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The **sub-prime** crisis has changed the global financial landscape for ever. The new market environment provides opportunities to improve historic practices and business models. **Andrew Cavenagh** investigates

# Lessons to be learned

The worsening credit crisis over the last six months has given the lie to two – in hindsight, smug – assumptions that prevailed in the international capital markets up to August. One was a widely-held belief that the global market for debt was now so deep and liquid that it could absorb any imaginable shock without precipitating a systemic crisis.

The other tenet that proved false was that the exponential growth of securitisation worldwide over the previous decade had created a class of stable and liquid bonds that would continue to provide financial and corporate borrowers with a cheap and reliable source of funding. It was this growth of securitisation that enabled US mortgage lenders to extend low-cost loans to a large raft of people for whom home ownership had previously been the impossible dream.

As all have belatedly realised in hindsight, there was a fundamental flaw with this lending model. The US companies that were offering loans of more than 100% of home values didn't always make the sort of credit checks that have historically been a prerequisite for mortgage lenders.

This was because they were safe in the knowledge that they would soon be passing on the entire credit risk of the loans to bond investors. So volume of lending became the key driver to the profitability of these mortgage originators, rather than the credit quality of their borrowers. It could be argued that the same was sometimes true for the investment banks that marketed and sold the bond issues that were backed

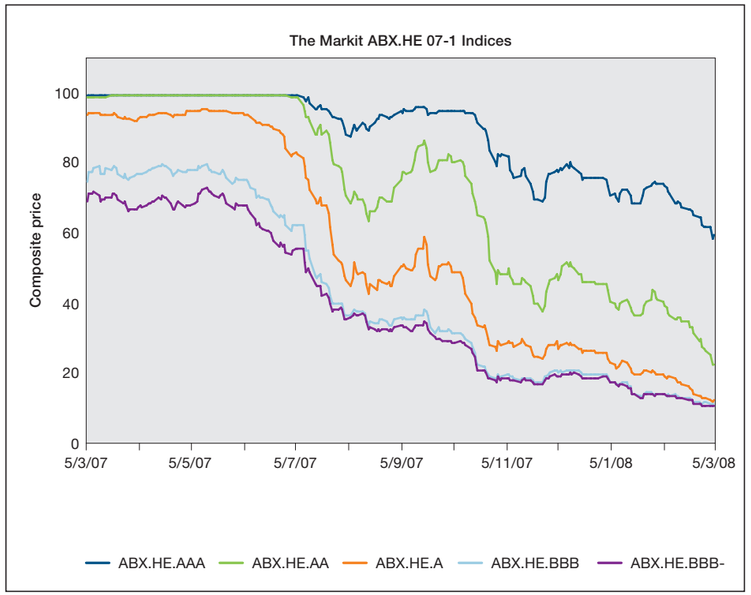
by these loans to investors around the world – whether directly as sub-prime RMBS (residential mortgage-backed securities) or indirectly through CDOs (collateralised debt obligations).

The banks were also earning their money from the volume of their turnover. All they had to do was tier the bond issues into tranches that could secure staggered ratings – with the highest triple-A rating covering the bulk of the issue – and sell them into the market. Then they would move on to the next issue. They also began to "slice and dice" the debt to a greater and greater extent through increasingly complex CDO structures – the so-called CDO-squared and CDO-cubed variants – which managed to transform much of the middle-ranking debt in an initial CDO into triple-A securities.

The US sub-prime lenders and investment banks have since learned a hard lesson, as a sharp rise in defaults on US sub-prime mortgages from 2006 initiated a progressive collapse of confidence in all securities backed by such assets. While US sub-prime lenders have filed for bankruptcy in droves, the investment banks have been forced to declare write-downs on sub-prime related investments of more than $100bn, led by the US giants Citi (with $18bn of losses) and Merrill Lynch ($14.1bn). Both firms' chief executives resigned as a consequence and the banks received cash injections from sovereign wealth funds in the Middle East to improve their balance sheets.

