



August 31, 2020

Mr. Alfred Pollard
General Counsel
Federal Housing Finance Agency
Eighth Floor
400 7th Street, SW
Washington, DC 20219

Re: RIN 2590-AA95, Enterprise Regulatory Capital Framework

Dear Mr. Pollard:

Thank you for the opportunity to respond to FHFA's re-proposal of the Enterprise Regulatory Capital Framework.

We fully support FHFA's goals to end conservatorship of the Enterprises by increasing the quantity and quality of capital supporting them, so that they can safely and soundly support and stabilize the secondary mortgage market across the housing cycle. Establishing a robust capital framework that is appropriate today but also structurally sound enough to maintain prudent Enterprise capital levels over time is a crucial step in making this transition.

Several principles guided our recommendations on the FHFA's 2020 Proposed Capital Rule:

1. A well-designed capital framework must be sensitive to risk while balancing a prudent amount of minimum capital.
2. The capital framework should discourage over-reliance on a single source of capital, but instead encourage the use of multiple sources of complementary capital.
3. The framework must require sufficient capital to operate in a stressful environment, but also allow economics that balance prudent risk management decisions with reasonable returns for investors in-order-to attract and retain significant equity.

We agree with the FHFA that equity capital should be the foundational component of the Enterprises' capital structure. As the FHFA points out, it can be used to cover any element of risk the Enterprises will face, including credit, market, and operational risks. However, Aon's belief is that not every dollar of capital needs to be equally flexible and fungible and diverse capital sources could further optimize the overall capital framework by preserving and protecting equity during stress.

The suggestions contained in our response emphasize the use of a risk-based capital framework to determine total capital required under most scenarios. We believe that the leverage ratio should be used to determine a minimum level of equity (Tier 1 capital) that the Enterprises must retain regardless of the risk-based capital required.



The anticipated magnitude of equity that will need to be raised and retained will require several years during which investors and taxpayers will be exposed to significant losses if a housing downturn emerged over that time period.

Though the final rule has not yet been determined, it is likely that the Enterprises would seek to generate something on the order of \$200B of equity, at least seven times their current capital. This is likely to take years and require a thoughtful transition process that retains many of the de-risking innovations, including CRT, that have developed post-GFC to ensure taxpayers are protected should there be a housing downturn during this important equity-building period. CRT should not be granted dollar-for-dollar credit to equity (a thoughtful haircut is appropriate), but it is a valuable tool that limits the volatility of future earnings and lowers the Enterprises cost of capital both of which will be beneficial to the equity raise.

We appreciate FHFA's leadership in driving this important topic, which will be an essential step forward to the Enterprises emerging from conservatorship. We look forward to engaging with the FHFA in the near future as the rule is further developed.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Monaghan". The signature is fluid and cursive.

Joe Monaghan
CEO, Aon Public Sector Partnership



Aon's Response to the FHFA 2020 Proposed Capital Rule

August 31, 2020

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Executive Summary

The FHFA's 2020 Proposed Capital Rule ("2020 PCR") has reasonable objectives and Aon agrees with its desire to transition Fannie Mae and Freddie Mac (collectively the "Enterprises") from conservatorship in a safe and sound manner that protects the U.S. taxpayer. We appreciate the opportunity to provide our perspective on the re-proposed rule. Aon has worked closely with the Enterprises, the market, and the FHFA to build multi-line insurance-based CRT since 2012. The Enterprises selected Aon, a diversified professional services firm, as their broker to help create the Agency Credit Insurance Structure (ACIS), Credit Insurance Risk Transfer (CIRT), Multifamily Credit Insurance Pool (MCIP), and Multifamily Credit Insurance Risk Transfer (MCIRT). These transactions shift risk away from the Enterprises to a diversified group of highly rated and well capitalized multi-line insurance and reinsurance companies.

The stated goals of the FHFA's 2020 PCR are to enable the end of the Enterprises' conservatorship and increase the quantity and quality of capital underpinning them, so that they can safely and soundly support and stabilize the secondary mortgage market across the housing cycle.

Establishing a robust capital framework is a crucial step in releasing the Enterprises from conservatorship. Determining the magnitude and mixture of resources necessary to secure the Enterprises' ability to pay losses in a severe stress economy and to continue to fulfill their mission throughout the housing cycle is essential for their success and stability.

To accomplish this, the FHFA's 2020 PCR sets capital levels with a two-pronged approach. The greater of a risk-based criterion or a leverage-based criterion will determine the Enterprises' required capital levels. The 2020 PCR also introduces new capital floors in the mechanical estimation of credit risk, additional and larger capital buffers, and an increased leverage ratio requirement. These elements of conservatism are intended to bolster the safety and soundness goal for the Enterprises.

After carefully considering the FHFA's request for feedback, we believe that a necessary requirement for the Enterprises to operate outside of conservatorship is a capital framework that encourages prudent long-term credit underwriting by matching the required capital levels to the risk borne by Enterprises. We also believe that there are several key areas of improvement that would better align capital and risk and help create strong long-term incentives for the Enterprises to be prudent managers of credit risk through the cycle.

In summary, we request that the FHFA consider:

1. Adjusting the risk-based capital framework as follows:
 - a. Consolidate the stress loss, the stability, and the countercyclical risk buffers into a single buffer, sized to risk weighted assets, and
 - b. Combine the tranche risk weight floor and overall effectiveness adjustment into a single CRT haircut and allow the Enterprises to buy out a portion of this haircut through the purchase of additional CRT coverage
2. Employ a minimum Tier 1 capital requirement based on the greater of
 - a. the existing Tier 1 risk-based capital requirement, or
 - b. a revised leverage ratio that is set at 1.5% of total adjusted assets, or
 - c. a new *Capital Mix Requirement*, set at 45% of the pre-CRT risk-based capital requirement

In addition, we believe it is important that the Enterprises hold a variety of capital sources to ensure their safety and soundness across economic cycles. Achieving the targeted levels of equity will be a multi-year process and will likely require complementary capital sources to reduce taxpayer loss exposure during the transition to sufficient equity levels. Given our belief in the benefits of diversified capital sources, the proposed adjustments to the capital credit for CRT are counterproductive to that goal. These adjustments will disincentivize the use of CRT – one of the most important innovations coming out of the 2008 Great Financial Crisis (“2008 GFC”) – that protects taxpayers and secures and preserves the Enterprises’ equity.

Taken in combination and based upon the Enterprises Q3 2019 assets, Aon’s proposal would require more capital than the 2018 proposal, but less than the 2020 re-proposal, as outlined in Figure 1 below:

Combined Enterprise Capital Requirements as of September 30, 2019

	2018 Proposed Capital Rule		2020 Proposed Capital Rule		Aon Response	
	\$ Billions	% of Assets	\$ Billions	% of Assets	\$ Billions	% of Assets
Pre-CRT RBC Requirement	178	2.9%	256	4.2%	213	3.5%
CRT Impact	(41)	(0.7%)	(22)	(0.4%)	(41)	(0.7%)
Risk-Based Capital Requirement	137	2.2%	234	3.8%	171	2.8%
Leverage Ratio Capital Requirement	152	2.5%	243	4.0%	91	1.5%
Total Capital Requirement	152	2.5%	243	4.0%	171	2.8%

Figure 1: Combined Enterprise Capital Requirements as of September 30, 2019

The remainder of this document details our perspective and analyses supporting these recommendations.

