



Walking Through Moral Hazard Minefields

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Synopsis

A primary risk known as moral hazard risk has been ignored in the transfer of risk between credit originators and investors of securitised credit products. This paper looks at moral hazard risk in its many forms as encountered in life, general and health insurance, superannuation and management, and draws parallels with the provision of credit and the conversion of debt into securitised credit products.

For the insurance industry we have appropriate laws to ensure that the principle of *uberrima fides* (utmost good faith) is upheld. These include laws to uphold the principle of alignment of interest (insurable interest is one aspect) and laws to ensure proper disclosure of the risks being transferred. But when an investment contract that includes a substantial transfer of risk is bought or sold there is only regard to the laws emanating from *caveat emptor*. This enables regulatory arbitrage and risks to be undisclosed in investment contracts that would have had to have been disclosed had those contracts been written via insurance mechanisms. Compare reinsurance markets to credit markets. The former involves sophisticated players disclosing all the risks to be transferred between each other but the latter can often involve a sophisticated player shedding undisclosed (even dangerous) risks to a relatively naïve investor.

So how should governments react to this regulatory arbitrage in securitised credit products? The paper suggests improvements in disclosure and facilitation of the principle of alignment of interests. These simple measures would help restore confidence in the credit markets. Perhaps the term “participating” credit securities could be used to differentiate those securities where the credit originator participates with the investors in the risks of the product. Australian regulators could also learn from how information about health insurance contracts is disclosed and adapt the “key features statement” regime of that industry to be used in other forms of insurance, banking and investment industries.

Contents

1. Introduction	5
The Global Financial Crisis.....	5
What is Moral Hazard	8
Uberrima Fides or Caveat Emptor?.....	8
Why Walk This Path	9
2. Life Insurance	9
Let the Life Insurance Buyer Beware	9
Questions	12
Let the Life Insurer Beware	12
Questions	13
Life Insurance Redistribution Risks.....	13
Questions	14
3. General Insurance	14
Let the General Insurance Buyer Beware	14
Questions	14
Let the General Insurer Beware	14
Questions	16
General Insurance Redistribution Risks.....	16
Questions	16
4. Health Insurance	17
Let the Health Insurance Buyer Beware	17
Questions	20
Let the Health Insurer Beware	20
Questions	26
Redistribution Risks	26
Questions	26
5. Superannuation	26
Let the Superannuation Buyer Beware.....	26

Questions	27
Let Superannuation Provider Beware	27
Questions	27
Superannuation Redistribution Risks	27
Questions	27
6. Provision of Credit.....	28
Let the Borrower Beware	28
Let the Credit Issuer Beware.....	29
Credit Redistribution Risks	30
7. Management	31
Moral Hazard Risks in Management.....	31
Questions	32
8. Conclusions	32
9. Definitions of Moral Hazard Risk and Moral Hazard	34
Investopedia (A Forbes Digital Company) Defines Moral Hazard Risk	34
Wikipedia (20/2/2009) Defines Moral Hazard.....	34
In Finance	35
In Insurance	35
In Management.....	36
History of the Term	37
10. Web links	37
11. Acknowledgements.....	38

1. Introduction

The Global Financial Crisis

This paper was written to stimulate the profession into thinking about the root cause of the so-called Global Financial Crisis that started in mid 2007 with the revelation that many securitised credit products and their derivatives and subsequent synthetic products were exposed to so-called US Sub-Prime mortgages. This paper was written in late 2008 and early 2009. The author does not pretend to know all or perhaps many of the answers to questions arising from the crisis but for most of his actuarial career he has been tiptoeing through moral hazard minefields in the fields of health, life, general insurance, superannuation and management. There are similar minefields in the banking and finance industry, particularly in the provision of credit. Hopefully the unanswered questions and the insights enumerated in this paper will be beneficial to the profession, and to other readers.

In 2008 the financial legs were blown off all the major Wall Street Investments Banks and many other commercial banks around the world have sustained serious injuries that under normal circumstances would have rendered them insolvent. But with massive government support many will carry on with their financial disabilities. Whole countries, such as Iceland and to a lesser extent Ireland, have had their financial systems blown apart. Even Russia, which until recently looked to be well on the way to again becoming a major economic force, has succumbed and by the end of 2008 was devaluing its currency by around 1% at least once each week. Banks in Europe are heavily exposed to short term debt of Russia and other Eastern European countries. Japan's December quarter GDP fell 3.3% and its exports by 35%. Some commentators have suggested that Japan is in an economic depression as is most of Eastern Europe. How far will this spread?

The government assistance to the banking industry has been in the form of official interest rate reductions, recapitalisations and purchases of so called "toxic assets". Because virtually incomprehensible synthetic assets were created from US Sub-Prime and other credit arrangements it is not possible to evaluate the full extent of the problem but we must learn from what has happened and ensure that it, or something even worse doesn't happen in future.

The underlying problem that the financial world faces is that credit has become exceedingly difficult to obtain because a large part of the international securitised credit market has become frozen. Why is it frozen? It is frozen because most investors are no-longer prepared to invest in securitised credit products. The simple reason for this is that securitised credit products are no-longer trusted, they have become "toxic". They are "toxic" because the price given to the credit risk in these products was wrong. It just wasn't a little bit wrong like 10 basis points here or 20 basis points there, the market seems to have decided that some aspects of the credit risk of these products have an incalculable price. One of the incalculable components of the credit risk of these products is the moral hazard risk that has been embedded deep within many of them. Due to the apparently enormous volumes of derivatives of these products and synthetic structures derived from both these products and their derivatives the freezing of this market has called this whole edifice into question.

Moral hazard risk in many financial products is like an unexploded mine buried deep in the product field. As the moral hazard mine ages it can become degraded and rust away without exploding or it can become destabilised and explode with little or no warning. So many moral hazard mines have exploded in 2008 and early 2009 that others that would have just rusted away are now thought to be destabilised. The fear is that this destabilisation has occurred through the underground shocks from other exploding mines. In financial parlance the underground shock waves from exploding moral hazard mines are called systemic shocks and the risk that many, previously presumed dead, moral hazard mines have become unstable from the shockwaves of explosions is known as systemic risk. So the market is fearful. Investors are fearful of the unknown destabilised moral hazard mines that could be about to explode. Why would you invest in a securitised credit product if there was a possibility that, instead of getting the promised return, you instead got your financial legs blown off? If you were the investment manager of an institution that has already been financially disadvantaged by the freezing of the securitised credit market would you even consider recommending to your superiors further investments in this type of security? If you are the investment manager that advised an institution to previously invest in securitised debt then right now you would be pretty fearful of just keeping your job!

The first stage of this crisis was the realisation that there were some US Sub-Prime moral hazard mines buried in securitised mortgage debt products. Investors were given warning of this early in the second quarter of 2007 by the Wall Street Journal, the Economist and presumably other influential journals. The initial reaction of investors was – “let’s get out of securitised debt instruments”. However the investment banks that put the products together and investment advisors were quick to advise that “there is no US Sub-Prime in your securities” and/or “there is nothing to worry about”. It would seem that this advice was often incorrect and may have been deliberately given because the financial interest of the advice giver was not aligned with the interest of the ultimate recipient of the advice. The bull equity market was rising strongly at this stage and as it turned out still had 15% more growth over 8 more months in Australia before it peaked.

The next stage of the crisis commenced in the September quarter of 2007 when some moral hazard mines started to explode. Again there were consistent denials about US Sub-Prime being in the particular securities that “your” institution was invested in. However the “noise” coming from exploding moral hazard mines was worrying many investors about systemic risk. By the end of September 2007 the investors in many of these securities had discovered that if they wanted to liquidate their investments they were going to have to take a substantial loss. By then, so-called US Sub-Prime was turning up in many securities that had previously been declared free of such debt. Also some investment products turned out to be synthetic, based on derivatives including, apparently, put options on exposures to US Sub-Prime. Around the world the securitised credit market was tightening significantly but many investors still didn’t believe it would create much of an issue for the real economy. The Australian All Ordinaries continued to increase by another 4% during October 2007. In this period the rating agencies commenced downgrading many securitised credit products.

The third stage of the crisis commenced when investors started to worry about the broader economy being affected by the credit crisis. The Australian All Ordinaries Index peaked at a high of 6,873 on November 1, 2007. It took 46 trading days to first decline 10% below its peak. This was the same time as it took to gain the final 10%. The next 10% decline took 40 trading days and the 10% after that (to 30% below the peak) took a further 135 trading days.

If there was an identifiable 4th stage it was when the panic set in. This happened in October and November 2008. In a few weeks the great Wall St. Merchant Banks disappeared and the US Government bailed out the American International Group, the largest insurer in the World. It was the insurer that had provided the majority of the Credit Default Swaps attached to many credit based securities. In many ways Credit Default Swap derivatives are equivalent to credit insurance. The All Ordinaries fell 17¼% in October and almost another 20% from the end of October until November 21 when the low point was reached for the year. During this period Central Banks aggressively lowered cash rates by significant amounts and Governments announced massive fiscal stimulatory packages that were intended to stabilise financial markets. That seemed to have happened – at least for a while. In this stage many overseas banks sustained substantial injuries that should have rendered them insolvent but generally governments couldn't allow major banks to become insolvent and so they patched up their injuries with guarantees, recapitalisations, purchases of "toxic assets", substantial interest rate reductions and sometimes outright nationalisations. These actions opened governments and taxpayers to huge new moral hazard risks. Like children who have been hurt, banks nursed their wounds by becoming very careful who they played with – that is they have become excessively risk averse and often wouldn't even lend to each other.

The fifth stage has started in January 2009 and it could be the longest and the most painful stage. Investors in securitised credit have become very risk averse. In many cases the exploding moral hazard mines have yet not given investors physical injuries because often the interest payments on their securities are still being met either in full or in large part. But investors have deep psychological injuries because they can't sell their investments and the spectre looms that, in the future, when the investments mature many of the borrowers will be unable to repay the capital. The borrowers that won't be able to repay the capital will be those that cannot refinance their loans through a bank. Finance through a securitised credit instrument would not seem likely if investors' continue to shun this market. In any event the secondary impact of the frozen securitised credit market is impairing the credit worthiness of many businesses and individuals.

Equity markets looked fragile and hit new lows in January and February 2009. Any "bounces" in the equity markets are viewed by market analysts as temporary as the real economy (Main Street as it is referred to in the US) has yet to feel the full impact of what has happened. Some institutions with long term liabilities such as life offices with annuity business or long term contractual business are struggling with their own solvency issues as the value long term liabilities rise with each fall in interest rates. If these are unmatched with risk free assets then these asset values won't necessarily rise in sympathy. For many years in Australia there has been little or no market for long term low or zero risk assets (long term Commonwealth and State Government securities), because governments were producing surpluses. Instead sometimes institutions "matched" their long term liabilities with riskier long term assets such as equities and properties while others have invested in corporate bonds or have bought US and UK long term government securities with and without currency hedging. Some long term investments in equities and property have significantly fallen in value because many other investors purchased these assets with credit and now want to reduce the extent of their leveraging.

