July 9, 2018

Federal Housing Finance Agency
Proposed Rule on Enterprise Capital Requirements
Comments/RIN 2590-AA95

Andrew Davidson & Co., Inc. (AD&Co) is pleased to have the opportunity to comment on the recently released FHFA Proposed Rule on Enterprise Capital Requirements. This comment will be limited to a discussion of the Proposed Approach for Single-Family Credit Risk Transfer (CRT) Capital Relief (discussion section II.4.b, Proposed Rule §§ 1240.14 through §§ 1240.16). We may provide comments on other aspects of the Proposed Rule at a later date.

Andrew Davidson & Co was founded in 1992 and is a leading provider of mortgage loan prepayment and credit models. Several hundred financial institutions and many regulators utilize our models to evaluate the value and risk of mortgage loans, mortgage-backed securities and related portfolios. Andrew Davidson was an early proponent of credit-risk sharing. He and the firm have contributed significantly to the development of CRT transactions and the CRT market. It is in this light that we comment on the Proposed Rule.

The FHFA Proposed Rule represents a significant step forward in the development of the CRT market because it establishes a clear process for transactions which provide significant risk transfer to meaningfully reduce capital requirements. Unlike current banking regulations, the rule does not require that the Enterprises achieve sale treatment for their mortgage assets to offset a portion of the capital requirement for those loans.

While we applaud this achievement, we believe that the rule should be further refined in order to better facilitate the growth and success of CRT. Even though the Proposed Rule will be suspended during the Conservatorship of the Enterprises, the rule is still likely to affect Enterprise activities. It may be also be used as a blueprint for GSE reform and could stimulate discussions with other financial regulators on how much capital relief should be provided for CRT transactions in other contexts. Thus, there are powerful incentives to make improvements to this aspect of the Proposed Rule.

CRT REDUCES RISK, BUT IS NOT EQUITY

Our recommendation is based on the observation that while CRT may reduce losses experienced by the Enterprises, the CRT transactions, even when fully collateralized by cash equivalents will not provide the same level of protection against loss (and ultimately to the taxpayer) as equity. Equity is superior to CRT in two important dimensions: fungibility and income.

First, CRT balances are not transferable between reference pools. If one reference pool has losses that do not fully absorb a CRT bond balance in a stress scenario, but another reference pool does have losses that exceed the CRT bond balances, the excess balances from the first bond cannot be used to absorb losses from the second pool. Equity, on the other hand, is fungible and will absorb losses from any part of the portfolio.

Second, in attracting investors to CRT, the Enterprises pay a spread over funding cost to investors to take on the credit risk of the mortgage loans. This income is not available to cover losses or rebuild net worth. On the other hand dividends

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paid to equity are generally subordinate to credit losses. While FHFA says that the rule does not directly include income as a source of claims-paying ability, income can provide a substantial amount of protection against losses.

As a result of these observations, we believe that the rule should be modified to alter the computation of how credit-risk capital is allocated to the tranches. The Proposed Rule has a five-step process to compute capital relief for CRT. Our recommendation would only change the first step, the other four steps would remain as proposed. After describing the treatment of CRT under the Proposed Rule, we outline our recommendation and then provide a discussion and support for the recommendation.

THE PROPOSED TREATMENT OF CRT

In step 1, (§1240.15.c.1) the Enterprise computes the Tranche Credit Risk Capital. The Proposed Rule first allocates expected losses to the most junior tranche and then continues to allocate capital to the most junior tranche first and then to the second most junior tranche and so forth until the amount of capital allocated equals the total pool group's credit risk capital. The Proposed Rule shows this in its Figure 1, replicated below. Tranche M1 has an attachment point of 50 basis points and a detachment point of 450 bp.

