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FARM CREDIT ADMINISTRATION

12 CFR Parts 651 and 652

RIN 3052-AC51

Federal Agricultural Mortgage Corporation Governance and Federal Agricultural Mortgage Corporation Funding and Fiscal Affairs; Risk-Based Capital Requirements

AGENCY: Farm Credit Administration.

ACTION: Final rule.

SUMMARY: The Farm Credit Administration (FCA, Agency, us, or we) issues this final rule amending our regulations on the Risk-Based Capital Stress Test (RBCST or model) used by the Federal Agricultural Mortgage Corporation (Farmer Mac). This rulemaking updates the model to ensure that it continues to appropriately reflect risk in a manner consistent with statutory requirements for calculating Farmer Mac's regulatory minimum capital level under a risk-based capital stress test. This rule updates the model to estimate the capital requirements associated with Farmer Mac's statutory authority to finance rural utility loans and to revise the treatment of certain secured general obligations held by Farmer Mac as program investments. This rule also revises the treatment of counterparty risk on non-program investments in the model by adjusting the haircuts applied to those investments to keep the model internally consistent with revisions made to stressed historical corporate bond default and recovery rates.

DATES: *Effective date:* This regulation will be effective 30 days after publication in the Federal Register during which either or both Houses of Congress are in session. We will publish a notice of the effective date in the Federal Register. *Compliance date:* Compliance with the changes to the model must be achieved by the first day of the fiscal quarter following the effective date of the rule. All other provisions require compliance on the effective date of this rule.

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SUPPLEMENTARY INFORMATION:

I. Objective

The objective of this final rule is to ensure that the RBCST for Farmer Mac continues to determine regulatory capital requirements in a manner consistent with statutory requirements.

II. Background

The FCA is an independent agency in the executive branch of the Federal Government that, in part, serves as the safety and soundness regulator of Farmer Mac. The FCA regulates Farmer Mac through the Office of Secondary Market Oversight (OSMO). Farmer Mac is a stockholder-owned instrumentality of the United States, chartered by Congress to establish a secondary market for agricultural real estate, rural housing mortgage loans, and rural utilities loans. Farmer Mac also facilitates the capital markets funding for USDA-guaranteed farm program and rural development loans. Section 5406 of the Food, Conservation and Energy Act of 2008 (2008 Farm Bill)¹ amended the definition of “qualified loan” in Title VIII of the Farm Credit Act of 1971, as amended, (Act)² to include rural utility loans. This change gave Farmer Mac the authority to purchase and guarantee securities backed by loans to rural electric and telephone utility cooperatives as program business. The 2008 Farm Bill further directed FCA to estimate the credit risk on the portfolio covered by this new authority at a rate of default and severity reasonably related to the risks in rural electric and telephone facility loans. The existing RBCST (Version 3.0) for Farmer Mac is contained in part 652, subpart B, and is used to determine the minimum level of regulatory capital Farmer Mac must hold to maintain positive capital during a 10-year period, as characterized by stressful credit and interest rate conditions. Version 3.0 of the RBCST was developed according to the provisions of section 8.32 of the Act before Farmer Mac was given rural utility authority and thus lacks a component to directly recognize the credit risk on such loans.³ The updated version of the RBCST will be identified as Version 4.0.

On January 22, 2010, we published a proposed rule (75 FR 3647) to enhance the RBCST for Farmer Mac and to add a component addressing Farmer Mac’s recently acquired authority to purchase and guarantee securities backed by loans to rural electric and telephone utility cooperatives. The comment period closed on April 22, 2010.⁴ This rulemaking finalizes policies proposed prior to the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act).⁵ Section 939A of the Dodd-Frank Act requires federal agencies to review all regulatory references to Nationally Recognized Statistical Ratings Organization (NRSRO) credit ratings by July 21, 2011, and, as a result of this review, to remove those references. While this rule maintains existing reliance on NRSRO credit ratings, the Agency intends to begin a rulemaking initiative immediately following this one to address the requirements of the Dodd-Frank Act.

III. Comments and Our Response

We received several comments on the proposed rule from Farmer Mac and one comment letter from the Farm Credit Council (FCC), acting for its membership and each of the five Farm Credit banks. The FCC expressed support for using a more conservative approach to loss rate estimation in the AgVantage portfolio. It also noted its belief that capital standards for Farmer Mac should be equivalent to those of Farm Credit System (FCS or System) lenders. The FCC was also generally supportive of the proposed characterization of credit risk in the rural utility portfolio, but noted that the approach requires vigilant oversight of Farmer Mac’s guarantee fee-pricing procedures. While we appreciate the FCC’s comment, the Act provides for a different treatment of capital than that of the other System institutions.

As such, the FCC's suggestion to make the capital standards equivalent to those of other FCS lenders is outside the scope of this rulemaking. Farmer Mac submitted comments on three aspects of the proposed rule--the method of characterizing credit losses on rural utility loans, the stress factor applied to the general obligation adjustment (GOA) to estimated losses in the AgVantage portfolio, and the concentration risk adjustment to the GOA factors. Farmer Mac stated that the proposed method of characterizing losses in the rural utility loans is not consistent across different market environments because it was too high relative to both the historical loss experience in that sector as well as levels that could be reasonably applied to agricultural mortgages. Farmer Mac also commented that the multiplier selected to stress GOA factors was too high, and the concentration risk adjustment to the GOA factors was unwarranted and duplicative to the use of credit ratings in the base GOA factors. Farmer Mac asked that the concentration risk be reversed in its impact to reflect a reduction in Farmer Mac's risk exposure in light of the counterparty's relative portfolio diversification.

We discuss the comments specific to our proposed rule and our responses below. For purposes of responding to the comments made regarding GOA factors, we will be using the following terms to distinguish between the existing "base GOA" factors to refer to those set forth in Version 3.0, which are based solely on historical corporate bond default and recovery rates, and "stressed GOA" factors to refer to Version 4.0 where base GOA factors are increased by a multiple of 3. Those areas of the proposed rule not receiving comment are finalized as proposed unless otherwise discussed in this preamble.

A. Credit Loss Estimation on Rural Utility Loans [§§ 652.50 and 652.65(b); Appendix A to Part 652]

1. Guarantee Fee

We proposed amending § 652.50 by adding a definition for guarantee fees charged on rural utility loans to distinguish treatment of these fees from those assessed against all other loans guaranteed by Farmer Mac. We explained "rural utility guarantee fee," as it pertains to funded volume, means the gross spread over cost of funds, not a subset of that spread. Farmer Mac requested that we clarify whether or not the definition of "rural utility guarantee fee" is meant to reflect a subset of the term "pricing spread."

We apply the term "rural utility guarantee fee" as a standalone term and not as a subset of pricing spread, and therefore, no component of the pricing spread should be netted. The rule defines "rural utility guarantee fee" as the actual guarantee fee charged for off-balance sheet volume and the earnings spread over Farmer Mac's funding costs for on-balance sheet volume on rural utility loans.⁶ As explained in the proposed rulemaking, we use the phrase "earnings spread" in the guarantee fee definition to represent the incoming cashflow rate minus Farmer Mac's total funding rate associated with that volume. We expect Farmer Mac to maintain records of these spreads when they are established for each transaction. We do not consider this an overly burdensome expectation given Farmer Mac's current practice of documenting such approvals of such spreads. Thus, the guarantee fee is the gross spread over cost of funds, not a subset of that spread. We are finalizing the definition as proposed. As a conforming technical change, we finalize amendments to sections 1.0.a., 4.1.b., 4.2.b.(2), and 4.2.b.(3) of the model in Appendix A of part 652 to add rural utility guarantee fees.

