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Executive Summary

CREDIT RATINGS FOR STRUCTURED PRODUCTS

*A Review of Analytical Methodologies, Credit Assessment Accuracy,
and Issuer Selectivity among the Credit Rating Agencies*

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The views expressed in this paper are those of the authors, and do not necessarily represent the views of NERA or any other NERA economists.

Preface

In late 2001, Moody's Investors Service ("Moody's") awarded a contract to National Economic Research Associates ("NERA") to conduct an independent study on aspects of the ratings process for structured products.

The study does not attempt to duplicate the process by which a credit rating is awarded. Rather, it compares the performance of rated structured finance products, and aims at evaluating the systematic differences, if any, created through the rating processes employed by the major credit rating agencies. Although the analysis should be of broad interest to market participants, its impetus was the debate over the treatment by one agency of securities, not previously rated by that agency, to be included in a rated structured transaction and, in particular, over the technique of "notching" adopted by some agencies.

Notching refers to the industry practice whereby one agency adjusts ratings of structured finance collateral from other agencies for the stated reasons of (1) bringing them in line with ratings it believes it would have assigned to the collateral and (2) adjusting for uncertainty and perceived differences in monitoring practices. The study is timely because rating agencies are being asked increasingly to rate collateralized debt obligations and other securities arbitrage programs with underlying collateral pools that include structured finance securities rated only by other rating agencies.

I. Summary

Scope

- This report covers structured products: residential mortgage backed securities (“RMBS”), commercial mortgage backed securities (“CMBS”), asset backed securities (“ABS”), and collateralized debt obligations (“CDOs”).
- The scope of the study encompasses the extent of each agency’s participation in rating structured products, the ratings methods of the credit rating agencies, historical ratings differences across transaction types and rating categories, systematic differences in historical performance among the credit rating agencies, and the possibility of “selection bias” with respect to the choice of (i) rating agencies asked to rate specific transactions; and (ii) collateral to be purchased by CDOs and other securities arbitrage programs.
- In setting the scope of the study, the objective has been to analyze the data in ways that might prove useful in determining a reasonable range for the ratings an agency would have assigned, if asked to rate a particular transaction, based only on the ratings of other agencies that were asked to rate the transaction.
- As with any set of empirical findings, there may be alternative interpretations that could be consistent with the data. Therefore, rather than argue for a single interpretation, the primary goal of the study is to present the facts, the range of possible interpretations, and the available evidence that can be used to differentiate among the potential interpretations.

Analyses Based on Data from Each Agency Individually

- Based on the transaction data provided by each agency, Moody’s and Standard & Poor’s had similar numbers of ratings. Fitch Ratings (“Fitch”) had the fewest ratings and the highest percentage rate of growth. [Exhibits III.1 through III.7]
- At year-end 2001, there were more Moody’s ratings in the ABS and CDO data sets than Fitch or Standard & Poor’s ratings (excluding undisclosed ratings). In RMBS, the numbers of ratings were roughly equal. Fitch ratings were provided on a slightly higher number of the RMBS and CMBS relative to Standard & Poor’s and Moody’s. [Exhibits III.8 and III.9]
- For all three credit rating agencies, there are a number of sub-sectors where high participation share is related to a particularly high proportion of single-rated deals. In the multiborrower (CMBS), subprime home equity (RMBS), and synthetics (CDO) sectors, more than half of the issues that Fitch rated were rated by Fitch alone. For Moody’s-rated issues, Moody’s alone rated more than half of the issues in auto leases (ABS), ABS other,

small business loans (ABS), CMBS single borrower, mortgage-backed bonds (RMBS), resecuritized MBS (RMBS), whole loan mortgage pools (RMBS), CLO/CBO other (CDO), credit derivatives (CDO), and structured notes (CDO). Standard & Poor's was the only rater on more than half the issues it rated in synthetics (CDO), student loans (ABS), and commercial properties (CMBS). Such concentration may result from specialized expertise, "rating shopping" by issuers, or other factors. [Exhibit III.10]

