

## **Association between Derivative Usage, Risk Management and Value of Firms: A Systematic Review**

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### **Abstract**

There is a deficiency of consent on the role of derivative usage, risk management and value of firm. This review study investigates that whether the derivative usage minimizes the risk exposure of firms and whether derivative usage increases the value of firms. In addition this review study also investigates that whether the derivative usage minimizes the financial risk and foreign exchange risk of firms. This review study covers 46 quantitative studies which were published during the period of 2000 to 2018. The main findings of this review study are, firstly; the derivative practices are associated with minimization of overall risk of firms, secondly; usage of derivative practice reduce the risk between financial matters of firms, thirdly; the derivative practices are associated with risk reduction of foreign exchange rate volatility and fourthly; the value of firm is increased by the usage of derivatives. Future directions for researches are suggested.

**Keywords:** Derivatives, Financial Risk Management, Foreign Exchange Risk Management, Value of Firms.

### **Introduction**

Previous literature identified that firms faced a lot of risk (Financial risk, Commodity risk, credit risk, currency risk, interest risk, volatility risk and volume risk) during the operations of their business and these risks directly affected the value of firm, growth of firm and performance of firm (Jalilrand, et al., 2000; Prevost et al., 2000; Hentschal et al., 2000; Brown, 2018; Flecturer, et al., 2002; Shu, et al., 2003; Masry, 2003; Jin et al., 2006; Bali, et al., 2007; Bartram, et al., 2008; Ameer, 2009; Latridis et al., 2012 and Peltomaki, 2013). The common risk which approximately all firms face is financial risk, credit risk and foreign currency risk (Jalilrand, et al., 2000; Prevost et al., 2000; Hentschal et al., 2000; Haushalter, 2000; Brown, 2018; Marker et al., 2001; Flecturer, et al., 2002; Shu et al., 2003; Hagelin, 2018; Nguyen et al., 2003; Masry, 2003; Jin et al., 2006; Bali, Hume, et al., 2007; Nguyen, et al., 2007; Bartram, et al., 2008; Kapitsinas, 2008; Ameer, 2009; Afza, et al., 2011; Latridis, et al., 2012; Lel, 2012; Chang, et al., 2013; Zhou, et al., 2013; Peltomaki, 2013; Lto, et al., 2016). Many researchers examined the risk management policies of firms for their investment and financial policies. Researchers found in their examination that the firms which are users of hedging policies use less external finance than non-users. The hedging policies help the firms to avoid from going outside of the firm for getting the finance. Firms will be able to generate their own finance at the time of need by using of hedging polices.

Derivatives have different types; one of them is foreign currency derivatives or exchange rate derivatives. These derivatives are used for minimizing the risk which is associated with the foreign transaction. As Allaynnes, et al., 2001; Brown, 2018; marker, et al., 2001; Hagelin, 2018; Nguyen, et al., 2003; Nguyen, et al., 2007; Kapitsinas, 2008; Afza, et al., 2011; Lel, 2012; Chang, et al., 2013 and Lto, et al., 2016, discussed in their study which is about the usage of foreign currency derivatives which are generally used for the purpose of hedging and to reduce the exposure of exchange rate. They found that the usage of foreign currency derivatives by firms is for hedging pur-

poses and the firm's hedge foreign currency for reduction in exposure of exchange rate which firm faces. The investment of firm is affected by the financial constraints as the Fazzari et al. (1998) says in their study of investment by corporation and the constraints in financing. They said that the corporate investment is affected by financial constraints because of problem in the information of capital market.

Financial risk and credit risk means the companies have to fund their business. The basic sources of funds from where a company could obtain funds are internal sources and external sources. Internal sources means the company could obtain funds from inside of the organization. While the external sources means the companies could obtain funds from the outside sources and these outside sources include two further types which are first; funds obtain through borrowing and second; funds obtain through issuing of shares of the company as the previous researcher employees these sources in their researches (Bradshaw, Richard and Saloon, 2006 and DaDalt et al., 2012). The companies have to give priority to their sources of financing from internal financing to equity according to the charge of financing and the company's desires to raise equity at last as financing resources (Myers and Majluf, 1984 and Muarray Z. and Vidhan k., 2005). As generally known, in external debt financing, the companies have to return the extra amount of money plus the principle amount to the creditors and in financing from equity the firms have to give share in profit of the firm. External financing is usually considered to be more costly than internal financing because the firm has to pay a transaction fee to obtain it. External finance directly affect the value, growth and performance of firms. As external finance is a big challenge for the firms and firms always try to reduce their dependency on external finance usage.

The user of derivatives has no need to get the finance from outside sources because they take benefit of their internally generated finance. Therefore the usage of derivatives reduces the utilization of external financing as the DaDalt et al. 2012, found in their study whether the usage of external finance reduced by the usage of derivative and they found positivity in their findings, the derivative make an impact on usage of external finance. According to Adam, 2017, that the firms got finance from internal resources by the use of derivatives and there is a strong association between the income of hedging and spending of investment. So, if the firms use the derivative contracts for business transaction they will minimize the risk of high volatility in prices and by this the firms will save their self from over prices. The firms will earn more by reduction in volatility in prices and will generate their own finance. They will have no need to go outside of the firm forgetting the finance. They will finance by internally.

The scope of derivative is very high in relation to remove the financial distress cost. The firms face the underinvestment problems when the financial distress cost is high. If the firms use the derivative contracts they will generate their own internally finance and therefore they will never face the financial distress cost as per the study of Afza et al. (2011), Artez et al. (2007) and Berkman et al. (1996). They all investigate the scope of usage of financial derivatives. Their studies revealed that the cost of financial distress is low in those firms who are derivative users and they have no underinvestment problem, no tax and financial distress cost problem. They also have no other agency cost problems. The firms which uses the derivatives, have the competitive edge from those firms which does not use the derivatives because there is a very strong positive relation between the purchases from abroad and also with firm's size and growth. Chaudry et al. (2014) determined the hedging policies of non-financial firms and use of derivatives by them for risk management. They also find that the firm is always wanted to get competitive advantage from those who are non-users of derivatives. Furthermore, significant linkage is found in the purchases from liquidity, purchases from other countries and firm's growth and in the usage of derivatives.

Getting External finance is always a big challenge for the non-financial firms because the external finance have a negative association with the profit maximization, investment opportunities, value of firm, and growth of firms and performance of firms. Many researchers investigate the relation of external finance with firms investment decision and most of them found that the external finance is associated with constraints in investment decision. The external finance has negative impact on firm's investment (Umutlu, 2010; Aivazain and Callen, 1980; Buettner, Overesch, Schreiber and Wasmer, 2006; Arafat, Warokka and Suryasaputra, 2014; Ahmad, Shah, Bilal and Ahmad, 2013; Yuan and Motohashi, 2012; Deangelo and Masulis, 1980 and Krishnan, 1996). External finance usage also affects the growth of firms. The firms which are associated with the usage of external finance have low growth rate and opportunities (Jung, 1996; Krishnan, 1996; Ling, 2008 and Ahn, 2005). The profits of firms also go down when the firms use the external finance for financing because the profitability and external finance are inversely associated with each other (Srivastava and Namita, 2014; Fama and French, 2002; Banga and Sinah, 2003; Mangalam, 2010 and Bennett, 1993).

