Kamakura Corporation
Impact Analysis -- Proposed Modification of 12 Code of Federal Regulations Part 704

NCUA Summary, and Discussion, of Final Kamakura Report

On November 19, 2009, the National Credit Union Administration (NCUA) issued proposed revisions to Part 704 of its rules governing Corporate Credit Unions (Corporates). NCUA engaged Kamakura Corporation (KKR), an independent financial consultant, to conduct an impact analysis of the proposed revisions on the economic viability, risk exposure, and liquidity of corporate credit unions operating under the proposed rule.[1]

KKR issued its final report on July 12, 2010.[2] This document summarizes the KKR report, including its processes, conclusions, and recommendations, as well as the NCUA views on the KKR report. Also, as NCUA worked to finalize its revisions to Part 704, NCUA carefully considered the KKR recommendations along with all the public comments NCUA received on the proposed corporate rule. The final revisions to the corporate rule reflect many of the KKR recommendations, as discussed here and in the preamble to that rule.

Kamakura Process (Summary)

NCUA's proposed rule would impose significant, new requirements and restrictions on corporate investments, credit risk, and asset-liability management (ALM). NCUA asked KKR to make an assessment of the risk to capital based on principal losses and economic value in two ways: 1) as if the rule had been in place prior to the credit crisis that began in mid-2007, and 2) going forward, that is, as if the rule was in effect at the beginning of 2010.[3] The primary intent of the 2007 assessment was to determine how the proposed rule, if in place during the credit crisis, would have mitigated credit losses. The primary intent of the 2010 assessment was to determine the ability of corporates to generate earnings going forward.

In conducting its analyses, NCUA asked that Kamakura use the Base-plus NEV limits in the proposed rule and to consider twelve different possible corporate liability scenarios. The liability scenarios included four different aggregate liability weighted average lives

---

[1] For more information about Kamakura Corporation, and the profiles of its principals, please visit Kamakura's website at www.kamakuraco.com.
[2] The final report consists of a 338 page narrative and a series of supporting spreadsheets. All these documents are posted on the NCUA website along with this summary document.
[3] The title of the report is *Kamakura Corporation -- Impact Analysis -- Proposed Modification of 12 Code of Federal Regulations Part 704 National Credit Union Administration July 12, 2010.*

(WALs) of 0.25, 0.5, 0.75, and 1.00 years, and three different overnight deposit scenarios of 25 percent, 50 percent, and 75 percent of total liabilities.

KKR ran several different analyses in producing its report, including:

- A 2007 stochastic analysis (*See* KKR Report, pp. 246 - 263).
- A 2007 deterministic analysis (KKR Report, pp. 263 – 268).
- An extended 2007 deterministic analysis (KKR Report, pp. 268 – 284).
- A 2009 stochastic analysis (KKR Report, pp. 290 – 331).
- A comparison of the business model of corporates to mutual funds (pp. 20 – 40).

More about these processes follows.

The most complex analyses were the two *stochastic* analyses, where Kamakura employed Monte Carlo simulations to analyze the effectiveness of NCUA's proposed corporate rule on a model corporate credit union portfolio for the period from 3/31/2007 through 12/31/2009 (33 months)(the "2007 stochastic" model) and then the period 12/31/2009 through 12/31/2012 (36 months)(the "2009 stochastic" model).

As the KKR Report states, in early 2007 there were more than 9 million different securities available for purchase, and it was not possible for KKR to run simulations against all these securities. Accordingly, to run its 2007 and 2009 simulations, KKR needed to narrow the securities universe.

To run the three 2007 analyses, KKR first created a broad universe of 534 securities of all different types that existed on the start date, of which 379 of the 534 were structured products.[4] The overall KKR universe failed NCUA's stress tests, primarily those in 704.8(d), (d), and (f) of the proposed rule, so KKR further winnowed the universe so that it complied with the restrictions in NCUA's proposed rule.[5] Using a process it described as "equal weights" and "maximum diversification," KKR, for each of NCUA's given liability scenarios, culled from the universe those securities which, individually, were most negatively affected by NCUA's base spread test. KKR started with a large maximum loss number, excluding each security that exceeded that loss number, and then incrementally reduced the maximum loss number until it had a portfolio of securities which, equally weighted, passed all four of the new, proposed NCUA tests.[6]

---

[4] See Kamakura Report, pp. 56 – 58. Kamakura picked only securities that were, on 3/31/2007, at least $100 million in size, had a rating of at least AA-, and had active trading data available to Kamakura through Intex and Markit Partners. The 379 structured products included various MBS and ABS, including two hundred private-label RMBS, fifty agency MBS, fifty commercial MBS, 20 auto ABS, 20 student loan ABS, 20 credit card ABS, and 19 other ABS. The other securities in the universe were 100 treasury securities and 55 corporate bonds.