- The agencies have different methodologies for rating structured products. It is difficult to ascertain from the information provided how these methodological differences might be related to overall ratings differences or differences in ratings performance. [Section IV.]
- Issues for which the rating has changed are far more likely to experience further rating changes than similarly rated issues whose ratings have not changed. Furthermore, consecutive rating changes tend to be in the same direction. This indicates the existence of serial correlation, which may imply that new information is either serially correlated or is not fully assimilated by initial rating actions. Hence some rating changes may be incomplete (insufficient in size), an empirical fact, which may affect the results of some statistical tests on differences in ratings performance. [Exhibit IV.2]
- In recent years, there has been a cyclical pattern to the frequency of ratings changes, particularly in CMBS. No agency has consistently higher or lower frequency of ratings changes than any other. [Exhibit IV.3]
- Although most rating changes lead to a widening of rating differentials among agencies, there are instances when multiple rating agencies change their ratings in the same direction but at different points in time. Based on those instances where both a leading and a following rating change within a 360-day window could be identified, there were some sectors in which one agency initiated more sequential downgrades than another: Standard & Poor's was more likely to initiate a downgrade in ABS than Fitch; Standard & Poor's was more likely than Fitch or Moody's to initiate a downgrade in RMBS; Moody's and Standard & Poor's were more likely than Fitch to initiate CDO downgrades, although there were comparatively few CDO observations. [Exhibit IV.4]

Analyses Based on Jointly Rated Transactions

- In recent years, about one-third of Fitch's and Moody's ratings, and one-half of Standard & Poor's ratings, are in the highest (AAA) category, even though the ratings scale spans nine ratings categories and 21 notches above "default." Some of the subsequent analyses exclude securities rated AAA in order to highlight the differences that are more prevalent in the other ratings categories. [Exhibit V.1 and V.2]
- On jointly rated transactions, Fitch and Moody's agreed on 60.5 percent of the ratings, Fitch was higher on 31.3 percent (attributable largely to the RMBS sector), and Moody's was higher on 8.2 percent. Fitch and Standard & Poor's agreed on 82.2 percent of the ratings, Fitch was higher on 4.3 percent, and Standard & Poor's was higher on 13.5 percent. Moody's and Standard & Poor's agreed on 67.2 percent of the ratings, Moody's

was higher on 19.3 percent, and Standard & Poor's was higher on 13.5 percent. Where there was disagreement between Fitch and Moody's, the difference averaged 2.3 notches when Fitch was higher, 1.9 notches when Moody's was higher. (On 5.2 percent of their joint ratings, most of which were RMBS ratings, Fitch rated investment grade and Moody's rated speculative grade versus 0.4 percent for the converse, the only such variance observed.) When there was disagreement between Standard & Poor's and Fitch, the difference was 1.7 notches when Standard & Poor's rated higher, 1.8 notches when Fitch rated higher. When there was disagreement between Moody's and Standard & Poor's, the difference was 2.0 notches when Moody's rated higher, 1.8 notches when Standard & Poor's rated higher. On average, Fitch rated 0.6 notches higher than Moody's, Standard & Poor's rated 0.1 notch higher than Fitch, and Moody's rated 0.1 notch higher than Standard & Poor's. Differences are greater for speculative grade than for investment grade securities. The credit rating differentials between Fitch and the other two agencies have become smaller in recent years. At year-end 2001, on average Moody's rated lower than Fitch by 0.3 notches, Standard & Poor's rated lower than Fitch by 0.1 notch, and Moody's rated lower than Standard & Poor's by 0.1 notch. [Exhibit V.3 through V.5]

