February 26, 2018

Federal Housing Finance Agency

Office of Housing and Regulatory Policy

400 7th Street SW, 9th floor

Washington, D.C., 20219

Re: Credit Score Request for Input

In most public discussion of efforts to update the credit scores collected by the Enterprises, the primary focus has been the relation between the scoring system selected and the size of the pool of scorable mortgage applicants. This emphasis is entirely appropriate—the Enterprises are designed to serve a broad market, should be held to a high standard in serving that market and should be expected to identify and eliminate unnecessary barriers rather than perpetuate them. One of FHFA's stated goals as conservator is to enhance the capacity of the Enterprises to fulfill their mission. FHFA is to be congratulated on its systematic but persistent efforts extending from the 2015 Scorecard[1] to the current RFI.

In fulfilling their mission, the Enterprises operate at the center of a complex system that includes investors as well as lenders and insurers. This comment letter concerns the interest of investors in the updating of credit scoring models.

While credit scoring models might be viewed primarily as tools for the evaluation of an applicant's credit, there is some reason to give great weight to investor considerations in the current RFI. The choice to update credit models seems already to have been made; the options presented by FHFA concern FICO 9 and VantageScore 3 rather than the model now in use. There is no question of incorporating new information or non-traditional credit history; both models use the same information. It is the claim of VantageScore that it incorporates certain of that

[1] "The Enterprises are to work to increase access to mortgage credit for creditworthy borrowers, consistent with the full extent of applicable credit requirements and risk-management practices" and this includes "assess[ing] the feasibility of alternate credit score models and credit history in loan-decision models, including the operational and system implications."

information (recent and unused lines of credit) in such a way as to extend scores to a population that is currently unscorable. But it is by no means clear that this broadens the market served by the Enterprises. Both Enterprises already have programs and procedures for evaluating unscorable loans—so it is doubtful whether there will be any expansion of the pool of applicants. While the impact on the population of borrowers is somewhat nebulous, the impact on investors is more certain. If we look at the operation of the Enterprises, it is fair to say that credit scores are used less for the evaluation of loans than for disclosing and summarizing credit quality to investors.

Credit scores are used by the each of the Enterprises to communicate a summary measure of loan credit quality to investors. Indeed, since Fannie Mae does not even use credit scores in DU, we can say that a primary use of credit scores is in recording, summarizing and communicating credit risk. If we look at credit scores this way, we can also say that the options under consideration by FHFA can be restated in terms of what investors will see: investors will see either (i) a single score from one provider, (ii) two scores based on the same information or (iii) one score but from two different providers—from scoring models that are not comparable to each other and, in aggregate, not comparable over time.

<table>
<tr><th>Option</th><th>What Investors See</th><th>Observation</th><th>Summary Comment</th></tr>
<tr><td>1</td><td>A single score from a single provider; different from current score or ‘not scored”</td><td rowspan="3">Investors regard disclosure as a tool to be used and are primarily concerned with the effectiveness of the tool. If a more predictive score is introduced., it will be welcomed; if a less predictive score is introduced, it will be resisted or ignored</td><td>Investor response will be determined by the predictive power of the score that is collected and disclosed compared to currently disclosed score</td></tr>
<tr><td>2</td><td>Two scores, both different from current score, or not scored from one or both providers</td><td>Investors will ignore the less predictive score</td></tr>
<tr><td>3</td><td>A single score from one of two providers, varying over time, or not scored</td><td>Investors will discount the less predictive score and treat the scores as non-fungible</td></tr>
<tr><td>4</td><td>A single score; may be occasionally supplemented by another score; or not scored</td><td>Uncertain need or benefit to disclosure of second score</td><td>Will be seen as identical to option 1</td></tr>
</table>

III. Question A2.5: Could using any of the multiple credit score options affect the way investors view, and therefore price, Enterprise securities? Could any of the multiple credit score options reduce liquidity in the TBA market and/or increase the volume to the specified market? Are there any unique considerations among the multiple score options (options 2-4) in evaluating their impact on MBS liquidity and/or demand for credit risk transfer transactions?