[5] See Kamakura Report, pp. 68 – 70.

[6] The yield test, the spread test, the spread with prepayment slowdown test, and the max 2-year portfolio WAL test. Kamakura did not choose the entire security, it just assumed it could buy some *equal amount* of each security.

KKR used a similar process to create its 2009 securities universe for each liability scenario.[7] Because of downgrades and securities that matured between 2007 and 2009, the initial 2009 universe (before applying the liability scenarios) included only 422 securities, of which 291 were structured securities.

How KKR conducted its stochastic processes

KKR used historical data on macroeconomic factors to correlate those factors with future default rates on loans.[8] In its 2007 and 2009 stochastic modeling, KKR ran thousands of simulations that took existing macroeconomic factors and varied those factors semi-randomly going forward. In each simulation, KKR calculated how the change in macroeconomic factors affected the probability of mortgage, auto, and credit card loan defaults in the upcoming period. Then, taking the probability of a particular loan default, and using a loss severity of 40 percent, KKR calculated the cash flows for each structured security in the universe.[9] As the structured securities amortized, KKR did not replace them with similar securities, but instead purchased Treasuries in amounts and maturities that kept the size of the corporate ($10 billion), as well as the weighted average life (WAL) of the corporate's portfolio, constant.

How KKR conducted its deterministic processes

For its 2007 analysis, KKR used both a stochastic and a deterministic analysis. While the stochastic analysis looked only at the information available on the starting date of the analysis, the deterministic analysis looked backward in time to see what *actually happened* to the portfolio of securities during the crisis. The fundamental difference between the two analyses is that the stochastic scenarios are random and the deterministic scenarios reflect the actual evolution of the term structure as it occurred from 2007-2009.

Kamakura Results (Summary)

The 2007 stochastic results

KKR stated the following about its 2007 stochastic results:

> *The stochastic scenarios appear to perform quite well. After three years, cumulative retained earnings for the model [$10 billion] corporate credit union varies from $400 Million to $1 Billion. However, as there is very little*

---

[7] See Kamakura Report, pp. 58 – 59.

[8] KKR Report, pp. 173 – 229. KKR's macroeconomic factors include the Case Schiller 10 City Home Price Index, S&P 500 Index, Transactions Based Commercial Real Estate Index, GDP, U.S. Treasury rates at various maturities and Fixed/Floating swap rates at various maturities, and national unemployment rates.

[9] The cash flows of securities with no credit risk, such as treasury securities, are not calculated this way, but simply calculated based on the forward interest rate curve depending on the time of purchase and maturity length.

> *purchase of structured products, this is almost entirely due to the spread earned by the credit union due to 3 months of interest rate mismatching (recall that the yield curve was fairly steeply sloped at the onset of this simulation), and the low simulated funding costs for the corporate credit union. Credit gains and losses are quite small, though this is somewhat difficult to interpret given the restrictions that the proposed rule placed on the corporate credit union's ability to purchase a meaningful amount of structured products. In short, the average simulated performance of the model corporate credit union during this period is almost entirely determined by the relative position and slope of their funding yield curves relative to US Treasuries.*

KKR Report, pp. 262 – 63. In other words, on its face KKR's 2007 stochastic modeling indicates that corporates would have suffered little in the way of credit losses had the proposed rule been in effect back in early 2007. This conclusion, however, is of limited utility to NCUA. Because of the way KKR constructed its universe, and then manipulated that universe to create the 2007 corporate's portfolio, that portfolio included very few securities that carried any credit risk. For example, in all 12 of the different liability scenarios, *at least* 60 percent of the corporate's assets were invested in Treasuries, and *no more than* 6 percent of the corporate's assets were invested in private-label MBS.

NCUA is uncertain if this sort of balance sheet would in fact have been typical of a corporate back in 2007, even under the restrictions of the proposed rule. For example, back in 2007 there existed very short, senior private label residential mortgage backed securities (RMBS) that carried attractive yields, and more of them could have been included in a corporate's portfolio (in lieu of Treasuries) under the restrictions of the rule than what KKR included.[10] In fact, it seems likely that a corporate seeking yield would have sought out and put more of these private label RMBS, and other shorter, higher-yielding MBS and ABS, into its portfolio.[11]

KKR's 2007 deterministic results

KKR then ran a deterministic, or backward looking, analysis on the same 2007 portfolios of securities. KKR stated the following about its 2007 deterministic results:

> *At the end of three years, cumulative retained earnings are between -$400 million and -$600 million dollars [again, for a $10 billion corporate]*

---

[10] *See*, *e.g.*, CUSIP 3618NF62.

