score has a range of 250 to 900. The results below highlight that if the proposed QAL criteria had been in place, there would have been significantly higher delinquency rates (67% and 28% respectively) for those that qualified for the safe harbor during each time period while allowing for the same percentage of consumers to qualify.

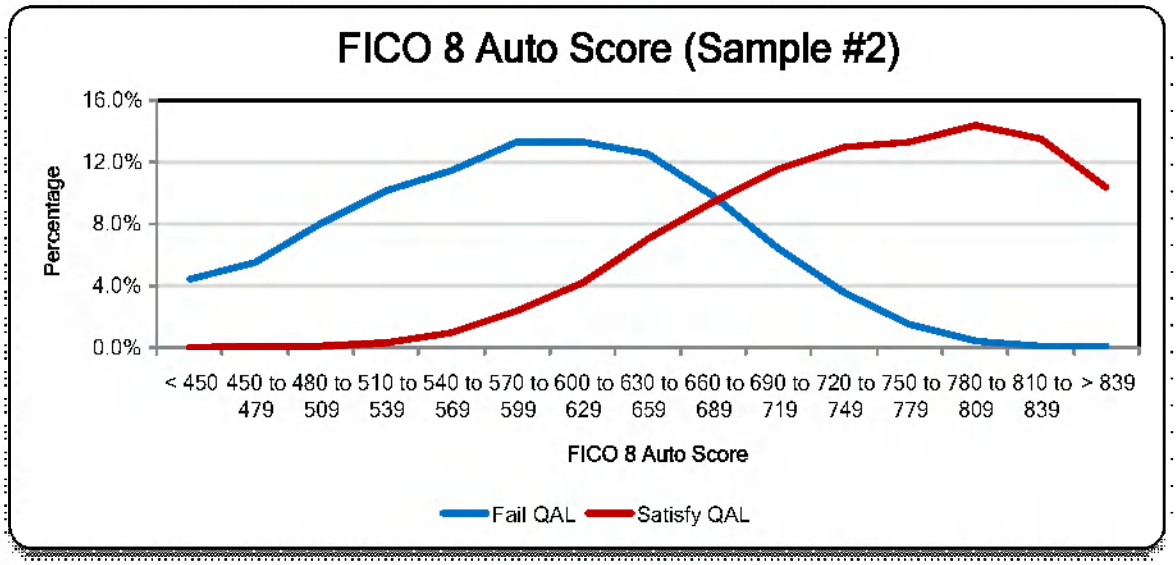
- Using a 2005 data sample, the proposed QRM credit history criteria allow for 70% of the population of consumers who obtained an auto loan between Nov 2005 and Jan 2006 to qualify under the proposed QAL credit history criteria, which equates to a FICO® 8 Auto Score of 635. The corresponding 90+ day bad rate for the consumers who qualified for the QAL is 2.5% versus 1.5% using the FICO® 8 Auto Score.

- Using a 2008 data sample, the proposed QRM credit history criteria allow for 77% of the population of consumers who obtained an auto loan between Nov 2008 and Jan 2009 to qualify under the proposed QAL credit history criteria, which equates to a FICO® 8 Auto Score of 635. The corresponding 90+ day bad rate for the consumers who qualified for the QAL is 2.3% versus 1.8% using the FICO® 8 Auto Score.

The graphics below illustrate the percentage of population that both fail and satisfy the QAL credit history criteria for loans originated in 2005 (Sample 1) and 2008 (Sample 2) plotted against FICO® 8 Auto Score on the x axis and percentage of population on the y axis. There is a significant percentage of the higher FICO 8 Auto Score consumers that do not qualify for QAL,

and a significant percentage of the lower FICO 8 Auto Score consumers that do qualify. The most prominent overlap occurs in the score range of 600 to 720. Using a case study example, two consumers who have the same FICO 8 Auto Score and have always paid their auto loan on time could have a different result; when assessed by the proposed QAL standard, one consumer might pass while the other could fail.





To provide keener insight, FICO also studied the minimum and maximum FICO 8 Auto Score that that would either pass or fail the proposed credit history standards of QAL. The minimum

FICO 8 Auto Score that qualifies for QAL is a 406, while the maximum FICO 8 Auto Score that would fail the QAL standards is 863. So, similar to the QRM research, consumers with excellent credit history failed the proposed QAL credit history test and likely incurred higher financing costs as a result.