Therefore companies are always in search of those tools which are helpful in reduction of that risk which is related to the external finance. One of the basic tool which is considered as helpful in minimization of financial risk, credit risk and foreign exchange risk exposure is derivatives. The derivatives are tools of hedging and these tools are used for the risk management (Jalilrand, et al., 2000; Prevost, et al., 2000; Hentschal, et al., 2000; Haushalter, 2000; Brown, 2018; Marker, et al., 2001; Flecturer, et al., 2002; Shu, et al., 2003; Hagelin, 2018; Nguyen, et al., 2003; Masry, 2003; Jin, et al., 2006; Bali, et al., 2007; Nguyen, et al., 2007; Bartram, et al., 2008; Kapitsinas, 2008; Ameer, 2009; Afza, et al., 2011; Latridis et al., 2012; Lel, 2012 Chang, et al., 2013; Zhou, et al., 2013; Peltomaki, 2013; Lto, et al., 2016). The companies want to minimize the risk which is associated with their business. The derivatives usage reduces the dependency of firms on the usage of external finance (Haushalter, 2000; Prevost, et al., 2000; Adan, 2002; Adedeji, et al., 2002; Berkman, et al., 2002; Carter, et al., 2006; Artez, et al., 2007; Reynolds, et al., 2007; Khediri, et al., 2009; Afza, et al., 2011; DaDalt, et al., 2012 and Zhou, et al., 2013).

Derivatives are used for the minimization of risk exposure which is associated with the corporation profit, value and performance and by use of derivatives the chances of heavy loss are minimized and the value of firm can be increased. (Prevost, et al., 2000; Allaynnes, et al., 2001; Brown, 2018; Marker, et al., 2001; Fletcher, et al., 2002; Lookman, 2004; Carter, et al., 2006; Kapitsinas, 2008; Bartram, et al., 2008; Clark, et al., 2009; Fauver, et al., 2010; Allaynnes, et al., 2012; Zhou, et al., 2013 and Phan, et al., 2014).

Some firms considered that if they give the value to the derivatives their value will be low. The investors do not show interest in their firms. But this is a wrong thinking about the derivatives. The inventors do not evaluate the firm on the bases of derivatives usage. For this purpose the Khediri (2010) investigated whether the investor give the value to usage of derivatives? He found that there is no effect on firm evaluation by use of derivatives. The Carter et al. (2006) and Jin et al. (2006) also investigated that whether the value of firm is affected by the hedging or not. They took the airline sector and fuel sector which is related to the airline industry. They found that the jet fuel hedging is positively related with airline firm worth and they found positive relationship between capital investment value and hedging

This review is restricted to the empirical studies that examines the association between derivatives and three related concepts (Overall risk management, financial risk management, Foreign exchange risk management and value of firm). This review allows us to address the competing pers-

pective of three related concepts in the financial derivative practices linkage with producing the evidence of a diverse sample of quantitative studies and by investigate and discussing detailed extent to which the disparities in this review study elements effect on results. Based on this review study, for future research the important lines will be highlighted which will give a better quantitative understanding of these three perspectives. This review study will contributes, firstly, to investigate the impact of financial derivatives on the financial risk. Previously researchers has tended to find out the association among derivative practices and financial risk management. Secondly, this study will contribute to investigate the impact of financial derivative practices on the foreign exchange rate risk. The following research question is for this perspective. Thirdly, to investigates the impact of financial derivative practices on overall risk management of firm and the following question is associated with this perspective and fourthly, to investigates the impact of financial derivative practices on the value of firm and the following research question is associated with this perspective. With these above perspective the following research questions is composed to find out the conclusion of this reviewed study:

1. Does the financial derivative usage minimize the financial risk of firms?
2. Does the financial derivative usage minimize the exposure of foreign exchange rate risk?
3. Does the financial derivative practices are associated with minimization of firm overall risk exposure?
4. Whether the derivative practices increase the value of firms?

#### **Study Attributes**

##### *Financial derivatives*

*“A financial derivative is an agreement between two or more than two parties where compensation is found on some agreed prices and time. Since a derivative can be produced by means of a joint agreement. Financial derivatives are the tools of hedging which are used for the minimization of risk exposure which is associated with the corporation profit, value and performance (Adam, 2017; Barton, 2017; Afza et al., 2011; Chaudry, et al., 2014; Khediri, 2010; Carter, et al., 2006; Geczy, et al., 1997 and Guay, 1991). By use of financial derivatives the chances of heavy loss are minimized and the value of firm can be increased.”*

##### *Risk*

*“Risk can be defined as the intentional interaction with uncertainty. Uncertainty is a potential, unpredictable and uncontrollable outcome. Risk is the possibilities of attaining or losing something of worth. Worth (such as physical health, emotion well-being, social status or financial wealth) can be increased or decreased when taking risk resultant from a given action or inaction, predicted or non-predicted.”(Burgman, 2005; Douglas & Wildavsky, 1983; Seery, 2011)*

*“Financial risk is the probability that investors will lose money when they put in their money in a company that has debt, if the company’s cash flow verifies that the company has inadequate funds to meet its financial commitments (Bodie, 2009; Jensen, 1993) . When a company consume the debt financing, its creditors are settled up before its shareholders if the company becomes insolvent. Financial risk also refers to the probability of a corporation or government failure to pay on its bonds, which would grounded for those bondholders to lose money. In external debt financing, the companies have to return the extra amount of money plus the principle amount to the creditors and in financing from equity the firms have to give share in profit of the firm (Yadav, 2018). External financing is usually considered to be more costly than internal financing because the firm has to pay a transaction fee to obtain it. External finance directly affect the value, growth and performance of firms. As external finance is a big challenge for the firms and firms always try to reduce their de-*

*pendency on external finance usage. Getting External finance is always a big challenge for the non-financial firms because the external finance have a negative association with the profit maximization, investment opportunities, value of firm, and growth of firms and performance of firms (Heil, 2018)."*

*Foreign exchange risk*

*"Foreign exchange risk refers to the risk which an investor faces when he desires to exclude a long term or short term situation in a foreign currency at a loss, because of a contrary association in exchange rates (Bernanke, Laubach, Mishkin, & Posen, 2018; De Grauwe, 2018). Foreign exchange risk is the financial risk of an investment's value changing due to the changes in currency exchange rate. Foreign exchange risk is also referred as FX risk or currency risk or exchange rate risk (Pilbeam, 2018)."*

*Value of firm*

*"Value of firm means the measure of a company's total value, often used as a more comprehensive alternative to equity market capitalization (Damodaran, 2016; Grant, 2016). The market capitalization of a company is simply its share prices multiplied by the number of shares of a company has outstanding. Firm's value is calculated as the market capitalization plus debt minority interest and preferred shares minus total cash and cash equivalents (Means, 2017)."*

***Role of Derivatives in Development of Manufacturing Sector***

The firms face a lot of risk (Financial risk, Commodity risk, credit risk, currency risk, interest risk, volatility risk and volume risk) during the operations of their business and always take different measures to reduce these risks. These includes avoidance, loss prevention, loss reduction, separation, duplication, insurance, diversification and hedging. The most common measures are insurance, diversification and hedging. Insurance means a contract between individual person and insurance company. The insurance company undertakes the guaranty to provide the compensation against specified loss, damage, illness or death in return for specific premium payment. Diversification means that allocating the capital of firm in a way that it will be distributed in various assets which are different in nature.

