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**Comments to the Federal Housing Finance Agency on Enterprise Capital Requirements
12 CFR Parts 1206, 1240, and 1750, Document No. 2018–14255, RIN-2590-AA95**

November 16, 2018

Submitted electronically

Director Mel Watt

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RE: Comments on Enterprise Capital Requirements FHFA RIN 2590-AA95

Dear Director Watt:

Thank you for the opportunity to comment on the Federal Housing Finance Agency's proposed rule on capital requirements for Fannie Mae and Freddie Mac (GSEs). The proposed rule would implement a new framework for risk-based capital requirements and a revised minimum leverage capital requirement for the GSEs – a framework with crucial implications for communities' access to mortgage credit. We urge FHFA to carefully consider the link between capital levels, pricing, and access to credit as it works to finalize its rule.

EXECUTIVE SUMMARY

In determining the capital standards for the GSEs, it is first critical to remember the primary drivers of the 2008 financial crisis and how those conditions have changed, affecting both the likelihood and severity of a future crisis. Next, the assumptions and mechanics of setting the capital regime must be closely examined in order to both set aside sufficient capital and enable the GSEs to provide their essential support for the housing market. Since the cost of holding capital to protect against a future crisis comprises the bulk of the total g-fees charged by the GSEs, care must also be taken to ensure the structure does not impose unnecessary burdens and obstacles to credit worthy borrowers seeking the opportunities of home ownership. Finally, the capital regime must recognize the legacy and continuing presence of discrimination in the housing market and must not perpetuate that discrimination.

Reviewing the proposed FHFA capital structure in light of the above standards shows the following:

- **The proposal contains useful provisions that acknowledge the important changes in the market since the last crisis, and it provides some measures to more accurately set and distribute capital than under the current GSE capital practices. However, substantial modifications are needed to establish an accurate, sufficient and productive capital model.**
- **The model only partially recognizes the profound changes in the mortgage market and in the GSEs since the 2008 crisis.** The ability to repay/qualified mortgage standards dramatically reduce the likelihood and depth of a crisis, and the proposed model does not fully take this into account. Similarly, the elimination of excessive GSE portfolios and the large risks they imposed and that are now removed are not considered in the model. As a result, the depth of a future crisis and the capital needed to withstand it are substantially overestimated.

- **The proposed model also undercounts by a large amount the resources available to the GSEs to absorb losses in a future crisis, and this further inflates the amount of needed credit risk capital.** Omitted and undercounted resources include the proposed additional buffers for market risk, deferred tax assets and going concern buffers, as well as the complete exclusion of ongoing GSE premium revenue, which was proven to a reliable and substantial resource in the last crisis.
- **The proposed distribution of the crisis capital inaccurately and unfairly burdens working families.** This capital is a buffer for a future systemic market failure above and beyond the credit risk capital that covers losses that occur throughout the business cycle. The model would disproportionately place the cost of this systemic failure capital on lower wealth borrowers, by a factor of as much as ten to one. These hardworking families are not the cause of these market failures, and they already shoulder much of the economic burden of these systemic failures. The capital model should not further aggravate this unfair distribution of costs of an overall market failure. Lower wealth borrowers are also overcharged by the failure to credit them for their lower and less volatile prepayment speeds that make their loans less costly to guarantee, and by the proposed risk multiplier surcharges that further inflate their capital charges.
- **Looking at the level of proposed capital in the model, for the above reasons, it is too high, and too much of it is placed on working families.** Analyses set out in the sections below show that a significantly lower amount of capital would fully absorb the losses that a repeat of the 2008 would produce, even under conservative assumptions that generate a high estimate of those losses.
- **The proposed model properly acknowledges the positive impact of loan seasoning and that this should be considered in capital levels and pricing.** However, an alternative model using a multi-vintage approach would better measure the risks across the multi-year portfolio of loans that will exist in a future crisis. This approach would produce a more accurate, less costly and less pro-cyclical capital structure.
- **Finally, the model must achieve safety and soundness, but it must do so in an accurate way that furthers the statutory purpose of the GSEs to ensure a broad, affordable and inclusive housing market.** This is particularly important since in the evolving housing market most credit worthy new borrowers will be people of color. Moreover, the model must not perpetuate the discrimination that is a fundamental part of the past and current housing market. The current proposal needs the above changes to achieve these goals.

I. Introduction: The Proposed Model Needs Substantial Modifications

To understand housing needs going forward, it is important in this discussion to remember the lessons of the past. At its core, the foreclosure crisis was caused by harmful mortgage features and lending practices that pervaded the pre-crisis mortgage market. The Federal Housing Finance Agency (FHFA) must also consider the critical role of the GSEs in the housing market and how capital determinations and allocations impact their ability to carry out their duties.

The Great Recession of 2008 was the result of systematic market failure caused by predatory lending and toxic loan products. Abusive loan terms, rather than “risky” borrowers, bear the greatest responsibility for the foreclosure crisis and the Great Recession of 2008. During the subprime boom, misaligned incentives and deregulation allowed mortgage brokers, lenders, and investors to profit greatly from reckless and predatory lending, and toxic financial products. In 2006, a CRL report estimated that predatory subprime lending would lead to approximately 2.2 million foreclosures.¹ At the time, this report was denounced by the mortgage industry as overly pessimistic. As we all now know, the system was actually loaded with far more risk, and the 2006 estimates were extremely conservative.

A CRL report, *Lost Ground 2011: Disparities in Mortgage Lending and Foreclosures*, highlighted the link between risky mortgage features and foreclosure rates.² For mortgages originated between 2004 and 2008, this report showed that loans originated by a mortgage broker, containing hybrid or option adjustable rate mortgages (“ARMs”), having prepayment penalties, and featuring high-interest rates (i.e., subprime loans) had much higher foreclosure rates than loans without these features. All of these links were confirmed by the Department of Housing and Urban Development (HUD) in its final report to Congress on the causes of the foreclosure crisis, which found that, while softening housing prices were clearly a triggering factor, the foreclosure crisis itself was “fundamentally the result of rapid growth in loans with a high risk of default—due both to the terms of these loans and to loosening underwriting controls and standards.”³

Communities in underserved markets have been deeply harmed by irresponsible lending in the last decade. In the lead up to the economic and housing crisis, African Americans and Latinos were more likely than similarly situated whites to receive mortgages with toxic features, even when also eligible for safer loans.⁴ As a result, households from underserved communities suffered a massive loss of

¹ Ellen Schloemer, Wei Li, Keith Ernst and Kathleen Keest. *Losing Ground: Foreclosures in the Subprime Market and their Cost to Homeowners*, December 2006. available at <http://www.responsiblelending.org/mortgage-lending/research-analysis/foreclosure-paper-report-2-17.pdf>.

² Debbie Gruenstein Bocian, Wei Li, Carolina Reid and Roberto Quercia. *Lost Ground, 2011: Disparities in Mortgage Lending and Foreclosures* (2011), available at <http://www.responsiblelending.org/mortgage-lending/research-analysis/Lost-Ground-2011.pdf>.

³ U.S. Department of Housing and Urban Development, Office of Policy Development and Research, *Report to Congress on the Root Causes of the Foreclosure Crisis*, at 29 (2010), available at https://www.huduser.gov/Publications/PDF/Foreclosure_09.pdf.

⁴ Jacob Rugh and Douglas Massey, *Racial Segregation and the American Foreclosure Crisis* (2010), American Sociological Review, available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4193596/>.

generational wealth.⁵ We have yet to undo the damage from past loans, and many borrowers still face significant and unnecessary barriers to homeownership.

In the years after the 2008 recession, the GSEs and the Federal Housing Administration (FHA) played a role in saving the market from a complete shutdown. Private capital withdrew from the market during and immediately after the housing crash. The countercyclical nature of the GSEs and FHA insured mortgage credit sustained the market. Private label lending peaked in 2006 with approximately 40 percent of all mortgage originations.⁶ It began to decline in 2007 and virtually stopped by 2008.⁷ With record levels of defaults and foreclosures occurring alongside sharply declining prices nationwide, overall mortgage lending quickly dried up.

Credit would not have been available for most mortgagees if not for government support during the financial crisis. Backed by government guarantees, the GSEs under FHFA conservatorship beginning in September 2008 and FHA continued to ensure the availability of credit. GSE lending jumped to over 65 percent of all mortgage originations in 2008.⁸ FHA lending also played a key role as its involvement increased rapidly.⁹ Since then, FHA purchase loans have dropped steadily and returned closer to the normal levels of the early 2000s.¹⁰ Moody's estimated that FHA's contribution prevented a second collapse in the housing market, which could have sent the U.S. economy into a double-dip recession and caused the economy to shed another 3 million jobs and the unemployment rate to rise an additional 1.6 percent.¹¹

To maintain this valuable countercyclical role, it is critical that the FHFA not inadvertently shrink the GSE footprint by imposing unwieldy and potentially harmful capital requirements that have particularly harsh impact on working families that continue to be excluded from the nation's steady and uneven recovery. They are the most fragile in economic downturns.

⁵ See Allison Freeman and Janneke Ratcliffe, *Setting the Record Straight on Affordable Homeownership* (May 2012), available at <https://communitycapital.unc.edu/files/2012/05/SettingRecordStraightAffordableHO.pdf>; see also Christopher Herbert, Daniel McCue, and Rocio Sanchez-Moyano, *Is Homeownership Still an Effective Means of Building Wealth for Low-income and Minority Households? (Was it Ever?)*, Joint Center for Housing Studies, Harvard University at 48 (September 2013) (stating that “[o]verall, owning a home is consistently found to be associated with increases of roughly \$9,000-\$10,000 in net wealth for each year a home is owned. . .”) available at <http://www.jchs.harvard.edu/sites/default/files/hbtl-06.pdf>.

⁶ Laurie Goodman, *et al.*, *Housing Finance at a Glance: A Monthly Chartbook*, at 8 (May 2017), available at http://edit.urban.org/sites/default/files/publication/90451/may_chartbook.pdf.

⁷ *Id.*

⁸ *Id.*

⁹ John Griffith, *The Federal Housing Administration Saved the Housing Market*, Center for American Progress (2012), available at <https://www.americanprogress.org/issues/economy/reports/2012/10/11/40824/the-federal-housing-administration-saved-the-housing-market/>.

¹⁰ US Department of Housing and Urban Development, *Annual Report to Congress Regarding the Financial Status of the FHA Mutual Mortgage Insurance Fund Fiscal Year 2010*, at 2 (2010), available at https://portal.hud.gov/hudportal/documents/huddoc?id=report_to_congress.pdf; See also US Department of Housing and Urban Development, *Federal Housing Administration Annual Report to Congress, The Financial Status Of the FHA Mutual Mortgage Insurance Fund Fiscal Year 2016*, at 8 (2016), available at <https://www.hud.gov/sites/documents/2016FHAANNUALREPORT1.PDF>.

¹¹ John Griffith, *supra* note 9.

II. The Proposed Model Contains Huge Buffers That Result in a Substantial Over-Projection of the Amount of Capital Needed in Stress Conditions

In reviewing the amount of capital proposed by FHFA to meet stress conditions, it is critical at the outset to recognize components of the model that result in a very substantial over projection of the needed capital. These are the stress model extreme assumptions and the large additional buffers that are available to meet losses and continue the Enterprises' businesses but are not included in the determinations of the credit loss capital levels proposed for a deep crisis. When these factors are included in the modeling, it shows that the proposed levels of capital are far too high. Not only does the model take the most conservative approach on each individual factor, collectively this approach has an even more substantial and problematic impact. The models runs a serious risk of harming the overall economy, with the heaviest burden on working families.

Looking first at the model assumptions, the model is based on a repeat of the 2008 crisis and the losses that would produce. However, the model fails to consider important factors that significantly reduce the level of losses that would occur in that stress scenario, and correspondingly it overstates the amount of capital proposed to meet that stress. For example, one key factor is that research shows borrowers continuing to pay on their mortgages, even when they are underwater, so long as the loan payments are affordable.¹²

Affordable loan payments depend upon the quality of the mortgage underwriting. A key driver of the 2008 crisis was unaffordable mortgages resulting from underwriting that neither sought to determine the borrower's ability to repay nor obtained documented data, such as income and expenses, to make such a determination. As a result, these tricked-up mortgages fueled and amplified a housing boom that was far beyond previous ones. In addition, when housing prices corrected, borrowers were not only underwater on their loans, they had loans with payments that they never had the ability to pay, and instead could continue only with serial refinancing and unsustainable high levels of house price appreciation. This fundamental risk factor for the housing market has been successfully remedied with the QM/Ability-to-Repay requirement enacted in the Dodd-Frank Act. This requires both that loans be affordable, and that this determination be based on reliable documentation.