Background

For the past eight years, Aon has collaborated with the Enterprises, the reinsurance market, and the FHFA to create and strengthen the reinsurance market and CRT programs. We first helped the Enterprises deepen their expertise with CRT programs, and subsequently helped expand the scope and sophistication of the CRT reinsurance market to absorb risk from the private mortgage insurers. Aon has placed more than 80% of the multi-line insurance CRT transactions to date and represents five of the six current mortgage insurers. We also believe our experience brokering capital relief transactions for European banks and our familiarity with European capital frameworks are useful to the Enterprises.

This historical engagement with the Enterprises drives our holistic and objective view of the FHFA's goals. Aon has also applied our strong perspective on natural catastrophe risk, which the FHFA has highlighted as an area of potential significant exposure. We have modeled hurricane, flood, and earthquake risk for the Enterprises and have also shared some of our perspectives on this historically. While not addressed in significant detail herein, Aon welcomes the opportunity to further dialogue with the FHFA and other key stakeholders on this important topic. Especially in-light-of climate change, fully understanding the Enterprises' exposure to natural catastrophes, their loss mitigating options (including hazard insurance requirements), and risk transfer alternatives is worthy of a separate discussion. We have worked closely with many large institutions in the US that are significantly exposed to these types of events, including FEMA, and are happy to share our perspective.

The Enterprises – From Inception to Conservatorship to Privatization

Fannie Mae (est. 1938) and Freddie Mac (est. 1970) were established to extend financing liquidity in the real-estate sector. They increase the supply of money available for mortgage lending by buying mortgages from originators, securitizing them, and selling the bonds to capital markets. To fulfill their charter, they must also remain prudent residential mortgage monolines and meet affordable housing goals set annually by HUD and approved by Congress.

The Enterprises fund their mortgages mainly with “pass-through” mortgage-backed securities (“MBS”). Historically, MBS investors have absorbed the interest rate risk of the mortgages while the Enterprises have retained the credit risk. Since the Enterprises' inception, their charter recognizes the importance of Credit Enhancement (“CE”), especially for high Loan-to-Value (“LTV”) mortgages. Every conventional mortgage with an LTV greater than 80 percent must be credit enhanced, either through seller risk retention, a seller recourse agreement, or by a private mortgage insurer (“PMI”).

However, their business model failed during the 2008 GFC and led to the U.S. government takeover (i.e., conservatorship) of the Enterprises. The key drivers leading to this were (a) poor mortgage underwriting exemplified by “exotic” mortgage products, (b) a lack of quality control by the Enterprises, and (c) extremely low Enterprise capitalization standards. This resulted in a \$190B government bailout for the Enterprises, and the FHFA became the Enterprises' conservator¹.

¹ Fannie Mae and Freddie Mac in Conservatorship: Frequently Asked Questions
<https://fas.org/sqp/crs/misc/R44525.pdf>

The FHFA and the Enterprises have since instituted numerous improvements and reforms in the broader mortgage industry to address the lessons learned during the 2008 GFC. These include (a) the Qualified Mortgage rule introduced in 2014,² (b) a tightened underwriting process, (c) standardized decision data, (d) enhanced quality control processes that leverage abundant data, and (e) operating and capital standards to regulate industry participants.

In 2012, the FHFA directed the Enterprises to develop CRT, which expanded CE to more mortgages within their broader portfolio. Together with Aon, the Enterprises created their insurance-based CRT programs, namely ACIS, CIRT, MCIP, and MCIRT. These programs allowed the Enterprises to evolve from retaining their credit risk (or buy-and-hold), to underwriting and distributing the majority of their credit risk (or buy-and-distribute). The presence of CE has made Enterprise performance less volatile and its overall portfolio more attractive to shareholders. CE also complements the Enterprises' equity capital and lowers their costs by stabilizing income and protecting equity positions.

We believe that any future capital framework must build on the improvements made by the Enterprises under FHFA's direction post- GFC. The framework should be based primarily on risk-based calculations and give a reasonable and appropriate level of credit to innovations like CRT which materially reduce the Enterprises' earnings volatility during periods of stress. However, any future capital framework should have a robust minimum level of common equity as its foundation to ensure that the Enterprises can continue their mission during any market downturn. This minimum equity level should have guardrails that are independent of a risk-based calculation to ensure that the Enterprises continue to build equity during the long periods of low loss activity that have historically preceded brief periods of housing downturns in the United States.

Aon's Response to the FHFA's Proposed Capital Rule

The proposed rule requires the Enterprises to capitalize to the greater of two separate capital calculations: a risk-based and a leverage-ratio based criteria. While on the surface this has not changed from the 2018 framework, there are significant adjustments to each of the two criteria.

Risk-Based Capital ("RBC") Requirement: The RBC requirement has several components, namely (a) a core risk-based capital requirement based on the relative riskiness of the mortgages guaranteed, (b) the capital relief due to CRT, and (c) the market and operational risks. It also describes three capital buffers, each of which play a different role with a collective purpose of requiring additional capital that will (a) require the Enterprises have enough capital to maintain their role in the mortgage market during stressful periods, (b) enable the Enterprises to hold additional capital based on the FHFA's estimate of their market share of the mortgage market, and (c) allow the FHFA to adjust capital depending on their judgment of overall risk in the mortgage market at any point in time.

² What is a Qualified Mortgage?

<https://www.consumerfinance.gov/ask-cfpb/what-is-a-qualified-mortgage-en-1789/>

Leverage Ratio (“LR”) Requirement: Under the LR requirement, the Enterprises must hold 2.5% plus a 1.5% leverage ratio buffer for a total of 4% of adjusted total assets.

Aon’s response focuses on several key areas of the 2020 PCR that we believe distort the Enterprises’ ability to match risk to capital and incent prudent long-term credit decisions. We submit the following adjustments for FHFA’s consideration:

1. Consider the following adjustments to the RBC framework:
 - a. Consolidate the stress loss, the stability, and the countercyclical risk buffers into a single buffer, sized to risk weighted assets, and
 - b. Combine the tranche risk weight floor and overall effectiveness adjustment into a single CRT haircut and allow the Enterprises to buy out a portion of this haircut through the purchase of additional CRT coverage
2. Employ a minimum Tier 1 capital requirement based on the greater of:
 - a. the existing Tier 1 RBC requirement, or
 - b. a revised leverage ratio that is set at 1.5% of total adjusted assets, or
 - c. a new *Capital Mix Requirement*, set at 45% of the pre-CRT risk-based capital requirement