2. Credit Risk

We proposed amending the model in Appendix A of part 652 to include rural utility program volume by using a stylized approach to characterizing credit risk for rural utility program volume by multiplying the dollar-weighted average rural utility guarantee fee by a factor of two to characterize stressed annual loss rates.⁷ We also proposed clarifying the applicability of individual sections of the

model to the rural utility portfolio and adding new sections 2.6, 4.1.e., and 4.3.e. to calculate losses for rural utility loans.

Farmer Mac objected to the proposed approach on the grounds that it results in projected stressed credit losses on rural utility loans that are inconsistent across different market environments and exceed both the historical experience in the rural utility sector and levels that could be reasonably applied to agricultural mortgages. Farmer Mac explained that the stressed credit loss characterizations on rural utility loans will be inconsistent across different market environments because it would be subject to inaccuracy due to potential volatility in the pricing by Farmer Mac of similar exposures under varying market conditions through time. In other words, investor risk tolerances vary with changes in perceived levels of overall risk in the market, and such changes could enable Farmer Mac to charge higher rates on rural utility loans despite no change in the underlying fundamentals of the sector or the specific loans it guarantees. We disagree with the suggestion that the stressed credit loss characterizations on rural utility loans will be inconsistent across different market environments. We used a multiple of the Farmer Mac rural utility guarantee fee as a proxy for stressed loss rates because the data on historical losses are not suitable for the development of a more statistically reliable estimate. We elected not to decompose the guarantee fee and earnings spreads into their component parts (including required versus “excess” spread) as that approach would have: 1) Required significant assumptions regarding what portion might be attributable to Farmer Mac’s perception of market conditions versus credit risk; and 2) added a level of calculation complexity that is disproportionate to the coarse level of precision achievable given the data limitations. In other words, we take the view that the market clearing price reflects the market consensus of risk at a point in time.

Farmer Mac asserts that the proposed approach is also incongruous because it characterizes losses of on- and off-balance sheet rural utility volume identically, though the rural utility guarantee fee would be inherently different. Farmer Mac suggests that the earnings spread on on-balance sheet volume might be larger than the guarantee fee on off-balance sheet volume. Farmer Mac clarified this comment by explaining that the return on equity component of the earnings spread would be larger for on-balance sheet volume “[i]f the return on equity pricing is determined using current statutory minimum capital requirements (or any other capital requirements set using a differential approach to capital allocation).” The comment references the statutory minimum requirements for on-balance sheet exposure (2.75 percent) and off-balance sheet exposure (0.75 percent) of outstanding principal. We understand the comment to indicate that program investment decisions, *i.e.*, capital allocations, might be made on the basis of some required equity return margin over the associated statutory minimum capital requirements rather than on the basis of the risk and expense characteristics of the investments. We disagree with this premise. We are aware of no reason to base return on equity requirements on fixed statutory minimum capital requirements or to use such minimum capital requirements as a proxy for capital allocated to specific program investments. We reject the suggestion that such fixed minimums could be appropriately used as a basis to justify differential return on equity requirements on investments that have otherwise exactly the same risk and expense characteristics.

Farmer Mac also commented that a multiple of two times the rural utility guarantee fee would not be consistent with FCA’s stated position that the agriculture sector is generally more risky than the rural utility sector. Farmer Mac used a hypothetical example to demonstrate its comment. In this example, the cumulative annual loss rate characterization on rural utility volume over the 10 years of the modeling horizon slightly exceeded the estimated lifetime loss rate on newly originated, agricultural loans underwritten according to Farmer Mac’s minimum standards. Farmer Mac modified the example to create a situation where the two sets of loans were equally seasoned and concluded that the cumulative loss rate for electrical loans in such cases would always exceed that of the agricultural real estate loans. Farmer Mac explained that the example demonstrated that the rule’s approach would not be consistent

with the statute's authorizing language requiring modeled loss rates to be "reasonably related to risks" in rural electric and telephone facility loans. Farmer Mac instead suggests that cumulative loss rates should, at the very least, be no greater than those for comparably sized agricultural mortgage loans. While Farmer Mac noted that the multiplier of two could be reduced, it instead asked FCA to adopt a credit risk estimate supported by historical loss and recovery rate trends.

We disagree with the commenter's use of FCA Bookletter BL-053, "Revised Regulatory Capital Treatment for Certain Electric Cooperative Assets," to support the contention that the proposed treatment is inconsistent with the bookletter's conclusion that the electric cooperative sector has a lower risk profile than the agricultural sector.⁸ While under normal conditions an average dollar of exposure to a rural electric cooperative is viewed as a lower credit risk than an average dollar of agricultural real estate mortgage exposure, the purpose of the RBCST is to represent a worst-case loss scenario for program-related assets. We view the concept of "worst case" in the rural utility cooperative sector as fundamentally different from the agriculture sector. The rule's approach inherently reflects our expectation that worst-case losses in the rural utility sector will occur far less frequently than worst-case losses in the agriculture sector--but when they occur, can be far more severe. While the average annual loss rate over the long term may be viewed as likely to be lower in the rural utility sector due to the infrequent occurrence of loss events, in a scenario where worst-case losses do occur, they will involve much greater loss rates than worst-case losses in agriculture. Further, the relationship between the two cumulative 10-year loss rates (agricultural versus rural utility) is not instructive, as the sector with the higher cumulative rate will vary depending on rural utility guarantee fee rates and the credit risk characteristics of the agriculture portfolio at any given time. Thus, in attempting to characterize both sectors' worst-case scenarios in the RBCST over a 10-year modeling horizon, having 10 years of loss rates that do not always sum to lower cumulative rate in the rural utility portfolio is not inconsistent with the general tenet that the electric cooperative sector typically has a lower risk profile.

Notwithstanding our position on this comment, using the suggested approach, it would be more appropriate to compare cumulative loss rates only to the modeling year at which the model indicates capital would approach its limit of zero (the zero-year) because losses recognized by the model in subsequent modeling years do not impact the calculation of the minimum capital requirement. Expanding on Farmer Mac's example, if the zero-year occurred at year three, cumulative losses over those 3 years in agriculture portfolio would be 9.87 percent versus 4.2 percent in the rural utility portfolio. Seasoning could further affect the relative impacts of credit risk in the model. Given our stated view of the fundamentally different concepts of "worst-case" in the two sectors, this fact does not contradict the Agency's stated position.

Farmer Mac's comment goes on to suggest various approaches to achieve the "result" recommended (that cumulative losses projected in the RBCST for rural utilities loans should be, on a relative basis, no greater than those for comparably sized agricultural mortgage loans). Farmer Mac notes that this result could be achieved by reducing the multiplier of two, but suggests instead that we abandon the proposed approach of applying a multiplier to Farmer Mac pricing factors in favor of an approach that references historical loss trends. In the proposed rule's preamble, we discussed in detail the insufficiency of historical loss trend data, as well as other alternatives to the proposed approach that were considered and why they were rejected.

Farmer Mac also stated that the proposed approach was inconsistent with historical loss trends. We disagree because the comment is based on the premise that appropriate historical loss trend information is available. As discussed in the proposed rulemaking, we determined that a data set suitable to build a reliable default probability loss function is not available due to the fact that historical losses in the electric cooperative sub-sector of the utilities industry have been extremely rare and dissimilar.⁹ We

also note that historical instances of default appear largely unrelated to specific underwriting decisions. Further, even among the few historical instances of non-performing loans in the data we obtained, restructured credit defaults have in many instances become more profitable than the original loan in terms of interest income, while others were never fully resolved despite exceptionally long periods of time since initial default. For those reasons, an empirical frequency-based analog for estimating credit risk, as was used to arrive at the model's approach to estimating agricultural loan risks, was not feasible for rural utilities. Instead, the rule characterizes credit risk on rural utility loans using the stylized approach of multiplying the dollar-weighted average rural utility guarantee fee by a factor of two to characterize stressed annual loss rates.