The profound implications of this underwriting change is evident from data on losses. In the crisis, the GSEs incurred massive losses from their Alt-A loans. These Alt-A loans, in fact, had greatly inflated borrower incomes and payments that were unaffordable from the outset. While these loans were less than 10% of the GSEs' 2008 business, they produced 40-percent of those losses.¹³

The prohibition of Alt-A loans through the Dodd-Frank Act means that, in any future mortgage crisis, borrowers will not enter the crisis with unaffordable loan payments. Consequently, any losses in the

¹² Diana Farrell, Kanav Bhagat, and Chen Zhao, *Falling Behind: Bank Data on the Role of Income and Savings in Mortgage Default* (October 2018), available at <https://www.jpmorganchase.com/corporate/institute/insight-income-shocks-mortgage-default.htm>.

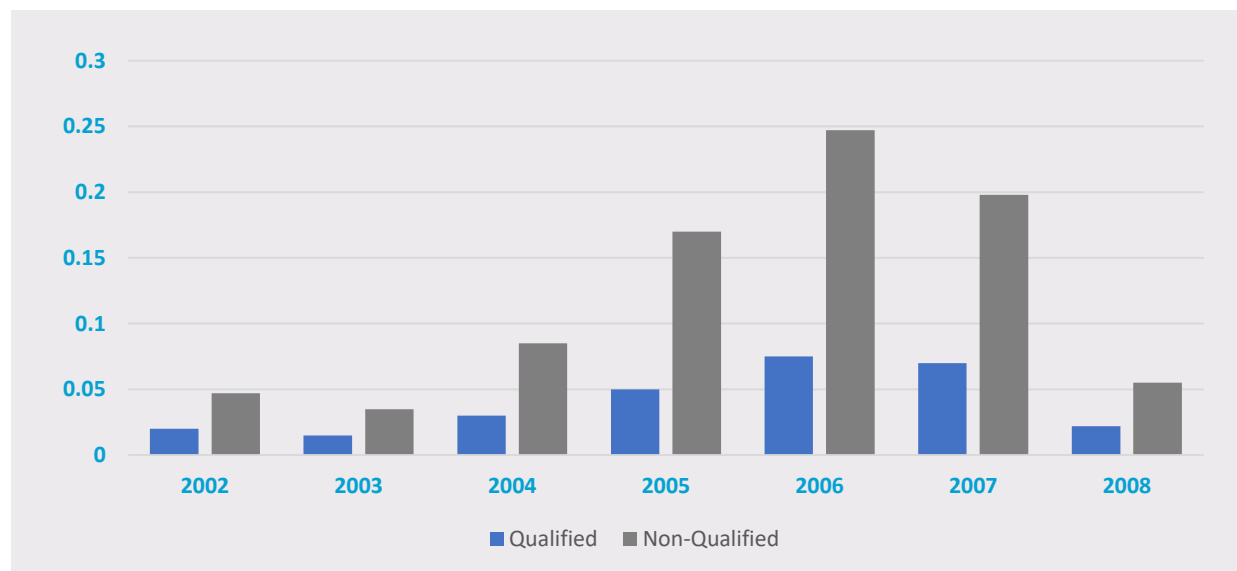
¹³ Richard K. Green and Ann B. Schnare, *The Rise and Fall of Fannie Mae and Freddie Mac: Lessons Learned and Options for Reform* (2009), available at <https://lusk.usc.edu/research/working-papers/rise-and-fall-fannie-mae-and-freddie-mac-lessons-learned-and-options-reform>; see also McArthur and Edelman, *The 2008 Housing Crisis* (2017), available at <https://www.americanprogress.org/issues/economy/reports/2017/04/13/430424/2008-housing-crisis/>.

mortgage market will not be dominated by unaffordable loans that collaterally harm well-underwritten loans. This policy change is a fundamental difference that will materially reduce credit losses in future house price downturns.

The importance of well-underwritten loans is confirmed by the performance of these loans in the 2008 crisis. Looking at the overall market performance in the recent crisis, loans that met just the QM structural requirements -- fully amortizing, documented income (but no DTI/affordability screen) -- had half the losses of other loans in the market.¹⁴ This reduction substantially understates the positive impact of the QM/ATR requirements, as the overall housing market and macro conditions were largely created and prolonged due to the impact of the non-QM loans in the market. That is, those with QM loans were harmed by the huge collateral impact of the non-QM loans, including the deep and long-TH model and alternatives are evaluated.

In an analysis by Vertical Capital Solutions using data provided by CoreLogic, loans with QM features outperformed non-QM loans substantially before, during and after the financial crisis (Figure 1).¹⁵

Figure 1. Loan Performance by Loan Type, Percent by Original Balance (90+ Days Delinquent and Defaults)



Source: Vertical Capital Solutions analysis of data provided by CoreLogic

In 2007, the worst vintage performance for all purchase 90 LTV loans, the estimated net loss rates for all 90 LTV purchase loans is around 4.55%, with QM standard loans representing a very small percentage of the total. Yet the FHFA stress level assumptions for new base risk 90 LTV loans by FICO average out to

¹⁴ Roberto G. Quercia, Lei Ding, and Carolina Reid, *Balancing Risk and Access: Underwriting Standards for Qualified Residential Mortgages* (January 18, 2012), available at <https://www.responsiblelending.org/sites/default/files/nodes/files/research-publication/Underwriting-Standards-for-Qualified-Residential-Mortgages.pdf>

¹⁵ Genworth Financial, *Risk Retention and Qualified Residential Mortgage* (March 15, 2011) presented at the U.S. Securities and Exchange Commission, available at <https://www.sec.gov/comments/df-title-ix/asset-backed-securities/assetbackedsecurities-49.pdf>.

4.54%. CRL calculates that the implied FHFA level of stress losses to be about 5.96 standard deviations higher than the long-run average mean for such loans.¹⁶ Moreover, in addition to this level of capital FHFA has proposed four additional supplemental capital buffers adding another 1.62% of capital. Thus, the total capital standard proposed pushes the bar to more than 7.5 standard deviations above the mean.

A second fundamental change in the market is the dramatic reduction of the portfolios of the GSEs. Leading up the crisis, the GSEs increasingly relied on revenue from their portfolios for their overall profitability. This was done by taking advantage of the lower borrowing cost of the GSEs due to their implicit government guarantee and using this to create a larger spread on their cost of funds and the note rates of the portfolio mortgages. This dynamic dramatically increased risk in two ways. First, the GSEs inflated the volume of their portfolios, and these loans had not only credit risk but also interest rate risk for the GSEs. Second, the GSEs' reliance on the portfolio revenue led the GSEs to underprice guarantee fees and reduce quality controls for large volume lenders to capture their loan flow for the GSEs' lucrative portfolios. Under conservatorship, the GSEs have been forced to reduce their portfolios dramatically, limiting them to only core business purposes such as TBA loans being aggregated for securitization, modified and distressed loans, and special program loans. This limitation is carried forward in all proposals for the future of the GSEs. It substantially reduces their risks, and again, like the QM/ATR requirement, it is not captured in the stress loss projections of the proposed model.

In addition to the overestimation of losses in the stress model, the proposal contains several explicit additional buffers that are not included in the capital determinations, even though they provide large reserves that would substantially cover stress losses. These include the ongoing deferred tax asset ("DTA") buffer, the going concern buffer and the ongoing premium from the large bulk of loans that will continue paying even in a very deep crisis. None of these buffers is included in the credit risk capital determination.

The GSEs hold substantial deferred tax assets, and these have significant value, even after the adjustment this year to reflect the corporate tax rate reduction. For Fannie, these are valued at 17.4B, and for Freddie, the value is \$5.0B.¹⁷ As noted in the proposal, these assets are included by statute in the capital of the GSEs. And the proposal notes that other financial regulators include deferred tax assets in meeting capital requirements, with limits. This proposal, though, effectively fully excludes the DTAs, notwithstanding the statute and the inclusion by other regulators. It does this by requiring a fully offsetting additional capital buffer in the amount of the DTAs (Proposal, p. 211). While the amount of required capital met by these assets should be limited, so they are not a disproportionate portion of the required capital, they do have significant value and should be included. Since the model assumes and takes considerable measures to ensure that the GSEs will continue in operation after the stress scenario, these tax assets will have realized value. And potential investors will certainly take them into account in providing capital or loans to the GSEs in a crisis. While the amount of these assets should be limited, it

¹⁶ The average stress loss assumptions were derived by weighting the proposed capital for base 90 LTV loans by FICO range and adding estimated long-run average net losses for such loans to get the 4.54% stress level losses. CRL then took the weighted average of the new loan FHFA capital for 90 LTV and divided it by an estimated long-run standard deviation for 90 LTV provided by Michael F. Molesky taken from previous analytical work on rating agency assumptions.

¹⁷ Enterprise Capital Requirements, 83 Fed. Reg. 33377 (July 17, 2018).

overstates the capital requirements to exclude them entirely, and excluding this buffer adds to the premium costs unnecessarily.

With regards to the market risk capital buffer of 35 basis points, it would appear that the reasons given by FHFA to require that particular size of the buffer is pointed towards the issues of managing the spread risk associated with assets in the retained portfolio and other assets with market risk exposure. It would also cover assets purchased as part of the GSE aggregation function through the cash window prior to securitizing loans into MBS and other securitizations. This would appear to be a prudential additional capital buffer were it not for the fact that the GSEs have developed extremely sophisticated systems for dealing with such risks on an extremely large scale.¹⁸

The proposal also contains an operations risk capital buffer of 3 basis points. It appears to be adequate and likely not out of line. However, CRL has no particular expertise in this area and therefore defers to other commenters who may be in a better position to offer more meaningful comments on this part of the proposal. For the purposes of CRL analysis in this comment, CRL will include the buffer in its version of an appropriate capital approach.

The other substantial additional buffer is the going concern buffer, which totals 75 bps. It is reasonable to include this buffer on a non-risk variant basis, as is proposed, to ensure that the GSEs can continue to operate and provide critical liquidity, which was so important in the recent crisis. However, the presence of this very substantial buffer should be fully taken into consideration in setting the stress assumptions and the other capital requirements.

The final and most important model feature that overestimates needed capital is the exclusion of any ongoing revenue from performing loans in a crisis. This flies in the face of the experience in any crisis--including the recent one--and even the assumptions of the model itself. Even in the depths of the last crisis, the vast majority of GSE loans continued to pay and generate very substantial revenues above expenses for the GSEs. As discussed above, the addition of QM/ATR requirements and the elimination of excessive, risky portfolio loans, further increase the percentage of loans that will perform in a very deep crisis. The availability of this revenue that can pay extensive losses dramatically reduces the amount of capital needed to absorb losses. Inclusion of this revenue would reduce the required credit risk capital by around 30% and possibly more, with the amount depending on future pricing decisions which should take into account required life of loan capital rates. However, the model excludes any revenue from new GSE business, even though it includes buffers and capital to ensure the GSEs will continue to operate. It also excludes any revenue from the GSEs' *existing* business. This is even less justified as data show that performing higher risk loans that carry higher premiums are even less likely to prepay in a crisis period. Moreover, higher priced low FICO borrowers had higher persistency patterns from 2005 through 2017 meaning that such loans would have a higher relative flow of premium under stress.

¹⁸ One of the problems encountered by the GSEs during the last recession was that their capital assets were all mortgage-related assets. Private label mortgage-backed assets held by the GSEs suffered extremely heavy losses in the last recession. Historically, State Insurance regulations of private mortgage insurance companies all have provisions that prohibit required capital from being invested in mortgage-related assets. CRL believes it would be prudent to require that GSE capital assets be comprised of non-mortgage related assets.

This exclusion of ongoing revenue may be based on the experience of the GSEs with mortgage insurance companies in the crisis when revenue from their ongoing business was at times unavailable to pay the GSEs' claims. For example, some MI claim payment was restricted by state insurance regulators. However, that experience is inapplicable to the GSEs' capital model. First, FHFA has imposed new capital standards for the mortgage insurance companies and imposed other conditions to greatly reduce that counterparty risk. More important, those factors do not, in any event, apply at all to the GSEs own ongoing revenue. This is the GSEs own cash flow, and it was reliable and substantial in the last crisis, and it will be in any future crisis. It should be included in any GSE capital model, whether in the structure of the proposed model or in the alternative model that we propose below in section VI.