As the damage spread beyond RMBS and CDOs backed by US sub-prime loans to all asset-backed securities (ABS), it also exposed a fundamental weakness in the investment vehicles that banks had set up to invest over $400bn in such bonds. These structured investment vehicles (SIVs) had financed their ABS purchases with cheap short-term borrowing in the asset-backed commercial paper (ABCP) market – and made a profit on the arbitrage between the two. However, as fears over the sub-prime exposures led money market funds to desert the CP markets, the SIVs were left horribly exposed.

Decline And Fall – The Past Year For A Synthetic Index Of US Home Equity ABS

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Because the sponsoring banks did not provide 100% liquidity facilities to cover their debt – unlike most bank conduit programmes – the structure of the vehicles obliged them to sell assets to meet maturing CP if they could not roll it over. Most SIVs were also subject to "market-value triggers", which forced them to sell off assets if valuations reached the trigger points.

## Vicious circle

A vicious circle rapidly developed where the threat of widespread sell-offs by SIVs sent all asset-backed bond valuations plummeting and activated the market-value triggers in more and more of the vehicles. This soon precipitated a wider debt crisis as banks became fearful of their own and others' potential exposures to SIVs and other ABS losses, and stopped lending money to each other.

That spelt the end for Northern Rock, the bank based in the north-east of England that had expanded aggressively through heavy – and increasing – reliance on borrowing from the wholesale money markets. But within a matter of weeks, no non-government financial institution or corporate could raise money from anywhere other than central banks. The asset-backed bonds that were supposed to deepen the liquidity of the capital markets to a degree never seen before had done just the opposite.

"The idea was that these investments spread the risk, but all they did was spread the contagion," comments Peter Spencer, the York University professor who is the chief economist for the independent ITEM Club forecasting group sponsored by Ernst & Young.

So why did the market depart so radically from the script, and what further lessons should all involved learn from the experience?

The Bank of England summed up succinctly what had gone wrong in its latest Financial Stability Review. It warned that the UK's financial system remained vulnerable to further shocks as





Tom Elliott, global strategist, JPMorgan Asset Management

a consequence of the "seriously flawed" model that banks and other financial institutions had adopted to expand their lending so rapidly over the past few years.

The Review itemised a number of "significant" failings of the "originate and distribute" model that had been behind the issue of such a vast volume of asset-backed bonds over the period. "These include inadequate information about the true credit risk underlying financial instruments; an excessive dependence on rating agencies; opaqueness about the distribution risks in the financial system; over-reliance on continuous liquidity in financial markets; and inadequate liquidity risk management," it concluded.

Sir John Gieve, deputy governor at the Bank, responsible for financial stability, acknowledges that regulators also need to reassess some of their procedures – as the Bank itself, along with the Financial Services Authority and the government Treasury, face widespread criticism over their failure to intervene earlier and more decisively in the Northern Rock case. "Some important lessons need to be learned by both financial institutions and authorities on liquidity risk management, valuations of complex instruments, disclosures of risk positions and on crisis management," he concedes.

Prof Spencer believes it will take more than two years to resolve some of the core causes of the crisis. "The wider use of securitisation, the role of the rating agencies – I'm afraid these are absolutely humungous issues."

But despite the magnitude of the crisis – which now threatens to inflict misery on hundreds of thousands of consumers as tighter lending criteria will surely make it impossible for credit-impaired borrowers to re-mortgage their homes at affordable cost or obtain any other form of credit – most believe that securitisation per se has not been discredited beyond repair.

"It has made people sit up and think about the huge amount of securitisation that we have had over the past few years," says Tom Elliott, global strategist at JP Morgan Asset Management. "In the near term we are going to see a rolling back, but it's not going to stop because of this hiccup."

Elliott maintains that the ability to sell debt so widely through securitisation is what lowered the cost of borrowing to the point where it was possible to advance mortgages at feasible cost to those who had never had access to such borrowing before, and he insists that remains a desirable goal.

"I do think this is a learning point that is going to improve the overall target of lowering the cost of global debt," he says. "But regulating the business hasn't kept pace, and I do think that will need to catch up."