While the hedging means the investment to minimize the risk of adverse price fluctuation of an assets. Normally hedging is done through usage of derivatives and this one is most preferable by the firms. In this study our main focus is on derivatives usage. Derivatives are the tools of hedging which are used for the minimization of risk exposure which is associated with the corporation profit, value and performance (Adam, 2017; Barton, 2017; Afza and Alam, 2011; Chaudry, Mehmood and Mehmood, 2014; Khediri, 2010; Carter, Roger and Simkins, 2006; Geczy, Minton and Schrand, 1997 and Guay, 1991). By use of derivatives the chances of heavy loss are minimized and the value of firm can be increased. A financial derivative is an agreement between two or more than two parties where compensation is found on some agreed prices and time. Since a derivative can be produced by means of a joint agreement. Derivatives let the investors to make the returns larger from small actions in original price of assets. Derivatives were the consequence of financial modernism. Modernism that react to existing wants and assist in managing risk in more and more complicated business environments. The types of derivative can't be described in a final list because these instruments have unlimited type which can be made by imagination. The derivatives are categorized in different types which are Options, Forward Contracts, Futures and Swaps. The most common type of derivatives which are used by firms as risk reducers are options and swaps. Option derivatives are those in which the buyer of an option has rights but not obligations to sell or buy the asset throughout an agreed time for a particular price. A Swap is the trade of the same obligation or security. The

best recognized swap take place when two parties swap interest payments derived from same principal amount. Swaps market has developed significantly. The types of swaps which are mostly used are interest rate swaps and currency swaps. Foreign currency swaps are used for mitigation of exchange rate exposures of firms. Many researchers found in their examination that the firms which are users of foreign currency derivatives, that firms face less risk of exchange rate exposure (Allaynnes and Ofek, 2001; Brown, 2018; marker and Huffman, 2001; Hagelin, 2018; Nguyen and Faff, 2003; Nguyen, Faff and Marshall, 2007; Kapitsinas, 2008; Afza and Alam, 2011; Lel, 2012; Chang Hasin and Hou 2013 and Lto, Koibuchi, Sato and Shimizu, 2016).

Derivatives are also helpful for those firms which have not strong governance (Lel, 2012). The use of derivatives by non-financial firms is also helpful for investment opportunities. The firms which are users of derivatives have a high growth in their investment opportunities (Nance, Smith and Smithson, 1993 and Geczy, et al., 1997). Many non-financial firms could take advantages of management of cash flow volatility from usage of derivatives, as, the derivatives are strongly associated with the minimization of cash flow volatility (Masry, 2003 and Geczy, et al., 1997). The smoother earning also could be possible by the usage of derivatives (Chang, et al., 2013).

The core focus of this study will be on three things which could be manage through derivatives. Firstly, foreign exchange risk, Secondly; value of firms, Thirdly; Financial risk management.

#### ***Foreign Exchange Risk and Role of Derivatives***

Due to globalization a firm could expand his business across the boundaries of country. The firm goes for business where he wants. The firms do import, export and enter port trade for expansion of business activities. For this purpose when the firms do import or export or enter port trade, they faces the problems of currency because every country has its own currency such as USA have Dollar, UK have Pound, Japanese have Yen and Pakistan have Rupees. When the firm of one country do import or export, the other country's firm want to pay or receive the currency in his country's currency because every country backed his currency according to their rules and regulation. Therefore every country's currency is different from other country's currency.

With the day by day increase or decrease in demand and supply of currency the value of one's country's currency is increased or decreased. Because of increase or decrease in the value of currency, there is always a risk of pay or receive more or less for the same quantity of import or export. The firms always try to minimize the foreign exchange risk exposure and seeks for those tools which are associated with minimization of foreign exchange rate risk exposure. The most efficient and mostly used tool for minimization of foreign currency risk exposure is foreign currency derivative. Foreign currency derivatives are tools of hedging which are used for the reducing of risk exposure which is associated with the corporation's profit, value and performance.

By use of foreign currency derivatives the chances of heavy loss by exchange rate risk exposure are minimized (Allaynnes and Ofek, 2001; Brown, 2018; marker and Huffman, 2001; Hagelin, 2018; Nguyen and Faff, 2003; Nguyen, Faff and Marshall, 2007; Kapitsinas, 2008; Afza and Alam, 2011; Lel, 2012; Chang Hasin and Hou 2013 and Lto, Koibuchi, Sato and Shimizu, 2016).

#### ***Financial Risk Management and Role of Derivatives***

The firms faces Financial risk, Commodity risk, credit risk, currency risk, interest risk, volatility risk and volume risk, during the operations of their business and always in search of measures which are helpful in managing these risks. The derivatives are tools of hedging and these tools are used for the risk management (Jalilrand, Switzer and tang, 2000; Prevost Rose and Miller, 2000; Hentschal and Kothari, 2000; Haushalter, 2000; Brown, 2018; Marker and Huffman, 2001; Flecturer, Forbes and Marshall, 2002; Shu and Chen, 2003; Hagelin, 2018; Nguyen and Faff, 2003; Masry, 2003; Jin and Jarian, 2006; Bali, Hume and Martell, 2007; Nguyen, faff and Marshall, 2007; Bar-

tram, Brown and Conrad, 2008; Kapitsinas, 2008; Ameer, 2009; Afza and Alam, 2011; Latridis and Euangelopoulos, 2012; Lel, 2012; Chang, Hasin and Hou, 2013; Zhou and Wang, 2013; Peltomaki, 2013; Lto and Koibuchi, Sato and Shimizu, 2016). The derivatives are also found very helpful for reduction of these risk. As many researcher check out the relation among derivatives and firms risk and they all found that the firms which are users of derivatives faces less risks. The derivatives usage and risk are inversely related to each other (Adam, 2017; Barton, 2017; Khediri, 2010; Carter, et al., 2006; Bali, Hume and Martell, 2007; Fender, 2000 and Bartram, et al., 2008).

Financial risk means the companies have to fund their business. The basic sources of funds from where a company could obtains funds are internal sources and external sources Internal sources means the company could obtain funds from insides of the organization. While the external sources means the companies could obtain funds from the outsides sources and these outside sources includes two further types which are first; funds obtain through borrowing and second; funds obtain through issuing of shares of the company as the previous researcher employees these sources in their researches (Bradshaw, Richard and Saloon, 2006 and DaDalt et al., 2012). The companies have to give priority to their sources of financing from internal financing to equity according to the charge of financing and the company's desires to raise equity at last as financing resources (Myers and Majluf, 1984). As generally known, in external debt financing, the companies have to return the extra amount of money plus the principle amount to the creditors and in financing from equity the firms have to give share in profit of the firm. External financing is usually considered to be more costly than internal financing because the firm has to pay a transaction fee to obtain it. External finance directly affect the value, growth and performance of firms. As external finance is a big challenge for the firms and firms always try to reduce their dependency on external finance usage.

Getting External finance is always a big challenge for the non-financial firms because the external finance have a negative association with the profit maximization, investment opportunities, value of firm, and growth of firms and performance of firms. Many researchers investigates the relation of external finance with firms investment decision and most of them found that the external finance is associated with constrains in investment decision. The external finance has negative impact on firm's investment (Umutlu, 2010; Aivazain and Callen, 1980; Buettner, Overesch, Schreiber and Wasmer, 2006; Arafat, Warokka and Suryasaputra, 2014; Ahmad, Shah, Bilal and Ahmad, 2013; Yuan and Motohashi, 2012; Deangelo and Masulis, 1980 and Krishnan, 1996).

External finance usage also affects the growth of firms. The firms which are associated with the usage of external finance have low growth rate and opportunities (Jung, 1996; Krishnan, 1996; Ling, 2008 and Ahn, 2005). The profits of firms also go down when the firms uses the external finance for financing because the profitability and external finance are inversely associated with each other (Srivastava and Namita, 2014; Fama and French, 2002; Banga and Sinah, 2003; Mangalam, 2010 and Bennett, 1993).

#### ***Value of Firms and Role of Derivatives***

Value of firm's means that how much the firm have marketability? The marketability of firms come from the profitability of firms and holding of shares by shareholders. The firms always try to improve the profitability of firm and try to increase the holding of shares by shareholders. The holding of share by shareholders is directly proportionate with the profitability of firm. If the profitability of firm increases then the investors shows more interest into the firms and the shareholdings will be increased (Vise versa). The firms always in search of those measures which are helpful for increasing their values. Derivative usage are associated with the firm's value. The firms which are users of derivatives their values are increased. (Prevost Rose and Miller, 2000; Allaynnes and Wes-

ton, 2001; Brown, 2018; Marker and Huffman, 2001; Fletcher, Forbes and Marshall, 2002; Lookman, 2004; Carter, Roger and Simkins, 2006; Kapitsinas, 2008; Bartram, Brown and Conrad, 2008; Clark and Judge, 2009; Fauver and Narango, 2010; Allaynnes, Lel and Miller, 2012; Zhou and Wang, 2013 and Phan, Nguyen and Faff, 2014).