At March 22, 2009, the predominant countries' central Bank cash rates were as set out in Table 1. In most countries cash rates seem to have reduced by 3.0% or more in 2008 and mostly in the last quarter of 2008. New Zealand's base interest rate has decreased by 1.5% in January and by another 0.5% in February. Australia's interest rate has decreased by 1.00% in early February to

reach its lowest rate since the early 1960's. It didn't decrease in March but will probably decrease by around 0.5% in April. In many OECD countries each recent reduction in the cash rate has creating a new record low for cash rates in that country and each reduction creates greater problems for that country's institutions that have long term liabilities that are not matched with risk-free long term assets.

Table 1	Central Bank Cash Rates Mid March 2009
AUD	3.25%
NZD	3.00%
USD	0.25%
EUR	0.50%
GBP	0.50%
JPY	0.10%
CAD	0.50%
CHF(Swiss)	0.41%
Hong Kong	0.33%
India	3.50%

End of February 2009

What is Moral Hazard

Moral hazard is not a new risk. It is a risk that has been recognised for millennia. The English term was known for at least a century before the London Institute of Actuaries was formed. But the World's great trading nations have understood its importance for much longer. Elementary forms of insurance of cargos and goods in transit have operated for as long as the spice trade and the silk trade have existed. So for at least 2500 years moral hazard risk would have been understood by Chinese, Indian and Arab traders and their rudimentary insurers. The broad concept of alignment of interests to ameliorate moral hazard risk has also been around for that period of time. One cute way in which the interests of buyers and sellers of goods were aligned in early days of trade was for the trader to take the seller of the goods on the journey between the locations where the goods were purchased to where the goods were to be delivered to the buyer. Sometimes this journey would have covered thousands of kilometres. This simple measure of good faith ensured that the seller would not arrange for the goods to be hijacked during that delivery so that they could then be resold to someone else.

Investopedia and Wikipedia provide definitions and elaboration of the term. These are included in the definitions section at the end of this paper.

Uberrima Fides or Caveat Emptor?

Insurance is written in the context of Uberrima Fides (utmost good faith)¹ but credit is more provided in terms of Caveat Emptor (buyer beware). So an applicant for insurance should reveal the exact nature and potential of the risks that he transfers to the insurer, while at the same time the insurer should make sure that the potential contract fits the needs of, and benefits, the prospective insured. Moral hazard risk in insurance exists when this higher duty of the two parties of an insurance contract is subordinated by one or both of the parties to their particular profit motive. Underwriting is the attempt by the insurer to test the uberrima fides of the applicant and so to this extent the insurer is using the cautions implied by caveat emptor. Regulators prescribe all sorts of rules and regulations to protect insureds (employing caveat emptor on behalf of insureds). One method of ensuring that uberrima fides does apply in an

¹ Hart, Buchanan and Howe Actuarial Practice of General Insurance 7th Edition, Chapter 2 Law of Contract

insurance contract is to apply the principle of alignment of interests. This can mean that less than 100% of the risk is transferred to the insurer or it could mean that their interests are aligned in other ways. In health and general property insurance often less than 100% of the risk is transferred. In life insurance the alignment of interest might be that each party has a motivation for the insured to remain alive even though their motivations could be different. Hence the term “insurable interest” is important because it signifies whether or not there will be an alignment of interest if the contract proceeds.

There is an argument that an investor in securitised debt is akin to an insurer in-so-far as the investor has taken on a portfolio of (credit) risk through his investment. Uberrima fides doesn’t apply to contract of investment but caveat emptor does. One issue this paper will explore is whether there should be an alignment of interest between the parties involved in providing the credit, securitising it and those ultimate holders of the credit risks. Should the arbitrage involved between transfers of risks in the insurance environment and the transfer of risks outside of the insurance environment be allowed to continue?

Why Walk This Path

Actuaries encounter moral hazard risk in many of their endeavours. Often we are ignorant of it and when we are cognisant of its existence we often ignore it. If there is one lesson we should learn from the financial crisis it is that we should better understand the nature of moral hazard risk and be more vigilant of it. This paper will take you for a walk through the moral hazard minefields that I and some colleagues have observed and suggest some simple ways to detect these moral hazard mines and to defuse them. The paper will be of greatest use to the profession if every reader adds his or her own observations of moral hazard risks identified by the author and, even better, if these readers can identify a method of managing his/her identified risk. A collected work of identified moral hazard risks and their management will be invaluable to the profession. Even a good debate of this paper would be helpful to many actuaries. Hopefully the conclusions will stimulate this.

It is too late to sweep the moral hazard minefield that has blown the legs off much of the financial sector. It appears that many more legs will be lost before this minefield is traversed and the financial world is on safer ground again. But hopefully the survivors of those who planted many of the mines may learn from their deceased and incapacitated colleague’s experiences. So we shouldn’t look upon this as just a thinking exercise or just a learning exercise. It affects us all in one way or another. There are many actuarial colleagues in financial stress as a result of the financial crisis and already the consequences have been truly awful for some. Almost every person on the planet with superannuation or personal investments has been affected. Retirees and near retirees are suffering most – and many will have had their future lifestyles irreparably damaged.

2. Life Insurance

Let the Life Insurance Buyer Beware

The very earliest days of my career were spent managing terminations of long term life insurance policies at a small branch office of a life insurer. It was a thankless task. The insured’s who surrendered their policies were invariably bitter about their surrender value proceeds –

particularly if they surrendered only a few years after the commencement date of their insurance. Later surrenders were easier to manage but only because in those days the insureds did not understand compound interest. When I explained how the first few premiums had effectively been paid as commission to the salesperson and his/her bosses the management of the surrender process often became very difficult. So it would have been easier to lie or at least obscure the truth. The problem was that in the 1950's and 1960's invariably the salesperson did not disclose his or her interest in the sale. In other words there was information asymmetry between the seller and the buyer as to the financial motivation of the seller. Had the seller explained his/her interest in every case then it was likely that their sales volume would have been significantly lower. If their sales volume had been much lower then their career would have been at risk. Also at risk would have been the career of their manager and perhaps their manager's manager and so on up the line. But it didn't stop there. If sales were poor for too long then ultimately the office would have been closed and yours truly would have been without a job. So everybody on the seller's side had an incentive to maintain the asymmetry of information with respect to the financial incentives to make a sale.

I don't recall ever being instructed to not disclose how the surrender value proceeds were determined but advising this made my work harder. Fortunately I did not remain in that employed position for very long as I was promoted to head office to work in underwriting. I was however in that branch office clerical position just long enough to clear up the mess the previous employee left. The bitterness and abuse of surrendering policyholders apparently got the better of that previous employee so he solved his problem by hiding many of the surrender value files behind the safe in the store room – and when the pressure got too great from bewildered policyholders who couldn't find out, let alone obtain their surrender proceeds he just up and resigned. I initially thought that the previous employee was inept at his work but with reflection I realise he had been psychologically wounded by the moral hazard mines that were going off around him. At least he escaped, before his sanity was too affected!

So what were the moral hazard risks? Firstly, there was the information asymmetry between the seller and the buyer in respect of the financial reward to the seller for making the sale. This information asymmetry became less consequential the longer the insurance continued or if the policy proceeds were paid out on death or maturity – so long as the insureds were not as clever as the actuaries at compound interest. Theoretically, every person who bought life insurance was going to keep it to maturity or death so the consequence of this non-disclosure of financial interest wasn't considered by actuaries or management to be very risky. However in time it became clear that few of these policies actually continued to maturity or death and many of them surrendered or lapsed in the early years of the insurance. These lapses and surrenders increased particularly when the economy was in recession. Secondly, it wasn't in the interest of the managers of the seller and the insurer generally that the seller disclosed the extent of commissions. This is because fewer sales meant less eventual profits. So the insurer had little incentive to manage this moral hazard risk. However most insurers did recognise this moral hazard risk and could limit it by the reducing the initial commissions to the sellers (agents, brokers, etc), provide some of the commission on trailing basis and institute clawback arrangements within the contracts between the insurer and seller so as to penalise the seller whose miss-selling resulted in early voluntary terminations. The product actuary therefore had a large part to play in the management of this moral hazard risk. By replacing some of the front end commission with a trailing commission the theory was that the financial long term interests

of the insurer and the salesperson became more aligned. Or in colloquial terms the salesperson kept some “skin in the game”. But this theory had a hole in it. That hole was competition.

So the moral hazard mine created with the sale of many life insurance products early in my career was the insufficient disclosure of financial interest of the seller. This mine “rusted” away with time – particularly if the policy continued to maturity or death. But it could explode with an early termination.

If one life office instituted moral hazard risk management in the form of reduced initial commissions and deeper trailing commissions but another life office didn’t do this, or at least do it to the same extent, then the “better” agents of the first office could simply transfer to the second office and then “twist” a large part of their “book of business” to surrender and take out a policy with the new office. So this so-called management of the moral hazard risk sometimes caused whole sales teams to leave one insurer for another insurer – even with their boss. This is an example of the moral hazard risk that is related to one party’s size, particularly when one party is an oligopoly or a monopoly. So moral hazard risk can be present when a party deals with an organisation that is much larger than it and much of its income comes from that organisation.

It seemed that covering up the information asymmetry may not have been the correct way to have managed the initial moral hazard risk. But many insurers found that a cover up produced less of a market risk to them than the risk of losing a number of highly productive agents. To minimise the risk of losing the best agents required the insurer to act within an appropriate framework of regulation that affected all insurers. Regulators were slow to recognise this and even slower to act because there were many vested interests in keeping the status quo. The argument that these were management issues that ought not to be the province of the regulator was often advanced by those that had most to gain from keeping the status quo.

The fact that the seller of life insurance often seemed to more own his “book of business” than the life office compounded the initial moral hazard risk caused by information asymmetry. The “moral” ownership of business is often misunderstood. Often it is necessary to be fairly cynical about such ownership. If business was obtained through a third party no matter how good the contract between the first two parties the third party may continue to have some form of moral ownership of the business. Good agents kept good records for their own good reasons!

As the life insurance market became more informed (that is the use of calculators or computers to do compound interest calculations became widespread) the popularity of high “up-front” commission long term life insurance products seemed to wane. A major reason for the decline of this type of business in Australia was the eventual regulatory requirement for disclosure of commissions, fees and charges on Product Disclosure Statements². A third reason was the development of new distribution channels for insurance products, for example, banks and other financial intermediaries.

² Product disclosure statements are often very comprehensive documents. A cynic might say that some are intended to obfuscate rather than disclose. In Australia there is currently an investigation into the concept of producing a “mini” product disclosure statement that will disclose just the essential facts.

Questions

Should the providers of credit (the underwriters of credit risk) be subject to similar disclosure regulations that life insurance underwriters have? Could the methods of distribution of credit products change the type and level of moral hazard risk embedded in them?

Let the Life Insurer Beware

The moral hazard risk of no or low disclosure of excess risk is ever present in the underwriting of insurance. It is no different in essence to the no or low disclosure in other forms of insurance and financial services such as the provision of credit. Actuaries tend to just price into the premiums, interest spreads, etc the consequences of such non-disclosure. But we should be looking to reduce its cost by thinking outside the square. Information asymmetry, which leads to this form of moral hazard risk can be addressed creatively and not just accepted carte blanche. We live in an information rich society and while privacy laws are important so too is moral hazard risk.

