

Derivatives

- 7.1 Some commentators have claimed that many of the problem areas in international finance arise from the use of highly complex, unrestricted, derivative products.¹ The Committee noted that hedge funds, in particular, are active in the use of derivative products to increase their leverage. Consequently the Committee examined in some detail the nature and uses of derivatives.

Definition of derivatives

- 7.2 In their simplest form derivatives are products which 'derive' their value from another source, e.g. a bond linked to changes in the \$US exchange rate and whose value varies with that rate. Frank Partnoy of Morgan Stanley (a former derivatives trader) described them as follows:

A derivative is a financial instrument whose value is linked to, or derived from, some other security, such as a stock or bond. For example, you could buy IBM stock; alternatively, you could buy a 'call option' on IBM stock, which gives you the right to buy IBM stock at a certain time and price. A call option is a derivative because the value of the call option is 'derived' from the value of the underlying IBM stock. If the price of IBM stock goes up, the value of the call option goes up, and vice versa.²

- 7.3 A report by the Parliamentary Joint Committee on Corporations and Securities in 1995 defined derivatives more explicitly:

1 For example: Sydney Futures Exchange Limited, *Surviving with Derivatives: What Directors Need to Know*, June 1995, p.1.

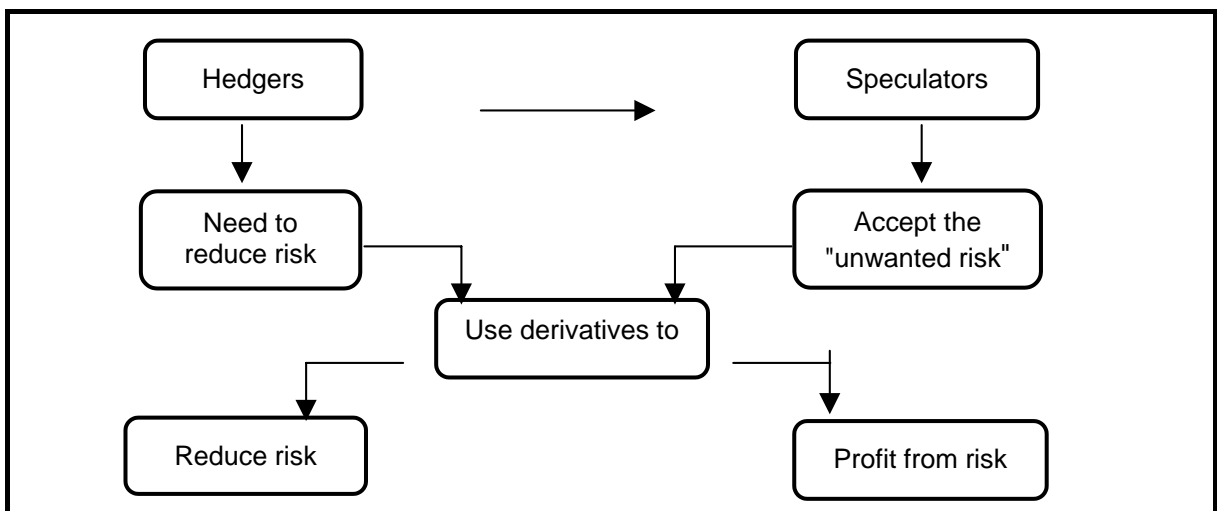
2 Frank Partnoy, *F.I.A.S.C.O., Blood in the Water on Wall Street*, W.W.Norton & Co., 1997, p.31.

Derivatives are financial products which derive changes in their value from the price of an underlying commodity, security, currency, cash flow or index. The main types of derivatives are futures, options and swaps³, although the range of derivatives products is continually expanding and many derivatives combine features of more than one type.⁴

In fact, the types of derivatives, and their complexity, are only limited by the imagination of the traders who invent them.

- 7.4 A paper by the Sydney Futures Exchange commented that fundamentally, derivatives were developed for the purpose of risk management. They facilitate the transfer of risk from those seeking to minimise their risk, to those who are prepared to accept the unwanted risk in the hope of a good return on their investment.⁵

Figure 1: Derivatives facilitate the transfer of risk



Source Reproduced from a diagram in Sydney Futures Exchange Booklet, *Demystifying Derivatives*, Sydney Futures Exchange, Sydney, 1998, p.4.

