

*Editorial***The Subprime Mortgage Meltdown**

‘The mortgage industry, a mutant monster organization of lapsed lending standards and arrant grift on the grand scale, is going to implode like a death star under the weight of these non-performing loans and drag every tradable instrument known to man into the quantum vacuum of finance that it creates.’

(James Howard Kunstler, October 17, 2005)

I came across this quote in Bageant (2007, pp. 99–100), his book describing and exploring where he grew up, in small-town, working-class, fundamentalist-Christian, deer-hunting, Scotch-Irish, lower-class Winchester, Virginia. In a chapter on mortgage brokers and their customers, Bageant describes people like ‘Tommy Ray’, who drives a construction materials delivery truck and makes \$9.50 an hour. Tommy Ray is easily able to get a loan to buy a residential lot and a \$79,000 ‘mobile home’ trailer, with a specially required septic tank, a driveway, electricity and so on, for a total of \$130,000, which had a resale value of ‘a little more than half of what he paid for it the day after he signs the contract’, and will cost him \$260,000 before it is paid off. Unless he defaults. In which case, the lender will be lucky to realize a few thousand dollars for the trailer on a glutted market. Welcome to subprime mortgage territory.

As the United States and Europe enter the first recession for over seventy years to be caused by a financial crisis, rather than oil-supply shocks or monetary policy overshooting, it is instructive to ask how this could be, given at least sixty years of development on the theory and empirical study of financial markets. As the regular reader of the *Australian Journal of Management* will know, the *Journal* itself has published a preponderance of papers in finance.

The subprime mortgage crisis is so called because of the large number of mortgages issued to Americans who could not easily meet the interest payments, let alone repay the principal, as so well described by Joe Bageant.

That’s at the retail end. At the other end of the supply chain the dominos continue to fall. First, Northern Rock Bank, the first bank to be bailed out by the Bank of England since the Great Depression. More locally, the Opes Prime debacle, with the involvement of the ANZ Bank, continues to exercise a morbid fascination on the rubber-neckers: were the superannuations funds the ANZ’s, too?

In the middle is the muddle. As I understand it, the mortgages were bundled, securitized, and sold at a discount from their normal value, which reflected the risk (of non-payment) inherent in the bundled mortgages. This was probably the last time on the supply chain where the risk of the mortgage-backed securities could have been estimated accurately. Whether or not it was, and to what extent, remains unknown.

Beyond that point lies further uncertainty, just how uncertain should have become unclear to me last (southern) spring, when my then part-time doctoral student told me about his attempts to refinance his apartment in Singapore. It wasn’t simply a matter of higher interest rates. As he talked, I realised that what he

was describing was non-price rationing of capital! The Singapore banks were on to it before the rest of us: in order to accurately price a risk asset, one must know exactly what the risk entails.¹

It couldn't have been my erstwhile student's ability to repay the loan: an Australian Graduate School of Management MBA graduate, from the early nineties, with a very successful career in consulting in South-East Asia in the intervening years, with his working partner and no children, a very low credit risk, one would have thought.

So why such rationing? It has become clear that the lack of liquidity which has become the hallmark of the subprime crisis stems from the lack of interbank lending. And this, in turn, apparently stems from information asymmetries: even if one bank does know its precise exposure to the subprime mortgage riskiness—and given such obscure derivatives as 'collateralized debt obligations', which apparently cannot be valued using a formula, but must be simulated, or numerically evaluated—other institutions do not know, or do not believe, estimates of risk when offered, and hence are not prepared to assume the risk of non-payment, apparently at any price. Non-price rationing.

In a perceptive essay, Sinn (2008) coins the term 'lemon bankers' to describe banks with a heavy exposure to the subprime mortgage market. This is direct reference to Akerlof's 1970 paper, 'The market for lemons', which first introduced the concept, and consequences for markets, of asymmetric information to economists at large, although some of its concepts had been commonplace in an industry with inevitable information asymmetries: the insurance market.

Akerlof modelled a market in which two sorts of cars are sold, although buyers cannot tell them apart before buying: good vehicles, and those vehicles that even when new exhibit fault after fault, so-called 'lemons'. If the price—because of the asymmetry there is only a single price—is too high, the risk of buying a lemon will deter buyers, and the market will collapse; if the price is low enough that buyers will assume the risk of buying a lemon, it might be too low to reward the sellers of non-lemons, who will not therefore offer their good vehicles for sale, and the market will degenerate to a market for lemons only. A monetary example is Gresham's Law: bad (debased) money (coins) drives out good. Or, in insurance, good risks decide to self-insure, leaving as policy buyers the bad risks who might find the profit-seeking insurance companies charging appropriately high premiums and so choking off demand for policies from all but the worst risks. Or resulting in the complete collapse of the insurance market.

