

## MOTIVES BEHIND THE USE OF DERIVATIVES: HEDGING OR SPECULATION?

Mehreen Furqan<sup>1</sup> and Nawazish Mirza<sup>2</sup>

### Introduction

The history of Financial derivatives can be traced back to 600 B.C. (Jungel<sup>1</sup>), when options on Olive Oil presses were first introduced. This was later followed by options on Tulips in Holland in 1630s, where the first market crash took place in 1637. Then in 1650 standardized futures on rice were traded in Japan. In 1728, options of Royal West Indian Company came up. 1848 saw the opening of Chicago Board of Trade with the Chicago Stock Options Exchange opening up in 1973 as the first proper market for trading of derivatives.

Financial derivatives are instruments, deriving their value, from an underlying asset. They are contracts made on an underlying asset which could be anything from stocks to any commodity. They can be traded in 'over the counter markets' or in specialized or normal stock markets. The main aim of these instruments is to hedge the risks being faced by the people or companies who are trading these instruments. Another very important reason of trading of these derivative instruments could be (as Chaplinsky (1999)) calls them "risk seekers" people who trade due to speculation. Higher risk means higher returns so people who are risk seekers are infact people who want higher returns and might want to earn that return through derivative instruments.

Derivatives are often linked directly with speculation, which in turn, is often blamed for Financial crises around the world. Bosworth *et al.* (1998) blamed the East Asian Crises on speculation like Summers

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1 & 2- Lahore School of Economics, Lahore, Pakistan

3-In part of a class lecture delivered in Vienna University of Technology.

(2000) did so for other major financial crises of the world during the 1990s.

Since speculation can be so disastrous, by bringing about financial crises affecting many economies and derivative markets are the highest prone to speculative motives, behind use of derivatives, this discussion attempts to answer the question “*Is Speculation or Hedging the main Reason for Use of Derivatives?*”

In the nineteenth century speculation was considered gambling (Kreitner, 2000). Speculation was that people bought or sold goods without the intent of taking the actual delivery, and sold again, trading in those goods before the actual delivery date to earn the profits. The courts also said that for speculation to be the reason behind the trading taking place it was necessary that the intention of both the parties was to speculate and not for just one party to speculate and the other to hedge. Later, researchers tried proving that speculation was also a stabilizing factor in the markets as it helped set the prices in accordance with the supply and demand, making markets efficient. In the late nineteenth century even the law decided to accept speculation as different from gambling and tried to bring it about as a normal part of the society. Finally, early in the last century, economists also started working to prove the increase in efficiency due to speculation.

Brunzell, Mats and Eva (2011) found that though the major motive behind trading in derivatives was hedging, it would depend on the target to be achieved. If the target was firm-level diversification, speculation was found to be the motive rather than hedging. Also, financial firm were found to be using derivatives to increase incomes, thus, supporting the speculation motive.

### **Hedging or Speculation?**

The literature supports hedging as the main motive of using derivatives. Some researches did mention the speculative reasons behind use of derivatives, but very few researches actually prove or even test this hypothesis. Egly and Jun (2014) tested the speculative motive of using derivatives for a number of companies, finding that trading income had an insignificant impact on firm value, implying that speculating motives of using derivatives might not be meaningful.

In case of Swaps, in multi-time period, hedging might be done to avoid default risk (Mozumdar,2001),. If access to swaps is present without any constraint, along with asymmetric information about the firm type and its motives to swap, speculation will surely result, as costs would go up in trying to control default risks. Hedging would be the main motive, in presence of more risky debt, for profitable firms with a strong capital structure. A firm will heavily speculate if its cost of debt is less than the equilibrium cost of debt in the market. Also when bad quality firms decide to take on large swap positions, the gross cost of debt and the swap rates both go up in the market. Thus, even firms whose initial motive was to hedge will now be motivated to speculate.

Pontiff and Koski (1999) found no significant difference between the risks and exposures of firms that used derivatives and firms that did not, implying that managers have neither been able to reduce risk by using derivatives for hedging purposes nor have they been able to increase risk by using derivatives for speculative reasons. Similarly, Kothari and Hentschel (2001) did not find any significant relationship between the risk of the firms and its use of derivatives negating both the hedging and speculating motives.