FICO Auto Scores on Loans Originated November 2005 – January 2006

	Files that Satisfy QAL "Credit" Criteria							
					Percentiles			
Score Version	*Min*	*Max*	*Mean*	*Median*	*1st*	*5th*	*95th*	*99th*
FICO 8 Auto	406	900	731	735	551	599	845	864
Prior FICO Auto	421	843	730	734	556	607	827	834

	Files that Fail QAL "Credit" Criteria							
					Percentiles			
Score Version	*Min*	*Max*	*Mean*	*Median*	*1st*	*5th*	*95th*	*99th*
FICO 8 Auto	341	863	589	590	425	468	708	749
Prior FICO Auto	321	806	586	588	421	466	698	733

Swap Set Analyses

The tables below highlight by FICO 8 Score bands the percentage of the population that obtained auto loans in 2005 and 2008 respectively that would either fail or satisfy the proposed QAL credit history rules. For example, in 2005 30% of the population would satisfy the proposed QAL standards and score below 690 (the apparent FICO score benchmark within the proposed rules); conversely 8% of the population would score above 690 and fail the QAL criteria. In 2008 the results are fairly similar: 24% of the population scored below 690 and qualified for QAL, and 12% of the population scored above 690 but failed QRM. Given there were approximately 20M auto loans originated in an average year, there would have been approximately 2.4M consumers who had FICO 8 Auto Scores above 690, but who would not have qualified for QAL.

	Sample #1 (October 2005)							
	Fail QAL & score greater than				*Satisfy QAL & score less than*			
	660	*690*	*710*	*720*	*660*	*690*	*710*	*720*
FICO 8 Auto	17%	8%	5%	3%	19%	30%	39%	43%
Prior FICO Auto	15%	7%	3%	2%	18%	30%	39%	43%

	Sample #2 (October 2008)							
	Fail QAL & score greater than				*Satisfy QAL & score less than*			
	660	*690*	*710*	*720*	*660*	*690*	*710*	*720*
FICO 8 Auto	21%	12%	7%	5%	15%	24%	32%	36%
Prior FICO Auto	20%	9%	5%	3%	14%	24%	32%	37%

Reasons Why Proposed QAL Criteria Fail to Adequately Predict Credit Risk. There are a number of reasons why the Agencies' proposed manual-based approach to assessing credit history is inadequate as compared to a predictive analytic approach. However, the primary difference is that the proposed QAL criteria are essentially a linear "knock out" system, similar to manual underwriting, which is designed to disqualify consumers if they do not meet the criteria. In contrast, an analytically derived score is multivariate, taking into account multiple criteria and the relative weight of each criteria or input, which results in a more precise measure of credit risk. Below are some of the illustrative reasons where we see a lack of sufficient predictive nature in the proposed QAL credit history standards.

Individual Anomalies. Consider the following examples of how low risk borrowers could be excluded from the QAL while high risk borrowers could qualify:

> High FICO score, but fails QRM. Assume a 57 year college professor with no history of collections; no adverse public records; never missed a payment on a mortgage account; demonstrated history of successfully paying a variety of different types of credit obligations (revolving, auto, mortgage, etc.); low revolving balances; very low revolving utilization ratio; long credit history (25+ years); and few recently opened accounts. However, this professor was on sabbatical and inadvertently had a 60 day delinquency 23 months ago, which was paid off in full a few days thereafter (*knock out*). The professor could have a FICO score above 800, but would not be eligible for a QAL.

