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Rethinking the Ratings-Based Approach

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ROLE OF CREDIT RATINGS: WHY ARE THEY IMPORTANT AND WHO USES THEM?

Over the past several decades, credit ratings have played an essential role in the financial system and have been used extensively by market participants. Since they are publicly observable and easy to interpret, investors typically use them as a starting point for their investment decisions. Large institutions, such as insurance companies and pension funds, often have internal investment guidelines requiring a specific fraction of capital to be allocated to securities with certain ratings. Financial regulators also rely on ratings. For example, the Investment Company Act of 1940 requires money market funds to hold only highly rated commercial papers. Pension funds also face similar ratings-based investment restrictions. Such regulatory reliance on credit ratings is particularly true for the insurance and banking industry, in which a ratings-based approach is employed to calculate the amount of capital needed to hold in reserves.

COLLAPSE OF STRUCTURED FINANCE RATINGS IN THE CRISIS

Underpinning all these functions listed above is the assumption that credit ratings contain the same amount of information across different categories of fixed-income instruments. However, the collapse of ratings among structured products during the 2007 to 2008 financial crisis casts significant doubts on this assumption. According to Moody's, the number of structured finance tranches downgraded by Moody's skyrocketed nearly eight-fold from 885 in 2006 to 6,801 in 2007.

In relative terms, 2007 saw a spike in downgrade frequency, reaching a record high of 7.2 percent of outstanding tranches, five times higher than its level in 2006. Moreover, one-third of the downgrade actions were against triple-A-rated tranches, which were widely considered to be safe investments by investors. In contrast to the severe credit deterioration in structured securities, the ratings performance of single-name corporate bonds was fairly stable during the crisis. In 2007 and 2008, respectively, 1,411 and 1,322 corporate bonds rated by Moody's were downgraded, slightly less than the number in 2006. Taken together, these results suggest that corporate bonds rating were well-calibrated to the underlying risks in the economy, while the initial credit ratings assigned to structured products were inflated.

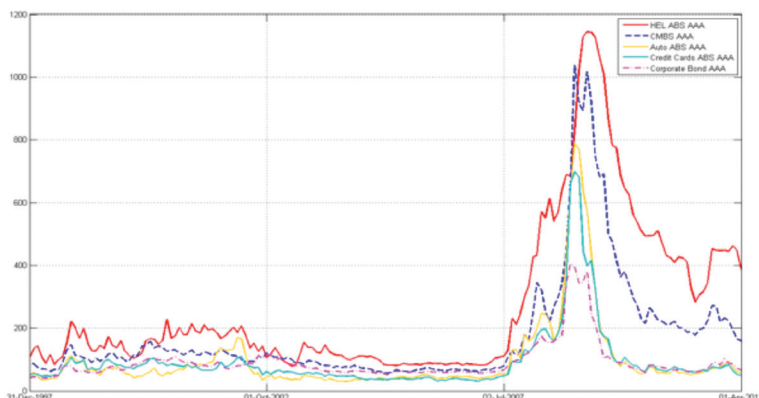
COMPARABILITY OF RATINGS

Such rating inflation among structured securities provides suggestive evidence against the comparability of credit ratings between structured finance securities and single-name corporate bonds. In other words, the same rating scale can mean very different things for structured securities than it does for traditional corporate bonds. A defining feature of structured finance activities is that a large share of securities issued (over 60 percent according to Fitch Ratings) are carved out as triple-A. Therefore, we concentrate our analysis on triple-A-rated securities. Figure 1 plots the evolution of triple-A credit spreads for home-equity loan (HEL), asset-backed securities (ABS), commercial-mortgage-backed securities (CMBS), auto-loan ABS, credit card ABS and corporate bonds. As it displays, all spreads have widened dramatically and reached record highs during the 2007 to 2008 credit crunch. However, the spread spike is more pronounced for structured products than for corporate bonds, suggesting that structured securities are more prone to economic downturns than their ratings-matched, single-name counterparts.

WHAT MAKES STRUCTURED SECURITIES DIFFERENT FROM CORPORATE BONDS?

The core discovery in the recent financial crisis is that securities produced by structured finance are fundamentally distinct investment products from single-name securities. They are actually far riskier than their ratings indicated and have little chance surviving a

FIGURE 1: BASIS POINTS: OPTION-ADJUSTED SPREADS



“ Investors should be aware of the shortcomings associated with credit ratings when employing a ratings-based approach toward pricing complex fixed-income instruments. ”

severe economic downturn. One central insight into the distinction is that the securitization process, which is common to all structured finance activities, substitutes risks that are largely diversifiable with systematic risks. The two-step procedure in the securitization process, pooling and tranching, allows for broad diversification of idiosyncratic default risks in the underlying collateral pool, leaving default risks in senior tranches written against them highly concentrated in the worst economic states. In the spirit of capital asset pricing model (CAPM), security with a risk profile highly exposed to systematic risk is expected to offer investors a higher rate of return than securities with the same expected payoffs but less correlated with the market. Given the way these structured products are manufactured, their payoffs are primarily driven by systematic risks. In contrast, the fortune of corporate bonds is more driven by firm-specific risk tied to a single company.

SYSTEMATIC RISKS

Credit ratings, however, reflect only securities' expected losses in terms of default likelihood and expected recovery value given default, and provide very limited information about their risk characteristics. As a result of their coarseness, securities with a certain credit rating can have dramatically different risk profiles, and thus can command a wide range of spreads as risk premium, depending on their exposure to systematic risks ("beta"). Such information loss in risk characteristics is critical to the understanding of the recent crisis, since many investors in fixed-income markets naively based their investments mainly on credit ratings (expected payoffs). They failed to appreciate the difference between single-name and structured securities when it comes to systematic risk exposures. Such investors in structured products are often less compensated for risks they bear. This is particularly true for investors in senior collateralized debt obligation (CDO) tranches, whose performances are highly correlated with the state of the economy as a whole after repeated pooling and tranching.

The following table summarizes systematic risk exposures of triple-A-rated auto ABS, credit card ABS and corporate bonds, estimated from an in-house model. Not surprisingly, both auto ABS and credit card ABS carry more systematic risks than single-name corporate bonds. It is interesting to note that the triple-A-rated

auto ABS and credit card ABS have been traded at comparable spreads to triple-A corporate bonds in the pre-crisis period, as displayed in Figure 1. This suggests that investors in these structured products are undercompensated for the higher systematic risk they bear.

	Auto ABS	Credit Cards ABS	Corporate Bonds
Systematic risk exposure	57%	47%	34%

CONCLUSION AND NEXT STEP

In the aftermath of the financial crisis of 2007 to 2008, the creditworthiness of credit ratings has been questioned by investors, regulators and the public. Despite their wide use in the financial services industry, they are actually insufficient for pricing and risk management of fixed income securities. We demonstrate that a ratings-based approach often leads to mispricing and underestimation of risks. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2011 directed federal regulators to remove credit ratings from their rules. In the insurance industry, the National Association of Insurance Commissioners (NAIC) also has taken steps to review its ratings-dependent rules.

Investors should be aware of the shortcomings associated with credit ratings when employing a ratings-based approach toward pricing complex fixed-income instruments. ■



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