FHFA states that Basel Accord capital regulations do not consider cash flows in setting capital for banks. However, the operation and risk of a bank is very different than that of a mortgage guaranty company like the GSEs. Premium flows are an integral part of GSE operations as a guarantor. As described in more detail in section III below, to view how important premium flows are, CRL estimated FHFA implied Stress Level net loan losses by adding to the new loan capital requirements estimated long-run average net loan loss rates by individual FICO/OLTV segment. CRL then applied such rates against the volumes of loan acquisitions by each segment to calculate what the volume of such new loan capital requirements would have been for each vintage. Then using the actual changes in loan balances over time for each individual segment, CRL calculated what the premium flow would have been under the two different capital and pricing approaches. The premium flows were limited to flows only through 2017 and is no indication regarding the time span of stress level net loan losses. Nevertheless, in both approaches, the cumulative premium flow was more than 60% of the observed record stress loss levels for all segments. Despite being weighed down by higher default rates, high LTV lower FICO loans appear to have greater persistency rates under stress conditions, allowing such loans to maintain such high levels of premium flow relative to stress loss levels.

Given the substantial amounts of capital required on High LTV Low FICO loans, stress level premium flow is a substantially large resource as compared to the going-concern buffer. CRL would propose to maintain the going-concern buffer, but credit premium consistent with stress-level persistency rates to offset the somewhat higher stress losses as proposed by FHFA. The effect of this would be to lower high LTV capital and pricing while having a much smaller impact on lower risk loans. The narrower range of credit risk pricing would provide more equitable pricing without impairing safety and soundness.

In summary, the FHFA model takes the most conservative approach on all of these individual factors discussed above. Individually, consideration of each of these factors results in a substantial reduction in the capital required to meet the deep stress test. Collectively, they show that the proposal has greatly excessive capital demands. This will harm the housing market and the overall economy, and it will place the heaviest unnecessary burden on working families of modest means.

III. The Proposed Model Assigns Far Too Much Capital to Lower Wealth Borrower Loans

Several components of the proposed model over-assess capital on lower wealth borrowers, raising the costs imposed on these borrowers and blocking their homeownership opportunities. This results from several aspects of the model, which are described below.

A. Lower Wealth Borrowers Are Over-Assessed Capital under the Model

In reviewing the performance of particular segments of loans with additional combinations of risk factors, it appears to CRL that the use of multiplicative additional risk factors results in overstating the potential risk exposure of several borrower loan segments. FHFA's proposed grid of such multipliers against the capital for base loan credit risks assumes that each factor's effect on additional credit risk is independent of the effect of other individual factors. Some of these risk multipliers surcharges are inappropriate, such as surcharges for small loans, which raise the costs in rural areas and depressed markets, and large surcharges for single borrower loans, which penalizes single parent households trying to achieve home ownership for the benefit of their families. When CRL compares base loan performance under stress to loans with combinations of additional risk factors, the results do not conform to a multiplicative result. Thus, particular combinations of risk factors overstate stress losses and raise credit risk capital and costs beyond what is necessary.

CRL's analysis will focus on the base credit risk high LTV loan performance which would consist of owner-occupied purchase loans. FHFA utilizes these loan characteristics to adjust capital requirements for additional risk characteristics in the form of multipliers.

CRL's approach would ideally examine single vintage net loss rates to loss rates composed of the same single vintage losses plus the concurrent losses of previous vintages. Unfortunately, the available datasets only go back to 1999. With the worst-case vintage loss experience viewed to be the 2006 vintage or the 2007 vintage, depending on the FICO range segment, there would appear at first glance to be insufficient observations to make an adequate comparison. However, analysis of the Fannie Mae dataset reveals that due to the unusually high home price appreciation observed from 2000 through 2006, prepayments of loans originated prior to 2004 were unusually high. By the start of 2007, there were very few loans outstanding that were originated prior to 2000. Therefore, the influence of the net losses from loans originated prior to 2000 would have only a small influence on the concurrent multi-vintage results after that date. For high LTV loans, CRL made estimates of origination volumes for previous vintages back to 1990, based on reported private mortgage industry reports for years 1990 to 1998. CRL then assumed persistency and net-loss rates consistent with those vintages. Persistency rates for pre-2000 vintages were assumed to have persistency patterns that came close to those of the 2000 vintage by FICO segment. Ultimate net loss rates were also viewed to be moderate for same vintages.

For base risk loans, both the net loss rates on single vintages and multi concurrent vintages in the recent downturn were the highest ever since the Great Depression. Figure 2 below displays the CRL results for high LTV loans by FICO ranges for 30-year fixed rate owner-occupied purchase loans for various single vintage targets and commensurate concurrent multi-vintages. Through 2017, the worst-case net loss rates were from 2006 for both the single vintage calculation and the multi-vintage calculations. However, estimating additional net losses through 2020 based on aging patterns of previous vintages, the 2007 vintage appears to edge out 2006 as the worst vintage for certain FICO range categories for different high LTV groupings of base risk loans.

Figure 2. CRL Capital Calculations Based on Fannie Loan Performance for 30-Year Fixed Rate Purchase Loans 2000-2017

FICO Range	Worst Case Single-Vintage loss rate	Worst Case Multiple-Vintage loss rate	Expected Long-run Average NLR	Implied Single-Vintage Capital	Implied Multi-Vintage Capital	Percent Difference
>90 <= 97 LTV Base Risk						
<=620	6.52%	4.11%	1.76%	4.76%	2.34%	-50.80%
620-660	6.49%	4.11%	1.50%	4.99%	2.61%	-47.60%
660-700	5.06%	3.17%	1.15%	3.91%	2.02%	-48.30%
700-740	4.10%	2.08%	0.77%	3.33%	1.31%	-60.70%
740-780	2.67%	1.35%	0.49%	2.19%	0.86%	-60.50%
780+	2.05%	1.18%	0.39%	1.66%	0.79%	-52.30%
>85<=90 LTV Base Risk						
<=620	5.98%	3.06%	1.02%	4.96%	2.04%	-58.90%
620-660	6.39%	3.40%	0.91%	5.48%	2.49%	-54.60%
660-700	4.45%	2.55%	0.60%	3.85%	1.95%	-49.20%
700-740	3.11%	1.66%	0.38%	2.72%	1.27%	-53.20%
740-780	1.67%	1.20%	0.22%	1.45%	0.98%	-32.40%
780+	1.48%	0.88%	0.16%	1.32%	0.73%	-45.20%

Source: Fannie Mae Loan Performance data

From various sources regarding loan performance over time, CRL has also estimated long-run average or expected losses by the credit-risk segments detailed in Figure 2. Using the FHFA’s approach of measuring capital, CRL subtracted these expected losses by segment from both the single and multi-vintage worst-case losses to calculate the implied capital requirements. CRL then compared the results of both to FHFA’s published grid for base loan capital by FICO and LTV segments. The results clearly show that the capital estimated from a multi-vintage approach is substantially lower than that of capital from a single vintage, by an average of 50% for 90 LTV loans and more than 55% for 90-97 LTV loans. CRL assumes that the same relationship between multi and single worst case observed net loss ratios

would also hold under the FHFA assumed level of stress losses. Accordingly, these factors were applied to the FHFA assumptions to estimate multi-vintage capital levels, assuming stress net loss levels commensurate with FHFA’s proposal (Figure 3).

Figure 3. Estimates of Multi-Vintage Credit Risk Capital versus Single-Vintage Capital Assuming the Same Degree of Losses as FHFA Stress Assumptions

FICO Ranges	90-97 LTV Segment		90 LTV Segment	
	Single-Vintage FHFA Capital	Multi-Vintage FHFA Capital	Single-Vintage FHFA Capital	Multi-Vintage FHFA Capital
<620	11.77%	4.10%	9.58%	3.94%
620-660	9.17%	4.80%	7.16%	3.25%
660-700	7.48%	3.87%	5.59%	2.84%
700-740	5.89%	2.31%	4.26%	1.99%
740-780	4.17%	1.65%	2.94%	1.99%
780+	2.86%	1.37%	2.00%	1.10%

Source: Fannie Mae Loan Performance data. The above capital estimates do not include premium off-sets.

For the sake of safety and soundness, we consider whether a life of loan fixed capital requirement by risk segment as determined by a multi-vintage approach together with the various proposed additional supplemental capital buffers are sufficient to maintain GSE financial soundness at each stage of the recent market downturn, assuming that the only exposure is the types of defined base risk high LTV loans. The FHFA Capital proposal would set new vintage credit-risk capital based on single vintage loss volatility under new conservative stress simulations by credit risk segment for base level credit risk loans meeting new GSE underwriting standards very similar to QM standards discussed under Dodd-Frank. For credit risk segments with higher risk borrower and loan characteristics, such capital levels would be adjusted by credit risk multipliers. In addition to credit-risk capital, FHFA would add four additional supplemental capital buffers totaling an average of another 1.62% of additional capital. These new capital requirements are assumed to require a 9 percent return. Consequently, the implied new premiums would run four to eight times higher (depending on the risk segment) than the 20-basis point average prior to 2008, even though the GSEs are no longer allowed to accept the kinds of loans responsible for most of the recent record GSE net loan losses incurred between 2008 and 2015. Once these high new loan capital requirements are set, the FHFA proposal would then provide for lowering credit-risk capital using a mark-to-market adjustment of home values to calculate “current LTVs” and also use current FICO scores to reassign capital levels. This approach creates an over-priced guarantee business that especially harms lower-wealth borrowers.

Because FHFA has not provided information on the methodology used to formulate its ultimate stress losses by segment, CRL’s comments can only be that they are unusually high relative to observed worst-case performance. All of our further analysis below maintains the FHFA stress loss levels but will analyze other approaches to setting capital regarding such a conservative standard.

In order to view the effects of various combinations of approaches and supplemental capital buffers in the following tests, the analysis needs to consider the impact of these combinations of capital on the calculation of risk-based pricing per segment, given that after-tax return on capital is a major component of the cost of doing business. While the tests will all have the same net losses by calendar year as given by the actual observations and estimates of remaining tail losses, the differences in pricing will have a large impact on the premium flows that will cover expenses and losses and taxes and returns on such capital. Figure 4 shows high LTV segments by FICO range for FHFA single-vintage new loan capital assumptions versus CRL's multi-vintage approach to capital.

Figure 4. CRL Pricing in BPS for High LTV Primary Purchase 30-Year Fixed Rate Loans

FICO Ranges	90-97 LTV Segment		85-90 LTV Segment	
	All Buffers Plus FHFA	All Buffers Plus Adjusted	All Buffers Plus FHFA	All Buffers Plus Adjusted
	Single-Vintage Capital	Multi-Vintage FHFA Capital	Single-Vintage Capital	Multi-Vintage FHFA Capital
<620	191	103	145	90
620-660	156	110	118	75
660-700	130	92	97	66
700-740	106	68	81	54
740-780	81	55	63	51
780+	65	50	52	41

Source: Calculations based on FHFA proposal and Fannie Mae Loan Performance data.

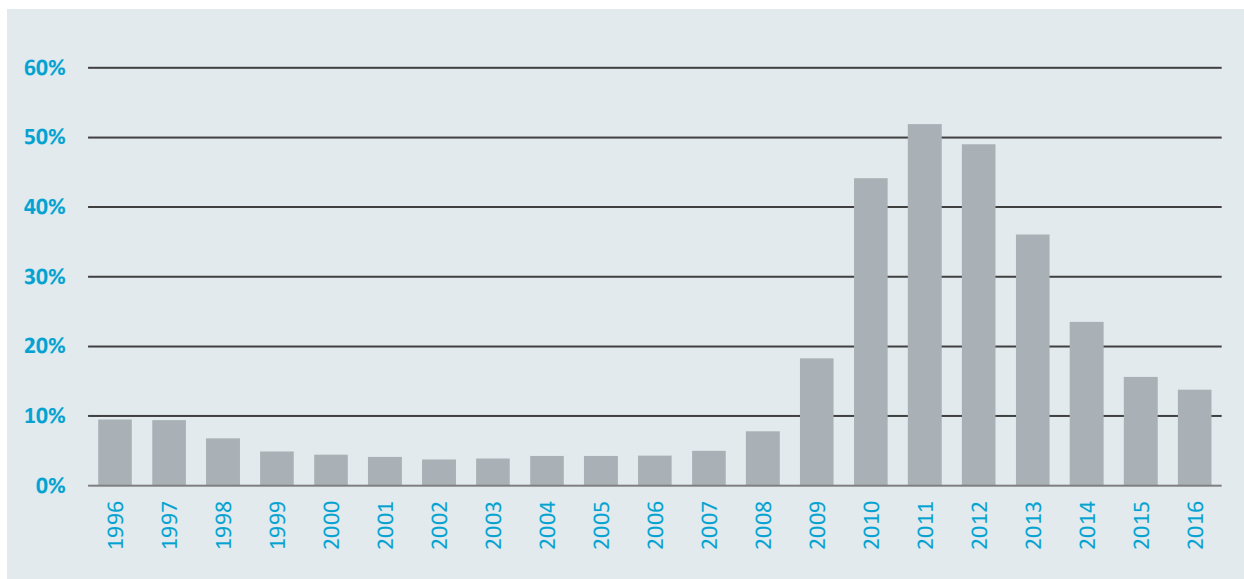
Finally, the CRL tests also estimate the impacts of not only actual capital but also the Mark-to-Market (MTM) adjusted capital levels over the course of the Fannie Mae observations. To view the full impact of MTM adjustments, the CRL test covers not only the loans originated prior to the targeted worst vintage (2006) but also includes the acquisition of loans following. With each vintage following the worst vintage displaying significantly better loss performance and with such losses not developing until three to four years following origination, these tests consider the effects of new business as offsets to business prior, an extremely important element of an on-going concern regarding fixed price insurance of a long-tailed risk. More importantly, FHFA has expressed its concern that the GSEs be able to continue to serve its secondary market functions during a stress event. To observe whether there is sufficient capital to continue to accumulate new business requires that we also observe the portfolio effects of years following the worst vintage.