Firm's value could be increased when there is a reduction in their risk associations. As earlier saying in this study that the firms faces a lot of risk (Financial risk, Commodity risk, credit risk, currency risk, interest risk, volatility risk and volume risk) during the operations of their business and always took different measures to reduce these risks. The derivatives are also found very helpful for reduction of these risk. As many researcher check out the relation among derivatives and firms risk and they all found that the firms which are users of derivatives faces less risks. The derivatives usage and risk are inversely related to each other (Adam, 2017; Barton, 2017; Khediri, 2010; Carter, et al., 2006; Bali, Hume and Martell, 2007; Fender, 2000 and Bartram, et al., 2008).

### Methodology

For carrying out the review study, the standard principle for completeness of this initial and essential step is to search out and select the original papers on interested topic. This study follows the Stuck et al., (1999) strategy of researching the articles, which consists of three stages: Firstly, this study used the universal research database (Google); secondly, this study cross checked the references which are available in the articles; thirdly, asked for the recommendations from the experts. This study is limited to the time-span of 2000-2018. The literature was searched from the international journals which are related to the field of finance, accounting, economics and management. In this review study the literature was searched by cross-checking the resulting list of studies with the section of references of 15 studies (Haushalter, 2000; Jalilrand, et al., 2000; Barton, 2017; Allaynnes, et al., 2001; Brown, 2018; Marker, et al., 2001; Fletcher, et al., 2002; Lookman, 2004; Carter, et al., 2006; Bartram, et al., 2007; Bali, et al., 2007; Kapitsinas, 2008; Bartram, et al., 2008; DaDalt, et al., 2012 and Allynne's, et al., 2012). Only the articles which are published during the year 2000 to 2018 were chosen in this research. This review study tries to include as many researches as possible, for this purpose the studies which are related to derivative practices relationship with overall risk management, financial risk management, foreign exchange risk management and value of firms were included in search as shown in table 1.

**Table 1. Sample Studies**

Reference	What they study in which time frame	What are their findings
Haushalter 2000	Determine about the hedging by corporation and basic risk exposure of 100 oil and gas production firms for the period of 1992 to 1994.	He finds that there is a positive relationship between financial leverage and hedging of firms. Moreover he also finds the positive association between total ratio of assets and hedging of price risk.
Jalilrand, et al., 2000	Studies the difference and similarities in the way to use derivatives for risk management of 548 largest non-financial firms of Canada for the year of 1996	They find that the Canadian firms use more derivatives for U.S firms and the usage of derivatives is for the purpose of risk management.



Reference	What they study in which time frame	What are their findings
Prevost, et al., 2000	Survey about the risk management instruments and about the effect of derivatives from 334 firms of New Zealand in 1998	They find in their survey that the firms of New Zealand uses the financial derivatives for risk management and also finds that the financial derivatives usage increase the value of firm and also minimize the risk associated with financial matters.
Hentschal, et al.,2001	Investigates whether the usage of derivatives by the 425 large U.S firms is associated with minimization of risk or maximization of risk in time frame of 1992-1993.	They finds that firms manage their different risk exposure with derivatives usage and the derivatives usage is associated with risk minimization of firms.
Allaynnies, et al.,2001	Determine the foreign currency derivatives usage, exchange rate exposure and hedging for manufacturing firms of S&P 500 for the year of 1993.	They determine that the usage of foreign currency derivatives by firms is for the purpose of hedging and firm hedge foreign currency to decrease the exposure of exchange rate which is faced by firms.
Allaynnies, et al.,2001	Determine the firm's market value and the usage of foreign currency derivative of 720 manufacturing firms for the time period of 1990 to 1995.	They find a positive connection between foreign currency derivatives usage and firms value. Moreover they find that the firm's value is increased by the result of derivative usage
Marker, et al.,2001	Examine the effect of foreign exchange derivatives usage and change in foreign exchange rate on the value of 166 firms of U.S for the period of 1994 to 1995.	They found that there is an increased relationship between foreign exchange derivatives and foreign exchange risk. Moreover they find that companies which are non-users of foreign exchange derivatives their value is affected by risk of foreign exchange.
Fletcher, et al.,2002	Investigates the impact of derivatives on UK unit trust risk and on their performance over the period of 1995 to 1997.	They find that there is a major effect of derivatives usage on whole sample trusts risk. Moreover they also find that the usage of derivatives have small impact on performance and also the firms which are users of derivatives have fewer risk change.
Adedeji, et al.,2002	Investigates that why the 234 firms of UK use the interest rate derivatives for the period of 1996.	They find in their investigations that the firms of UK uses the interest rate derivatives to reduce financial distress and to increase the economics of scale and they have a positive association with derivatives.

Reference	What they study in which time frame	What are their findings
Berkman, et al.,2002	Determine the relationship between financial characteristics and derivative usage by 158 firms of Australia over the period of 1995.	They find that the derivative usage increases the firm's leverage and size and the derivative usage is positively associated with both.
Shu, et al.,2003	Examine the major determinants for which the 1100 plus firms of Taiwan uses the derivatives over the period of 1997-1999.	They find that the firms of Taiwan uses the derivatives for the purpose of managing firms risk related to debt.
Masry 2003	Survey about financial derivatives usage by the 401 non-financial firms of UK for 2001.	He finds that the large public and international firms uses derivatives for risk management and the major reason of usage is to manage the cash flow volatility.
Lookman 2004	Investigate that whether 364 oil and gas producing firm's value is increased by the usage of hedging through derivatives over the period of 1999-2000.	He finds that the firms which are users of derivative for primary risk their values are higher than the non-users of derivatives.
Carter, et al.,2006	Investigates that whether the firms of U.S airline industry affected by hedging in the time frame of 1992 to 2003.	They find that the Jet Fuel hedging is positively related with the values of airline firms and there is also a positive association between hedging and value of capital investment.
Jin, et al.,2006	Examine the hedging and value of 199 U.S oil and gas companies over the period of 1998 to 2001.	They find that the sensitivity (risk) of oil and gas stock price is reduced by hedging usage and the market value of oil and gas industry is not affected by hedging.
Artez, et al.,2007	Investigate whether the hedging is rationales for U.K corporation and what is the value of hedging for the time period of 2002 to 2006?	They find that the cost of external finance can be reduced by the corporate hedging. Moreover the hedging can minimize the cost of financial distress and it can also reduce the predictable tax.
Bali, et al., 2007.	Examine whether the hedging through derivatives reduces the market risk exposure of firms over the period of 1995 to 2001.	They find that there is a little relationship between firms risk exposure and the usage of derivatives.
Nguyen, et al.,2007	Explore the hedging by foreign currency derivatives on exchange rate risk exposure and impact of foreign currency derivatives on Euro exchanger rate risk of 120 non-financial French firms for the period of 1996-2000.	They find that the foreign exchange risk exposure is decreased by the usage of foreign currency derivatives and the Euro is also linked with the reduction in foreign exchange exposure but it does not linked with removal of foreign exchange risk exposure.