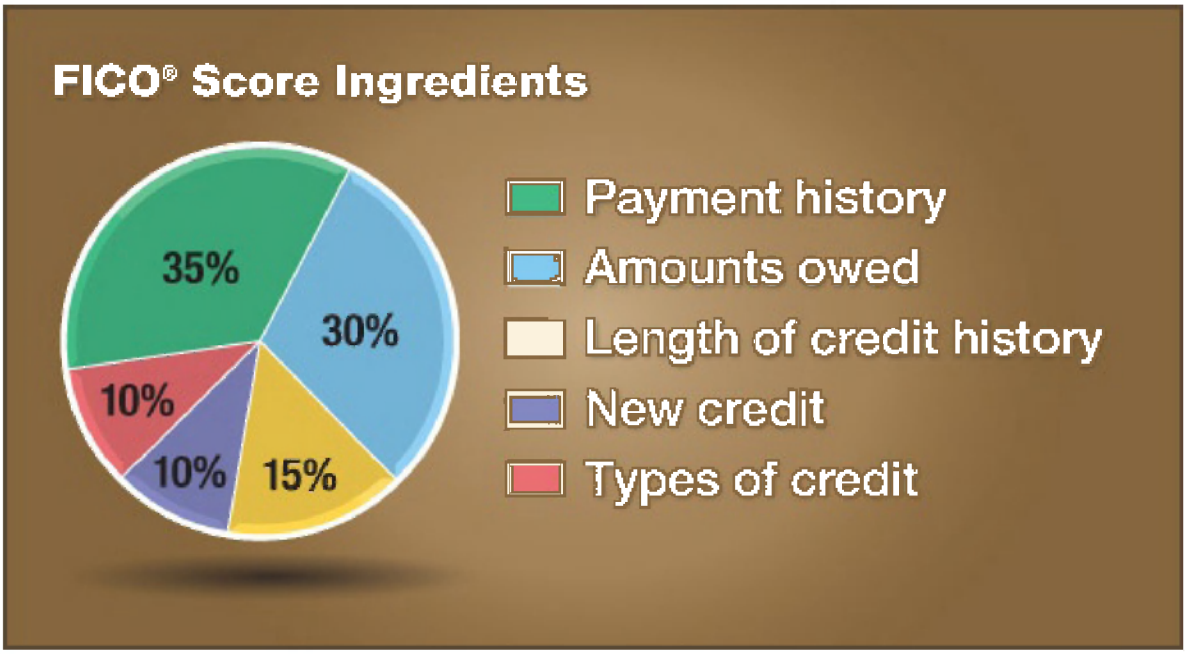
Low FICO score, but passes QRM. Assume a 22 year old aspiring rock star, living in his parents' basement; he was very recently, but not currently, 30 days past due on several accounts; no 60+ day delinquencies in the past 2 years, but 90-180 days past due just over 2 years ago; numerous 3rd party collections accounts; maxed out on several revolving accounts; relatively short credit history (□ 10 years); and a large number of recent new accounts and applications for credit. The rock star could have a FICO score below 500, but under the proposed rules, he would be eligible for a QAL.

Much like the QRM research, FICO's analysis of the proposed QAL credit history standards reveals very similar distorted outcomes that result in a significant number of borrowers with low credit scores (high credit risk) meeting the standards while excluding a number of high scoring borrowers (low credit risk). Furthermore, by adopting a linear approach based on a set of "knockout" rules, the proposed QAL credit history standards fall well short of providing the predictive accuracy of empirically derived credit scoring models. The result is that the proposed standards lead to significantly higher default rates which appear to conflict directly with the underlying intent of the QAL.

EXHIBIT 2

The 5 FICO® Score Ingredients (from scoreinfo.org)

Your FICO® Score takes into consideration five main categories of information from your credit reports. The chart below shows the relative importance of each category to your FICO® Score.



Next we will go through a detailed breakdown of each category. As you review the information, keep in mind that:

- A FICO® Score takes into consideration all of these categories, not just one or two.
- The importance of any factor depends on the information in your entire credit report.
- Your FICO® Score looks only at the credit-related information contained in your credit reports.
- Your FICO® Score considers both positive and negative information from your credit reports.

1. Payment History

Approximately 35% of your FICO® Score is based on this information, which includes:

- Payment information on many types of accounts:
  - Credit cards – such as Visa, MasterCard, American Express and Discover.
  - Retail accounts – credit from stores where you do business, such as department store credit cards.

  - Installment loans – loans where you make regular payment amounts, such as car loans and mortgage loans.
  - Finance company accounts.
- Public record and collection items – reports of events such as bankruptcies, foreclosures, suits, wage attachments, liens and judgments.
- Details on late or missed payments ("delinquencies") and public record and collection items.
- The number of accounts that show no late payments.

2. The Amounts You Owe

Approximately 30% of your FICO® Score is based on this information.

Credit utilization, one of the factors evaluated in this category, considers the amount you owe compared to how much credit you have available. You can control how much you use and lenders determine how much credit they are willing to provide. FICO's research shows that people using a high percentage of their available credit limits, compared to people using a lower level of credit, are more likely to have trouble making some payments now or in the near future.

Having credit accounts with an outstanding balance does not necessarily mean you are a high-risk borrower with a low FICO® Score. A long history of demonstrating consistent payments on credit accounts is a good way to show lenders you can responsibly manage additional credit.

In this category, your FICO® Score takes into account:

- The amount owed on all accounts.
- The amount owed on different types of accounts.
- Whether you are showing a balance on certain types of accounts.
- The number of accounts where you carry a balance.
- How much of the total credit line is being used on credit cards and other revolving credit accounts.
- How much is still owed on installment loan accounts, compared with the original loan amounts.