The following tests examine the role of risk-based premium under the recent stress, the adequacy of capital relative to required capital, and the ability to add new business under the various capital and pricing approaches, or if not, what amounts of additional capital would have been required.

B. Test #1: Using the Full FHFA Approach

This first test gives us a baseline for results on base risk loans using the full FHFA capital approach. For these test purposes, CRL will focus only on high LTV loans because these are generally the riskier loans in the portfolio as well as being the most important for first-time homebuyers. The test utilizes the actual persistency rates and net loss rates for Fannie Mae's QM base risk 90 LTV loans. It examines all vintage loan performance with each segment by vintage by FICO assigned the full FHFA capital proposal including Mark-to-Market adjustments. Figure 4 displayed above shows the CRL pricing estimates assuming the full FHFA capital proposal for two high LTV ranges: 85-90 LTV high LTV and 90-97 LTV base unseasoned loans by FICO range. Figure 5 for 90 LTV base loans shows the startling effects of the higher required capital and premium. The chart shows that if the FHFA capital proposal and its implied pricing requirements were implemented in the early 1990s, the loss and expense ratios (net loan losses plus expenses divided by premium earned) would have been extremely small leading up to the great recession, rising to a single year high of 51.9% in 2011. Despite the worst housing recession since the Great Depression, capital and implied pricing was more than sufficient to preserve capital and indeed grow it beyond what the FHFA proposal would have required.

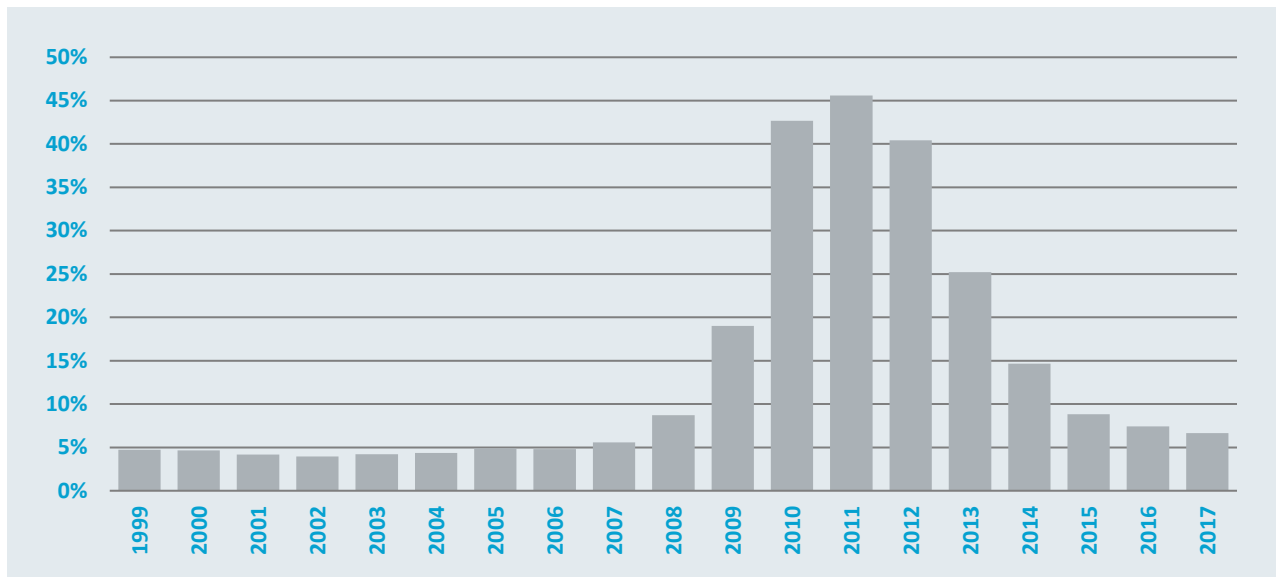
Figure 5. Test #1 Loss + Expense Ratio Results for 85-90 LTV Base Risk Loans



Source: Fannie Mae Loan Performance data and assumed pricing for FHFA capital requirements approach

The pricing required by new loan single vintage capital implied by the full FHFA approach is so high that there was zero risk to capital on 90 LTV base risk loans, even under the worst market conditions since the Great Depression. Even though the mark-to-market (MTM) adjustments suggested that additional capital was required, none was needed given the pricing. The same results held true for the 90-97 LTV base risk loans shown in Figure 6.

Figure 6. Test #1 Loss and Expense Ratios for 90-97 LTV base Risk Loans under FHFA Capital and Implied Pricing



Source: Fannie Mae Loan Performance data and assumed pricing for FHFA capital requirements approach

Test #1 conclusions are that the combination of the credit risk capital and additional buffers for new high LTV loans results in pricing that provides more than sufficient revenue to cover all losses and expenses associated with the volumes of high LTV base loan net losses observed from 1999 through 2017 without the support of stress capital. It strongly suggests that lower capital levels may be more appropriate for both pricing and safety and soundness, as well as enabling the GSEs to add new business during a crisis event.

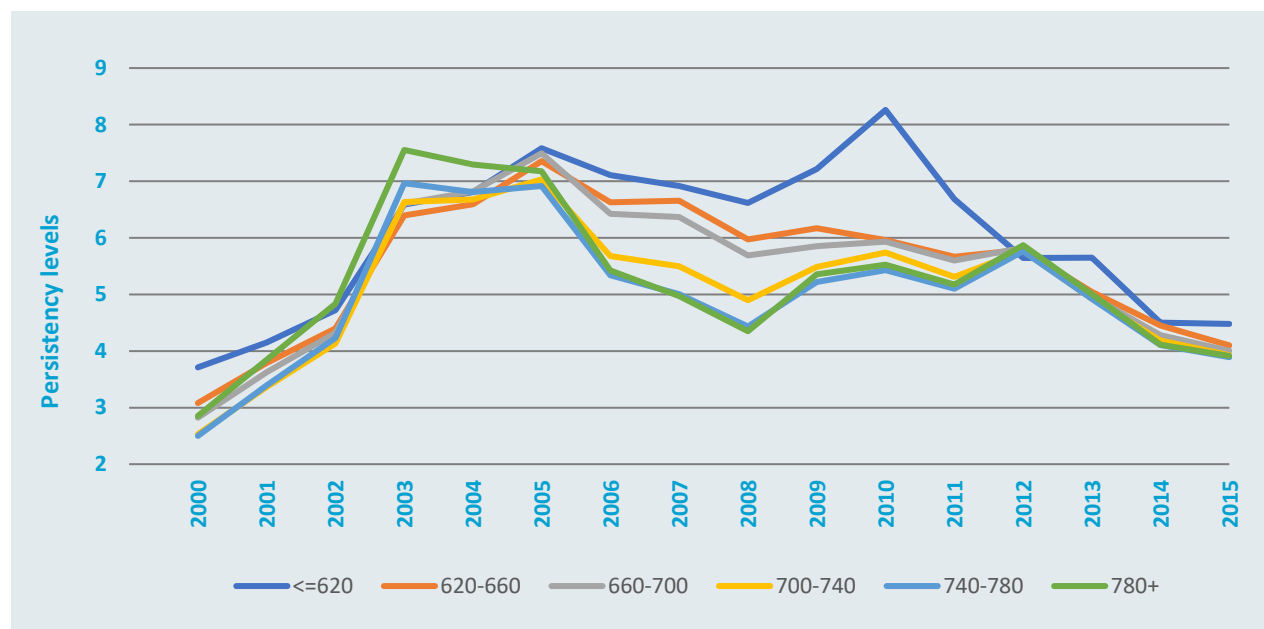
C. Lower Wealth Borrowers Are Not Credited for the Benefit of Their Lower and Less Volatile Prepayment Speeds

In addition to assessing lower wealth borrowers too much capital, these borrowers also are overcharged due to the model’s failure to consider the substantial positive benefit of these borrowers’ more desirable prepayment behavior. Data show that lower wealth borrowers’ loans have both lower and less volatile prepayment speeds, and particularly so in a crisis. This generates considerable benefits for the GSEs. First, this greater and more reliable persistency provides important revenue support in a crisis. Second, it reduces the negative convexity of GSE securities, thus increasing their value and lowering the cost of funding for all borrowers. The model, however, fails to credit these loans for these substantial values, and as a result it further over assesses capital expense on them.

An important observation taken from the Fannie Mae data set is that there is a distinct difference in prepayment speeds between FICO ranges and original LTV, especially during the worst vintage time frame. Higher FICO loans consistently experienced higher prepayment rates compared to lower FICO ranges. Progressively higher original LTVs had substantially lower prepayment speeds than progressively lower LTVs. As a consequence, the risk-based premium flows of the relatively riskier loans would be higher during the stress event, suggesting that risk-based pricing would have a stronger benefit in

covering more of the stress losses. Such differences in prepayment speeds should also be considered in pricing the various credit-risk segments in so far as the costs of expected ultimate losses need to be averaged over the expected life of the loans for each segment.

Figure 7. Ever-to-Date Persistency Levels for 90-97 LTV by vintage and FICO Ranges



Source: Fannie Mae Loan Performance data

Figure 7 shows the ever-to-date persistency levels for 90-97 LTV base risk loans by FICO category. Because the data are ever-to-date calculations, persistency levels should be falling as a matter of course with each following vintage year. The lowest persistency levels were the vintages prior to 2003. For the vintages prior to 2003 while home prices plowed ever higher from 1991 through 2006, high LTV borrowers often took advantage of the jumps in net equity to refinance and drop private mortgage insurance premiums. During this period there was little difference in persistency patterns for the various FICO ranges for this LTV segment. However, beginning with the 2004 vintage, prepayments dropped significantly lower due to the decline in home values beginning in June 2007. But that was not the case across all FICO ranges. Indeed, the differences in persistency levels grew quite large through the core of the recession with low FICOs sticking around longer than high FICO groups. Therefore, pricing for low versus high FICO loans needs to consider such differences in measuring the average annual loss rates. It also suggests that during stress events, low FICO loans generate a much larger relative amount of premium than pricing levels alone might suggest.

This same lower volatility of lower wealth loans also occurs in times of changing interest rates. Again, lower wealth borrowers are much less likely to refinance, and they do so more slowly. The risk of borrowers' refinancing in times of lower interest rates is a major risk for investors in GSE MBS, and investors demand greater yield for their assuming this risk. If borrowers significantly change their refinancing propensity so as to refinance when market rates fall and extend the duration of their loans when rates rise this has a material adverse impact on investors as they get stuck with below market rate

securities when rates rise, and the securities prepay early when rates fall, depriving investors of advantageous yields. This so-called “negative convexity” risk is a major factor in MBS pricing. The lower volatility of lower wealth loans reduces this risk for investors and all GSE securitized loans benefit substantially from this stability.

These two material benefits of the stability of lower wealth loans reduce the cost of the financing and create a more resilient structure in a crisis stress. The model should be adjusted to account for and credit these borrowers with these substantial benefits.

