

CURRENT CONTEXT OF USING DERIVATIVES AS RISK MANAGEMENT TECHNIQUE OF SRI LANKAN LISTED COMPANIES

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ABSTRACT

Risk management has become a vital part of businesses all over the world and firms adopted various risk management techniques to manage risk. This study examines derivatives use in randomly selected 94 listed companies in the Colombo Stock Exchange (CSE), Sri Lanka representing four industry sectors. We find that 41% of the selected firms used derivatives. When we analyze different industry sectors Banking, Finance and Insurance sector recorded fairly low percentage (36%) of using derivatives. In contrast to this Diversified holding companies depicts highest percentage (71%) of derivatives usage. Developed derivatives market yet to be emerged in Sri Lanka and however, there is an increasing trend of using derivatives by Sri Lankan companies. Size of the company has an impact of using derivative instruments. Interest rate swaps, currency swaps and forward exchange contracts mainly used to manage risks in Sri Lankan companies.

KEYWORDS: Colombo Stock Exchange, Derivatives, Financial Instrument, Hedging, Risk Management

INTRODUCTION

A financial derivative is a financial instrument that is linked to another specific financial instrument, indicator or commodity and through which specific financial risks (such as interest rate risk, foreign exchange risk, equity and commodity price risk) can in their own right, be traded in financial markets. The value of a financial derivative comes from the price of an underlying item such as an asset or index. Financial derivatives can be used for risk management, hedging (protecting) against financial losses on commercial transactions and financial instruments and arbitrage between markets and speculation. A derivative can be defined as a financial instrument whose value depends on (or derives from) the value of other, more basic, underlying variables. Very often variables underlying derivatives are the prices of traded assets (Hull & Basu, 2011). There are now active trading in credit derivatives, electricity derivatives, weather derivatives, and insurance derivatives in the world. Many new types of interest rate, foreign exchange, and equity derivative products have been created. However still there is no discernible developed derivative market in Sri Lanka. From last few years, Sri Lankan financial institutions have attempted to enter the derivative market and some of the financial institutions have introduced a few of derivative instruments to their customers.

Due to non availability of a developed market for derivatives in Sri Lanka, still most of the Sri Lankan firms are not interesting to use derivatives for their risk management. However there is an increasing trend of using derivatives by large scale companies and most of the financial sector companies also used to manage risk through derivatives. Therefore there is a debate at present whether Sri Lankan companies are using derivatives or not which is very important to clarify and what extent they are using them in risk management.

Number of studies have been done on use of derivatives in the risk management practice in developed countries (Berkman and Bradbury (1996); Berkman, Bradbury and Magan (1997); Howton & Perfect (1998); Jalilvand, Switzer, & Tang (2000); Mariathan, (2000); Allayannis & Weston (2001); El-Masry (2006); Freeman, Cox & Wright (2006);

Batten & Hettihewa (2007)]. However, it was found that there is a paucity of researches which examine the use of derivatives which could be the result of being it is not a popular risk management tool in Sri Lankan companies. Therefore we study the use of derivatives in Sri Lankan selected listed companies. This study contributes to identify how Sri Lankan firms are using derivative financial instruments in their risk management and it will be supportive to managers on deciding whether to enter the derivative market or not.

The remaining of this paper organizes as follows. Section 2 deals with the general introduction to risk management and hedging techniques. Section 3 reviews the literature related to use of derivative products as risk management technique in companies. Section 4 discusses the data and methodology used in this research. Section 5 provides analysis and interpretation. Section 6 concludes the paper.

RISK MANAGEMENT AND HEDGING

Managing risk is a popular concept of modern corporate management. Managers adopt various strategies in order to manage risk. Since the exposure to the risk is very high in present business context, it is taken as very serious to manage the risk. With this broad concept of risk management, nowadays firms are considering on Risk Based Decision Making, Risk Governance, Risk Responsibilities, and Risk Culture etc. Exposure to the risk is depending on certain factors as the industry type and size of the business. The firm having more risk exposure should apply more efficient and effective risk management strategies. Firms are exposed to various risks as credit risk, foreign exchange risk, interest rate risk, liquidity risk, political and country risk etc and have to manage them with high level of concern.

