Risk-Based Capital Update

19 December 2001

I. Introduction

Risk-based capital can be a somewhat dry topic. Therefore, instead of supplying our readers with a lengthy piece discussing the entire framework, we are supplying a shorter piece that focuses on important recent developments. Some of the subjects covered in this report were previously addressed in Nomura's weekly CMBS publication. *See FDIC Approves New Risk-Based Capital Standards for Securitized Products*, Nomura CMBS Weekly Update (9 Nov 2001).

We expect the newly released U.S. regulations to produce up to five basis points of tightening in the spread between short average life private label and agency CMO tranches. AA-rated and A-rated tranches of ABS, MBS and CMBS deals could see similar tightening.

The U.S. bank regulatory agencies issued revised risk-based capital regulations at the end of November. The new regulations represent the culmination of the agencies' 10-year-long "recourse project." The regulations partly resolve the former capital disparity between cases where (i) a bank retains risk when securitizing its own assets and (ii) a bank provides credit enhancement for third party assets. Although the regulators' objective was to provide more consistent capital treatment for transactions involving similar risk, some disparity remains. In addition, the new regulations embrace a "ratings-based approach" for determining the capital requirements associated with investments in rated securitization deals. The ratings-based approach applies as well in some situations where a bank provides credit enhancement for either its own assets or third party assets.

Also during the past year, the Basel Committee on Banking Supervision published several new risk-based capital *proposals*. The proposals address much of the same subject matter as the new U.S. regulations. However, the Basel proposal places very strong emphasis on the use of banks' internal credit ratings systems as a basis for determining capital requirements.

II. Discussion

Risk-based capital requirements are one aspect of the overall regulatory capital requirements for financial institutions. Their roots trace back as far as 1989 in the U.S., *see* 54 Fed. Reg. 46863 (8 Nov 1989). Internationally, they are even slightly older, *see International Convergence of Capital Measurement and Capital Standards* (July 1988).

The basic requirement of the risk-based capital regulations is for an institution to maintain capital of at least 8% of its "risk-weighted assets." The calculation of risk-weighted assets requires assigning each asset to a "risk-weight category" for on-balance sheet assets. The five risk-weight categories are 0%, 20%, 50%, 100% and 200%. Off-balance sheet items, such as loan commitments, derivative contracts, and stand-by letters of credit, are converted to "credit equivalent amounts" which then assigned to risk-weight categories.

The table on the next page summarizes the key features of the new regulations and compares them to the Basel proposals; it does not summarize the entire framework of bank capital regulation or even the entire risk-based capital framework. Following the table is a glossary explaining some of the new terminology introduced by the new regulations (in boldface).