Reference	What they study in which time frame	What are their findings
Reynolds, et al., 2007	Examine the linkage between the decision of 2006 New Zealand firms for using the derivatives and decision of New Zealand firms for investment for the period of 1999.	They find that the usage of derivatives is associated with the firm's size and capital structure and liquidity of firms and they also find that the usage of derivatives is increased by the non-financial firms.
Kapitsinas 2008	Investigate the impact of derivatives on the value of 81 manufacturing firms of Greece for the period of 2004 to 2006.	He finds a positive and significant connection between the usage of derivatives and the value of firm.
Bartram, et al., 2008	Examine the effect of derivatives on value and risk of 6888 manufacturing firms of 47 countries for the period of 200-2001.	They find that firms can reduce their total risk and systematic risk through derivative usage and find that there is a positive but weak relationship between firm's value and financial derivatives.
Khediri, et al., 2009	Investigates the decisions of finance and the operations of hedging by all manufacturing firms of French for the period of 2000 to 2002.	They find that decisions of financing and hedging by firms are determined on jointly bases. The firms which are highly leveraged by hedging their financial distress cost is very low.
Ameer 2009	Examine that how much the Malaysian firms give value to interest rate and foreign exchange rate derivatives for risk management for the period of 2003-2007.	Find that few Malaysian firms use the derivatives for hedging of risk and the firms which uses derivatives have a positive association with total earning.
Clark, et al., 2009	Investigate the financial hedging strategies' effect on firm's value in short run and long run by using different types of hedging instruments just like option, swap, foreign currency debt and forward for 412 non-financial firms of U.K for the years 1995.	They find that the firms uses the forward and option hedging instrument for short run and the foreign currency debt and forward for long run. They also find hat overall all foreign currency swap derivatives are related with generation of firms value.
Khediri 2010	Investigates that whether the investor of 250 non-financial firms of French give importance to usage of derivatives for the period of 2000 to 2002	He finds that the derivatives to usage have no impact of firm's valuation.
Ameer 2010	Examine the practices of corporate hedging by 112 Malaysian firms for the duration of 2003 to 2007.	He finds that there is a significant linkage between derivative usage and foreign sale, size, firm's growth and fluidity.
Fauver, et al., 2010	Examine the 1746 U.S firms' value with the usage of derivatives for the period of 1991 to 2000.	They finds that there is a negative impact of derivatives usage on those firms value which have a greater problem of agency

Reference	What they study in which time frame	What are their findings
		and monitoring.
Afza, et al.,2011	Determine the derivatives usage and risk management of foreign exchange risk for 86 non-financial firms of Pakistan over the period of 2004 to 2007.	They find that the firms use the foreign currency derivatives to minimize the risk exposure of foreign currency risk.
Afza, et al.,2011	Determine the scope of financial derivatives for 105 manufacturing firms of Pakistan for the period of 2004-2008.	They find that the firms which are users of financial derivatives their cost of financial distress is low and firms have no problem of underinvestment.
DaDalta, et al.,2012	Examine that whether derivative usage decreases the usage of external finance of USA firms over the period of 2002 to 2004.	They find that the financial derivatives have negative association with external finance.
Latridis et al., 2012	Examined that how much 229 firms from London stock exchange's financial measures are affected by usage of hedging instruments? For the period of 2006	They find that the firms which are users of hedging instrument have greater development in finance as compare to non-users of hedging instruments. Moreover they also find that the firms can reduce variability and riskiness by usage of hedging instruments and the hedging instruments can improve fundamentals of firms.
Allynne's, et al., 2012	Examine the usage of foreign currency derivatives and corporate governance by firms and the impact of their usage on 39 cross-listed U.S firm's value.	They find that the firms which have strong internal and external corporate governance enjoy the very significant premium from foreign currency derivatives and the relationship between foreign currency derivatives usage and the firm's value is also linkage with the strong corporate governance.
Lel 2012	Examine that how much 1039 firms from 30 countries governance support to firm for using the foreign currency derivatives for the period of 1990 to 1999.	They find that the firms which have strong governance used the derivatives for reduction in currency exchange exposure and reduction in external finance usage. The firms which have no strong governance use the derivatives only for the reason of management.
Chang, et al., 2013	Examine the currency derivative usage impact on earnings from the exchange rate risk exposure for all manufacturing firms of China for	They find that the exchange rate exposure is decrease by currency derivative usage and the earning management chose the currency derivatives for smooth earnings

Reference	What they study in which time frame	What are their findings
	time period of 2000 to 2011.	and for avoiding of small loss with the reduction in exchange rate risk exposure.
Zhou, et al.,2013	Determine the 148 UK non-financial firm's management of foreign exchange risk by derivative usage for the year of 2013.	They find that the UK non-financial firm's use derivatives for managing the exposure of exchange risk, have a positive effect to their managing and through use of derivatives their exposure to exchange rate risk is decreased and the firm's value is increased and cost of capital also decreases.
Peltomaki 2013	Investigates the derivatives diverse strategy of funds in association with their risk exposure and performance of 3382 individual funds of hedging and 761 funds of hedging funds for the period of 1994 to 2006.	He finds that derivatives divers strategy can be associated with the increase in the large losses probability and the weak performance and also find that the hedge funds are differ from funds of hedging funds because the funds of hedge is associated with derivative they manage risk with it.
Chaudry, et al.,2014	Determine the hedging policies of 75 non-financial firms of Pakistan and their usage of derivatives for risk management over the period of 2007 to 2011.	They find that users of derivatives have complete edge over non users of derivatives. Moreover they also found an important association between usage of derivatives and abroad purchase, liquidity of firms and firm's size and growth.
Phan, et al.,2014	Investigate the association between financial derivatives and 94 oil and gas exploring US firm's value over the time duration of 1998 to 2009.	They find some evidence in their investigation that hedging through financial derivatives increases the value of firms when there is price decreasing period.
Ayturk, et al., 2016	Determine the usage of corporate derivatives effect on Turkey 204 non-financial firms value over the period of 2007 to 2013	They find in their determination that the Turkish firms value does not affected by the derivatives practices.
Lto, et al., 2016	Investigates the association between 227 Japanese firm's exchange rate risk exposure and the tools of risk management.	They find that the financial and operational hedging through currency derivatives could minimize the risk associated with exchange rate.
Barton 2017	Investigates whether the derivative usage affect the earning management decisions of 304 non-financial firms over the period of 2013 to 2015.	He finds that the discretionary accruals and usage of derivatives by managers are partial alternatives for smother earnings.

Reference	What they study in which time frame	What are their findings
Adam 2017	Examine that whether derivatives usage reduces the dependency on capital market of 111 north Americans Gold mining industries..	He found that the firms which used the derivatives are financed internally and there is a strong positive association between hedging revenue and investment expenditures.
Brown 2018	Investigates that how the foreign exchange risk can managed with the derivatives usage of 3110 U.S based HDC incorporation which are the users of foreign currency derivatives.	He finds that the foreign exchange risk could be managed through the foreign currency derivatives and foreign exchange risk management is a part of foreign operations and smooth earning.
Hagelin 2018	Examine that why the 160 non-financial firms of Sweden uses the currency derivatives for hedging for the year 2016.	He finds that the firms uses the currency derivatives for minimization the exposure of translation of currency and this one is related to increase the value of firm by reducing financial distress and underinvestment problem.
Kapitsinas 2018	Determine the usage of derivatives by 120 manufacturing firms of Greece for their risk management for the fiscal year of 2013.	The researcher finds that the firms use the derivatives for the purpose of minimization of interest rate risk and foreign exchange risk.

### *Description of study*

This review study's literature search, resulted in 46 studies which are most relevant to the relationship among derivatives and overall risk management, financial risk management, foreign exchange risk management and value of firms. Much of these studies are published in the finance focused journals such as the journal of Business Finance & Economics. Other studies are published in economics journal such as Applied Economics Letters. The population which is used in these studies are from different sectors. The 18 studies use all kind of firms (e.g. Financial, non-financial etc.) as sample, 11 studies uses non-financial firms, 9 uses only manufacturing firms, 4 uses oil and gas industries and the other remaining 4 studies found that they uses the sample data of financial firms, Airline industry, Gold and Mining and Hedging funds industries as sample. The detail of studies which are included in this study is presented in table 2.