Hedging is a kind of strategy to manage or eliminate the risk of a firm and especially to eliminate the foreign exchange risk and interest rate risk. Derivatives are kind of instruments that are used to hedge the risk of a firm and can be in different forms. According to the classic Modigliani and Miller paradigm (1958), risk management is irrelevant and portfolio diversification addresses the issue. However, some researchers suggest that hedging is a value increasing strategy for the firm [Tufano (1998), Allayanis and Weston (2001), Pantzalis, Simkins and Laux (2001)]. Therefore it is important to study on the use of derivatives as a risk management technique in middle income country like Sri Lanka.

LITERATURE REVIEW

Derivatives started to use in developed exchanges many years ago and researchers have conducted extensive investigations on the use of derivatives in developed countries. Some of the authors have studied the association between the use of derivatives and firm value. For example, Froot, Scharfstein, and Stein (1993) studied theoretical association between derivatives use and the firm value and suggest the firms use derivatives to lower non diversifiable costs that associated with market frictions, such as taxes, financial distress costs, and external financing costs. Berkman (1996) suggest that limit orders for options are "picked off" after adverse changes in the underlying stock price. Berkman and Bradbury (1996) provide evidence on the corporate use of derivative instruments and provide empirical evidence on the relation between the theoretical determinants and actual derivatives use. Pantzalis, Simkins and Laux (2001) document the importance of operational hedges as significant determinants of exchange rate risk as measured by the "breadth" and "depth" of dimensions of the multinational corporation foreign subsidiary network. Allayannis and Weston (2001) examine the use of foreign currency derivatives (FCDs) in US non financial firms and its potential impact on firm value, and find a positive relation between the firm value and the use of FCDs.

Some researchers have studied the use of derivatives in comparative way by taking into consideration different countries either developed or emerging for example, Berkman, Bradbury and Magan (1997) provide an international

comparison of derivatives use. This study addresses whether derivatives use is a phenomenon that is primarily limited to sophisticated and liquid financial markets in US. Howton and Perfect (1998) studied the use of currency and interest rate derivatives in US firms. They studied the patterns and determinants of derivatives use in US firms and concluded that swaps are the most often used interest rate contract, and forwards and futures are the most often used currency contracts. Jalilvand et.al (2000) studied the similarities and differences in derivatives use between the Canadian, U.S. and European risk managers and found that the use of derivatives products are more widespread in Canada than in the United States and Continental Europe.

Studies pertaining to use of derivatives as the risk management technique is popular among previous researchers. Graham and Rogers (2000) studied the use of derivatives by firms facing interest rate risk as well as currency risk. They found that firms use hedging in response to expected financial distress costs, firm size, and investment opportunities. They have used hedging to increase debt capacity which will increase the firm value. Ahmed and Masry (2006) found that larger firms are more likely to use derivatives than medium and smaller firms. Also public companies were found more likely to use derivatives than private firms and international firms are using derivatives more than others. At the same time they found that foreign exchange risk is the most commonly managed risk through derivatives and secondly interest rate risk. Batten and Hettihewa (2007) has done a cross sectional survey of risk management practices and derivatives use by Australian firms and found that the supervision of emerging derivative markets depend on the expedient and tractable resolution of challenges arising from consistent risk management and prudential standards that guarantee market stability in crisis situation.

The above three paragraphs reviews literature related to association between the use of derivatives and firm value, next we consider the review under different country context and next section reviews how use of derivative as risk management practice in companies.

Goswami and Shrikhande (1997) studied the economic rationale for the use of interest rate swaps by nonfinancial firms. McAllister and Mansfield (1998) examined the potential of using financial derivatives to mitigate the problems associated with direct property investment. Tufano (1998) studied the potential cost of corporate risk management strategies that are based on cash flow hedging. Mariathasan (2000) has explained the use of derivatives by insurance companies that, insurance companies represent a key market for derivatives and therefore it is difficult to gain a clear overview of their benefits. Maas (2001) provided an overview of common credit derivatives, the size and scope of their markets and their role in structured credit products. Freeman, Cox and Wright (2006) studied the possible use of credit derivatives by corporate treasurers. They conclude that the credit derivative market is, at present, dominated by large banks and insurance companies who trade credit exposure among themselves. Wang, Wen and Yang (2010) examined theoretical valuation of derivatives and their hedging roles in corporate risk management. Afza and Alam (2011) identified the factors affecting the firm's decision to use foreign exchange derivative instruments. As per their findings, firms having higher foreign sales are more likely to use foreign exchange derivatives to reduce exchange rate exposure. At the same time financially distressed large-size firms with financial constraints and fewer managerial holdings are more likely to use foreign exchange derivatives.

