



DERIVATIVES: ARE THEY WEAPONS OF MASS DESTRUCTION?

Yasoda Priyankari Wijerathna

yasoda.wijerathna@kdu.ac.lk, yasoda.9010@gmail.com.

Faculty of Law, General Sir John Kotelawala Defence University, Rathmalana, Sri Lanka.

ABSTRACT

The growth of the amount of financial derivatives during the last fifteen years has been phenomenal. With the total notional amounts outstanding on over-the-counter derivative contracts amounting to around nine times global GDP by the end of June 2012, they represent by far the largest financial transaction in the world. Even though, these instruments are used to deal with the inherent risk associated with finance, they can be the cause of destruction if not used cautiously. As once pointed out by Warren Buffet, “Derivatives are financial weapons of mass destruction”. In this context, after an analysis of the nature and the types of derivatives, the article seeks to evaluate whether these financial instruments, derivatives, are in fact a cause of financial destruction than a cause which brings forth financial benefits, with reference to several controversial derivative disasters. This doctrinal research was conducted through the traditional black letter approach and the critical analysis method. Qualitative data were gathered through a review of primary sources, statutes and secondary sources, books with critical analysis, research journals, working papers, corporate and policy reports and web sources. In the light of the derivative disasters, 2008 global recession, it is concluded that Buffett’s statement was correct to a great extent since derivatives are financially lethal in the absence of an effective risk control mechanism. However, it is stated that these derivative disasters could have been prevented with the presence of proper regulations, adequate corporate internal control systems and also with a sound understanding of the nature of the derivatives one deals with.

KEY WORDS: *Financial derivatives, mass destruction, derivative disasters*

Corresponding Author: Yasoda Priyankari Wijerathna, email: yasoda.wijerathna@kdu.ac.lk, yasoda.9010@gmail.com

1 INTRODUCTION

The growth of the amount of financial derivatives during the last fifteen years was phenomenal. With the total notional amounts outstanding on over-the-counter (OTC) derivatives contracts amounting to around nine times global GDP by the end of June 2012, they represent by far the largest financial transaction in the world. Even though, these instruments are used to deal with the inherent risk associated with finance, they can be the cause of destruction if not used cautiously.

As Warren Buffet once pointed out in the annual report of Berkshire Hathaway Inc. (2002)

“Derivatives are financial weapons of mass destruction. Derivatives generate reported earnings that are often wildly overstated and based on estimates whose inaccuracy may not be exposed for many years. Large amounts of risk have become concentrated in the hands of relatively few derivatives dealers...which can trigger serious systemic problems”.

In this context, the article seeks to examine, with reference to several controversial derivative disasters, whether these financial instruments, derivatives, are in fact a cause of financial destruction or whether they are a cause of financial benefits,.

2 METHODOLOGY

Following the legal research methodology this doctrinal research was conducted using the traditional black letter approach and the critical analysis method. Qualitative data for the research was gathered through a review of primary sources; statutes and secondary sources; books with critical analysis, research journals, working papers, corporate and policy reports. Further reference was made to web based sources for the purpose of gaining current awareness. Initial part of this research, which sets up the background for the analytical discussion, is expository as it discusses about the nature and types of derivatives. In the latter part of the research, the data gathered regarding several key derivative disasters around the world were analysed through the critical analysis method to address the research

problem whether derivatives, in fact are a cause of financial destruction than a cause which brings forth financial benefits.

3 DISCUSSION

Nature of financial derivatives

Derivatives are financial products that have no intrinsic value but derive its value from another financial asset such as interest rates, securities or currencies. Any change in the value of the underlying asset leads to price change of the derivative.

Hull (2009) defines a derivative as “a financial instrument whose value depends on or is derived from the performance of a secondary source such as an underlying bond, currency, or commodity, or “a financial instrument whose value depends on (or derives from) the value of other, more basic, underlying variables” and this definition is largely used in legal and policy discourses (Lynch, 2011).

Hedging and speculation operate as the commercial rationale for financial derivatives. Standard forms of financial derivatives are the option, the forward and the swap. ‘The futures’ and credit derivatives are important as well. The characteristic common to these derivatives is that the price of the underlying asset exceeds the capital invested.