Over 25 years ago I set up a life insurer that had a unique advantage. This life insurer's parent had accumulated a lot of medical information about prospective insureds. Prospective insureds were required to give permission to the life insurer to access the medical information in the parent's possession in respect of underwriting the risks and managing the claims. This was unique in Australia at the time and rudimentary access to the hospital claims database was given to the underwriter for each applicant. In the first twelve months about one applicant in ten falsely advised on their personal statement for term life insurance that "they hadn't been in hospital in the last five years". Around half of these false advices didn't disclose that they had been in hospital for a serious illness such as heart disease, cancer and other diseases with a poor long term prognosis. The other half who had forgotten about their earlier hospitalisation usually only had forgotten about some minor procedure that was of little or no consequence. With this additional information the life insurer rejected many applications that would otherwise have been accepted on the strength of the applicant's personal statement. Without this additional information the eventual claim rate would have been considerably higher and, although a few earlier claims might not have been accepted due to non-disclosure, the majority of death claims of the rejected applicants would not have occurred in the first few years of the insurance and so non-disclosure would not have been suspected or easily proven had it been suspected after the claim had been received.

The parent obtained a level commission on each premium paid and sales were conducted through its network of offices. So the financial arrangements and the information sharing between the parent and the life insurer strongly aligned the interests of the parent and the life insurer. I understand that after more than twenty-five years of operation this particular venture has been a great success for both the parent and the insurer. Moreover it has been a great success for the insureds as they have shared the reward for such a reduced risk life insurance operation. Moral hazard risks have been reduced to a minimum in this operation. By now this life insurer underwrites much more than term life insurance so its success will be due to many initiatives subsequent to my rather humble involvement in its early years.

There is an interesting moral hazard risk when the sales person and the applicant collude to hide from the insurer certain important information about the risk. This is a case when the salesperson helps the applicant to complete the underwriting information and advises the applicant to leave out certain information on the grounds that "we don't want the underwriter to get the wrong idea

about your health”. Here the financial interest of the salesperson and the financial interest of the applicant can be aligned. The former in respect of his or her initial commission and the latter in respect of the better financial protection given to his or her family which might not have been available had the additional information been provided. It is unlikely to occur when the applicant is very unwell because an early death would be thoroughly investigated but, for example, a “no” answer to a question about chest pains that the applicant hasn’t yet seen a doctor about would cause the underwriter to pass an application from, say, a slightly overweight smoker in his 40’s. So moral hazard can exist when the interests of the wrong parties are aligned for the wrong reasons and information asymmetry exists between them and the other party taking the risk. If a salesperson was caught out for colluding with an applicant to hide certain information the insurer should immediately dismiss the salesperson – but what if that salesperson was one of the best salespersons that the insurer got business from or, what if that salesperson could influence half of the sales force? Then his/her dismissal could eventually lead to half the sales force going to a rival insurer – and twisting much of “their” business across to the rival. This is a difficult issue because it can lead to the heart of moral hazard risk in management. Being up-front about these risks in training programs and occasionally employing mystery shoppers is probably the only way of ensuring that only the right salespersons are employed. Pride through quality (quality assurance tools) can be used to encourage the right behaviour. But salespersons need to see that their managers and their managers’ managers are providing the appropriate example.

Questions

What lessons can we apply from the underwriting of life insurance to the underwriting of credit? Could there have been collusion between the persons selling credit and purchasing it? Would the full disclosure of financial interest in the credit market have the same effect on moral hazard risk as it has had in the life insurance market?

Life Insurance Redistribution Risks

Life insurers usually need capital to cover the cost of the risks that they underwrite. This is because each sale of life insurance produces a regulatory (or accounting) capital requirement. One reason for this is the initial expense of getting the insurance “on the books”. Insurers can reduce the need for capital by reinsuring “part of all or some of the risks” they take on. Thus a reinsurer can effectively provide capital to meet the initial costs of the insurer (which might be commissions or direct sales expenses) and perhaps generate a sales “profit”. In return for this “up-front” payment the reinsurer expects to make profits over the longer term from covering part of all or some of the risks of the insurance. “Part of all or some of the risks” is an important phrase because successful reinsurers know that some “skin has to be in the game”. In other words reinsurers know that moral hazard risks can be amplified if all of the insurance risk was passed to a reinsurer for a profit. So reinsurers talk in terms of “retention policies”. The retention policy ensures that the financial interests of the direct writer and the reinsurer continue to be aligned and ensures that the direct writer will suffer financial consequences if it underwrites worse risks than its actuaries allowed for in the premium rates.

If a reinsurer fails then the risk transfer to that reinsurer also fails because the ceding company is still primarily obligated to provide the risk cover accepted in the contractual arrangements with its insureds. For this reason life insurers choose their reinsurer carefully and often will look at

contractual arrangements beyond that being proposed: - that is to any contract between the reinsurer and the reinsurer's reinsurer and so on.

Questions

Would the application of the alignment of interest principle in the credit securitisation market restore trust to that market? How far up the securitisation value chain should this principle apply? How important is the essential difference between life insurance reinsurance and securitisation given that the reinsurance process aggregates risks whereas securitisation process tends to disaggregate risk?

3. General Insurance

Let the General Insurance Buyer Beware

Much of what has been said of life insurance is equally applicable to general insurance. Much general insurance is sold through intermediaries and often to a captive audience. How often is buyer of some general insurance product told about the financial interest of the seller?

A good example is the car rental business. Recently I rented a car in New Zealand from one of the well-known car rental firms. The rental included insurance but with an excess of \$2,500. Apparently many drivers in New Zealand drive without any form of car insurance so an accident, even if not your fault can be a costly experience when there is such a large excess. The cost of eliminating the excess was \$28 per day or probably about 30 or more times the cost of the risk. Who was making the profit from the sale of the insurance? Certainly the person behind the counter was very persuasive in her selling of this extra cover. Her financial reward for making this sale was not disclosed nor was the reward to the car rental company. To me this was a clear case of moral hazard risk. But I paid the premium anyway! So here I was, an actuary recognising the exorbitant cost for such a relatively small risk and knowing that someone was making a huge profit on the sale but still paying this premium because I still didn't want the consequences of an accident to spoil my holiday.

Another product that worries me is mortgage guarantee insurance. Lenders have set rules for when this insurance has to be purchased. The rules relate to the mortgagees initial equity in the property but is the commission paid to the lender or financier clearly disclosed?

The misalignment of interests of the buyer and the seller of general insurance is a source of moral hazard risk. But because discontinuances involving refunds are very rare these moral hazard mines invariably don't cause problems for the seller.

Questions

Can we apply what we know about moral hazard risk in the distribution of general insurance to the moral hazard risk in the distribution of credit?

Let the General Insurer Beware

Isn't it peculiar how a business premise can burn down at a very convenient time? It is just as peculiar how some families have multiple accidents where family members seek compensation often multiple times. It doesn't matter what claims frequency distribution function you can

assign to the claims distribution the probability of such occurrences are next to infinitesimal. But they happen! So moral hazard to a general insurer can exist not only when the insured takes out the insurance cover (non disclosure of risk) but when the claim happens (it might be false) but also the quantum of the claim (it might be overstated).

I have been fascinated by disability and workers compensation claims. About 30 years ago I was asked by a colleague to look at certain doctors' profiles - within the privacy laws. One case was memorable. The doctor was a specialist who was claiming on his disability income insurance. He claimed that he had a certain psychiatric condition that rendered him unable to work. His normal practice was in Sydney. However he did not divulge to the insurer that he had another practice in Canberra where it turned out he was extremely busy. Once armed with the practice address in Canberra a private investigator hired by the insurer soon recorded enough evidence to ensure that doctor's claims were no longer paid and that he eventually spent some time behind bars for fraud and lost his medical licence.

Another time I was asked by a claims investigator to somehow help him get financial control of a portfolio of workers compensation claims. The claims investigator believed that many of the claims were fraudulent. He believed that he could expose the frauds and hence reduce the outstanding claims provision significantly so making a considerable profit. I thought that he should be telling the insurer this but the insurer had ceased business and had become an unwanted child of what had been a takeover and restructure of the parent organisation. After several interviews, including with the well known entrepreneur that engineered the takeover it seemed to me that no-one in the parent or the large company that had taken over the parent was in the least bit interested in the outstanding claims issues of this unwanted child. All they wanted was to get rid of this shell of an insurance company as soon as possible. In the end the client bought the insurer and over the next few months proved that his suspicions were correct. What fascinated me was the mindset of the claimants. Most were also claiming unemployment benefits and the investigator had some way of finding out which of the claimants was doing this. Then the proposition to the insured of exposure to Centrelink³ or to cease claiming on your workers compensation resulted in the workers compensation claim file being closed. Even for the few claimants that didn't appear to be claiming unemployment benefits the investigator was able to film the claimant undertaking normal work usually in his stated occupation.

While most people would think that only a few people would want to defraud an insurer (or their employer) in respect of workers compensation or sick leave I had different experience. Once, a niece from New Zealand bought her boy friend to our residence for a barbeque lunch. He was quite a likeable young man but what he told me was horrifying. He said that he and his workmates who worked on the waterfront had just been ticked off by the union because they had broken a union rule. This rule was that not more than 50% of the employees were permitted to be off on compo at any one time. However, more than 50% of their group had been off on compo continuously in the last fortnight. He explained in more detail how the scheme worked. The employee would fake a workplace accident and then go off on compensation. Complicit doctors were involved. This rotation of workers compensation claims was organised on an informal roster system. Often the "sick" or "injured" employee would then work at some other part time job. This was enormous moral hazard risk to the employer and also to its workers compensation insurer and indirectly to all employers and workers compensation insurers. But to me the issue

³ The Commonwealth Government department paying unemployment benefits had a different name then.

didn't just lie with the employer and the insurer. If this rogue was to be believed then the union and some doctors were complicit and the example would amplify the future moral hazard risks of insurers, governments and other institutions throughout society. Now I had no reason to disbelieve him as he admitted that at that time he was formally off work on compo even though he was perfectly fit. He also seemed quite proud of the job he had obtained and the "perks" that went with it.

Flood insurance provides an interesting example of how moral hazard risk can work. In outback Australia residents can be informed that their property will be flooded days or weeks in advance of when the flood will occur. This early warning could enable a property owner with substantial cover to be quite selective about which of his/her property requires replacement by the insurer and which should be moved to higher ground so as to escape flood damage. This moral hazard risk is one of the reasons why insurers are restrictive about provision of flood cover in some geographical areas.

Questions

If it was easy to perpetrate wholesale fraud on insurers underwriting workers compensation risks how much easier would it be to perpetrate wholesale fraud on the ultimate underwriters of credit risk given that many of these underwriters were relatively unsophisticated investors who were purchasing products that were deliberately opaque? To what extent did deliberate untruths cause some investors to invest in some securitised credit products?

General Insurance Redistribution Risks

The comments made about redistribution risks in life insurance apply equally in general insurance.