Having discussed the above literature we found that unavailability of data relevant to this area of study hindered conducting in depth research by previous researchers. This is mainly due to disclosure on derivatives was not a practice before 1990 [see for example: Bodnar, Hayt, Marston, and Smithson (1995), and Phillips (1995)]. Thereafter, the information on the use derivatives has come to the annual report disclosures as a practice as well as a requirement in the accounting standards. Some of the researchers have used binary variables indicating whether a firm uses derivatives or not.

DATA AND METHODOLOGY

Since Sri Lanka doesn't have a developed derivative market, the availability of data is limited. However, in the recent past Sri Lankan companies have entered into the use of derivatives and there is a paucity of research studies on the use of derivatives in Sri Lanka. This paper examines how Sri Lankan companies attempt to enter the use of derivatives. At the same time, Sri Lanka has not adopted the new version of International Financial Reporting Standards (IFRS) and International Accounting Standards directly up to 1st of January 2012, where the older version of the same did not focus on recognition of derivative instruments as on balance sheet items, almost all the firms have not recognised derivative instruments as on balance sheet and they were stated as off balance sheet items. This also restricts to gather the data from published financial statements on the use of derivatives.

When we refer to the world wide web on products available in different financial institutions, some of the banks and financial institutions have offered derivative financial instruments to their customers, and it lead us to examine the use of derivatives in Sri Lanka. However Sri Lanka is in the initial stage of introduction of derivatives, non financial institutions have not entered much into the use of derivatives, whereas the companies in the financial services sector have started to use them. Most of the previous researchers have eliminated the utility and financial services companies from the examination of relationship between the uses of derivatives and firm value. [Berkman et.al (1997), Howton and Perfect (1998), Allayannis and Weston (2001)]. The studies examine the degree of usage of derivatives and do not examine the firm value and uses of derivatives. Therefore we studied a sample of financial and non financial firms and referred to the disclosures in the annual reports on the use of derivatives. After the direct adoption of the recent version of IFRSs into the Sri Lankan financial reporting practice, companies have started to follow them from 1st January 2012. These new accounting standards include standards on financial instruments and companies have disclosed them in the recent quarterly financial statements. Therefore we examined the recent quarterly data published by sample of companies selected for the study. A sample of 94 listed companies in the Colombo Stock Exchange (CSE) which represented four (04) industry sectors as Bank, Finance and Insurance, Investment Trusts, Power & Energy and Diversified Holdings were examined for the use of derivatives. This examination was limited to four sectors with the availability of data. Therefore further 25 companies which represent the Milanka Price Index were also examined since they cover several industry sectors with the intention of improving the results relating to the present research.

Some of the annual reports disclosed clearly the use of derivatives as a risk management instrument and some of them were not clearly mentioned. At the same time by referring the risk management part of the annual report, we found that companies reported the use of derivatives under separate heading as well as under accounting policies. According to the new accounting standards, there are specific standards on financial instrument, and derivatives also should be accounted as per those accounting standards. Then the companies those who use derivatives disclosed the accounting policies as per the accounting standards. When the companies disclose the use of derivatives as a risk management function, most of the companies reported on the type of derivatives that they are using. However some of the companies have not disclosed the type of derivative and just they have reported as they are using derivatives. Therefore we had to use Yes, No approach for non-disclosed companies and analyzed the type of derivatives used by other companies in detail.

EMPIRICAL RESULTS

This investigation covers two basic aspects of use of derivatives such as the degree of usage of the derivatives and the type of derivatives used by companies. Most of the companies have disclosed the type of derivatives used and about 29% of our sample companies have not disclosed the relevant information pertaining to use of derivatives.

The Degree of Usage of Derivatives

According to the empirical results of our analysis, 41% of the total of 94 companies uses derivatives in their risk management functions (Figure 1). This percentage is fairly low and as a whole the use of derivatives in Sri Lanka is in an increasing trend. However when analysing the use of derivatives in different industry types, we found that companies in certain industries are using derivatives more than other sectors. This is because the type of industry is always affecting the risk management of the company since the exposure to the risk is associated with the industry sector.

