

1.1 INTRODUCTION

One question on the mind of the general public following the global credit turmoil of 2007 and 2008 is why major banks can announce huge bonuses at a time when they are suffering considerable losses. The former Chief of the Fed Paul Volcker, who is attempting to improve the international accounting standards, said¹

[bankers' compensation packages] were most invidious of all ... the mantra of aligning incentives seems to be lost in the failure to impose symmetrical losses – or frequently any loss at all – when failures ensue

The problems with banker incentives are complex, but few could argue that those who received substantial bonuses at the end of 2006 and 2007 always acted in the interests of their shareholders. In the wider world, senior bankers created a very volatile and fragile financial system that was on the verge of breaking down, saved only by generous handouts from various central banks. An accountant might argue that bonuses, even if badly designed, are outside the scope of his responsibility, which is to calculate the profit or loss and reveal this in a consistent manner to the shareholder. However, this is a dangerous view. There is very clear evidence that banks, through off-balance sheet vehicles and mis-valuing of financial instruments, did not reveal all that the shareholder needed to know and therefore it is questionable as to whether they complied with the accounting standards framework. There is also evidence that inappropriately designed bonuses are putting pressure on the accounting profession to simultaneously comply with the accounting standards and mislead the shareholders as to what is going on. Unfortunately, though the accounting standard setters have devoted a lot of time and resources towards improving the accounting standards, there are still underlying problems that they must address as a matter of urgency. In particular, there are instances where financial institutions claim to be in compliance with accounting standards while simultaneously hiding assets and liabilities through off-balance sheet vehicles. There is also the worry that the accounting standards cannot cope with the increasing complexity of financial instruments, particularly when it comes to hedge accounting. Indeed, so strong was the objection to the hedge accounting rules for financial instruments that the International Accounting Standards Board (IASB) was forced by the European Union (EU) to revise International Accounting Standard IAS 39, *Financial Instruments: Recognition and Measurement*. In fact, the EU introduced 'carve outs' designed to make the accounting standards easier to adopt and more reliable. In effect, the EU told entities to ignore some of the rules that the IASB had devised. In addition, many practitioners argue that the standard setters are getting things badly wrong when it comes to specialist areas like insurance – where insurance companies feel that they have to publish two

¹ Christia Freeland, 'A towering disciplinarian', *Financial Times*, 12 April 2008.

sets of accounting results each year, one in compliance with the international accounting standards but totally misleading and another which ignores the accounting standards but paints a more realistic picture of underlying profitability.

Quite a lot of guidance is available on both the international accounting standards which are used in Europe, Asia and Africa and also the American standards. However, when it comes to financial instruments, many practising accountants argue that the accounting standards themselves are difficult to interpret and the simple examples provided by the various accounting standards boards and the accountancy firms do not get to the heart of accounting for complex financial instruments.

Contributors to the financial crises:

- **Bonuses.** People usually associate bonuses with rewards for increasing the profit of the entity. Few could argue with the idea that if employees are bringing in profits to a business they should be rewarded with a bonus. However, the bonus systems of many senior bankers are flawed, in that they encourage traders to make banking profits more volatile and riskier and not necessarily more profitable. Accountants and auditors often allow a situation where bankers can show high profits, and achieve high bonuses, while in reality they are simply transferring wealth to themselves at the expense of shareholders without revealing to the shareholder what is going on.
- **Poor risk measurement.** Financial institutions often boast that they have the latest risk management tools to measure market risk and credit risk and they emphasise that, being well regulated, their ability to take risk is limited. But, the mere fact that sophisticated banks buy complicated structured credit products that often they themselves don't understand suggests otherwise. This is simply a side-effect of the fact that many senior finance executives either don't measure risk or don't take seriously the risks that they measure. Also, the explosion of the credit derivative market and complex securitisation market suggests that banks are often anxious to buy products whose risk is difficult to measure.
- **Other people's money.** Investment trusts and institutional investors may have voting power over certain shares but they don't always have beneficial interest. In other words, those with voting power are investing other people's money and therefore don't suffer too much when shares fall in price. They are often tempted (though not all do) to exploit this through malpractices by voting in a manner which maximises their fees rather than the return to the shareholder. For instance, a corporate finance firm might put pressure on its pension arm to vote in incompetent directors if they feel it will help them to secure a corporate finance mandate.
- **Conflicts.** Auditors and credit rating agencies in theory work on behalf of the investor, but in reality their fees are paid by directors and traders who are motivated to conceal bad news and credit risk. Auditors and credit rating agencies are therefore often motivated to maximise fees by giving their assurances too liberally.
- **Ability to hide losses.** Entities often use different accounting treatments for the same type of economic asset. In some cases assets are shown on the balance sheet at market value, but in many cases the assets are taken 'off-balance sheet'. For instance, an entity that borrows say £10,000,000 to buy an asset that has fallen in value to £9,000,000 would be forced to show a loss of £1,000,000 if the asset and liability were brought on to the balance sheet. However, the entity might be tempted to hold the asset and liability in an off-balance sheet company and therefore conceal from the shareholder and regulator the true economic position.

- **Complexity.** Where there is complexity there is confusion and where there is confusion there is the ability to mislead. Auditors, credit rating agencies and regulators often don't have the resources to deal effectively with complex structured products. This in itself makes the products attractive to bonus-hungry traders who want to take on risk but simultaneously conceal risks and losses.
- **Lobbying pressure and poor accounting standards.** There is evidence that lobbyists on behalf of financial entities and corporates attempt to use their influence to leave the accounting standards as they are, even if they are weak. This lobbying pressure was certainly in evidence when the American Financial Accounting Standards Board (FASB) attempted to treat stock options as an expense in the Profit & Loss account.

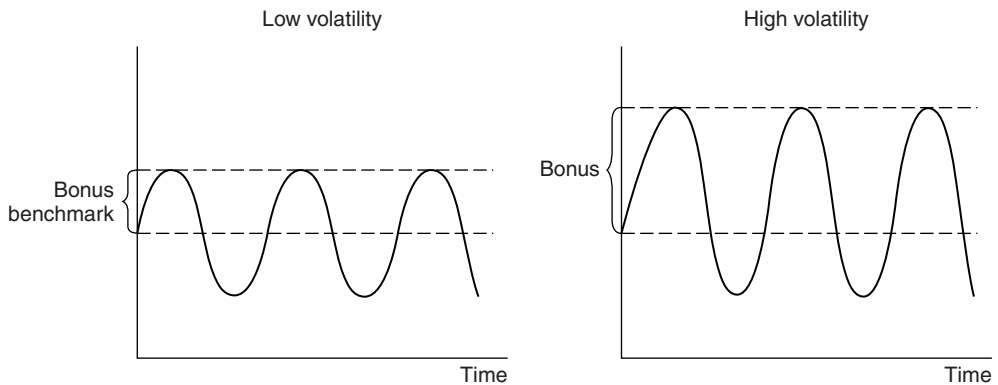


Figure 1.1 Bonuses

Case Study: Fannie Mae

The calculation of Earnings Per Share (EPS) is very much linked to how an entity interprets the accounting standard. In May 2006, the Office of Federal Housing Enterprise Oversight produced a report on accounting irregularities at Fannie Mae.² The report concluded that 'improper earnings management at Fannie Mae increased the annual bonuses and other compensation linked to EPS that senior management received'.