General reinsurers also have an additional moral hazard risk. If they take some portion of a portfolio of risks they need to understand how accumulated those risks might be and also how the additional risks might affect their total accumulated exposure. A good example of the danger of accumulated risks was the experience of FAI insurances in the Darwin Cyclone of Christmas Day 1974. FAI was in its early days and was very heavily exposed to property insurance in Darwin without reinsurance. The resultant actions of the regulator and the subsequent court actions lasted for many years.

So, aggregated risk can be an issue for a general insurance reinsurer. Sometimes risk aggregation can occur in surprising ways particularly in extra-ordinary times. Reinsurance actuaries do extensive modelling of their risk portfolios to further understand how aggregation can occur in certain circumstances and then sometimes their office takes further reinsurance cover to shed some of that aggregated risk.

Questions

What reinsurer would take a reinsurance exposure to flood risk near a river after heavy rain in its catchment area without being given an explanation as to the nature of the risk by the original underwriter? So why was US Sub-Prime risk passed on to investors without them having any knowledge that it had been sliced and diced into their investment products? Why did regulatory regimes fail to understand the information asymmetry between the investors and the issuers of this risk?

4. Health Insurance

Let the Health Insurance Buyer Beware

One of the main differences between other branches of insurance and health insurance has been the distribution mechanism and the expense rates of insurers. Unlike in many other countries the expense rates of Australian private health insurers have been tightly regulated. The regulation of expenses is not direct but insurers with high expense rates are put under a lot of pressure by the regulator and the Commonwealth Department of Health's premium approval process. As a result insurers with continually high expense rates invariably don't survive for too many years before getting merged into another health insurance entity. Consequently the majority of business is sold directly by the insurer or by some agent who gets little or no direct financial reward for selling it – except perhaps a tiny amount that is sold through a small number of specialised brokers who get small percentage of premium as an upfront commission as well as a trailing commission.

When I first became employed in health insurance products were very simple and benefit structures were also very simple so an insurer didn't need geniuses to sell its health insurance products. At that time larger health insurers had salaried salespersons whose job was to sign up people in workplaces. This was before Medibank and Medicare so a very high proportion of the population had (so called) voluntary health insurance cover as public hospital treatments were not available free of charge⁴. With the introduction of the national health insurance program called Medibank in 1975 private health insurance became truly voluntary and the insurers were then permitted to offer ancillary cover. The ancillary cover in effect was to replace their medical benefits business, which was being nationalised. Hence the ancillary business indirectly enabled their viability to be retained. At this time, by necessity, health insurance products had to become more complex but this also meant that sales people had to be better trained.

In the late 1970's many health insurers marketed their products through chemist agencies. Usually the insurer did not have an employee working in the chemist shop but relied on the chemist allocating that job to one of his/her employees. Usually in the bigger chemist stores the health insurance job was delegated to the best looking junior female whose main job was to work at the cosmetic counter. Now chemists liked being the agent for one or more health insurers as it created additional traffic through the chemist shop, if only to pay the monthly contribution. This was in the days prior to flexible bank debit arrangements so for many people, who didn't have easy access to a branch office, a chemist agent provided a simple method of paying contributions. With the natural development of more complex health insurance products I figured that the principle of alignment of interests was more than a principle about financial arrangements and it could be made to work for the insurer in a new way. So I designed a product that would be appealing to the young ladies who worked on the cosmetic counters of chemists. The advertising people gave it a good brand name and produced a brilliant campaign. Specially trained sales people went around selling this product to these young ladies but also effectively teaching them how to sell it to their friends and customers. This strategy worked. The chemist shop cosmetic counter girls became effective ambassadors of the insurer and sales multiplied.

⁴ Except in Queensland, which had a "free" at point of service hospital system.

It took years for the other health insurers to catch on to the ploy of aligning the interests of the cosmetic counter girls with the insurer and even then I doubt if they understood how it really worked. Furthermore, by the time competing products had entered the market the cosmetic counter girls of most chemists were heavily identified with my insurer and would not switch to another. Was there any moral hazard mines sown by this exercise? I don't think so. The salespeople sold the product because they had bought it themselves and thought it was good value. In fact the product's profit margin was quite slim, which also made it difficult for a later competitor to undercut its price.

In those early days of my involvement in health insurance sometimes the buyer wasn't the person insured. A common practice in hospitals was to sign up patients that weren't insured, get the insurer to waive the waiting period and transfer the patient immediately to special account. Special account was a mechanism funded by the Commonwealth Government to which the insurer paid the contribution and the Government refunded to the insurer all the fund benefits paid. The patients put into the special account included: long term chronically ill patients, patients with pre-existing illnesses and patients over 65. For all intents and purposes, the benefits being paid from the special account were no different than the ordinary account benefits, so special account patients were none-the-wiser. But this system led to some awful moral hazard risks. When mum and dad farmer wanted to go for a trip to Europe grandma would be put in the local country hospital for the duration of the trip. This ensured she would be looked after in their absence. Patients were found to be living in some country hospitals and commuting to work each day from their ~~hotel~~-hospital room. Invariably the Commonwealth Government was paying for these patients. This moral hazard risk was compounded by the initial underwriter having no vested interest in the financial outcome and the actual financier (the Commonwealth Government) being far too removed from intricacies of the process to care. In this case the politics of doing nothing about the moral hazard risk outweighed any political advantage from directly intervening. Eventually by intervening indirectly through changes in the insurance system the political disadvantages of direct intervention were avoided.

With the advent of Medibank Mark 2 in October 1976 the reinsurance arrangements took over the function of the previous special account arrangements. Collectively insurers became exposed to all of the open-ended risks as the Government subsidy to the reinsurance account was a fixed amount set in the federal budget process. Insurers then had a strong incentive to stop the blatant frauds that had been previously perpetrated on special account. It was quite a time before some public hospitals accepted that their extended social welfare role was over. I suspect many hospital claims assessors also had to change their attitudes at that time. Many country public hospitals were no longer able to justify their existence and with state government budget cuts they went out of business. Many insurers introduced a rule effectively prohibiting a health care provider from purchasing or funding a health insurance membership for a patient (other than for a family member).

The introduction of the reinsurance arrangements exposed me to a new moral hazard risk known as sovereign risk. As the designer of Medibank Mark 2 and a trustee of the new reinsurance arrangements I made a deal with the Minister of Health at the time whereby the Commonwealth Government would, each year make a budget commitment to pay a finite amount into the reinsurance arrangements estimated to be approximately 50% of the next year's total claims on reinsurance. The Government's first year's contribution was \$50 million. For the next year I advised the Minister that the subsidy should be \$70 million but only \$40 million was provided in

the Budget⁵ and it went down each year from there until the subsidy eventually disappeared. In the meantime claims on reinsurance escalated rapidly and by 2007/8 had exceeded \$2.9 billion⁶. So sovereign risk can be thought of as the moral hazard risk that you become exposed to when your business partner is the Government because Government also controls policy and regulation.

From the mid 1970's until the mid 1980's the Commonwealth Government changed the national health scheme several times. Usually when such a change occurred the Commonwealth Government mandated a three month period when anyone could join a private health insurer without having to serve any waiting period. This also led to some unusual membership enrolment activity. It could be typified by one old man who, when interviewed by a nurse assessor who went to see him in his private hospital bed, said to the effect "I was asleep in the park and when I woke up I was here." "And what is your medication?" she enquired. "Oh they give me a Mogadon at night with my glass of whisky." It turned out he was one of many homeless people who were taken at night from park benches to one of several hospitals usually while they were drunk. These people were then kept in hospital for "observation"⁷. A certain doctor was getting paid by the hospital for keeping them there. A chain of hospitals was involved and the hospital was effectively paying the contributions of these previously uninsured homeless people. Other insurers were alerted to check their claims profiles in these particular hospitals and this caused virtually a complete freeze on insured benefits being paid to these hospitals. After some behind the scenes negotiations the CEO was sacked and the chain of hospitals eventually sold to a more ethical operator.

Although health insurers quite often waive the 2 month general waiting period in sales campaigns or for new employees joining an employer payroll deduction scheme they seldom, if ever, choose to waive the 12 month pre-existing waiting period rule. So buyers have to be aware of how this rule works. Generally Australian health insurers do not ask you to declare pre-existing illnesses at the time of completing the application to join. Rather they investigate any large claims (mainly hospital claims) in the first 12 months after the date of entry. After obtaining additional information from the patient's doctor and consulting their own medical experts if it becomes clear that the signs or symptoms of the illness had existed at or prior to taking out the insurance then the claim would be rejected. But many investigations into pre-existing illnesses do not give a black or white result and so many claims that should be rejected are not. Sometimes claims are rejected that shouldn't be and then sometimes an appeal will reverse that decision. However, many pre-existing claims are too small to make an investigation economically worthwhile so the cost of pre-existing conditions is substantial.

A major source of moral hazard risk for the buyer is the complexity of the health insurance arrangements. The complete set of rules for a major health insurer may be several hundred pages long. But the rules contain only part of the complete contractual arrangements. Other parts are contained in the contractual arrangements between the insurer and hospitals and these will be

⁵ The total claims on reinsurance ended up being \$160 million in 1977/78 and increased to \$185 million in 1978/79.

⁶ There have been numerous changes to the reinsurance (now incorrectly called risk equalisation system) and its function now is to primarily pool a substantial part of the costs of hospital treatment of elderly insureds.

⁷ If you had been a homeless alcoholic and were suddenly getting 3 meals a day, a decent bed, alcohol and a good nights sleep you would have thought that you had gone to heaven.

different for each hospital group and for individual hospitals. But rules are changed quite frequently and the contractual arrangements between the hospital and the insurer are renegotiated usually every two or three years. Not all renegotiations are successful so some hospitals can go “off contract” and others that do not have a contract might successfully negotiate a contract. So the moral hazard risk for the insureds is that their insurance is either not what they expected they were purchasing or has since been changed in an inappropriate way for their particular circumstance. This change could simply be that the private hospital they were to use was not able to renegotiate a new contract so had to go “off contract”. “Off contract” hospitals typically get much lower benefits than hospitals with contracts. Patient co-payments, which are usually advertised and fixed for treatment in contracted hospitals can be very substantial in “off contract” hospitals.

Because health insurer rules are so complex there is a government website⁸ where products offered by insurers are disclosed in a standard format, comparisons between products (and insurers) can be made and information about which insurers have contracts with each hospital can be found. This helps those who are computer literate to better understand what they are paying for. But it should be noted that information is standardised on this website and anywhere standardisation occurs there are limitations. The principle of a Key Features Statement, which is one of the features of this website is a sensible response to getting over the information asymmetry between the insurer and the insured or potential insured. Key Features Statements ensure that private health insurers do not use disclosure requirements to obscure the truth through excessive disclosure.

Questions

Did sovereign risk play a part in the incorporation of moral hazard risks within credit products? Could future sovereign moral hazard risks be averted by appropriate regulatory regimes? How can the political disadvantages of direct intervention into the credit market moral hazards be avoided by indirect regulatory means? Would the Australian health insurance concept of a Key Features Statement be useful in disclosing information to borrowers?