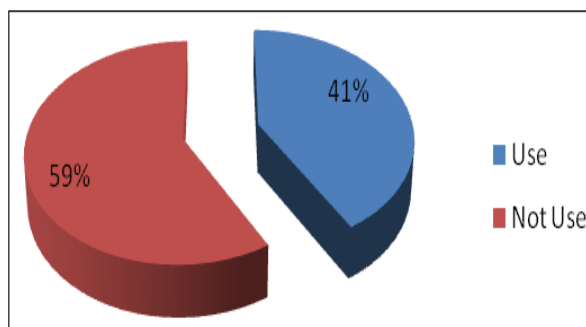


Figure 1: Usage of Derivatives

Analysis of the use of derivatives with the industry type shows that, the use of derivatives in the BFI sector companies is in a fairly low percentage as 36% (Figure 2). Companies in this sector concern more on the risk management and as normal course of business they engage in derivative contract with their customers. Therefore this low percentage signals us that the disclosures relating derivatives of BFI companies may not reflect their actual usage. By looking at the previous researches we found that researchers have excluded finance sector companies from their sample [Berkman et.al (1997), Howton and Perfect (1998), Allayannis and Weston (2001)]. Since most of the operations of BFI companies include hedging activities by their nature and it may be difficult to assess the use of derivatives and its impact of using them with several other variables. This effect is further explained by analysing the use of derivatives by Investment trust companies, which is also fairly low percentage at 11% (Figure 2). Normally the investment companies diversify their portfolios and use related investment management techniques in their normal course of business. This would be the reason for reducing the extent of the use of derivatives.

The degree of the usage of derivatives by Power and Energy sector companies also in a similar level to the whole and about 37% of them are using derivatives (Figure 2). These companies are also exposed more to the risk and therefore the use of risk management mechanisms is important. Therefore it is evident that there is a trend of increasing the use of derivatives by Power and Energy sector companies.

According to the analysis, Diversified Holding companies are the most important companies in the usage derivatives. As a percentage, 71% of Diversified Holding companies are using derivatives which show a significant trend (Figure 2). This may be a consequence of the high risk that they are exposed. Since these companies are large in their size and the diversification is more, always there is a high risk. Therefore the uses of derivatives as alternative risk management techniques could be popular.

Since our analysis has covered only four (04) industry sectors with the availability of information, we extended our analysis to the Milanka Price index in order to show an enhanced picture on the use of derivatives. Milanka index consists with top 25 companies which represent various industry sectors and thereby it further reinforces the findings of this study. Figure 2 shows that 64% of these Milanka companies are using derivatives which show that there is a significant impact of size of the company for the usage of derivatives. When the companies expand their operations, the

risk attached to them is automatically increased. Therefore the large companies tend to use new risk management techniques and now the trend is towards the use of derivatives.

In consistent with previous researchers like Ahmed and Masry (2006), we found that larger firms are more likely to use derivatives than medium and smaller sized firms. This could be a result of more risk exposure of large firms than small firms. At the same time, most of the large firms are having foreign operations where they have to manage foreign exchange risk. As Afza and Alam (2011) identified where there are foreign operations, there is an increasing trend of using foreign currency derivatives. Ahmed and Masry (2006) also found that foreign exchange risk is the most commonly managed risk through derivatives. Also small firms are not much considering on risk management which was also a reason to reduce the degree of usage of derivatives.

Types of Risk Hedged and Choice of Derivatives by Companies

Mainly there are four types of derivatives such as futures, forwards, options and swaps. However, these derivatives are used for different risk categories as interest rate risk, foreign exchange risk, and commodity price risk. Derivatives can be identified as over-the-counter (OTC) instruments (i.e. forwards, swaps and options) and exchange traded instruments (i.e. futures and options). Since there is no organised derivative exchange, no futures or exchange traded options in Sri Lanka. At the same time, still companies have not entered to the option market for shares. At present Colombo Stock Exchange is looking forward to introduce them into Sri Lanka.