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<table>
<tr><th colspan="6">Summary of New Risk-Based Capital Regulations</th></tr>
<tr><th>Subject</th><th colspan="3">U.S. Banking Regulations
66 Fed. Reg. 59614
29 November 2001</th><th colspan="2">Basel Committee <u>Proposals</u>
January 2001
and October 2001</th></tr>
<tr><td rowspan="3">Investments in senior and subordinated securities of asset securitizations (e.g., MBS, ABS, and CMBS)</td><td><u>LT Rating</u>
AAA or AA
A
BBB
BB</td><td><u>ST Rating</u>
A-1 or P-1
A-2 or P-2
A-3 or P-3</td><td><u>Risk Weight</u>
20%
50%
100%
200%</td><td><u>LT Rating</u>
AAA or AA
A
BBB
BB</td><td><u>Risk Weight</u>
20%
50%
100%
150%</td></tr>
<tr><td>B+ or lower
or unrated</td><td>not prime
or unrated</td><td>gross-up</td><td>B+ or lower
or unrated</td><td>deduct from
capital</td></tr>
<tr><td colspan="3">Traded positions get rated treatment with one rating from an independent rating agency. Untraded positions need at least two rating agency ratings. If there are split ratings, lower rating governs.</td><td colspan="2">"Look-through" treatment for senior unrated positions (i.e., look through to underlying assets) (¶ 527)</td></tr>
<tr><td>Residual interests
Includes: any retained on-balance sheet asset that functions as a credit enhancement for a securitization and all credit enhancing interest-only strips
Does not include: interests purchased from a third party, except for credit enhancing interest-only strips.</td><td colspan="3">Ratings-based approach if eligible (BB- or higher). Otherwise, "dollar-for-dollar" treatment: bank must hold capital in an amount equal to the amount of the residual interest, except for credit enhancing interest-only strips that have already been deducted from capital for other reasons (see below). OK to net out associated deferred tax liabilities under dollar-for-dollar treatment. Low-level recourse rule does not apply.</td><td colspan="2">Securitized assets removed from risk-based capital calculation only if a "clean break" has occurred, isolating the assets from the bank (¶¶ 518-21).
Retained subordinate ABS are considered "first loss" credit enhancements and should be deducted from capital (¶ 528).</td></tr>
<tr><td>Recourse obligations other than residual interests (e.g., credit derivative contracts and credit enhancing loan commitments)</td><td colspan="3">Ratings-based approach if eligible (BB- or higher). Otherwise, "gross-up" treatment: bank must hold capital against the amount of the position plus all more senior positions in the transaction, subject to the low-level recourse rule.</td><td colspan="2">same as residual interests</td></tr>
<tr><td>Direct credit substitutes (including purchased subordinate securities)</td><td colspan="3">Same as recourse obligations.</td><td colspan="2">Minimum 100% risk weight for mezzanine and subordinate securities in which a bank has invested (¶ 528).</td></tr>
<tr><td>Stripped mortgage-backed securities such as interest-only MBS and principal-only MBS</td><td colspan="3">Ineligible for any risk weighting less than 100%, regardless of rating.</td><td colspan="2">no special treatment</td></tr>
<tr><td>Credit enhancing interest-only strips</td><td colspan="3">Must deduct the amount that exceeds 25% of Tier I capital; then treat the remainder as residual interests that do not qualify for ratings-based approach.</td><td colspan="2">no special treatment</td></tr>
<tr><td>Unrated position that is senior to a traded rated position in all respects</td><td colspan="3">Treated as if it had the rating assigned to the traded rated position.</td><td colspan="2">Banks permitted to use "inferred rating" of unrated senior position</td></tr>
<tr><td>Use of banks' internal ratings</td><td colspan="3">Only permitted for determining capital requirement relating to direct credit substitutes supporting asset-backed commercial paper programs; no risk weighting less than 100% allowed based on banks' internal ratings.</td><td colspan="2">Very extensive and detailed proposals for allowing broad use of banks' internal rating systems. October 2001.</td></tr>
<tr><td>Managed assets (early amortization)</td><td colspan="3">No regulation published but issue is under consideration (66 Fed. Reg. at 59619)</td><td colspan="2">10% conversion factor to on-balance sheet equivalent amount (then apply applicable risk weight for asset) (¶ 523)</td></tr>
<tr><td>Liquidity facilities for asset-backed commercial paper programs</td><td colspan="3">No regulation published</td><td colspan="2">20% conversion factor to on-balance sheet equivalent amount for qualified liquidity facilities (¶¶ 535-536)</td></tr>
</table>

III. Glossary

Bank's internal ratings: A bank that supplies a direct credit substitute for an asset-backed commercial paper program is permitted to use its own risk assessments as a basis for determining the capital requirement associated with the direct credit substitute. The bank must be able to show that its internal rating system is "adequate." The adopting release for the new regulations identifies several characteristics that would usually be present in an adequate internal rating system:

- It is an integral part of an effective risk management system that explicitly incorporates the full range of risk from securitization activities.
- It links its ratings to measurable outcomes.
- It separately evaluates risk on assets in raw form (*i.e.*, unsecuritized) and on specific tranches of securitizations backed by those assets.
- It uses reasonably fine gradations to identify differing levels of risk and those gradations can be mapped to the rating agencies' rating systems.
- It has clear and explicit criteria for classifying assets into each risk grade. Clear and explicit criteria apply to using subjective factors.
- It is subjected to testing and verification through an internal audit procedure.
- It tracks its performance over time makes adjustment to optimize its performance.
- It uses assumptions that are at least as conservative as the assumptions used by the rating agencies in their rating activities.