Let the Health Insurer Beware

The health insurer has to combat many additional moral hazard risks not so apparent in the rest of the insurance industry.

The first moral hazard risk is the effect of insurance on the behaviour of the insured. Argument is often advanced that the insured will use a lot more health services than the uninsured. This consequence of insurance is true at the margin but the people who argue this seem to think that attending a doctor, dentist, paramedic and ancillary health care provider only has a monetary cost that reduces or perhaps is eliminated by insurance. In reality attending a health care provider has more than a monetary cost that can be ameliorated by insurance. This additional cost is both time and cost of getting to and from the attendance or treatment. There may also be direct monetary costs associated with the treatment that are either not or inadequately insured⁹. Even

⁸ www.Privatehealth.gov.au

⁹ In Australia a person may receive ambulatory medical treatment free of charge from a doctor who bulk bills the Commonwealth Government but a high proportion of ambulatory medical services result in a pharmaceutical prescription, which may be subsidised by the Commonwealth Government but still has a relatively high threshold

retired people, for example, value their time and have to incur transport costs. The absence of insurance may cause someone to even delay a procedure or not have it at all. But sometimes this can lead to something much more expensive being required at a later date.

In one of the projects I was involved with on the Indian subcontinent I looked at the effect of new “free” insurance given to people in a small fairly remote geographical area. There definitely seemed to be insurance induced changes in health services provided to the new insureds that lived close to the participating medical centres. However there didn’t seem much change in health services provided to people who lived more than a few kilometres away. Geographical access seemed to be the main issue. This is particularly important if there is no public transport to the location of the medical centre, or when there is, it is sporadic and too expensive for the local population.

When designing a health insurance contract it can be important that the benefit structure doesn’t perversely push insured patients into a very expensive treatment option which has little or no additional utility than a relatively cheap option. An example is the choice that could be made to fix something by having a day only procedure or 10 treatments with a physiotherapist. The insurance cost of the day only procedure might be \$1000 and the insurance cost of 10 physiotherapy treatments might be \$350 (patient co-payment \$150). If the day only procedure is fully covered by insurance and requires only one day off work and 1 hour’s travel it may be much more preferred by the patient than the 10 physiotherapy services that are only partly covered. This is particularly so if each physiotherapy visit requires one hour plus one hour’s travel. Even a person who is retired and fully covered for physiotherapy treatment (so insurance cost is \$500) would find the procedure less “costly” than the 10 physiotherapy treatments. In practice such choices are not so clear cut. Usually a medical procedure has to be followed by physiotherapy or some other therapy and requires an initial visit to the surgeon and a visit after the procedure to get stitches taken out etc. In Australia surgeon’s fees are seldom fully covered by insurance. Therefore when assessing whether or not a moral hazard risk may occur it is important to not just look at the issue from the point of view of the insurer but also from the point of view of the patient and to then include the other costs and inconveniences that the patient may experience.

Another major moral hazard risk insurers face is the competition risk. This risk can be perverse. If Insurer A provides the best benefits for a particular chronic condition then certain doctors may suggest to their insured patients who suffer from that chronic condition to change from their present insurer to insurer A so as to obtain the better benefits. Therefore for certain conditions the competition risk actually encourages insurers to keep the benefits as low as possible. Psychiatric conditions are a good example. A good psychiatrist can make a living out of quite a small number of patients so it is very much in his/her interest and his/her patients’ interests to ensure that patients are obtaining the best benefits available. This is the alignment of interests of two parties against a third! So in a 3 party arrangement whereby one party is meeting all or part of the costs of the other two parties there can be alignment of interests of the two parties to disadvantage the third party. This risk would be reduced significantly with more appropriate

cost. So the relatively high threshold costs of pharmaceuticals acts as a proxy for a patient payment for a medical service that would otherwise be “free”.

portability¹⁰ rules. This is a similar risk situation to the collusion of a life insurance agent and an applicant to get life insurance cover that wouldn't be provided if all the underwriting evidence was disclosed. That is colluding parties can gain the benefits of non disclosure to a third party who takes on the risk.

Much of the moral hazard risk faced by health insurers is caused by government trying to be seen to be fair to the electorate or acceding to special interest groups. In late 1975 after the general election caused by the earlier constitutional crisis I designed a 10 point health insurance plan that fitted within the election platform of the new government. 7 and a half of the 10 points were accepted by government and became Medibank Mark 2. The 2 and half points not accepted are worthy of further discussion.

Firstly, there is the point that was only half accepted. I suggested that there should be a Medibank levy that would be payable by all individual taxpayers who were not insured. This was accepted but my recommendation was that it should be a capped surcharge on income tax payable and calculated as, say, 10% of tax payable. The alternative was a 3% levy on taxable income. The cap was to have been 10% to 20 % above the equivalent cost of a health insurance premium and would be changed from time to time as premium levels changed. This 10% of tax surcharge against a 3% levy on income seemed a fine point and it seems that the higher number although levied on tax rather than income was less politically acceptable. My reasoning for the recommendation was that a levy on income tax could not get into the CPI because income tax was not included in CPI whereas a levy on income probably would. As it turned out the levy on income did get into CPI and this caused some political issues at the introduction of Medibank Mark 2. However, as usual, the Australian Bureaux of Statistics quoted two figures for the following year to show what the CPI was with and without the Medibank Levy. But the greater difficulty came after public hospital based specialists got around section 17 of the Health Insurance Act by forming trusts through which they billed for services, which I had been assured insurers would not have to pay for. These additional services added around 15% to the benefit paid by insurers which upset the delicate balance between the premium rates and the capped Medibank Levy. When it became obvious that the Medibank Levy had to increase and this increase would flow through to the CPI, which was already very high due to the legacy of the previous government, the Prime Minister ordered that the scheme be changed. Had the Medibank Levy been a capped surcharge on personal income tax then CPI would not have been an issue if the cap had to be lifted. That decision to change Medibank Mark 2 caused a series of half baked health insurance schemes to be introduced over the following few years. So I regarded the point about the Medibank levy as being only half won and because it was only half won it significantly contributed to the eventual electoral loss of that government and then the subsequent introduction of Medicare in 1984.

The next point to be rejected was the recommendation that the pre-existing waiting period be 5 years. Alternatively it was argued that it could be 2 years with some other compensating (and complicating) adjustments to policy. This was rejected in favour of just a 1 year pre-existing waiting period without adjustments. This simple decision has caused many of the current moral

¹⁰ Portability rules enable an insured to transfer from one health insurer to another without penalty. Insurers can have rules that effectively require waiting periods to be applied for higher benefits gained through a transfer but the Commonwealth Government doesn't allow such application in a number of circumstances such as a change caused by a hospital going off contract.

hazard issues for health insurers and eventually the need to break with community rating in favour of Lifetime Community Rating¹¹. Permanent pre-existing exclusions are, in my view, unreasonable for both insureds and the insurer as it would create uncertainty every time there is a large claim¹². This uncertainty would have deleterious effects on the product and the investigative management procedures would be fairly expensive for the insurer to maintain. I suspected that a 5 year pre-existing rule would be long enough to ensure that very healthy insureds would be motivated to continue their insurance and provide enough incentive for relatively young healthy people to insure but would be much less onerous than a lifetime rule. The argument against this proposition was that uninsured people worried about their health would not insure if they had to wait 5 years for cover for pre-existing conditions when there was a “free” at point of service public system available as an alternative. With the introduction of Medicare in 1984 the proportion of Australians covered by private health insurance slowly declined to the point where several measures had to be introduced to arrest the decline. These additional measures were: the Medicare Levy Surcharge which currently applies from taxable personal incomes of \$70,000 (single and \$140,000 families), the lifetime community rating premium surcharge, which steadily increases from age 31 to age 65 and is applicable for 10 years and the 30% rebate for private health insurance, which was later extended to 35% and 40% for those aged over 65 and 70.

Had the 5 year pre-existing rule been adopted then it should have been sufficient incentive to have eliminated the need for lifetime community rating and probably the Medicare Levy Surcharge. It probably would not have eliminated the need for the premium rebate because this rebate is basically to compensate for the requirement of insureds to both pay through personal income taxes for the hospital part of Medicare while at the same time pay for the equivalent private health insurance coverage. This apparently double charge for hospital care seemed manifestly unfair prior to the introduction of the rebate. However experience with the reinsurance subsidy (and other indirect subsidies to private hospitals) had taught the health insurance industry that they would have faced a huge sovereign risk¹³ if government had provided an indirect subsidy to correct the widely acknowledged double charge for private hospital coverage. As tax deductions were of little or no benefit to low income earners (including the elderly) a highly visible rebate seemed the best option. Had the Government introduced a 2 year pre-existing waiting period then this might not have been sufficient to eliminate the need for either or both of the Medicare Levy Surcharge or the Lifetime HealthCover arrangements. However, the insured moral hazard risks of the private health insurance industry would still be significantly lessened with a 2 year pre-existing rule than with the current 1 year rule.

The other point to be rejected was an extension of the 2 month waiting period to 3 months. In the end I didn’t argue strongly for this and, had it been adopted, it probably would not have made a lot of difference as most new entrants get this waiting period waived.

The points that were accepted for Medibank Mark 2 included: the continuation of Medibank, which for the uninsured would not have changed, the scrapping of all existing income tax

¹¹ This became known as Lifetime HealthCover.

¹² In Australia a hospital claim over perhaps \$5000 would probably be the trigger point for an insurer to seriously investigate the possibility of pre-existing if the pre-existing exclusion was permanent.

¹³ This sovereign moral hazard risk relates to the ease in which a future government can remove an indirect subsidy.

concessions, the scrapping of the special account arrangements, the scrapping of any remaining remnants of the Subsidised Health Benefit Plan, the scrapping of Commonwealth benefits for hospital services, the re-introduction of ambulatory medical benefits (but without Commonwealth benefits), the introduction of the reinsurance arrangements with the new budgeted 50% Commonwealth subsidy to these arrangements plus some administrative changes. Note most of these suggestions were to remove the existing government support programs for private health insurance. The mix of tax deductions and government benefits had put a number of perverse incentives into health insurance structure. These created their own moral hazard risks for the government and it seemed that the best way to eliminate these risks was to get rid of all of these sources of risk given that just then there seemed to be a brief period in Australia's history when this could be achieved. Much of the industry was uncertain about such radical change given its very comfortable and cushioned existence prior to the introduction of Medibank. In the discussion of Illth Insurance¹⁴ in June 1977 in Sydney a then prominent actuary suggested that the health insurance industry existed for the benefit of its management. This was strongly disputed by the industry at the time. However had he said that the many and varied Commonwealth subsidies that had been provided to the industry created significant moral hazard risk for the government then the industry would have probably agreed. One of the moral hazard risks was the risk of management failure given the extent of comfort and security that was effectively provided to health insurance management by those subsidies. At that time I did not appreciate that in some cases it would take many years to change the culture that had developed from the 1950's to the 1970's. This is not just a reference to the culture in some of the insurers but also the culture of the regulator¹⁵.