The worrying fact here is that senior executives may find that their bonuses are enhanced if they spend more time stretching the accounting standards rather than running the underlying business to suit the needs of the shareholder. In the case of Fannie Mae, the annual bonus was linked to EPS, which is in turn influenced by the accounting standards. Indeed, compensation for senior executives that was driven by or linked to EPS dwarfed basic salary and benefits. For CEO Franklin Raines, for example, two compensation components directly tied to meeting EPS goals accounted for more than \$20 million for the six years from 1998 through 2003. Three-year EPS goals also played a crucial role in determining the size of the approximately \$32 million awarded to Mr Raines during that six-year period under a long-term executive compensation programme. In total, over \$52 million of Mr Raines' compensation of \$90 million during the period was directly tied to achieving EPS targets.

There were two aspects of Fannie Mae which had an impact on the way that they interpreted the accounting standards. On the one hand, they clearly wanted to take risks and did take

² Report of the Special Examination of Fannie Mae, Office of Federal Housing Enterprise Oversight, May 2006.

Case Study: (Continued)

them – but they also wanted to give the impression that they were making substantial profits. On the other hand, they wanted to smooth out earnings so that they gave the impression of being a risk-averse financial entity whose earnings were predictable. According to the OFHSO report, ‘The Enterprise achieved double-digit growth in earnings per common share (EPS) for 15 straight years and leveraged its extraordinary financial success into enormous political influence. That financial and political success gave rise to a corporate culture at Fannie Mae in which senior management promoted the Enterprise as one of the lowest-risk financial institutions in the world and as “best in class” in terms of risk management, financial reporting, internal control, and corporate governance’.

Clearly, there is strong evidence that the accounting standards were stretched to smooth out the earnings. In other words, Fannie Mae was taking on a lot more risk than they wanted their shareholders to know about. They achieved this by profit smoothing. In good years, they would take excess profits and make artificial provisions so that the profits came down to a level consistent with a risk-averse company. In bad years, with high losses, they would release the provisions. This tactic proved rewarding in terms of bonuses, since by keeping unnecessary provisions and later releasing them they could keep profits above target every year rather than just in some years.

Arthur Levitt, the former Chairman of the SEC, referred to this type of earnings management as ‘[a] gray area where the accounting is being perverted; where managers are cutting corners; and, where earnings reports reflect the desires of management rather than the underlying financial performance of the company’. Mr Levitt included ‘cookie jar’ reserves, the premature recognition of revenue, and the abuse of the concept of materiality among the five most common and popular forms of inappropriate earnings management.

1.2 SCOPE OF THE BOOK

1. Introduction
2. Accounting Foundations
3. Corporate Governance
4. Hedge Accounting
5. Illustrative Examples: Hedge Accounting
6. Accounting for Structured Products (Market Risk)
7. Accounting for Credit Risk
8. Accounting for Structured Products (Credit Risk)
9. Off-Balance Sheet Accounting
10. Reconciliation
11. Mark-to-Market Accounting
12. Accounting for Insurance
13. Conclusion

This book is designed to address the practical difficulties that accountants face when dealing with financial instruments. In Chapter 2 we look at the problems with accounting, in particular the confusing mixed model used in the accounting standards where some assets are shown at cost while others are shown at market value; some assets and liabilities are carried at a value which represents neither cost nor market value. Although this mixed-model approach has not proved to be a difficult problem in the past, the use of complex financial instruments puts a strain on an accounting system which relies on the mixed-model approach. Needless to say,

the ambiguity created by the standard setters opens the door to a lot of misleading or creative accounting. One question on most people's minds is why the accounting standards cannot deal with the complexities of financial instruments. There is no simple answer to this, though poor corporate governance may perhaps explain why people with vested interests are slow to correct the problem. The main standard covering financial instruments in Europe, Africa and Asia – IAS 39, *Financial Instruments: Recognition and Measurement* – is examined in detail in Chapter 4 and Chapter 5 looks in more detail, using a number of examples, at how IAS 39 is implemented in practice.

Securitisation is an area that has preoccupied accountants for a number of years, particularly because different banks appear to be using different approaches to account for securitisations. It is also important from a litigation perspective, since many banks were accused of using securitisations as an excuse to keep certain non-performing assets off-balance sheet and therefore conceal losses that entities have made. The topic is broken down as follows. Chapter 6 focuses on the use of structured products that are exposed to market risk, i.e. inverse floaters and foreign exchange products. We focus on the complexity of these products and in particular why institutions such as banks are motivated from an accounting perspective to buy these instruments. The rules of embedded derivatives are examined in detail. However, the embedded derivative rules are quite complex and, more importantly, difficult to apply to certain credit products. In Chapter 7 we examine credit risk and how the accounting standards deal with it. Chapter 8 focuses on securitisation and other complex structured products, and Chapter 9 examines the confusing accounting rules in place to deal with securitisation. The difference between the American and European accounting standards in tackling the problems of off-balance sheet is also explored. It appears that the problems of accounting for financial instruments are not confined to complex credit structured products and off-balance sheet entities. Accountants and auditors are also having difficulty with simple derivatives. In early 2008, Société Générale became exposed to a 'rogue trader' scandal; critics raised questions on internal controls and, in particular, why one single trader had the ability to effectively borrow €50 billion and gamble it without his superiors finding out. Accountants and auditors here have an important role in detecting and preventing instances where rogue traders clock up huge liabilities and conceal them. Chapter 10 examines this area in detail.

Following complaints from various banks to the EU, the IASB were forced to revisit their rules for certain aspects of hedge accounting, particularly as it applies to banks with deposit accounts. The EU, motivated by the practical difficulties that banks were facing, informed the IASB that they themselves would modify IAS 39 by carving out two features of IAS 39 (one of the carve-out features known as the 'fair value option' is now resolved). The result is that there are two versions of IAS 39, the unamended version as produced by the IASB and the amended version as adjusted by the EU. The circumstances surrounding these carve-outs, and the proposed solution to the complex area of applying the hedge accounting rules to the banking book, are examined in detail in Chapter 11. The disclosure requirements of the new standard IFRS 7, *Financial Instruments: Disclosures* covers the risk disclosure requirements that financial institutions are required to reveal to shareholders, particularly how financial instruments affect the risk profile of entities. It is important of course that accountants understand the risks that financial instruments create and so risk measurement techniques like Value at Risk and the regulatory Basel 2 requirements are discussed. Chapter 11 also focuses on the arguments put forward by critics of the accounting standards – namely that showing all financial instruments at market value on the balance sheet may turn out to be against the interests of shareholders.

