

November 16, 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. 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.

This comment addresses aspects of the proposed rule that were not covered in our previous two letters. Our first letter (July 9, 2018) concerned the treatment of risk transfer. We argued that credit risk transfer (CRT), while providing a reduction in risk, is not equity. Capital relief is appropriate for CRT and should be available to all regulated financial institutions, but the method chosen by FHFA is too generous for low attachment points and not generous enough for higher attachment points.

Our second letter (October 18, 2018) addressed the pro-cyclicality of the Proposed Rule, which is created primarily by linking the capital charge for single-family mortgages to the current loan-to-value (LTV) ratio of the loans rather than to the original LTV. Specific countercyclical measures in both the rule and the management of the enterprises are necessary to counteract the pro-cyclicality of the rule.

In this third and final letter, we address other specific areas of the rule, such as the computation of single-family credit risk and the relationship between sources of risk and capital, and we provide some overall comments on what the rule does not cover. We conclude with a comment on the potential use of a computed capital shortfall to determine a commitment fee for the enterprises under the Preferred Stock Purchase Agreement (PSPA). The topics for this comment include the following:

1. Single-family Credit Risk
2. Geography
3. Mortgage Insurance
4. Market Risk
5. Leverage Capital
6. Capital Definition
7. Mission Risk
8. PSPA

## **SINGLE-FAMILY CREDIT RISK**

Overall we find that the risk weight tables for single-family credit risk are reasonable and broadly consistent with the results of the AD&Co LoanDynamics Model for similar stresses, that is, a decline in a national measure of home prices by 25%. We note that the capital charge for the GSEs book of business is 273bp, which is well below the 4 to 5% capital charge provided for by Basel II under the standardized approach. Banks that can use internal models may have lower capital charges. However, as pointed out in our second letter, the capital charges for the assets held by the enterprises may rise significantly in a declining home-price environment.

We also find that multipliers for the risk parameters we explored appeared to be reasonable when viewed individually. However, it is generally not appropriate to treat all adjustments as strictly multiplicative when combined, so it is likely that some combination of effects might overstate or understate losses using this method.

For this reason, and more generally, we believe it is essential that as part of the adoption of the rule, FHFA also establish a process to assess the various tables, multipliers and methodologies used in the rule on a predetermined schedule. We recommend that each numerical assumption in the rule, as well as each broad methodology, be reviewed and, if necessary, revised every five years. (We would recommend that the review be placed on a rotating schedule so that portions of the rule are under review each year.)

Experience shows that changes in mortgage products, market conditions and the availability of more data can lead to significant changes in the expected performance of mortgages. A regular timetable for assessing the quality of the assumptions and making revisions is essential for the long-term relevance of a risk-measurement process. Indeed it is clear that one of the major flaws of the prior stress-test regime under OFHEO was that models were not updated to reflect changing market conditions and products.

## GEOGRAPHY

An example of an area that could be reviewed is geography. In our modeling we find a strong relationship between geography and credit risk from two sources: differences in local housing price dynamics and differences in default resolution timelines. Housing price dynamics differ from region to region in two ways: momentum in home price changes and differences in the volatility of home prices across markets. The effect of persistence is clear. If a region of the country is experiencing home-price declines, those declines are likely to continue for a few more years, as home prices are generally slow to adjust to changing economic fundamentals.

As for the relative volatility of home prices, one need only consider that default acts much like an option. The borrower can “put” the home to the lender if the value of the home falls below the amount of the mortgage. As with any option—even one that is not exercised efficiently or ruthlessly—the value of the option increases as the volatility of the underlying asset increases.

The value of this option also depends on the costs associated with resolving defaults. These expenses are strongly related to the time it takes to foreclose, which may be greater in judicial states than non-judicial states. Using AD&Co models, we replicated a stress scenario similar to the one described by FHFA in the proposed rule using a representative new loan with an 80% LTV and a 750 FICO. The computed credit risk capital varied greatly, with the highest risk states having more than triple the cost of the lowest cost states.

In our analysis, variations in HPI volatility reveal loans in CA, FL, NV and AZ to be riskier than average, while TX is among the least risky states. Extended resolution timelines raise costs in NY, NJ and other Northeastern states. From a policy perspective, FHFA may have chosen not to differentiate price and capital by geography, perhaps assuming that the enterprises would maintain geographically diverse portfolios. This would clearly be a limitation if there were new entrants which had different geographic diversification. Even with nationally diversified portfolios, GSE average credit pricing should reflect the full variation of these geographic factors. We find that a nationally diversified portfolio has greater risk than a portfolio of loans evaluated based upon the national average home price.