One change that seems certain to result from the debacle is that institutions that originate mortgages – or any other types of loan – will no longer be allowed to sell on the entire risk to the capital markets. It is hard to imagine that some of the reckless sub-prime lending that occurred in the US would have happened if the lenders had been obliged to keep the "assets" on their balance sheets.

"Next time round, originators will surely be obliged to retain some exposure rather than selling the whole thing on," comments Elliott.

## Agencies under scrutiny

The role of the rating agencies is also under real scrutiny. Standard & Poor's, Moody's and Fitch all face lawsuits in the US from disgruntled investors who lost money on sub-prime related investments. At the same time, market regulators are closely examining the relationship between the agencies and the investment banks that pay their fees.

While the credit quality of any security can deteriorate over a period of time, the speed with which the ratings of some US sub-prime and CDO bonds fell from the triple-A level to sub-investment grade – within a matter of a few weeks – inevitably raised questions over the agencies' competence. "They clearly are exposed to the charge of not paying full attention," comments Elliott.

While it would be difficult to prove that any rating agency compromised its opinion to safeguard its fees, there is no doubt that over the past four years lead managers on issues have put the agencies under increasing pressure to "get to" required ratings – particularly

for deals involving assets that the lead managers were also originating, such as sub-prime mortgages and commercial property loans. There was often an implicit – sometimes explicit – threat that too much obstinacy on the part of any rating agency might lead the arranging bank(s) to drop it in favour of the other two, and there is plenty of anecdotal evidence that arrangers played the agencies off against each other in this way.

"What we see in the last few years was a squeeze on the rating agencies," confirms Chris Greener, structured finance analyst at SG Corporate and Investment Banking in London.

At the same time, the rating agencies' stress models often underestimated the correlation risk of multiple defaults occurring simultaneously. "In the event, the correlation was much higher than everyone had factored into their models," says Greener.

"There are limits to these analytical models," agrees Anita Bradshaw, director at IT systems consulting firm LogicaCMG. "What tends to happen is that all the models that are out there are pretty uniform."

Despite the unprecedented interest in their operations from the regulators, however, it seems unlikely that the agencies activities will become subject to formal regulation. Given the relative speed with which the different organisations operate, for instance, it would hardly be practical for a body like the UK Financial Services Authority to authorise the rating agencies' stress models, let alone sanction individual ratings.

As the agencies seek to improve confidence in their operations from its present all-time low, changes to their stress models and in their approach to rating deals are much more likely to be driven by investor pressure in the near term.

"People are just nervous and sceptical of the whole sector," explains Greener. "The reality is that investors are going to take a much closer look at how the rating agencies rate deals. For the next two years, I don't think you'll need any kind of regulation because it will be self-regulating."

Chris Greener, structured finance analyst, SG Corporate and Investment Banking, London

And what else do the banks need to do? Many are occupied by cleaning up the wreckage of the SIVs, as most have been forced to support the vehicles with their balance sheets in one way or another – either through buying the CP the vehicles issue themselves or through providing them with full liquidity support and turning them into conduits. Consequently, the creation of new types of arm's length investment mechanisms will not be high on their agendas. At some juncture the need will return, however, and it seems certain that the vehicles of the future will have two key characteristics as a consequence of the last six months' experience – guaranteed liquidity lines to cover all the debt they issue and the absence of market-value triggers.

Meanwhile, liquidity concerns will remain paramount in the sector. The collapse of Northern Rock was an object lesson as to how quickly even a large financial institution (with over £100bn of assets) can easily face ruin if it loses the confidence of its peers and its depositors. And no-one can be under any illusion that the British government would step in and nationalise a second high-street lender that got into such difficulty.

## Vulnerable systems

But while banks' current focus on the liquidity issue is perhaps understandably on maintaining diverse and economic sources of funding, Bradshaw at LogicaCMG warns that they should also be examining the threat that their internal systems might pose. She points out, for instance, that several of the large UK clearing banks seem to be unaware of how vulnerable their systems for intra-day payment and settlement could leave them on this score – particularly in the current environment. "You do have occasions when someone thinks that a missed payment is a sign of weakness," she observes.