Chapter 12 deals with accounting for insurance, focusing on the problems of life assurance companies where certain insurance products are shown at cost on the balance sheet or even kept off-balance sheet while investment products, though having similar characteristics to some insurance products, are brought on to the balance sheet, causing confusion and misleading results.

1.3 BACKGROUND

Case Study: DB Zwirn Hedge Fund

There is a trend in the financial markets to move away from simple products to products that even hedge funds have difficulty valuing. Why are financial institutions, investment managers and hedge funds willing to take on the additional operational, credit and liquidity risk associated with these products? The answer may be the flawed incentive scheme that many financial institutions operate under. Auditors, credit rating agencies and regulators face huge difficulty measuring the risks associated with complex illiquid instruments. The result is that risk is not measured. Given that flawed incentive schemes reward those who take risks with their shareholders' money there is a tendency, as this case study reveals, to take on huge risks in products that cannot be measured.

In May 2008, the Securities and Exchange Commission (SEC) launched an investigation into DB Zwirn, focusing on how the \$5 billion hedge fund valued its assets and calculated its profits and incentives. The SEC's concern stemmed from the fact that the managers of some hedge funds often award themselves a bonus based on 20% of the profits. A rosy valuation of some of the more illiquid assets leads of course to higher bonuses. Financial institutions differ from companies in that the latter must generally wait until an asset is sold and the cash received before they can recognise a profit. Hedge fund managers simply calculate the difference between the original purchase price and current market value to determine their profit and bonus. In the case of illiquid assets, hedge funds and financial institutions generally have to make assumptions. There is the obvious conflict of interest that financial institutions will choose assumptions that maximise their fees or bonus.

Needless to say, following the credit crunch banks were tempted to hide losses using optimistic estimated values of assets held by all kinds of financial institutions, in particular, investments in illiquid assets such as loans to private companies and other debt instruments. The SEC has asked DB Zwirn to provide extra information on these valuations. The hedge fund invested in corporate loans and other credits where the market was illiquid. In particular, they lent to smaller companies around the world for which there was no clear price.

Often, these loans appear at par value on the balance sheet because they are not traded. However, in many cases the loans may have lost considerable value, owing to the credit crises, yet those losses are not reflected on the balance sheet. Where the assets are not reflected at current fair value on the balance sheet, there is a risk that hedge funds will 'cherry-pick', i.e. sell loans that have made a profit but keep loss-making loans on the balance sheet at cost where it is easier to hide losses.

In May 2008, DB Zwirn was under pressure to return money to shareholders but had difficulty selling some of its loans – an indication that the loans were overpriced on its balance sheet. There is a risk that the hedge fund is using its own staff to decide on the value of some loans and also using outside 'independent' valuers to value them. However in practice, staff may not always give an unbiased result since they themselves may earn bonuses based on the valuation or at least be influenced by those that do earn bonuses. In the same way the 'independent' valuers may suffer from the same conflicts of interest that auditors and credit rating agencies face, i.e. they are being paid by the managers of the hedge fund who themselves are on bonus schemes. There is a risk therefore that the external valuers will simply 'rubber stamp' whatever valuations the hedge fund managers want.

Most accountants will agree that accounting for, and auditing of, financial instruments has become a lot more challenging and difficult than ever before. Not only must the accountant know how to value financial instruments, he must also be able to understand and disclose the ways in which they change the risk profile of an organisation and report in a manner which complies with the most difficult and controversial accounting standards ever written, IAS 39 and its American equivalent FAS 133. There is evidence that accounting for financial instruments is breaking down in practice. In 2007, for instance, many major banks such as Merrill Lynch, Citibank and UBS were forced to reveal substantial losses causing their share prices to suffer badly, which in turn led to chief executives resigning. What was worrying, however, from an accounting point of view was the extent to which banks and institutions were hiding losses. At one stage in 2007, many banks suffered share price declines as high as 50%. The investment world no longer trusted the annual reports published by these institutions. Indeed, in some cases, assurances by the banks themselves that they were not hiding losses were ignored by investors who continued to mark share prices downwards. Bear Stearns, for instance, reassured the world that it did not have a liquidity crisis but was eventually forced, within days, to seek assistance from the American government. Needless to say, some accountants will feel quite worried by the threat of litigation.

A few years ago, the legendary investor Warren Buffet described the main tools of financial engineering, derivatives, as 'weapons of mass destruction'. Why? What is wrong with innovation in the financial sector? Advocates of financial engineering argue that the entire community – from mortgage borrowers and companies, to investors – have benefited from innovation. Derivatives have allowed both funds and companies to manage their risk profile in an optimal manner and it is because of derivatives that personal borrowers can lock into fixed rates, thus removing financial risks from their lives. But this benefit is confined to the proper use of derivatives and sensible financial engineering policies. In reality, derivatives are often used to 'create' profits and allow banks, along with other financial institutions, to award themselves very high bonuses at the expense of the shareholders and, sometimes, taxpayers. What many investors and accountants don't fully appreciate is that poorly designed bonus systems encourage financial institutions to take on huge risks and, by clever use of the accounting standards, to hide those risks from the shareholders. In short, the complexity of financial instruments allows financial institutions to conceal from their shareholders, as well as regulators, what is really going on. Warren Buffet's words of wisdom certainly proved to be correct in 2007.

Consider credit derivatives. These derivatives are similar to insurance products in that the party who wishes to avoid the risk of a credit loss pays a premium to the party willing to take on the risk. Banks and investors are heavy users of financial instruments that transfer credit risk from one party to another. In return for a premium, a bank can insure itself against customers defaulting by entering into a credit default swap with a counterparty. By removing excess risk and uncertainty, banks can do what they do best – that is, originate loans with customers and raise money from deposit holders. Banks of course are regulated by various governments, through the so-called Basel rules. They must also abide by very complex accounting standards and in America, regulation designed after the fall of Enron and World-Com, Sarbanes-Oxley. It is reasonable to say, however, that if banks can transfer their risks to other counterparties and simplify their procedures, compliance with the various regulatory requirements is a lot easier. So, based on this argument, are credit derivatives a positive influence? The answer of course is that they are. However, if credit-based financial instruments allow banks to hide losses, then they are clearly a force for destruction. Unfortunately, there

is evidence, as discussed below, that the accounting standards are either not implemented correctly or not designed correctly to deal with credit derivatives, with the result that the words ‘off-balance sheet losses’ continue to cloud the reputation and integrity of the accounting profession.