[11] NCUA was aware of the importance of allowing Kamakura to conduct an independent analysis of NCUA's proposal. Specifically, NCUA was concerned that it not be perceived by Kamakura or any other party as dictating the form and inputs for KKR's analysis. Accordingly, Kamakura, not NCUA, picked the specific securities that populated its 2007 and 2009 universes. Kamakura, not NCUA, determined the procedure by which those universes would be reduced to portfolios compliant with the ALM, investment, and credit risk provisions of the proposed rule. And Kamakura, not NCUA, determined the precise methods by which those portfolios would be evaluated for their potential credit losses, and their ability to generate sufficient earnings, going forward.

depending on the liability scenario. Despite the widespread credit losses throughout the credit crisis, credit losses are relatively minor [in the KKR portfolio] during this period (the largest values are on the order of $40 million dollars in a single month) as the structured products holdings are so limited and the small amount of structured products eligible for purchase are generally very senior, very high performing securities. Still, the movements in interest rates were sufficient to more than eliminate the Net Economic Value of these institutions after three years.

KKR Report, pp. 268 - 69. So both KKR's deterministic and stochastic models were in agreement that, had the proposed rule been in effect back in early 2007, the corporate would have suffered little in the way of credit losses, but this conclusion is also of limited utility to NCUA because KKR's portfolios were overweighted in Treasury securities. Also noteworthy was the striking difference in KKR's 2007 stochastic and 2007 deterministic results. Using the same portfolios, the stochastic analysis "performed quite well," with positive earnings growth of $400 million to $1 billion (400 – 1000 basis points), but the deterministic analysis performed terribly, with three-year cumulative retained earnings of between ***negative*** $400 million and $600 million. In the deterministic case, these losses were not due to credit losses, but, rather, due to the flight to safety and the associated collapse of Treasury yields in 2007 - 2008, so that the rollover of the short-term Treasury investments at rates significantly lower than the corporate's cost of funds produced a negative net interest income.

KKR's 2007 "extended" deterministic results.

In May 2010, after becoming aware of KKR's preliminary 2007 stochastic and deterministic results, NCUA requested that KKR also conduct a *third* 2007 analysis, which we call here the 2007 "*extension"* analysis. In an attempt to increase the number of securities in KKR's 2007 model corporate portfolio which carried credit risk, NCUA asked KKR to incrementally relax the NEV limits associated with the proposed cashflow and IRR sensitivity tests until KKR could create a portfolio that included a larger percentage of private label RMBS (with increased yield and credit risk), all while retaining the remaining investment, ALM, and credit risk restrictions of the proposed rule.[12] After constructing such a portfolio, NCUA asked Kamakura to analyze the portfolio deterministically for credit losses.

In all cases, as the proposed NEV limits were incrementally relaxed by factors of 2.0 up to 7.5 on the yield stress test and up to 6.0 on the spread and prepayment test, KKR's 2007 portfolios produced a total *positive* return, indicating that there were *no* catastrophic credit losses, even when the private-label RMBS grew to 20 percent of the total 2007 portfolio assets.[13] So this 2007 *extension* analysis supported NCUA's

[12] Incrementally relaxing the proposed NEV limits would, ultimately, increase the percentage of private label RMBS in KKR's portfolio because KKR's initial 2007 universe consisted of 37.4 percent private label RMBS (i.e., 200 out of 534).

[13] This refers to the performance of the portfolio as a whole; in some cases, individual securities did suffer large credit losses. Also, the maximum permissible Base-plus NEV declines were 20 percent for

proposed rule revisions as appropriate limits on catastrophic credit losses. Of course, the fact that these relaxed NEV limits did not result in significant credit losses also supported permitting somewhat more relaxed NEV limits in the final rule so as to give corporates an opportunity to go longer in their assets and generate additional earnings from those assets.[14]

The 2009 stochastic results

NCUA's primary purpose with the 2009 stochastic analysis was to determine whether a corporate could, under the proposed revisions and starting with a clean balance sheet, build the targeted 45 basis points (bp) of retained earnings over a three-year period beginning on December 31, 2008 as required by the proposed rule. The securities selected by KKR, and the associated stochastic portfolio performance, varied depending on the liability structure of the corporate. The following chart, assembled from pp. 319 - 330 of the KKR report and the supporting spreadsheets, summarizes the 2009 results:

---

the proposed 704.8(d) and (e) tests, and 30 percent for the proposed 704.8(f) test. To fill the portfolio to over 20 percent private label RMBS, using its equitable distribution and maximum diversification approach, KKR needed to relax these NEV tests to about 150 percent and 180 percent declines, respectively, which represent a factor of between six and eight times the initial 20 and 30 percent figures. See KKR Report, at pp. 273 – 74 (liability scenario six).