Kothari and Guay (2001) did a study to test the magnitude of hedging with derivatives and concluded that the reason for lower use of derivatives, than the firm should be using, could be because it is

either using other forms of hedging or due to the type of decision making that exists in the firm (due to agency cost not let the firm use the optimal amount of derivatives). It could also be simply because firms are not using derivatives for hedging but for speculation purposes.

Thus, this discussion will start with the speculative motive of using derivatives and then move on to the hedging motive. Speculation in use of derivatives could be because of the risk seekers mentioned above who believe in taking higher risk for higher returns. On the other hand Speculation could also be the result of agency cost in a firm (Schiozer and Saito, 2005) . Using hedging derivatives maximizes shareholders wealth so the managers might want to maximize their earning by speculating in derivative markets and earning the higher returns. Since this would reduce the shareholders wealth the main agent-principal problem of agency costs arise.

### **Speculative Motives**

Thiagarajan and Petersen (1997) found no significant difference in risk reduction between a firm using derivatives aggressively and one with using only operational techniques for risk reduction, implying it was possible that derivatives were being used more for speculative reasons than for hedging the risks.

According to Sapra (2001) if firms follow mandatory hedge disclosures they are motivated to take more excessive speculative positions, than in a full information regime. Meanwhile, Weiner (2004) found the Commodity-Fund Managers to be speculative herding. Nan (2007) discussed introducing accounting principles to make derivative activities transparent. This would then in turn encourage good use of derivatives for hedging purposes and discourage the use in speculative motives.

Chan-Lua (2005) found that the market in Chile was not a very well established market and thus its exposure to foreign exchange risks was not very high. Yet they used derivatives regularly and spot transaction took place leading to speculation taking place, implying that speculative reasons could be a stringer reason for using derivatives than using them for Hedging.

### **Hedging Motives**

Now the focus of this discussion is on the other motive of using derivatives; to hedge against risks associated with firms (especially nonfinancial firms, since they do not issue these instruments and just trade in them).

According to Krawiec (1998) using derivatives for hedging is an important decision to be taken by the management of any firm. It is something that not only benefits the firm itself but is something that maximizes the benefits going to the shareholders.

Schrand, Minton and Geczy (1997) found that firms which had more financial constraints, with higher opportunities for growth, higher exposure to foreign exchange-rate, economies of scale in hedging activities, greater institutional ownership, higher managerial holdings and a greater watch from bondholders were more likely to use currency derivatives, implying that the main reason for use of derivatives was hedging and not speculation. Similarly, Haushalter (2000) supported that hedging was done to avoid financial constraint.

Sheedy (2002) found very little difference in using derivatives to hedge risks between Singapore and Hong Kong but when compared with USA they were found to be participating more in derivative and those too mainly Foreign Exchange Derivatives.

Rogers and Graham (2002) found that firms mainly used derivatives because they were a less costly way of hedging risks. The

costs of using derivatives were found to be way less than the tax benefits that arose due to use of derivatives thus firms preferred using them.

Fehle, Brown and Bartram (2003) studied the pattern of use of derivatives over the world, and found that the main aim of firms using derivatives was to hedge risk regardless of which country they belonged to. It was also found that firms using higher interest rate derivatives had higher firm value, thus, from the firm valuation theory, use of derivatives help hedge risks associated with firms and so increase its value.

Judge (2006) found firms who had a higher risk of bankruptcy costs were higher hedgers of risks and firms concerned with international trading and those which had short-term loans used derivatives mainly to hedge their risks.

After almost 6 years of the research done by Thiagarajan and Peterson (1997), their technique of empirical testing was used by Chung (2003) to prove that use of commodity derivatives reduce the risk exposure of the firms. The firm that had hedged its production had less volatility in its sales revenue, operating costs expenses, equity risk exposure and forecasting of earnings than that of an un-hedged firm, in response of market news.

Schiozer and Saito (2005) proved that management in firms use derivatives to reduce risk and not for speculation. Firms used derivatives to mainly hedge against foreign Exchange risk, followed by interest rate risk and lastly due to commodity risk. Their results proved that Brazilians were least active in the derivative markets so they were not aiming at speculation when they were using derivatives rather they were trying to reduce their risks only.