Finally, Farmer Mac commented that the proposed approach to characterizing credit losses in the rural utility portfolio is inconsistent with the Act. We disagree with this assessment because the Act does not require us to use any particular statistical methodology. The Act, at section 8.32(a)(1)(B), requires us to estimate credit loss risk “at a rate of default and severity reasonably related to risks in electric and telephone facility loans . . . as determined by the Director [of OSMO].” The proposed rulemaking explained in some detail the reason behind selecting the method of identifying rural utilities credit loss risk, and Farmer Mac has offered no evidence to demonstrate that our method does not reasonably relate to actual risks in the rural utilities sector.

We selected a method that relies directly on the notion that the assessment of relative risk would be reflected in differences in priced guarantee fees charged by Farmer Mac. These fees represent Farmer Mac’s estimate of likely long-term average annual losses on an investment, in addition to fee loads to cover operating costs and return-on-equity requirements. We selected the combination of the total earnings spread with a lower stress multiple because the total spread also represents agreement on the value of the transaction between at least two parties: Farmer Mac and its counterparty (*i.e.*, a market clearing price).

For these reasons, we finalize this section and the conforming changes as proposed to reflect the treatment of the rural utility authority. As we gain more experience and data in this sector, the Agency may revisit this approach.

B. Modification of the Treatment of Loans Backed by an Obligation of the Counterparty and Loans for Which Pledged Loan Collateral Volume Exceeds Farmer Mac-Guaranteed Volume [§§ 652.50 and 652.65(d); Appendix A to Part 652]

We are amending sections 2.4.b.3, 2.4.b.4, 4.1.f., and 4.2.b. of the model in Appendix A of part 652 to increase the GOA factors, address counterparty concentration risks, and ensure AgVantage Plus volume maturities are recognized in the model.

1. GOA Factors--Treatment of Loan Volume

We proposed revising the GOA factors by stressing the historical corporate bond loss rates to levels intended to represent stressed conditions instead of average conditions. We accomplish this in the model by modifying the GOA factors through the application of increases (or “haircuts”) to the estimated historical loss rates by whole-letter credit rating category using a multiple of three.

Farmer Mac commented that our selection of three as the multiplier appeared to be much too high based on data in reports issued by Moody’s Investor Services. Farmer Mac explained that the multiple and its implied assumption of a coefficient of variation (CV) equal to one lacked empirical support or theoretical justification. Farmer Mac asked that the implied underlying CV ratio be much lower than one

and that separate multipliers, scaled by whole-letter credit rating, be applied based on the historical variability over time of each whole-letter credit rating. Farmer Mac based this request on Moody's data on the standard deviations for 10-year cumulative default rates. Farmer Mac recommends these data be used to derive empirically based multiples of GOA factors to represent stress on issuer counterparties.

We disagree with the recommendation as we believe it to be based on a mistaken reliance on CVs of average default rates within credit rating categories over time, rather than cross-sectional CVs of the individual issuer defaults within each period.¹⁰ The long-term average rate of the annual average default rate combined with the standard deviation of those average default rates do not convey a reasonable measure of "worst-case" default risk, but rather, as identified in the Moody's report, are primarily related to sample size used in construction of the estimated average loss rates. We believe our approach places the adjusted corporate bond loss estimate in a range that provides a meaningfully stressful representation, given limited data, and reflects generally accepted statistical principles and relationships. We selected the multiplier of three on the basis that it was a reasonable policy position given that the most accurate alternative to the selected multiple using statistical theory to establish the limits on probability from the sample variance (*i.e.*, Chebychev's theorem as discussed in the proposed rule) would have yielded a proposed multiple many times higher than three. We continue to believe that use of the limit of probability established through limited sample information to require too extreme a multiple, and instead maintain our more moderate treatment through the use of our proposed value of three.

We further disagree that one can accurately infer individual variability directly from the variance of a set of pooled experiences (aggregate annual default rates) through time. The primary purpose of the cited report, as explained by Moody's in the report, appears fundamentally different from its use in the comment letter. Moody's report explicitly states its purpose is to present confidence intervals around historical average cumulative default rates and, as warning against interpretation as a cross-sectional variance, the report indicates that standard errors around estimated long-run average default rates "should not be confused with the much greater bands of uncertainty associated with the expected performance of particular cohorts of issuers formed at specific points in time (cross section)."¹¹

We finalize this provision as proposed.

2. GOA Factors--Concentration Ratios

We proposed modifying GOA factors to recognize the risk associated with a counterparty's (also referred to as the AgVantage Plus issuer) loan portfolio concentration in the industry sector used in an AgVantage Plus issuance. We also proposed modifying section 2.4.b.3.A. of Appendix A to allow the Director of OSMO to make final determinations of concentration ratios on a case-by-case basis by using publicly reported data on counterparty portfolios, non-public data submitted and certified by Farmer Mac as part of its RBCST submissions, and generally recognizing two rural utility sectors--rural electric cooperatives and rural telephone cooperatives.

Farmer Mac objected to the GOA modifications because it believes the change creates redundancy in two ways: 1) The level of an issuer's loan portfolio concentration is already captured in the NRSRO's credit rating and therefore already captured in the level of the base GOA factor (prior to the proposed concentration risk adjustment), and 2) base GOA factors already capture stress associated with "tail" events according to the newly proposed stressed corporate bond loss-rate multiple. Farmer Mac suggests instead that the new GOA factors be adjusted to reflect a reduction in risk due to the level of diversification of the issuer, not an increase in risk due to the issuer's portfolio concentration.

Farmer Mac further commented that the proposed methodology is vague and might oversimplify

industry concentration. Farmer Mac asked that at least two sub-sectors of rural electric utilities be recognized in the concentration adjustment: distribution cooperatives and generation and transmission (G&T) cooperatives. Farmer Mac explained that the magnitude of the concentration risk-adjusted GOA (CRAGO) factors are driven more by the concentration risk adjustment than by the stressed historical corporate bond default and recovery rates (stressed GOA factors). Farmer Mac states that this is counterintuitive to the concept of the GOA because it associates more of the final effect of the CRAGO adjustment with the issuer's portfolio structure than is warranted. Farmer Mac illustrates this point using the example of a sovereign issuer without credit risk. In this scenario, the CRAGO factor would equal the concentration ratio, due to the mathematical relationship between the stressed GOA (pre-concentration risk adjustment) and the CRAGO (i.e., $1 - (1 - \text{GOA})(1 - \text{concentration ratio})$, where $\text{GOA} = 0$). If that concentration ratio were one, then no risk-mitigation would be recognized in the general obligation of the sovereign issuer even if the issuer were rated AAA. Farmer Mac views this as placing an overly heavy emphasis on the issuer's portfolio concentration.

Farmer Mac contends that our approach is inherently deficient because, in the example, the percentage increase in the GOA factor after adjustment for concentration risk is much greater for the AAA issuer (1,800 percent) than it is for the BBB issuer (300 percent), though the magnitudes of change stated in percentage terms are actually artifacts of the scale of remaining credit risk within each whole-letter rating category, as we discuss in depth below. Farmer Mac commented that the concentration risk adjustment should, if it has any impact at all, reduce risk rather than increase risk. Farmer Mac suggested replacing the mathematical relationship we had proposed with a multiplicative relationship--i.e., because the concentration ratio will frequently be less than one, that the stressed GOA factor should be reduced for any level of issuer portfolio diversification, rather than increased for any level of portfolio concentration. Farmer Mac suggests the following formula: $\text{CRAGO} = \text{stressed GOA} * \text{CR}$.

