Credit Risk

Subprime Loan Problem and the Securitization Market

By Yukio Muromachi
muromati@nli-research.co.jp

Financial engineering has taken much blame for the turbulence in global financial and securities markets sparked by the U.S. subprime meltdown. However, the problem can be partly attributed to the inadequate use of financial engineering, and the limitations of credit ratings.

In securities investment, common wisdom associates high risk with high expected return, and low risk with low expected return. Some asset-backed securities, however, offer low risk (high credit rating) and high expected return (large yield spread compared to government bonds or LIBOR). In recent years, with credit spreads persisting at very low levels, investors naturally gravitated to these securities, whose yield spreads were high compared to corporate bonds with the same rating. The anomaly thrived for several years until this summer, when the U.S. subprime-mortgage meltdown sparked turbulence in global credit markets.

Subprime mortgages are loans granted to homebuyers with a less-than-perfect credit report. When the U.S. housing market boom began in 2003, homeowners took advantage of surging house prices to refinance mortgages and resell homes for short-term gains. Growing numbers of low-income households also bought their first home. As the housing boom slowed in 2005, mortgage lenders eased credit to keep the momentum going. When the boom finally collapsed, homeowners could neither refinance or resell, triggering a wave of defaults and foreclosures that continue to grow to this day.

In the past, this type of problem would have been contained inside the U.S. market. However, approximately 60% of home mortgages — and even higher for some types — had been securitized and sold as residential mortgage-backed securities (RMBS). These securities were then pooled into CDOs (collateralized debt obligations) and sold to investors all over the world. As a result, when U.S. subprime borrowers defaulted, it impacted not only mortgage lenders, but RMBS and CDO investors such as hedge funds and financial institutions worldwide. Investors hastily redeemed holdings in funds with large subprime exposures, prompting the funds to sell off highly liquid corporate debt to raise cash. Thus the meltdown spilled over to prices of non-subprime debt and the CDOs linked to them.

Exhibit 1　CDO Tranches and Cash Flows

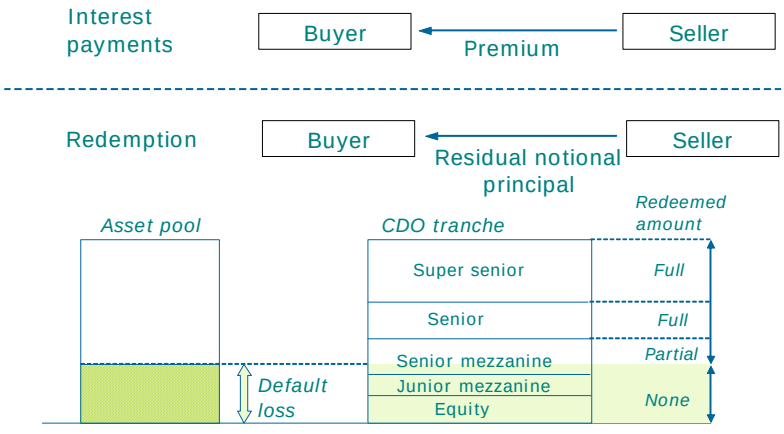

Exhibit 1 illustrates the cash flows of a CDO with exposure to a pool of debt securities. CDOs are issued in tranches having different risk exposure and premium levels. Exposure to default loss of the asset pool (reference asset portfolio) is greatest at the bottom tranche. Thus, for example, the first 3% of default loss is absorbed entirely by equity. For losses above this threshold, exposure shifts upward to the junior mezzanine and senior mezzanine tranche respectively. At the highest tranche, exposure is minimal, while the premium is smallest.

Normally, CDO securitization is designed to control risk by pooling many diversified and uncorrelated assets. In addition, global diversification ensures that risk is not concentrated in a particular region or among particular investors. The method is sound as long as principles of risk and portfolio management are observed. However, problems arose because: (1) the CDOs pooled similar reference assets, thus failing to diversify default risk; (2) the same CDOs were used as reference assets to compose other CDOs (see Exhibit 2); and (3) RMBS and CDO issuers used excessive leverage in their investment.

Credit-rating agencies have also been criticized for issuing overly-lenient ratings, neglecting to assess the quality of underlying assets, and being subject to potential conflict of interest in that rating fees are paid by securities issuers. In their defense, it can be said that ratings simply reflect one opinion (investors are ultimately responsible), and that ratings assess credit risk and not the risk of loss of principal due to daily price fluctuations (many securities continue to make interest payments even when prices decline). Nonetheless, rating agencies need to make improvements. For example, they should use different rating symbols for asset-backed securities than for bonds to erase the misperception that large yield spreads carry the same risk as bonds with the same credit rating. Moreover, they should introduce a new rating concept that assesses the possibility of price fluctuations. Actually, recent media reports indicate that foreign credit-rating agencies have recognized these market needs and are working toward a solution.

We believe that financial markets will learn from these shocks and grow, while credit-rating agencies will make necessary improvements. But investors need to be aware that risks can materialize at any time, and that ultimately they are responsible for their own decisions.

Exhibit 2 Relationship of Subprime Mortgage, RMBS and CDO