Combined Enterprise Capital Requirements as of September 30, 2019

	2020 Proposed Capital Rule		Aon Response	
	\$ Billions	% of Assets	\$ Billions	% of Assets
Pre-CRT RBC Requirement w/o Buffer	157	2.6%	157	2.6%
Capital Buffer	99	1.6%	55	0.9%
Pre-CRT RBC Requirement	256	4.2%	213	3.5%
CRT Impact	(22)	(0.4%)	(41)	(0.7%)
Risk-Based Capital Requirement	234	3.8%	171	2.8%
Leverage Ratio Capital Requirement	243	4.0%	91	1.5%
Tier 1 RBC Capital Mix Requirement*			96	1.6%
Tier 1 RBC Requirement	200	3.3%	142	2.3%
Tier 1 Capital Requirement	243	4.0%	142	2.3%
Total Capital Requirement	243	4.0%	171	2.8%

*Illustrated with 45% of Pre-CRT RBC Requirement

**Higher of the Capital Mix Requirement and Tier 1 RBC Requirement

Figure 2: Combined Enterprise Capital Requirements as of September 30, 2019

The combined impact of these recommendations and a comparison to the 2020 PCR is summarized in Figure 2. By consolidating the buffers, the pre-CRT RBC requirement is reduced from 4.2% to 3.5%, a 0.7% reduction in capital. The combination of the tranche risk weight floor and the overall effectiveness adjustment into a single CRT haircut would improve the CRT capital relief by 0.3%. The resulting total capital requirement of 2.8% compares to 4% in the 2020 PCR. Furthermore, the reduction of the Tier 1 LR requirement from 4% to 1.5% makes the Tier 1 RBC requirement the binding Tier 1 capital constraint at 2.3%.

The rest of this section goes into the rationale and detail behind our recommended adjustments.

Adjustments to the Risk-Based Capital Framework

We are proposing three main adjustments to the risk-based capital framework that we believe will better align risk and capital which will create a stronger foundation to maintain prudent through the cycle underwriting and risk selection incentives. These adjustments are:

1. Consolidate and simplify the RBC buffers
2. Consolidate the tranche risk weight floor and OEA into a single haircut
3. Augment the minimum Tier 1 capital requirement within the RBC framework

1. Consolidate and Simplify the RBC Buffers

Aon also believes the RBC framework should aspire to be as sensitive to the underlying risk of the Enterprises as possible, so that it appropriately incentivizes prudent risk management and disincentivizes improper levels of risk accumulation. Risk weight floors and capital buffers may individually appear reasonable, but because they tend to be blunt instruments, they should be evaluated carefully and in consideration of the overall responsiveness of the RBC framework to the underlying risk. Under the 2020 PCR, almost 60% of the RBC requirement is driven by either buffers or risk weight floors.

We summarize three aspects of the RBC framework that we believe should be assessed in the overall context of the RBC framework and one additional consideration for evaluating the RBC framework's various buffers and floors.

First, the introduction of the 15% loan-level risk weight floor appears to affect a significant portion of the Enterprises' mortgage portfolio, especially as these mortgages season and accumulate equity based on home price appreciation. In the Urban Institute's analysis of the 2020 PCR³ they estimate that historically almost half of the Enterprises' mortgage portfolio would be affected by the risk weight floor. Furthermore, improperly designed loan-level risk weight floors can materially distort the relative riskiness between mortgages. Therefore, we believe that the loan-level risk weight floor requires further review and should likely be reduced. If the loan-level risk weight floor is implemented as it is currently proposed, it has a significant potential to ultimately bias the Enterprises' portfolio away from lower-risk mortgages.

Second, implementing capital conservation buffers that scale with adjusted total assets results in capital buffers that do not properly scale with changes in risk. The FHFA highlights the benefits of aligning the capital buffers to adjusted total assets, namely that they avoid amplifying the secondary effects of calibration risk and further mitigate the pro-cyclicality of the RBC requirement. However, this decision also produces an RBC framework with buffers that account for 40% of the total RBC requirement and are not sensitive to risk features.

Third, the stability capital buffer relies on a narrow definition of market share of mortgage debt that does not reflect (a) the relatively lower amount of risk retained by the Enterprises due to their use of pass-through MBS, or (b) the generally stronger credit characteristics of the Enterprises' mortgage portfolio compared to the broader residential mortgage market. If these items are not part of the calculation of

³ Analysis of the Proposed 2020 FHFA Rule on Enterprise Capital
<https://www.urban.org/research/publication/analysis-proposed-2020-fhfa-rule-enterprise-capital>

market share, the Enterprises will end up with an implied market share that far exceeds their implied share of industry mortgage risk. In addition, this buffer is pro-cyclical and penalizes the Enterprises for playing a larger role in the mortgage market during times of stress – which they would be expected to do. As an example, during the recent COVID-19 crisis, the Enterprises' larger size resulted in more effective mortgage industry intervention and stabilization.

Finally, the proposed RBC framework largely ignores a meaningful source of future capital in the form of future guarantee fees on existing mortgages. These contractually obligated future cash flows will be available for the Enterprises to pay for credit losses in a stressful macroeconomic environment. Even if they are only partially considered in the stress loss buffer, the presence of these future cash flows should help inform the required levels of various floors and buffers to maintain safety and soundness goals.

Aon therefore believes that a single buffer, sized to risk weighted assets, should be sufficient to account for model risk and allow for additional capital to ensure the Enterprises are going concerns through significant macroeconomic stress. We recommend consolidating the stress loss, stability, and countercyclical buffers into a single *RBC Buffer* which should be sensitive to risk weighted assets. This buffer would need to be calibrated, but Aon's preliminary view is that a buffer sized to 3.25% of risk weighted assets is a conservative amount of additional capital.

2. Consolidate the Tranche Risk Weight Floor and OEA

We propose that the 10% tranche risk weight floor and the 90% Overall Effectiveness Adjustment ("OEA") be replaced with a 10% CRT capital relief haircut, the *CRT RBC Haircut*. This is because the tranche risk weight floor and the OEA address highly interrelated risks – model risk for the former and fungibility risk for the latter. Fungibility risk is the risk that coverage from one CRT transaction can only be used to absorb credit loss from a specific pool of mortgages; it is positively correlated to model risk.

Examining the impact of fungibility risk helps reveal the reason it is correlated to model risk. First, Aon believes that fungibility risk is relatively small for the Enterprises' mortgage portfolio because, unlike their bank counterparts, the Enterprises guarantee mortgages with homogenous credit characteristics. It is unusual to find large variations in credit risk levels when examining quarter-to-quarter or year-to-year Enterprise post-2008 GFC mortgage acquisitions.

It is worth highlighting that the Enterprises have systematically and consistently transferred their single-family mortgage credit risk through CRT transactions since 2013, while Freddie Mac's Multifamily K-Deals have consistently been issued since 2009. Since the Enterprises apply CRT to the entire mortgage portfolio, the fungibility risk is significantly mitigated by the fact that CRT detachment points are tailored to the credit risk of each corresponding mortgage pool. However, model risk also arises when the Enterprises determine the appropriate CRT detachment point relative to the underlying credit risk. This highlights how fungibility and model risk are interrelated.

Due to the connected nature of these risks and the challenges introduced by capital non-neutrality (see Additional Analysis of the Tranche Risk Weight Floor section), we believe it is advantageous from a risk management perspective to combine the tranche risk weight floor and OEA into the 10% *CRT RBC Haircut*.