Different types of financial derivatives

‘Forward’ contracts are bilateral customized contracts to buy or sell a financial asset in the future at a certain time and a price. The ‘Futures’ are based on the same principle and are standardized agreements to sell or buy a specified quantity of a financial asset between two parties at a specified price, time and a place. However, while the ‘futures’ are traded on exchanges, ‘forwards’ are said to be OTC and this difference in trading venues result in noteworthy distinctions in the two types.

The most popular form of derivatives, the ‘options’ are contracts between two parties to buy or sell a specified quantity of asset at a specified price. The buyer possesses a right but bears no obligation to perform the contract and the performance can be made on or before the date specified in the contract.

An option contract exists between a party which gains the right to perform the contract known as the option buyer/ option holder and an option writer/ option seller who charges a fee called 'option premium' from the former, in exchange for the given right (Rohilla, 2011). The options are further categorized as American option and European option. The former refers to a contract that can be exercised at any time before it matures and when an option can be exercised only at the maturity, it is called European option.

A swap contract refers to an agreement between a party with a fixed rate security and a party with a variable rate security to exchange two different streams of cash flows in future. Credit derivatives can be divided as credit default swaps and collateralized debt obligations (Partnoy, 2007).

Are derivatives financial weapons of mass destruction?

Warren Buffet once in 2002 described derivatives as "time bombs" for all parties involved and also emphasized the difficulty of tracking the values and liabilities of derivatives even for their holders (Berkshire Hathaway Inc, 2002). However, he also pointed out that this generalization might not always be judicious since the range of derivatives is so great.

Derivatives create a vehicle for corporations to hedge some of their unwanted risks (Aboy, 2010). However, they are also capable of being used for the purpose of speculating, concealing and keeping the dealings off balance sheets. They can heighten leverage and arbitrage regulatory and tax-rules.

In the annual report of Berkshire Hathaway Inc. (2002) Buffets States that "parties to derivatives have enormous incentives to cheat in accounting for them". Traders on derivatives are paid on earnings calculated by mark-to-market accounting and according to Buffet, utilizing mark-to-model in substitution of mark-to market model leads to large scale mischief (Berkshire Hathaway Inc, 2002).

Analysis of the statement by Buffet in the annual report of Berkshire Hathaway Inc. (2002) makes it clear that he directed his criticism at OTC derivatives

which are not collateralized, guaranteed or transparent as forwards. Risks associated with these derivatives can be categorized as counter party risks, marking errors and linkage and 100% leverage. The counter party risk refers to the risk that the other party may fail to perform its delivery obligation. As for the second type, the lack of an exchange coupled with incentive by inducement by CEOs etc. to overestimate profit can result in marking errors, departing from market-to-market accounting to market-to-hypothetical value. Further, some OTC contracts that facilitate 100% leverage can cause systematic problems (Aboy, 2010).

In case of credit derivatives their payoffs are linked in some way to a change in credit quality of an issuer or issuers. When a company faces a state of difficulty, banks become involved in saving the company, and in the event of bankruptcy, the banks can intervene in liquidation since their loan is often secured with preferential right to get their loan settled. Accordingly, credit derivatives reduce the incentive for banks to monitor and adequately control credit risks neglecting the "know your customer rule" completely (Partnoy, 2007).

The case of Enron bank provides an illustration. In this case, JP Morgan Chase, Citigroup and some other banks had lent money to it using massive amounts of credit derivatives. Banks failed to monitor the Enron, and as a result, Enron was tottering on the brink of closure and so were the banks (Economist, 2002).

Another problem is the non-transparency of the credit default market. All swaps are structured as over-the-counter (OTC) derivatives, and mostly they are unregulated which makes it possible for the detail of a swap contract to be kept undisclosed. This results in uncertainty for the stakeholders and sometimes it proves to be a big loss (Tijoe, 2007).

Further, it is noteworthy that derivative instruments like total-return swaps have no regard to margin requirements. Analysing the financial status of organizations that are majorly involved with derivative contracts is problematic even for experienced analysts and investors. Derivatives are not always regulated, yet they can cause extreme

swings in value. High fluctuation of value of these securities can create dangers to the economy as a whole as one could see from the 2008-2009 credit crisis.