[14] As Kamakura summarized the 2007 extension results:

> *If the corporate credit union had selected structured products from the a universe similar to Kamakura's construction (based on the weighted average life, ratings, and other restrictions in the proposed rule), and if the corporate credit union followed a maximum diversification approach, the corporate credit union would have purchased structured product securities that led to annualized rates of return between 50bp and 500bp with 95 percent probability (even at greatly expanded stress test limits). This seems to be largely due to initial requirements on ratings, subordination, and average life used in construction of the initial asset universe, as the NEV stress tests do not appear to identify assets that perform poorly relative to assets that perform well.*

KKR Report, p. 283. KKR also stated:

> *Given the amount that the stress tests in the proposed rule would have to be relaxed to accommodate non-trivial structured products purchases (150 percent change in NEV increased from 15 percent under the normal regulations, and 20 percent under the base-plus regulations), the complexity of implementing these tests at very high frequency at the portfolio level, and the limited relationship between the stress test performance and the historical performance during the credit crisis, Kamakura recommends that the NCUA pursue alternative testing regimes to determine if assets are fit for purchase.*

KKR Report, p. 284.

Liability Strategy:	1	2	3	4	5	6	7	8	9	10	11	12
Overnight Funds:	0.25	0.25	0.25	0.25	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75
Liability WAL (in years):	0.25	0.50	0.75	1.00	0.25	0.50	0.75	1.00	0.25	0.50	0.75	1.00
Cumulative Retained Earnings (in $millions – <u>maximum at some point during three year period</u>[15])	(48)	231	77	212	53	284	237	262	34	153	289	365
Cumulative Retained Earnings (in $millions – <u>end of period</u>):	(314)	44	1.7	36	(171)	190	134	163	(64)	104	260	343

The bottom line: if the $10 billion corporate's liabilities had a WAL of one-half year or greater, the corporate was, on average, able to build its retained earnings to, or past, the necessary 45 basis points (i.e., $45 million) in three years. At shorter liability WALs, however, the restrictions of the cash flow sensitivity test apparently restrained the corporate from going long enough on its assets to generate the necessary earnings.

<u>Comparison of the efficiency of corporate credit unions and mutual funds</u>

The KKR report, on page 21, states that:

> *With respect to investment and capital investment opportunities, we note that a natural person credit union which owns 1 percent of the corporate credit union's capital and which deposits 1 percent of its other liabilities indirectly owns 1 percent of the assets of the corporate union. In this sense, the corporate credit union is a mutual fund. While corporate credit unions provide a great deal of services to natural person credit unions above and beyond investment activities, the proposed regulations are almost exclusively concerned with this aspect of their business.*

KKR decided to compare historical WesCorp FCU and Southwest Corporate FCU data with 24 selected mutual funds, and concluded that "all 24 funds had lower total costs to investors than the sum of [the corporate's] expenses and the ROA target (i.e., 45 bp in 3 years, annualized to 15 bp)." KKR also stated that 19 of the 24 funds beat U.S. Central in this regard. KKR concludes that NCUA's proposed retained earnings (RE) targets/requirements are questionable policy, and could lead to overly risky behavior by corporates in an attempt to meet these RE targets and requirements.

[15] This number is important because Kamakura replaced the corporate's amortizing structured securities with Treasuries, and this reinvestment strategy produced a distinctive downturn in retained earnings toward the end of each 36 month period. It is unlikely that a corporate would have followed this reinvestment strategy.

Corporates, of course, are more than investment vehicles. They provide a tremendous range of noninvestment products to their members, and add significant value in the bundling of these products. The KKR comparison does not consider the noninvestment aspects of corporates, the ability of corporates to aggregate and bundle services, and the pricing power that corporates have with regard to their noninvestment services and aggregation of services. In fact, KKR stated that:

> *Kamakura ignores changes in an MCCU's expenses, or changes in the fees associated with non-investment services and products as dynamic expenses and fees are beyond the scope of this analysis.*

KKR Report, p. 37, fn 20. Accordingly, NCUA believes that KKR's comparison of corporates to mutual funds, while demonstrating the importance of corporates continuing to seek efficiencies, is otherwise of little practical interest.