We appreciate Farmer Mac's concern that the two sub-sectors of rural electric utilities be recognized. However, we believe the rule provides for recognition of those sub-sectors and others on a case-by-case basis. We recognize Farmer Mac's authority to finance four industry sectors: Agriculture (including farms and agribusiness), rural electric distribution cooperatives, rural electric G&T cooperatives, and rural telephone cooperatives. The modifications to section 2.4.b.3.A. of Appendix A will allow the Director of OSMO (Director) to make final determinations of concentration ratios, including recognizing two rural utility sectors--rural electric cooperatives and rural telephone cooperatives. However, we disagree that the GOA factors contain redundancy. While NRSRO's may consider the extent of diversification of assets generally in their credit ratings, they do not do so in a worst-case context. Nor would the NRSRO's consideration of diversification always specifically include the impact of the issuer's relative exposure to industry sectors that Farmer Mac is authorized to finance. Agriculture and rural utility cooperative exposures are often combined with other sector exposures in publicly reported documents--including sectors that Farmer Mac is not authorized to finance. While it's possible that an NRSRO might require the issuer to disaggregate that information, its rating determination would not specifically focus on the degree of exposure to the Farmer Mac-authorized sectors. Hence, credit ratings do not provide the level of granularity of information needed. Nor does an NRSRO rating necessarily consider the issuer's exposure to the specific industry sector involved in the specific AgVantage Plus pool being modeled as this approach does. We do not believe that consideration of these specific risk components to the modeling of AgVantage Plus volume is sufficiently reflected in credit ratings to use them as suggested. For example, an NRSRO rating on a 100-percent concentrated issuer (e.g., a single-sector lender) says little or nothing about its ability to guarantee the credit on loan volume that it would pledge to Farmer Mac. In a worst-case loss scenario in that single sector, the issuer's ability to liquidate its unpledged assets to fulfill its general obligation to Farmer Mac at a price near the outstanding principal would be severely reduced. This rule effectively evaluates the degree of that

reduced ability at 100 percent. In other words, we do not believe it to be plausible that an issuer whose unpledged assets are experiencing worst-case losses would be able to continue as a going concern if it were forced to liquidate a significant volume of those unpledged, but highly impaired assets in order to fulfill its general obligation to Farmer Mac.

Farmer Mac asked that we define the sectors but did not suggest any definition with the request. We decline to do so because we believe the general understanding of what these sectors include is sufficient for setting a parameter but flexible enough to allow the Director to use his discretion in a manner appropriate to each case presented. In addition, we do not view the fact that the concentration risk adjustment has a significant impact on the CRAGO as counterintuitive. We believe it is logically consistent to view the concentration ratio as potentially a more significant driver of the value of the issuer’s general obligation than the estimated corporate bond loss rate. We view the concentration risk adjustment as a critical component of the CRAGO because it reflects the ability of the specific counterparty to augment the more generalized component derived from stressed corporate bond default rates by whole-letter credit rating.

Farmer Mac’s comment included an example of a sovereign (credit-risk-free) issuer and AgVantage Plus counterparty. We believe this example is too extreme to be applicable even for illustrative purposes. As a risk-free issuer, the hypothetical sovereign issuer in the example would be guaranteeing the credit risk on the subject loan volume, thus making the transaction more akin to the Farmer Mac II program than to the AgVantage Plus product.¹² The RBCST already contains an approach on this type of transaction, *i.e.*, it does not recognize credit risk and therefore would it not be appropriate to model this volume using the treatment for AgVantage Plus. Such transactions would result in a gross loss estimate of zero to which the CRAGO (equal to the concentration ratio as previously discussed) would be applied for a net loss estimate of zero. However, to the more general point outside of this extreme case, *i.e.*, a single-sector AAA issuer, we believe it reasonably and logically consistent for the single sector characteristic to weigh most heavily in the CRAGO. The discussion and tables below further describe these relationships.

Farmer Mac argued that our approach is inherently deficient due to the fact that the CRAGO factor increases (relative to the stressed GOA) so much more for the AAA issuer (18 times) than it does for the BBB issuer (three times). We disagree and use the following tables to illustrate the ultimate effects of the CRA across a set of cases that we believe provide a more meaningful context for interpretation of the effects of its application.

The table is organized in three panels across base Pre-GOA probability of default rates (PD) of 1, 3, and 6 percent (*i.e.*, examples of loss rates as would be determined by the RBCST credit loss module or from the rural utility guarantee fee). The stressed GOA (GOA Pre-CRA) is applied to each case and a pre-concentration risk adjusted loss rate provided in column D (Pre-CRA loss rate). The first table assumes a 25-percent concentration ratio (CR) and provides associated final loss rates in column F after the CRA. Column G reproduces the multiples of change cited by Farmer Mac in its comment.

| A | B | C | D | E | F | G |
|-----|----------------|----------------|----------------------|-----|-------------------------|-------|
| | Pre-GO A PD | GOA Pre-CRA | Pre-CRA loss rate | CR | Loss Rate post-CRAGO | = F/D |
| AAA | 1% | 1.41% | 0.0141% | 25% | 0.261% | 18.48 |
| AA | 1% | 3.70% | 0.0370% | 25% | 0.278% | 7.51 |
| A | 1% | 5.13% | 0.0513% | 25% | 0.288% | 5.62 |

| | | | | | | |
|-------|----|--------|---------|-----|--------|-------|
| BBB | 1% | 11.48% | 0.1148% | 25% | 0.336% | 2.93 |
| < BBB | 1% | 44.52% | 0.4452% | 25% | 0.584% | 1.31 |
| | | | | | | |
| AAA | 3% | 1.41% | 0.0423% | 25% | 0.782% | 18.48 |
| AA | 3% | 3.70% | 0.1110% | 25% | 0.833% | 7.51 |
| A | 3% | 5.13% | 0.1539% | 25% | 0.865% | 5.62 |
| BBB | 3% | 11.48% | 0.3444% | 25% | 1.008% | 2.93 |
| < BBB | 3% | 44.52% | 1.3356% | 25% | 1.752% | 1.31 |
| | | | | | | |
| AAA | 6% | 1.41% | 0.0846% | 25% | 1.563% | 18.48 |
| AA | 6% | 3.70% | 0.2220% | 25% | 1.667% | 7.51 |
| A | 6% | 5.13% | 0.3078% | 25% | 1.731% | 5.62 |
| BBB | 6% | 11.48% | 0.6888% | 25% | 2.017% | 2.93 |
| < BBB | 6% | 44.52% | 2.6712% | 25% | 3.503% | 1.31 |

As the table indicates, assuming a counterparty concentration ratio of 25 percent and a loss rate estimate of 1 percent before any adjustment for general obligation credit enhancement, the proportional changes are as provided in Farmer Mac’s comment letter--the AAA issuer’s post-CRAGO loss rate increases by a factor of 18.48, whereas the BBB issuer’s loss rate increases only 2.93 times after considering the concentration risk. We consider the increase differential consistent with the logic that when a structure is backed by a high-quality issuer’s general obligation, there is effectively more risk-mitigation value to lose if that issuer happens to be highly concentrated in the same sector as the underlying loans and the magnitude of that loss is appropriate and proportionate to the concentration risk at the issuer. Despite this difference in CRA impact, the loss rate post-CRAGO for a AAA issuer is still less than half the stressed loss rate applied to a BBB issuer, and this relationship is not affected by the level of the pre-GOA PD (i.e., the 3-percent and 6-percent Pre-GOA PD scenarios reflect the same magnitude of change post-CRAGO). When there is little credit risk, there is less risk to mitigate with the GOA. However, in the “below-BBB and unrated” cases, the magnitude of the reduction in credit risk is far greater than in the case of the higher rated initial exposures. For example, observe the last two rows in column C with 11.48-percent and 44.52-percent “GOA Pre-CRA” factors. Prior to the CRA, the stressed GOA would have reduced initial PD losses by 88.52 percent (1 – 0.1148) and 55.48 percent (1 – 0.4452), respectively. The magnitude of difference among these changes to the initial PD is reduced by the application of the CRA, which is the same for each of them. The percentage reduction in the initial PD post-CRA is 73.94 percent (down 24.65 percentage points) in the AAA case, 66.39 percent (down 22.13 percentage points) and 41.61 percent (down 13.67 percentage points) in the “BBB” and “< BBB” cases, respectively--down 25 percent from the Pre-CRA PD risk mitigation levels. We consider this result consistent with reasonable depictions of final credit exposure relationships.