And such non-price rationing as my student experienced, even in the *entrepôt* island state, is a form of capital market collapse.

Sinn argues that the subprime was caused by an accounting system that leads subprime to greater volatility of firms that own assets whose prices fluctuate in the short term, as well as three moral hazards, the third of which is the problem of asymmetric information between banks and their debtors, which is very similar to that between the buyers and sellers of second-hand cars discussed above. Even the

1. As Ian tells it, despite a loan-to-valuation ratio of around 55%, HSBC would not refinance. Nor would Citibank, DBS, or Hong Leong. In most cases, Ian believes that these decisions stemmed from a shortage of cash to lend, a supply-side issue, rather than the would-be borrowers' position. Eventually, they were able to refinance (up to 70%) with Standard Chartered, which appeared to be less exposed to the wider global mortgage issues. (Ian Scott, personal communication, 2008).

professional ratings agencies severely underestimated the risks flowing from the securitized sub-prime mortgage instruments, such was the opaqueness of the capital markets involved.²

The other two moral hazards, according to Sinn, were, first, that management focused excessively on short-term share-price performance, ‘probably owing to the excessive influence of investment banks on commercial banks’ policies’. Second, a belief on the part of their managers that the banks were too large for governments to let them fail. Not only did the Bank of England eventually nationalize Northern Rock in effect, but the U.S. Federal Reserve saved the customers of Bear Stearns with a \$30 billion incentive for its purchase by J.P. Morgan.³

The Papers

This issue includes nine papers: one on managerial and labour remuneration inside organisations, six on aspects of financial markets and financial decision making, one on the impact of forecasts of a firm’s future prospects, and, finally, one on identifying business networks or clusters in a region. As usual, financial market papers predominate, and we can see how theoretical contributions dating back over a century are being applied to understanding these markets and the instruments traded, and including two contributions (Options Pricing, and the Capital Asset Pricing Model) that have earned their developers the Nobel Prize in Economics.

As a consequence of the subprime mortgage crisis, official and unofficial interest rates are on the move worldwide. In Australia, Norway and some other resource-rich countries up, while in the U.S. and Europe down, for macroeconomic reasons. Can those countries with higher interest rates expect greater volatility in interest rates? This is the ‘level effect’. Of course, many factors can influence interest-rate volatility, so probably not, but research into better understanding the dynamics of interest rates continues, characterised by the Constant Interest-Rate Elasticity of Variance, CEV (Cox & Ross 1976).

Here, Gray and Smith (2008) continue this research, applied to the Australian yield curve. They adopt a new estimation technique that shows that significant correlations exist between the residuals of such parameters of the yield curve as level, slope, and curvature, at least for short-term rates. Yes, Virginia, there is a level effect.

Last year we published a study of the market for Australian vice-chancellors, the chief executive officers of Australian (and British) universities (Soh 2007). We here publish a second paper on the topic of the remuneration of ‘academic executives’ (the top five levels of executives at Australia’s increasingly hierarchical universities). Clements and Izan (2008) find similarities and differences in comparisons of academic executives with private-sector executives: institutional size is a clear correlate of the level of remuneration in both sectors; both sectors exhibit institutional-size elasticities of remuneration of about a quarter, a number

2. The failure of the U.S. Securities and Exchange Commission to avert the collapse of Bear Stearns has been blamed on reduced resources available to the SEC to monitor the increasing complexity of the largest companies on Wall Street (Westbrook 2008).

3. It was the 1998 bail-out of the notorious hedge fund, Long-Term Capital Management (Lowenstein 2000), that inspired Kate Jennings’ 2002 novel set in a Wall Street bank, and titled *Moral Hazard*.

that has also been found in previous studies of executive remuneration in the U.S. and the U.K.

The research finds at least one difference between universities and private-sector organisations in the ‘steepness’ of the ‘stairway to the top’, the changes in remuneration as we look across the top five levels of the executive hierarchy. According to Clements and Izan, tournament theory tells us that the steeper this slope, the greater the rivalry in the climb to the top, and the more difficult such progression. On average, the university stairway is about half as steep as the corporate stairway, suggesting that the ascent is much harder for corporate executives than for academic executives. Whether the relative lack of competition in administrative academia results in less stellar top executives in universities is a future study, no doubt.

Accounting papers are not a common occurrence in the pages of the *Journal*, although thirty years ago, under Ray Ball, the foundation editor, we published several well-cited accounting papers (Watts 1977; Smith & Watts 1982). Chang, Ng and Yu (2008) continue this tradition. The authors investigate investors’ reactions to forecasts of a firm’s prospects, and ask whether, first, investors are more affected by unfavourable than by favourable forecasts, and, second, more influenced by analysts’ forecasts than by managers’ announcements.

