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**Fair valuation of illiquid financial products and its difficulties**

It is important for financial institutions to reach an industry-wide consensus on methods for determining illiquid financial products' fair value. Equally important is an understanding of mark-to-model valuation's limitations.

Amid the current financial crisis, financial institutions throughout the world are faced with the controversial issue of how to determine the fair value (market value)<sup>1)</sup> of illiquid financial instruments (e.g., securitized products). Following are some background on this issue, a discussion of the practical difficulties of determining fair value, particularly from the standpoint of Japanese buy-side institutions, and a proposal of a pragmatic approach to surmounting such difficulties.

### Why fair valuation is in the spotlight

Determining the fair value of financial product holdings has fundamental and important risk-management implications for financial institutions. Fair valuation is a key prerequisite for risk quantification (e.g., in the form of capital adequacy ratios). However, the current financial crisis has revealed inadequacies in financial institutions' methods of measuring and verifying securitized products' fair value. For example, some financial institutions have reportedly used price data provided by brokers without adequately verifying them. In response to such practices, the Basel Committee on Banking Supervision (BCBS) issued Supervisory Guidance for Assessing Banks' Financial Instrument Fair Value Practices in November 2008. In Japan, the Financial Services Agency amended its Comprehensive Guidelines for the Supervision of Major Banks and Comprehensive Guidelines for the Supervision of Small/Medium-Sized and Regional Financial Institutions last August. These amended guidelines require financial institutions to appropriately value securitized products and objectively verify broker-provided price data.

With many brokers recently downsizing their securitized product operations, some foreign brokers have ceased providing market-price data to financial institutions.

Financial institutions increasingly find themselves in the position of having to determine fair values themselves.

Valuation practices also have accounting implications. The International Accounting Standards Board (IASB) and US Financial Accounting Standards Board (FASB) have been issuing guidance on measuring illiquid financial products' fair value since September 2008. Market prices are normally considered determinative of fair value if a market exists for the product in question. Even if market price data exist, however, the FASB and IASB's recent guidance clarified that rationally calculated prices (referred to below as "model prices") may be used in lieu of market prices if the latter are deemed to be distressed prices. This guidance was issued in response to distressed conditions in securitized product markets, where forced liquidation depressed market prices to anomalously low levels relative to fair value estimates based on fundamentals<sup>2)</sup>. The accounting authorities were concerned about financial institutions exacerbating the financial crisis by treating market prices as fair values as usual<sup>3)</sup>.

In October, the Accounting Standards Board of Japan (ASBJ) followed the IASB and FASB's lead by issuing similar guidance in accord with the trend toward international convergence of accounting standards. The ASBJ's guidance was distinguished by its applicability to not only securitized products but also 15-year JGB floaters (JGBs with floating-rate coupons linked to the 10-year constant-maturity JGB yield), an asset class in which market prices had deviated widely from model prices. In fact, according to interim financial statements dated September 2008, many banks with JGB floater holdings apparently limited their mark-to-market losses by valuing the floaters at model prices.

## Practical difficulties of mark-to-model valuation

Calculating model prices for financial products generally requires an analytical model and data inputs. JGBs, for example, would be valued using a discounted cash flow model and data inputs such as issue attributes (e.g., coupon rates) and market data (e.g., yield curve data).

Textbooks tend to focus mainly on analytical valuation models and treat the data inputs as a given. In the case of securitized products, however, the data inputs often pose difficulties in practice<sup>4)</sup>. The key issues are how to determine the data inputs to use and how to obtain the requisite data. Securitized products' prospective cash flows are variable, largely a function of the underlying assets' prepayment and default rates. Forecasts of prepayment and default rates are therefore required to calculate model prices, but data useful in forecasting these variables are generally not readily accessible to investors. In response, the Japan Securities Dealers Association has formed a working group<sup>5)</sup> comprising brokerage and buy-side representatives and is currently promoting standardized information disclosure by sellers. While these efforts may lead to some improvement, they are not sufficient to fully resolve the problem of data availability. Much data (e.g., CDO default correlations, values of CMBS collateral properties) are not readily ascertainable or available, even to product originators.

Another difficulty is determining the risk premium to use when discounting future cash flows. This risk premium broadly consists of a credit spread and (market) liquidity spread. The former can be estimated by various means (e.g., credit risk models), but no standardized method exists for estimating the latter<sup>6)</sup>. With even bid/ask data often not readily available, quantification of liquidity spreads is a vexing problem for many financial institutions. One possible approach to quantifying liquidity spreads is to identify previous timeframes of putatively normal market conditions and assume that the differential between broker prices and model prices during these timeframes represents a liquidity spread. However, even this approach poses practical difficulties such as determining what constitutes normal market conditions and deciding what product unit to use to estimate the spread.

## Resolving valuation challenges

In terms of how to address such difficulties, the first step is to seek a rough industry-wide consensus on valuation methods.

Given existing limitations on the availability and determinability of data inputs, certain inputs are likely to ultimately remain discretionarily determined. Nonetheless, financial institutions should seek to avoid a complete lack of side-by-side comparability due to too much case-by-case discretion.

Also needed is a widespread recognition that fair valuation requires some degree of discretionary judgment and therefore has limitations. The aforementioned BCBS guidance recommends ascertaining the extent to which valuations vary in response to changes in data inputs. The specific methods it recommends for doing so include sensitivity analysis and stress testing<sup>7)</sup>. To comply with these recommendations, financial institutions will likely have to strengthen their valuation staffs and further augment their quantitative systems' analytical capabilities.

**Note**

- 1) The valuations used in fair value accounting are called "fair values" in US and international accounting standards and "market values" in Japanese standards.
- 2) For example, default probabilities implied by subprime MBS indices are, by some estimates, too high relative to actual default rates.
- 3) There is also strong opposition to use of model prices as fair value estimates on the grounds that it detracts from the reliability of financial statement information.
- 4) Regarding analytical models for valuing securitized products, a rough consensus seems to have emerged among practitioners, although academic debate continues.
- 5) Working Group on Securitized Product Sales
- 6) There does not even appear to be a consensus definition of the concept of market liquidity.
- 7) Of course, even if such analysis and testing is done, financial institutions are still exposed to model risk from the analytical model itself.

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