**Table 2. Details of Study**

No	Reference	Dev	OA Risk	FR	FX Risk	V of Firm	Sample	Time Frame Design
1	Haushalter 2000	1	0	1	0	0	Oil and Gas production firms (100)	LN
2	Jalilrand, Switzer and Tang 2000	1	1	0	0	0	548 Non-financial firms of Canada	LN

No	Reference	Dev	OA Risk	FR	FX Risk	V of Firm	Sample	Time Frame Design
3	Prevost, Rose and miller 2000	1	1	1	0	1	334 firms of New Zealand	LN
4	Hentschal and Kothari 2001	1	1	0	0	0	425 Large US firms	LN
5	Allaynnes and Ofek 2001	1	0	0	1	0	Manufacturing firms which are listed in S&P 500	LN
6	Allaynnes and Weston 2001	1	0	0	0	1	720 manufacturing firms	LN
7	Marker and Huffman 2001	1	0	0	1	1	166 firms of US	LN
8	Fletcher, Forbes and Marshall 2002	1	1	0	0	1	UK unit trust	LN
9	Adedeji and Barker 2002	1	0	1	0	0	234 firms of UK	LN
10	Berkman, Bradbury, Hancock and Innes 2002	1	0	1	0	1	158 firms of Australia	LN
11	Shu and chen 2003	1	1	1	0	0	1100 plus firms of Taiwan	LN
12	Nguyen and Faff 2003	1	0	0	1	0	500 Australian firms	LN
13	Masry 2003	1	1	0	0	0	401 non-financial firms of UK	LN
14	Look man 2004	1	0	0	0	1	364 oil and gas producing firms	LN
15	Carter, Roger and Simkins 2006	1	0	1	0	1	US airline industry	LN
16	Jin and Jarian 2006	1	1	0	0	0	199 US oil and Gas companies	LN
17	Artez, Bartram and Du-fay 2007	1	0	1	0	0	UK corporations	LN
18	Bali, Hume	1	1	0	0	0	Multiple financial indus-	LN

No	Reference	Dev	OA Risk	FR	FX Risk	V of Firm	Sample	Time Frame Design
	and Martell 2007.						tries	
19	Nguyen, Faff and Marshall 2007	1	0	0	1	0	120 Non-financial firms	LN
20	Reynolds and Boyle 2007	1	0	1	0	0	2006 New Zealand firms	LN
21	Kapitsinas 2008	1	0	0	0	1	81 Manufacturing firms of Greece	LN
22	Bartram, Brown and Conrad 2008	1	1	0	0	1	6888 Manufacturing firms of 47 countries	LN
23	Khediri and Falus 2009	1	0	1	0	0	All manufacturing firms of French	LN
24	Ameer 2009	1	1	0	0	1	Malaysian Firms	LN
25	Clark and Judge 2009	1	0	0	0	1	412 non-financial firms of UK	LN
26	Khediri 2010	1	0	0	0	-1	250 non-financial French Firms	LN
27	Ameer 2010	1	0	0	0	1	112 Malaysian firms	LN
28	Fauver and Narango 2010	1	0	0	0	-1	1746 US firms	LN
29	Afza and Alam 2011	1	0	0	1	0	86 Non-financial firms of Pakistan	LN
30	Afza and Alam 2011	1	0	1	0	0	105 Manufacturing firms of Pakistan	LN
31	DaDalta, Lin and Lin 2012	1	0	1	0	0	All manufacturing firms of USA	LN
32	Latridis and Euangelopoulos 2012	1	1	0	0	0	229 firms of London	LN
33	Allyne's, Lel and Miller 2012	1	0	0	0	1	39 cross-listed US firms	LN
34	Lel 2012	1	0	0	1	0	1039 firms of 30 countries	LN
35	Chang, Hasin and Hou 2013	1	0	0	1	0	All manufacturing firms of China	LN
36	Zhou and Wang 2013	1	0	1	1	1	148 UK non-financial firms	LN
37	Peltomaki 2013	1	1	0	0	0	3382 individual funds of hedging and 761 multiple hedging funds	LN



No	Reference	Dev	OA Risk	FR	FX Risk	V of Firm	Sample	Time Frame Design
38	Chaudry, Mehmood and Mehmood 2014	1	0	0	0	1	75 non-financial firms of Pakistan	LN
39	Phan, Nguyen and Faff 2014	1	0	0	0	1	94 Oil and Gas exploring US firms	LN
40	Ayturk, Gurbuz and yanik 2016	1	0	0	0	-1	204 non-financial firms of Turkey	LN
41	Lto, Koibuchi, sato and Shimizu 2016	1	0	0	1	0	227 Japanese Firms	Contemporaneous
42	Barton 2017	1	1	0	0	1	304 non-financial firms	LN
43	Adam 2017	1	0	1	0	1	111 North American Gold Mining Industries	LN
44	Brown 2018	1	0	0	1	1	3110 US based HDC incorporations	Contemporaneous
45	Hagelin 2018	1	0	1	1	1	160 non-financial firms of Sweden	LN
46	Kapitsinas 2018	1	0	1	1	0	120 Manufacturing firms of Greece	LN

This study can be additionally detailed if we take a look at four study attributes. The third column in table 2 shows the kind of derivatives measures employed. It can be seen in table 2 that there are 17 studies measures through derivative practices, 9 studies employed intervention measures of derivatives, 4 studies uses index measures and 13 studies used the practices and index measures together. In the total sample studies the 13 studies investigated the association between derivatives and overall risk management, 14 studies investigated the relationship between derivatives and financial risk management, 12 studies checked the association between derivatives and foreign exchange risk management and 23 studies investigated the relation between firm's value and derivative practices.

Table 2 shows that most of studies investigated the association on all type of firms level of analysis (18), on the non-financial firms level of analysis (11), on the manufacturing firms level of analysis (09) and with smaller aiming on all other types of firms (e.g. Oil and Gas industries (4), financial firms 91), Gold and Mining industries (1), Airline industries (1) and (1) hedging fund firm). In the final column of table 02, the studies are classified into, contemporaneous, predictive or longitudinal designs. It can be seen that only 2 studies used the contemporaneous design and the rest of all studies used the longitudinal design.

### Results and Discussion

It was found in literature that the derivative practices had a positive effect on overall risk management of firms in almost 21% of the total 62 data points, positive effect on financial risk management in almost 23% of the total 62 data points, positive effect on foreign exchange risk management in almost 19% of the total 62 data points and positive effect on value of firm in almost 32% of total 62 data point. Our conclusion of this review study is based on the majority of reported effects. The results summary of this review study is presented in table 3. The results for the each study attribute (overall risk management, financial risk management, foreign exchange risk management and value of firm) are presented in separate heading.