Some argue that if risk is transferred around many financial institutions and not concentrated on one, then the financial markets can absorb shocks. One important contribution credit derivatives make to the financial world is that they transfer risk from regulated institutions to non-regulated entities. Hedge funds and pension funds, for instance, are not regulated in the same way as banks. In fact, hedge funds are really not regulated at all, though there is a growing army of people who say they should be. For a long period of time, pension funds were only lightly regulated, but this is changing. In the UK, for instance, a pension regulator was recently appointed to deal with insufficiently funded pensions. In broad terms, nevertheless, the regulatory and accounting requirements for hedge funds are a lot less than for banks. Banks take deposits from, and hold current accounts on behalf of, customers. These customers do not place money with their banks because they want to speculate on stock markets and bond prices, etc. They put the money on deposit for transactionary purposes. The consequences of a large retail bank collapse would be devastating, hence the need for the Basel rules. For hedge funds, however, investors understand that they are taking risks and achieving higher rewards. Therefore, there is no need for the bureaucratic requirements of Basel and the accounting treatment, as we shall see, is a lot more straightforward. For this reason alone, credit derivatives make an important positive contribution. Risk is transferred away from regulated institutions to entities that can accommodate risk better. But this is not the only advantage.

Apart from the regulatory advantage, hedge funds need to diversify their exposures. Hedge funds invest in a broad range of assets. It is important to do so because it allows for diversification, and therefore reduces the risk of concentration, i.e. putting too many eggs in one basket. It is easy, for instance, for a hedge fund to gain exposure to equities, foreign exchange, interest rates and commodities but, in the absence of credit derivatives, gaining exposure to the credit market is quite restricted. Unlike banks, hedge funds do not have a high street presence and therefore find it difficult to initiate loans. So, if the manager of a hedge fund believes that the yield on loans is too high, he can gain exposure by insuring bank loans through credit derivatives and make money if the premium received exceeds any bad debt losses experienced. Credit derivatives are just one way of gaining this exposure. Bonds and securitisation (to be discussed later) are another means, but by far the most efficient method is through credit derivatives.

1.4 CONCERNS OVER THE MISUSE OF FINANCIAL INSTRUMENTS

When the President of the European Central Bank, Jean-Claude Trichet, addressed the International Swaps Dealers Association (ISDA) in April 2007, he spoke of concern about the credit derivatives market. He warned that the markets may have become ‘excessively complacent’. If there was excessive complacency in the derivatives market, the consequences would be unimaginable given the size of the market. In 2006, for instance, the total outstanding volume of credit derivative contracts doubled to \$34,500 billion. Unlike ordinary derivatives, credit derivatives are difficult to both monitor and process. Occasionally, credit derivatives

are difficult to price, despite their high volume. For instance, sometimes those who buy credit derivatives (i.e. pay a premium and buy protection) are not 100% sure if the default language on the loan documentation is similar to the default language on the credit derivative documentation. This is because loan documentation is not always standardised, whereas credit derivative documentation is more or less standardised. The consequence of this is that banks may find they have paid a premium for a type of insurance protection only to find that when the loan defaults the credit derivative counterparty finds a clever lawyer who can wangle his way out of compensating the bank for the loss. There are other complications. Often, there is a high leverage factor between the amount of loans issued and the amount of credit protection in the markets on those loans. For instance, a company might have £10 million bonds in issue but there may be £70 million of outstanding credit derivatives on that bond. Why? Because not everyone who buys credit protection does so for hedging purposes. A hedge fund might have purchased, say, £8 million of the bonds but subsequently taken the view that the company is going to get into difficulty. Solution, buy £8 million worth of credit protection through a credit derivative and buy additional protection of, say, £12 million so that the hedge fund can profit from the company's expected demise. If the company did get into difficulty, a lot of complications could arise. Although the bond would fall in value, the fall might not be as great as one predicted because those who bought credit protection without owning the bond (speculators who want to benefit from the crash) would have to buy and deliver the bond to the credit derivative counterparty in order to receive compensation through the credit derivative. A further complicating factor is the conflict of interest the hedge fund has by owning the bond and having even more credit protection. A hedge fund might, in such circumstances, use any voting power contained in the bond to prevent a restructuring or loan negotiation since, although the value of the bond would fall, the value of the credit derivative would increase substantially, as would the overall profit of the hedge fund. This conflict of interest is partly the reason why regulators are insisting on more rules and better transparency from the hedge fund industry. An accountant could reasonably argue that all these problems are something that the trader and regulators have to worry about but not the accountant. This, however, is not entirely true. As we shall see later in this book, if an instrument is difficult to value then the International Financial Reporting Standards (IFRS), and their equivalent in the USA, will have difficulty in dealing with them. An asset or liability that is not shown on the balance sheet at the correct market value is known as 'off-balance sheet'. In such cases a creative accountant will find it easier to hide losses but can also enhance profits (by cashing in the credit derivative before maturity). Therefore, if a trader is offered the opportunity to buy a credit derivative, he might reason as follows: 'If I make a profit I can cash it in and my bonus goes up. If I make a loss the accountants will most probably record it incorrectly (due to its complex off-balance sheet nature) and therefore I can hide losses indefinitely, so my bonus won't suffer.' This line of argument is perhaps an oversimplification, but the important point to remember is that if a credit instrument is complex and cannot be valued, there are huge operational difficulties and opportunities to engage in creative accounting. Also, if the bonus system of the trader is incorrectly devised (as they often are), the temptation to exploit complex credit derivatives is very high.

So, should the accounting profession be worried about the increased use of complexity in the financial instruments market? The answer is a resounding yes. Many investment trusts, corporates, banks and hedge funds have found themselves in severe difficulty because they have purchased complex illiquid assets that they subsequently could not sell. Insurance companies were at one stage notorious for getting themselves involved in complex derivative

arrangements which they could neither understand nor handle. Indeed, it was the purchase of an insurance company and the inability of its new owner Warren Buffet to close out the loss-making risky derivative contracts that led to the famous description of derivatives as ‘weapons of mass destruction’. As long as entities are using these products, accountants and auditors will have difficulty in complying with the demanding international accounting standards.