3. Length of Credit History

Approximately 15% of your FICO® Score is based on this information.

In general, all else being equal, a longer credit history will increase your FICO® Score. However, even people who have not been using credit long could get a fairly high FICO® Score, depending on how their credit report looks in terms of the other four categories of information, particularly the first two. In this category your FICO® Score takes into account:

- How long your credit accounts have been established. Your FICO® Score considers the age of your oldest account, the age of your newest account and the average age of all your accounts.
- How long specific credit accounts have been established.
- How long it has been since you used certain accounts.

4. New Credit

Approximately 10% of your FICO® Score is based on this information.

FICO's research shows that opening several credit accounts in a short period of time represents greater risk – especially for people who do not have a long credit history. In this category your FICO® Score takes into account:

- How many new accounts you have.
- How long it has been since you opened a new account.
- How many recent requests for credit you have made, as indicated by inquiries to the credit reporting agencies.
- Length of time since credit report inquiries were made by lenders.
- Whether you have a good recent credit history, following past payment problems.

FICO® Scores do not penalize you for "rate shopping" when seeking a mortgage, auto loan or student loan. To enable you to shop for the best rate, the FICO® Score ignores inquiries for similar financing types made in the 30 days prior to scoring. That means all inquiries made during your shopping period are counted as one inquiry when determining your score. This shopping period is 45 days on the newest versions of the FICO® Score. Each lender chooses which version of FICO® Score it wants to use.

5. Types of Credit in Use

Approximately 10% of your FICO® Score is based on this information.

Your FICO® Score considers your mix of credit cards, retail accounts, installment loans, finance company accounts and mortgage loans. It is not necessary to have one of each, and it is not a good idea to open a credit account you don't intend to use. In this category your FICO® Score takes into account:

- What kinds of credit accounts you have. Do you have experience with both revolving (credit cards and lines) and installment (fixed loan amount and payment) accounts, or has your credit experience been limited to only one type?
- How many accounts you have of each type. Your FICO® Score also looks at the total number of accounts you have. For different credit profiles, how many is too many will vary depending on your overall credit picture.

What a FICO® Score Ignores

FICO® Scores consider a wide range of information on your credit report. However, they do NOT consider:

- Your race, color, religion, national origin, sex and marital status. U.S. law prohibits credit scoring from considering these facts, as well as any receipt of public assistance, or the exercise of any consumer right under the Consumer Credit Protection Act.
- Your age. Other types of scores may consider your age, but FICO® Scores don't.
- Your salary, occupation, title, employer, date employed or employment history. Lenders may consider this information, however.
- Where you live.
- Any interest rate being charged on a particular credit card or other account.
- Any items reported as child/family support obligations or rental agreements.
- Certain types of inquiries (requests for your credit report or score). Your FICO® Score does not count any inquiries you initiate, any inquiries from employers or insurance companies, or any inquiries lenders make without your knowledge.
    - Checking your own credit report and score is not considered in scoring models such as the FICO® Score.
    - Asking your friend in the lending business to pull your credit report and score is not only prohibited by contract, it will also count as an inquiry in future scores – don't do it!
- Any information not found in your credit report.

- Any information that is not proven to be predictive of future credit performance.

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EXHIBIT 3

Analysis of Eligible Loans Under QRM Standards When Varying Maximum LTV For Purchase Loans

I. 85% LTV Maximum for Purchase Loans

Parameters of 85% LTV Study

FICO

- Examined pool of new mortgages opened between 2005-2008
- Merged loan-level information with Credit Bureau files to more fully explore the outcomes of the proposed QRM definition
- QRM 'non-credit" criteria applied to dataset
  - Back-end DTI <= 36%
  - Origination Loan-to-Value
    - Purchase <= 85%
    - Refinance <= 75%
    - Cash out Refinance <= 70%
  - Owner occupied
  - First lien
- After applying QRM "non-credit" criteria, ~30% new mortgages remained

Proposed QRM Criteria Breakdown - 85% LTV

FICO

- Files that Pass the QRM "non credit criteria ~30%
- Of that population:
  - Files that fail QRM "credit" criteria ~15%
  - Files that satisfy QRM "credit" criteria ~85%
- Files with new mortgage that satisfy all aspects of QRM criteria ~26%

QRM Credit Criteria and Comparable FICO Score
Cut-off 85% LTV (volume held fixed)

FICO

Corresponding FICO Score Cut-off

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	85%	15%
FICO 8	650	85%	15%
FICO 8 Mortgage	635	85%	15%
Prior FICO	645	85%	15%

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.5%	10.2%
FICO 8	650	2.1%	12.6%
FICO 8 Mortgage	635	1.8%	14.0%
Prior FICO	645	2.1%	12.9%

Overall 90+ Bad Rate on New Mortgage Accounts – 3.6%

Data Summary: The proposed QRM credit criteria (85% LTV) allowed for 85% of the new mortgage population to qualify for the QRM exemption. The corresponding FICO® Score that would allow for the same percentage of population to qualify for QRM is a 650. The resulting 90+ dpd rate for the QRM credit criteria is 2.5% vs 2.1% for the FICO® 8 650 Score.