Additionally, we believe that haircuts which address deficiencies in CRT capital relative to equity capital should encourage innovation and improved CRT structures to mitigate these capital relief haircuts. In the

case of the 10% *CRT RBC Haircut*, it addresses model risk and uncertainty in stress loss, which affects the CRT detachment point. Model risk can be transferred through CRT by purchasing limit beyond the stressed loss estimate. The Enterprises should therefore be incentivized to purchase additional limit in excess of the stressed loss amount and buy out some amount of the 10% *CRT RBC Haircut* by receiving additional capital relief.

Additional Analysis of the Tranche Risk Weight Floor

The tranche risk weight floor is a new material introduction to the RBC requirement and is adapted from the banks' regulatory capital framework. However, we believe that there are two major issues with its inclusion in the 2020 PCR. First, it can create unintended consequences in the types of CRT structures that minimize capital requirements. Second, it represents an outsized reduction in CRT capital relief on Day 1 of the CRT transaction, which grows with the age of the CRT transaction.

Tranche Risk Weight Floor Introduces Unintended Risk Management Incentives

The tranche risk weight floor is intended to address the overall model risk and the additional uncertainties introduced by CRT. However, we believe that it is technically inflexible and could also lead to risk management incentives that are likely unintended.

Implementing the tranche risk weight floor allows the Enterprises to achieve lower capital requirements with CRTs that have a shorter maturity and a detachment point that is lower than the stressed loss estimate. This non-monotonic relationship results in capital requirements that are at odds with traditional risk management principles.

We can illustrate this with a simple example that assumes a single CRT transaction covering a pool of single-family mortgages in a benign macroeconomic environment. The pre-CRT credit risk capital requirement and expected loss on this pool are assumed to be 3% and 0.20% respectively, without any loan level credit enhancement. The CRT structure has an attachment point of 0.35% and a detachment point of 3.15%, with a 12.5-year maturity term that is assumed to be 100% covered by reinsurers with strong counterparty financial strength funding 20% of the limit of liability with collateral assets.

Figure 3 illustrates how the Enterprises can achieve a post-CRT credit risk capital requirement of 1.15% if the CRT tranche detaches at 75% of the stressed loss estimate, which is lower than the 1.35% capital requirement if the CRT tranche detaches at 100% of the stressed loss estimate. This is for a 12-year maturity term. Furthermore, the same post-CRT credit risk capital requirement of 1.15% when the CRT tranche detaches at 75% can be achieved with a CRT structure that has a shorter 7-year maturity term compared to the typical 12-year maturity term.

Post-CRT Credit Risk Capital vs. CRT Tranche Size

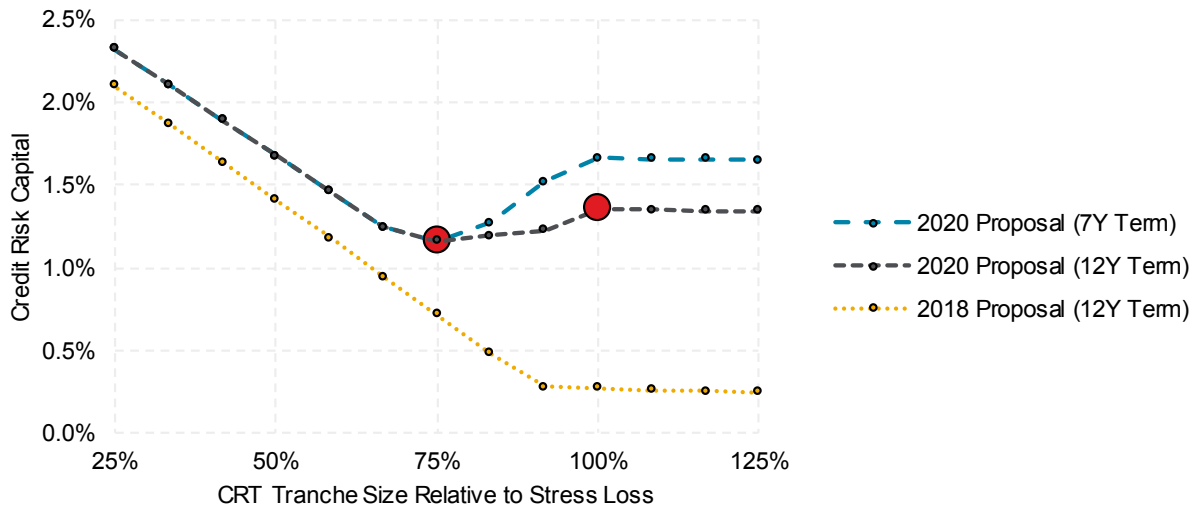


Figure 3: Post-CRT Credit Risk Capital vs. CRT Tranche Size

A capital framework where higher CRT tranche detachment points and longer CRT maturity terms result in lower post-CRT credit risk capital requirements is desirable. This is consistent with the notion that transferring more credit risk through CRT reduces the capital that the Enterprises must hold. The 2018 proposed capital rule exhibited this proper monotonic relationship, as demonstrated in Figure 3. However, this is not the case in the 2020 PCR; the post-CRT credit risk capital requirement initially decreases, but subsequently increases with increasing CRT tranche size relative to the stressed loss estimate. While presumably unintended, the tranche risk weight floor creates a distorted relationship between the amount of credit risk transferred and the required post-CRT credit risk capital.

Introducing distorted incentives that skew the relationship between capital and risk may lead to imprudent risk management decisions. In this instance, the tranche risk weight floor may ultimately incentivize the Enterprises to transfer only 75% of their credit risk to minimize their required capital, which is a less than ideal risk management decision. Having the *CRT RBC Haircut* in place of the tranche risk weight floor can motivate the Enterprises to set the CRT detachment point higher than the stressed loss estimate, so that CRT investors will bear the initial model uncertainty faced by the Enterprises.

Tranche Risk Weight Floor Introduces Capital Non-Neutrality Challenges

Figure 4 below shows that the marginal impact on CRT capital relief due to the OEA and tranche risk weight floor is five times larger than the reduction due to the Loss Timing Effectiveness Adjustment (“LTEA”) and the Loss Sharing Effectiveness Adjustment (“LSEA”). The combined impacts of the LTEA and LSEA result in 90% CRT capital relief relative to stress loss. Because we illustrate CRT in reinsurance form, the CRT capital relief is reduced to the extent that the reinsurance maturity term is shorter than the term of the underlying mortgages and that reinsurers only partially collateralize the full limit of liability.