A less obvious moral hazard risk faced by health insurers is the progressive worsening in the portfolio of insured risks caused by selective withdrawals. This feature is particularly important in health insurance but also exists in life and general insurance. Health insurance in Australia consists of two quite separate components: - hospital cover and "general" cover, which includes benefits for dental, optical and other ancillary health services - and it is possible for insureds to select only one of these components either hospital cover or "general" cover. When the two are taken together the insured will generally obtain some ancillary benefit payments from his or her insurance from time to time and will thus rationalise that there is some material benefit in being insured. Lapse rates are generally lower for insureds covered by combined policies than for those covered by hospital or general cover separately. For a person covered by hospital cover who is under 55 the claim incidence is approximately 10% per annum¹⁶. However the claim rate is only about 30% over 10 years and about 50% over 25 years, such is the skewness and kurtosis of the claims frequency distribution function. So, if the insurer was to get a cohort of average hospital risks in a particular year and retain them for 10 years then 70% would not have made a hospital claim at the end of that decade. The ones that had made a claim would have been likely to have made more than one claim. In considering the value of hospital insurance, 70% of insureds will see it as having little value. So the moral hazard risk for the insurer of those who only have hospital insurance is that the good risks will not see the sense in continuing. This shows up as a slowly deteriorating risk profile, not just on a demographic basis but within each demographic

¹⁴ Illth Insurance B W Walker – IAA June 1977

¹⁵ The regulator was the Commonwealth Department of Health in those days.

¹⁶ Excluding Obstetrics and minor investigative procedures done in day surgeries.

profile. When political or economic factors cause insureds to consider their commitment to health insurance the deterioration in risk profile tends to become more pronounced.

Some insurers are particularly exposed to a particular industry or employer that may be going through a major structural change. This will often amplify the moral hazard risk of the insured making a judgement on his or her insurance based on his or her recent (5 to 10 year) experience, which can lead to major changes in risk experience for that insurer in a relatively short period of time. In general insurance this is countered to some extent by no-claim bonuses. The use of no claim bonuses is not permitted in Australian health insurance. However in general (ancillary) health insurance cover, insurers do provide benefits that increase in value with length of membership so as to provide some sense of increasing worth with longevity. These loyalty features and the regular small claims that can be made on general health insurance cover contribute to the better retention experience of combined cover memberships. This retention issue is just one reason¹⁷ why stand alone hospital insurance experiences higher utilisation than the same cover included in a combined package.

Health insurance sold and paid for through chemist agencies produced an interesting moral hazard issue. Chemists were initially keen for this business because it increased traffic through their shop. But as chemists expanded into a wide range of non-pharmaceutical consumables health insurers discovered retention rates were particularly low among those who paid mainly through chemists and benefit utilisation rates of these insureds were correspondingly higher. It was thought that when the insured went to pay his or her next premium they may have been distracted by the other goods in the shop that they could buy for that outgo. Could it be that they were helped with that choice? If the chemist's interest was to increase traffic through his or her shop then a customer who only paid a health insurance premium wouldn't have done much for his/her bottom line! This is just another subtle moral hazard risk associated with a third party seemingly having some moral ownership of the business. So the expansion of chemists' shops into many other consumables contributed to insurers encouraging payment through automatic debit arrangements.

Some people only purchase health insurance to avoid the Medicare Levy Surcharge. As the surcharge is avoided by just purchasing hospital insurance¹⁸ often Medicare Levy dodgers just purchase this cover. The moral hazard risk for the insurer is that the Government will change aspects of this arrangement and hence many Medicare levy dodgers will drop out. The income thresholds at which the Medicare Levy Surcharge first becomes payable were recently changed for the first time since the introduction of this levy. Because of the concurrent economic turmoil caused by the global financial crisis any measurement of the reduction in membership as a result of this change will not be able to separate the two principal causes from each other or from the normal causes of discontinuance so the effect of this change won't be able to be measured.

The more general point is that whenever Government provides a stimulus to private health insurance in the form of a tax it can also modify it or remove it and that is the hazard for insurers. However the contra argument was that this stimulus had been in existence for over 10 years and hadn't been indexed so some form of indexation was necessary.

¹⁷ Also older people often take this cover – perhaps because they can't afford to purchase combination cover. One has to examine the risk cost within each demographic profile to see the difference in utilisation.

¹⁸ There is a limit as to how big the excess or co-payment may be

Questions

What similarities are there in the experience of the interaction of the health insurance industry in Australia and its Government and the interaction of credit financiers in the US and their Government? Did competition issues create additional moral hazard risk for credit issuers? Do credit risks deteriorate with time in the same way as health insurance risk and if so how can this be mitigated?

Redistribution Risks

The health insurance industry's reinsurance arrangement was renamed risk equalisation in 2007¹⁹. It is really a claims pooling system. As a result each insurer has a continuing retention of a claim even though part of it is going to be pooled with the rest of claims in that state. Its retention depends on the age of the claimant, the size of the insurer and the claims amount in the case of the high cost claims pool. The retention kept by an insurer in respect of any hospital claim can't be less than around 18%. The larger the insurer the greater the retention has to be because its share of the pool is proportionate to its size. So there is a protection built into the structure of the risk equalisation arrangements to neutralise the moral hazard risk that would occur if 100% of claim was reinsured. In other words the interests of the original insurer are aligned with the ultimate holder of the risk (the industry as a whole) by the retention policy.

Questions

Should there be a mandatory retention policy to ensure the alignment of interest of the issuer of credit with that of the ultimate risk taker (investor) when credit risk is "reinsured" through securitisation?

5. Superannuation

Let the Superannuation Buyer Beware

There is an enormous amount of regulation surrounding superannuation in Australia so theoretically the buyer shouldn't have to beware of much but defined contribution superannuation structures do put a lot more risk with the buyer than does a defined benefit structure. Basically individuals have to bear the financial risk and the longevity risk. While the equity and property bull markets were running many people didn't think too much about either of these risks because they assumed that the annual 10% plus investment returns that they were getting every year would continue. The change in circumstances will have brought the concerns about these risks to the fore.

Financial advisors have to disclose their commissions, fees etc on any product disclosure statement. This requirement is independent of the advice being about superannuation, life insurance or personal savings. But what the buyer should beware of is that the advisor sells him/her an inappropriate strategy. Selling pensioners a strategy whereby they mortgage their house to invest in the share market after providing a 7% commission to the advisor would seem

¹⁹ Risk Equalisation misnames what is essentially a claims pooling mechanism. In the early part of this century the industry was examining a true risk equalisation system with an additional high cost claims pool but insurers that believed their profitability could be adversely affected vetoed such change.

to be a rather inappropriate strategy. So the sales pitch of the Storm Financial Group might be an extreme example of why buyers should beware. No doubt there are less extreme examples. Perhaps the eventual legal actions in relation to Storm Financial will expose whether there needs to be any legal or regulatory changes.

Questions

Was the miss-selling of credit a feature that helped cause the Global Financial Crisis? What strategies can be used to reduce incentives to miss-sell credit?

Let Superannuation Provider Beware

Superannuation funds often provide life insurance as a benefit to their members. Often this is done on a basis that provides little or no underwriting, although some small schemes do require underwriting and most schemes require it for discretionary cover. A good example occurs when there is the provision of "free cover" for employees of fairly small firms. A colleague was involved in a case where the firm "recruited" a relative of the CEO. This new employee was suffering a terminal illness. The new employee only lasted a few months in the job before dying and a benefit was then paid that wouldn't have been nearly so large if there had been free cover rules that were more appropriate for a small scheme.

I have often been the underwriter for superannuation schemes. Once, some decades ago I refused my CEO discretionary cover on grounds that he was overweight, didn't exercise and had diabetes and (I suspected) heart disease. That refusal wasn't well received but accepted and justified as he died less than 2 years later. Fortunately in that case the rules provided for my stance but others could have been intimidated. Both these cases indicate how the power of one party over the other party could be used to create a moral hazard risk.

Questions

Did the "power" of the Wall Street Merchant Banks and the Rating Agencies create additional moral hazard risks in securitised credit? What was the influence of the "powerful" rating agencies in the securitised credit market?

Superannuation Redistribution Risks

The life insurance risks of a superannuation fund are often "reinsured" with a Life Office. In these circumstances the life insurer will usually do the underwriting, at least above the free cover limit.

Questions

Subordination of a function from the inexperienced to the experienced is sound business practice but is it sound business practice to subordinate a function from the experienced to the inexperienced? How much worse would such a business practice be if the subordinated risks are deliberately hidden from the inexperienced risk taker?

6. Provision of Credit

Let the Borrower Beware

How many people carefully read a mortgage document right through before they sign it? Do they even get the opportunity? Even if they get the opportunity and had the time to read it would they understand it? Or if their solicitor was given the opportunity to read it would he or she necessarily understand it if it had been written by a specialist lawyer? In the age of information all professions are developing specialities and this increasingly will mean that advice of a specialist in a particular practice area may not be fully comprehended by a specialist in another practice area. So, invariably, an unsophisticated borrower has to trust the lender and believe the person with whom they are dealing. In the case of large corporate loans usually both the borrower and the lender will use lawyers who specialise in that particular area of legal practice.

If the loan is not going to be held on the balance sheet of the lender but is going to be parcelled up with other loans, securitised and sold to investors should the borrower be told? Some would say that these are details that probably should be provided to the buyer but it seems that in many instances this information is not provided or comprehended. Why should such details be provided? Because the seller's motivation for providing the credit might be influenced if the seller is intending to make a profit out of the transaction and pass on the risk to others. Moral hazard risk can exist in the circumstance when there is information asymmetry between purchaser of credit and the provider of that credit. In all financial sector transactions where up-front profit is involved prudence can often take second place to profit particularly where the direct seller's interest is not disclosed.

Although the global financial crisis allegedly started with US Sub-Prime mortgages it soon appeared that information asymmetry occurred in many aspects of lending and securitisation than just in the provision of mortgages. But rather than tackling the issue of Sub-Prime mortgages (in Australia, low-doc loans) we should look at what sensible practices should apply in the provision of credit. Is there information asymmetry? It is unlikely that a fifty or one hundred page disclosure statement is ever going to be read and comprehended by a customer²⁰. It is equally unlikely that a website that has each bit of information independently accessible is ever going to be completely comprehended by an applicant no matter how well set out that website. An additional short statement is required. So to remove the information asymmetry it would be sensible for the Government to regulate that each retail credit applicant be provided with a specially formatted Key Features Statement that is preferably only 1 page long. Also there should be disclosure of commissions and/or other incentives that the seller (both the person dealing directly with the applicant and his/her organisation) will obtain from the acceptance of the loan application. This statement should include the intended domicile of the loan²¹ or at least whether the lender is planning on keeping all the risk on its balance sheet. If the loan is not to be fully held by the lender then the commissions and charges to be paid to the lender by the securitising organisation should be disclosed. To ensure that intentions are not changed after the

²⁰ For example the Commonwealth Bank's loan information booklet on its website is 92 pages (including the index).

²¹ For example loan will be issued and held by XYZ Bank, or 20% of the Loan will be held by XYZ bank and 80% securitised by ABC P/L and offered to investors, etc

loan is issued then changes to the disclosure of commissions and/or other incentives, charges, etc and domicile should then be provided to each borrower whose loan domicile is being changed.