- 7.5 In a derivative contract, the medium and rate of repayment are specified in detail. This may involve currency, securities or a physical commodity

3 Futures and forward rate agreements involve an agreement to buy or sell an asset at a given price on a future date. Options contracts give one party the right (but not the obligation) to buy or sell an asset in the future. Swaps involve an interest rate or currency exchange, e.g. an interest rate swap may oblige one party to pay a fixed interest rate to another party in return for a floating interest rate.

4 Parliamentary Joint Committee on Corporations and Securities, *Report on Derivatives*, 20 November 1995, para.1.3, pp.1-2.

5 Sydney Futures Exchange Booklet, *Demystifying Derivatives*, Sydney Futures Exchange, Sydney, 1998, p.4.

such as gold or silver. The actual amount to be repaid may be linked to the movement of interest rates, stock indexes or a foreign currency. A contract may also include an element of 'leverage', which serves to multiply the impact (whether it be good or bad) of the derivative contract on the repayment obligations.⁶

- 7.6 The various types of derivatives can be separated into two broad categories:
- Exchange-traded derivatives are, as their name suggests, traded through the stock markets and consequently are subject to the rules and disciplines of those markets. They generally fall within very standard types.
 - Over-the-Counter (OTC) derivatives, which are not standardised but custom-made for the customer and are not traded through stock exchanges. They are also not subject to the controls which apply to exchange-traded products.
- 7.7 An important feature of the trade in derivatives is that as their complexity grows, it becomes more and more difficult to determine accurately the key value of any particular derivative – its *present value*. This is the value which a product has for an investor now. It is defined as “The current value of a future cash flow discounted at an appropriate interest rate”⁷. Those traders who are particularly skilled at calculating present values accurately and quickly for complex derivatives, are highly valued by their employers.

Difficulties with derivatives

- 7.8 The more complex OTC derivatives have been the cause of some disastrous losses in foreign-exchange markets in recent years. A particular problem is the difficulty faced by investors in assessing the present value and the level of risk associated with such complex products. There is ample evidence in the literature that products are deliberately fashioned to confuse the buyer and to hide the high level of risk attached to them.
- 7.9 An extra element of confusion is introduced into the market by the practice of slicing an investment into 'strips' – e.g. 10 strips of \$10 each from a \$100 investment. Each strip is then combined with one or more strips from other investments and each of the composite packages is sold separately.

6 Pennsylvania Securities Commission, A Brief Guide to Financial Derivatives, 27 July 1999, p.1. http://www.state.pa.us/PA_Exec/Securities/corpfm/derivbro.html

7 Reuters Limited, *Reuters Glossary of International Financial and Economic Terms*, Edited by the Senior Staff of Reuters Limited, 3rd Edition, Longman Group Limited, Essex, UK, 1994, p.99.

- 7.10 In the face of this type of complexity, investors tend to rely on the advice of ratings agencies, such as Standard and Poor's or Moody's, which purport to evaluate risk levels and assign an appropriate rating to each type of investment. The process is not, however, as clear cut as it first appears. A practice has grown up in the ratings agencies of allowing traders to raise the rating assigned to their product by including a small strip of a highly rated product: such as a AAA rated US Treasury Bond. Using this technique it has been possible for traders to get a AAA rating for derivatives which consist mainly of highly speculative and volatile investments.
- 7.11 The advantage for some companies which utilise the more complex types of derivatives, lies in the fact that, in many cases, the obligations entered into do not have to appear on their balance sheets. It is therefore possible to disguise highly risky activities as something much more innocuous and even to hide losses on these activities for considerable periods of time.
- 7.12 Some of these extremely complex derivatives have been the source of such disruption in the marketplace (and the cause of such huge losses to some investors), that it is worthwhile to consider in some detail how one of these products works. The following extract is taken from the story of a Wall St derivatives trader:

... early on I learned about one derivatives trade that I think exemplifies the group's business. This particular trade, and its acronym, were among the group's most infamous early inventions, although it is still popular among certain investors. The trade is called PERLS.