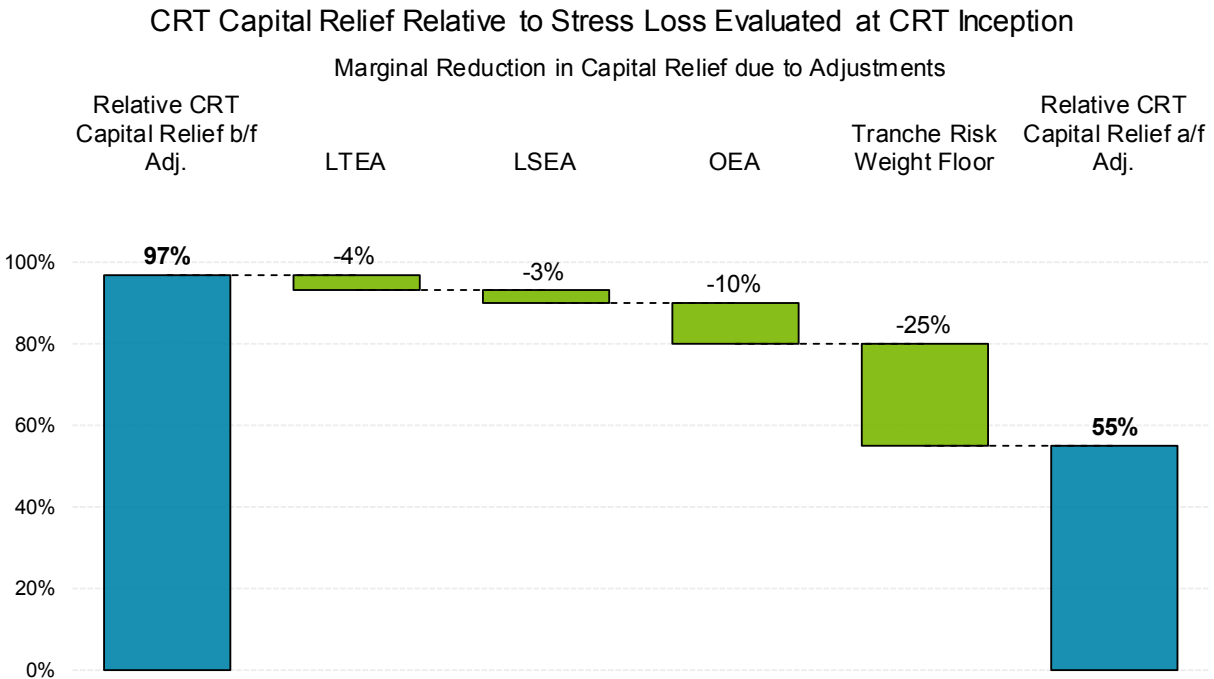


Figure 4: CRT Capital Relief Relative to Stress Loss Evaluated at CRT Inception

Assuming there are no adjustments to the capital relief derived from CRT, a CRT tranche that overlaps exactly with stress loss should completely reduce the credit risk capital required for the underlying mortgages and result in 100% capital relief relative to stress loss. However, layering on the impact of the OEA and the tranche risk weight floor produces only 55% CRT capital relief relative to stress loss. Put another way, a CRT structure that transfers all the stress loss only generates roughly half as much in capital reduction.

It should not be surprising that the tranche risk weight floor is a significant drag on CRT capital relief. Typical single-family CRT structures detach at 4%, so the Enterprises must hold an additional $10\% \times 96\% \times 8\% = 77$ bps in required capital if they decide to use CRT. Most single-family mortgage portfolios in CRT transactions require between 200 bps and 300 bps of underlying credit risk capital, which implies the Enterprises must hold 25% to 40% more capital on top of the stress loss amount for CRT. While the 2020 PCR attempts to ensure that the nature of the risk transferred is commensurate to the amount of capital relief, it unfortunately creates a significant disconnect between the amount of credit risk transferred and the capital relief ascribed to CRT.

In addition to reducing CRT capital relief on Day 1, the proposed rule would cause capital relief to rapidly decline during the life of the CRT transaction. In most cases, this would render CRT completely obsolete well before its maturity from a capital relief standpoint, even when a significant portion of the credit risk continues to be transferred.

Single CRT Transaction Capital Relief Over Time Relative to Stress Loss Under 2020 Proposal

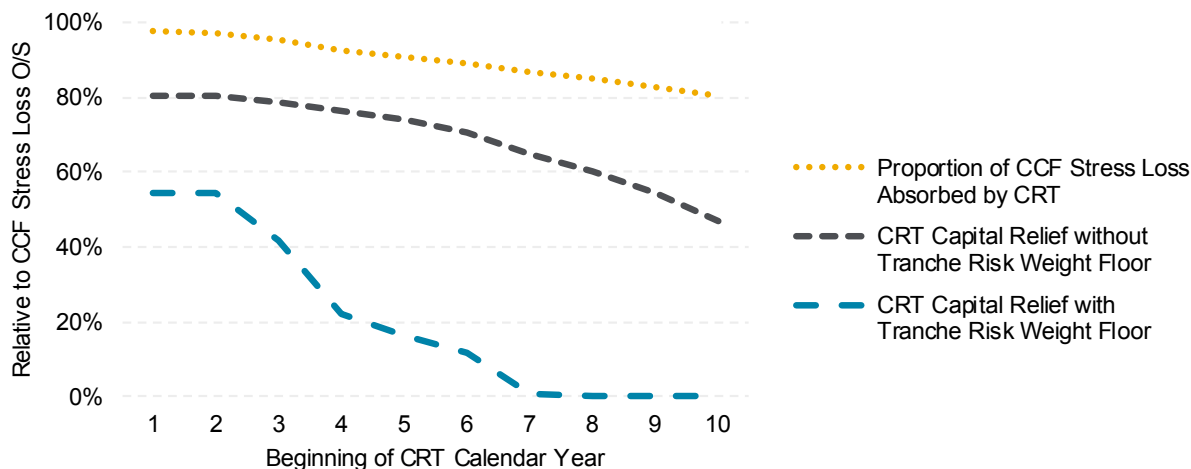


Figure 5: Single CRT Transaction Capital Relief Over Time Relative to Stress Loss

Figure 5 highlights the decrease in CRT capital relief over the life of the CRT term. We measure the outstanding stress loss on a closed portfolio of mortgages at the beginning of each successive year and calculate both the portion of the outstanding stress loss that is transferred by CRT and its corresponding capital relief. As we demonstrated in Figure 4, even though 97% of the stress loss is transferred by CRT at the outset of the CRT transaction, the Enterprises only receive 55% capital relief – an implied capital relief haircut of over 40%. Even with benign macroeconomic conditions persisting over the life of the CRT transaction, the capital relief haircut quickly consumes all the CRT capital relief, as illustrated in Figure 5. Merely three years from its inception, the CRT transaction only produces 20% capital relief despite continuing to transfer 90% of the outstanding stress loss – an implied capital relief haircut of roughly 75%. By the end of the sixth year, the CRT no longer produces any capital relief for the Enterprises, despite transferring over 85% of the outstanding stress loss.

The relative impact of the tranche risk weight floor compared to the outstanding stress loss over time is the primary reason for the rapid decline in CRT capital relief. In a benign macroeconomic scenario, the decrease in outstanding stress loss over time due to healthy home price appreciation drives lower mark-to-market LTV ratios. However, the additional capital the Enterprises must hold because of the tranche risk weight floor remains fixed at 77 bps; this is because typical CRT structures maintain the same detachment point over time relative to the outstanding mortgage portfolio. Consequently, the additional capital required by the tranche risk weight floor increasingly dwarfs the CRT capital relief. By less than halfway through the full CRT term, the CRT produces no capital relief for the Enterprises.