Figure 1. Single-Family CRT Example
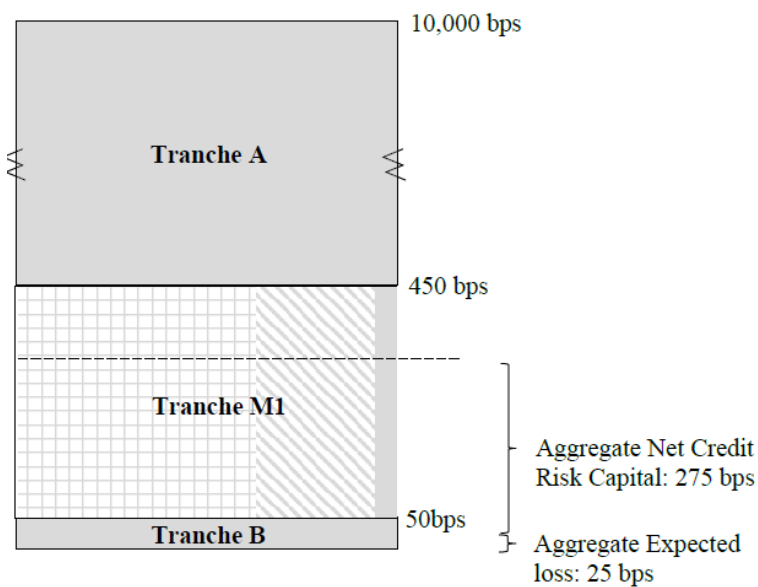
Ownership:
Tranche A: 100% retained (in solid gray).
Tranche M1: 60% to capital markets (gray grid lines), 35% reinsured (in gray diagonal lines), and 5% retained (in solid gray).
Tranche B: 100% retained (in solid gray).

Source: FHFA Proposed Rule p.153.

In this this calculation, no capital is assigned to any attachment point beyond 300 basis points, and all 275 basis point of capital is assigned to tranches M1 and B. (25 basis points of expected loss is essentially assigned to Tranche B, but is not capital.

RECOMMENDED APPROACH

The goal of our approach is to better align the risk reduction from CRT to the economic benefit of CRT. We will first describe the method and then discuss the conceptual underpinnings.

In our method, capital allocation to tranches below the expected loss plus aggregate net risk capital (25 plus 275 basis points in the example) will be reduced and there will be additional capital allocation to tranches beyond that point.

In keeping with the approach of the FHFA proposal we created Table 1 as a small set of factors to facilitate the allocation.

Table 1. Capital Allocation Factors

Percent of EL + Net Credit Risk Capital	Capital Allocation % of Detach - Attach
0% - 50%	90%
50% - 100%	60%
100% to 150%	30%

In Table 2, we show how our proposed method would reduce the allocation of capital to Tranche M1 of Figure 1. Under the proposed method, 225 basis points of capital would be allocated to the tranche versus 250 under the FHFA method.

Table 2. Tranche M1, Attachment 50, Detachment 450

Percent of EL + Net Credit Risk Capital	Allocation Factor	Collateral Loss (bp) up to:	Attach (bp)	Detach (bp)	Attach minus Detach	ADCo Method	FHFA Method
0 – 50%	0.9	150	50	150	100	90	100
50% - 100%	0.6	300	150	300	150	90	150
100% to 150%	0.3	450	300	450	150	45	0
TOTAL						225	250

In Tables 3A and 3B, we show the how our recommended method changes the allocation of capital. Suppose that Tranche M1 had the same attachment point of 50 basis points but had a detachment point of 300 basis points. Under the FHFA method there would be no reduction in the capital allocation at all. The capital allocation would remain at 250 basis points despite a 150 basis point decrease in the attachment point. There would be no capital-based incentive to issue CRT with any attachment point beyond 300 basis points. Under our proposed method the capital allocation would be reduced to 180 basis points on this Tranche M1, with an additional 45 basis points of possible capital reduction available by increasing the detachment point or by issuing an M2 bond with an attachment point at 300bp and a detachment point at 450 basis point as shown in Table 3B.

Figure 2 is a schematic of the methodology showing the weighting of each segment of the CRT bonds. The first 150 basis points receives a 90% weight, the next 150 basis points a 60% weight and the third 150 basis points receives a 30% weight.