D. Lower Wealth Borrowers Are Assigned Too Much of the Capital Resulting from a Systemic Market Failure

As described in Section I above, it is well documented that the primary drivers of the crisis were risky loan structures with teaser rates and dramatically increasing payments at the end of the teaser period along with a deep deterioration in underwriting, led by no documentation loans. Risky loans and loan terms combined with excessive leverage and inadequate capital to push our financial system and economy to the brink of collapse. The capital proposed in the FHFA model is to cover for the risk of a repeat of this systemic market failure. Notably, this capital is to cover losses far beyond those expected in the course of normal business cycles, including deep recessions. Those “expected losses” are covered by a separate portion of the G-fee calculated for these amounts. Importantly, since the model requires very larger amounts of capital to guard against a repeat of the crisis, the cost of paying investors for this capital makes up the bulk of the total G-fee, over two thirds of the current fee. While the portion of the G-fee to cover expected losses deals with more idiosyncratic circumstances of individual borrowers -- the traditional risks of disability, divorce, death and the like -- the capital for a repeat of the 2008 crisis is to guard against another catastrophic failure of the financial system.

The risk of such a national calamity should not be placed overwhelmingly on hardworking families of modest means. This not only puts an undue burden on them, it makes it much harder for them to achieve the financial stability that comes with long term homeownership, a stability that also benefits the overall society. Consequently, the capital in the base model should be distributed more evenly. For example, there should be a base amount of capital assigned to all loans, with increased charges of up to 50% of the base amount. This would produce a capital structure that was more equitable and more resilient in a crisis, as there would be less volatility in GSE revenue in a crisis.

Relatedly, the proposal contains two options for backup capital standards to the credit risk-based capital model. FHFA proposes two alternative minimum credit risk capital floors: a) 2.5% of all assets in accordance with GAAP plus all off-balance sheet guarantees, or b) 1.5% of trust assets and 4% of non-trust assets. The first option, a backup standard of 2.5% of all assets would be both more equitable and resilient.

E. Pricing under the Proposed Model Must Consider the Lower Risk of Seasoned Loans

A key feature of the proposed capital model, and one supported by decades of data is that seasoned loans with lowered current loan to value ratios compared to their ratios at origination have lower risk than they would have with the higher initial loan to value. The proposed model takes into account through the use of national valuation models to update loan to value ratios as the loans season, adjusting the capital levels accordingly. This reduces the capital requirements for the loans. The impact

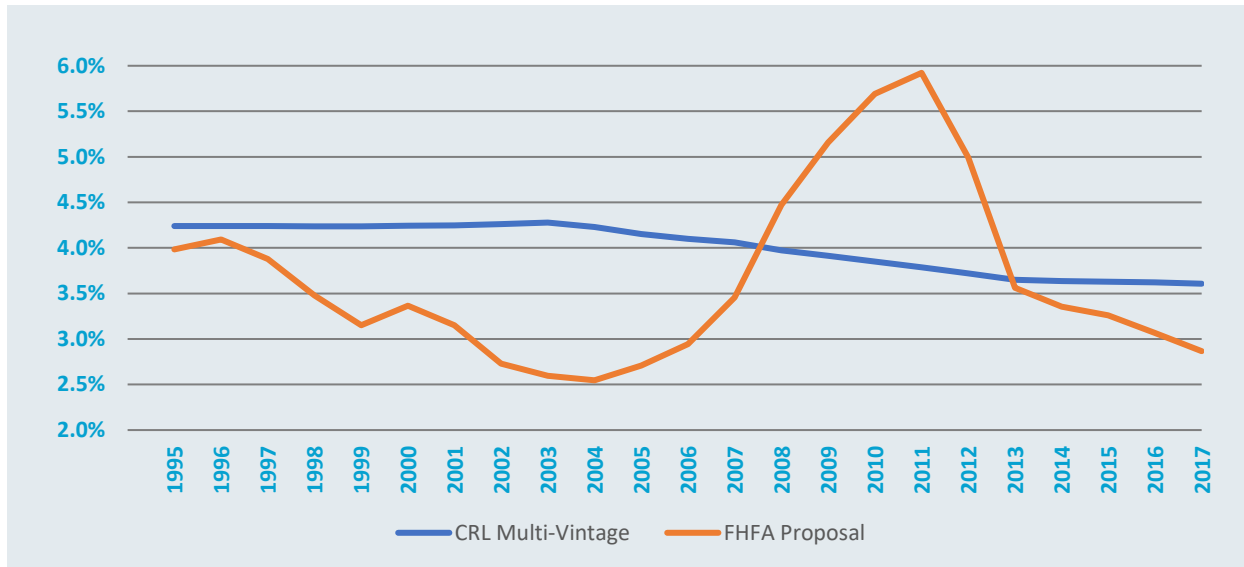
of these adjustments is the greatest for lower wealth borrowers, as they often start with the highest loan to value ratios, which are assessed the highest capital requirements. As these loan to value ratios reduce in seasoning, these loans realize significant capital reductions. Importantly, these adjustments must be included in the pricing for these loans. That is, the pricing should be based on the expected capital requirements over the life of the loan, not an assumption that the loan will require the full initial amount of capital for its duration. Notably, current GSE pricing does not take this into account. This adjustment can be achieved through either the proposed model or the alternative multi-vintage approach described below that uses the performance of multi-vintage portfolios to take into account seasoning and the benefits of diversification of a portfolio. In any event, the effect of seasoning must be considered to properly price G-fees.

IV. A Multi-Vintage Approach Would Better Protect the Safety of the Enterprises and Serve the Market

Compared to the FHFA proposal, the use of a multi-vintage approach provides for both lower capital and pricing. Multi-vintage capital calculations combine the net losses on all vintages prior to a specific target start date that is concurrent with those of the target vintage over a given number of years. Because the losses on the worst-case vintage do not manifest for at least two years following, the CRL multi-vintage approach calculation includes the two vintages following the worst case observed. This sum of net losses is then divided by the balances outstanding of vintages prior to the target vintage as of the start of the target vintage. This approach is, therefore, looking at all of the forces affecting the over-all portfolio performance on actual and required capital. By running various target start years, CRL was able to determine which target start year developed the largest portfolio net loss rates for each of the FICO segments within each LTV criteria. These results were shown in Figures 2 and 3 which also compare the results to single worst-case net loss rates for individual vintage years. While FHFA speaks in terms of subtracting expected losses associated with forecasted factors, CRL subtracts estimates of long-run average net loss rates from both the single and multi-vintage worst cases to determine capital levels associated with the recent record housing downturn. The CRL approach is focused on a long-run view and a portfolio result not a single vintage.

Also unlike under the FHFA proposal, the rates of capital by credit risk segment do not change from year to year. In Figure 8, we compare the required capital percentages for both the multi-vintage and FHFA single-vintage approaches (with MTM adjustments to the FHFA). As presented, the multi-vintage approach provides for a more stable capital requirement over time without sacrificing the safety and soundness of the GSE, and with less additional pressure under actual stress to add additional new business. Note the increased level of required capital for the entire portfolio compared to the multi-vintage approach. Under the declining home period, recent high LTV loans would require substantially greater levels of capital than the portfolio levels shown. The only reason for the decline in the CRL multi-vintage capital levels was due to the change in the mix by FICO ranges.

Figure 8. Required Capital for 30-Year Fixed Owner 90 LTV Purchase Loans under Multi-Vintage versus Single Vintage + MTM



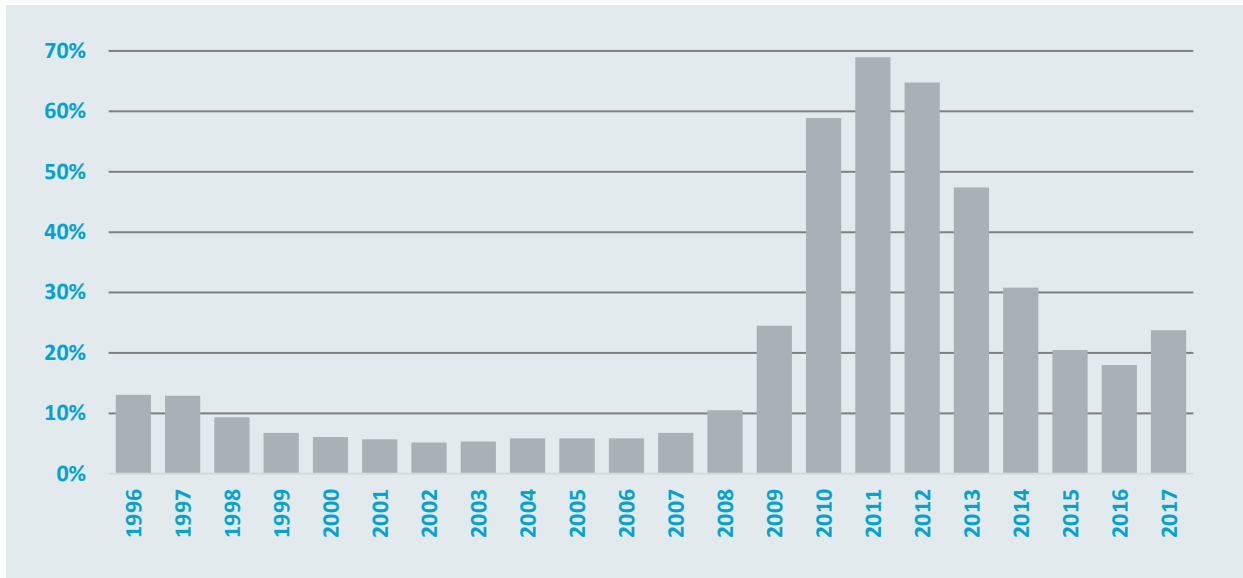
Source: Fannie Mae loan performance data

A. Test #2: Multi-Vintage Capital and Implied Pricing over the Recent Great Recession

In this test, CRL substitutes its multi-vintage capital adjustment on the FHFA single-vintage capital approach to see the effects of both the lower capital and lower implied prices would have had on the Fannie Mae portfolio of base risk high LTV loans over the recent Great Recession.

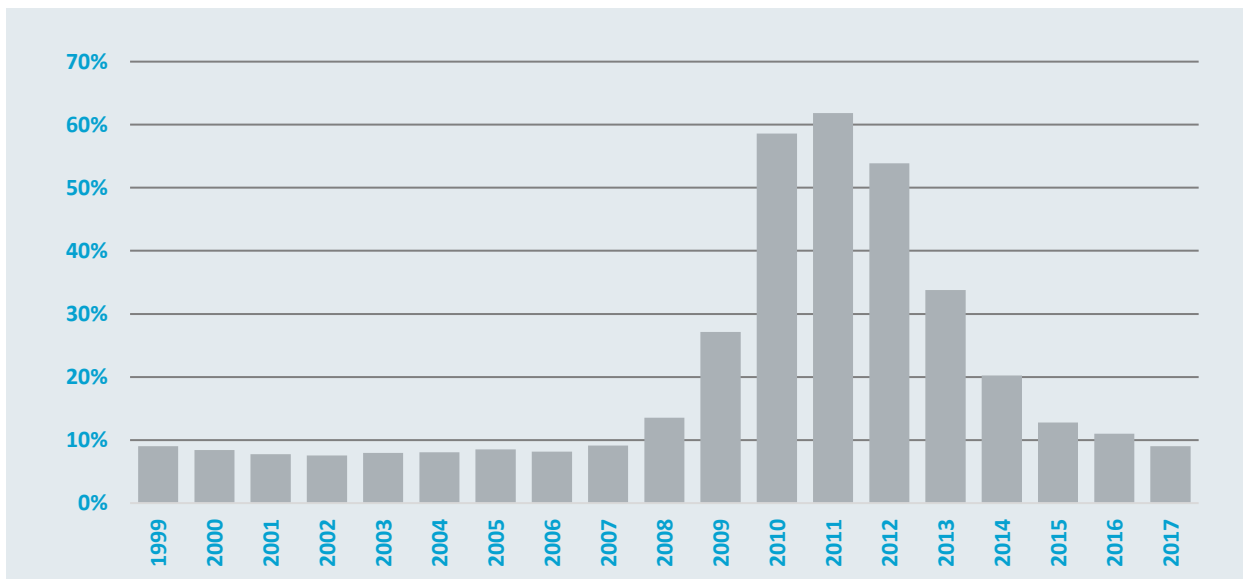
Test #2 results reflect the benefits of using a life of loan approach for setting credit risk capital. Prices are substantially lower than in the FHFA proposed capital approach tested above. Yet the diversification of risk over time yields sufficient capital and premium to cover what has been the worst mortgage downturn. The net loss and expense ratio rise no higher than 69% for 85-90 LTV base risk loans (Figure 9), while the similar ratio for 90-97 LTV base risk loans peaked at 61.8% (Figure 10). Finally, because the life of loan capital requirements are substantially lower than the single-vintage capital proposed, Fannie Mae easily has sufficient capital to continue to add new business following the 2007 worst case vintage.