They conclude that investors treat analysts’ and managers’ forecasts differently, responding more strongly to analysts’ forecasts than to managers’ forecasts, perhaps because of the relative credibility of the independent analysts.

Some options (European) are defined on the asset price itself at a single date or the maturity date; others (Asian options) are defined on an average of the asset prices. A particular kind of Asian option is defined on the ratio of the spot price to its average (or vice versa), and have recently appeared as special types of Variable Purchase Options. VPOs have been traded on the Australian Stock Exchange, ASX, since 1992. The pricing of options has been of interest in finance for over a hundred years, since Bachelier’s 1900 thesis,⁴ and more recently won the Nobel Prize in Economics for Merton and Scholes, in 1997.

Moreno and Navas (2008) examine the pricing of VPOs using Australian data, using both geometric and arithmetic means of stock prices assumed to follow a log-normal process. Ratios of the stock price to its geometric mean are log-normally distributed to maturity, as with Black/Scholes. But ratios of the stock price to its arithmetic mean cannot be derived in a closed form. Noreno and Navas show that prices of Australian options obtained using those methods—the Wilkinson approximation, the gamma distribution, and Monte Carlo simulation with antithetical variables—are quite similar, even with few data points.

Truong, Partington, and Peat (2008) report a survey to determine the extent to which the advances in means of using market data to calculate the cost of capital have been adopted by Australian companies listed on the ASX. Of the 356 companies approached, 87 (or almost 25%) responded. The survey found that projects are usually evaluated using Net Present Value, although Internal Rate of Return and Payback Period are also used. Cash flows are estimated up to ten years into the future. The growth rate could be the inflation rate, the industry average, or zero.

4. See Bachelier, Samuelson, Davis and Etheridge (2006) for a translation and commentary.

Discounting uses the Weighted Average Cost of Capital, usually assumed constant for the life of the project, and based on target weights for debt and equity. The Capital Asset Pricing Model is used to estimate the cost of equity capital, with the risk-free bond rate adjusted up by a risk premium of usually six percent. Betas are obtained from public sources. Models other than the CAPM are not used. The cost of debt is often, but not always, adjusted for interest tax shields. But the value of imputation tax credits is ignored in computing beta, the risk premium, and the WACC, and in estimating cash flows, although most companies realise that this value is not zero. Use of real options techniques in project evaluation is growing.

Bilson, Brailsford, Sullivan and Treepongkaruna (2008) examine the ability of several term-structure models to price bonds along the yield curve, using Australian data. They conclude that most such models generally underprice bonds of short and medium maturity, but overprice bonds at the long end of the curve. No model was best, although duration-based models were worst. This matters if the market is relatively illiquid.

As Truong, Partington, and Peat remind us, it is now over forty years since Bill Sharpe (1964) unveiled the Capital Asset Pricing Model. Since then, others have elaborated on the CAPM. For instance, Fama and French (1992) added two additional factors—the firm's size and its book-to-market equity ratio—to the CAPM, and, more recently, momentum has been added as a fourth factor.

Kassimatis (2008) combines two findings in his analysis of portfolio returns on the ASX: time variation in Australian market risk, and the significance of the Fama-French factors. Although he finds that the additional factors (including momentum) have significant explanatory power in a model assuming static risk premia, with time-varying factor loadings, the significance of those additional factors becomes marginal, which suggests that they may proxy for misspecified market risk. No doubt further research will follow.

It was the financier J.P. Morgan, when asked what stock prices would do, who replied, 'Prices will fluctuate'. Can we do better than that? For instance, are the growths in sales and the earnings for Australian listed firms persistent, and hence predictable, using valuation ratios, such as book-to-market equity, sales-to-price, and earnings-to-price? Hall and Tochterman (2008) do find some persistence, in contrast to earlier U.S. studies, but conclude that nonetheless the stock market has not been very successful at identifying firms with superior growth prospects.

In the final paper in this issue, Athiyaman and Parkhan (2008) attempt to identify business networks, or clusters, in the Cairns region of Queensland. This is done as a demonstration of a functionalist approach to such identification, in an attempt to elaborate on theories and explanations of the special clustering of firms. They claim success.

Housekeeping

Two months ago, David Gallagher, the deputy general editor, gave notice that he wished to step down both as deputy editor and as associated editor, finance. I am very sorry to farewell David, since his enthusiasm for the *Journal* and his energy in reviewing, editing, and writing papers has been very welcome, not least his vision for the *Journal's* future. He has not been replaced as deputy editor yet, but I am

pleased to announce that John Handley of the Melbourne Business School has agreed to become co associate editor, finance, with Garry Twite, who continues. Farewell, David, and welcome, John.

The E. Yetton Award, for the best paper published in the *Journal* in the previous year's volume (which included three issues in Volume 32), goes to Comerton-Forde, O'Brien, & Westerholm (2007), and the runner-up is McKenzie (2007). Congratulations, all. Several papers from previous issues will be republished in anthologies and textbooks.