However, despite often being considered as high risk, the derivatives market in the U.S. has grown up to \$516 trillion opposed to an estimate of \$100 trillion (by Bank of International Settlements) in 2008 (Rohilla, 2011).

Derivatives disasters

Bank frauds via derivatives trades have not been a rare scenario during the last few decades. Disasters associated with derivatives trade have resulted in derivatives having a bad public image.

Most disasters are caused by single rogue traders who attempt to cover up losses they incur in derivative trade as a result of risks they assume, which are not known to the senior management. Some aggressive traders choose high risk doubling strategy which is usually used in gambling, to recover such losses (Verma, 2008).

Banks and institutions usually have rules regarding the limits of risks any trade can assume and thereby attempt to prevent imprudent strategies like doubling which can lead to bankruptcy when luck disfavours. Nevertheless, smart traders circumvent such regulations by hiding trades or misinterpreting the risks.

The chain of events which led to the collapse of Barings in 1995, Britain's oldest merchant bank, is a demonstration to the high risk associated with the derivatives trade. From 1992, Nick Leeson, the major trader of Barings Bank, made unauthorized speculative trades which initially made large profits. However, Leeson lost his touch as his speculative range enhanced. Having an obligation to report to superiors, Leeson used one of Barings' error accounts to hide his losses and managed to deceive the bank's auditors (Caproasia Online, 2015).

Leeson guessing that the exchange rate will continue to stay static overnight, placed a short straddle on the Nikkei. Due to the Kobe earthquake, a sudden and a sharp drop in the Nikkei and other Asian markets was

caused. Leeson attempted to offset this heavy loss with short term risky new trades betting that Nikkei stock average would make a speedy retrieval. However, due to the severity of the earthquake, the recovery failed to materialize and having lost more than twice its available capital, the bank went bankrupt (Bhugaloo).

Afterwards more regretful disasters took place. In 2004, National Australia Bank (NAB) incurred a huge loss amounting to \$ 360 million as a result of its greater reliance on speculation and high-risk investment activity to maintain profitability. The company tolerated the breaches of risk limits by traders like David Bullen and even ignored warning from rival banks since important profits had been made by these traders in the past (Skeers, 2004). As depicted by the bank's annual reports the increasingly risky trading was a conscious policy.

Along with other incidents like 'Metallgesellschaft' and 'Proctor and Gamble', NAB incident provides an illustration to a kind of situation where the derivative disasters stem from imprudent and inappropriate derivative strategies implemented with the full knowledge of the top management.

Furthermore, in 2008, Jerome Kerviel an employee of Société Générale, lost over \$7 billion having purchased futures contracts for which the underlying assets were stock indices (Canac and Dykman, 2011). The total value at purchase was about 50 billion while the delivery date for the contracts has been one to three months in the future. This constituted one of the largest bank frauds in the world history via derivatives trading.

In the light of aforementioned situations, it can be stated that the statement made by Buffett was correct to a great extent since it is evident that the financial derivatives are financially lethal in the absence of an effective risk control mechanism. These financial weapons had an impact on the sub-prime crisis of 2008 in the U.S. as well.

In the U.S. many banks gave highly lucrative sub-prime loans and they were expected to yield a very high return in view of the increasing home prices. Owing to the high risk associated with this kind of

loans the interest rate was kept 2% higher than the prime loans and therefore appeared to be excellent investment options. As stock markets flourished, many big fund investors were attracted to sub-prime loan, and they bought such portfolios from the original lenders making the sub-prime loan market a fast booming segment.

Nevertheless, these sub-prime loans became speculative as well as unprofitable when the home prices started declining. Sub -prime borrowers were in an extremely difficult situation as they could not afford to pay their higher interest rates. With the rapid decline of the home prices, the lending companies, that were expecting to sell them and recover the loans, found them in a scenario where loan amount surpassed the total cost of the house. The only option that remained in these circumstances was to write off losses on these loans. With the Mortgage Backed Securities (MBS) losing their value the problem got aggravated.