Applying FICO® 8 score cutoff instead of QRM criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~49,000 fewer bads above cut off. Assuming ~$50k loss per bad, this corresponds to a reduction in loss of ~$2.4 billion.

QRM Credit Criteria and Comparable FICO Score
Cut-off 85% LTV (bad rate held fixed)

FICO

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria		2.5%	10.2%
FICO 8	615	2.5%	16.7%
FICO 8 Mortgage	580	2.5%	21.2%
Prior FICO	615	2.5%	15.2%

Overall 90+ Bad Rate on New Mortgage Accounts – 3.6%

Resulting Volumes by FICO® Score

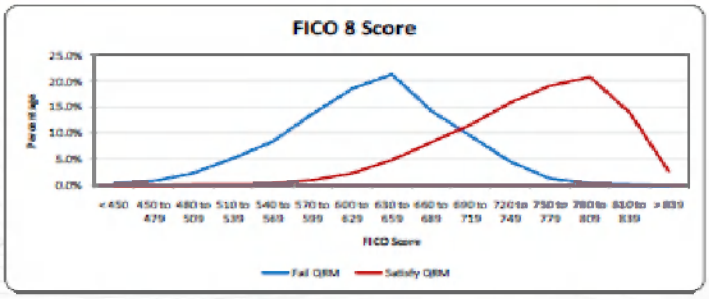
QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	85%	15%
FICO 8	615	92%	8%
FICO 8 Mortgage	580	94%	6%
Prior FICO	615	91%	9%

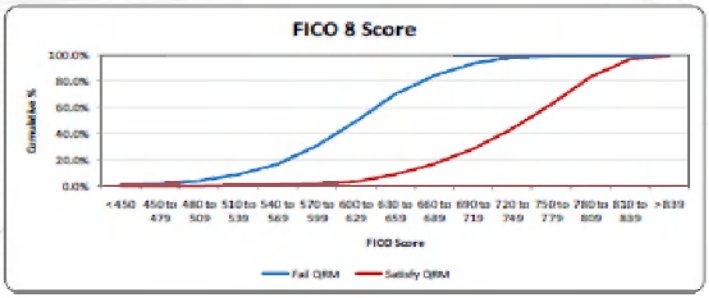
Data Summary: The proposed QRM standards (85% LTV) would result in an overall 2.5% 90+ dpd rate for the QRM qualified population. The corresponding FICO® 8 score that would result in the same 90+ dpd rate is a 615.

Applying FICO® 8 score cutoff instead of QRM credit criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~1,000,000 more QRM qualified consumers while still holding the bad rate of the "Above Cut-off" population fixed at 2.5%.

Proposed QRM Score Distribution - 85% LTV

FICO





FICO Score Stats 85% LTV - a wide range of credit both qualifies and fails under the proposed rules

FICO

	Files that Fail QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	438	827	628	631	479	521	725	757
FICO 8 Mortgage	332	850	621	627	405	471	747	790
Prior FICO	396	782	616	623	468	505	708	735

	Files that Satisfy QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	493	850	751	760	597	642	832	848
FICO 8 Mortgage	407	850	751	760	559	615	850	850
Prior FICO	492	818	745	760	598	640	809	816

The proposed QRM rules will result in consumers with good credit not qualifying for the QRM exemption while those with poorer credit qualifying, potentially resulting in disparate pricing and terms.

Swap Sets Between QRM and FICO Score Cut-off 85% LTV

FICO

	New Mortgage Population							
	Fail QRM & score greater than				*Satisfy QRM & score less than*			
	660	*690*	*710*	*720*	*660*	*690*	*710*	*720*
FICO 8	29%	15%	8%	6%	8%	16%	24%	28%
FICO 8 Mortgage	31%	18%	12%	10%	13%	22%	29%	33%
Prior FICO	26%	10%	4%	2%	9%	17%	25%	29%

Data Summary: 15% of the new mortgage loans originated between 2005 and 2008 with a FICO score greater than 690 would have failed the QRM criteria

Applying the proposed QRM criteria (85% LTV) on the 47.8 M new mortgage loans originated between 2005 and 2008, 323,000 with FICO scores above 690 would have failed the QRM standards.