Kamakura Conclusions and Recommendations (Summary)

KKR summarized its conclusions and results on pp. 8 – 10 of its report. Those conclusions and results are reprinted here verbatim (*boxed and in italics)*, with an NCUA response, where appropriate, immediately following.

Best Components of the Proposed Regulations and Requested Analysis

At the heart, the regulations attempt to reduce the ability of corporate credit unions to purchase highly concentrated amounts of risky securities through ratings and sector limits. While Kamakura believes that there may be more effective methods to accomplish this goal, the NCUA should be applauded for their efforts in this regard.

The proposed regulations recognize the difficulties that corporate credit unions have in raising capital and as such try to ensure that the corporate credit unions are managed to attain certain returns and retained earnings targets. These targets can be improved, but Kamakura agrees with the appeal of these limits given the difficulty the corporate credit union faces when raising additional capital.

The sector, subordination, and issuer limits in the proposed regulations implicitly limit the macroeconomic factor risks faced by the corporate credit union. Based on the performance of the asset universe constructed with these limits in mind, Kamakura believes that these limits would have mitigated the losses faced by the corporate credit unions.

The NCUA requested the analysis to be conducted on a variety of liability strategies and with a variety of portfolio targets. In practice, it turned out that many of these portfolio targets were unattainable given the limits in the proposed rule, but the thoroughness of the approach is appealing, particularly when the liability structures have such an impact on the simulations.

The proposed regulations reward portfolio monitoring and management behavior with more relaxed stress test limits and ratings requirements. While Kamakura has reservations about the effectiveness of ratings requirements and the stress tests in the proposed rule, the linkage between risk management efforts and rewards is very appealing, and all too absent in the marketplace.

While beyond the scope of the analysis, the prompt corrective action powers granted to the NCUA may be helpful in preventing and controlling risky behavior.

However, Kamakura believes that there are several alterations that can be made to the proposed regulations to greatly increase their effectiveness. This section details changes that can be made that would more accurately reflect what Kamakura calls "best practice" risk management.

Best Practice Recommendations

-- Eliminate the calculation of the NEV Stress tests in sections 704.8(d), (e), and (f). These tests pose a substantial burden on the corporate credit unions, greatly reduce the number of securities available for investment, and do not appear to identify securities with differences in credit performance meaningfully related to the performance of securities throughout the credit crisis.

NCUA Response –

Many public commenters voiced similar concerns to Kamakura, that is, that the two proposed cash flow mismatch sensitivity tests (704.8(e) and (f)) were too complicated and restrictive. The Board has determined to follow this Kamakura recommendation and remove the two proposed cash flow mismatch tests from the final rule. The elimination of the these two tests will allow corporates to have greater flexibility in managing the mismatch between asset and liability cash flows, which increases earnings potential but also slightly increases the credit and liquidity risk.[16] Kamakura's extended 2007 deterministic analysis supports NCUA's belief that relaxing the permissible mismatch between assets and liabilities will not greatly increase the credit risk to corporates. Still, to mitigate the increased risk, the NCUA Board has retained the proposed 2 year WAL on assets and added an asset WAL extension limit in the prepayment slowdown scenario.

[16] The elimination of these two tests moots some other criticisms in the KKR report, such as the criticism of the proposed exclusion of derivatives from the calculation of these two tests. See, e.g., KKR Report, p. 17, fn. 8.

NCUA does not agree with eliminating the current interest rate risk (IRR) NEV sensitivity test required by paragraph 704.8(d). The 704.8(d) IRR NEV limits have been in place for many years, and corporates have established risk measurement systems to implement this test. NCUA believes these IRR NEV limits have proven effective at controlling interest rate risk. While the 2007 crisis was not an interest rate crisis, the next financial crisis could involve sudden, severe, and adverse movements in interest rates against which the IRR NEV test provides important protection.

-- Require use of an internal models approach based on correlated macroeconomic factors. While the precise effects of these factors are subjective, macroeconomic factors are clearly related to the overall performance of securities.

-- Require stress testing of economic value of equity with respect to macroeconomic risk factors (such as home prices, real GDP growth, commodities, equities, interest rates, and unemployment rate) and specify limits.