Table 3A. Tranche M2, Attachment 50, Detachment 300

Percent of EL + Net Credit Risk Capital	Allocation Factor	Collateral Loss (bp) up to:	Attach (bp)	Detach (bp)	Attach minus Detach	ADCo Method	FHFA Method
0 – 50%	0.9	150	50	150	100	90	100
50% - 100%	0.6	300	150	300	150	90	150
100% to 150%	0.3	450	0	0	0	0	0
TOTAL						180	250

Table 3B. Tranche M1, Attachment 300, Detachment 450

Percent of EL + Net Credit Risk Capital	Allocation Factor	Collateral Loss (bp) up to:	Attach (bp)	Detach (bp)	Attach minus Detach	ADCo Method	FHFA Method
0 – 50%	0.9	150	0	0	0	0	0
50% - 100%	0.6	300	0	0	0	0	0
100% to 150%	0.3	450	300	450	150	45	0
TOTAL						45	0

Figure 2. Illustration of Recommended method assuming sale of M1 and M2.

Bond	FHFA	ADCo
M1	0	45
M2	250	180
Total	250	225
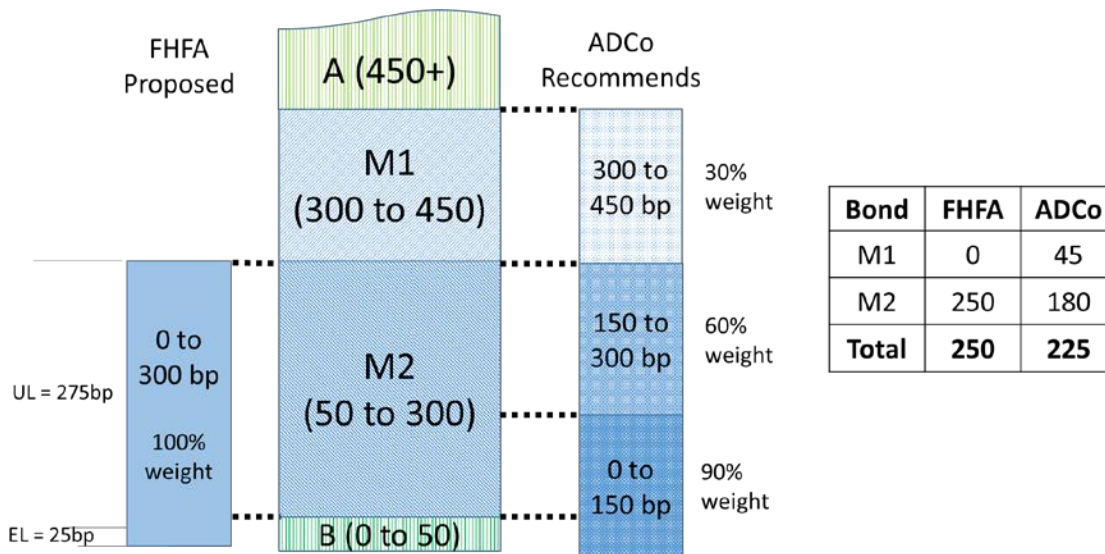
DISCUSSION

Our proposed method has two main features. First, an extension of capital relief to higher attachment points as described above, and second, a slight reduction in total capital relief. While presented together they are two separate features of the method. The total amount of capital relief can be adjusted by altering the allocation factors. For example, allocation factors, 1.0, .65, .35, would result in total capital allocation of 275 basis across CRT tranches M1, M2 and B.

These two features address the observations that CRT is not a direct substitute for equity. By providing an extension of capital relief to higher levels of loss, the recommended approach would encourage higher detachment points for CRT

and make it more likely that CRT could cover losses on individual reference pools. This would serve to offset the disadvantage that CRT is not fungible across deals.

In the event of a severe decline in home prices, it is likely that most reference pools will experience some degree of increased loss. Thus for lower attachment points there is little need for fungibility as the CRT bonds will likely experience losses and CRT balances will offer almost the same protection as equity. At higher attachment points there is greater risk that actual losses will be higher for some pools and lower for other pools reducing the effectiveness of CRT balances to offset total portfolio losses. Thus, the recommended approach decreases capital relief at higher attachment points. In addition, because CRT balances cannot cover losses on other pools, we extend capital relief beyond the average portfolio stress level so that coverage for losses on reference pools with higher than average losses will be offset by CRT.