In 2006, ABN Amro launched a credit derivative known as the Constant Proportion Debt Obligation (CPDO). From a marketing perspective, the product was easy to sell. It paid a handsome return. Investors could receive $\text{Libor} + 2\%$. The extra 2% was compensation for the risks undertaken (i.e. the risk that a basket of loans would suffer a bad debt experience). What made the product unusual was that a rating agency gave the product a triple-A rating, indicating to the investor that they were taking on very little credit risk. The result – an opportunity to invest in a product that was virtually risk-free yet paid a high return. The superficial conclusion is that the investor is getting a high return for nothing. In reality, the investor bore a lot more risk than the triple-A rating indicated. The product was quite complex. In essence, the investor was guaranteed a fixed return of $\text{Libor} + 2\%$. However, if the pool of loans had a bad debt experience, the issuer would simply make up the loss by widening the number of loans being protected. The additional fees from selling protection on the new loans would pay for the loss on the existing loans. Cynics of this product claim that it is more dangerous than entering into a casino and playing doubles or quits until you recover your initial losses. Did the people buying these products understand what they were buying? More importantly, given that the accountant must show these products at their market value on the balance sheet, are they doing it correctly? Is there a conflict of interest within the rating agency system that the regulators have stopped? Can the accountant deal with the off-balance sheet opportunities presented to creative accountants and traders who are bonus-hungry? In theory, there is nothing to worry about. The regulators, credit rating agencies and accountants have their reputations to protect. The reality is more worrying. Many of the aforementioned parties do not have the resources or experience to deal with complex financial instruments and often, those that do allow their fees and potential bonus payments to guide their decisions. Are they worried about ending up in court if the scheme blows over? Yes, they are, but they will often use the fact that the complexity of financial instruments and the even more demanding accounting standards make life very difficult for regulators, accountants and rating agencies. It is this complexity that protects wrongdoers. Very few prosecutors will be able to unravel the complexities of financial instruments or the accounting standards to make a compelling ‘beyond doubt’ prosecution case for the lay jury to understand.

1.5 COMPLEXITY

There are two important attributes that an accountant should understand about complexity. Firstly, banks can often use complexity to disguise the amount of fees that they earn. Simple products like bonds and shares earn only a very basic commission. It is quite easy for an investor to see how much a bank lays on in charges and the investor can quite easily obtain a competitive quote amongst banks or brokers. Complex structured products, including certain types of credit derivatives, however, are more difficult to compare and so the investor does not know how much he is paying in fees and of course the bank is under no obligation to disclose this. Seasoned travellers will know that if a hotel is going to charge exorbitant prices for telephone calls or the mini-bar they are unlikely to advertise the price they charge. The hotel

guest must wait until he checks out before the cost is revealed and then he is not in a position to do anything about it. Some banks operate on the same principle – except the amounts are substantially larger and an investor may have to wait years down the line before he realises he has paid too much. Again, the accountant must concern himself with these issues since, under IAS 39, most fees charged on structured products must be identified and released to the Profit & Loss account immediately. In practice, accountants may not be adequately equipped with the skills to do this, and the issuing bank is unlikely to assist. The last thing they want to do is reveal how much they have charged in fees. The risk that accountants may account for structured products and credit derivatives incorrectly is therefore quite high.

1.6 REVENUE RECOGNITION

A second feature of structured products is the reward-now/risk-later phenomenon. Consider a bond issued in 2007 which pays a high coupon but exposes the investor to a huge amount of leveraged risk. Say a bond is issued for \$10,000,000 where the coupon is Libor+3% but the investor may lose his principal if one of eight loans defaults in two years' time. Assume that the risk of default on each of these loans is 1%. The structurer is in effect offering insurance on eight loans and therefore receives approximately 8% in fees for insuring the loans. He passes only 3% to the investor and retains the remaining 5% as 'fees'. The leverage factor in this simple example is 8, which means that there is a high probability that the investor will lose his principal. However, if the risk is not communicated to the investor, he focuses on the 3% above Libor and of course the bank selling the product earns 5% so everyone is happy. Given the investors' naivety and poor ability to measure risk, the issuing bank might be tempted to increase the leverage further and earn more fees. For instance, if he increased the leverage to 10, then fees would jump from 5% to 7%. Therefore, the important lesson to bear in mind is that the structured product arrangers are, through the fee mechanism, encouraged to pass on a considerable amount of risk to the investor. The 'ideal' investor is someone who doesn't fully understand the risks involved and is also spending other people's money. The 'other people' rely on the accountant to expose the fees under IAS 39 and the risks under IFRS 7, but it is fair to say that accountants often don't fully understand the risks and therefore account for these products incorrectly.

1.7 INAPPROPRIATE REWARD INCENTIVES

One of the major driving factors behind the weak accounting standards is an inappropriate reward incentive. Clearly, it is desirable to have a bonus system that rewards risk, but problems do arise when banking executives keep the rewards themselves and pass on the risk either to their customers or to their shareholders. The incentive is to take on huge amounts of risk and to conceal what they are doing. Regulators are, of course, there to stop this and the accounting standards are there, in part, to disclose the risks that the shareholder is exposed to. However, as was revealed over 2007 and 2008, banking executives continue to take huge risks, retain fat bonuses and exploit the accounting standards to conceal their losses and hide their risks. The problem, known as the 'traders' dilemma', is not just confined to traders and banking directors, it is evident also in the investment fund industry. An example of how it applies in the fund industry is given below.

Example: Fund industry

Consider a fund manager who raises \$10,000,000 from shareholders and manages the fund on their behalf. In return, he is compensated with 2% of assets under management and 20% of any profits. Table 1.1 shows the return on the asset class that the fund manager has invested in, together with the fees that he earns.

Table 1.1 Unleveraged portfolio

	Funds raised from shareholders	\$10,000,000			
	Borrowings	\$0			
	Funds under management	\$10,000,000			
	Funds under management fee	2%			
	Performance fee	20%			
Year	Fund performance	Profit/loss of fund	Performance fee	Funds under management fee	Total to manager
1	10%	\$1,000,000	\$200,000	\$200,000	\$400,000
2	8%	\$800,000	\$160,000	\$200,000	\$360,000
3	9%	\$900,000	\$180,000	\$200,000	\$380,000
4	-15%	-\$1,500,000	\$0	\$200,000	\$200,000
5	12%	\$1,200,000	\$240,000	\$200,000	\$440,000
6	13%	\$1,300,000	\$260,000	\$200,000	\$460,000
7	-10%	-\$1,000,000	\$0	\$200,000	\$200,000
8	5%	\$500,000	\$100,000	\$200,000	\$300,000
9	-8%	-\$800,000	\$0	\$200,000	\$200,000
10	-12%	-\$1,200,000	\$0	\$200,000	\$200,000
Average return	1%			Average return	\$314,000
				Total return	\$3,140,000

The overall return for each of the first 10 years is shown in the second column. The average return over the 10 years, a mere 1%, is not great. In the first year, the fund manager becomes entitled to 20% of the fund's return, i.e. \$200,000, and an additional \$200,000 being 2% of the assets under management. The overall return over the 10 years is \$314,000, which isn't terribly disappointing given that the return on the portfolio was on average 1% a year and the manager took on no risk (apart from reputation risk).