**Table 3. Results of Syntheses Evidence**

Study Related to		Reference	Value of Firm
<b>Value Of Firm</b>	03	Prevost, et al., 2000	+
	05	Allaynnes, et al., 2001	+
	07	Marker, et al., 2001	+
	08	Fletcher, et al., 2002	+
	10	Berkman, et al., 2002	+
	14	Look man 2004	+
	15	Carter, et al., 2006	+
	22	Bartram, et al., 2008	+
	24	Ameer 2009	+
	25	Clark, et al., 2009	+
	26	Khediri 2010	-
	27	Ameer 2010	+
	28	Fauver, et al., 2010	-
	33	Allynne's, et al., 2012	+
	36	Zhou, et al., 2013	+
	38	Chaudry, et al., 2014	+
	39	Phan, et al., 2014	+
	40	Ayturk, et al., 2016	-
	42	Barton 2017	+
	43	Adam 2017	+
	44	Brown 2018	+
	45	Hagelin 2018	+
	46	Kapitsinas 2018	+
<b>Over All Risk Management</b>			
	01	Haushalter 2000	+
	02	Jalilrand, et al., 2000	+
	03	Prevost, et al., 2000	+
	04	Hentschal et al., 2001	+
	08	Fletcher et al., 2002	+
	11	Shu et al., 2003	+
	13	Masry 2003	+
	16	Jin et al., 2006	+

Study Related to		Reference	Value of Firm
	18	Bali et al., 2007	+
	22	Bartram, et al.,2008	+
	24	Ameer 2009	+
	32	Latridis et al., 2012	+
	37	Peltomaki 2013	+
<b>Financial Risk Management</b>			
	03	Prevost et al., 2000	+
	09	Adedeji et al., 2002	+
	10	Berkman, et al., 2002	+
	11	Shu et al., 2003	+
	15	Carter et al., 2006	+
	17	Artez, et al., 2007	+
	20	Reynolds et al., 2007	+
	26	Khediri et al., 2009	+
	29	Afza et al., 2011	+
	31	DaDalta, et al., 2012	+
	36	Zhou et al., 2013	+
	43	Adam 2017	+
	45	Hagelin 2018	+
	46	Kapitsinas 2018	+
<b>Foreign Exchange Risk Management</b>			
	06	Allaynnes et al., 2001	+
	07	Marker et al., 2001	+
	12	Nguyen et al., 2003	+
	19	Nguyen, et al., 2007	+
	30	Afza et al., 2011	+
	34	Lel 2012	+
	35	Chang, et al., 2013	+
	36	Zhou et al., 2013	+
	41	Lto, et al., 2016	+
	44	Brown 2018	+
	45	Hagelin 2018	+
	46	Kapitsinas 2018	+

### Overall Risk Management

In 13 data points, the relationship between derivatives and overall risk management were investigated. A positive relationship between derivative practices and overall risk management was established in 13 sample studies which are performed in multiple firms. Six studies were found that they investigated the relationship among derivatives and overall risk management of firms in the

setting of overall firms (e.g. financial firms, Non-financial firms) (Prevost, et al., 2000; Hentschal et al., 2001; Fletcher et al., 2002; Shu et al., 2003; Ameer, 2009 and Latridis et al., 2012). Two of them were found that they investigated the relationship among derivative practices and overall risk management in the setting non-financial firms (Jalilrand, et al., 2000 and Masry 2003) and 2 studies check the relationship in the setting of Oil and Gas industries (Haushalter 2000 and Jin et al., 2006). At the end three studies were found in the setting of financial, manufacturing and hedging fund firms (Bali et al., 2007; Bartram, et al., 2008 and Peltomaki 2013). All of these studies found that the derivatives are used by the firms for risk management by the firms and the derivative usage is associated with the minimization of risk of firms.

#### ***Financial Risk management***

The association between derivative practices and financial risk management was addressed in 14 data points. All the studies had found positive relationship among derivatives and financial risk management. Six studies from total sample related to financial risk management had utilized the overall firms as sample (Prevost et al., 2000; Adedeji et al., 2002; Berkman, et al., 2002; Shu et al., 2003; Artez, et al., 2007 and Reynolds et al., 2007). Two studies had used non-financial firms as sample (Hagelin 2003 and Zhou et al., 2013) and 4 studies had used manufacturing firms as sample (Kapitsinas 2008; Khediri et al., 2009; Afza et al., 2011 and DaDalta, et al., 2012). All of these studies found that the user of derivatives has no need to get the finance from outside sources because they take benefit of their internally generated finance. Therefore the usage of derivatives reduces the utilization of external financing as the DaDalt et al. 2012, found in their study whether the usage of external finance reduced by the usage of derivative and they found positivity in their findings, the derivative make an impact on usage of external finance. According to Adam, 2017, that the firms got finance from internal resources by the use of derivatives and there is a strong association between the income of hedging and spending of investment. So, if the firms use the derivative contracts for business transaction they will minimize the risk of high volatility in prices and by this the firms will save their self from over prices. The firms will earn more by reduction in volatility in prices and will generate their own finance. They will have no need to go outside of the firm forgetting the finance. They will finance by internally.

#### ***Foreign Exchange Risk Management***

Relatively a few of researchers have included the derivative practices and foreign exchange risk management in their studies. Only 12 data points were resulted from the 62 data points. All data points shows the positive and significant effect of derivative usage on foreign exchange risk exposure management. In total data point related to foreign exchange risk exposure management 4 studies were found that they had used all firm's data as sample (Marker et al., 2001; Nguyen et al., 2003; Lel 2012 and Lto, et al., 2016), 4 studies had used non-financial firm's data as sample (Hagelin 2003; Nguyen, et al., 2007; Afza et al., 2011 and Zhou et al., 2013), 3 studies had used manufacturing firm's data as sample (Allaynnies et al., 2001; Kapitsinas 2008 and Chang, et al., 2013 and only 1 study used HDC incorporations data as sample (Brown, 2018).

#### ***Value of firm***

Many researchers have included derivative practices and value of firm in their researches. The total 23 data points which is almost 37% of total 63 data points were related to value of firm. Total 8 studies form 23 data points had included overall firms as sample for research (Prevost, et al., 2000; Marker, et al., 2001; Flectcher, et al., 2002; Berkman, et al., 2002; Bartram, et al., 2008; Khediri 2010; Fauver, et al., 2010 and Allynne's, et al., 2012), seven studies had used non-financial firms as sample (Barton 2001; Hagelin 2003; Clark, et al., 2009; Ameer 2010; Zhou, et al., 2013; Chaudry, et al., 2014 and Ayturk, et al., 2016), three studies had used manufacturing firm's data as

sample for investigation (Allaynnes, et al., 2001; Kapitsinas 2008 and Bartram, et al., 2008), two studies were found that they had used the data of oil and gas producer firms as sample (Look man 2004 and Phan, et al., 2014) and the remaining three studies had utilized the data of Gold and Mainlining Industry, HDC based incorporations and Airline industries (Brown 2001; Adan 2002 and Carter, et al., 2006).

Three data point which are almost 5% of total 23 data points which are related to derivative practices and value of firms support negative relationship among derivative usage and value of firm (Khediri 2010; Fauver, et al., 2010 and Ayturk, et al., 2016).

### **Conclusion**

After brief review of the study it was found that the usage of derivative by firms is related to increase the value. The firms which practice derivatives tool in their organizations have their value increased because the usage of derivatives minimizes the dependency of firm on external finance as well as reduces the risks of firm which are associated with the growth, profit and value of firms. Derivatives are used for the minimization of risk exposure which is associated with the corporation profit, value and performance and by use of derivatives the chances of heavy loss are minimized and the value of firm can be increased. (Prevost Rose and Miller, 2000; Allaynnes and Weston, 2001; Brown, 2018; Marker and Huffman, 2001; Fletcher, Forbes and Marshall, 2002; Lookman, 2004; Carter, Roger and Simkins, 2006; Kapitsinas, 2008; Bartram, Brown and Conrad, 2008; Clark and Judge, 2009; Fauver and Narango, 2010; Allaynnes, Lel and Miller, 2012; Zhou and Wang, 2013 and Phan, Nguyen and Faff, 2014).

### **Limitations and Future recommendations**

This review study is a narrative study by nature and the meta-analysis has not been employed. Meta-analysis is designed to handle a large amount of quantitative studies, habitually meta-analysis provides the contradictory results and could allow the researcher to estimates the accurate relationship. We decided to do a systematic review instead of met-analysis because systematic review allows us to includes all the available quantitative studies and allows to draw a complete picture of quantitative studies which are related to the relationship among derivative practices and value of firm, among derivatives and overall risk management of firms, among derivatives and financial risk management and among derivatives and foreign exchange risk management of firms. There is a great variation in measures which are employed to capture the relationship among the attributes, in the level of analysis techniques and in the study design of sample studies which are chosen to perform this review study. Therefore to capture the results of their relationship the best technique is to perform a systematic review instead of meta-analysis.