PERLS stands for Principal Exchange Rate Linked Security, so named because the trade's principal repayment is linked to various foreign exchange rates, such as British pounds or German marks. PERLS look like bonds and smell like bonds. In fact, they *are* bonds – an extremely odd type of bond, however, because they behave like leveraged bets on foreign exchange rates. ... instead of promising to repay the investor's principal at maturity, the issuers promise to repay the principal amount multiplied by some formula linked to various foreign currencies.

... With PERLS, investors who were not permitted to bet on foreign currencies could place such bets anyway. Because PERLS looked like bonds, they masked the nature of the investor's underlying bet. For example, one popular PERLS, instead of repaying the principal amount of \$100, paid the \$100 principal amount multiplied by the change in the value of the US dollar, plus twice the change in the value of the British pound, minus twice the change in the value of the Swiss franc. ... If you

understood what you were buying, you hoped to receive a lot more than \$100, although you knew you could receive a lot less. If the foreign currency rates went the wrong way – if the dollar and pound zigged while the franc zagged – you could lose every penny.

In a clever but somewhat dubious marketing pitch for PERLS, ... salesmen often bragged that the investor's "downside was limited to the size of the initial investment". These words appeared as boilerplate throughout Morgan Stanley's marketing documents and almost always generated snickers from the salesmen. One of the ironic selling points of PERLS – and many other derivatives my group later sold – was that the most a buyer could lose was everything.⁸

- 7.13 The problems presented by this type of activity were serious enough to compel the Sydney Futures Exchange to state:

Wide publicity has been given to the dramatic losses in derivative markets by large overseas corporations, government bodies and ... the losses that led to the downfall of the British bank, Barings. These losses have served as a reminder that derivatives markets, useful as they are as risk management tools, are a source potential of risk for all those who deal in them if they are not carefully monitored, controlled and managed.⁹

- 7.14 The Treasury in its submission, acknowledged these problems. It noted that increasing complexity and uncertainty in the market had led to an inability on the part of investors to properly evaluate the risks inherent in their decisions:

The recent crises have revealed shortcomings in the way investors and creditors have evaluated and priced the risk of their investment and lending decisions. In particular the absence of adequate, reliable and timely information is now widely accepted as one of the factors which exacerbated the severity of the East Asia financial crisis.

The increasing sophistication and integration of financial markets over the last two decades, such as the growth of derivative markets, have compounded the difficulty faced by the market in addressing information requirements.¹⁰

8 Frank Partnoy, F.I.A.S.C.O., *Blood in the Water on Wall Street*, W.W.Norton & Co., New York, 1997, pp.55-57.

9 Sydney Futures Exchange Limited, *Surviving with Derivatives: What Directors Need to Know*, June 1995, p.1.

10 Submission No.13, The Treasury, p.2.

7.15 There are three areas which seem to be at the heart of most derivative-related difficulties:

- anything which can be used to reduce risk can, if misused, increase that risk;
- the inclusion of a leverage provision in derivative contracts multiplies the impact of market changes. Not all of these risks are revealed in public accounting records; and
- complexity – there is a constant need for users of derivatives to keep up-to-date with the latest products and techniques. If they do not, they are dependent on the skills and integrity of the traders selling the product.¹¹

7.16 The problem of evaluating risk in connection with derivatives was brought out by the Association of Superannuation Funds of Australia. The Association commented that it is difficult to determine the real extent of exposure to market fluctuations when derivatives are used:

It comes back to the nature of some of the derivative instruments and a matter of pricing them. The exposures through derivatives can be more problematic to report on a continuous basis because their value is contingent on developments. You may have a very small exposure, given a certain level of pricing in either a currency or a commodity, but if there are adverse developments, that exposure can change.¹²

7.17 The trend towards more and more complicated derivatives is likely to continue. When this likelihood is combined with the growing body of evidence showing that investors are often not fully aware of what they are buying, it is clear that there is a need for more transparency in this area. The literature indicates that many of the instances of huge losses by investors could have been avoided if they had been clearly aware of the nature of the product offered to them.