- Ratings differences increase as time elapses from new issuance. Fitch's ratings go from 0.3 notches higher than Moody's at issuance to about 1 notch higher than Moody's overall after five years (largely the result of RMBS ratings), with a standard deviation of about 1.5 notches; for speculative grade issues after five years, Fitch's ratings were nearly 3 notches higher, with a standard deviation of almost 2 notches. There was no difference on average between Fitch and Standard & Poor's at issuance or after five years, although the standard deviation grew to more than 2 notches for speculative grade issues. Moody's ratings matched Standard & Poor's overall (with a standard deviation of about 1 notch after five years), and for speculative grade Moody's ratings go from no difference at issue to about 1 notch lower than Standard & Poor's (standard deviation of about 2 notches) after five years. The comparisons of longer-term securities necessarily include only those issued in earlier years, and thus do not reflect the performance of more recent cohorts. [Exhibit V.6]
- On jointly rated transactions, Fitch was more likely to rate the most subordinated tranche in a transaction, while one of the other agencies was more likely to rate the most senior tranche in the transaction. [Exhibit V.7]
- In recent years, there do not appear to be meaningful differences in the frequency of rating changes between agencies when both rate the same transaction. A pattern does exist for single-rated securities. Moody's changed its ratings more frequently than either Fitch or Standard & Poor's for most of the 1990s. At the end of the decade, however, Fitch seems to have increased substantially the frequency of its rating changes. [Exhibits V.8 and V.9]

Analyses Based on Historical Ratings Actions

- A transition matrix shows the historical frequency of one-year changes from each rating to each rating. For each agency, the transition rates are significantly different from year to

year and from product to product. That is because the very large number of data points allows even small differences in ratings changes to produce statistically significant results. These differences may be due to cyclical (macroeconomic) factors and/or variations in the mix of securities rated, as well as changes in ratings methodology. [Section VI., Exhibits VI.1 through VI.6]

- Analysis of historical ratings changes indicates differences across agencies overall and in each of the four sectors considered. The differences are statistically significant. In certain sectors, it may not be possible to draw statistically significant conclusions regarding ratings differences because ratings several notches apart have historically similar probabilities of upgrades and downgrades. [Exhibits VI.7 through VI.9]
- Historically, downgrades have been most likely among speculative grade ABS rated by Fitch or Moody's, speculative grade CDOs rated by Moody's, and speculative grade CMBS and RMBS rated by Standard & Poor's. [Exhibit VI.8]
- There are significant differences in the frequency and direction of ratings changes between single- and multi-rated issues, particularly for those not rated AAA. Fitch and Moody's speculative grade ABS had more downgrades on their single-rated deals than on their multi-rated deals. Fitch and Standard & Poor's speculative grade RMBS had fewer downgrades on their single-rated deals than on their multi-rated deals. [Exhibits VI.10 through VI.12]
- When Fitch and Moody's issued downgrades, the number of notches downgraded was larger for single-rated securities than for multi-rated securities. Standard & Poor's downgraded fewer notches on average for single-rated securities than for multi-rated securities. [Exhibit VI.13 through VI.15]
- Fitch was significantly more likely to report upgrades on single-rated RMBS and downgrades on single-rated ABS than for multi-rated RMBS and ABS, respectively. Moody's was significantly more likely to report downgrades on single-rated RMBS and speculative grade ABS, than for corresponding multi-rated deals. Standard & Poor's was significantly more likely to report downgrades on single-rated investment grade CMBS and upgrades on single-rated RMBS, than for multi-rated CMBS and RMBS, respectively. Differences in downgrades between single- and jointly-rated deals could be due to differences in product mix, differences in monitoring practices, or differences in ratings criteria; the agencies maintain that their monitoring and ratings criteria are independent of whether other agencies also rate a particular security. [Exhibit VI.16 through VI.18]
- Performance differences are generally smaller than rating differences observed on jointly rated issues. While rating differences are based on a direct comparison, performance differences are based on statistical inference and are subject to assumptions that cannot be conclusively tested (such as the assumed absence of qualitative differences between single- and jointly-rated issues). [Sections V. and VI.]

- Comparisons of reported ratings changes indicate some differences between each agency's single-rated issues and issues rated by other agencies. Performance differences equate to less than one-half notch overall, but exceed one notch for speculative grade ratings in some sectors. [Exhibit VII.1]
- Although observed differences in performance are generally small between single- and multi-rated securities, there may not be a high degree of confidence associated with this conclusion for many speculative grade and low investment grade categories. It is not possible to rule out, with a high degree of confidence, that performance differences equivalent to several notches do exist. [Exhibit VII.2]