This leads to the three categories of adjustment. A small reduction for CRT with low attachment points below 50% of the expected loss plus net credit risk capital, a larger reduction for CRT with attachment points from 50% to 100% of the expected loss plus net credit risk capital, and the introduction of capital relief for attachment points from 100% to 150% of the expected loss plus net credit risk capital.

The slight reduction in total capital relief serves to reflect the fact that CRT reduces income to the enterprises and in other ways decreases flexibility relative to equity. Yet the reduction is not so great as to discourage the use of CRT since the cost of CRT is generally well below the cost of equity, especially beyond a small slice of first loss.

COMPARISON TO OTHER APPROACHES

Following the style and approach of the Proposed Rule, we have presented a method that relies on simple and transparent multipliers. In order to develop the multipliers we looked to other methodologies that address these issues.

A May 2002 article in *Risk Magazine* by Pykhtin and Dev, entitled "Credit Risk in Asset Securitizations: An Analytical Model" describes the marginal capital requirements for these types of transactions. The underlying theory is that the loans in the securitization are correlated with each other, and that the bank portfolio contains many of these transactions that are not perfectly correlated with each other.

Figure 3 taken from their article and reproduced below shows the impact of imperfect correlation on the marginal capital requirement at each attachment point. Note the impact of even a small decline in correlation below 100%.

Figure 3. From Pykhtin and Dev, 2002, Marginal Capital and Expected Loss
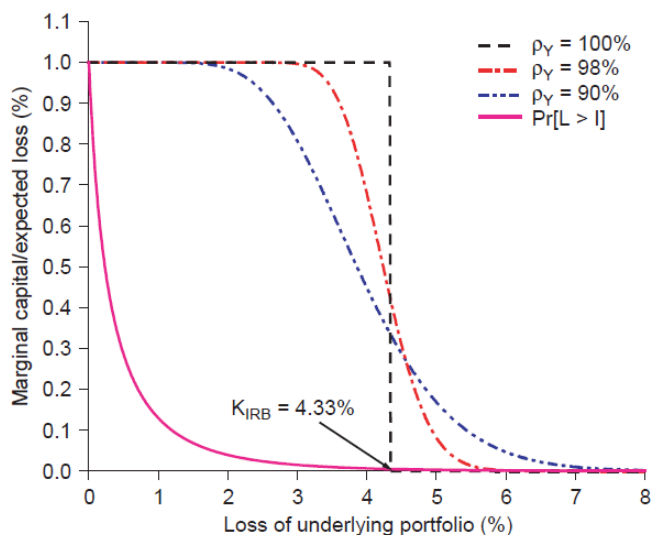
We have replicated the Pykhtin and Dev approach using parameters similar to those used in the Proposed Rule. Figure 4, shows the marginal capital contribution by attachment point, for various correlations. Our recommended approach represents a simplification of this pattern, splitting these curves into three tiers.

Figure 4. Pykhtin and Dev Method Applied to CRT Assumptions
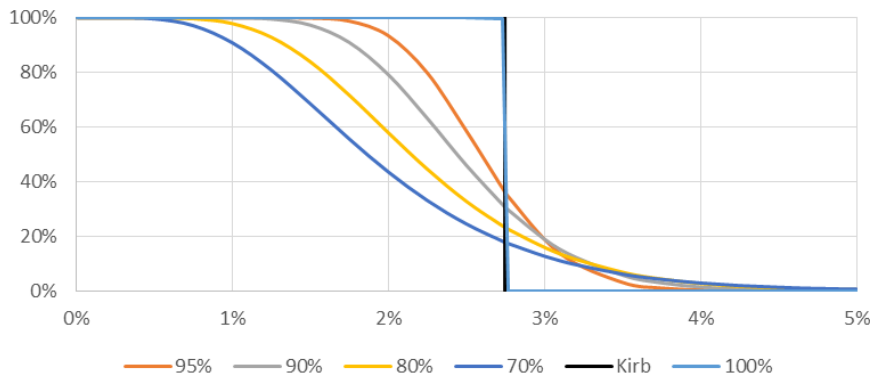
Another benchmark is the Standardized Supervisory Formula Approach (SSFA) of Basel, used by the banking regulators. The SSFA approach is more punitive to securitization and increases the amount of capital requirement. SSFA assigns 100% capital to any tranche retained up to the capital requirement of the underlying collateral and then also greatly extends the capital requirement into more senior tranches.