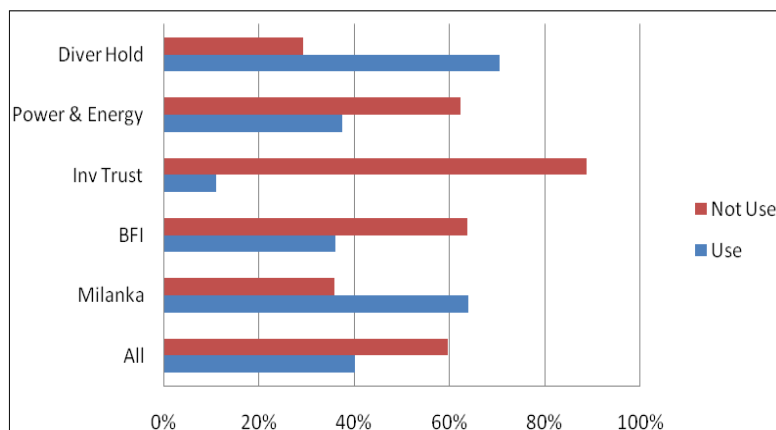


Figure 2: Use of Derivatives by Industry Type

According to our analysis, we found that major six (06) types of derivatives use in Sri Lankan practice. They are forward exchange contracts, currency options, interest rate swaps, currency swaps, share swaps and commodity swaps. All these derivatives have covered four basic sources of exposures as foreign currency, interest rate, share and commodity. As the initiation of the use of derivatives in Sri Lanka, managing the foreign currency exposure has reserve a significant place. This finding is in line with Afza and Alam (2011) and Ahmed and Masry (2006) where they proved that foreign exchange risk is highly considered in use of derivatives. All forward exchange contracts, currency options and currency swaps are used to manage the foreign exchange risk.

Out of all companies those who have disclosed the types of derivatives they use, we find that 25% are using forward exchange contracts in order to manage their foreign exchange risk (Figure 3). Another 15% uses currency swaps and only 1% uses currency options. Since there is no developed derivative market in Sri Lanka, Companies use Over the Counter (OTC) derivatives and most popular one is the forward contract. In case of foreign currency, forward exchange contracts have become more popular with this reason. At the same time, swaps also becoming important and therefore currency swaps are also used by 15% of companies (Figure 3).

Next important purpose of using derivatives is to manage the interest rate risk which is also in line with Ahmed and Masry (2006). In order to manage the interest rate risk, Companies use interest rate swaps as a derivative instrument. Out of all companies those who have disclosed the types of derivatives; another 25% are using interest rate swaps (Figure 3). Use of forward contracts or options in order to manage the interest rate risk was not found in Sri Lankan practice.

However, Sri Lankan companies are still in the stage of introducing the share based derivatives and commodity based derivatives. Therefore the percentage of the usage of share swaps is 3% and the percentage of the usage of commodity swaps 1% (Figure 3).

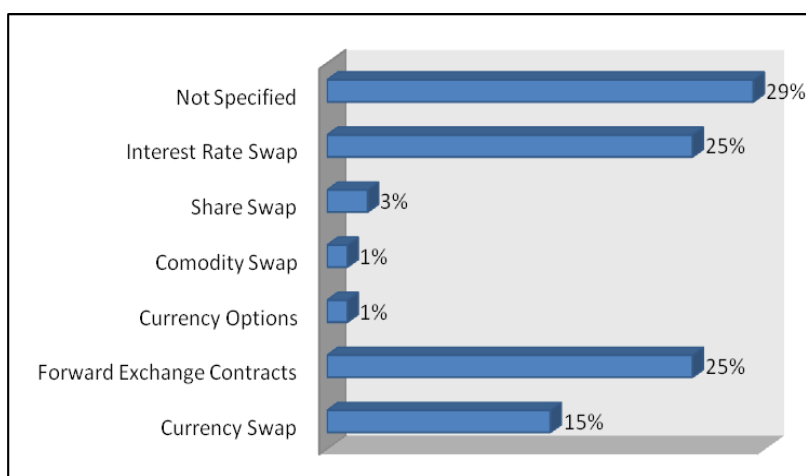


Figure 3: Types of Derivatives

CONCLUSIONS

The purpose of this paper is to investigate the degree of usage of derivatives and types of derivatives used by Sri Lankan listed companies. In overall, 41% of selected companies have used derivatives and 59% not used derivatives as risk management technique. There are 20 industry sectors in the Colombo Stock Exchange and among them Banking, Finance and Insurance (BFI) industry revealed fairly low percentage (36%) of using derivative products. However, study revealed that they use hedging instruments to mitigate risk in their normal course of business. Power and energy sector is also similar to the BFI sector. In comparison to those sectors listed above diversified holding companies recorded highest percentage (71%) of using derivatives. Moreover, study finds that size the company have an impact on derivative choice. Sri Lankan listed companies use forward exchange contracts, currency options, interest rate and currency swaps to manage foreign exchange risk. Out of the companies selected for the study 25% and 15% of companies using forward exchange contracts and currency options to manage risk. However, listed companies in Sri Lanka are in the stage of introducing share and commodity based derivatives.