The next table provides comparable information, but with a concentration ratio of 50 percent rather than 25 percent. As can be seen in the table, a consistent and appropriate proportionality remains as the multiples of change become much larger due to increases in the concentration ratio--that is, the loss rate post-CRA GOA for a AAA issuer is still less than the stressed loss rate applied to a BBB issuer, though by increasingly smaller margins as concentration ratios rise. This is logical and intentional

because as the concentration ratio approaches one, risk-mitigation value of the CRAGOA approaches zero for all categories of issuer leaving Pre-GOA PDs unadjusted for the general obligation of the issuer.

| A | B | C | D | E | F | G |
|-------|-------------------|----------------|----------------------|-----|------------------------------|-------|
| | Pre-G OA PD | GOA Pre-CRA | Pre-CRA loss rate | CR | Loss Rate post-CRA GOA | = F/D |
| AAA | 1% | 1.41% | 0.0141% | 50% | 0.507% | 35.96 |
| AA | 1% | 3.70% | 0.0370% | 50% | 0.519% | 14.01 |
| A | 1% | 5.13% | 0.0513% | 50% | 0.526% | 10.25 |
| BBB | 1% | 11.48% | 0.1148% | 50% | 0.557% | 4.86 |
| < BBB | 1% | 44.52% | 0.4452% | 50% | 0.723% | 1.62 |
| | | | | | | |
| AAA | 3% | 1.41% | 0.0423% | 50% | 1.521% | 35.96 |
| AA | 3% | 3.70% | 0.1110% | 50% | 1.556% | 14.01 |
| A | 3% | 5.13% | 0.1539% | 50% | 1.577% | 10.25 |
| BBB | 3% | 11.48% | 0.3444% | 50% | 1.672% | 4.86 |
| < BBB | 3% | 44.52% | 1.3356% | 50% | 2.168% | 1.62 |
| | | | | | | |
| AAA | 6% | 1.41% | 0.0846% | 50% | 0.030% | 35.96 |
| AA | 6% | 3.70% | 0.2220% | 50% | 3.111% | 14.01 |
| A | 6% | 5.13% | 0.3078% | 50% | 3.154% | 10.25 |
| BBB | 6% | 11.48% | 0.6888% | 50% | 3.344% | 4.86 |
| < BBB | 6% | 44.52% | 2.6712% | 50% | 4.336% | 1.62 |

Finally, Farmer Mac suggested using the formula: CRAGOA = stressed GOA * CR to recognize increased risk associated with counterparty concentrations. As we previously explained, we intend to recognize the increased risk associated with counterparty concentrations and do not consider Farmer Mac's suggestion to adequately factor the impact of increased concentration on effective credit exposure. The concentration risk adjustment is a critical component of the CRAGOA because it tightens the focus on this key risk characteristic of the specific counterparty to complement the more generalized component derived from stressed corporate bond default rates by whole-letter credit rating--which, we do not believe adequately captures this information.

We finalize as proposed all changes on this subject matter but revise our stated interpretation of the proposed methodology as it is applied to rural electric utility cooperative issuers to recognize two sectors, electric distribution cooperatives and electric generation and transmission cooperatives.

3. Technical Changes

We proposed amending § 652.50 by adding a definition for “AgVantage Plus” to clarify that, while “AgVantage Plus” is a product name used by Farmer Mac, we are applying it throughout this subpart to refer both specifically to AgVantage Plus volume currently in Farmer Mac's portfolio as well as other similarly structured program volume that Farmer Mac might finance in the future under other names. We described “AgVantage Plus” as a program created by Farmer Mac in 2006 to provide guarantees on timely repayment of principal and interest on notes issued by the counterparty. The notes are secured by obligations of issuer, which obligations are, in turn, backed by Farmer Mac eligible loan assets. We also proposed conforming changes to the model at Appendix A of part 652 to replace the term “Off-Balance Sheet AgVantage” with “AgVantage Plus.”

Farmer Mac suggested we reduce the complexity in the rule by referring to all AgVantage products by the term “AgVantage Plus,” but exclude pools with an initial principal amount under \$25 million. We agree and have revised that definition to include any AgVantage program investment over \$25 million to avoid unnecessary complexity on small deals. Only those AgVantage issuers under the original AgVantage program structure (as opposed to what we have been referring to as “AgVantage Plus”) identified in the original RBCST, (64 FR 61740, November 12, 1999) will be excluded from the RBCST loss calculation.

In January 2010, Farmer Mac adopted new Financial Accounting Standards Board guidance related to the consolidation of variable interest entities (Accounting Standards Update, December 23, 2009). The adoption required consolidation of a significant volume of previously off-balance sheet program volume onto the balance sheet. As this change impacts only the presentation of this volume and has no impact on the risk or cashflows associated with this volume, we have made minor mechanical adjustments in data inputs to nullify the impact of the adoption within the RBCST. These include creating a new asset line item for the affected consolidated volume and an offsetting line item in the liabilities section.

We finalize as proposed all other changes on this subject matter.

C. Revise Haircuts on Non-Program Investments [Appendix A to Part 652]

We proposed changing the haircut levels for non-program investments in existing section 4.1.e. of Appendix A, renumbering the section as 4.1.f., to the same loss rate adjustment factors proposed for application on loans underlying guaranteed notes (*i.e.*, AgVantage Plus) as discussed in section III.B.1 of this preamble. The proposed investment haircuts to recognize counterparty risk were:

| Whole Letter Credit Rating | Haircut (percent) |
|----------------------------|----------------------|
| AAA | 1.41 |
| AA | 3.70 |
| A | 5.13 |
| BBB | 11.48 |
| Below BBB and Unrated | 44.52 |

We likewise proposed annually updating these figures, or as often as an updated version of the Moody's report on Default and Recovery Rates of Corporate Bond Issuers becomes available.

We received no comments on this proposal and finalize as proposed all changes on this subject matter.

D. Other Miscellaneous Changes [§§ 651.1(b) and 652.5]

In the process of this rulemaking, we noted citations that were not updated in prior rulemakings and make those corrections now. In a 1994 rulemaking, a definition for “affiliate” was added to § 651.1(b). This definition was later duplicated in § 652.5 as part of a 2005 rulemaking. The definition in both locations references section 8.3(b)(13) of the Act; this citation should read “section 8.3(c)(14).” The original rulemaking mistakenly used paragraph (b) instead of (c), and Congress later renumbered paragraph (c)(13) as (c)(14).¹³ Both rulemakings clearly discuss the contents of section 8.3(c)(14) of the Act, so we are correcting the citations now.