Clean break: The concept of "clean break" is central to the Basel proposals. When a bank executes a securitization backed by its own assets, the assets will remain on the bank's balance sheet unless a clean break occurs. The requirements for a clean break are as follows: (i) the assets are legally isolated from the bank and beyond the reach of the bank's creditors, even in a receivership, (ii) the transferee of the assets is a special purpose vehicle and the holders of interests in the vehicle have the right to pledge or exchange the interest, and (iii) the bank does not maintain control over the transferred assets. *See* Basel Committee on Banking Supervision, *The New Basel Capital Accord*, ¶ 518 (January 2001)

Credit enhancing interest-only strips: A credit enhancing I/O strip is an on-balance sheet asset that (i) represents the right to receive interest due on transferred assets and (ii) exposes a bank to disproportionate credit risk on the transferred assets. "Excess spread" resulting from securitizations of home equity loans and manufactured housing loans are examples of credit enhancing I/O strips. If a securitizer of credit card receivables books an on-balance sheet asset to reflect the value of expected excess spread, that too would be a credit enhancing I/O strip. Credit enhancing I/O strips are a type of "residual interest." However, unlike other kinds of residual interests, which arise only when a bank *retains* disproportionate risk in assets that it has sold, credit enhancing I/O strips include both retained *and purchased* interest-only strips that serve as credit enhancement. Credit enhancing I/O strips are subject to a special rule limiting them to 25% of a bank's Tier I capital.

Direct credit substitute: A direct credit substitute is any kind of arrangement where a bank provides credit enhancement for assets that were not previously owned by the bank. Examples include purchased subordinate interests as well as credit derivatives and lines of credit that provide credit enhancement for third-party assets. Direct credit substitutes are very similar to "recourse" and "residual interests," except that recourse and residual interests generally relate to credit enhancements of a bank's own assets (or assets that the bank has transferred). Direct credit substitutes are eligible for capital treatment under the ratings-based approach if they meet the required criteria (*i.e.,* at least one rating for traded positions or at least two ratings for untraded positions; lower or lowest of split ratings governs; rating must be BB- or better). An ineligible direct credit substitute receives gross-up treatment.

Dollar-for-dollar treatment: Dollar-for-dollar capital treatment means that a bank must hold a dollar of capital for each dollar of the asset subject to this treatment. Residual interests are the only kind of asset subject to this treatment. The low-level recourse rule does not apply to dollar-for-dollar treatment. Dollar-for-dollar treatment is the most onerous capital standard under the new U.S. regulations.

Gross-up treatment: Gross-up treatment means that a bank must hold capital against the amount of the position plus all more senior positions in the subject transaction. That is, the asset in question is combined with all more senior positions in the same deal and then the result is risk-weighted based on the nature of the collateral or the obligor. Gross-up treatment applies to any direct credit substitutes that are ineligible for the ratings-based approach. Gross-up treatment applies also to recourse arrangements (other than residual interests) that are ineligible for the ratings-based approach. The low-level recourse rule applies to gross-up treatment. Gross-up treatment is similar to "look-through treatment" described in the Basel proposal.

Liquidity facility: Asset-backed commercial paper programs can be divided into two main categories: (i) fully-support programs and (ii) partially supported programs. Fully supported programs are those that have 100% credit enhancement to completely insulate investors from the credit risk of the underlying assets. Partially-supported programs have less than 100% credit enhancement. In fact, they commonly have credit enhancement of 15% or less. Because a partially-supported program may issue ABCP that matures before cash flow can be received on the underlying assets, it normally needs a separate "liquidity facility" to supply funds for paying-off maturing ABCP (if the program is unable to issue new ABCP). The liquidity facility is designed to work with the program's credit enhancement facility. The credit enhancement facility is supposed to absorb the credit risk of the underlying assets and to substantially free the liquidity facility from exposure to credit risk. Under existing regulations, banks are not required to hold any capital against their commitments under liquidity facilities, but they are required to hold capital against their commitments under credit enhancement facilities (*i.e.*, direct credit substitutes). Because of the differing regulatory treatment of liquidity facilities and credit enhancement facilities, banks have been motivated to keep credit enhancement facilities as small as possible. This has sometimes involved pushing risks to the liquidity facilities. This, in turn, has prompted heightened regulatory scrutiny of liquidity facilities. Although there is no capital charge for liquidity facilities under present U.S. capital regulations, the Basel proposals would impose a capital charge for liquidity facilities. It is fair to expect U.S. regulators eventually to follow the Basel Committee's lead once the Basel proposals are finalized.

Look-through treatment: Look-through treatment is a concept used in the Basel proposal. It applies to unrated senior ABS. Under look through treatment, the capital requirement for unrated senior ABS is determined by looking through the security to the assets backing it. The capital charge is calculated by using the applicable risk weight for the assets and the balance of the security.