Figure 9. Test #2 - Net Losses & Expense Ratio Results For 85-90 LTV loans Using Multi-Vintage Capital and Pricing



Source: Fannie Mae loan performance data and CRL price assumptions

Figure 10. Test #2 Net Loss and Expense Ratios for 90-97 LTV Loans under Multi-Vintage Capital and Pricing



Source: Fannie Mae loan performance data and CRL price assumptions

B. Test #3: What Would Happen If Losses Approximated Implied FHFA Stress Levels?

The worst-case losses assumed by FHFA for 85-90 LTV base risk loans averaged 40% higher, and 50% higher for 90-97 loans than those that were actually suffered thus far on mid-2000s worst vintages through 2017 with estimates of additional losses to form ultimate net loss rates. According to FHFA, the primary factor in net loss performance is the change in home values over time. Therefore, in order to generate that degree of a market correction, there would have to be a higher degree of home price appreciation prior to such a downturn. But given that developing such a pre-stress change commensurate with such a downturn would be extremely intricate, Test #3 uses factors relating ultimate loss rates of observed worst-case vintage net losses to FHFA implied net loss rate stress levels. In Figure 11, we present the factors by FICO and LTV segment applied to all vintages on annual losses starting with the 2007 calendar year.

Figure 11. Multiplier Factors Needed to Raise Loss levels on Observed Worst Case Vintages to FHFA Assumed Stress Loss Levels

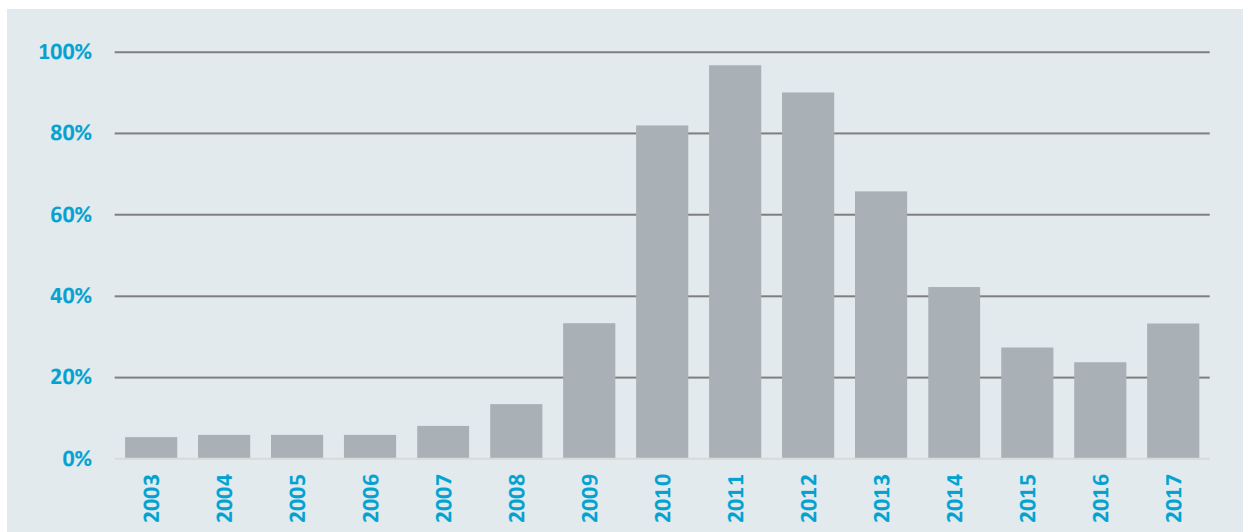
FICO Ranges	85-90 LTV	90-97 LTV
<620	1.646	1.922
620-660	1.172	1.523
660-700	1.291	1.478
700-740	1.389	1.503
740-780	1.757	1.611
780+	1.352	1.472

Source: Fannie Mae performance data and CRL loss estimates

FHFA has already characterized its stress assumptions as having a slower recovery pace than the recent recession which would extend the greater volume of losses over a longer time period than has been the recent recession's experience. In comparing the recent worst vintage results against the FHFA implied stress net losses the ratios were higher for the high FICO loans than the low FICO loans as one would expect. In this test, the ratios were applied to all net losses observed starting from 2007 through 2017. CRL believes that because the losses are being impacted over a shorter recovery range compared to that envisioned by FHFA, that a fair offset to this would be to leave the persistency rates as they are and assume that the increase in defaults came at the expense of prepaids. Given that these are high LTV loans, that would likely be the case. Test #3 was run using the lower capital and pricing assumptions based on the multi-vintage approach.

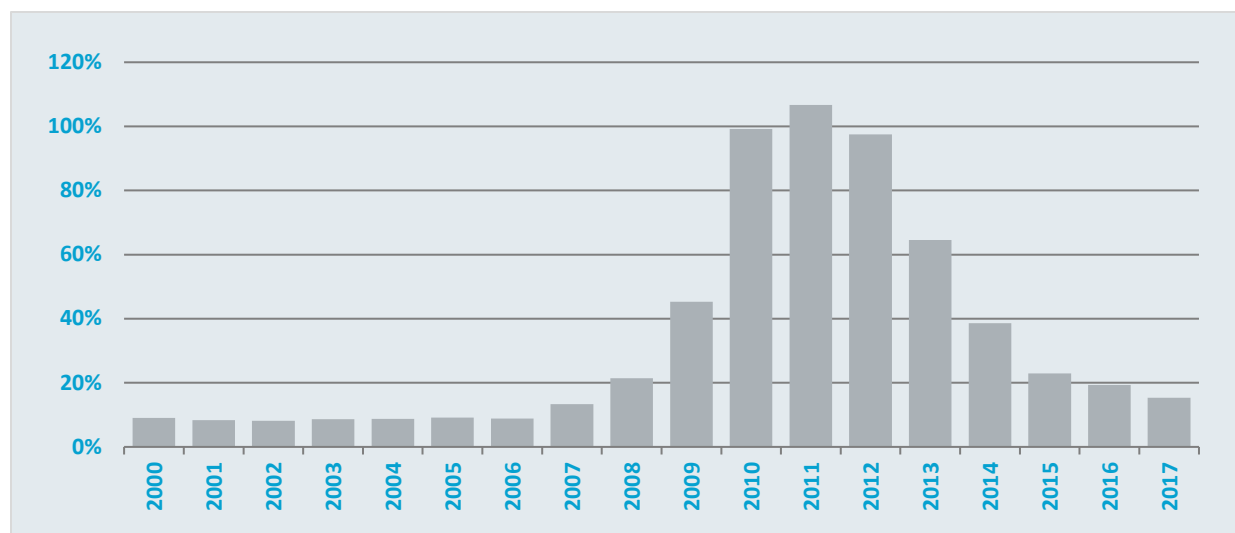
The results were quite striking for both the 85-90 LTV and 90-97 LTV segments. Once again CRL uses the combined loss and expense ratios by year, with the worst annual ratios coming in 2011. In Figure 12, the ratios for 85-90 LTV base risk loans reached a high of only 96% which means of course that once again, that capital remained untouched. And in Figure 13 following, the ratios for the 90-97 segment reached a high of 106.6%. So even with stress level losses compacted into a shorter loss distribution, the pricing based on a multi-vintage capital approach along with the additional supplemental buffers was sufficient to protect the major share of capital held and easily accommodated the new business volumes following 2007.

Figure 12. Test #3 - 90 LTV Net Losses & Expense Ratios Assuming FHFA Stress Level Losses and Multi-Vintage Capital and Pricing



Source: Fannie Mae loan performance data and CRL loss estimates and pricing assumptions

Figure 13. Test #3 - Net Loss and Expense Ratios for 90-97 LTV Base Loans



Source: Fannie Mae loan performance data and CRL loss estimates and pricing assumptions

The results of Test #3 strongly suggest that further adjustments to required capital and pricing are warranted. If there is no risk to capital using all assumptions thus far, perhaps the pricing model needs to assume that the returns on capital are not justified given no risk to capital using the multi-vintage approach. At 9% returns, the costs of capital are more than 75% of the multi-vintage capital approach. If we cut returns to 4.5%, pricing could be reduced by nearly 40%. But below market returns to investors is a sustainable approach. What we have demonstrated is that notwithstanding the unusually high FHFA stress level loss assumptions, recognition of some significant portion of premium produces lower required capital while maintaining a very high degree of safety and soundness. This type of modeling based on actual observations can serve in reviewing inadequate pricing as well. Such inadequate pricing was just as much a factor in the GSE debacle as was adequacy of capital.

In addition to the pro-cyclical forces that are introduced to the system through the use of mark-to-market adjustments of home values, there are two additional factors that also have similarly directional effects in increasing the overall pro-cyclical nature of the proposal. The first is the treatment of expected losses relative to either new or seasoned loans already adjusted for changes in “current LTV”. Instead of a long-run average calculation of expected losses, the FHFA approach would use whatever the GSE is forecasting at that time for new loans. Thus, the “stress level net loan loss” is always moving in whatever direction home prices are trending, since the capital portion of the stress loss is added to expected losses. Thus, when home prices are rising, expected losses are falling along with mark-to-market capital. And when home prices are falling, expected losses are rising, which when added to either new loan capital requirements or shifting mark-to-market capital greatly increase capital and also the presumed target stress loss levels. In CRL’s approach to using a portfolio or multi-vintage approach by risk segment, long-run average net losses would be considered expected losses. Rising actual losses would not change the life of loan capital requirements. The second factor is inclusion of a non-performing loan capital charge. As more loans go delinquent on their path to reaching whatever ultimate level of losses, FHFA would add additional capital on top of already very high capital requirements. If capital is

supposed to ensure the ability to cover losses to a specific confidence level that already is beyond 99.999%, why would there be a need to add additional capital beyond that level when losses have only just begun, with no requirements to validate that the losses have a significant probability of surpassing the assumed comfort level? CRL can only surmise that such an inclusion was thought necessary as an additional method of ensuring that there would be more capital available sooner should mark-to-market capital levels prove to be too low. The downside to including this additional capital beyond what the GSEs generally put up in loss reserves, is that higher capital requirements will make it more expensive and more restrictive to provide funding for low down-payment loans for first-time homebuyers at times when this segment of the market is most needed to take excess foreclosed inventory off the market and allow the market to recover.

The use of multi-vintage approach which produces stable life of loan capital levels for portfolio level losses by segment not only takes into account the benefits of loan seasoning, but is substantially easier to implement. Moreover, its stability over the cycle has substantial benefits in giving confidence to the market that there is adequate capital and steadier premium pricing to cover all losses and also continue to serve the market in all circumstances.

In summary, as shown by the above analyses, a multi-vintage approach provides secure capitalization that is less volatile, simpler and more efficient.

V. A Better Approach to Credit Risk Transfers

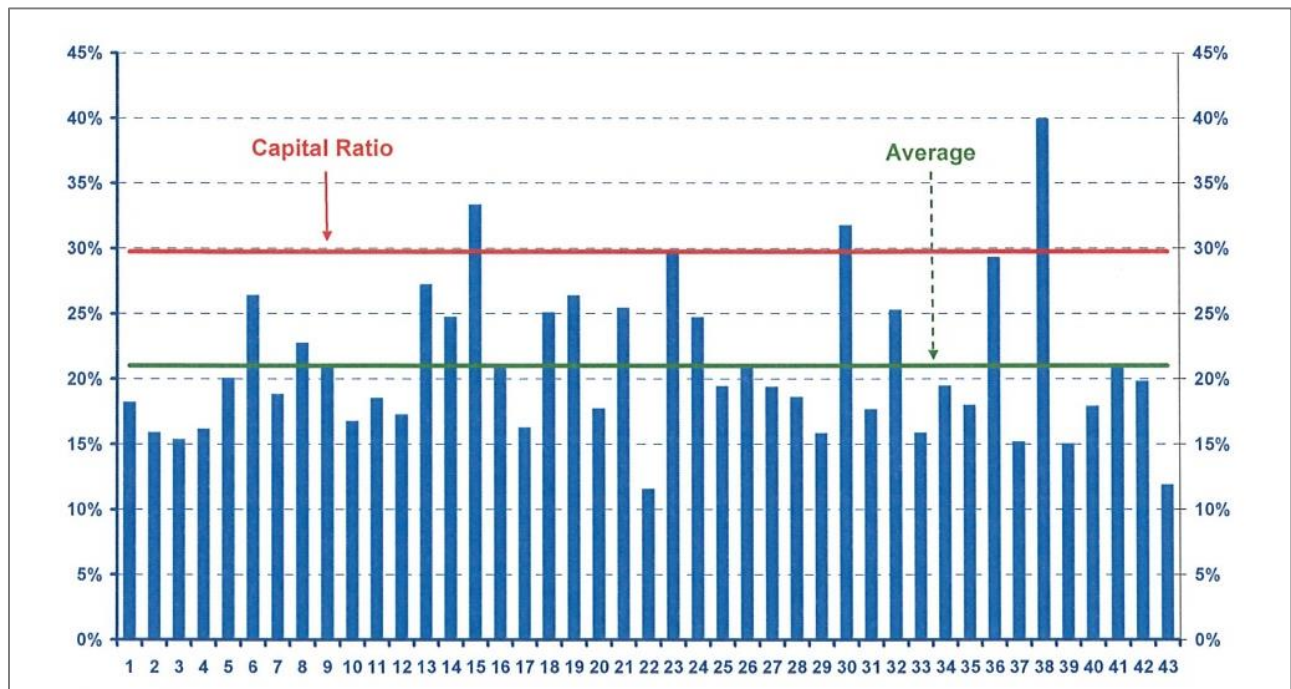
For the past several years under the FHFA custodianship, the GSEs have been engaged in credit risk transfer (CRT) programs to reduce the risk to taxpayers by ceding portions of risk to the private capital market. Numerous financial experts have voiced their concerns over various aspects of the general contract form and the effectiveness and costs of the program as opposed to the GSEs just keeping the risk altogether, and only possibly ceding catastrophic risk to either GNMA or FHA for a fee commensurate with those remote potential loss levels.