7.18 Treasury, however, sounded a cautionary note when it commented that since the use of derivatives tended to shift transaction risk to those more able to bear it, the increase in derivatives use is likely to help stabilise the international finance system rather than destabilise it.¹³

7.19 The SFX in its guide to Directors on derivatives, added similar comments:

Every academic study, and an exhaustive US Government inquiry conducted by the Brady Commission after the stock crash of 1987, has concluded ... : that futures and other derivative markets provide a safety valve in the event of a financial crisis; they are an escape hatch that allows fund managers to adjust their exposure to

11 Intellishare, *Derivatives Primer*, 28 June 1999, p.5. <http://www.intellishare.com/derivtxt.htm>

12 Evidence, Association of Superannuation Funds of Australia, 22 March 2000, p.110.

13 Submission No. 13, The Treasury, p.15.

a rapidly moving market. Without them the crash of 1987 would almost certainly have been much worse.¹⁴

- 7.20 The solution would therefore seem to lie in greater transparency in the derivatives trade. If traders were required to disclose complete information about their product, many of the current problems would be eliminated.

Size of the derivatives market

- 7.21 The growth in international financial transactions in the last twenty years has been extraordinary. The Treasury, referring to a study by the McKinsey Global Institute, observed that the stock of all financial assets traded on global markets increased from an estimated \$US 5,000 billion in 1980, to \$US 35,000 billion in 1992. It is expected to reach about \$US 83,000 billion this year. To put these totals in perspective, the 1992 total is equivalent to twice the GDP of the OECD countries at the time and the projection for 2000 would be three times the OECD's GDP.¹⁵
- 7.22 In this rapid increase in transactions, the fastest growing products have been interest rate and currency derivatives. These two now make up 98% of the total.¹⁶ The following table, provided by the Treasury¹⁷, covering a selected range of derivatives, gives a guide to the rate of growth in the use of derivative instruments:

Table 2: Selected Financial Derivatives Markets (\$US billion, notional amounts outstanding at year end)

Instruments	1986	1988	1990	1992	1998
Exchange Traded Instruments	583	1307	2292	4641	13549
Interest rate options and futures	516	1175	2054	4288	12305
Currency options and futures	49	60	72	105	57
Stock index options and futures	18	72	166	248	1186
Over-The-Counter Instruments	500	1330	3451	5346	50997
Interest rate swaps	400	1010	2312	3851	--
Currency and interest/currency	100	320	578	860	--
Other	--	--	561	635	--
Total	1083	2637	5743	9987	64546

Source: Bank of International Settlements Annual Reports, various.

14 Sydney Futures Exchange Limited, *Surviving with Derivatives: What Directors Need to Know*, June 1995, p.11.

15 Submission No. 13, The Treasury, p.14.

16 Submission No. 13, The Treasury, p.14.

17 Submission No. 13, The Treasury, p.15.

7.23 The Treasury reported that the 'notional value' of outstanding contracts in 1995 amounted to about \$US 57 trillion and by 1998 it was around \$US 86 trillion. These figures were qualified by the explanation that the 'notional principal values' quoted represent the face value of the contracts. If there is an adverse change in the value of a derivative, it is usually only a fraction of the face value which is subject to a 'margin call'¹⁸, not the full amount:

Thus the actual international financial flows, the credit exposure, and the money at risk in these derivative contracts, is typically only a few per cent of the 'notional principal' value.¹⁹

7.24 Even at a few per cent of the notional principle value, however, the total amount of money involved is still huge. It should also be remembered that it was failure to meet margin calls for that small percentage of their debt which brought down Barings Bank and Long Term Capital Management.

Hedging and speculating with derivatives

Hedging

7.25 Hedging is simply the process of preventing or minimising loss by compensating in one market for potential losses in another. It is used as an insurance technique, seeking protection against future price fluctuations. It is commonly used as protection against fluctuations in currency exchange rates or commodity prices.²⁰

7.26 There are many different ways in which hedging can be undertaken. A simple example is when a trader wishes to enter into a contract to sell currency at the current (or spot) rate at a specified date in the future. This insures him against any fall in the currency in the meantime – it also means, of course, that he forfeits any profit should the currency rise. It is, however, possible for him to use an options contract. This gives him the

18 Each buyer and seller must maintain a margin account with their brokerage firm or exchange clearing house. The deposit in this account is known as the 'initial margin. Each day when a trader's transactions are balanced, any loss sustained is deducted from the margin account. If that account falls below the 'minimum maintenance margin', the trader will receive a 'margin call' to restore the minimum margin. [Summarised from *Reuters Glossary of International Financial and Economic Terms*, Third Edition, 1994.]