Low-level recourse rule: The low-level recourse rule provides that the dollar amount of risk-based capital required for assets transferred with recourse should not exceed the maximum dollar amount for which the transferring bank is contractually liable. The low-level recourse rule applies to the gross-up treatment of direct credit substitutes but not to the dollar-for-dollar treatment of residual interests.

Managed assets: The term "managed assets" refers to assets that have been securitized in a revolving pool structures that contains an early amortization feature. The sponsor of such a securitization usually bears the risk that the securitized assets will flow back to its balance sheet if any event occurs that triggers the early amortization feature. Therefore, the sponsor arguably has continuing credit exposure to the assets even after they have been securitized.

Residual interest: A residual interest is any on-balance sheet asset that represents an interest created by a transfer that qualifies as a sale of financial assets and that exposes the transferring bank to disproportionate credit risk. Except for credit enhancing interest-only strips, residual interests do not include interests purchased from third parties. Other examples of residual interests include

(i) retained subordinate interests, (ii) cash collateral accounts, and (iii) spread accounts. Residual interests are subject to dollar-for-dollar treatment, in which the low-level recourse rule does not apply.

Recourse: Recourse refers to any kind of arrangement where a bank retains disproportionate credit risk in connection with an asset sale. Most residual interests are examples of recourse, except for purchased credit enhancing I/O strips. While residual interests must be on-balance sheet items, recourse includes off-balance sheet items as well. Examples include credit derivative contracts and credit enhancing loan commitments.

Stripped mortgage-backed securities: The term "stripped MBS" includes interest-only securities and principal-only securities. "Stripped MBS" also includes securities that represent highly disproportionate allocations of the principal and interest components of the underlying mortgage loans. For example, a security that entitled the holder to receive 99% of the interest and 1% of the principal from a pool of mortgage loans would be a stripped MBS.

Traded position: The concept of traded positions relates to positions that carry rating agency ratings. There are two alternative ways for a position to qualify as a traded position: Under the first alternative, there must be reasonable expectation that the position will be sold to investors shortly after it receives its rating. Under the second alternative, there must be reasonable expectation that, shortly after the rating is assigned, a third party will rely on the rating in connection with a transaction (*e.g.*, a secured loan). A traded position can qualify for capital treatment under the ratings-based approach if it has one or more ratings from independent rating agencies. If there are split ratings from two or more rating agencies, the lower or lowest such rating governs the capital treatment.

Untraded position: An untraded position is a position other than a traded position. An untraded position is eligible for capital treatment under the ratings-based approach only if it has two or more ratings from independent rating agencies. If there are split ratings from two or more rating agencies, the lower or lowest such rating governs the capital treatment.

IV. Market Implications

On the investing side, the **reduced capital requirements** for investing in highly-rated ABS, MBS and CMBS should boost bank demand for such securities and pull spreads tighter. The risk-based capital advantage previously enjoyed by GSE securities has been eliminated. **In our judgment, a 5-basis point tightening of the spread between short average life private label and agency CMO tranches is realistic.** Similarly, the new treatment of AA-rated and A-rated mezzanine securities of ABS, MBS, and CMBS deals has the potential to cause those securities to tighten by about 5 basis points as well.

From an issuance perspective, the new regulations have mixed implications. The prior regulatory framework was extremely favorable for securitization. It created powerful incentives for banks to securitize credit card receivables and to conduct commercial lending activities through asset-backed commercial paper (ABCP) programs. The new regulations substantially preserve those incentives. They specifically did *not* impose a capital requirement for managed assets that are vulnerable to early amortization risk. Such a requirement would increase bank risk-based capital requirements for securitized credit card receivables. Interestingly, the Basel proposals call for a minimum risk-based capital requirement of 10% for revolving credit securitizations that contain early amortization risk (¶ 523). Similarly, the new U.S. regulations did not impose a capital charge on liquidity facilities for ABCP programs, even though the Basel proposal calls for a 20% capital charge (¶¶ 535-536).

Another aspect of the new regulations that strongly favors securitization, is the change to allow use of banks' internal rating systems for determining the risk-based capital requirements for direct credit substitutes that supply credit enhancement for ABCP programs. This will help banks to preserve the high operating leverage that they can achieve by using ABCP programs (*e.g.,* $8 million of capital supporting $1 billion of commercial loans made through an ABCP program).