II. 90% LTV Maximum For Purchase Loans

Parameters of Study - 90% LTV

FICO

- Examined pool of new mortgages opened between 2005-2008
- Merged loan-level information with Credit Bureau files to more fully explore the outcomes of the proposed QRM definition
- QRM "non-credit" criteria applied to dataset
  - Back-end DTI <= 36%
  - Origination Loan-to-Value
    - Purchase <= 90%
    - Refinance <= 75%
    - Cash out Refinance <= 70%
  - Owner occupied
  - First lien
- After applying QRM "non-credit" criteria, ~32% new mortgages remained

Proposed QRM Criteria Breakdown - 90% LTV

FICO

- Files that Pass the QRM "non credit criteria ~32%
- Of that population:
  - Files that fail QRM "credit" criteria ~16%
  - Files that satisfy QRM "credit" criteria ~84%
- Files with new mortgage that satisfy all aspects of QRM criteria ~27%

QRM Credit Criteria and Comparable FICO Score Cut-off 90% LTV (volume held fixed)

FICO

Corresponding FICO Score Cut-off

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	84%	16%
FICO 8	650	84%	16%
FICO 8 Mortgage	635	83%	17%
Prior FICO	645	84%	16%

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.7%	10.8%
FICO 8	650	2.2%	13.2%
FICO 8 Mortgage	635	1.9%	14.6%
Prior FICO	645	2.2%	13.5%

Overall 90+ Bad Rate on New Mortgage Accounts – 4.0%

Data Summary: The proposed QRM credit criteria (90% LTV) allowed for 84% of the new mortgage population to qualify for the QRM exemption. The corresponding FICO® Score that would allow for the same percentage of population to qualify for QRM is a 650. The resulting 90+ dpd rate for the QRM credit criteria is 2.7% vs 2.2% for the FICO® Score.

Applying FICO® 8 score cutoff instead of QRM criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~64,000 fewer bads above cut off. Assuming ~$50k loss per bad, this corresponds to a reduction in loss of ~$3.2 billion.

QRM Credit Criteria and Comparable FICO Score Cut-off 90% LTV(above cut-off bad rate held fixed)

FICO

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.7%	10.8%
FICO 8	620	2.7%	16.5%
FICO 8 Mortgage	585	2.7%	21.0%
Prior FICO	620	2.6%	15.4%

Overall 90+ Bad Rate on New Mortgage Accounts – 4.0%

Resulting Volumes by Cut-off

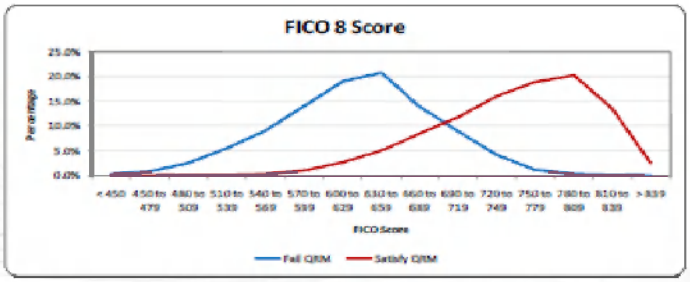
QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	84%	16%
FICO 8	620	90%	10%
FICO 8 Mortgage	585	93%	7%
Prior FICO	620	89%	11%

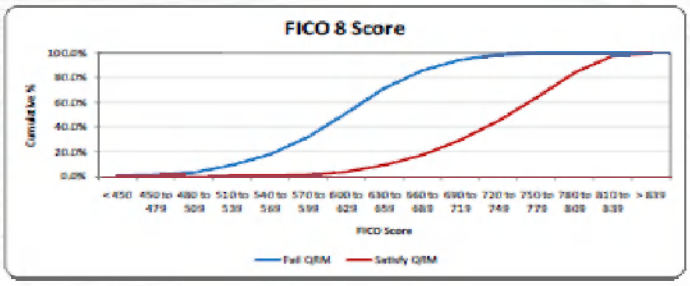
Data Summary: The proposed QRM standards (90% LTV) would result in an overall 2.7% 90+ dpd rate for the QRM qualified population. The corresponding FICO® 8 score that would result in the same 90+ dpd rate is a 620.