3. Augment the Minimum Equity Requirement within the RBC framework

Aon acknowledges that equity capital can respond more effectively against non-credit related risks such as operational and market risk. On the other hand, to ensure competitiveness, the Enterprises' capital composition should also be driven by market conditions (i.e., the relative cost of the forms of capital). While Aon strongly believes that the RBC requirement should be the dominant driver of the Enterprise we also believe that equity must be the foundational component to the Enterprises' capital composition. Equity capital should increase with risk and though we propose using the LR requirement to establish a minimum level of equity, we believe a further adjustment within the risk-based capital framework is needed to protect against an over-reliance on non-equity capital especially as risk increases.

The 2020 PCR requires that \$200B of the Enterprises' RBC requirement be Tier 1 (see Figure 6). This is calculated based on the \$99B buffer in addition to 75% of the RBC requirement net of the buffer (i.e., \$134B*75%). While we do not propose altering this calculation, we note that an over-reliance on CRT and a potential reduction of the RBC buffers and the incremental CRT impact reduces the Tier 1 RBC requirement to 2.3%.

Combined Enterprise Risk-Based Capital Requirements as of September 30, 2019

	2020 Proposed Capital Rule		Aon Response	
	\$ Billions	% of Assets	\$ Billions	% of Assets
Pre-CRT RBC Requirement w/o Buffer	157	2.6%	157	2.6%
Capital Buffer	99	1.6%	55	0.9%
Pre-CRT RBC Requirement	256	4.2%	213	3.5%
CRT Impact	(22)	(0.4%)	(41)	(0.7%)
Risk-Based Capital Requirement	234	3.8%	172	2.8%
Tier 1 RBC Capital Mix Requirement*			96	1.6%
Tier 1 RBC Requirement	200	3.3%	142	2.3%
New Tier 1 RBC Requirement**			142	2.3%

*Illustrated with 45% of Pre-CRT RBC Requirement

**Higher of the Capital Mix Requirement and Tier 1 RBC Requirement

Figure 6: Combined Enterprise Risk-Based Capital Requirements as of September 30, 2019

The Tier 1 RBC requirement is bound by the presence of the Capital Buffers as well as current practices of CRT. As a precautionary measure to protect from future over-reliance on CRT and potential reduction of the buffers, the FHFA can further set an explicit portion of the pre-CRT RBC requirement to be Tier 1 capital.

To achieve this, we propose a Tier 1 capital requirement set at 45% of the pre-CRT RBC requirement, called the *Capital Mix Requirement*. This is an improvement over the Leverage Ratio (discussed in the next section) since it scales up when macroeconomic conditions deteriorate. Further, it acts as a ceiling limiting the amount of CRT that could be used to satisfy additional capital requirements as RBC requirements increase.

Tier 1 Leverage Ratio Requirement to set a Minimum Equity Level

Given a robust RBC framework with a reasonable capital buffer and minimum equity requirement (Capital Mix Requirement), there may not be a need for a LR requirement in the overall capital framework. However, we do agree with the FHFA that this minimum equity level should form the foundation of the Enterprises' capital, which ensures their ability to navigate a future housing crisis. If a LR requirement is used in addition to the *Capital Mix Requirement*, we believe it should be a countercyclical guardrail that defines a minimum reasonable level of equity capital that the Enterprises must hold. Accordingly, any LR requirement established today must be periodically reviewed by the FHFA to determine whether it still achieves these key objectives.

When setting an appropriate LR requirement for the Enterprises, it is tempting to use U.S. bank leverage ratios as a starting point. However, this presents several challenges. First, the Enterprises and banks have different risk profiles – the Enterprises are monoline entities that mainly focus on taking single-family credit risk while banks are generally multiline with heterogeneous risks. Second, the Enterprises retain minimal liquidity and interest rate risk on single-family mortgage portfolios, which leaves them with mostly credit risk – a stark contrast to banks' full retention of liquidity, interest rate, and credit risk. For these reasons, we do not think bank leverage ratios are relevant comparison points for determining the Enterprises' LR requirement.

Aon's premise for designing a LR requirement is that the RBC requirement should be the dominant driver of the capital requirement, as risk sensitivity is an ideal to uphold in any capital criteria. Consequently, setting the optimal LR requirement is tantamount to setting the absolute minimum amount of Tier 1 capital that will allow the Enterprises to operate safely and soundly no matter the macroeconomic or risk environment.

The LR requirement should not be set too low that it would impede safety and soundness, but it should also not be set so high that it becomes frequently binding. If set to such a high level, as it would have been for most of the past decade, then it disincentivizes the Enterprises to prudently manage risk either through portfolio composition or credit enhancement. Therefore, Aon's approach sets a reasonable LR requirement that (a) creates a safe Tier 1 capital amount, (b) allows the RBC framework to dictate the total capital requirement, and (c) creates risk-based incentives for the Enterprises to manage their business prudently. It is worth noting that the Enterprises' Tier 1 capital nearly fully overlaps with their CET1 capital.

We recommend a LR requirement that is set at 1.5% of adjusted total assets. In our response, the LR requirement defines the minimum level of Tier 1 capital without an additional leverage ratio buffer. When the LR requirement is framed as a safeguard measure for a minimum amount of Tier 1 capital, the leverage ratio buffer is no longer necessary, and should therefore be removed. As a supplemental measure of safety, we also outlined a recommendation in the RBC section which sets a minimum Tier 1 capital requirement that scales with the RBC requirement to ensure that there is always a safe minimum amount of Tier 1 capital across all risk environments.

A LR requirement of 1.5% compares favorably with some of the FHFA's own criteria. On page 74 of the 2020 PCR, the FHFA cites 2008 GFC peak capital losses of \$167B, or 3% of assets at that time. The FHFA also goes on to state that if those losses were adjusted for mortgage products that are no longer acquired by the Enterprises, the resulting 2008 GFC peak capital losses could be reduced by as much as

\$108B, with a resulting loss of approximately \$60B, or 1% of assets. There is some uncertainty in this estimation of the \$60B of adjusted loss or 1% of assets. Setting the LR requirement at 1.5% implicitly provides a 50% cushion above the adjusted 2008 GFC peak losses, which allows room for estimation error.

We can also put the 1.5% LR requirement in context by looking at the cumulative losses estimated under the 2019 Dodd Frank Act Stress Test (“DFAST”). The DFAST exercise simulates the potential impact of the macroeconomic conditions experienced during the 2008 GFC on the Enterprises’ present-day mortgage portfolio. The DFAST stress loss estimate is \$60B, approximately 1% of total assets today, which suggests that a 1.5% LR requirement provides a 50% cushion of Tier 1 capital above the DFAST stressed loss estimate.