NCUA Response – NCUA is not inclined to implement these recommendations at this time. We are not convinced that the future performance of individual securities, or groups of securities, can yet be accurately predicted using macroeconomic modeling based on a few years of historical data. We note, for example, the significant disparity between KKR's 2007 stochastic analysis of its selected portfolio of securities and KKR's 2007 deterministic analysis of the same portfolio. NCUA is also concerned about the difficulty in standardizing such analysis and implementing it uniformly throughout the corporate system; the cost of such analysis; and the difficulty in regulating and examining for proper performance of such analysis. NCUA will, however, continue to observe the use of such macroeconomic analysis in the banking arena going forward.

-- Require all stress tests of every asset in the portfolio, even derivative securities. Stress tests should assume rational option exercise, with the models underlying option exercise decisions available for view and audit on demand.

NCUA Response – Again, the final rule does not contain the two cash flow mismatch stress tests in proposed 704.8(e) and (f). The two remaining non-IRR stress tests in the final rule are the asset WAL limitations in 704.8(f) and (g), and those two WAL tests do not mention "rational option exercise."[17] Instead, the calculations in (f) and (g) require that the corporate assume that "*no* issuer or market options will be exercised." These

[17] The KKR Report expresses some skepticism about the use of the weighted average life (WAL) calculation, inferring that it is not a precise calculation. <u>See</u> KKR Report, p. 17, fn. 12. NCUA readily admits that the WAL calculation on a security subject to prepayment changes over time, and that at any given time the WAL must be estimated. NCUA also believes, however, that there is adequate information available to a corporate to make a reasonable and supportable estimate of the remaining WAL for any given security.

two WAL limits are intended to protect against the credit and liquidity risk posed by the uncertain *exercise* of such options, whether such exercise is considered to be rational or not. For example, the decision by an issuer not to exercise a clean-up call will extend the WAL of the securities and increase the underlying risk -- whether or not such exercise is considered by all to be "rational." Likewise, during the recent credit crisis certain auction rate securities, initially considered by some to have a maturity of the next auction date (usually about one month), extended out in some cases to 15 or 20 years when the underlying auction failed and the holders of the securities were unable to unload them. In past failed auctions, broker-dealers would typically exercise their option to submit a clearing bid and purchase the securities from the security holders – but many of the broker-dealers refused to exercise that option when auctions failed in 2007. Again, whether that option failure was rational or not was irrelevant – the failure of the broker-dealers to exercise their purchase options caused a significant extension in the estimated WAL of the auction rate security.

-- Eliminate the legacy ratings minimum and replace it, if necessary, with a maximum default probability of a given percentage over a specific time horizon using best available techniques.

NCUA Response – NCUA recognizes the imperfections in the nationally recognized statistical rating organizations (NRSROs) ratings process. In fact, Congress has recently directed that all federal agencies, by July 2011, review their regulations for the use of NRSRO credit ratings, determine substitute standards of credit worthiness, and remove the references to the credit ratings.[18] NCUA will complete that review for the corporate rule and other NCUA regulations by July 2011 and take appropriate action. Still, until NCUA has completed its review and determined suitable substitutes for NRSRO ratings, NCUA will continue to require the use of those ratings where appropriate. In the corporate rule, NRSRO ratings are not singular qualifiers to authorize the purchase of a security, but are only used to *exclude* securities from possible purchase. Specifically, there are many other requirements a security must satisfy before purchase even if it carries a sufficiently high NRSRO rating. Those other requirements include that:

- The security satisfies the corporate's own due diligence and credit standards;
- The security is not of prohibited type or structure (e.g., not a private label RMBS, CDO, or NIM, and not subordinated);
- Purchase of the security is consistent with the single obligor limits;
- Purchase of the security is consistent with the sector concentration limits;
- Purchase of the security will not cause the aggregate asset WAL to exceed 2.0 years; and
- Purchase of the security will not cause the aggregate asset WAL, assuming 50 percent prepayment slowdown, to exceed 2.25 years.

[18] The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, §939A.

NCUA is certainly open to a requirement that a corporate "use a maximum default probability of a given percentage over a specific time horizon using best available techniques." The issues are in the implementation, and a key question is what, exactly, are those best available techniques now, if they do not include any reference to NRSRO ratings? Corporates are required to conduct their own independent credit analysis, and NCUA will continue to push corporates toward best practices regarding credit analysis. At this point in time, however, and given the different levels of expertise among the corporates, the NCUA is not ready to entirely abandon the use of NRSRO ratings as a screening device.[19]

-- Modify the target profitability test, stated as the target for cumulative retained earnings as a percent of assets after three years. The level of interest rates largely determines the degree to which these targets can be met, even without earning a positive spread over funding costs. For example, at the current levels in the proposed regulations, if rates are 4 percent or above, the 15 basis point ROA target can be met even with zero funding spread. These tests should instead require a minimum spread over funding costs, rather than a simple ROA target.