Now consider the fees that the fund manager makes if he decides to 'gear up' the portfolio, i.e. borrow an additional \$10 million on top of the \$10 million originally raised from the shareholders. We assume in Table 1.2 that the fund manager borrows money at an interest rate of 5%.

The overall return on the asset class in percentage terms is the same as before, with the average return per year being 1%. This time the profit in the first year is 10% of the funds under management, i.e. \$2 million, less \$500,000 in interest charged on the loan (5% of \$10,000,000), giving a total profit of \$1,500,000. The fund manager becomes entitled to 20%

Table 1.2 Geared portfolio

	Funds raised from shareholders	\$10,000,000			
	Borrowings	\$10,000,000	Interest charge	5%	
	Funds under management	\$20,000,000			
	Funds under management fee	2%			
	Performance fee	20%			
Year	Fund performance	Profit/loss of fund	Performance fee	Funds under management fee	Total to manager
1	10%	\$1,500,000	\$300,000	\$400,000	\$700,000
2	8%	\$1,100,000	\$220,000	\$400,000	\$620,000
3	9%	\$1,300,000	\$260,000	\$400,000	\$660,000
4	-15%	-\$3,500,000	\$0	\$400,000	\$400,000
5	12%	\$1,900,000	\$380,000	\$400,000	\$780,000
6	13%	\$2,100,000	\$420,000	\$400,000	\$820,000
7	-10%	-\$2,500,000	\$0	\$400,000	\$400,000
8	5%	\$500,000	\$100,000	\$400,000	\$500,000
9	-8%	-\$2,100,000	\$0	\$400,000	\$400,000
10	-12%	-\$2,900,000	\$0	\$400,000	\$400,000
	1%	-\$2,600,000		Average return	\$568,000
				Total return	\$5,680,000

of this figure as well as 2% of the assets under management of \$20 million. The total return for year 1 is therefore \$700,000. The average return is now \$568,000, a considerable increase on the previous case where the fund manager did not borrow. The benefits of gearing to the fund manager should therefore be obvious. The increase in the fund manager's bonus does not arise because he has performed better. It arises because the fund manager has put the shareholders' funds at greater risk. What is interesting about the second fund is that because of the interest payments, the fund has actually made a loss for the investor of -\$2,600,000 over the 10 years, yet the fund manager still manages to extract a performance fee. The loss to the shareholder climbs to -\$8,280,000 when fees to the manager are taken into account. It becomes clear from the example that the fund manager has an incentive to gear up the portfolio as much as possible. If it is possible to hide this fact from the shareholder, the fund manager will clearly benefit.

Very often, the fund manager's ability to borrow money is restricted. However, fund managers can overcome this restriction by using derivatives instead of borrowing money. In Table 1.3 we illustrate how a fund manager uses a combination of derivatives and loans to leverage up the portfolio. As before, the fund manager is able to simultaneously make losses over the 10-year period and extract not only a management fee but also a performance fee.

Derivatives broadly come in two forms, linear and non-linear. Linear derivatives are where the trader agrees to buy an asset in the future. In Table 1.3, the fund manager has borrowed an extra \$10,000,000 and has used linear derivatives to increase the exposure by a further \$60,000,000. Although the funds under management fee remains at 2% of \$20,000,000, the performance fee is based on the total exposure, i.e. \$80,000,000. In the first year, for instance,

Table 1.3 Geared portfolio with derivatives

Year	Fund performance	Profit/loss of fund	Performance fee	Funds under management fee	Total to manager
Average return	1%	-\$25,400,000	Average return		\$892,000
			Total return		\$8,920,000

the performance fee is effectively 20% of \$4,500,000 and the profit of \$4,500,000 is calculated as follows: $\$80,000,000 \times 10\%$ less interest at 5% of total effective borrowings \$70,000,000. As before, the return to the shareholder is negative yet the fund manager receives a substantial fee along with a performance benefit. The problem, often referred to as the ‘traders’ dilemma’, is not confined to investment fund managers. Anyone in a bank who is on a bonus scheme is tempted to put the shareholders’ funds at greater risk as long as he can walk away from losses. Indeed, the ‘traders’ dilemma’ may explain why banks were more than willing to make sub-prime loans to credit-risky individuals – in the knowledge that if property prices rose the bankers would get an enhanced bonus and if property prices fell (as they did in America throughout 2007) they could walk away from the losses, though after receiving a substantial compensation. Treasurers of corporates are also in the same predicament. In the past, they could use derivatives to leverage up the assets of the corporate and generate huge losses. Derivatives also gave these corporates the opportunity to hide losses when they occurred. As always, these treasurers could jump ship along with huge bonuses well in advance of the entity

having to report losses to shareholders. At the start of 2007, the financial press reported on the huge bonuses that City executives had received. In London alone, the bonuses were estimated at STG 8.8 billion. One could conclude that they received these bonuses because of the substantial benefit that they provided for their customers. However, given that four months later the financial institutions awarding these bonuses were announcing substantial losses, one could conclude that some of the bonuses arose because the recipients were rewarded for exposing their employers, the banks, to huge risks. The argument for linking bonuses to losses is perhaps unfair, but few will deny that unless the bonus calculating procedure is sophisticated enough to measure and disclose risks, the banking crises of 2007 may resurface again and again, though in other forms, in the future – perhaps with more lethal consequences. The shareholders often cannot do anything about this and therefore have to rely on the regulators to remove the temptation for some City traders to reap huge bonuses while destroying shareholder value simultaneously. Shareholders will also have to rely on accountants to disclose the risks and losses in a timely fashion. It is obviously a good idea if the shareholder realises the risks when he makes the investment, rather than having to wait until huge losses amass before the risks are properly disclosed. Also, a shareholder would rather hear of losses when they occur and not have the bad news deferred. The accounting standards therefore have an important role in protecting shareholders from the ‘traders’ dilemma’. To some extent they have done so by forcing entities to calculate the loss to shareholders by awarding share option schemes – prior to IFRS 2 it was possible to hide losses. However, they have not coped sufficiently with the prospect that employees on share incentive schemes are tempted to make these incentives more valuable by making the shares more volatile (as discussed above). This represents, of course, a hidden loss to the shareholder.

1.8 PROTECTION FOR SHAREHOLDERS

One can clearly see the attraction of using leveraged financial instruments. What have the accountants and regulators done to protect the investor from such losses? From a regulatory perspective there are a number of rules. Basel 2, for instance, indirectly protects shareholders by forcing banks to measure and disclose the risks that they are taking on. This is known as the Pillar 3 requirement. The benefit for the regulators is that if shareholders see that banks are taking on too much risk they will abandon the shares, causing problems for the bonuses of the bank’s directors. Of course, the primary role of the Basel committee is to prevent banks from going bankrupt. By forcing banks to disclose the risks they undertake, the committee ends up protecting shareholders.