Nguyena and Robert (2010) found that though the risk increased in case of firms that used derivatives extensively, it was not more

than those who were not using derivatives supporting the hedging motives behind using derivatives.

### **Risks to be Hedged with derivatives**

Hedging can be a direct or simple hedging or it could be a cross-hedge between different type of portfolio assets can be used to diversify risk as well. Bowman (2004) proved that under normal conditions a direct hedge would be as effective as a cross-hedge. But using the case example of the Asian Currency crises he concluded that at times of financial crises or structural changes in currencies direct hedges proved to be more significant than cross-hedges.

Since Foreign Exchange Derivatives have been found to be the most used derivatives, looking at their use is very important. Pramborg and Hegelin (2002) proved the effects of reduced risks by use of Foreign Exchange Derivatives.

Foreign exchange risk is not just associated with firms who are trading in foreign countries but is also an important factor in association with acquisitions in foreign countries. Helwege, Burns and Bartram (2008) proved that it was not the use of derivatives that helped reduce the risk exposure to the firms, in an acquisition, but it was their operational strategies which through acquisition reduced their exposure after the acquisition took place.

A type of risk that could be hedged using derivatives was the use of derivatives that Danish Pension Institutions to protect them against the risk associated with the interest that they had guaranteed to pay on their new pension policies (Vittas *et al.*, 2007). It was found that due to the use of derivatives and hedging of risks the leverage of these institutions has increased but it has not affected the firm's exposure to market risk even though it has increased exposure to operational and credit risks of the institution.

Another unique type of risk, that makes a firm use derivatives, to hedge is the "Predation risk". Haushalter *et al.* (2007) proved in their

study that the more a firm was dependent on its rivals for investments the more use of derivatives they will have to have higher cash flows and to hedge their risks, explaining why the use of derivatives differ among and across industries.

### **Conclusion**

From this review of literature we can easily conclude that speculation, though a part of using derivatives, is not the main aim. Derivatives are mainly used for hedging purposes because they can hedge almost any type of risk associated with a firm. Since there are a number of types of hedging possibilities we can easily look at the broad horizon that is covered by using derivatives as a hedging strategy. And the best thing about using derivatives to hedge risk is that these instruments are not very costly thus the returns associated with them are more than the costs.

Though, we need to be careful about something pointed out by Thorbecke (1995). He said that the use of derivatives might have many benefits but they also have certain dangers associated with them. According to him derivatives are mainly used for hedging purposes, to hedge against risk but what they are actually doing is that by use of these derivatives, market risk is increasing and so would the exposure of firms to it. Since derivative trading leads to systematic risk in the market increasing a firm's market risk is in fact increasing rather than decreasing. Another problem that is associated by use of derivatives by managers of the firm is the agency cost problems in which managers will either benefit from insider trading or make certain dealings in derivatives which would increase their returns but minimize shareholders returns. Thus, such a situation would lead to problems in using of derivatives.

As far as the main purpose of this discussion is concerned, we can safely state from the literature reviewed so far that even an Islamic country can use derivatives for hedging purposes and all it will be



doing is protecting itself against risks. As Jobst (2007) proved that all the components of derivatives were according to the laws of Islamic Religion and none against it. He proved mathematically that derivatives were in compliance with Islamic laws and also suggested that with an increase in technology new Islamic-compliant components of derivative activities are cropping up.