## MORTGAGE INSURANCE

Based on our modeling it appears that for the most part the initial credit given to mortgage insurance (without counterparty haircuts) in the proposed rule is about equal to the benefit that mortgage insurance (without recision) would have provided in a benign environment. However, in the stress scenario described, our models show lower effectiveness for mortgage insurance (MI). In the table below, the base case represents non-stressed home prices, the stress scenario is similar to housing crisis levels of decline, and the severe stress scenario roughly matches what we believe to be the FHFA stress used to compute the single-family credit losses for the proposed rule.

	<b>LTV Range</b>	<b>81-85</b>	<b>86-90</b>	<b>91-95</b>	<b>96-97</b>
	Coverage	12	25	30	35
<b>FHFA</b>	Multiplier	86.7	55.1	41.2	32.2
<b>AD&amp;Co Model</b>	Base Case	88.5	57.5	40.9	30.9
	Stress	91.9	66.5	52.1	42.4
	Severe Stress	94.2	73.7	61.8	53.3

We believe that the capital reduction for MI may be overstated somewhat, because severities may rise in the severe stress case, and average realized mortgage insurance coverage is always somewhat less than the stated coverage percentage due to the loan-by-loan nature of the MI contract. The automatic cancellation feature of MI at 78% LTV also reduces the effectiveness of MI, especially over longer time horizons.

## MARKET RISK

Prior to the financial crisis, the enterprises retained large portfolios and bore a significant degree of market risk. This risk arose from potential mismatches between the mortgage and other assets held on balance sheet and the liabilities and swaps used to fund and hedge those assets. Market risk has several components: duration, convexity, prepayment, and spreads, but the current capital proposal addresses only one of them—spread risk. While current GSE operations may have reduced exposure to other market risks, not all risks have been eliminated. If this capital rule is used post conservatorship, there may be greater chance that the enterprises will increase their exposure to market risk.

We would recommend that at a minimum, the capital rule provide a backup method of computing and tracking total market risk, and either require that the GSEs not exceed a certain threshold or impose an additional capital charge for increased market risk.

## LEVERAGE CAPITAL

The proposed capital rule offers two alternatives for leverage capital, bifurcated and combined. While recognizing that there is a trade-off between the approaches, we recommend using the bifurcated alternative because it aligns better with risk. The higher leverage capital requirement on non-trust assets partially offsets the incomplete measure of interest-rate risk and prepayment-risk in the proposed rule, as we describe above. The higher capital requirement is also more consistent with the treatment of those assets by bank regulators.

The greater alignment of the bifurcated approach has a downside in that it is less likely to be binding and might encourage activities that have a low capital charge but still bear other hidden risks. By contrast, a binding leverage requirement might encourage desired cross-subsidization and additional prudent risk taking.

On balance, we support the bifurcated approach, provided that the FHFA addresses the pro-cyclicality (discussed in our prior letter) and other capital reducing but risk-increasing strategies that the enterprises might choose to employ.

## DEFINITION OF CAPITAL/PRESENTATION OF RESULTS

Assessing capital adequacy of the enterprises is complicated by the requirement that FHFA use a congressionally mandated definition of capital and by the presence of offsetting transactions, such as MI and CRT, which reduce the risk of the enterprises. We recommend that FHFA address these definitional issues and adopt a different approach for categorizing capital adequacy.

Our approach would address the capital requirement in two parts as in the table below. The first column would be the capital charges associated with the sources of risk, including any adjustment for pro-cyclicality, and the second column would be the capital benefit of the sources of support, including equity.

The sources of risk column would show the full loss (excess and expected) for each asset type, the additional operations and on-going concern charges, and any other capital charges. The full loss would not be offset by either mortgage insurance, credit risk transfer or other reductions.

The second column would be the sources to bear risk, including mortgage insurance, credit risk transfer and capital. Any offsetting adjustment to the countercyclical buffer would also be shown in this column. The difference between the capital benefits associated with the sources of support and the capital charges associated with sources of risk would be the capital surplus if positive, and the capital shortfall if negative.

