Anatomy and prescription

As the smoke begins to clear from the collapse and near-demise of some of the financial world's biggest names this autumn, what lessons can be learned? And what steps might prevent a future repetition of the massive volatility?

Some guidelines for the future were suggested recently by John Hull of the University of Toronto, the British-born professor of derivatives and risk management at the university's Joseph L Rotman School of Management.

Hull visited London in October to present his thoughts on the crisis in the latest of the Rotman School's finance speaker series. To provide some background to the events that triggered the current problems, he presented his audience with a graph of US property prices based on the S&P/Case-Schiller Composite 10 Home Price Index, the most respected gauge of the state of the US housing market.

He looked at the period from 1987 to mid-2008 and showed that, up until 2000, market conditions were relatively stable despite fluctuations in economic conditions. In the six years from 2000, prices then rose steeply, before reaching a plateau and then falling sharply in the two subsequent years.

During the six boom years, lending processes grew slacker and, as mortgage lenders complacently assumed they had more than adequate collateral, it became progressively easier for property buyers to borrow more than they could afford.

"Around 2004, mortgage originators gave up checking what people entered on their applications," said Hull. "It became possible to be without a job or any income yet still obtain a mortgage."

AGGRESSIVE TACTICS As prices climbed, the originators devised new products to continue drawing buyers into the market and their selling tactics became more aggressive. Products included adjustable rate mortgages for periods of 30 years, which were directed at borrowers with a poor credit rating and had an initial attractively low teaser rate. Thus the products carried a low opening rate for the first two or three years before reverting to a higher rate for the remainder of the mortgage term.

Other dubious initiatives from the period included the notorious ninja (no income, no job, no assets) and liar loans offered to poor credit risks.

This policy was further assisted by a particularly low Federal Funds rate over the period 2002 to 2005.

"The banks found it a very easy proposition to invest in AAA-rated tranches of these products, which typically offered rates of interest equal to Libor plus 150 basis points," said Hull. "So the returns offered were much higher than the cost of funds, while capital requirements were low.

"But by 2007 the bubble had truly burst, forcing the market to confront the reality that many US subprime mortgages wouldn't be serviced. The flight to quality began and credit spreads rose to very high levels."

VICTIMS But why did so many financial institutions fall victim? After all, the asset-backed securities that were at the root of the problem have been around for many years.

Asset-backed securities are special-purpose vehicles that are likely to comprise at least six senior, mezzanine and equity tranches. The assets generate cashflows that are allocated to these tranches effectively through a 'waterfall'.

Executive summary

- **After an extended boom between 2000 and 2006, the bubble well and truly burst in 2007. Mortgage lenders had grown complacent about their levels of collateral, while borrowers had been actively encouraged to borrow more than they could afford. Asset-backed securities were at the root of the problem, but rating agencies working with inaccurate data and ill-advised short-term thinking on performance-related bonuses artificially prolonged the boom and deepened the ensuing bust. John Hull outlines a five-point plan for improving future standards.**

HOW DID THE FINANCIAL SERVICES INDUSTRY END UP IN SUCH A SORRY STATE? AND HOW CAN IT BE MADE MORE RESILIENT IN FUTURE? **GRAHAM BUCK** HEARS THE VIEWS OF ONE EXPERT COMMENTATOR.

The senior tranche is the first to be satisfied – and the last to be exposed to losing some or all of its principal in the event of a default. Typically AAA rated, the senior tranche also proved easiest to sell.

Despite being the most vulnerable to a total wipe-out, the equity tranche was also not a difficult sell, generally either going to hedge funds or being retained by the principal.

Finding a buyer for the mezzanine tranche was a slightly more difficult proposition, so the originators decided to create a similar product from the mezzanine tranche alone; again replicating the same structure of senior (AAA rated), mezzanine (BBB rated) and equity (unrated) tranches. The resulting product was the asset-backed security collateralised debt obligation (ABS CDO), otherwise known as the mezzanine CDO.

The various repackaged mezzanine tranches were collected into a portfolio before the originators approached the ratings agencies. The repackaging ultimately resulted in anything up to 90% of the original subprime mortgage receiving an AAA rating – something that many investors, who either failed to understand or investigate the structure of these vehicles, did not appreciate.

This top rating for assets that were far from being top grade lay behind the decision, in late July, by Merrill Lynch to sell a huge portfolio of originally AAA rated CDOs to Lone Star at a rate of only 22 cents to the dollar as its losses from defaults began accumulating.

Another contributing factor to the losses was the poor quality of mortgages granted during 2006 at the height of the property boom. Losses proved heaviest from these newest mortgages as they were typically of lower quality than mortgages given in 2005, which, in turn, were themselves inferior to those from 2004.

INACCURATE DATA AND WRONGFUL ASSUMPTIONS So were the ratings agencies lax in assigning AAAs to these products? The likes of Moody's and Standard & Poor's "can only rate on the basis of information that they are given, and in these cases had to do so on data that was very inaccurate," said Hull.

In addition, the agencies were accustomed to rating bonds but less familiar with structured products, which differed significantly, and got their assumptions wrong on the correlation between the assets.

"There is evidence to indicate that mortgage originators used lax lending standards because they knew the loans would be securitised," Hull said, adding that the interests of originators and investors would have to be aligned in any future securitisations.

Hull suggested the end-of-year bonus in the financial services sector contributed to the problem. For many workers, the bonus was "the lion's share" of remuneration; based on performance over the year, it encouraged short-term thinking.

Transparency was another issue, with investors failing to understand the products – which were "among the most complex credit derivatives ever devised" – and relying solely on their credit ratings.

Most financial institutions also lacked models to value the tranches they were trading, a shortcoming that contravened their own normal procedures.

"ABS CDOs have the same structure as CDO squareds, which synthetic CDO traders find difficult to value," said Hull. "Yet without a valuation model, risk management becomes virtually impossible."

So did any of the banks discern the warning signs and avoid ABS CDOs or get out in time? Canada's Toronto-Dominion Bank was one.

"Chief executive Ed Clark decided the bank really didn't understand these structured products and made the decision to move out of them before the crisis broke," Hull said. "It was, perhaps, a decision that owed more to instinct than to detailed analysis. It wasn't a hard decision to take, but it proved harder to implement, with plenty of people suggesting it was a wrong move."

HULL'S FIVE-POINT PLAN So how does the financial services industry avoid another great crash? Hull proposed the following:

- **Originators of structured products should retain a stake in each of the tranches they create:** The problem would not arise or be less serious if they had to retain a sizeable percentage – say, 20% – of each tranche. The ratings agencies could enforce this as the pre-requisite for granting a rating.
- **Originators should provide greater transparency:** The arrangers of structured products should make software freely available to potential investors and their lawyers that would let them perform various risk simulations on the products. The current crisis proves that merely attempting to describe them in words is not sufficient.
- **Bonuses should reflect performance over a period of more than one year:** A five-year period would discourage the short-term thinking and desire for a quick profit that artificially prolonged the boom and has made the subsequent bust deeper.
- **Remember that models are an important discipline and are also needed for good risk management:** Stress-test results on potential debt levels should be based on scenarios generated by a risk management committee and not only on historical data.
- **Don't forget that risk management is important in good times as well as bad:** Up until now, both stress-test results and risk management in general have seldom been taken seriously when times are good and are only appreciated during a downturn.

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