### References

- Bowman, Chakriya (2004) "Cross-Hedging Effectiveness in Emerging Markets Experiencing Structural Change", *Australian National University – Crawford School of Economics and Government*.
- Brunzell, Tor; Hansson, Mats; Liljebloom, Eva. (2011) "The use of Derivatives in Nordic Firms", *European Journal of Finance*. Vol. 17 Issue 5/6, p355 - 376.
- Chan-Lua, A. Jorge (2005) "Hedging Foreign Exchange Risk in Chile: Markets and Instruments", *IMF Working paper*, No. 05/37.
- Chaplinksy, Susan (1999) "The Basics of Financial Derivatives", *University of Virginia Darden School Foundation* A case study presented to Graduate School of Business Administration.
- Chung, Y. Sam (2003) "Do Financial Analysts Value Corporate Hedging Strategies?: A case of Precious Metal Mining Firms", *EFMA 2004 Basel Meetings Paper*, Working Paper Series.
- Dr. Sheedy, Elizabeth (2002) "Corporate Use of derivatives in Hong Kong and Singapore: A Survey", *Macquarie Applied Finance Centre Research*, Paper No. 23, 21<sup>st</sup>.
- Egly, Peter V.; Sun, Jun (2014) "Trading Income and Bank Charter Value during the Financial Crises: Does Derivative Dealer Designation Matter?", *Quarterly Review of Economics & Finance*. Vol. 54 Issue 3, p355-370.
- Fehle, R. Frank, Brown, W. Gregory and Bartram, M. Sohnke (2003) "International Evidence on Financial Derivatives Usage", *AFA 2004 San Diego Meetings*, EFA 3003 Glasgow, Working Paper Series.
- Haushalter, G. David (2000) "Financing Policy, Basis Risk and Corporate Hedging: Evidence from Oil and Gas

- Producers”, *Journal of Finance*. Vol. 55 Issue 1, p107-152.
- Haushalter, David; Klasa, Sandy; Maxwell, William F (2007) “The Influence of Product Market Dynamics on the Firm’s Cash Holdings and Hedging Behavior”, *Journal of Financial Economics*, Vol. 84 Issue 3, p797-825.
- Helwege, Jean, Burns, Natasha and Bartram, M. Sohnke (2008) “Foreign Currency Exposure and Hedging: Evidence from Foreign Acquisitions”, *Lancaster University, University of Taxes, San Antonio and Penn State University, Working Paper Series* 2008.
- Jobst, A. Andreas (2007) “Derivatives in Islamic Finance”, *Islamic Economic Studies*, Vol 15, No.1.
- Judge, Amrit (2006) “Why and How UK Firms Hedge”, *European Financial Management Journal*, Vol. 12, No. 3, pp. 407 – 441.
- Kerwicz, D. Kimberly (1998) “Derivatives, Corporate Hedging, and Shareholder Wealth: Modigliani - Miller Forty Years Later”, *University of Illinois Law Review*, Vol. No. 1.
- Kothari, S.P. and Guay, Wayne (2002) “How Much do Firms Hedge with Derivatives?”, *AFA Atlanta Meetings, Working Paper Series*, March 2001.
- Nan, Lin (2007) “Impact of SFAS 133 on Speculation and Hedging” *Carnegie Mellon University*, September 13.
- Nguyena, Hoa; Faff, Robert. (2010) “Are Firms Hedging or Speculating? The Relationship between Financial Derivatives and Firm Risk”, *Applied Financial Economics*. Vol. 20 Issue 10, p827-843.
- Pramborg, Bengt and Hagelin, Niclas (2002) “Hedging Foreign Exchange Exposures: Risk Reduction from Transaction and Translation Hedging”, *EFMA 2001 Lugano Meetings, Working Paper Series*.
- Schiozer, Felipe Rafael and Saito, Richard (2005) “Derivative Usage and Risk Management by Non Financial Firms: A Comparison between Brazilian and International Evidence”, *Getulio Vargas Foundation, Working Paper Series*.

- Rogers, A. Daniel and Graham R. John (2002) "Do Firms Hedge in Reponse to Tax Incentives?", *Journal of Finance*, Volume 57, pp. 815 – 839.
- Thiagarajan, S. ramu and Peterson, A. Mitchell (1997)" Risk Measurement and Hedging", *Financial Management*, Vol. 29, Issue 4.
- Thorbecke, Willem (2005) "Financial Derivatives, Harnessing the Benefits and Containing the Dangers" *Working paper No. 145*.
- Vittas, Dimitri, Andersen, Erik Brink, Ladekarl, Regitze and Ladekarl, Jeppe (2007)  
"The Use of Derivatives to Hedge Embedded Options: The Case of Pension Institutions in Denmark" *World Bank Policy Research Working Paper 4159*.
- Weiner, J. Robert (2004) " Do Birds of a Feather Flock Together - Speculator Herding in Derivatives Market", *Working Paper Series*.