As far as the accounting standards are concerned, it would be very obvious from any annual report if a fund manager or company decided to gear up its portfolio through borrowings. Under IAS 32.11(a), for instance, the term ‘liability’ is defined as an obligation to deliver cash in the future. Virtually all loans would meet this definition. The use of derivatives is, of course, covered under IAS 39. Although IAS 39 was an unwelcome innovation for many accountants, on the grounds that it is difficult to implement, it did constrain treasurers, traders and bank directors from taking on too much risk and hiding losses. IFRS 7, the disclosure standard for financial instruments, achieves the same purpose because entities are required to disclose how financial instruments alter the risk profile of the entity.

1.9 MEASURING THE ‘TRADERS’ DILEMMA’

The above example should reveal that when there is ‘optionality’ in the bonus structure, i.e. the ability to walk away from losses, there is an incentive for managers/traders to take on more risk. However, the use of optionality in bonuses means that there is also a huge transfer of wealth from the shareholder/investor to the fund manager or trader. In certain bonus systems, i.e. share incentive schemes, the transfer of wealth from shareholder to employee is recorded as an expense through the Profit & Loss account. IFRS 2 (*Share Based Payments*), for instance, now requires directors (of corporates as well as banks) to estimate the value of the transfer, i.e. the loss to the shareholder, and treat this as an expense to the Profit & Loss account. However, there are certain other types of bonuses where optionality is present but not captured under IFRS 2. Hedge fund bonuses, for instance, are as dangerous and perhaps even more costly than share incentive schemes but there is no requirement to disclose the transfer of wealth or to disclose the incentive to increase the risks that the investor/shareholder faces.

What is even more surprising, however, is that the regulators, whose responsibility is effectively to prevent banks from taking on too much risk, ignore, in their calculations, bonus schemes that encourage traders and bank directors to take on too much risk. One could argue that the technology to measure this risk is not available, but that is not so. The Black–Scholes model, used by option traders to price call and put options, can easily be adjusted to identify and measure the perverse incentive of many bonus schemes operating within financial institutions.

Table 1.4 illustrates how the Black–Scholes model prices a call option. A trader has the right but not the obligation to buy a share for 98, its current market price, in approximately two-and-a-half months (0.2 of one year). Obviously, if during this period the share price rises, the trader will buy it at the agreed exercise price of 98. If the share price falls he can walk away from the transaction without incurring a loss.

Table 1.4 Black–Scholes model

Asset price (S)	98	98	98	98
Strike price (X)	98	98	98	98
Time to maturity (T)	0.2	0.2	0.2	0.2
Risk-free rate (r)	10%	10%	10%	10%
Volatility (σ)	20%	30%	40%	50%
Value				
d1 numerator	0.02400	0.02900	0.03600	0.04500
d1 denominator	0.08944	0.13416	0.17889	0.22361
d1	0.26833	0.21615	0.20125	0.20125
Delta	0.60578	0.58557	0.57975	0.57975
$N(d2)$	0.57099	0.53267	0.50892	0.49108
Exponential	0.98020	0.98020	0.98020	0.98020
Call	£4.52	£6.22	£7.93	£9.64

What the table reveals is that the value of the option increases as the underlying volatility increases. When the volatility is 20% the value of the option is only £4.52. When the volatility is 50% the value climbs to £9.64. However, the conclusion should be obvious, if a bonus scheme allows a trader to participate in the gains but walk away from the losses, it encourages the trader or bank director to make the portfolio more volatile. Clearly, the regulators should

penalise banks if they implement incentive schemes that encourage this type of risk. The figures of £4.62 and £9.64 represent the loss of wealth from the shareholder to the trader/fund manager. If the bonus scheme comes under IFRS 2 (*Share Based Payments*) then the cost of the option is correctly recognised as an expense in the Profit & Loss since it is, in effect, a loss to the shareholder. As mentioned, many bonus schemes have ‘optionality’ but are not captured by IFRS 2 and so the shareholder is losing out in two ways. He is clearly losing the value of the option, but perhaps more importantly in today’s environment, the bonus scheme encourages management to take a lot more risk with the shareholder’s money.

In the case of Northern Rock, one could argue that the bonus scheme of its directors may have contributed to the problem. If the directors are allowed to participate in profits but walk away from losses there is a very clear incentive to take on as much leverage as possible. Leverage, of course, increases volatility and volatility increases the value of bonuses. It could possibly explain why banks are so willing to take on huge risks at the expense of their shareholders. Also, financial institutions may be tempted to use complex structured products to achieve this leverage, perhaps knowing that the regulators cannot measure the risk of complex products and the accountant cannot deal with it properly under the accounting standards.

Case Study: Freddie Mac accounting manipulation

In a court case against the former Chief Executive of Freddie Mac, Leland Brendsel, Warren Buffet revealed that he had considerable worries about how Freddie Mac was run.³ Brendsel was accused of accounting manipulation and running Freddie Mac in a reckless manner. Buffet outlined two areas of concern. Firstly, he was worried about the investments that Freddie Mac was making. In many cases the risks were excessive and sometimes speculated in areas that had nothing to do with the underlying business. The second concern was the extent to which Freddie Mac was manipulating earnings in order to conceal the risks and losses that they were making with some of these investments.

There is little doubt that bonuses contributed to the problem. According to *Mortgage News Daily*,⁴ bonuses were at the centre of the motivation for accounting manipulation, not only in Freddie Mac but also its sister company, Fannie Mae. In 2006 *Mortgage News Daily* observed:

‘Last month the Office of Federal Housing Enterprise Oversight (OFHEO), the division of the Department of Housing and Urban Development charged with regulating Fannie Mae and its sister organization Freddie Mac, issued a scathing report on Fannie’s financial manipulations, stating outright that some of the motivation was to protect those executive bonuses.’

Both companies were brought down by the 2007/2008 credit crises, and are now in existence only because of subsidies that the US government has given (by way of guarantees). As mentioned elsewhere in this book, poorly devised bonus schemes encourage risk-taking and put pressure on directors to manipulate the accounting standards in order to conceal these risks and losses.

Off-balance sheet

According to the OFHEO,⁵ Freddie Mac wanted to portray a ‘Steady Freddie’ image, i.e. that its earnings were not volatile but instead fairly steady, growing at a constant rate per annum. Obviously, if a bonus system rewards excessive profitability then the temptation is to take on as much

³ David S. Hilzenrath, ‘Buffet testifies that he saw early signs of Freddie Mac’s woes’, *Washington Post*, 31 October 2007, p. D03.