The questions of cost-effectiveness arise due to two primary factors: 1) the differences in the rates of return sought by private market guarantors and the returns deemed adequate for the GSEs; 2) the greater volatility of individually privately guaranteed MBS versus the enormously greater diversification of GSE risk between GSE guaranteed MBS for the same vintage year and the added diversification of risk both past and in the future. Both the higher degrees of stand-alone volatility of losses and the higher rates of return requirements raise the cost of capital which in turn would need to be passed down in the pricing required by the GSEs. Given the nature of a mezzanine risk attachment and maximum, and because the CRT specifies attachments in terms of cumulative losses, the timing of benefits from the CRT program is a cause for concern in that such benefits might not begin to be paid until well into the stress period, say the sixth or even eighth year.

CRL recognizes partial benefits of ceding credit risk in that the cost of ceding the risk is based on the average of the risks of all the loans in the pools reinsured and the average capital held. However, the process of setting up such risk transfers on a pool by pool basis is that one is only using capital as defined by new loans since all of the loans going into the MBS are new. The attachment point losses and the maximum losses are defined in terms of new loan loss parameters instead of life of loan parameters. This raises the cost of CRT reinsurance over keeping the loans as full GSE exposures. More importantly, the reinsurance capital and reinsurance benefits of each CRT are available only to that particular pool,

even if a given guarantor has multiple CRT contracts. And while there are a few large aggregators who put together loans for MBS pooling, much of GSE pooling activity is done by individual large lenders. But even between large lenders, there are often substantial differences in loan performance even for the same geographic markets. To illustrate this CRL draws on a portion of work put together by the former trade association of the MI industry, MICA in a comment letter regarding potential Basel Accord rules implementation in the US. The presentation described how mortgage insurance diversifies risk between lenders so as to lower the amount of total market capital required to cover higher-risk mortgage defaults of each institution.

Figure 14. Southern California 90 LTV recession results by largest lenders



Source: MICA, on file with authors

Figure 14 displays the cumulative foreclosure rates on 90 LTV 30-year fixed-rate purchase mortgages by owner-occupied borrowers originated between 1989 and 1993 for properties located in Southern California by the 43 largest lenders in that market. So even though they were large, and originated loans in the same market over the same period, there were substantial differences in the cumulative foreclosure rates. The market average cumulative foreclosure rate for these 90 LTV loans was roughly 20%. Ideally, the CRT would take on a mezzanine layer of risk for a certain price. But because of the potential for variation between lenders, one cannot assume that collectively their benefits will cover all of the targeted band of potential loss. But this can only happen if the individual pool maximum obligation goes beyond the targeted percentage assumption as required by the GSE if held in portfolio. Consequently, with higher percentage amounts of capital required for pools relative to the GSE at higher returns for the private guarantors means a substantially higher cost for reinsurance using this approach. Assuming that all of these loans went to the GSEs, which would be the expected stress foreclosure rate. But if each of the 43 lenders were to have entered into a CRT program for these same loans, what would

have to happen to be sure that each lender's pool would cover all of the remaining risk assigned assuming that all of the 43 issues stand completely on their own without additional amounts of capital? If the desired layer of risk to be reinsured was between averages of 10% and 20%, then the assumed maximum for the individual pools would have had to be around 40% to have the reinsured layer fully covered for each MBS. A maximum of 30% would have covered all but three, with the losses in excess coming back to the GSE.

Prior to this new form of CRT, GSE capital was fully fungible to cover losses from any of its products or risk segments. Under the pool approach of CRT risk transfers, CRT capital is only available for the individual pool under the CRT contract. The capital is fully segmented to just that pool. As such the loss maximums and capital required for each pool need to be sufficiently high so that the average of all of the pools reaches the desired level of coverage needed. But given the need for higher capital than the GSEs and the fact that private guarantors expect higher returns on capital than the GSEs would require for the same level of risk, the current approach to risk transfer does not appear to very cost effective. Such higher costs will only be passed on to future borrowers.

CRL would also expect that given the higher loss levels and required capital for such risk transfers, that lenders and guarantors participating in such structures will be encouraged to only do such deals for lower than average risk segments with lower potential variation in loss, leaving more volatile risks to the GSEs.

If FHFA can shift the focus of its capital approach from a single-vintage approach to risk segment analysis to a multi-vintage approach by segment, credit risk transfers could be accomplished in a way that incorporates all of the benefits that are part of the GSE diversification of risk across lender, geography and time. The idea would be to measure the collective distributions of potential losses from all segments using a multi-book approach to determine what levels of risk potential to have the portfolio credit risk transfer (PCRT) attach and max out at. Then those guarantors could purchase a share of the losses within that loss layer for the entire portfolio exposure. The transfer would remain in effect for 15 years. Because the multi-book approach reflects a lower degree of variance, the maximum potential losses for a particular probability range of risk would be substantially lower than that of individual pools, permitting lower levels of private capital to secure the private guaranty. This new form of CRT would resemble a quota share agreement in essence, with a first loss deductible. This would allow the outside capital to be as fungible as GSE capital once losses exceeded a certain level.

To reduce the timing disadvantages given the cumulative loss approach as provided in the current form of CRT, this new form of contract would also consider the timing of losses in terms of attachment. Just as long-run average expected portfolio losses have a specific pattern of losses by segment, so do the scenarios that form the attachment level of losses, and the maximum levels of losses. Therefore, attachments could be set in terms of loan loss ratios with obligations to a certain maximum loss ratio. This would mean that as portfolio losses develop within a certain band, benefits from reinsurance would be more commensurate with the loss development.

The guarantor's share as a percentage of the total portfolio would decline over time as both the portfolio grew with new loans, and as loans that existed in the portfolio at the time of purchase prepay. This share would always continue to move lower except when the annual loss rate may have exceeded the attachment point for the portfolio. If annual portfolio losses have never crossed the attachment point prior to the expiration of the 15-year term, then the contract has ended. The long-term of the contract ensures that over 99% of the Quota Share's potential losses at the time of quota share CRT commencement would be covered.

VI. The GSEs' Public Interest Duties Should Help Drive the Final Rule

FHFA and the GSEs important public interest duties deliver broad liquidity to the mortgage market and ensure that borrowers in every region of the nation have access to mortgage credit, including low-to-moderate income, rural families, and people of color. They also support the mortgage activity of community banks. The GSEs purchased over 2.4 million home purchase and refinance mortgage loans in 2016, including nearly a half a million loans to low- and moderate-income borrowers, over 450,000 loans to borrowers of color, and nearly 400,000 loans originated by community banks and credit unions.¹⁹ This lending stems from chartered and statutory obligations²⁰ that drive the GSEs affordable housing goals. Since 2003, the goals helped 25 million hard-working families nationwide to become homeowners.²¹ Ensuring that the GSEs can continue these important public interest duties must be considered when determining the final rule.

A. The Great Recession Eroded Homeownership Gains, Particularly for Communities of Color

Due to historical discrimination and redlining in the nation's housing finance system, white families have higher rates of homeownership than families of color.²² They also have higher levels of wealth as home equity plays an important role in determining family wealth and is a key contributor to the racial wealth gap. Leading up to the Great Recession, families of color were unfairly targeted with dangerous and

¹⁹ Michael Calhoun, Tom Feltner, Pete Smith, *Supporting Mortgage Lending in Rural Communities*, The Brookings Institution (January 2018), available at https://www.brookings.edu/wp-content/uploads/2018/01/es_2018_01_10_rural_housing_report.pdf.

²⁰ The duty-to-serve requirements ensure broad availability of mortgage credit throughout the business cycle. Congress created the obligation within the actual charters of the GSEs, and they state that the GSEs must "promote access to mortgage credit throughout the nation (including central cities, rural areas, and underserved areas) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing. These obligations continue through the Fair Housing Act of 1968. They are carried forward in the Equal Credit Opportunity Act of 1974 (ECOA) and are implemented through the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (FHEFSSA) and Housing and Economic Recovery Act in 2008 (HERA). They represent Congress' long-term view that all secondary mortgage market participants have an affirmative duty to further fair lending. See 12 U.S.C. § 1716; 12 U.S.C. § 1451 note; 42 U.S.C. § 3601 *et seq*; 5 15 U.S.C. § 1691 *et seq*; 12 U.S.C. 4501 *et seq*; Pub. L. 110-289 (July 30, 2008).

²¹ National Community Reinvestment Coalition, *Nationwide Benefits from the Affordable Housing Goals*, available at <https://ncrc.org/wp-content/uploads/2014/09/nationwide%20ahg.pdf>.

²² For a detailed discussion of how federal housing policies benefitted whites while disadvantaging African Americans and other people of color, see *A Failure to Act: How a Decade without GSE Reform Has Once Again Put Taxpayers at Risk*, Hearings before the Committee on Financial Services, 115th Cong. (Testimony of Nikitra Bailey), at 18-22, available at <https://docs.house.gov/meetings/BA/BA00/20180906/108660/HHRG-115-BA00-Wstate-BaileyN-20180906.pdf>.

toxic mortgages that led to a decline of \$1 trillion in wealth for the families who lived near but who did not experience an actual home loan foreclosure.²³ The Great Recession also wiped out thirty years of homeownership gains for African-Americans. It exacerbated the already large racial homeownership gap, with black homeownership rates falling to levels that predate the passage of the Fair Housing Act more than 50 years ago.²⁴ The current homeownership rate for black families is only 41.6%, as compared to 72.9% for white families.²⁵

The Great Recession also exacerbated inequality in wealth distributions. According to the Pew Research Center, in 2012 whites had 13 times the wealth of African-Americans and 10 times the wealth of non-white Hispanics.²⁶ If current trends continue, it could take as long as 228 years for the average Black family to reach the level of wealth white families own today.²⁷ For the average Latino family, matching the wealth of white families could take 84 years.²⁸

Rather than remediate the damage done by subprime lending and its disproportionate impact on borrowers of color, lenders' overcorrections in the market have instead closed off lending options for these communities. Since the financial crisis, many lenders and the GSEs have limited lending and increased prices for borrowers with lower credit scores and/or lower down payments. Borrowers of color, low and moderate-income families, and first-time homebuyers tend to have both lower FICO scores and fewer resources to put towards a down payment due, in part, to discrimination.

This action is short-sighted and present real safety and soundness concerns for the overall economy since people of color will account for most new household formation going forward. Harvard's Joint Center for Housing Studies found that non-whites, especially Latinos, accounted for 60 percent of household growth from 1995-2015 and predicted that half of millennial households by 2035 would be non-white.²⁹ Serving these borrowers will be a significant factor in a well-functioning mortgage market.

B. Credit Remains Tight 10 Years after the Financial Crisis, Preventing Homeownership Opportunity for Creditworthy Borrowers

People of color and low- to moderate-income families continue to face challenges in accessing credit. Discrepancies for African-Americans and Latinos persist even as the mortgage market overall has nearly returned to pre-crisis lending volumes. Market indicators highlight how tight lending standards have

²³ Debbie Gruenstein Bocian, et al., *Collateral Damage: The Spillover Costs of Foreclosures* (2012), available at <https://www.responsiblelending.org/sites/default/files/nodes/files/research-publication/collateral-damage.pdf>.