The TBA Market

The TBA market (and the associated roll market) is most sensitive to prepayment speeds (and especially to prepayment speeds early in the life of a loan). Because there is no obvious connection between the credit score provider (when credit scores are based on information available to each) and the likelihood that a borrower will prepay, it might be thought that (apart from the cost of updating systems), the risk within the TBA market is remote. But there is one worrisome risk within the TBA market that deserves FHFA's careful attention. What is distinctive about VantageScore is that it assigns a credit score to individuals with sparse, scarce or stale credit history. If the credit scores of these individuals were to prove unusually volatile and if the Enterprises were to continue their current practice of tying LLPAs or Delivery Fees to credit scores, this volatility could easily translate into volatility of the refinancing incentive that borrowers face. For example, if an enterprise charged a graduated upfront guarantee fee at credit scores of 620, 640 and 660, a borrower with an initial score of 640 would face a different effective mortgage rate (and hence refinancing incentive) if his or her score moved down to 620 or up to 660.

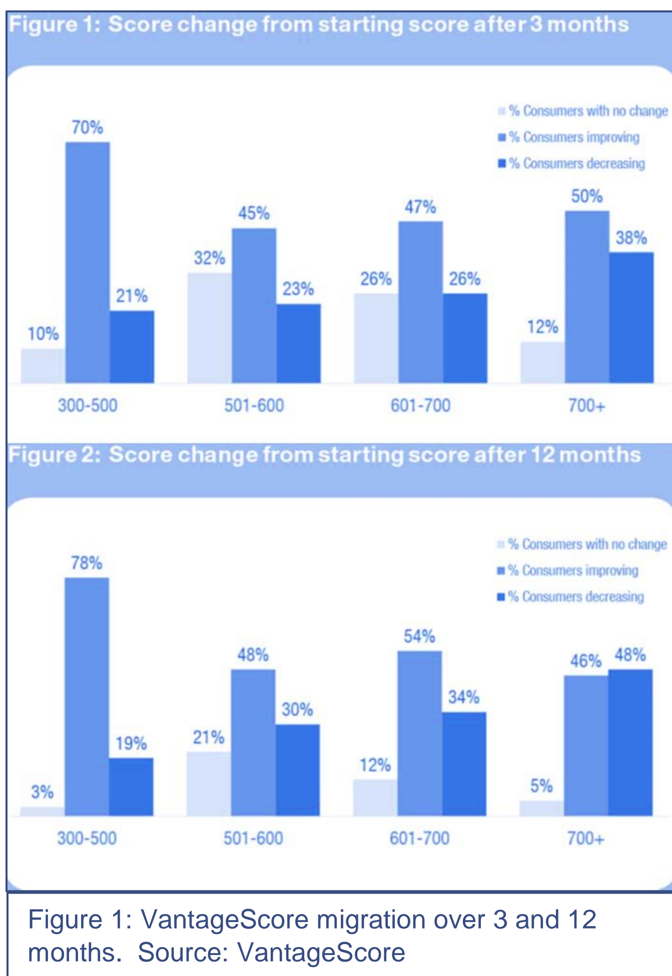

Figure 1: VantageScore migration over 3 and 12 months. Source: VantageScore

But is there any reason to expect that those individuals whose credit becomes scoreable under VantageScore to show unusual volatility in credit score? There may be. VantageScore has published some information regarding score migration. (see Figure 1.) These charts include the whole population (not just the currently unscorable) and do not indicate the magnitude of the change in credit score. But only 26% stability after three months and 12% after one year seems somewhat low. Investors can be expected to ask for analysis on relative score migration. If it should prove to be the case that the credit scores of the currently unscorable population are unusually volatile, the reaction in the TBA market could be both significant and adverse.

Adjustments within the TBA market can be dramatic. If a particular class of loans (such as loans with a VantageScore but no FICO score) were excluded from good delivery in the TBA market, borrowers falling into this class of loans would face higher mortgage rates (perhaps 0.25% higher) on top of any higher upfront guarantee fees. This market adjustment could undo much of the benefit of extending the scorable population.