Warren Buffet's reference to derivatives as financial weapons of mass destruction became true in 2008 and paved the way to the financial crisis referred to as Global Recession. At the end of 2002 as shown by their annual report, Insurance giant American International Group's (AIG) Financial Products unit had \$14.9 billion in risk related to credit derivatives and a notional amount in its credit-derivative portfolio of \$126 billion. Bank of America held an average of \$25.3 billion in derivative assets and \$17.3 billion in derivative liabilities in 2002.

Underlying reasons and prevention of the disasters

When considering the role of the derivatives in these financial calamities, it is the immense liquidity of the derivatives which attract rogue traders. High liquidity makes it possible for such traders to adopt doubling policies (Partnoy, 2007). Secondly, derivatives provide enormous amount of leverage. Traders are enabled to multiply their rate or return (or loss) on the underlying asset owing to the fact that capital invested in the derivative is significantly less than the underlying asset. Furthermore, due to the complex nature of derivatives most members of senior

management of companies and banks possess low levels of awareness regarding trade and it affords an opportunity for smart traders to circumvent rules and mislead the senior management.

However, with the right regulations, the above discussed kinds of financial disasters could have been prevented. In my opinion, failure of corporate internal controls can be considered as the main cause of these disasters. Lack of involvement, lack of awareness and the absence of accountability of the management for important activities of the company make it possible for rogue traders to hide their illegal transactions and losses.

In cases like the Baring Bank's, a proper system of internal controls, mainly an increased supervision, a regulatory system to prevent imprudent policies like doubling, a strategy and a system of checks and balances could have prevented the entire debacle. The duties performed by Nick Leeson should have been segregated among several individuals. In addition, unannounced spot audits are a great way to deal with this kind of problems

In the case of credit derivatives, standardized derivatives lead to fewer problems and companies tend to adhere to the relevant regulatory laws. However, there are costs related to standardizing derivatives and the terms and conditions cannot be modified. In order to keep clear of these costs, sometimes the companies go for OTC derivatives where there are lesser costs and tailor-made terms and conditions. These self-regulations can lead to violation of laws. These OTC derivatives play a central role within contemporary capitalism. In case of OTC derivatives in particular, due to lack of transparency and inadequate regulation, identifying where the dangers lie is a very difficult task.

In the United Kingdom, for regulatory purposes, the necessary limitations are brought in by the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (SI2001/544). Section 19 of the Act requires firms to be authorized to conduct regulated activities. Breach of this section is considered a criminal offence punishable on indictment by a maximum term of a two year imprisonment with or without a fine. Additionally,

under section 22, an activity to be recognized as a regulated activity, it must be carried on 'By way of business'. While Section 118 of FSMA concerns market abuse, Section 397 makes it a criminal offence to mislead a market or investors.

However, it should be noted that under section 412, Gaming and wagering legislation does not apply to transactions regulated by the FSMA with certain provisos (Perera, 2007).

Some positive characteristics of derivatives

Derivatives, contrary to the popular belief can be used to help allocating and taking the price risk out of everything from corn to cattle to stock. According to Richard Sandors, who has been called "the father of financial futures, Buffett was wrong since he made no distinction between regulated and unregulated derivatives which are "opaque, have no price discovery and done with bilateral deals that could cause systemic credit risk" (Task, 2013). According to Sandors derivatives promote efficiency, yet Buffet view this positive perspective as a micro-picture of the scenario (Task, 2013).

New research, co-authored by an assistant professor of finance at Stanford GSB, Francisco Pérez-González, demonstrated that hedging has collateral benefits that can enhance a firm's overall value. Further, he states that "allowing firms to focus on the risks they are in business to take, while hedging against risks that they are not in business to take, can add value," (Andrew, 2013).

4 CONCLUSION

Extreme fluctuation of value based on contingent events is what makes derivatives dangerous. As Randall Dodd, director of the Derivatives Study Centre, Washington, pointed out that derivatives are double-edged swords that are extremely useful for risk management, but they also can create a host of potential new risks (Dodd, 2001).

In fact, derivatives are not necessarily dangerous. Yet, deficiency of information and knowledge are the dangerous things. Shareholders and the management

should be well informed to control the use, and concomitant abuse of derivatives (Hudson, 1998).

The losses caused by derivatives are often due to self-regulatory methods and a public regulator can do much better in this regard (Rohilla, 2011). In terms of hedging not only the banks but also other participants too should come within the domain with expertise.