Bradshaw says banks were probably more attuned to the risk posed by late payment and settlement 15-20 years ago, when – as a former Deutsche Bank employee – she recalls that institutions used to deliberately test each other with "games of chicken" towards the end of the working day. "These days there are a lot more inefficient banks in the payments system," she maintains.





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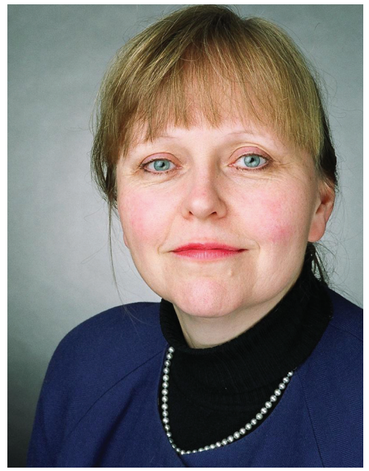

Anita Bradshaw, director, LogicaCMG

"Some have very ancient IT architectures for their payments systems."

While it might seem fanciful to imagine that failure to process end-of-day payments on a given date could precipitate the collapse of a high-street bank, in the current climate of nervousness it would certainly cause it some embarrassment. How would the payment counterparties react, and what would be the impact on its short-term borrowing ability?

It is easy to see how such a failure would cause tremors at the top of any leading bank. One UK clearing bank, for instance, went to great lengths to keep quiet a significant failure of its IT system recently, which apparently prevented the bank from performing several functions for a matter of hours.

In the benign lending environment that prevailed up to July 2007, banks also relaxed the stress tests they conducted on their operations. It was obviously in management's interest to favour less stringent stress testing that allowed banks to take greater risks and – supposedly – improve the profitability of their operations.

As the shortcomings of such policies are apparent to all now, banks seem sure to replace such unreliable testing formulae with more analytical tools that can determine effective liquidity and collateral strategies, and reflect a bank's true lending capabilities more accurately. "It's really a question of the stress testing you do," explains Bradshaw. "It's very important that you test the things that have the biggest impact on your operations – and it's very important that you know what those impacts are."

## Revising risk models

Banks' risk models will also need revision. Bradshaw says the sector's reliance on credit risk models that require more and more data input has long been a shortcoming, because such models do not give an accurate correlation between market risk and credit risk – and tell a bank how much capital it requires to support the actual credit risk.

"The transition matrices are not always stable," she points out. "The banking industry has a history of not having very good credit models – it's a particular failing of the sector." She expects to see the replacement of such analytical risk models with systems that make more use of simulation.

Meanwhile, as the banks draw lessons from the mistakes that have led them to declare aggregate losses worldwide of more than $100bn, corporate and consumer borrowers will learn once again that when the banking system sneezes it will not be long before they catch a cold. This year has already seen big lenders restrict their offerings in the retail market. All the big UK mortgage lenders have withdrawn the 125% products that enabled many first-time buyers to get a foot on the property ladder, while Citi credit card subsidiaries have served notice they are terminating the facilities of riskier borrowers.

Such measures will reduce banks' risk exposure but inevitably lead to a higher incidence of defaults. Home repossessions in the UK climbed to an eight-year high of 27,000 in 2007, and the figure is bound to rise this year as the untold thousands who have lived beyond their means on the back of rising house prices – and constant re-mortgaging – will no longer be able to do so. (Non-conforming borrowers accounted for half the repossessions last year.)

With UK consumer debt standing at a record 160% of disposable income, this inability to refinance mortgage debt seems certain to feed through into a sharp increase in unsecured borrowing defaults and personal bankruptcies. (Mortgage lenders have refused to disclose how many of their borrowers have relied on refinancing to stay afloat over the past two to three years.)

Meanwhile, a survey commissioned by Belgium's KBC Bank in February of 107 senior corporate executives (nearly half of them financial directors and treasurers) showed that a vast majority expected the availability of bank-supplied credit to diminish this year – and that its price would go up. The executives said that companies would also need to rely on the strength of their banking relationships more heavily in 2008 – as banks became more cautious and less trustful – and that as a result of this tighter credit climate, higher interest rates and a general economic downturn, the number of corporate defaults would rise. ■