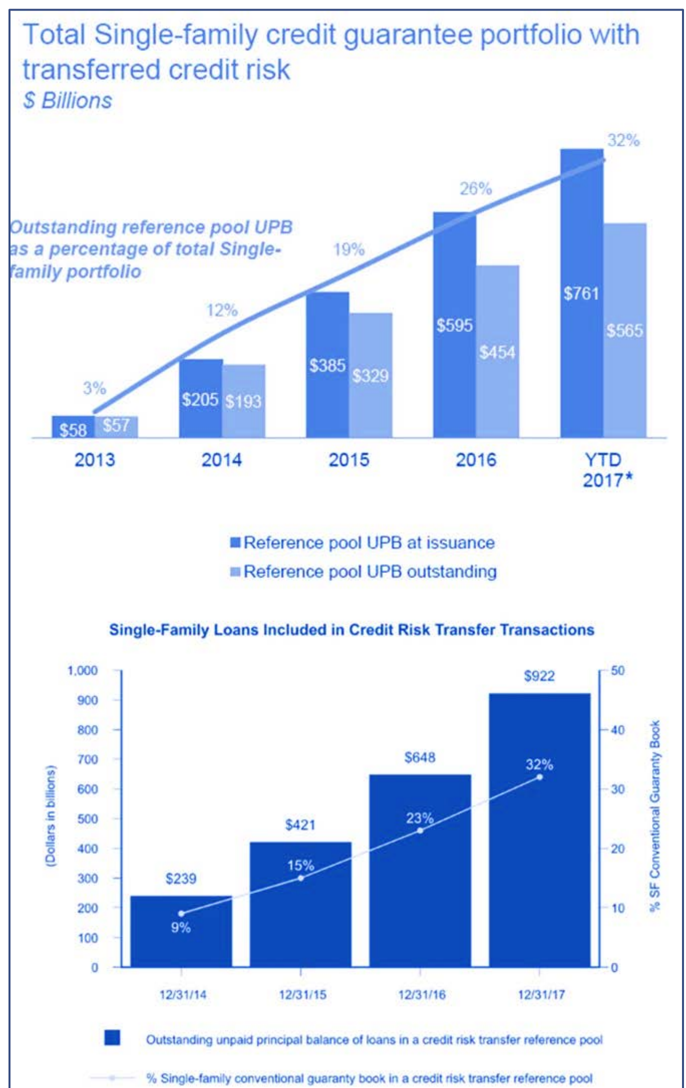

Figure 2: Credit Risk transferred by the Enterprises.
Top panel: Freddie Mac through 9/30/17
Bottom Panel: Fannie Mae through 12/31/17
Source: Freddie Mac and Fannie Mae

The CRT Market

The risk within the TBA market arising from the choice of a credit score is somewhat speculative—its realization is likely to depend on the option pursued by FHFA, how that option is implemented in upfront guarantee fees and further research in credit score migration patterns. The risk to the market for credit risk transfer (the CRT market) is far more certain.

Credit scores serve a number of functions within the CRT market:

1. Credit scores serve to summarize everything that a lender or bearer of risk can learn from scrutiny of a borrower's credit file.
2. Credit scores allow investors to track changes in the credit of a pool of loans over time
3. Credit scores anonymize the data that the Enterprises disclose to markets
4. Credit scores permit investors to estimate, test and maintain credit risk models

In part as a consequence of the value of credit scores, the Enterprises (under the direction of FHFA) have undertaken over the past few years to build a market for risk transfer.

There are many reasons why FHFA should be particularly attentive to the CRT market in making its decision regarding credit scores.

1. The CRT market is of great strategic importance
2. The development of the CRT market has been successful to date but the market is still young and fragile. (see Figure 2.)
3. Credit scores are of central importance to the GSE strategy for building this market.

