Risk Management Lessons from the Sub-prime Crisis

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The 'sub-prime crisis' began in the US in August 2007 and has its origins in three types of risk. Of course when the markets are in crisis, risk and risk management practices of companies and participants in the markets come under scrutiny. While a whole plethora of risks can be identified emerging as the crisis unfolded, there are three main risks that will be focused on in this article.

Sub-prime loans are high loan to valuation loans to low and medium income borrowers (sometimes referred to disparagingly as NINJA loans – no income, no jobs or assets). Consequently, if the loans stayed on balance sheet, the lender would be exposed to greater credit risk than when lending to prime borrowers. Sub-prime loans were often offered at low introductory rates, which triggered to a much higher rate at the end of the introductory period, thus making it extremely difficult for the low income borrower to meet the mortgage repayments. This resulted in *credit risk.*

The credit risk did not necessarily stay with the lender (which implied that the lender and/or the broker were not so concerned about the credit worthiness of the borrower). These loans were packaged up (sometimes with other assets) and securitized into assets such as collateralized debt obligations (CDOs). The overall outcome from this securitization process, together with increasing levels of consumer leverage, has been a significant increase in the leverage of the financial system as a whole. Securitized loans were moved off banks' balance sheets (and often purchased by other banks to place) into special purpose vehicles such as Structured Investment Vehicles (SIVs) and Conduits, which funded these long term investments by short term borrowings in the capital markets. This resulted in a high level of *leverage* in the financial system and thus exposure to market risk from changes in the price of the securitized assets which magnified the credit shock when sub-prime borrowers started to default. Thus risk arising from excessive leverage also contributed to the crisis.

The third type of risk is *liquidity risk*. In August 2007 we witnessed the simultaneous global freezing of wholesale capital markets, including the interbank markets, CDO markets and markets for asset-backed commercial paper (ABCP). For example, it became impossible to roll over short-term commercial paper in the US and other markets.

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Although the crisis began in credit markets where we saw a widening of credit spreads globally, there was a spillover into equity markets. The Australian equity market fell in January 2008 by 11 percent, and by the end of April 2008 was some 17.5 percent below its November 2007 peak. The collapse of the Australian equity market has triggered substantial disruption in the economy and has had a profound effect on companies, banks stockbrokers and individual investors, and the main events are summarized in Table 1.

The first casualties in Australia in July 2007 of the contagion caused by the sub-prime crisis were two unlisted hedge funds Basis Capital and Absolute Capital. Both entities were highly levered and invested in assets which when the crisis struck turned out to be illiquid. Unable to value and sell assets they were forced to suspend redemptions. The Basis Yield Alpha Fund, which invested mainly in CDOs (including high risk sub-prime mortgages) was put in provisional liquidation at the end of August 2007. Retail investors had invested in these funds through major financial institutions' investment platforms. Westpac-owned BT Financial Group and St George Bank had even offered margin loans of up to 80 per cent for 20 per cent equity in Basis Capital's two funds. Who could see the collapse coming? Basis Capital had received Standard and Poor's highest rating of five stars not long before it collapsed and Absolute Capital was rated as a 'strong buy' by an analyst in the London Independent just weeks before it suspended redemptions from two of its funds. Australia has one of the most liberal approaches to the range of investment products offered to retail investors. *Caveat emptor.* Investors in Absolute Capital are likely to receive around 10 cents in the dollar.

Next to fall was RAMS Home Loans as a direct result of the freezing of global capital markets mentioned above. RAMS funded half of its $14.6billion loan book through extendable commercial paper issued in the US. It was unable to successfully refinance $6.2 billion of short term debt, exercising its option to extend the maturity of its commercial paper debt proved suicidal, and its mortgage origination business was subsequently taken over by Westpac in early October 2007. RAMS as a mortgage origination business relied on short-term wholesale funding to fund long-term illiquid assets. Its demise was a direct result of liquidity risk and also the concentration of maturities on its funding. Its IPO in had occurred in July 2007, the announcement of its funding problems in August saw its share price fall by around 50 per cent, and subsequent difficulties further destroyed most of the shareholder value.

From December 2007 through March 2008 a number of companies faced serious difficulties in a falling stock market. MFS, City Pacific, Centro and AFG were all highly leveraged (as was RAMS) but their corporate structures were far more complex and opaque. Their business models consisted of funding and purchasing highly illiquid assets (such as commercial property, real estate, infrastructure, equipment for leasing etc), then repackaging the assets (into a trust or investment vehicle) for sale to investors (as well as holding similar assets on the parent's highly levered balance sheet). The parent company took a spread on the sale and then locked in a long-term stream of income for managing the investment vehicle. MFS, City Pacific, and Centro were funding the assets with short-term debt and had difficulty rolling the debt over. There were quite complex interlinkages (debt, equity and guarantee positions) between the parent, subsidiaries and managed

funds, making for opaque structures, potential for magnified leverage, and problems for lenders to assess credit worthiness. When lenders came to reassess positions after the crisis hit these characteristics were highly undesirable. In some cases, the linkage of debt covenants to stock market capitalization created further complications for borrowers when equity markets fell.

Executives in Allco (AFG) had highly leveraged positions in the shares of the company funded through lending their stock to brokers, using a stock-lending model to provide margin loans. In this model, legal title (but not the economic interest) was transferred to the broker who in turn could on-lend the stock as security for bank loans to support its margin lending activities. In fact, Tricom Equities caused a major disruption to the smooth functioning of the stock market in January 2008, because it had on-lent AFG stock to banks to fund its own margin lending, and was unable to regain title in time to meet settlement obligations.. A complex web indeed.