IV. Quantitative Impact of Changes on Required Capital

We received one comment from a Farm Credit System institution that understood the proposed rule to reflect only incremental capital requirements on rural utility loan volume. We are clarifying that the substantive changes to the RBCST contained in this final rulemaking involve more components of the model than simply the incremental capital requirements on rural utility volume, including changes to GOA factors applied to all AgVantage Plus-type volume and changes to investment haircuts. Due to the stated confusion by Farmer Mac regarding our intended meaning of “rural utility guarantee fee” (see Farmer Mac’s request for definitional clarification above), we are providing further clarification in the estimated impacts table below:

| Calculated Regulatory Minimum Capital (\$ in thousands) | | | | |
|--|--|-----------|-----------|------------|
| | | 6/30/2010 | 9/30/2010 | 12/31/2010 |
| 0 | RBCST Version 3.0 | 30,434 | 36,743 | 42,105 |
| 1 | Revised Haircuts on Investments | 30,739 | 37,053 | 42,358 |
| 2 | Tripling of Version 3.0 GOA Factors | 30,525 | 36,969 | 42,816 |
| 3 | Credit Risk on Rural Utility Loans | 32,564 | 37,694 | 79,997 |
| 4 | Concentration Risk Adjustment with Rural Utility Credit Risk | 79,924 | 92,844 | 123,304 |
| | All RBCST Version 4.0 Effects | 82,270 | 94,966 | 125,498 |

The impact amounts on line “1” reflect only the change associated with the revised haircuts on non-program investments. The impact amounts on line “2” reflect only the change associated with the tripling of general obligation adjustment factors with all else equal in the RBC Version 3.0 (*i.e.*, it does not reflect rural utility credit-loss characterization). The impact amounts on line “3” reflect only the change associated with the credit loss characterization on rural utility volume (*i.e.*, it does not reflect the application of the tripling GOA factors to rural utility AgVantage Plus volume or agricultural AgVantage Plus volume). The impact amounts on line “4” reflect the concentration adjustment to the general obligation adjustment factor on all AgVantage Plus volume, both rural utility and agricultural, (*i.e.*, it does not reflect the application of the tripling GOA factors to rural utility or agricultural AgVantage Plus volume, but it does include the rural utility loss estimates isolated in line “3”). The individual estimated impacts do not have an additive relationship to the total impact on the model output. This is due to the interrelationship of the changes with one another when they are combined in Version 4.0 (proposed). It is worth noting that the marginal effects are also not constant rate effects, but depend on the starting conditions and earnings spread of Farmer Mac and the magnitude of the effect considered. For example, as the volume in the rural utility category is increased, the rate of increase in the marginal minimum risk-based capital requirement begins to increase as the downward-pressure on that rate exerted by earnings from other activities are further diluted as those earnings become increasingly smaller in proportion to total estimated losses. The same effect is evident in other ways as risk increases and the offsetting effect of earnings is diminished relative to increased risk. For example, this effect would be observed, all else equal, with lower initial earnings spreads or higher AgVantage Plus counterparty concentrations, updated (and higher) Moody's base corporate bond default rates, or ratings downgrades. Thus, the values in the table above are illustrative of the relative effects of the revisions in this rulemaking, given the conditions as of each quarter end, but can be materially affected by changes in starting conditions or risk compositions through time. Moreover, due to the substitutability allowed within certain loan pools and ability of AgVantage counterparties to vary the level of overcollateral submitted in each quarter of a pool's life, the risk characteristics of an individual pool are subject to change quarter to quarter.

Our tests indicate that changes related to credit losses on rural utility loans combined with the concentration risk adjustment to the GOA would have the most significant impact on risk-based capital calculated by the model.

V. Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act (5 U.S.C. 601 et seq.), FCA hereby certifies the final rule will not have a significant economic impact on a substantial number of small entities. Farmer Mac has assets and annual income over the amounts that would qualify it as a small entity. Therefore, Farmer Mac is not considered a “small entity” as defined in the Regulatory Flexibility Act.

¹ Pub. L. 110-246, 122 Stat. 1651 (June 18, 2008) (repealing and replacing Pub. L. 110-234).

² Pub. L. 92 181, 85 Stat. 583 (December 10, 1971).

³ FCA currently treats Farmer Mac’s portfolio of investments in rural utility loans as non-program investments.

⁴ 75 FR 13682 (March 23, 2010).

⁵ Pub. L. 111-203, 124 Stat. 1376, (H.R. 4173), July 21, 2010.

⁶ For purposes of the mechanics within the spreadsheets of RBCST Version 4.0, on-balance sheet volume will, if necessary, be divided into those with AgVantage Plus-type structures and those that are outright loan purchases similar in structure to Farmer Mac’s cash window for agricultural mortgages.

⁷ In the proposed rule, in this context, we used the phrase “average annual loss rates.” We believe the phrase “stressed annual loss rates” is clearer. What we intend to convey is that while agricultural lifetime loss rates are calculated by the model and then distributed on a front-loaded basis, we characterize rural utility loss rates as equal annual loss rates, or what could be referred to as average loss rates over a period of worst case stress.

⁸ While BL-053 pertains to Farm Credit System banks and associations, and not to Farmer Mac, we believe the general tenets set forth in it apply to those same certain loan types in Farmer Mac’s portfolio.

⁹ In evaluating the suitability of empirical data sources, we examined historical loan performance data of the U.S. Department of Agriculture’s (USDA) loan programs and interviewed market participants including the National Rural Utility Cooperative Financing Corporation, CoBank, and USDA’s Rural Utility Service.

¹⁰ In the proposed rule, we used a CV of one in an example to demonstrate a point and not as a factual premise of this rulemaking.

¹¹ Cantor, R; Hamilton, D.; Tennant, J. “Confidence Intervals for Corporate Default Rates”, Moody’s Investor Services, Global Credit Research: Special Comment, April 2007; p. 1-2.

¹² Farmer Mac’s program investments in loans that are guaranteed by the USDA as described in section 8.0(9)(B) of the Act, and which are securitized by Farmer Mac, are known as the “Farmer Mac II” program.

¹³ Section 8.3 is found at 12 U.S.C. 2279aa-3 and discusses the powers of Farmer Mac and its board. Amendments to the Act made in the Food, Agriculture, Conservation, and Trade Act Amendments of 1991 [Pub. L. 102-237] gave Farmer Mac the authority to establish, acquire, and maintain affiliates under applicable state law. This 1991 amendment led to the inclusion of the term in § 651.1. Subsequently, a 1996 amendment to the Act [Pub. L. 104-105] redesignated paragraph (c)(13) as (c)(14).

List of Subjects

12 CFR Part 651

Agriculture, Banks, banking, Conflicts of interest, Rural areas.

12 CFR Part 652

Agriculture, Banks, banking, Capital, Investments, Rural areas.

For the reasons stated in the preamble, parts 651 and 652 of chapter VI, title 12 of the Code of Federal regulations are amended to read as follows:

PART 651—FEDERAL AGRICULTURAL MORTGAGE CORPORATION GOVERNANCE

1. The authority citation for part 651 continues to read as follows:

Authority: Secs. 4.12, 5.9, 5.17, 8.11, 8.31, 8.32, 8.33, 8.34, 8.35, 8.36, 8.37, 8.41 of the Farm Credit Act (12 U.S.C. 2183, 2243, 2252, 2279aa-11, 2279bb, 2279bb-1, 2279bb-2, 2279bb-3, 2279bb-4, 2279bb-5, 2279bb-6, 2279cc); sec. 514 of Pub. L. 102-552, 106 Stat. 4102; sec. 118 of Pub. L. 104-105, 110 Stat. 168.

§ 651.1 [Amended]

2. Amend § 651.1 (b) by removing the reference, “section 8.3(b)(13)” and adding in its place the reference, “section 8.3(c)(14)”.

PART 652—FEDERAL AGRICULTURAL MORTGAGE CORPORATION FUNDING AND FISCAL AFFAIRS

3. The authority citation for part 652 continues to read as follows:

Authority: Secs. 4.12, 5.9, 5.17, 8.11, 8.31, 8.32, 8.33, 8.34, 8.35, 8.36, 8.37, 8.41 of the Farm Credit Act (12 U.S.C. 2183, 2243, 2252, 2279aa-11, 2279bb, 2279bb-1, 2279bb-2, 2279bb-3, 2279bb-4, 2279bb-5, 2279bb-6, 2279cc); sec. 514 of Pub. L. 102-552, 106 Stat. 4102; sec. 118 of Pub. L. 104-105, 110 Stat. 168.

Subpart A—Investment Management

4. Section 652.5 is amended by revising the definition for “affiliate” to read as follows:

§ 652.5 Definitions.

* * * * *

Affiliate means any entity established under authority granted to the Corporation under section 8.3(c)(14) of the Farm Credit Act of 1971, as amended.