Table 4 converts the SSFA methodology into marginal capital factors on the same basis as our recommendation. The SSFA is designed, not to show the amount of capital relief, but rather to show the amount of capital that must be held against any retained risk. Thus under the SSFA, a bank would be required not only to hold 100% capital for attachment points below 3% but would also hold 61% capital for retaining the 300 bp to 450 basis point tranche. Not until the 6% attachment point would the capital requirement reach the 4% capital requirement generally applicable to mortgage loans.

Table 4. SSFA Method

Attachment	Detachment	Equity Factor
0.0%	0.5%	100%
0.5%	3.0%	100%
3.0%	4.5%	61%
4.5%	6.0%	20%
6.0%	10.0%	4%

The calculation of the SSFA is based upon a p factor of 0.5. The p factor can be thought of as a securitization-aversion factor. A p-factor of approximately 0.2 would lower the equity factor on the 3% to 4.5% tranche to approximately 30% as in our recommended approach, indicating that our approach is less securitization adverse than current banking regulation.

In addition to these theoretical measures, the approach we recommend is also consistent with pricing in the CRT market. We have recently introduced total-return indices for the CRT market. The indices are tiered by attachment point. Table 5 shows the current yield for each of these tiers. We compare the spread over Libor, which represents the net cost to the GSE, across the tiers to the capital relief factors. We assume an equity premium of 8% over Libor. We see

that the relative cost is lower than capital relief factors so that the GSEs would retain significant financial incentives to pursue CRT, except for the first loss tranche.

Table 5. Market Spreads by Attachment Point

Tier	Tranche	Attachment	Current Yield	Spread vs. Libor	Relative Cost	ADCo Factors
0	B / B2	0	9.16%	7.16%	90%	90%
1	B1 / M3	0.25%	5.65%	3.65%	46%	90%
2	M3 / M2	0.95%	5.14%	3.14%	39%	90%/60%
3	M2 / M1	1.75%	3.30%	1.30%	16%	60%/30%
4	Old M1s	3.75%	2.62%	0.62%	8%	30%

In sum, our proposed approach would provide the tax payers with greater protection against loss, and is consistent with economic theory, with other regulatory approaches and with market pricing of CRT bonds.

OTHER ISSUES

There are several other issues that we would like to highlight here that have some bearing on CRT capital relief and we offer a few suggestions.

The Proposed Rule provides for haircuts for non-fully collateralized deals. The calculations for those haircuts might need to be adjusted to reflect the capital-allocation factors. We believe that haircuts for non-fully collateralized deals should be compared to the net amount of capital relief so that if the capital-relief factor were 30% and the counterparty had posted 30% collateral there would be no need for an additional haircut.

FHFA has the alternative of treating CRT as additional capital available to cover credit losses as opposed to a reduction in capital requirement: We have a slight preference for treating the benefit of CRT as additional capital rather than as a reduction in risk.

We understand that under current regulations, reserves for expected losses are considered a component of total capital and can be used to meet the capital requirement. We would recommend that capital requirements then be increased to include expected losses, until such time that loan loss reserves are removed from total capital.

CONCLUSION

We thank FHFA for the opportunity to present our ideas on capital relief for CRT bonds. We applaud FHFA for taking a clear step toward providing incentives for CRT issuance and recognition of the risk reduction value of CRT. We recommend refinements of the approach that would somewhat reduce the capital benefit for CRT below the amount of expected loss plus net credit risk capital, and would extend capital relief to higher attachment points. We believe such a change would provide taxpayers with greater protection against loss and better align CRT as an alternative to equity. Our recommendation is consistent with economic theory, with other regulatory approaches and with market pricing of CRT bonds.