This last point—the importance of credit scores for CRT market development—deserves some emphasis. A successful CRT program is far more difficult than most discussion of this market would lead you to believe. The Enterprises need to transfer credit risk and, with that, some or all or more than all of the revenue they earn by bearing credit risk. The program will be sustainable only if the revenue they need to transfer is less than the revenue they charge. (Recent disclosure by the Enterprises suggests that revenue received and paid in CRTs is uncomfortably close to a push.) But why should private investors charge less than the Enterprises (who have access to the full credit file)? The Enterprises have faced this challenge directly and seem to have adopted a strategy of providing

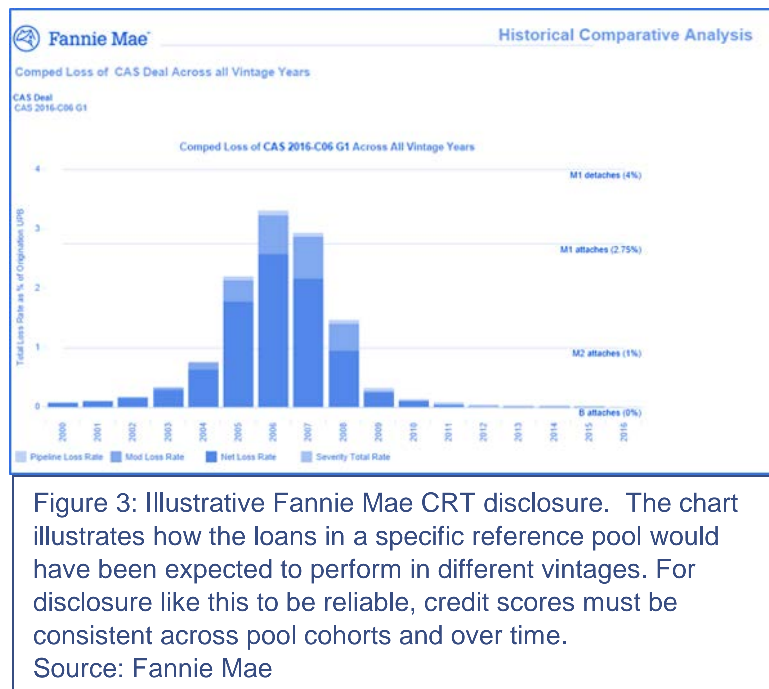

Figure 3: Illustrative Fannie Mae CRT disclosure. The chart illustrates how the loans in a specific reference pool would have been expected to perform in different vintages. For disclosure like this to be reliable, credit scores must be consistent across pool cohorts and over time.
Source: Fannie Mae

outstanding disclosure (including modeling and analytics) that permits investors to assess and manage transferred credit risk with high confidence and at low cost. (See Figure 3.) It would not be an exaggeration to say that the CRT market has been built on FICO.

In its RFI, FHFA has provided much helpful background information. It has not, however, discussed two matters that will be of paramount interest to credit investors: how does the predictive power of FICO 9 or of VantageScore compare to the predictive power of classic FICO? Are the scores provided by FICO 9 or VantageScore comparable or mappable to scores that have been disclosed in the past? It is my understanding that FICO 9 represents an improvement in predictive power over classic FICO (by reason of the weighting attached to certain kinds of debt) and that scores reported under classic and newer FICO scoring models are comparable.[2] It is also my understanding that VantageScores are not comparable to previously disclosed FICO scores. If this understanding is correct, it would be a powerful argument for choosing option 1 (with FICO 9) and against choosing Option 1 (with VantageScore) and against choosing Option 3.

Enterprise Disclosure and Analysis

My discussion so far has concerned Enterprise disclosure to investors concerning the credit quality of individual loans or individual pools. As FHFA points out, the Enterprises also use credit scores for more general disclosure purposes. Here, an important consideration is the comparability of summary measures over time. And if comparability over time is important, then options 1 (with FICO 9), 2 or 4 (with Fico 9 as the primary score) are far preferable to option 3.