²⁴ Laurie Goodman, Alanna McCargo, and Jun Zhu, *A Closer Look at the Fifteen-Year Drop in Black Homeownership*, Urban Institute (Feb. 13, 2018) available at <https://www.urban.org/urban-wire/closer-look-fifteen-year-drop-black-homeownership>.

²⁵ U.S. Census Bureau, *Quarterly Residential Vacancies and Homeownership*, Second Quarter 2018 (July 26, 2018), available at <https://www.census.gov/housing/hvs/files/currenthvspress.pdf>.

²⁶ Rakesh Kochhar and Richard Fry, *Wealth inequality has widened along racial, ethnic lines since end of Great Recession*, Pew Research Center (2014), available at <http://www.pewresearch.org/fact-tank/2014/12/12/racial-wealth-gaps-great-recession/>.

²⁷ Dedrick Asante-Muhammad, et al., *The Road To Zero Wealth: How The Racial Wealth Divide Is Hallowing Out America's Middle Class* (2017), at 15, available at https://prosperitynow.org/files/PDFs/road_to_zero_wealth.pdf.

²⁸ *Id.*

²⁹ Joint Center for Housing Studies of Harvard University, *State of the Nation's Housing 2017* (June 2017), available at http://www.jchs.harvard.edu/sites/default/files/harvard_jchs_state_of_the_nations_housing_2017.pdf.

become, especially for conventional mortgages. In 2016, only 3.1% of conventional loans were made to African-American borrowers, and only 5.8% were made to Hispanic white borrowers.³⁰ By contrast, non-Hispanic white borrowers received 70.2% of the conventional loans.³¹ The conventional market has tightened credit standards and shut out over 6 million creditworthy borrowers since 2009.³²

Increasingly, FHA has become the primary source of mortgage credit for borrowers of color, including upper-income borrowers who could be well served by conventional lenders. While the share of FHA purchase lending made to Black and Latino borrowers has exceeded the share of FHA purchase lending to white borrowers since 2004, the FHA share to borrowers of color also grew at a faster rate during the recession and has remained persistently high.³³ In 2016, Black and Latino borrowers received nearly half their purchase mortgage loans from FHA, while white borrowers received less than a quarter of theirs and Asian borrowers received under 14%.³⁴ The FHA market share jumped 180% from 2004 levels for low-income Black borrowers and 267% and 642% from 2004 levels for Black middle-income and high-income borrowers.³⁵ Compared to conventional loans FHA loans can be costlier over the life of the loan, particularly the life of the loan premium and lender overlays on FHA loans. Further, increasingly, lenders have also been less willing to make these loans.

³⁰ Center for Responsible Lending, *New HMDA Data Show Despite Growing Market, African-Americans and Latinos Remain Underserved* (2017), available at <https://www.responsiblelending.org/sites/default/files/nodes/files/research-publication/crl-2016hmda-policy-brief-sep2017.pdf>.

³¹ *Id.*

³² Laurie Goodman, Jun Zhu, and Bing Bai, *Overly Tight Credit Killed 1.1 Million Mortgages in 2015*, Urban Institute (Nov. 21, 2016), available at <https://www.urban.org/urban-wire/overly-tight-credit-killed-11-million-mortgages-2015> (stating that lenders would have issued 6.3 million additional mortgages between 2009 and 2015 if lending standards had been more reasonable).

³³ Melissa Stegman and Peter Smith, *Repairing a Two-Tiered System: The Crucial but Complex Role of FHA*, Center for Responsible Lending (May 2018), available at <https://www.responsiblelending.org/sites/default/files/nodes/files/research-publication/crl-repairing-two-tiered-system-fha-may2018.pdf>.

³⁴ *Id.*

³⁵ *Id.*

In 2016, the average credit score for all new loan originations fell from its high of 750 in 2013 to stand at 732 in December of 2016. However, the average score remained about 33 pts above the average score a decade before.³⁶ At the same time, market-level credit availability indices continue to show that lenders have a very low tolerance for taking reasonable risk for new loans.³⁷ Recent vintages of new mortgages (loans originated from 2011-2015) have had near zero rates of default.³⁸ These tight credit standards are preventing homeownership opportunity for credit worthy borrowers of color and low- to moderate-income borrowers. Recent data released by Fannie Mae show that loans to low-income borrowers originated from 2010-2015 had a default rate of just 0.3 percent, approximately equal to that of loans to high-income borrowers originated from 2002-2004.³⁹ There is ample opportunity in the mortgage market to expand lending to borrowers while still offering responsible loans that borrowers can successfully repay.

C. Excessive Risk-Based Pricing is Locking Borrowers Out of the Market

Following the mortgage crisis of 2008, FHFA and the GSEs instituted loan level price adjustments (LLPAs) to offset risk from borrowers with lower credit profiles and smaller down payments, despite compelling evidence that when provided with safe and affordable mortgage loans, these borrowers perform well. Further, these increased fees disproportionately impact potential homebuyers of color and low-to-moderate income families whose ability to save for down payments and credit profiles have been negatively impacted by discrimination and lack of opportunity in the mortgage market.⁴⁰

³⁶ Laurie Goodman et.al., *Housing Finance at a Glance: A Monthly Chartbook* (March 2017), available at <https://www.urban.org/research/publication/housing-finance-glance-monthly-chartbook-march-2017>.

³⁷ *Id.*; Mortgage Bankers Association, *Mortgage Credit Availability Index* (2017), available at <https://www.mba.org/newsresearch-and-resources/research-and-economics/single-family-research/mortgagecredit-availability-index>.

³⁸ Laurie Goodman, *Squeaky Clean Loans Lead to Near-Zero Borrower Defaults – And That is Not a Good Thing*, Urban Institute (Aug. 31, 2016), available at <https://www.urban.org/urban-wire/squeaky-clean-loans-lead-near-zero-borrower-defaults-and-not-good-thing>.

³⁹ Fannie Mae 2016 Annual Housing Activities Report and Annual Mortgage Report, Chart at 19, available at <https://www.fhfa.gov/PolicyProgramsResearch/Programs/AffordableHousing/Documents/FannieMaeGoals2017/FannieMae2016-AHAR-AMR-FINAL.pdf>.

⁴⁰ See *A Failure to Act: How a Decade without GSE Reform Has Once Again Put Taxpayers at Risk*, Hearings before the Committee on Financial Services, 115th Cong. (Testimony of Nikitra Bailey), at 18-22, available at <https://docs.house.gov/meetings/BA/BA00/20180906/108660/HHRG-115-BA00-Wstate-BaileyN-20180906.pdf>.

Underwriting structures determine if borrowers are credit worthy, but pricing structures have a significant impact on whether a credit worthy borrower can afford a mortgage. Differential pricing creates an additional barrier to mortgage credit by increasing the price, sometimes significantly, for some borrowers relative to others. There is evidence of price acting as a barrier even in today's mortgage market. For example, although Fannie Mae's guidelines allow the GSEs to purchase loans with credit scores down to 620 and loan-to-value (LTV) ratios of up to 97 percent, very few loans purchased by the GSEs have these characteristics. One reason is that excessive risk-based pricing by both the GSEs and private mortgage insurers add significantly to the cost of loans for borrowers with lower scores and less wealth for a down payment. For example, the combination of loan-level price adjustments (LLPAs) and mortgage insurance (MI) premiums adds over 300 basis points to the cost of a mortgage for a borrower with a credit score of 620 and an LTV of 97 percent.⁴¹

D. Pricing Practices Determine Who Can Afford A Mortgage and Should Drive Access

The GSEs, though, currently set prices based on a more consolidated set of borrower characteristics than private actors like private mortgage insurers. They lay off credit risk largely through back-end credit risk transfer mechanisms which allow for the pooling of loans and risk. Ultimately, these policies limit the degree to which loan pricing is highly segmented. Preserving these features will result in less differential pricing and make it more likely that credit worthy families of modest means can afford a mortgage.

E. Deep Upfront Credit Risk Transfer Increases Prices and Limits Access to Credit for Some Credit Worthy Borrowers

The credit risk transfer programs have the potential to increase prices for certain borrowers which would effectively limit access to credit for some creditworthy borrowers. These risks are most acute for, but not entirely limited to, front-end credit risk transfer structures.

An important component of any credit risk transfer structure is how the entity taking on the credit risk will be compensated for the risk it takes on. In back-end credit transfer structures (such as the STACR or CAS structures) the GSEs pay the private entities for taking on credit risk. FHFA estimates this cost in terms of "guarantee fee concessions" in its 2016 report on credit risk transfer programs.⁴² Guarantee fee (G-fee) concessions do not affect borrower pricing directly because the GSEs set the guarantee fee independent of the risk transfer transaction. Back-end credit risk structures allow for the pooling of loans and risk, which limit the degree to which loan pricing is highly segmented. Thus, these structures ensure that private capital insulates taxpayers without facilitating differential pricing, which undermines access and affordability goals.

In other structures, particularly in front-end structures under the current PMIERS capital structure, borrower pricing is more likely to be affected by the credit risk transfer structure, as the compensation

⁴¹ $350/4+225=312.5$ basis points. Fannie's Mae's LPA for this combination of credit score and LTV is a one-time fee of 350 basis points (see page 2, <https://www.fanniemae.com/content/pricing/llpa-matrix.pdf>). We assumed a LPA multiple of 4 to convert this upfront fee to an ongoing cost comparable to the MI premium. Borrower paid MI from Genworth for this combination of credit score and LTV is a continuing fee of 225 basis points. See https://mortgageinsurance.genworth.com/pdfs/Rates/11370775.Monthly_Natl.FIXED.0616.pdf.

⁴² See FHFA Single Family Credit Risk Transfer Progress Report, at 17-20 (June 2016), available at <https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/CRT-Progress-Report-6292016.pdf>.

for taking on credit risk is likely to be built into up-front borrower pricing. Front-end credit transfer structures transfer price setting power as well as credit risk. Deep upfront credit risk transferred to private capital incentivizes actors to segment, rather than pool, credit risk, and prices. As recent PMI pricing changes show, pricing power in private hands results in greater price differentiation by credit score. Higher prices for borrowers with lower credit scores limits access to mortgage credit for these borrowers. Back-end structures create less risk of exacerbating differential pricing as long as the GSEs continue to build in average pricing into the process of setting g-fees.

We are particularly concerned that front-end structures, including “Deeper MI,” structurally frustrate the GSEs’ statutory duties to create a well-functioning housing market and provide broad market access. Front-end structures are by their nature incentivized to decrease access to mortgage credit for creditworthy borrowers and advantages some lenders over others. It is difficult to identify the business justification for front-end credit risk-transfer structures when the GSEs have other structures for transferring credit risk at their disposal. To justify such a structure, FHFA would need to either put in place strong prohibitions on differential pricing or articulate a compelling business reason for advantaging this structure over others.

We urge FHFA to avoid pursuing front-end credit risk transfer structures that have the potential to limit access to credit and as a consequence, undermine the mission of the GSEs to increase liquidity in the market, especially for underserved populations. Most important, the current PMIERS structure should be modified in line with the above recommendations for the GSEs’ capital structure, so that more accurate and equitable pricing can be implemented by those guarantors.

F. The Housing Finance System Must Preserve Pooling of Loan Risk

Relying on deep, upfront private capital to cover credit risk does not provide a countervailing pressure to market incentives to finely and differentially price credit risk. Even in the current system, in which the GSEs have incentives for risk and price pooling, troubling pricing differences prevent creditworthy borrowers from getting mortgages. The system’s current incentives for pooling of risk must remain. Preserving these features will result in less differential pricing and make it more likely that creditworthy families of modest means can afford a mortgage.

VII. Conclusion

As shown above, the proposed model contains useful improvements to the current capital model. First, it sets out in an explicit manner, many of the assumptions of the capital model, unlike the current practice, though disclosure of underlying data and further assumptions and algorithms is needed. The model recognizes the systemic nature of a future crisis and the common benefit of the GSEs and their long-term security. This is reflected in the credit invariant distribution of the cost of the going concern buffer. This approach needs to be expanded to more of the crisis capital costs that are also the result of systemic failure and likewise benefit all who are served by the GSEs. Overall, the levels of capital proposed in the model are overstated when the impact of reforms are considered, and significant other resources, including ongoing premium, are included in the model. The model appropriately recognizes the important impact of loan seasoning, which must be considered in setting capital and pricing. Set out above is an alternative approach to take seasoning into account and also recognize the benefits of multi-vintage diversity. It produces a better outcome at a lower cost. Finally, the model is a tool to enable the GSEs safety to achieve their statutory goals of a broad, affordable inclusive market. The model needs significant modifications to achieve these goals.

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