A few aspects of the new regulations go the other way; they embody a tougher regulatory stance than existed before. The treatment of credit enhancing interest only strips is notably onerous. For banks that securitized home equity loans or manufactured housing loans, the new regulation is significant. It should discourage securitization activity and encourage the affected banks to sell home equity loans and manufactured housing loans in whole loan form. The tough new treatment of credit enhancing interest only strips should have less impact on credit card securitizations, where the banks do not necessarily record a separate asset for excess spread.[1] However, banks often hold the "C" tranches of credit card deals and these arguably could be subject to classification as purchased credit enhancing I/O strips rather than direct credit substitutes. If so, the new regulations will force a change on the credit card landscape.

Another aspect of the new regulations that seems to reflect a "get tough" posture on the part of U.S. regulators is the "dollar-for-dollar" treatment of residual interests. This tough treatment will discourage the use of retained subordinate interests as a credit enhancement device. Banks can avoid the tough treatment by providing credit enhancement for each other's deals (*i.e.,* direct credit substitutes).

Although the regulations purport to harmonize the treatment of "recourse" and "direct credit substitutes," they do so in an unexpected way. A longstanding regulatory position had been that "asset sales with recourse" could not be booked as sales. Accordingly, an institution would have had to hold capital against the entire underlying asset pool as if it had not been sold. Conversely, if a bank supplied a stand-by letter of credit to support a third party's assets, the capital charge would be calculated by reference to the amount of the letter of credit and not the underlying assets.

Consider the following example of how the old system worked: If a bank sold a $90 senior interest in $100 of loans and retained a $10 subordinated interest, the transaction would not have been recognized as a sale and the bank would have been required to hold capital of 8% of $100, or $8. If the bank supplied a $10 stand-by letter of credit to support $100 of identical loans owned by a third party, the capital charge would have been 8% of $10, or 80¢. Even though the risk to the bank would have been identical in both cases, the capital requirement was only one tenth as great in the case of supporting third-party assets. There was opportunity to create very great leverage as a bank could support $100 of third-party assets with just 80¢ of capital.

It seemed for a while as though the regulators were going to raise the capital charge for enhancing third party assets – to bring it more in line with the basic notion that institutions should hold risk-weighted capital of 8%. In the new regulations, the regulators went half way.

Under the new regulations, if a direct credit substitute can qualify for the ratings-based approach, it can receive treatment more favorable than it would have received before. That means that even less than 80¢ of capital could support $100 of third party assets. However, if the direct credit substitute is rated in the BB category, its treatment will be worse than before ($1.60 of capital to support $100 of third party assets), but still not nearly as tough as the treatment of a retained subordinate interest. If the direct credit substitute is not eligible for the ratings based approach, it will receive the same treatment as newly defined "recourse," but still better treatment than a retained, on-balance sheet subordinate interest, which would be a residual interest under the new regime. In the example above, the $10 retained subordinate interest would require capital of $10 under the new regulations – $2 more than under the old regulations.

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[1] For example, consider the following note to CitiCorp's financial statements:

> Revenue on securitized credit card receivables is recorded monthly as earned over the term of each securitization transaction, which may range up to 12 years. The revolving nature of the receivables sold and the monthly recognition of revenue result in a pattern of recognition that is similar to the pattern that would be experienced if the receivables had not been sold.
>
> Net revenue on securitized credit card receivables is collected over the life of each sale transaction. The net revenue is based upon the sum of finance charges and fees received from cardholders and interchange revenue earned on cardholder transactions, less the sum of the yield paid to investors, credit losses, transaction costs, and a contractual servicing fee, which is also retained by certain Citicorp subsidiaries as servicers.

See Citicorp, Form 10-K for period ended 31 Dec 2001, p. F-10.

The key to understanding the evolution is to realize that much of what formerly was described under the rubric of "recourse," has now been carved out and classified as "residual interests." Thus, although newly defined "recourse" and "direct credit substitutes" receive essentially identical treatment, newly defined "residual interests" are treated more harshly.

V. Conclusion

With the release of the new regulations, another chapter in the saga of bank capital regulation has drawn to a close. For better or worse, the new regulations are final and they supply long-awaited certainty to market participants.

However, it is unlikely that the new regulations represent the final chapter of bank capital regulation. The Basel Committee has not yet finalized its proposals. After it does, there will probably be further developments in U.S. regulations.

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