Comparison of Leverage Ratio and RBC Capital Mix Requirements

	% of Assets				
Pre-CRT RBC Requirement	2.5%	3.0%	3.5%	4.0%	4.5%
Leverage Ratio Capital Requirement	1.5%	1.5%	1.5%	1.5%	1.5%
Tier 1 RBC Capital Mix Requirement*	1.1%	1.4%	1.6%	1.8%	2.0%
Minimum Tier 1 Capital Requirement	1.5%	1.5%	1.6%	1.8%	2.0%

*Illustrated with 45% of Pre-CRT RBC Requirement

Figure 7: Comparison of Leverage Ratio and RBC Capital Mix Requirements

We previously introduced the *Capital Mix Requirement* as a Tier 1 capital requirement that scales with the pre-CRT RBC requirement. Figure 7 above illustrates how the Capital Mix Requirement (set in this example to 45% percent of the pre-CRT RBC requirement) compares to the LR requirement at different levels of pre-CRT RBC requirement. If the RBC requirement grows within the Enterprises, the Capital Mix Requirement will also grow. The required capital in lower-risk environments will be bound by the LR requirement at 1.5% of total adjusted assets setting a minimum Tier 1 capital level.

CRT’s Role in Strengthening the Enterprises

As noted earlier, Aon partnered with both Enterprises to help create and introduce the insurance-based CRT programs, ACIS, CIRT, MCIP, and MCIRT. We have observed tremendous growth and innovation in these programs over the past seven years and are proud of the role we have played in supporting the Enterprises in the execution of these transactions. The Enterprises’ adoption of CRT has also alleviated their concentration of credit risk and their lack of capital due to conservatorship restrictions. By transforming their business model from a buy-and-hold to a buy-and-distribute, the Enterprises have moved from the storage to the moving business and have spread much of the credit risk associated with newly guaranteed portfolios.

CRT has many broadly acknowledged benefits, but it is only part of a diverse set of credit enhancement tools that include mortgage insurance, lender risk sharing, and senior subordinate transactions. These tools complement other forms of capital such as common equity, which the FHFA notes should be the core and foundational component of the Enterprises’ capital structure. These tools also protect and preserve equity and provide a cushion to reduce the impact of losses during periods of stress.

In this spirit, CRT should constitute part of the Enterprises' capital structure. However, while only \$41B of the \$213B of RBC requirement that Aon has proposed (or less than 20%) would come from CRT, it should be structured to absorb a disproportionately larger share of losses during times of stress. For example, our analysis shows that on a typical reference pool of mortgages with CRT protection, the Enterprises can expect to receive recoveries of up to 90% of the stress losses in a replay of the 2008 GFC (see Figure 5). Although CRT and other credit enhancement tools may constitute a relatively small portion of the overall capital structure, they play a big role in limiting retained losses during times of stress. This can preserve equity capital, help sustain the Enterprises through future crises, and allow them to continue to fulfill their mission.

Furthermore, as noted in prior pages, achieving the equity goals of FHFA's (or even Aon's proposed) capital framework will be challenging. The largest IPO on record was approximately \$30B (Saudi Aramco in 2019⁴). If we assume the Enterprises will raise at least \$90B of equity combined, there will still be a \$125B equity capital deficit. Assuming they can generate \$20B per year of retained earnings (Enterprises' \$25B of earnings in 2018 were largest in last 5 years), they could raise the remaining required capital in just over six years. However, we are concerned that a sole reliance on equity capital to meet FHFA's capital requirements during the transition will expose the Enterprises to a potential reduction in their capital position or even require them to draw from the Treasury again if there is near-term volatility in the housing market.

Using CRT to Benefit the Enterprises

CRT benefits the Enterprises in three distinct ways:

- Reduces earnings volatility
- Complements other forms of capital including equity, by creating a broader and more diversified capital structure
- Confers useful, dynamic, and granular credit underwriting and pricing feedback in a manner that is not provided by equity investors

CRT and, more broadly, credit enhancement reduce the Enterprises' earnings volatility and losses under the risk-based capital framework. In a stressed housing environment, they are absorbing the majority credit losses and minimize the impact on the Enterprises' retained earnings thereby preserving equity. Reduced cost and increased investor confidence are what drive the value of CRT versus other forms of capital. To date, its comparative cost for the Enterprises has been lower than that of their own capital. In 2019, for example, the typical CRT transaction had a 7%⁵ cost of capital under the 2018 proposed capital rule, meaningfully lower than the likely targeted return of at least 10-15% that we believe equity investors would require. Overall, CRT lowers the Enterprises' cost of capital and reduces their earnings volatility in a range of potential stress events.

This is crucial to building the future equity investor confidence needed to obtain the sizable equity raise for the Enterprises post-conservatorship. For instance, since the COVID-19 pandemic took hold of the U.S. economy, several mortgage insurers have raised both debt and equity and effectively utilized new reinsurance purchases to augment their capital base and create investor confidence for those raises.

⁴ World's Biggest IPO Got Bigger: Aramco IPO at \$29.4 Billion

<https://www.bloomberg.com/news/articles/2020-01-12/world-s-biggest-ipo-got-bigger-aramco-ipo-size-at-29-4-billion>

⁵ Demystifying GSE Credit Risk Transfer, Part I – What Problems Are We Trying to Solve?

https://www.jchs.harvard.edu/sites/default/files/harvard_jchs_gse_crt_part1_layton_2020_0.pdf

Reinsurance CRT also incorporates the lessons learned during the 2008 GFC and is designed to mitigate the impact of a future housing crisis. The Enterprises have developed strong teams and robust internal practices, protocols, and analytics to evaluate the cost and benefit of CRT transactions. They have also developed thoughtful frameworks to evaluate the contractual, execution, counterparty, and timing risk associated with these structures. For instance, the contractual language is highly favorable to the Enterprises in cases of claim disputes, with no room for claim rescission or denial except for proven fraud. This allows CRT contracts to closely align with European banking requirements for achieving credit risk mitigation credit for certain guarantees (e.g., the Prudential Regulatory Authority in the United Kingdom). However, since no regulatory or procedural framework can be perfect, the judgment of talented professionals at the FHFA and the Enterprises should be regularly applied to assess the risk and reward of all credit enhancement tools.

CRT investors and reinsurers also help reinforce Enterprise credit underwriting discipline because they are focused on the underlying credit quality of the covered mortgages. Several years ago, ACIS and CIRT reinsurers voiced concerns over the larger-than-expected portion of high debt-to-income (“DTI”) ratio mortgages entering CRT transactions. The Enterprises adjusted their approach so there were fewer of these mortgages.

Due to reinsurers’ exposure to and extensive expertise in natural catastrophe risk, they have consistently evaluated the Enterprises’ exposure to natural catastrophe risk and then assessed the natural catastrophe risk that may be embedded in CRT transactions. Aon has diligently worked with the Enterprises over the past five years to better quantify this risk and to facilitate reinsurer questions and analyses. Based on the Enterprises’ actual mortgage portfolios, Aon has been able to leverage its extensive natural catastrophe modeling expertise and help the Enterprises better understand and monitor this risk. This extensive undertaking considers different types of natural perils (hurricanes, earthquakes, floods, etc.), each of which presents unique modeling challenges. In addition, the analysis is refreshed on an ongoing basis with the constant evolution of the Enterprises’ portfolios and climate change.

Finally, reinsurers have been able to support CRT innovations by the Enterprises, which include large forward CRT commitments (front-end risk transfer), early contract termination options, and coverage for more specialized portfolios such as 15-year fixed rate mortgages. Reinsurers’ risk management expertise and their underwriting capacity allow the Enterprises to tailor solutions and CRT structures that further advance their mission and their safety and soundness goals. In particular, the forward CRT commitments allow more effective risk management through the cycle. These can translate to lower upfront origination costs (i.e., lower guarantee fees) and a more optimized cost of capital.