NCUA Response – The only form of capital available to corporates that can absorb losses without downstream effects on NPCUs is retained earnings, and NCUA believes that some form of pressure is necessary to encourage corporates to build retained earnings. NCUA further believes that the elimination of the cash flow mismatch tests, and the loosening of the WAL requirements for Treasury and agency securities, should make it easier for a corporate to earn money to reach the retained earnings targets and requirements, reducing the pressure to take on extraordinary risk.

Kamakura's recommendation to require a minimum spread over funding costs does not take into account the effect of the fee income and expenses associated with corporates' non-investment operations. Since these fee income and operating expenses vary significantly from corporate to corporate, a spread over funding costs adequate for one corporate may not work for another.

-- Encourage the movement of fund management "off balance sheet" from the corporate credit unions by allowing them to establish investment management affiliates in which they act as agent, not principal, in managing money for natural person credit unions. This would allow corporate credit unions to offer a wider array of investment alternatives at considerably lower operating costs. It would also considerably reduce the capital requirements of corporate credit unions, thereby boosting risk-adjusted profitability.

[19] For example, NCUA is not ready to permit a corporate to purchase a security that is publicly rated as "junk" (i.e., below investment grade) by an NRSRO just because the corporate's internal credit analysis indicates that the credit quality of the security is significantly better than the NRSRO rating would indicate. NCUA will continue to explore the concept, as required by the Dodd Frank Act, of alternative standards of credit-worthiness.

NCUA Response – NCUA is not opposed to corporates moving toward providing investment advisory services and away from taking investments onto the corporate's books. NCUA will want to review the specific role of the corporate, or the corporate's CUSOs, in any such arrangement.

-- Require that structured product investments only be in securities where the underlying collateral is fully disclosed on a transaction by transaction basis on demand, by the investor, in electronic form.

-- Require limits based on market assessments of performance, such as a maximum allowable credit swap per corporate.

NCUA Response – As discussed above, corporates are required to conduct their own independent credit analysis of a particular security or counterparty, and NCUA will continue to push corporates toward best practices regarding credit analysis. At this time, however, NCUA is not prepared to mandate the practices above by regulation. However, where loan level collateral information is available electronically, NCUA expects that corporate credit unions will obtain the information and perform independent credit analysis to support any investment decision in accordance with best practices. Should the information not be available, the corporate credit union must justify why it considered the investment for purchase. NCUA does note that, by prohibiting private label RMBS, CDOs, NIMs, and subordinated securities, NCUA has removed from the reach of corporates many of those securities in which the transparency required above would be most important. Also, NCUA will in the future explore the concept of credit swap pricing as proxy for default probability in the security selection process, but this may not make sense for certain securities, including structured securities.

If these recommendations are difficult to implement for political, legal, or other reasons, Kamakura lists below alternative recommendations that will not change the underlying rule as dramatically.

Alternative Approaches

-- Remove the portfolio level stress test requirements to ease calculation burdens of corporate credit unions. Instead, specify for a set of target liability maturity schedules, the maximum allowable change in value of an individual asset with respect to particular stress tests. Such a calculation is substantively similar to what is in the proposed regulations, but dramatically lightens the computation required whenever a corporate credit union purchases and sells securities.

NCUA Response – As noted earlier, NCUA has eliminated entirely from the final rule the cash flow mismatch tests in proposed sections 704.8 (e) and 704.8 (f). Given the elimination of the cash flow mismatch tests, NCUA believes it is necessary to retain the

2.0 year WAL test, and 2.25 year WAL extension test, on the corporate's loans and investments, with some additional some WAL permissible for Treasuries and agency securities as described in 704.8(g). With these simplifying changes NCUA does not believe the establishment of target liability schedules and individual asset stress tests is necessary. Of course, the affect of individual investments on the IRR NEV and asset WAL must be determined before purchase or orgination.

> *-- Greatly relax or remove the stress test requirements in sections 704 (d), 704 (e), and 704 (f), even at the single asset level. The spread and prepayment stress test appears somewhat effective, and highlights the joint nature of stress tests. Kamakura also believes that an additional stress test involving the slope of the yield curve should be applied. These stress tests should be conducted on every security in the portfolio, and should accommodate rational option exercise.*

NCUA Response - As noted above, NCUA has removed the cash flow mismatch tests in proposed sections 704.8 (e) and 704.8 (f) from the final rule, and substituted a simplified prepayment test applicable only to the WAL measurement on the asset side. NCUA also agrees that corporates should periodically perform stress tests reflecting the effect of changes in the slope of the yield curve. Paragraph 704.8 (d)(2)(i) of the current corporate rule, which is not affected by the pending revisions to the rule, requires corporates to determine if they should conduct additional tests to address market factors that may materially impact that corporate credit union's NEV, including "changes in the shape of the Treasury yield curve." Paragraph 704.8(d)(2)(iii) also requires consideration of embedded option values.