* * * * *

Subpart B—Risk-Based Capital Requirements

5. Amend § 652.50 by adding alphabetically the following definitions:

§ 652.50 Definitions.

* * * * *

AgVantage Plus means both the product by that name used by Farmer Mac and other similarly structured program volume that Farmer Mac might finance in the future under other names. Those AgVantage securities with initial principal amounts under \$25 million and whose issuers were part of the original AgVantage program are excluded from this definition.

* * * * *

Rural utility guarantee fee means the actual guarantee fee charged for off-balance sheet volume and the earnings spread over Farmer Mac’s funding costs for on-balance sheet volume on rural utility loans.

6. Amend § 652.65 by:

- a. Redesignating paragraphs (b)(5) and (b)(6) as paragraphs (b)(6) and (b)(7);
- b. Adding a new paragraph (b)(5);
- c. Revising newly redesignated paragraph (b)(6) and paragraph (d)(2) to read as follows:

§ 652.65 Risk-based capital stress test.

* * * * *

(b) * * *

(5) You will calculate loss rates on rural utility loans as further described in Appendix A.

(6) You will further adjust losses for loans that collateralize the general obligation of AgVantage Plus volume, and for loans where the program loan counterparty retains a subordinated interest in accordance with Appendix A to this subpart.

* * * * *

(d) * * *

(2) You must use model assumptions to generate financial statements over the 10-year stress period. The major assumption is that cashflows generated by the risk-based capital stress test are based on a steady-state scenario. To implement a steady-state scenario, when on- and off-balance sheet assets and liabilities amortize or are paid down, you must replace them with similar assets and liabilities (AgVantage Plus volume is not replaced when it matures). Replace amortized assets from discontinued loan programs with current loan programs. In general, keep assets with small balances in constant proportions to key program assets.

* * * * *

7. Amend Appendix A of subpart B, part 652 by:

- a. Revising the table of contents;
- b. Revising the last sentence of section 1.0.a.;
- c. Adding a new fourth sentence to section 2.0;
- d. Adding the words “for All Types of Loans, Except Rural Utility Loans” at the end of each heading for sections 2.1, 2.2, 2.3, and 2.5;
- e. Revising section 2.4.b.3 introductory text, b.3.A., and b.4 introductory text;
- f. Adding a new section 2.6;
 - g. Renumbering the footnote in section 3.0 from “15” to “16”;
 - h. Revising section 4.1.b., redesignating section 4.1.e. as section 4.1.f., adding a new section 4.1.e., and revising newly redesignated section 4.1.f.;
 - i. Revising section 4.2.b. introductory text, paragraphs b.(1)(A)(v), b.(1)(A)(vi), adding paragraph b.(1)(A)(vii), revising the last sentence of paragraph b.(1)(B), the first sentence of paragraph b.(2), and the last sentence of paragraph b.(3) introductory text;
 - j. Adding section 4.3.e.; and,
 - k. Revising the second sentence of section 4.4.

The revisions and additions read as follows:

Appendix A—Subpart B of Part 652—Risk-Based Capital Stress Test

- 1.0 Introduction.**
- 2.0 Credit Risk.**
- 2.1 Loss-Frequency and Loss-Severity Models for All Types of Loans, Except Rural Utility Loans.**
- 2.2 Loan-Seasoning Adjustment for All Types of Loans, Except Rural Utility Loans.**
- 2.3 Example Calculation of Dollar Loss on One Loan for All Types of Loans, Except Rural Utility Loans.**
- 2.4 Treatment of Loans Backed by an Obligation of the Counterparty and Loans for Which Pledged Loan Collateral Volume Exceeds Farmer Mac-Guaranteed Volume.**
- 2.5 Calculation of Loss Rates for Use in the Stress Test for All Types of Loans, Except Rural Utility Loans.**
- 2.6 Calculation of Loss Rates on Rural Utility Volume for Use in the Stress Test.**
- 3.0 Interest Rate Risk.**
- 3.1 Process for Calculating the Interest Rate Movement.**
- 4.0 Elements Used in Generating Cashflows.**
- 4.1 Data Inputs.**
- 4.2 Assumptions and Relationships.**
- 4.3 Risk Measures.**
- 4.4 Loan and Cashflow Accounts.**
- 4.5 Income Statements.**
- 4.6 Balance Sheets.**
- 4.7 Capital.**
- 5.0 Capital Calculations.**
- 5.1 Method of Calculation.**

* * * * *

1.0 Introduction

- a. * * * The stress test also uses historic agricultural real estate mortgage performance data, rural utility guarantee fees, relevant economic variables, and other inputs in its calculations of Farmer Mac's capital needs over a 10-year period.

* * * * *

2.0 Credit Risk

* * * Loss rates discussed in this section apply to all loans, unless otherwise indicated. * * *

* * * * *

2.4 Treatment of Loans Backed by an Obligation of the Counterparty, and Loans for which Pledged Loan Collateral Volume Exceeds Farmer Mac-Guaranteed Volume

* * * * *

b. * * *

3. Loans with a positive loss estimate remaining after adjustments in “1.” and “2.” above are further adjusted for the security provided by the general obligation of the counterparty. To make this adjustment in our example, multiply the estimated dollar losses remaining after adjustments in “1.” and “2.” above by the appropriate general obligation adjustment (GOA) factor based on the counterparty's whole-letter issuer credit rating by a nationally recognized statistical rating organization (NRSRO) and the ratio of the counterparty's concentration of risk in the same industry sector as the loans backing the AgVantage Plus volume, as determined by the Director.

A. The Director will make final determinations of concentration ratios on a case-by-case basis by using publicly reported data on counterparty portfolios, non-public data submitted and certified by Farmer Mac as part of its RBCST submissions, and will generally recognize rural electric cooperatives and rural telephone cooperatives as separate rural utility sectors. The following table sets forth the GOA factors and their components by whole-letter credit rating (Adjustment Factor = Default Rate x Severity Rate x 3), which may be further adjusted for industry sector concentration by the Director.¹⁵

| A | B | C | F | E | F | G |
|-----------------------|-------------------------|--------------------------|----------------------------|-------------------------------------|--|---|
| Whole-Letter Rating | Default Rate (Per-cent) | Severity Rate (Per-cent) | V3.0 GOA Factor (Per-cent) | V4.0 GOA Factors (D x 3) (Per-cent) | Concentration Ratio (e.g., 25%) (Per-cent) | Factor with Concentration Adjustment $1 - ((1-E) \times (1-F))$ (Percent) |
| AAA | 0.897 | 54 | 0.48 | 1.41 | 25.00 | 26.06 |
| AA | 2.294 | 54 | 1.24 | 3.70 | 25.00 | 27.78 |
| A | 2.901 | 54 | 1.57 | 5.13 | 25.00 | 28.84 |
| BBB | 7.061 | 54 | 3.82 | 11.48 | 25.00 | 33.61 |
| Below BBB and Unrated | 26.827 | 54 | 14.50 | 44.52 | 25.00 | 58.39 |

* * * * *

¹⁵ Emery, K., Ou S., Tennant, J., Kim F., Cantor R., "“Corporate Default and Recovery Rates, 1920 – 2007,”” published by Moody’s Investors Service, February 2008 – the most recent edition as of March 2008; Default Rates, page 24, Recovery Rates (Severity Rate = 1 minus Senior Unsecured Average Recovery Rate) page 20.