Credit scores are pervasive in Enterprise disclosures. Fannie Mae's Quarterly Credit Supplement, for example, presents a 5-quarter FICO distribution of acquisitions, a FICO distribution cross-tabulated with LTV, a 10-year chart of mean and tail (<620) FICO scores, an 8-year table of the FICO distribution of HARP and Refi Plus

[2] See https://www.transunion.com/resources/transunion/doc/products/resources/product-fico-9-risk-scores-faqs.pdf : "*Q7. Is there backward compatibility to prior versions of the FICO® Score?*
Yes. To simplify the process of adopting a newer, more powerful FICO® Score, there is backward compatibility with all prior versions. FICO® Score 9 is aligned to the same odds-to-score relationship as prior versions of the FICO® Score and has the same minimum score criteria, reason codes, and score range. Providing backward compatibility with prior versions of the FICO® Score enables credit grantors to migrate to the new score with less effort"

acquisitions, a chart displaying mean and tail FICO scores for its outstanding credit portfolio by origination year, FICO distribution cross-tabulated against other risk factors for its guaranty book of business, and a chart showing the credit loss concentration of its guaranty book of business by FICO Score. If the Enterprises were to collect and disclose credit scores in a way that made summary statistics not meaningful or made time series of credit scores discontinuous, this would eviscerate a significant portion of their disclosure.

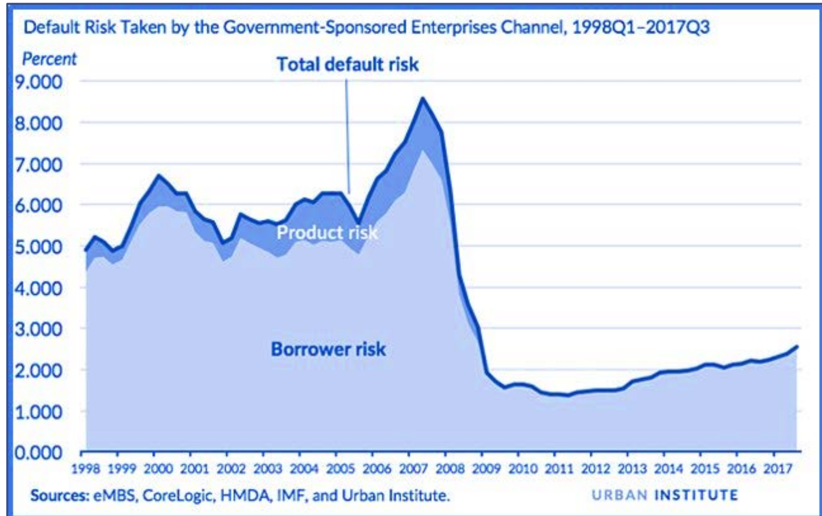

Figure 4: This chart illustrates the credit risk acquired by the enterprises over time. The construction of the index is heavily reliant on the consistency of credit scores.
Source: Urban Institute

How important is this? How are these disclosures used?

After the financial crisis and in the wake of the adjustments made by the Enterprises and other players in the mortgage finance industry, there has been a very healthy interest in the question of whether the industry is serving the market adequately, is too inclined to take risk or too inclined to avoid risk. In response to these questions, a large number of analysts have undertaken to construct indices of credit availability; these indices are built on the disclosures by the Enterprises. (See Figures 4