⁴ http://www.mortgagenewsdaily.com/6152006_Fannie_Mae_Bonuses.asp

⁵ OFHEO Freddie Mac Report 2003.

Case Study: (Continued)

risk as possible and then use accounting manipulation to smooth out earnings. That means in good years hiding profits and in bad years releasing those profits. The two creative accounting methods often used to achieve this are ‘off-balance sheet’ tactics, i.e. not reflecting assets at their true value on the balance sheet, and the creation of fictitious provisions (referred to by Arthur Levitt – formerly Head of the SEC – as ‘cookie jar’ reserve accounting). The ability of entities to engage in this form of creative accounting is now largely curtailed by IAS 37.

Freddie Mac and FAS 133, Accounting for Financial Instruments and Hedging

There is little doubt that the emergence of FAS 133 in 2001 caused problems for Freddie Mac. Certain financial instruments which were kept off the balance sheet prior to 2001 started to appear on the balance sheet since FAS 133 requires that entities show all derivatives on their balance sheet at market value. Also, there is evidence that Freddie Mac was using these derivatives for speculative purposes and therefore could not avail itself of the hedge accounting rules that allow entities to delay recognition of the profit or loss on derivatives. The result was that Freddie Mac had to reveal the extent to which it was speculating and was unable to maintain the pretence that its earnings were steady and non-volatile.

Needless to say, Freddie Mac objected to FAS 133, arguing that it was too complex and cumbersome and decided to ‘transact around FAS 133 since it did not fully reflect the economic fundamentals of the company’s business’. There is little doubt that some of these criticisms were true, but opponents of FAS 133 and its European equivalent IAS 39 fall into two camps, those who find it difficult to implement because of its sheer complexity and those who do not want to give up the advantages of manipulating their bonuses through off-balance sheet accounting. The OFHEO report suggests that many Freddie Mac employees in the accounting side did not know how to implement FAS 133 correctly, and also that Freddie Mac went to extraordinary lengths to continue to keep items off the balance sheet despite the FAS 133 requirements.

Classification

One of the first tasks that Freddie Mac had to deal with, on implementing FAS 133, was to smooth out the profits. Freddie Mac had used derivatives and these had made a substantial amount of money (possibly from speculating). By smoothing these profits, i.e. recognising small profits over a period of years rather than all at once, Freddie Mac would be able to disguise the volatility of its earnings. The way that Freddie Mac chose to do this was by reclassifying assets in the ‘Held to Maturity’ portfolio to the ‘Trading’ portfolio. As stated earlier in this book, there is always a risk that assets shown at cost on the balance sheet contain unrecognised losses. Freddie Mac therefore effectively decided to recognise these losses to coincide with the recognition of the derivative gains, hence the Profit & Loss account appeared smoother. In essence, Freddie Mac exploited the cherry-picking opportunities inherent in the accounting standards. There is some justification for Freddie Mac’s activities. One technical weakness of FAS 133 is that it is clumsy and therefore produces unintended artificial volatility in the Profit & Loss account. However, the OFHEO were of the opinion that Freddie Mac’s motivation was to manipulate bonuses and to conceal volatility.

Another technique that Freddie Mac used to conceal volatility was to classify assets from ‘Trading’ to ‘Available for Sale’. Trading assets are shown on the balance sheet at market value with any changes in market value going through the Profit & Loss account. Although the assets are shown on the balance sheet at fair value, the change in value does not go through the Profit & Loss account and so although the assets appear on the balance sheet, the advantages of ‘off-balance sheet’ are maintained. The ‘Available for Sale’ category allows entities to conceal any gain or loss on a financial instrument into ‘Equity Reserve’ – the result being that an entity could suffer huge losses on certain complex products (like securitisations) and conceal their losses. Also, by sidestepping the

Profit & Loss account the real volatility of the entity is concealed. Freddie Mac's interpretation of the accounting standards was, however, flawed. It is not possible to transfer assets from the 'Trading' portfolio to the 'Available for Sale' portfolio and from the 'Held to Maturity' portfolio to the 'Trading' portfolio in the manner that Freddie Mac did. Freddie Mac appeared to claim that it sold the assets and then bought other assets and so there was not a change of classification, but the sale of one asset and the purchase of another. However, FAS 125, *Accounting for Transfer of Assets and Extinguishment of Liabilities* makes clear when an asset is sold and Freddie Mac did not meet the requirements. Therefore, the transfer between the portfolios was inappropriate. IFRS has similar provisions to the American accounting standards. Under IAS 18, *Revenue Recognition* control must pass and beneficial (or economic interest) must pass before a true sale can take place. This did not happen with Freddie Mac, so the accounting treatment was inappropriate.

Swaptions

Freddie Mac's treatment of Swaptions in its annual report is revealing and illustrates why financial institutions across the world prefer complex financial instruments that are difficult to value, possibly loss-making even when purchased and contain huge operational risks, all to the detriment of the shareholder and (in Freddie Mac's case) to the detriment of the US taxpayer as well. The preference for complex products arises because they are illiquid, difficult to value and therefore traders can invent valuation techniques and assumptions that maximise their bonuses.

An employee within Freddie Mac was able to convince the accountants and auditors that certain swaps were illiquid and therefore needed a special mathematical model for their valuation. Often, however, these mathematical models require certain variables such as volatility estimates to value the derivatives. Different data providers often provide different estimates on the same variables, allowing Freddie Mac and others to choose the most 'suitable' variable. It appears that Freddie Mac changed the inputs to suit its circumstances and achieve its results. In short, it decided what the profit level should be and then worked out what valuation was necessary to achieve those profits. It then picked the assumptions that achieved these valuations. It is always dangerous for external auditors to allow their clients to change their valuation techniques for this reason, even if the client convinces the auditor that the revised valuation methodology is more sophisticated and more correct.

As the OFHEO report observed:

'It is equally clear that the [revised] valuation policy was implemented with the advice and concurrence of Arthur Anderson. Interviews indicate that the [revised] approach was presented to Arthur Andersen at a December 20, 2000 SFAS 133 transition meeting, and that Arthur Andersen indicated that it could "sign-off" on such a model provided it had intellectual merit.'

The valuation requirements for financial instruments with quoted prices are set out in SFAS 107, which states that quoted prices must be used where available. 'Accordingly, only in those circumstances where there are not quoted prices for the financial instruments is management permitted to rely on its best estimate of fair value.' Freddie Mac never concluded that market volatility quotes or dealer quotes were unavailable, only that the quotes did not reflect a price at which Freddie Mac believed it would be able to transact. This is not a permitted conclusion under SFAS.