19 Submission No. 13, The Treasury, p.15.

20 Edna Carew and Will Slatyer, *FOREX: The Techniques of Foreign Exchange*, Allen & Unwin, Sydney, 1989, p.124.

same arrangement but with an option over whether or not he chooses to complete the contract when the specified day arrives.

- 7.27 A second example is a swap arrangement. If a trader has too much of his debt in contracts with flexible exchange rates, he may choose to swap some of those contracts for others carrying a fixed exchange rate. He has then ensured that if interest rates increase, his loss has been minimised. Similar arrangements are often entered into using swaps between various currencies.
- 7.28 Hedging arrangements are very flexible and transactions may be hedged and then unhedged a number of times – depending on how high the trader judges the risk factor to be.

Speculating

- 7.29 The Reuters Glossary defines speculation as:

The act of taking a ... position in the market in anticipation of a favourable move, which should result in a gain when the position is covered. Also refers to investors' general belief that a certain specific event may occur.²¹

- 7.30 Speculative investments can be distinguished from hedged investments in that they are not linked to a commercial transaction. They are normally made on a short-term basis and carry an above-average risk level. To offset that increased risk level, the returns are also high if the investment is successful.

- 7.31 In currency markets, large scale speculation can be dangerous to the stability of the market. The Reserve Bank's submission, referring to the activities of hedge funds at the beginning of the Asian Crisis, said:

In fact, some might regard the actions of hedge funds ... as the ultimate in destabilising behaviour: they came into a market that was already under intense pressure and sold a large volume, pushing the currency over the brink.²²

- 7.32 Similar activities by the hedge funds in the UK in 1992 and Australia in 1998, underline the dangers posed by the rapid movement of large scale speculative investment flows.²³
- 7.33 The Reserve Bank made it clear that firms simply positioning themselves to take advantage of anticipated market developments are carrying out a

21 Reuters Limited, *Reuters Glossary of International Financial and Economic Terms*, Edited by the Senior Staff of Reuters Limited, 3rd Edition, Longman Group Limited, Essex, UK, 1994, p.118.

22 Submission No.7, Reserve Bank of Australia, p.3.

23 Submission No.7, Reserve Bank of Australia, pp.1, 3-4.

perfectly legitimate business activity. The problems arise when that firm (or firms) tries to influence the course of those developments. The Reserve Bank, referring again to hedge funds commented:

Their ability to do this reflects not only the size of their position-taking relative to some of the markets in which they operate, but their influence on the behaviour of other market participants because of the reputation they enjoy.²⁴

Conclusions

- 7.34 In relation to derivatives, the Committee noted that the solution to many of the problems lies with the participants themselves – making sure that they fully understand the financial instruments they are buying; insisting on receiving complete information before they proceed and ensuring that their risk level is contained within feasible limits.
- 7.35 Government could assist this process, the Committee said, by requiring greater disclosure from traders offering complex products. The general issue of greater disclosure was addressed directly by the Committee in the chapter on Transparency and Information Requirements (Chapter 4).
- 7.36 The main issue of concern to the Committee is the problem of the unregulated, tailor-made for the client product, which stands outside the present legislative requirements. The Committee said that it is difficult to see how these products could be regulated when they are never involved in the regulated sectors of the market. In fact, many of them are deliberately designed to *ensure* that they are not subject to prudential regulation.
- 7.37 The Committee considers that the rapid changes occurring in the area of international financial markets suggest that the whole subject should be addressed again in the next Parliament.

Recommendation 7

7.38 The Committee recommends that:

Given the rapid growth in derivatives trading, the Treasury, the Australian Stock Exchange and the Sydney Futures Exchange should set up a working group to ensure that proper transparency regarding derivatives exposure is maintained by major public companies and financial institutions.

David Hawker MP
Chair
1 March 2001