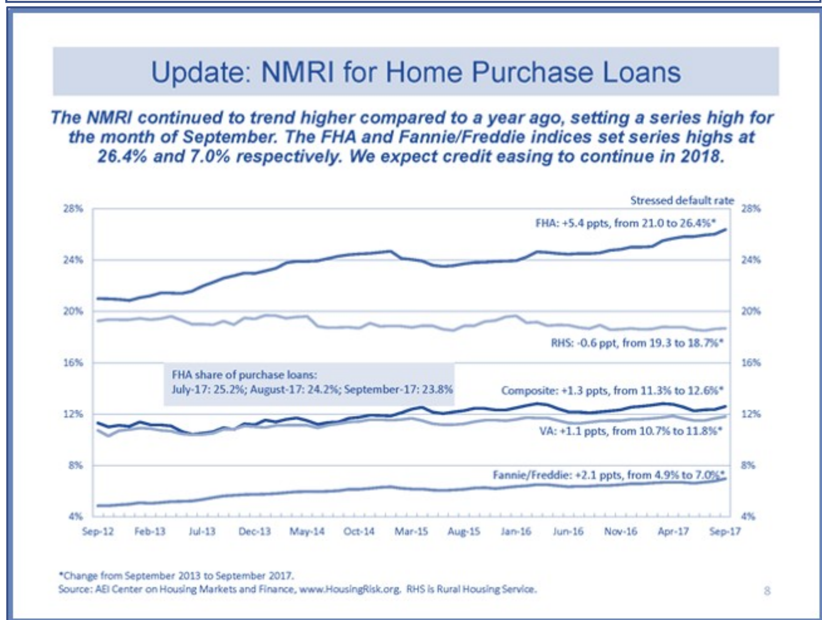

Figure 5: This chart illustrates the credit risk acquired by different sectors over time; it is intended to support a perspective different from (but consistent with) that in Figure 5. The construction of this index is heavily reliant on the application of a fixed odds-to-score ratio for credit scores.
Source: AEI

and 5.) Whether the analysts are more inclined to stress the importance of credit availability or to stress the importance of risk management, they are working from the same data. And while the analysts are naturally inclined to emphasize the strength of their own indices, the basic findings of the analyses are largely in agreement. This ability of different analysts to use Enterprise disclosure to gauge the Enterprise acquisition of risk and to initiate fruitful discussion of Enterprise performance is very valuable. If the Enterprises were to change their disclosure regime in a way that made analysis more cumbersome, it is more likely that discussions of Enterprise performance would get bogged down in details of data reconciliation and less likely that there would be broad public consensus about Enterprise performance.

A FICO Score of 640 is not the same as a VantageScore of 640. The odds-to-score relationship of a 660 FICO is not the same as the odds-to score relationship of a 660 VantageScore. The substitution of VantageScore for FICO (under options 1 or 3) would result in a discontinuity and incomparability in time series that would rob measures of credit availability of much of their value.

These analyses of credit availability—whose foundation has been the consistent and detailed Enterprise disclosure of credit scores and credit performance—have been a powerful catalyst for identifying, prioritizing and addresses major issues in the conventional mortgage market: put-back policies, insurance rescission and servicing liability. And it is worth adding: in the absence of these improvements in the willingness of lenders to extend credit, any expansion of Enterprise policies would lose much of their force.

Question A3.4: If FHFA allowed the Enterprises to use multiple credit score models by adopting options 2, 3, or 4, would this competition translate into far-superior credit scoring models available to the housing finance markets? Would competition in the mortgage origination process create an incentive to incorporate more credit data for consumers with "thin files" or no credit history? How should FHFA balance these considerations with accuracy and mortgage credit risk?

It is very prudent to ask what effect FHFA's decision on the current question will have on competition going forward. But as long as the Enterprise path is set on reducing the accumulation of risk and increasing the distribution of risk (reduction of retained portfolios, increase in CRT programs), it is worth considering whether progress in developing superior credit scoring models is as likely to stem from competition among investors as

from competition among originators. After all, investors generally have the option to invest in market risk and credit risk through private MBS markets as well as through Enterprise markets.

It is clear that there remains substantial room for progress in credit scoring models—both from the systematic collection and use of non-traditional information (rent, utilities) and from intensive refinement of current information. Credit scores are not (as they are sometimes characterized) measures of the probability of default; they are a rank ordering of a population in terms of the propensity to default. Our experience has been that the current credit scoring system does a consistently good job in ranking the population but that borrowers differ in their sensitivity to economic conditions. It would be a valuable refinement of scoring models to incorporate sensitivity to economic conditions.

There is an additional benefit to giving weight to competition among investors: there is in many cases a more natural alignment between the interest of the Enterprises and the interests of their investors than with we find with originators. FHFA may find it less problematic to "balance" the benefit of fostering competition with "accuracy and mortgage credit risk."

John Gibbons

Retired Mortgage Executive

This comment letter represents the opinion of the author and is based on research supported by FICO.