The issue of December 2008 will be my last as General Editor.

Robert E. Marks

General Editor

References

- Akerlof, G.A. 1970, 'The market for 'lemons': Quality, uncertainty and the market mechanism', *Quarterly Journal of Economics*, vol. 84, pp. 485–500.
- Athiyaman, A. & Parkhan, C. 2008, 'A functionalist approach to identifying business clusters', *Australian Journal of Management*, vol. 33, no. 1, pp. 201–30.
- Bachelier, L. 1900, 'Théorie de la speculation', *Annales Scientifiques de l'École Normale Supérieure*, vol. 3, no. 17, pp. 21–86.
- Bachelier, L., Samuelson, P., Davis, M. & Etheridge, A. 2006, *Louis Bachelier's Theory of Speculation: The Origins of Modern Finance*, Princeton, Princeton University Press.
- Bageant, J. 2007, *Deer Hunting with Jesus: Dispatches from America's Class War*, Melbourne, Scribe.
- Bilson, C.M., Brailsford, T.J., Sullivan, L.J., & Treepongkaruna, S. 2008, 'Pricing bonds in the Australian market', *Australian Journal of Management*, vol. 33, no. 1, pp. 123–44.
- Chang, M., Ng, J. & Yu, K. 2008, 'The influence of analyst and management forecasts on investor decision making: An experimental approach', *Australian Journal of Management*, vol. 33, no. 1, pp. 47–68.
- Clements, K.W. & Izan, H.Y. 2008, 'The stairway to the top: the remuneration of academic executives', *Australian Journal of Management*, vol. 33, no. 1, pp. 1–30.
- Comerton-Forde, C., O'Brien, M.A. & Westerholm, P.J. 2007, 'An empirical analysis of strategic behaviour models', *Australian Journal of Management*, vol. 32, no. 2, pp. 181–203.
- Cox, J. & Ross, S.A. 1976, 'The valuation of options for alternative stochastic processes', *Journal of Financial Economics*, vol. 3, pp. 145–66.
- Fama, E.F. & French, K.R. 1992, 'The cross-section of expected stock returns', *Journal of Finance*, vol. 47, pp. 427–65.
- Gray, P. & Smith, D.R. 2008, 'An empirical investigation of the level effect in Australian interest rates', *Australian Journal of Management*, vol. 33, no. 1, pp. 31–46.
- Hall, J. & Tochtermann, M. 2008, 'Persistence in growth versus market expectations', *Australian Journal of Management*, vol. 33, no. 1, pp. 169–200.
- Jennings, K. 2002, *Moral Hazard: A Novel*, Picador, Sydney.
- Kassimatis, K. 2008, 'Size, book to market and momentum effects in the Australian stock market', *Australian Journal of Management*, vol. 33, no. 1, pp. 145–168.

- Kunstler, J.H. 2005, 'No direction home', October 17. http://jameshowardkunstler.typepad.com/clusterfuck_nation/2005/10/no_direction_ho.html, accessed 14/05/2008.
- Lowenstein, R. 2000, *When Genius Failed: The Rise and Fall of Long-Term Capital Management*, Random House, New York.
- McKenzie, M.D. 2007, 'International evidence on the determinants of the decision to list', *Australian Journal of Management*, vol. 32, no. 1, pp. 1–28.
- Moreno, M. & Navas, J.F. 2008, 'Australian options', *Australian Journal of Management*, vol. 33, no. 1, pp. 69–94.
- Sharpe, W.F. 1964, 'Capital asset prices—A theory of market equilibrium under conditions of risk', *Journal of Finance*, vol. 19, no. 3, pp. 425–42.
- Sinn, H.-W. 2008, 'Lemon banking', Project Syndicate, <http://www.project-syndicate.org/commentary/sinn19>, accessed 16/05/2008.
- Smith, C.W. Jr. & Watts, R.L. 1982, 'Incentive and tax effects of executive compensation plans', *Australian Journal of Management*, vol. 7, no. 2, pp. 139–57.
- Soh, L.H.C. 2007, 'The market for Australian vice-chancellors', *Australian Journal of Management*, vol. 32, no. 1, pp. 29–55.
- Truong, G., Partington, G. & Peat, M. 2008 'Cost-of-capital estimation and capital-budgeting practice in Australia', *Australian Journal of Management*, vol. 33 no. 1, pp. 95–122.
- Watts, R.L. 1977, 'Corporate financial statements: A product of the market and political processes', *Australian Journal of Management*, vol. 2, no. 1, pp. 53–75.
- Westbrook, J. 2008, 'SEC's Bear Stearns oversight points to fund shortages', *Bloomberg*, May 2007.