### Sample Capital Analysis (pro-forma, not intended to reflect actual values)

Sources of Risk		Sources of Support	
Credit Risk (gross)	134.1	Mortgage Insurance	22.1
Expected Loss (reserves)	12.5	Credit Risk Transfer	21.5
Market Risk	19.4	G-fee Income	42.3
Going Concern Buffer	39.9	Equity	5.4
Operational Risk	4.3	DTA (offset)	(26.8)
<b>Total</b>	<b>201.2</b>	<b>Total</b>	<b>64.5</b>
Countercyclical Buffer	35.2	Countercyclical Buffer	(9.3)
<b>Total</b>	<b>245.4</b>	<b>Total</b>	<b>42.7</b>
<b>Capital Surplus (Shortfall)</b>		<b>(190.2)</b>	

In our analysis we adjust the sources of support for components of equity (as required by statute and GAAP) which would not be available to cover the sources of risk. Generally these items are not included in Tier I capital or are limited in their inclusion in Tier I capital. The proposed rule makes an adjustment for Deferred Tax Assets, but it does not make an adjustment for loan loss reserves. As loan loss reserves are included in the definition of capital, expected losses need to be included as a source of risk.

On the other hand, the rule does not provide any benefit for likely future income for guarantee fees, which could certainly offset future losses. Perhaps FHFA believed that g-fee income was an offset for loan loss reserves and so both could be excluded. We would prefer to directly include guarantee fees as a source of support, with appropriately conservative assumptions on prepayment rates, discounting and haircuts. Future payments to CRT counterparties would also be deducted from this calculation.

While the results above are roughly based upon the reported numbers in the proposed rule, the numbers in shaded blue boxes are approximations and are not intended to reflect actual values. The purpose of the table is only to show a possible presentation of the data.

The benefit of this approach is that that it would clearly show the total amount of risk passing through the enterprises and how that risk has been distributed. Furthermore, in the current approach, netting mortgage insurance from mortgage credit risk hides the amount of risk that is borne by the MI industry. We also believe that showing DTA as a reduction in the sources of support provides greater clarity as to the sources of support.

## **AREAS NOT ADDRESSED BY THE PROPOSED RULE**

A capital rule is only one dimension of a regulatory structure. By itself, the capital rule cannot ensure safe and sound operation by the enterprises. While the rule is fairly comprehensive in addressing credit risk based on the current operations of the enterprises, it is somewhat sparse in dealing with deviations from these practices. In addition to market risk, as we described above, the rule also provides little guidance in how FHFA would address changes in underwriting practices or risk-sharing deal structures, both of which could significantly increase the risk of the enterprises but might not be captured by the proposed rule.

In addition, the enterprises have a public mission which may not be directly related to the capital rule, but fulfilling that mission may increase risk and capital charges. Therefore, mission, risk and capital must be evaluated in concert to avoid repeating the problems that led to failure of the GSEs. Such issues include: using cross subsidization to make homes more affordable for target populations; providing access to borrowers across the country and in underserved and risky markets; providing an outlet for loans for a wide range of mortgage originators; providing stability to the capital markets; and aligning interests between parties throughout the mortgage chain. FHFA should consider mechanisms to measure outcomes in these dimensions and find an appropriate way to balance these goals with capital efficiency.

## **CAPITAL AND THE PSPA**

Under the PSPA, Treasury can be compensated for the advances it has made to the enterprises in the form of Preferred Stock through dividends or through a commitment fee for future potential advances. To date, the compensation for Treasury's support has been through dividends, which are a sweep of all excess retained earnings. With the proposal of a capital rule for the enterprises, it would be possible to restructure the payments using a commitment fee rather than a sweep.

The commitment fee amount could be set to 10% (or another rate) of the capital shortfall computed under the proposed rule. For example, with a current shortfall of approximately \$200 billion, the commitment fee would be \$20 billion, which is close to the current combined annual earnings of the enterprises.

The enterprises would pay up to that amount on a non-cumulative basis to Treasury. The dividend amount could be reduced back to a specific percentage of the outstanding balance, or even better, the outstanding balance of the preferred stock could be reduced by categorizing prior payments in excess of the original dividend rate of 10% as repayments.

Adopting such a structure offers a way to evaluate alternatives that would provide additional capital relief and a possible path to recapitalizing the enterprises, either under the current rules or under revised rules adopted by Congress.

## CONCLUSION

As we stated in our first comment letter, the proposed capital rule is a major step forward for the housing finance system. As the enterprises are central players in the housing-finance system, a transparent and reasonable framework for evaluating the risk and returns to the enterprises is essential to the overall performance of the system. While we have proposed a number of revisions to the proposed rule, we believe the proposal provides an excellent basis for discussions of the enterprise risk during conservatorship and establishes a solid foundation for future housing finance reform.