To understand the clear view of these relationship additional researches are needed which explore multi-level research designs and conduct the longitudinal studies. The multi-level research designs are needed to simplify that how levels are linked in terms of derivative practices and overall risk management, financial risk management, foreign exchange risk management and value of firms. The longitudinal studies are needed to clear the energetic interaction between these study attributes.

This study utilized the systematic review technique. But this study is a narrative by nature and the meta-analysis has not been employed in this review study. The meta-analysis technique handles a large number of quantitative studies and provides the strong and accurate results of the underlying investigation. So, this study recommend the future researchers to employee the meta-analysis technique to capture these underlying associations.

In this review based study only those studies were included which are of quantitative nature. Further researches could be benefited by accompanying our quantitative research with a qualitative research approach which will provides an comprehensive understanding of why and how the derivative practices minimize the overall risk of firms as well as financial risk and foreign exchange risk and also will provides a broad know-how that how and why derivative practices are associated with maximization of firm's value.

While, a large number of researches on derivative practices are found with different attributes but in this review study only those studies were included which were investigated the relationship and financial risk management, among derivatives and foreign exchange risk management. Among derivatives and overall risk management and among derivatives and value of firms, which, are very few in numbers. Because of this, it is difficult to draw strong and accurate implications about the role of derivatives for firms. With this view, it is recommended to the future researchers to investigate the impact of derivatives on other constructs (e.g. growth of firms, profitability of firms, investment opportunities of firms, firm's performance or size of firm). The studies were collected only for the time period of 2000 to 2018. The previous researches were exempted in this review study. The previous researches could be utilized for future researches. With this addition the review will provides more clear, strong and accurate results for the underlying relationships.

### References

- Acharya, V. V. and T. C. Johnson (2007). Insider trading in credit derivatives. *Journal of Financial Economics* **84**(1): 110-141.
- Allayannis, G., et al. (2012). The use of foreign currency derivatives, corporate governance, and firm value around the world. *Journal of International Economics* **87**(1): 65-79.
- Adam, T. R. (2017). Do firms use financial derivatives to reduce their dependence on external capital markets?. *European Finance Review*, *6*(2), 163-187.
- Afza, T., & Alam, A. (2011). Determinants of extent of financial derivative usage. *African Journal of Business Management*, *5*(20), 8331-8336.
- Allayannis, G., & Ofek, E. (2001). Exchange rate exposure, hedging, and the use of foreign currency financial derivatives. *Journal of international money and finance*, *20*(2), 273-296.
- Allayannis, G., & Weston, J. P. (2001). The use of foreign currency financial derivatives and firm market value. *Review of financial studies*, *14*(1), 243-276.
- Ameer, R. (2010). Determinants of corporate hedging practices in Malaysia. *International Business Research*, *3*(2), 120-130.
- Aretz, K., Bartram, S. M., & Dufey, G. (2007). Why hedge? Rationales for corporate hedging and value implications. *The Journal of Risk Finance*, *8*(5), 434-449.
- Bartram, S. M., et al. (2009). International evidence on financial derivatives usage. *Financial management* **38**(1): 185-206.
- Bali, T. G., Hume, S. R., & Martell, T. F. (2007). A new look at hedging with financial derivatives: Will firms reduce market risk exposure?. *Journal of Futures Markets*, *27*(11), 1053-1083.
- Barton, J. (2017). Does the use of financial financial derivatives affect earnings management decisions?. *The Accounting Review*, *76*(1), 1-26.
- Bartram, S. M., Brown, G. W., & Conrad, J. (2011). The effects of financial derivatives on firm risk and value. *Journal of Financial and Quantitative Analysis*, *46*(04), 967-999.
- Carter, D. A., Rogers, D. A., & Simkins, B. J. (2006). Does hedging affect firm value? Evidence from the US airline industry. *Financial Management*, *35*(1), 53-86.

- Chaudhry, D., Iqbal, N., Mehmood, M. S., & Mehmood, A. (2014). Determinants of corporate hedging policies and financial derivatives usage in risk management practices of non-financial firms. *Wulfenia Journal, ISI Indexed, Impact Factor 0.267, 21(7)*, 293-310.
- Clark, E. and A. Judge (2009). Foreign Currency Derivatives versus Foreign Currency Debt and the Hedging Premium. *European Financial Management* **15**(3): 606-642.
- DaDalt, P., Gay, G. D., & Nam, J. (2002). Asymmetric information and corporate financial derivatives use. *Journal of Futures Markets*, 22(3), 241-267.
- DaDalt, P. J., Lin, B. X., & Lin, C. M. (2012). Do financial derivatives affect the use of external financing?. *Applied Economics Letters*, 19(12), 1149-1152.
- Froot, K. A., et al. (1993). Risk management: Coordinating corporate investment and financing policies. *The Journal of Finance* **48**(5): 1629-1658.
- Fender, I. (2000). Corporate hedging: the impact of financial derivatives on the broad credit channel of monetary policy.
- Fletcher, J., Forbes, D., & Marshall, A. (2002). An investigation of the impact of derivative use on the risk and performance of UK unit trusts. *Financial Services Review*, 11(2), 173-187.
- Graham, J. R. and D. A. Rogers (2002). Do firms hedge in response to tax incentives? *The Journal of Finance* **57**(2): 815-839.
- Guay, W. and S. P. Kothari (2003). How much do firms hedge with derivatives? *Journal of Financial Economics* **70**(3): 423-461.
- Hagelin, N. (2018). Why firms hedge with currency derivatives: an examination of transaction and translation exposure. *Applied Financial Economics* **13**(1): 55-69.
- Haushalter, G. D. (2000). Financing Policy, Basis Risk, and Corporate Hedging: Evidence from Oil and Gas Producers. *The Journal of Finance* **55**(1): 107-152.
- Hentschel, L. and S. P. Kothari (2001). Are corporations reducing or taking risks with derivatives? *Journal of Financial and Quantitative Analysis* **36**(01): 93-118.
- Jin, Y. and P. Jorion (2006). Firm value and hedging: Evidence from US oil and gas producers. *The Journal of Finance* **61**(2): 893-919.
- Iatridis, G. E., & Euangelopoulos, P. (2012). How Does the Selection of Hedging Instruments Affect Company Financial Measures? Evidence from UK Listed Firms. *International Journal of Economics and Finance*, 4(5), p51.
- Judge, A. (2006). Why and How UK Firms Hedge. *European Financial Management* **12**(3): 407-441.
- Kapitsinas, S. (2018). Financial derivatives usage in risk management by non-financial firms: Evidence from Greece.
- Kapitsinas, S. (2008). The Impact of Financial derivatives Usage on Firm Value: Evidence from Greece.
- Magee, S. (2013). The effect of foreign currency hedging on the probability of financial distress. *Accounting & Finance* **53**(4): 1107-1127.
- Nguyen, H. and R. Faff (2003). Can the use of foreign currency derivatives explain variations in foreign exchange exposure?: evidence from Australian companies. *Journal of Multinational Financial Management* **13**(3): 193-215.
- Smithson, C. and B. J. Simkins (2005). Does risk management add value? A survey of the evidence. *Journal of applied corporate finance* **17**(3): 8-17.
- Spanò, M. (2007). Managerial Ownership and Corporate Hedging. *Journal of Business Finance & Accounting* **34**(7-8): 1245-1280.

- Stulz, R. M. (2004). Should we fear derivatives? *The Journal of Economic Perspectives* **18**(3): 173-192.
- Wu, M. C., Liao, S. L., & Huang, Y. T. (2012). Executive Compensation and Hedging Behavior: Evidence from Taiwan. *International Review of Accounting, Banking & Finance*, *4*(2)