Although, some consider derivatives as a form of legitimate gambling that enable users to place bets on the market these financial instruments provide gains that extend beyond those of gambling by causing markets to be more efficient, aiding to successfully manage risk and providing investors with assistance to discover asset prices. Despite the negative comments made by many on the financial derivatives, the world of finance is kept fascinated by the capabilities and powers of the financial derivatives.

The fundamental factor here is that the derivatives come within different categories and all the derivatives are not destructive to the same degree. Hence, it is extremely important to understand the nature of what one is dealing with before an intelligent assessment can be made and handling of derivatives should be done with care to prevent disasters.

5 REFERENCES

Abeyssekara T.B. (2013) *A Proposal for the Protection of Digital Databases in Sri Lanka* (PhD Thesis, University of Exeter-UK) Available at <https://ore.exeter.ac.uk/repository/handle/10871/14172> [Accessed 8th September 2017]

Aboy M. (2010) *Are Derivatives 'Financial Weapons of Mass Destruction'? An Explanation of Why Derivatives are Controversial and Often Considered High Risk*. Available at <https://ssrn.com/abstract=1936168> [Accessed 29th July 2017]

- Andrews E.L (2013) *In Defense of 'Weapons of Financial Mass Destruction*. Available at <https://www.gsb.stanford.edu.com> [Accessed 30th July 2017].
- Berkshire Hathaway Inc (2002): 2002 Annual Report, Available at <http://www.berkshirehathaway.com/2002ar/2002ar.pdf> [Accessed: 25th July 2017].
- Bhugaloo S. *Commodities Trading: Nick Leeson, Internal Controls and the Collapse of Barings Bank*. Available at http://www.tradefutures.co.uk/Nick_Leeson_Barings_Bank.pdf [Accessed 30th July 2017].
- Canac, P., Dykman, C. (2011): The Tale of Two Banks: Socieété Générale and Barings *Journal of the International Academy for Case Studies* 17.
- Caproasia Online (2015) *Nick Leeson bankrupt Barings Bank*. Available at <http://www.caproasia.com/2015/04/14/nick-leeson-bankrupt-barings-bank/> [Accessed 1st August 2017].
- Dodd R., (2001) *The Role of Derivatives in the East Asian Financial Crisis - Special Policy Report 1*, Derivatives Study Center. Available at <http://www.financialpolicy.org/DSCSPR1.PDF> [Accessed 30th July 2017].
- Economist (2002) *The Real Scandal* Available at <http://www.economist.com/node/940091> [Accessed 1st August 2017].
- Financial Services and Markets Act 2000 – United Kingdom
- Hull, J. (2009) *Options, Futures and Other Derivatives*. 7th edition, Pearson.
- Jake , S. (2004) *Australia's largest bank shaken by speculative trading losses* Available at <http://www.wsfs.org/en/articles/2004/03/nab-m17.html> [Accessed 30th July 2017].
- Lynch, T.E. (2011) *Derivatives: A Twenty-First Century Understanding*, *Loyola University Chicago Law Journal* 43.
- Partnoy, F. (2007) *The Promise and Perils of Credit Derivatives*, *University of Cincinnati Law Review* 75.
- Perera T. (2007) *Market Maker's Legal Risk Unenforceability Of Financial Derivatives Contract* Available at http://www.apbsrilanka.org/articales/19_ann_2007/17_Thejaka%20Perera.pdf [Accessed 30th July 2017].
- Rohilla A. (2011) *Financial Derivatives – Weapon to Mass Destruction*. Available at SSRN:<http://ssrn.com/abstract=2022816> [Accessed 30th July 2017].
- Task, A. (2013) *Actually, Warren Buffett Was WRONG About Derivatives: Richard Sandor*. Available at <https://finance.yahoo.com/blogs/daily-ticker/actually-warren-buffett-wrong-derivatives-richard-sandor-140540626.html> [Accessed 30th July 2017].
- Tijoe, L. (2007): *Credit Derivatives: Regulatory Challenges in an Exploding Industry* *Ann. Rev. Banking & Finance* 26.
- Verma, R. (2008) *Derivatives and Risk Management*. New Delhi, Tata Mcgrow Hill Publishing Co. Ltd.