The concept of a key features statement will be vigorously argued against by lenders, their agents and others in the finance industry. But if a health insurer can reduce a several hundred page rules document down to a key features statement for each product then it shouldn't be impossible for a bank, other authorised deposit taker or lender to do the same for something that is a lot less complicated. The concept of a government website where such key features statements reside and become comparable would also be of immense value to borrowers and so enhance competition. From a competition viewpoint the banking industry is much like the health insurance industry in Australia as it is an oligopoly with a small number of key players that control most of the market and a variety of niche players.

One wonders whether Sub-Prime honeymoon rate loans that were sold to poor Americans were ever properly explained to the buyers. Anecdotal evidence suggests that in many cases the buyer did not understand how much interest he or she was going to have to pay when the honeymoon period concluded. What may have happened was they were given a false illusion that they would be able to re-finance at the end of the period into another honeymoon loan but without any explanation of the risks that were involved in such a strategy. Although we would like to think that such practices wouldn't happen in Australia we certainly have honeymoon interest rates and a culture of concealment by obfuscation of the essential information which the buyer should have to make an informed decision. Miss-selling and profiteering in other financial sectors have repeatedly occurred in Australia so we shouldn't kid ourselves that this doesn't happen in the provision of credit.

Let the Credit Issuer Beware

What does the credit issuer have to be aware of when selling credit? The principal danger is that the buyer won't be able to pay for it and, furthermore won't be able to repay the capital as and when repayments are payable in accordance with the contractual arrangement. Dealing with the issue of paying for the loan (paying interest), it would be argued that low doc loans were developed in Australia for those up and coming entrepreneurs and executives whose past tax income histories wouldn't provide evidence of ability to be able to pay for the loan. In some cases this is double-speak for there being a past history of understatements of taxable income. So low-doc loans could be a prescription for the development of moral hazard risk. If such loans are to be securitised and a minimum level of risk retention mandated²², perhaps the existence of the extra moral hazard risk that could be present in low-doc loans could be acknowledged by a higher risk retention requirement. The credit agency rating of a portfolio of low-doc loans would presumably be lower and the interest payable then correspondingly higher.

The second issue is the repayment of the loan capital. It would seem that in the period leading up to the global financial crisis some sellers of finance might have temporarily forgotten about this aspect of the provision of credit. The assumption that there will always be a market for the rolling over of a credit facility has proven to be incorrect. The fall back position that the purchaser of the credit will pay it back out of cash flow is unlikely if it all has to be paid back at one point in time. Hence the current rush by large companies to convert debt instruments into

²² See next section of this report

equity or some form of hybrid investment. With the frozen securitised credit market many corporations appreciate that it may be difficult or impossible to roll over existing credit facilities when they become due. The solution offered in this paper is to put trust back into the securitised credit market at least in respect of new issues where the lender has retained a reasonable equity in the provision of the credit. Such equity, if held in the form of the marketed security would need to be certified and audited each year and the investors in such securities notified of any change. One way of describing these securitised credit arrangements would be to call them “participating”. That is the credit originator is participating in the credit risks with the investors.

Insurance contracts are issued within the context of *uberrima fides* (utmost good faith) but credit is issued within the context of *caveat emptor* (buyer beware). But elements of *caveat emptor* are also present in the process of providing insurance so given that the provision of credit includes a transfer of risk should elements of *uberrima fides* be included in that process? What steps should governments take to ensure that the disclosure requirements of lenders are made more specific and less obscure?

Credit Redistribution Risks

When a loan becomes securitised the seller of the credit becomes the buyer of the securitisation service. This is similar to the concept of selling insurance part of which is reinsured. The main difference is that reinsurance involves aggregation of risk, whereas securitisation involves the disaggregation of risk. It seems that at times there was a considerable lack of transparency in all the other transactions that occurred in the securitisation process after credit was provided. If we are to believe articles such as that published in the Australian Financial Review in early March 2009²³ then profits were syphoned off in each step of the process but it appears that the original purchaser of the credit was not informed nor does it appear that even lower order participants in the process were necessarily informed. Had there been a regulatory structure that required information to be passed down through the participants to the original borrower would these excesses have occurred? Had there been regulatory structures contextually similar to those in the risk transferring environment of *uberrima fides* would those excesses have occurred?

Finally there is the issue of retention. In life insurance, general insurance and health insurance passing 100% the risk to others is not available because of the moral hazard issues that could occur. Why did the market allow lenders of money to pass 100% of their risk to others without question? I guess the answer to that question was that the collective market didn’t understand moral hazard risk and furthermore was acting in an information vacuum about such risks. The secondary answer is that regulators allow regulatory arbitrage with the transfer of risks outside of the insurance environment. As we now understand moral hazard risks abound in the provision of credit and, because of this acquired understanding, the market for securitised credit risks has practically seized up. A common sense practical approach is needed. The regulatory arbitrage should be considered and where practical it should be eliminated.

The banking and finance industry should look to the life, general and health insurance industries for how to go about minimising moral hazard risk and probably elements of *uberrima fides* should be regulated to generate trust in risk transference arrangements. Furthermore banks and other significant investors in transferred risks should be looking at the actuarial modelling

²³ “The End of Wall Street” Essay by Michael Lewis who wrote *Liars Poker*. Refer Weblink 6)

processes reinsurance actuaries use to identify aggregated risk. On one hand one could say that Enterprise Risk Management (ERM) structures within some banks spectacularly failed to recognise the aggregation of moral hazard risk in their investments of securitised debt, but on the other hand one could say ERM in credit issuers were spectacularly successful. However the common element to both was the lack of information about the risks that were really being transferred in such arrangements and much of that can be blame on the regulatory environments.

7. Management

Moral Hazard Risks in Management

There are many perverse incentives in the compensation arrangements of professionals, including actuaries that lead to moral hazard risks. The standard business model of consulting actuarial firms that generates fee income based on the number of billable hours is but one example of moral hazard. The management style known as Management by Objectives (MBO) has created moral hazard for actuaries when "management" sets billable hours targets for each actuary in the firm in order to achieve the MBO budget for revenue and then compensates those who meet the targets by means of a bonus system. One infamous example, that is part of the US folk-lore in the actuarial community, concerns the head of one consulting firm who instructed all of his subordinates to meet a target of "six more billable hours per week" or face the prospect of being fired. Another example concerns a particular consultant who regularly charged more than 200 billable hours a week. Management of that particular consulting firm were delighted with his performance and rewarded it (and themselves) well but would the clients have been quite as delighted had they known of this practise? All the clients knew was that the service they were getting from the consultant was expensive and because it was expensive it had to be a very valuable service. If the clients had known this very valuable service was in fact overpriced by perhaps 400% or 500% they might not have thought it quite so valuable!

There are many examples of moral hazard in the United States in the pensions and investment fields. When the Pension Benefit Guaranty Corporation (PBGC) was established under the ERISA legislation in 1974, the guarantee of benefits (up to certain limits) by the PBGC was funded by a flat premium per capita on active participants in pension plans without any regard to the extent to which the pension plans were adequately funded and without regard to the extent of the financial strength, credit-worthiness or bankruptcy-risk of the sponsoring employer. This encouraged inappropriate risk-taking in investment policy and funding strategy, often with the support and guidance of members of the actuarial profession.

Another problem in the financial services arena concerns the Rating Agencies that rate the credit-worthiness and claims-paying ability of bond issuers and insurance companies. Rating agencies operate by charging a fee to be paid by the entity being rated. Whistle-blowers have recently testified to US Congress that the rating agencies would compromise fair standards of practice in the interest of generating fees and would knowingly over-rate risky assets and securities in the pursuit of fees and profits.

In Australia when rating agencies started rating health insurers, health insurers were initially given a rating based on what appeared to be misunderstood data published by the regulator. Insurers had the opportunity of perhaps getting a better rating by paying a fee to let the rating agency "in the door". So this led to the risk of "purchasing" a better rating. Of course the insurer

that didn't think it could get a better rating wouldn't have wanted to pay the fee. Perhaps it is unfair to pick on rating agencies but part of the problem seems to be that the legislation under which they are set up in the US apparently makes them pretty well immune to legal action resulting from their performance. This legal immunity would appear to multiply the moral hazard risks.

On a number of occasions I have observed the moral hazard risks created by the Key Performance Indicator (KPI) system of rewarding management. On one occasion a CEO had a KPI related to the amount of new business written by the health insurer. Despite being warned about financial issues created by previous excessive new business and eventually instructed to cease writing new business it still kept flowing in. The problem was that insurer's agents were being rewarded with up-front commissions and found it very easy to write business virtually on the steps of private hospitals when, in each case, pre-existing waiting periods were being waived by the CEO. Eventually, the insurer's financial problems grew to the point that an administrator was appointed. So the CEO and board were dismissed.

Another occasion a recently appointed CEO had a KPI to exceed a certain profit figure. When it appeared to him that it would be unlikely that the KPI would be met at the end of the financial year claims information was deliberately manipulated in an attempt to cause the actuary to advise a considerably lower outstanding claims provision than that required. This backfired when the manipulation was uncovered and so the CEO failed to get his bonus. The board, then sympathetic to their new CEO, changed actuaries at their first opportunity.

So how difficult is it for a board to take action on a moral hazard issue perpetrated by a CEO whom they have recently appointed? They immediately see that they would be blamed for the CEO's misdemeanour because they have so recently appointed that CEO. One alternative course of action is to shoot the messenger! How many messengers get shot? Sometimes a messenger might fear for his/her life when exposing a fraud²⁴.

Questions

What part did inappropriate profit motives play in the multiplication of moral hazard risks in provision of credit and the securitisation of it? Could rating agencies be organised under a different business model? Should rating agencies operate under some international law rather than US law and if so what protection should be given to them?

8. Conclusions

There are many more moral hazard questions relating to the finance industry than there are answers but there is a great need to focus on and find appropriate answers to these questions.

The principal antidotes to moral hazard risk are disclosure and the alignment of interests of parties involved in the risk transfer. These are issues that lie right at the heart of schemes of risk transfer in insurance environments where there is major involvement of actuaries. The actuarial profession should advocate this publicly and couple this advocacy with the statement that

²⁴ The pleas in the early part of the written exposure of the Madoff Ponzi scheme in 2005 are indicative of the fear of this writer. See the seventh Weblink; The World's Largest Hedge Fund is a Fraud; Wall Street Journal, November 2005.

actuaries will bring professionalism and personal integrity to that market. The need for professional actuarial involvement in schemes of credit risk transfer should be communicated both within the profession and to external regulatory and policy-making institutions. A campaign to raise awareness of what actuaries can do and what regulators should do to improve transparency in credit risk transfer schemes will do much to improve the image and reputation of the profession. However the profession's emphasis needs to be on the professionalism and personal integrity of the members of the profession because in the recent past some members of the profession have not done as well as they might in recognising and dealing with moral hazard issues²⁵.

Moral hazard risks usually occur where there is information asymmetry. The exploration of life, general, health insurance, superannuation and management provides a background from which we can see how information asymmetry could create moral hazard risks in the provision of credit. Perhaps some of the concepts of *uberrima fides* should be migrated to this market since securitising credit also involves risk transfer. The reason that information asymmetry about risk was able to proliferate in the securitised credit market was that the risk transfer regulatory regime required in the insurance system did not apply in this market – that is there was regulatory arbitrage.