REFERENCES

1. Afza, T., & Alam, A. (2011). Corporate derivatives and foreign exchange risk management: A case study of non-financial firms of Pakistan. *The Journal of Risk Finance*, 409-420.
2. Allayannis, G., & Weston, J. P. (2001). The Use of Foreign Currency Derivatives and Firm Market Value. *The Review of Financial Studies*, 243-276.
3. Ahmed A. El-Masry, (2006), "Derivatives use and risk management practices by UK nonfinancial companies", *Managerial Finance*, Vol. 32 Iss: 2 pp. 137 - 159

4. Batten, J. A., & Hettihewa, S. (2007). Risk Management and Derivatives Use in Australian Firms. *Journal of Asia Business Studies*, 37-44.
5. Berkman, H. (1996). Large Option Trades, Market Makers, and Limit Orders. *The Review of Financial Studies*, 977-1002.
6. Berkman, H., & Bradbury, M. E. (1996). Empirical Evidence on the Corporate Use of Derivatives. *Financial Management*, 5-13.
7. Berkman, H., Bradbury, M. E., & Magan, S. (1997). An International Comparison of Derivatives Use. *Financial Management*, 69-73.
8. Bodnar, G. M., Hayt, G. S., Marston, R. C., & Smithson, C. W. (1995). Wharton survey of derivatives usage by U.S. nonfinancial firms. *Financial Management* 24(2), 104-114.
9. El-Masry, A. A. (2006). Derivatives use and risk management practices by UK nonfinancial companies. *Managerial Finance*, 137-159.
10. Freeman, M. C., Cox, P. R., & Wright, B. (2006). Credit risk management: The use of credit derivatives by non-financial corporations. *Managerial Finance*, 761-773.
11. Froot, K. A., Scharfstein, D. S., & Stein, J. C. (1993). Risk Management: Coordinating Corporate Investment and Financing Policies. *The Journal of Finance*, 1629-1658.
12. Goswami, G. & Shrinkhande, M. (1997). Interest Rate Swaps and Economic Exposure. Retrieved from <http://www.frbatlanta.org/filelegacydocs/wp976.pdf>
13. Graham, J.R. & Rogers, D.A. (2000). Does Corporate Hedging Increase Firm Value? An Empirical Analysis. Retrieved from <http://www.sba.pdx.edu/faculty/danr/danraccess/Hedg100.pdf>
14. Howton, S. D., & Perfect, S. B. (1998). Currency and Interest-Rate Derivatives Use in US Firms. *Financial Management*, 111-121.
15. Hull, J. C., & Basu, S. (2011). *Options, Futures and Other Derivatives*. New Delhi: Prentice Hall.
16. Jalilvand, A., Switzer, J., & Tang, C. (2000). A global perspective on the use of derivatives for corporate risk management decisions. *Managerial Finance*, 29-38.
17. Jobst, A. A. (2008). The development of equity derivative markets: An examination of current standards and challenges in emerging Asia. *International Journal of Emerging Markets*, 163-180.
18. Maas, P. V. (2001). Active loan portfolio management through the use of credit derivatives. *Balance Sheet*, 47-52.
19. Mariathasan, J. (2000). The use of derivatives by insurance companies. *Balance Sheet*, 29-32.
20. McAllister, P., & Mansfield, J. R. (1998). Investment property portfolio management and financial derivatives: Paper 1. *Property Management*, 166-169.
21. Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, 261-297.

22. Pantzalis, C., Simkins, B. J., & Laux, P. A. (2001). Operational Hedges and the Foreign Exchange Exposure of U.S. Multinational Corporations. *Journal of International Business Studies*, 793-812.
23. Phillips, A. L. (1995). 1995 Derivatives practices and instruments survey. *Financial Management*, 24(2), 115-125.
24. Tufano, P. (1998). Agency Costs of Corporate Risk Management. *Financial Management*, 67-77.
25. Wang, M., Wen, M.-M., & Yang, C. C. (2010). Weather derivatives, price forwards, and corporate risk management. *The Journal of Risk Finance*, 358-376.