Applying FICO® 8 score cutoff instead of QRM credit criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~920,000 more QRM qualified consumers while still holding the bad rate of the "Above Cut-off" population fixed at 2.7%.

Proposed QRM Score Distribution - 90% LTV

FICO





FICO Score Stats 90% LTV - a wide range of credit both qualifies and fails under the proposed rules

FICO

	Files that Fail QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	438	827	625	628	480	520	723	756
FICO 8 Mortgage	321	850	617	623	409	470	743	787
Prior FICO	396	782	614	620	468	504	706	734

	Files that Satisfy QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	493	850	749	758	592	638	831	848
FICO 8 Mortgage	407	850	749	757	556	611	850	850
Prior FICO	492	818	743	758	592	636	809	816

The proposed QRM rules will result in consumers with good credit not qualifying for the QRM exemption while those with poorer credit qualifying, potentially resulting in disparate pricing and terms

Swap Sets Between QRM and FICO Score Cut-off 90% LTV

FICO

	New Mortgage Population							
	Fail QRM & score greater than				Satisfy QRM & score less than			
	660	690	710	720	660	690	710	720
FICO 8	28%	14%	7%	5%	9%	17%	25%	29%
FICO 8 Mortgage	30%	17%	11%	9%	14%	23%	30%	34%
Prior FICO	24%	10%	4%	2%	9%	18%	26%	30%

Data Summary: 14% of the new mortgage loans originated between 2005 and 2008 with a FICO score greater than 690 would have failed the QRM criteria.

Applying the proposed QRM criteria on the 47.8 M new mortgage loans originated between 2005 and 2008, 6.69 M consumers with FICO Scores above 690 would have failed the QRM criteria.

Swap Sets Between QRM and FICO Score Cut-off 90% LTV

FICO

	New Mortgage Population							
	Fail QRM & score greater than				*Satisfy QRM & score less than*			
	660	*690*	*710*	*720*	*660*	*690*	*710*	*720*
FICO 8	28%	14%	7%	5%	9%	17%	25%	29%
FICO 8 Mortgage	30%	17%	11%	9%	14%	23%	30%	34%
Prior FICO	24%	10%	4%	2%	9%	18%	26%	30%

Data Summary: 14% of the new mortgage loans originated between 2005 and 2008 with a FICO score greater than 690 would have failed the QRM criteria.

Applying the proposed QRM criteria on the 47.8 M new mortgage loans originated between 2005 and 2008, 343,000 consumers with FICO scores above 690 would have failed the QRM standards.

III. 95% LTV Maximum For Purchase Loans

Parameters of Study 95% LTV

FICO

- Examined pool of new mortgages opened between 2005-2008
- Merged loan-level information with Credit Bureau files to more fully explore the outcomes of the proposed QRM definition
- QRM "non-credit" criteria applied to dataset
  - Back-end DTI <= 36%
  - Origination Loan-to-Value
    - Purchase <= 95%
    - Refinance <= 75%
    - Cash out Refinance <= 70%
  - Owner occupied
  - First lien
- After applying QRM "non-credit" criteria, ~34% new mortgages remained

Proposed QRM Criteria Breakdown - 95% LTV

FICO

- Files that Pass the QRM "non credit criteria ~34%
- Of that population:
  - Files that fail QRM "credit" criteria ~16%
  - Files that satisfy QRM "credit" criteria ~84%
- Files with new mortgage that satisfy all aspects of QRM criteria ~28%

QRM Credit Criteria and Comparable FICO Score Cut-off 95% LTV (volume held fixed)

FICO

Corresponding FICO Score Cut-off

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	84%	16%
FICO 8	645	84%	16%
FICO 8 Mortgage	630	84%	16%
Prior FICO	645	83%	17%

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.9%	11.3%
FICO 8	645	2.4%	14.5%
FICO 8 Mortgage	630	2.1%	15.6%
Prior FICO	645	2.3%	14.3%

Overall 90+ Bad Rate on New Mortgage Accounts – 4.3%

Data Summary: The proposed QRM credit criteria (95% LTV) allowed for 84% of the new mortgage population to qualify for the QRM exemption. The corresponding FICO® Score that would allow for the same percentage of population to qualify for QRM is a 645. The resulting 90+ dpd rate for the QRM credit criteria is 2.9% vs 2.4% for the FICO® Score.

Applying FICO® 8 score cutoff instead of QRM criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~68,000 fewer bads above cut off. Assuming ~$50k loss per bad, this corresponds to a reduction in loss of ~$3.4 billion.