4. Continuing the previous example, the pool contains two loans on which Farmer Mac is guaranteeing a total of \$2 million and with total submitted collateral of 110 percent of the guaranteed amount. Of the 10-percent total overcollateral, 5 percent is contractually required under the terms of the transaction. The pool consists of two loans of slightly over \$1 million. Total overcollateral is \$200,000 of which \$100,000 is contractually required. The counterparty has a single “A” credit rating, a 25-percent concentration ratio, and after adjusting for contractually required overcollateral, estimated losses are greater than zero. The net loss rate is calculated as described in the steps in the table below.

| | | Loan A | Loan B |
|----|---|-------------|-------------|
| 1 | Guaranteed Volume | \$2,000,000 | |
| 2 | Origination Balance of 2-Loan Portfolio | \$1,080,000 | \$1,120,000 |
| 3 | Age-Adjusted Loss Rate | 7% | 5% |
| 4 | Estimated Age-Adjusted Losses | \$75,600 | \$56,000 |
| 5 | Guarantee Volume Scaling Factor | 90.91% | 90.91% |
| 6 | Losses Adjusted for Total Overcollateral | \$68,727 | \$50,909 |
| 7 | Contractually Required Overcollateral on Pool (5%) | \$100,000 | |
| 8 | Net Losses on Pool Adjusted for Contractually Required Overcollateral | \$19,636 | |
| 9 | GOA Factor for “A” Issuer with 25% Concentration Ratio | 28.84% | |
| 10 | Losses Adjusted for “A” General Obligation | \$5,664 | |
| 11 | Loss Rate Input in the RBCST for this Pool | 0.28% | |

* * * * *

2.6 Calculation of Loss Rates on Rural Utility Volume for- Use in the Stress Test

You must submit the outstanding principal, maturity date of the loan, maturity date of the AgVantage Plus contract (if applicable), and the rural utility guarantee fee percentage for each loan in Farmer Mac's rural utility loan portfolio on the date at which the stress test is conducted. You must multiply the rural utility guarantee fee by two to calculate the loss rate on rural utility loans under stressful economic conditions and then multiply the loss rate by the total outstanding principal. To arrive at the net rural utility loan losses, you must next apply the steps “5” through “11” of section 2.4.b.4 of this Appendix. For loans under an AgVantage Plus-type structure, the calculated losses are distributed over time on a straight-line basis. For loans that are not part of an AgVantage Plus-type structure, losses are distributed over the 10-year modeling horizon, consistent with other non-AgVantage Plus loan volume.

* * * * *

4.1 Data Inputs

* * * * *

b. Cashflow Data for Asset and Liability Account Categories. The necessary cashflow data for the spreadsheet-based stress test are book value, weighted average yield, weighted average maturity, conditional prepayment rate, weighted average amortization, and weighted average guarantee fees and rural utility guarantee fees. The spreadsheet uses this cashflow information to generate starting and ending account balances, interest earnings, guarantee fees, rural utility guarantee fees, and interest expense. Each asset and liability account category identified in this data requirement is discussed in section 4.2 “Assumptions and Relationships.”

* * * * *

e. Loan-Level Data for All Rural Utility Program Volume. The stress test requires loan-level data for all rural utility program volume. The specific loan data fields required for calculating the credit risk are outstanding principal, maturity date of the loan, maturity date of the AgVantage Plus contract (if applicable), and the rural utility guarantee fee percentage for each loan in Farmer Mac’s rural utility loan portfolio on the date at which the stress test is conducted.

f. Weighted Haircuts for Non-Program Investments. For non-program investments, the stress test adjusts the weighted average yield data referenced in section 4.1.b. to reflect counterparty risk. Non-program investments are defined in § 652.5. The Corporation must calculate the haircut to be applied to each investment based on the lowest whole-letter credit rating the investment received from an NRSRO using the haircut levels in effect at the time. Haircut levels shall be the same amounts calculated for the GOA factor in section 2.4.b.3 above. The first table provides the mappings of NRSRO ratings to whole-letter ratings for purposes of applying haircuts. Any “+” or “-” signs appended to NRSRO ratings that are not shown in the table should be ignored for purposes of mapping NRSRO ratings to FCA whole-letter ratings. The second table provides the haircut levels by whole-letter rating category.

FCA WHOLE-LETTER CREDIT RATINGS MAPPED TO RATING AGENCY CREDIT RATINGS

| | | | | | |
|------------------------------|---------------|-----------------------|-----------------------|-----------------------|-------------------------------|
| FCA Ratings Category | AAA | AA | A | BBB | Below BBB and Unrated |
| Standard & Poor's Long-Term | AAA | AA | A | BBB | Below BBB and unrated |
| Fitch Long-Term | AAA | AA | A | BBB | Below BBB and Unrated |
| Standard & Poor's Short-Term | A-1+ SP-1+ | A-1 SP-1 | A-2 SP-2 | A-3 | SP-3, B, or Below and Unrated |
| Fitch Short-Term | F-1+ | F-1 | F-2 | F-3 | below F-3 and Unrated |
| Moody's | | Prime- MIG12 VMIG1 | Prime-2 MIG2 VMIG2 | Prime-3 MIG3 VMIG3 | Not Prime, SG and Unrated |
| Fitch Bank Ratings | A | B A/B | C B/C | D C/D | E D/E |

| | | | | | |
|--|---|---|---|---|---|
| Moody's Bank Financial Strength Rating | A | B | C | D | E |
|--|---|---|---|---|---|

FARMER MAC RBCST MAXIMUM HAIRCUT BY RATINGS CLASSIFICATION

| Ratings Classification | Non-Program Investment Counterparties (Excluding Derivatives) (Percent) |
|------------------------|---|
| Cash | 0.00 |
| AAA | 1.41 |
| AA | 3.70 |
| A | 5.13 |
| BBB | 11.48 |
| Below BBB or Unrated | 44.52 |

* * * * *

4.2 Assumptions and Relationships

* * * * *

b. From the data and assumptions, the stress test computes pro forma financial statements for 10 years. The stress test must be run as a “steady state” with regard to program balances (with the exception of AgVantage Plus volume, in which case maturities are recognized by the model), and where possible, will use information gleaned from recent financial statements and other data supplied by Farmer Mac to establish earnings and cost relationships on major program assets that are applied forward in time. As documented in the stress test, entries of “1” imply no growth and/or no change in account balances or proportions relative to initial conditions with the exception of pre-1996 loan volume being transferred to post-1996 loan volume. The interest rate risk and credit loss components are applied to the stress test through time. The individual sections of that worksheet are:

(1) * * *

(A) * * *

- (v) Loans held for securitization;
- (vi) Farmer Mac II program assets; and
- (vii) Rural Utility program volume on balance sheet.

(B) * * * The exceptions are that expiring pre-1996 Act program assets are replaced with post-1996 Act program assets and AgVantage Plus volume maturities are recognized by the model.

(2) **Elements related to other balance sheet assumptions through time.** As well as interest earning assets, the other categories of the balance sheet that are modeled through time include interest receivable, guarantee fees receivable, rural utility guarantee fees receivable, prepaid expenses, accrued interest payable, accounts payable, accrued expenses, reserves for losses (loans held and guaranteed securities), and other off-balance sheet obligations. * * *

(3) **Elements related to income and expense assumptions.** * * * These parameters are the gain on agricultural mortgage-backed securities (AMBS) sales, miscellaneous income, operating expenses, reserve requirement, guarantee fees, rural utility guarantee fees, and loan loss resolution timing.

* * * * *

4.3 Risk Measures

* * * * *

e. The credit loss exposure on rural utility volume, described in section 2.6, “Calculation of Loss Rates on Rural Utility Volume for Use in the Stress Test,” is entered into the “Risk Measures” worksheet applied to the volume balance. All losses arising from rural utility loans are expressed as annual loss rates and distributed over the weighted average maturity of the rural utility AgVantage Plus Volume, or as annual loss across the full 10-year modeling horizon in the case of rural utility Cash Window loans.

* * * * *

4.4 Loan and Cashflow Accounts

* * * The steady-state formulation results in account balances that remain constant except for the effects of discontinued programs, maturing AgVantage Plus positions, and the LLRT adjustment.***

* * * * *

Dated: April 21, 2011

**Mary Alice Donner,
Acting Secretary,
Farm Credit Administration Board.**