> *-- Enhance the sector and issuer concentration limits in the proposed rule with further tightening, and joint sector limits based on common macroeconomic factors: for example, non-agency RMBS is limited to 15 percent of the portfolio, CMBS is limited to 15 percent of the portfolio, and non-agency RMBS + CMBS is limited to 25 percent of the portfolio.*

NCUA Response – NCUA agrees that corporate exposure to private label RMBS, combined with NPCU exposure to residential mortgages, creates significant system-wide concentrations in residential mortgages and increases the associated risk. NCUA also agrees that CMBS and RMBS are highly correlated in their response to macroeconomic factors. Accordingly, NCUA has adopted this Kamakura recommendation, with slight modifications, into the final corporate rule by:

- Prohibiting private label (i.e., nonagency) RMBS;
- Limiting the remaining permissible MBS to the lower of 10x capital or 50 percent of assets; and
- Further limiting CMBS to the lower of 3x capital or 15 percent of assets.

> *-- Relax the reliance on agency ratings, possibly replacing them with additional limits on shared characteristics, such as collateral level FICO scores, information requirements, branching structure and so on. Such approaches target needlessly complex and difficult to assess securities without a heavy reliance on ratings. The regulations should also explicitly prohibit the use of ratings from firms that are engaged by the issuer of the structured security.*

NCUA Response – As noted earlier, NCUA recognizes the necessity as directed by Congress to eventually move away from reliance on credit ratings provided by NRSROs, but NCUA still feels that their use at this time is appropriate as an initial screening device when considering particular investments for purchase. NCUA also concurs with the use of best practices by a corporate when it conducts its own, internal credit analysis of any potential security purchase. As for prohibiting the use of ratings firms that are engaged by the issuer of a structured security, NCUA believes this would be impractical at this time and difficult to enforce. Also, since the NRSRO rating is used only to exclude securities, and not include securities, the impact of any potential internal conflict of interest on a particular NRSRO rating is mitigated.

> *-- Require that structured product investments only be in securities where the underlying collateral is fully disclosed on a transaction by transaction basis on demand, by the investor, in electronic form. This sort of information requirement will help prevent investment in needlessly complex securities, or in securities that the corporate credit union cannot easily assess.*

NCUA Response - As discussed above, corporates are required to conduct their own independent credit analysis of a particular security, and NCUA will continue to push corporates toward best practices regarding credit analysis. At this time, however, NCUA is not prepared to mandate the practices above by regulation. Where loan level collateral information is available electronically, NCUA expects that corporate credit unions will obtain the information and perform the independent credit analysis to support any investment decision in accordance with best practices. Should the information not be available, the corporate credit union must justify why it considered the investment for purchase. Again, by prohibiting private label RMBS, CDOs, NIMs, and subordinated securities, NCUA has removed from the reach of corporates many of those securities in which the transparency required above would be most valuable.

> *-- Restrict investment in structured products where the security is tranched by any criteria other than the maturity of interest and principal. Specifically, collateralized debt obligations or any security by any other name where tranches are created by the percentile rank of credit losses should be prohibited or greatly reduced. Subordinated securities of this type faced the largest credit losses through the crisis, and the senior tranches had risks that were systematically under-estimated.*

NCUA Response - NCUA generally agrees with this recommendation. The final corporate rule prohibits certain complex investments, including CDOs and NIMs. The final rule also prohibits subordinated securities. NCUA is uncertain, however, that it should go farther and prohibit other securities, such as support tranch securities, that are arguably not tranched solely by "the maturity of interest and principal."

-- Prohibit investment in securities of any kind if the corporate credit union's risk management department and investment department, or either department individually, are unable to perform an independent assessment of the valuation and risk sensitivity of the instrument. The models and assumptions used in this assessment must be available on demand and must be re-assessed at least every two years.

NCUA Response - NCUA generally agrees with this recommendation, but believes it is best implemented through regular supervision of the corporates' investment and risk management activities rather than a rulemaking. A corporate must create and retain adequate records of its due diligence on any particular securities purchase, including its internal credit risk analysis and compliance with other investment, credit risk, and ALM provisions of the corporate rule.