

## DOES SUBPRIME DESERVE MORE THAN 20:20 HINDSIGHT?

The national press is full of tales of subprime mortgage mayhem, and commentators have been very critical of the way banks loosened lending criteria while accepting tighter credit spreads.

But then, commentators have 20:20 hindsight - it's more difficult to answer forward-looking questions about the balance between risk and reward. For example, how could subprime mortgage lenders have made better choices during the period they built up their portfolios, and what does the future now hold for lenders in other key subprime areas such as auto-lending?

Taking a balanced view is important. Next year, commentators may be using their 20:20 hindsight to tell a different story: how hard-nosed investment banks and hedge funds made a lot of money during 2007 buying up selected subprime assets that went on to deliver excellent margins in the longer term.

To reach a rational answer on risk versus reward, we think that banks must use quantitative risk and capital modeling to adopt a risk-adjusted 'through-the-cycle' view of the spreads available in subprime.

This kind of risk-adjusted view is not crystal ball gazing - it can't guarantee that subprime portfolios will make a profit in every economic circumstance. But it does guarantee that the bank will know, at the time it is building a portfolio, whether the portfolio is likely to turn a profit in the long run once expected losses, risk capital costs, funding and operating costs are taken into account.

In the subprime sector, risk capital costs are a particularly important factor because they reflect the volatility of the portfolio's loss rate - how far losses might depart from their historical average or 'expected' rate as economic conditions deteriorate.

As an experiment, we recently constructed a series of portfolios of subprime auto loans to discover what kind of through-the-cycle credit spreads banks ought to be making in this segment - and where the key levers of long-term success and failure might lie.

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For example, in one piece of research we considered a BB- rated institution that had built up a portfolio of \$3bn subprime auto-loan assets with an average probability of default of 15.1% and a loss given default of 55%. Using an economic capital model, we then worked out the credit risk capital cost of this illustrative portfolio, which turned out to be about 7.88% of total assets using some 'middle of the road' risk factor assumptions.

Critically, our research found that subprime capital costs depended considerably on the assumptions about the degree of correlation between two risk factors: borrower probability of default (PD) and facility loss given default (LGD). As we increased the assumed correlation between these risk factors in the portfolio from a low of 0.20 up to 0.60, the credit capital results rose from 6.65% to 9.73%.

It's exactly this kind of correlation that's been spilling red ink in the subprime mortgage market, where rising default rates against a background of falling house prices have rocked market confidence and liquidity, making it more difficult for borrowers - and lenders - to refinance and potentially forcing another round of defaults.

Lower credit scores also drive up the risk measures and thus required capital. For example, keeping PD and LGD correlation at a level of 0.4, we found that customers with credit score ranges of 600-619 required a credit spread of 7.22% and customers with 580-600 scores required 9.22%, spiking up to 12.13% for those with 560-580 scores. (The credit spread here includes the cost of maintaining risk capital at a typical bank hurdle rate plus the cost of expected losses, but does not include funding and non-interest expenses.)

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This kind of analysis helps banks determine capital adequacy and the risk-adjusted profitability of the whole portfolio, but it's also critical for determining which portfolio segments are driving long-term profitability up or down.

The presence of a fat spread over funding costs in a particular subprime segment might indicate a highly profitable business activity - or the spread might be swamped by high capital costs driven by correlated risk factors.

Ironically, perhaps, the rate of attrition in subprime portfolios means there is often excellent data available, within the bank or via customized benchmarks, to determine risk parameters (compared with low-default portfolios).

Rather than blindly pursuing market share or notionally high spreads, banks must learn to use this data to identify the subprime business that offers the best risk-adjusted margins - and the best long-term return for shareholders.

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