QRM Credit Criteria and Comparable FICO Score Cut-off 95% LTV (bad rate held fixed)

FICO

90+ Bad Rate on New Mortgage Accounts

QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	2.9%	11.3%
FICO 8	615	2.9%	17.7%
FICO 8 Mortgage	585	2.9%	21.3%
Prior FICO	615	2.9%	16.4%

Overall 90+ Bad Rate on New Mortgage Accounts – 4.3%

Resulting Volumes by Cut-off

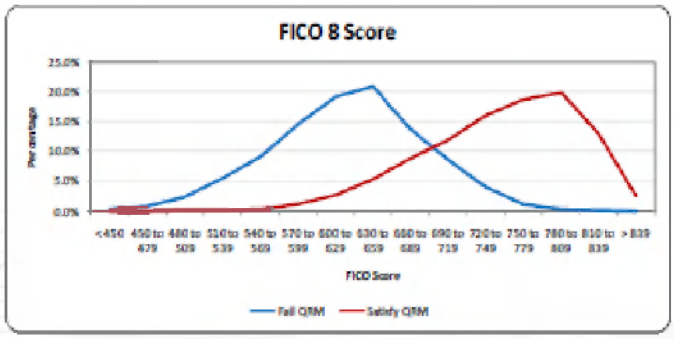
QRM/Score	Score Cut-off	Above Cut-off	Below Cut-off
QRM Criteria	-	84%	16%
FICO 8	615	91%	9%
FICO 8 Mortgage	585	93%	7%
Prior FICO	615	90%	10%

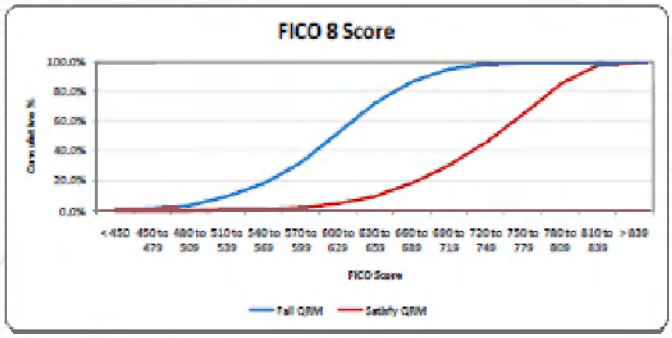
Data Summary: The proposed QRM standards would result in an overall 2.9% 90+ dpd rate for the QRM qualified population. The corresponding FICO 8 score that would result in the same 90+ dpd rate is a 615.

Applying FICO 8 score cutoff instead of QRM credit criteria on the ~47.8 million new mortgages booked between 2005-2008 results in ~1,140,000 more QRM qualified consumers while still holding the bad rate of the "Above Cut-off" population fixed at 2.9%.

Proposed QRM Score Distribution - 95% LTV

FICO





FICO Score Stats 95% LTV- a wide range of credit both qualifies and fails under the proposed rules

FICO

	Files that Fail QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	428	827	624	627	480	520	721	756
FICO 8 Mortgage	321	850	616	622	409	472	741	786
Prior FICO	396	782	613	619	468	504	705	732

	Files that Satisfy QRM "Credit" Criteria							
					Percentiles			
Score Version	Min	Max	Mean	Median	1st	5th	95th	99th
FICO 8	493	850	748	756	591	636	831	848
FICO 8 Mortgage	407	850	747	754	555	609	850	850
Prior FICO	492	818	742	757	589	634	809	816

The proposed QRM rules will result in consumers with good credit not qualifying for the QRM exemption while those with poorer credit qualifying, potentially resulting in disparate pricing and terms

Swap Sets Between QRM and FICO Score Cut-off 95% LTV

FICO

	New Mortgage Population							
	Fail QRM & score greater than				Satisfy QRM & score less than			
	660	690	710	720	660	690	710	720
FICO 8	27%	14%	7%	5%	9%	18%	26%	30%
FICO 8 Mortgage	29%	16%	11%	8%	15%	24%	31%	35%
Prior FICO	24%	9%	4%	2%	10%	19%	27%	31%

Data Summary: 14% of the new mortgage loans originated between 2005 and 2008 with a FICO® score greater than 690 would have failed the QRM criteria.

Applying the proposed QRM criteria on the 47.8 M new mortgage loans

originated between 2005 and 2008, 364,000 consumers with FICO scores above 690 would have failed the QRM standards.