Moral hazard risk can exist in many forms of contractual arrangements and in management. In many instances moral hazard risks can be managed but in competitive environments usually there is a need for a combination of management and appropriate regulation. Such regulation often only needs be “light touch” to ensure moral hazard risks can then be minimised. Regulation is a sensible response of Government when risk is being transferred from the sophisticated to the relatively unsophisticated.

The routine passing on of 100% of a risk is in itself likely to generate additional moral hazard risk. It is likely to be impossible to generally regulate against such practices but it should certainly be possible to regulate against the practice of passing off 100% of the risk embodied in a credit product released for investment in Australia. If Australia does this then its example will more than likely be copied by many countries that have a securitised credit market. The concept of “participating” securitised credit products could bring this about. In this sense “participating” is the extent the credit originator is participating with the investors in the risks of the product.

Information concealment by obfuscation can provide an environment of information asymmetry. Regulators should look carefully at what has been achieved by appropriate regulation in the Private Health Insurance industry in Australia. If several hundred pages of complex health insurance rules can be distilled to a one or two page Key Features statement for each product then so too can a mortgage document, other loan documents and probably many other forms of disclosure documentation. This requires determined legislators but now is the time that such legislation would get enough sympathy from the public to outweigh the objections from other vested interests.

²⁵ Morris Review of the Actuarial Profession – March 2005

9. Definitions of Moral Hazard Risk and Moral Hazard

Investopedia (A Forbes Digital Company) Defines Moral Hazard Risk

Investopedia states that moral hazard risk is:

The risk that a party to a transaction has not entered into the contract in good faith, has provided misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Moral hazard can be present any time two parties come into agreement with one another. Each party in a contract may have the opportunity to gain from acting contrary to the principles laid out by the agreement. For example, when a salesperson is paid a flat salary with no commissions for his or her sales, there is a danger that the salesperson may not try very hard to sell the business owner's goods because the wage stays the same regardless of how much or how little the owner benefits from the salesperson's work. Moral hazard can be somewhat reduced by the placing of responsibilities on both parties of a contract. In the example of the salesperson, the manager may decide to pay a wage comprised of both salary and commissions. With such a wage, the salesperson would have more incentive not only to produce more profits but also to prevent losses for the company.

Wikipedia (20/2/2009) Defines Moral Hazard

Wikipedia is more expansive about moral hazard:

Moral hazard is the prospect that a party insulated from risk may behave differently from the way it would behave if it were fully exposed to the risk. Moral hazard arises because an individual or institution does not bear the full consequences of its actions, and therefore has a tendency to act less carefully than it otherwise would, leaving another party to bear some responsibility for the consequences of those actions. For example, an individual with insurance against automobile theft may be less vigilant about locking his or her car, because the negative consequences of automobile theft are (partially) borne by the insurance company. Morale hazard is sometimes used to refer to moral hazard which occurs without conscious action.

Moral hazard is related to information asymmetry, a situation in which one party in a transaction has more information than another. The party that is insulated from risk generally has more information about its actions and intentions than the party paying for the negative consequences of the risk. More broadly, moral hazard occurs when the party with more information about its actions or intentions has a tendency or incentive to behave inappropriately from the perspective of the party with less information.

A special case of moral hazard is called a principal-agent problem, where one party, called an agent, acts on behalf of another party, called the principal. The agent usually has more information about his or her actions or intentions than the principal does, because the principal usually cannot perfectly monitor the agent. The agent may have an incentive to act inappropriately (from the viewpoint of the principal) if the interests of the agent and the principal are not aligned.

In Finance

Financial bail-outs of lending institutions by governments, central banks or other institutions can encourage risky lending in the future, if those that take the risks come to believe that they will not have to carry the full burden of losses. Lending institutions need to take risks by making loans, and usually the most risky loans have the potential for making the highest return. A moral hazard arises if lending institutions believe that they can make risky loans that will pay handsomely if the investment turns out well but they will not have to fully pay for losses if the investment turns out badly. Essentially, profit is privatized while risk is socialized. Taxpayers, depositors, and other creditors have often had to shoulder at least part of the burden of risky financial decisions made by lending institutions.^{26 27}

Moral hazard can also occur with borrowers. Borrowers may not act prudently (in the view of the lender) when they invest or spend funds recklessly. For example, credit card companies often limit the amount borrowers can spend using their cards, because without such limits those borrowers may spend borrowed funds recklessly, leading to default.

Some believe that mortgage standards became lax because of a moral hazard—in which each link in the mortgage chain collected profits while believing it was passing on risk—and that this substantially contributed to the 2007–2008 subprime mortgage financial crisis.²⁸

Brokers, who were not lending their own money, pushed risk onto the lenders. Lenders, who sold mortgages soon after underwriting them, pushed risk onto investors. Investment banks bought mortgages and chopped up mortgage-backed securities into slices, some riskier than others. Investors bought securities and hedged against the risk of default and prepayment, pushing those risks further along. In a purely capitalist scenario, the last one holding the risk (like a game of musical chairs) is the one who faces the potential losses. In the 2007–2008 subprime crisis, however, national credit authorities – in the U.S., the Federal Reserve – assumed the ultimate risk on behalf of the citizenry at large. This led to concerns about the rise of corporate welfare, or economic fascism (corporatism), given the potentially large transfers of wealth to investors in mortgage-backed securities.²⁹

In Insurance

In insurance markets, moral hazard occurs when the behavior of the insured party changes in a way that raises costs for the insurer, since the insured party no longer bears the full costs of that behavior. Because individuals no longer bear the cost of medical services, they have an added incentive to ask for pricier and more elaborate medical service—which would otherwise not be

²⁶ Summers, Lawrence (2007-09-23). "Beware moral hazard fundamentalists". Financial Times.

²⁷ Brown, Bill (2008-11-19). "Uncle Sam as sugar daddy". MarketWatch.

²⁸ Holden Lewis (2007-04-18). "'Moral hazard' helps shape mortgage mess". Bankrate.com.

²⁹ "Bailout of Wall Street is Economic Fascism". reuters.com (2008-09-24).

necessary. In these instances, individuals have an incentive to over consume, simply because they no longer bear the full cost of medical services.

Two types of behavior can change. One type is the risky behavior itself, resulting in what is called *ex ante* moral hazard. In this case, insured parties behave in a more risky manner, resulting in more negative consequences that the insurer must pay for. For example, after purchasing automobile insurance, some may tend to be less careful about locking the automobile or choose to drive more, thereby increasing the risk of theft or an accident for the insurer. After purchasing fire insurance, some may tend to be less careful about preventing fires (say, by smoking in bed or neglecting to replace the batteries in fire alarms).

A second type of behavior that may change is the reaction to the negative consequences of risk, once they have occurred and once insurance is provided to cover their costs. This may be called *ex post* moral hazard. In this case, insured parties do not behave in a more risky manner that results in more negative consequences, but they do ask an insurer to pay for more of the negative consequences from risk as insurance coverage increases. For example, without medical insurance, some may forego medical treatment due to its costs and simply deal with substandard health. But after medical insurance becomes available, some may ask an insurance provider to pay for the cost of medical treatment that would not have occurred otherwise.

Sometimes moral hazard is so severe it makes insurance policies impossible. Coinsurance, co-payments, and deductibles reduce the risk of moral hazard by increasing the out-of-pocket spending of consumers, which decreases their incentive to consume. Thus, the insured have a financial incentive to avoid making a claim.

Moral hazard has been studied by insurers³⁰ and academics. See works by Kenneth Arrow,^{31 32 33} Tom Baker,³⁴ and John Nyman.

In Management

Moral hazard can occur when upper management is shielded from the consequences of poor decision making. This situation can occur under a number of circumstances:

When a manager has a sinecure position from which he or she cannot be readily removed.

³⁰ Crosby, Everett. "Fire Prevention". *Annals of the American Academy of Political and Social Science* 26: 224–238. doi:10.2307/1011015. . Crosby was one of the founders of the US National Fire Protection Association.

³¹ Arrow, Kenneth (1963). "Uncertainty and the Welfare Economics of Medical Care". *American Economic Review* 53 (5): 941–973. doi:10.2307/1812044.

³² Arrow, Kenneth (1965). *Aspects of the Theory of Risk Bearing*. Finland: Yrjö Jahnssonin Säätiö. OCLC 228221660.

³³ Arrow, Kenneth (1971). *Essays in the Theory of Risk- Bearing*. Chicago: Markham. ISBN 0841020019.

³⁴ Baker, Tom (1996). "On the Genealogy of Moral hazard". *Texas Law Review* 75: 237. ISSN 00404411.

When a manager is protected by someone higher in the corporate structure, such as in cases of nepotism or pet projects.

When funding and/or managerial status for a project is independent of the project's success.

When the failure of the project is of minimal overall consequence to the firm, regardless of the local impact on the managed division.

When there is no clear means of determining who is accountable for a given project.

The software development industry has specifically identified this kind of risky behavior as a management anti-pattern, but it can occur in any field.

History of the Term

According to research by Dembe and Boden,³⁵ the term dates back to the 1600s, and was widely used by English insurance companies by the late 1800s. Early usage of the term carried negative connotations, implying fraud or immoral behavior (usually on the part of an insured party). Dembe and Boden point out, however, that prominent mathematicians studying decision making in the 1700s used "moral" to mean "subjective", which may cloud the true ethical significance in the term.³⁶

The concept of moral hazard was the subject of renewed study by economists in the 1960s, and at the time did not imply immoral behavior or fraud; rather, economists use the term to describe inefficiencies that can occur when risks are displaced, rather than on the ethics or morals of the involved parties.

10. Web links

- 1) Discussion of moral hazard and insurance by Robert Schenk
<http://ingrimayne.com/econ/RiskExclusion/Risk.html>
- 2) Moral hazard and risk (in Finance) <http://samvak.tripod.com/pp150.html>
- 3) The Moral Hazard Myth (in Health Care)
http://www.gladwell.com/2005/2005_08_29_a_hazard.html
- 4) What is Moral Hazard <http://www.thebigmoney.com/articles/moral-hazard/2008/09/19/what-moral-hazard>
- 5) Uncle Sam as sugar daddy; Marketwatch Commentary: The moral hazard problem must not be ignored <http://www.marketwatch.com/news/story/story.aspx?guid=%7b9F4C2252-8BA7-459C-B34E-407DB32921C1%7d&siteid=rss>

³⁵ Dembe, Allard E. and Boden, Leslie I. (2000). "Moral Hazard: A Question of Morality?" New Solutions 2000 10(3). 257-279

³⁶ David Anderson, Ph. D. "The Story of the moral"

6) The End <http://www.portfolio.com/news-markets/national-news/portfolio/2008/11/11/The-End-of-Wall-Streets-Boom>

7) The World's Largest Hedge Fund is a Fraud; Wall Street Journal, November 2005:
http://online.wsj.com/documents/Madoff_SECdocs_20081217.pdf

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