Using Reinsurers to Manage Through-the-Cycle Risk Prudently

Reinsurance is commonly described as “the insurance of insurance companies” and its origins can be traced back as far as the 14th century. Historically, reinsurance was developed to support the marine and fire lines of insurance but has since grown to be an important element in almost every line of insurance risk. Its primary purpose is to protect insurers from single catastrophic events or the aggregation of significant amounts of risk. Reinsurance also helps cover exposures that are too large for any individual insurance companies to manage by spreading the risk between multiple risk-taking organizations. Reinsurers tend to “follow the fortunes” of the insurance companies that they insure but are also prudent underwriters of insurance risk.

The Enterprises benefit from various types of credit enhancement supported by different groups of risk transfer partners. The insurance and reinsurance companies that support the ACIS, CIRT, MCIP, and MCIRT programs are multi-line property and casualty and life insurance companies. They underwrite the CRT deals on a buy-and-hold basis and have limited options to remarket or sell those contracts in a secondary market. In addition, they cannot borrow or utilize leverage to support those positions. Their promise to pay is backed by partial collateral at the inception of the CRT contract and the full capital on their balance sheets. The financial strength of reinsurers' balance sheets is demonstrated by the financial strength ratings assigned by rating agencies such as AM Best, Moody's, and S&P.

Reinsurers' mortgage portfolios are managed on an exposure basis and are limited to a small percentage, typically less than 10%, of their overall capital base. They underwrite and price the risk based on their fundamental analysis and expected returns through the cycle. Finally, the lack of mark-to-market accounting requirements helps them avoid short-term illiquidity or the forced selling of positions.

Reinsurance-based CRT Deals Have Been Executed During the COVID-19 Market Disruption Generating Nearly \$2B of Mortgage Risk Transfer

Some market commentators have noted that the CRT market disappeared during the early months of the COVID-19 pandemic, but Aon is pleased to highlight that this was not the case for insurance and reinsurance CRT. Aon represented the Enterprises and several mortgage insurers in executing five different mortgage reinsurance deals from March 15th through August 31st of 2020, which secured \$1.8 billion of reinsurance CRT limit. This included several new reinsurance transactions for mortgage insurers which, as noted above, aided in their ability to raise additional debt and equity.

CRT pricing has adjusted to the new macroeconomic conditions and its incremental uncertainty. Some reinsurers have paused as they reassessed their models to determine the impact of the novel COVID-19 pandemic, but the market otherwise remained orderly. All CRT transactions presented to the mortgage reinsurers were priced and executed, and the marketplace continues to support new CRT transactions.

Applying Counterparty Lessons from the 2008 GFC

As the Enterprises apply the lessons learned during the 2008 GFC, they have continued to carefully scrutinize all ACIS, CIRT, MCIP, and MCIRT reinsurers. As mentioned above, they have established robust frameworks to minimize contractual exposure, as well as assess and surveil reinsurance counterparty risk.

Contract Certainty – Key Terms and Conditions

The contractual language supporting ACIS, CIRT, MCIP, and MCIRT is highly favorable to the Enterprises, and is designed for the reinsurers to “follow the fortunes” of the Enterprises. For instance, the obligation to pay the claim within ten days is unconditional even during litigation. Reinsurers can only cancel the CRT contract if the Enterprises fail to make the premium payment. In addition, the reinsurers’ limit of liability is partially collateralized in a trust account, with the collateral percentage based upon each individual reinsurers’ financial strength rating as provided by a rating agency (e.g., AM Best, Moody’s, and S&P), which is generally between 20% to 75% of the limit of liability. The trust assets are required to be highly-liquid cash equivalents and are also cross collateralized among all the CRT transactions in which each reinsurer participates.

Payment of Claims

Reinsurance CRT is a significant and attractive source of entity-based private capital because reinsurers generally have diversified business lines that are not heavily concentrated in or highly correlated to U.S. residential mortgage risk.

Figure 8 shows that roughly \$2B in projected stress losses were associated with the reinsurance limit underwritten by the top ten reinsurance CRT participants. This represents roughly 80% of the total stress loss modeled in a 2008 GFC replay. Approximately \$3B of dedicated highly liquid collateral across those ten reinsurers is available should they fail to pay claims. Additionally, the collateral posted by reinsurers is cross collateralized against all their CRT liabilities. As a result, collateral on a CRT transaction that is not experiencing losses can be used in CRT transactions that are experiencing losses. This approach effectively boosts the loss covering collateral available to the Enterprises. In this example, the available collateral is nearly 1.5x the stress losses in a 2008 GFC replay.

It is important to remember that the collateral is the last line of defense for recovery under these CRT transactions. Reinsurers have significant financial strength in their balance sheets and are very likely to pay claims in the timely manner prescribed by the CRT contracts without the Enterprises needing to tap into the available collateral. The same top ten reinsurers previously described had over \$107B of equity at the end of 2019, while the projected stress losses of \$2B were less than 2% of their combined common equity. This demonstrates that CRT is a limited and extremely manageable exposure for these reinsurers.

Top 10 CRT Reinsurers as of 2019

Projected 2008 GFC Replay Stress Loss (\$B)	1.9
Committed Collateral (\$B)	2.8
Stress Loss as a ratio to Collateral	147%
Total Available Common Equity (\$B)	107.0
Stress Loss as a ratio to Common Equity	2%

Figure 8: Top 10 CRT Reinsurers as of 2019

Furthermore, reinsurers have demonstrated their willingness and expediency in paying claims. Historically the reinsurance industry is quick and responsive in claim payments. Aon found that in response to a series of hurricanes and wildfires that hit the U.S. in 2017 and 2018, reinsurers paid more than \$10B in claims with over 90% of those payments occurring within fifteen days of the claims notice being presented to them⁶.

Conclusion

In conclusion, we would like to again express our support for the FHFA's aims and reinforce our agreement with the concerns it has raised about the current approach to CRT. The approach we have proposed in this response is designed to build on the FHFA's proposed rule change, address its vulnerabilities, and enhance its effectiveness through two primary adjustments: three primary changes to the RBC framework and a reduction in the LR requirement to 1.5%. Our experience and analyses indicate that if the FHFA adopts these recommendations, it can (a) achieve a more equitable balance of equity and complementary capital for the Enterprise, (b) build a framework that provides the Enterprises with even more support in both benign and stressed economies, and (c) continue to capture the value CRT can offer as an important complement to its core equity capital.

We welcome your feedback and look forward to discussing this response with you. Thank you for providing us with the opportunity to participate in this discussion.

⁶ Based on actual reinsurer claim payment performance to Aon clients

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Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

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Aon's PSP is a global team of professionals focused exclusively on serving the unique needs of governments by creating innovative solutions for federal, state and local agencies. For over 40 years, Aon has supported public entities globally, including many Federal agencies, more than half of the U.S. states, and over a hundred large municipal governments. We are a dedicated team of colleagues with broad experience in both government and the private sector that delivers all of Aon's capabilities to help our government clients secure their public mission.

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