ABC Learning was another high profile company to find itself in difficulties as a result of executives and directors having taken leveraged positions in the stock of the company. As its share price declined, reflecting concerns about its funding problems and performance, speculation that margin calls would be triggered may have caused a wave of short selling in ABC which resulted in a dramatic drop in its share price.

Margin lending, stock lending and short selling practices have all been questioned as a result of the crisis and the ensuing bear market, and a number of stockbroking and securities lending firms have been engulfed by the fallout. Four firms that used securities lending techniques to provide margin loans for retail customers in the Australian market (Tricom Equities, Lift Capital, Opes Prime and Chimaera Capital), have now all but disappeared. Tricom Equities has shrunk its book from $2.4billion to $200million, Lift Capital and Opes Prime have been placed in liquidation and ANZ bank has absorbed Chimaera Capital. Perhaps this is a good outcome - only the big players such as hedge funds will be able to access the remaining wholesale stock lenders.

Margin lending based on securities lending using Australian Master Securities Lending Agreements (the model used by Opes Prime) involved temporary transfer of securities ownership by clients to the stockbroker in return for cash collateral. That ownership was subsequently transferred to the bank providing loan funding to the stockbroker to finance its margin lending book. The counterparty credit risk involved has had catastrophic consequences for a number of retail investors, small companies and their key stakeholders. When Opes Prime failed as a result of poor management practices and risk controls, its bank creditors commenced the sale of substantial shareholdings in a significant number of small companies (lent to Opes Prime by some key stakeholders in those companies). Many companies requested trading halts while the situation and likely impact of sales of large blocks of shares was assessed, and there were unplanned changes in significant ownership stakes as those key stakeholders discovered their shareholdings sold to other parties.

The Australian market has witnessed a number of collapses and near collapses as a consequence of the sub-prime crisis and its effects on equity markets world-wide. Retail investors, directors, executives, banks, non-bank financial/investment companies, companies, stockbroking and securities firms have been affected by the fallout from the crisis. Credit risk, high leverage and liquidity and funding risk have all been factors in the impact of the crisis.

Financial engineering, where financial instruments (and companies) are bundled and unbundled to redistribute the cash flows and the risks, has been responsible for creating some of the problems that have surfaced. The complexity and opaqueness of the products and company structures created left even professionals puzzled. Ratings agencies and investment analysts made wrong calls. Reputable banks indirectly (via their financing of margin lenders) lent up to 80 percent to retail customers to invest in risky securities. They appear also to have relaxed their lending standards allowing opaque, complex companies to rapidly grow large, highly levered, balance sheets. Good corporate governance in some companies was neglected in a booming market. Leverage levels increased in a rising market.

One of the lessons the recent experience pays us all to remember is that what goes up can also come down, and that business models built on high leverage and an assumption of ever increasing asset prices are subject to significant risks. Despite the repeated lessons of history, unfortunately our memories are short.

Table 1: Australia and the sub-prime crisis: Headline events

Date	Headline Event	Further Information
July 16, 2007	Basis Capital announces suspension of withdrawals from two hedge funds due to inability to calculate NAV (previously reported at over $1 bill).	Planned liquidation of "master fund" in which its retail funds have invested announced on Aug 31. NAV reported to have declined by as much as 80 per cent.
July 25, 2007	Absolute Capital announces suspension of withdrawals from two "Yield" Funds (investing in corporate loans and CDOs).	Appointment of a voluntary administrator on Nov 27 under Australian insolvency regime arrangements. Announcement of winding up with likely return of A$0.10 in the dollar
Aug 14, 2007	RAMS Home Loans announces exposure to rollover risk in US XCP market.	IPO was July 27 at $2.50. Sale of origination business to Westpac announced on Oct 2.
Dec 17, 2007	Centro Property announces difficulties in rolling over debt and suspends redemptions from two managed funds. Share price drops from $6.20 to $1.36	Jan 15, announces possible default event, forex risks, prior under-reporting of current liabilities, share price drops from $1.50 - $0.60. Feb 18, announces extension of refinancing facilities
Jan 18, 2008	MFS announces proposed separation of businesses and "recapitalization" share issue to pay off short term loans. Shares drop 75% to $0.99 as it attempts to raise $550m.	Shares suspended. Short term debt financing problems announced on Jan 23. Redemptions from its managed fund suspended on Jan 30. Sale of 65% of its stake in Stella Group announced on Feb 4.
Jan 23, 2008	Allco Finance Group	Subsequent restructuring of debt arrangements

	announcement of sales of stock borrowed from principals of Allco Finance Group due to failure to meet margin call.	with banks and selling off assets to reduce debt levels. Share price falls to below $1 from $9 in mid 2007
Feb 1, 2008	Tricom Securities fails to settle share trades causing market disruption	Tricom had on-lent borrowed stock and was unable to provide the stock to settle. Margin book subseqneuntly reduced from $2.4 bill to $200 mill.
Feb 26, 2008	ABC directors announce the use of margin loans over their shares in the company.	Share price collapses, company forced to sell 60 % of its US business
Mar 28, 2008	Opes Prime stockbroking placed in administration with margin lending book of over $1 bill.	Margin calls had not been made to selected customers. Creditor banks seizure (and sale) of stock involved in loans to directors of small listed companies led to stock market trading halts and substantial ownership changes
Mar 4, 2008	Property developer City Pacific requests trading halt.	Shares plunge 58% on fears that $500m of short-term debt to the Commonwealth Bank will struggle to be repaid.
Apr 11, 2008	Stockbroker Lift Capital is placed in administration	Followed a similar business model to Opes Prime
Apr 16, 2008	Securities firm Chimaera Capital is absorbed by ANZ Bank	

Source: Christine Brown and Kevin Davis “The Subprime Crisis Down Under” forthcoming, *Journal of Applied Finance*