

## The financial determinants of the financial derivatives' usage within SME businesses in Pakistan

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### ABSTRACT

It had been acknowledged that the usage of financial derivatives improved the financial performance of the firms despite larger and smaller firms. Sufficient studies had been conducted on larger firms but there was a paucity of literature on financial derivatives' usage within SMEs in the context of Pakistan. This gap created thirst for the current research in exploring the financial determinants of the financial derivatives' usage within SMEs. This research was directed by pursuing the research problem: "how and why the financial determinants of the financial derivatives' usage could be established within SMEs in Pakistan?" A qualitative research was conducted in order to explore this research issue. Respondents of this research were identified by applying snowballing sampling technique. Total twenty (20) convergent interviews were conducted to establish the literature and to confirm the financial determinants of the financial derivatives' usage within SMEs. Thematic analysis technique was used to analyze the data. The outcomes of this research confirmed twelve (12) financial determinants of the financial derivatives' usage, i.e. firm size, leverage, exchange rate exposure, interest rate exposure, liquidity, cash flow volatility, financial distress cost, reduction in taxes, firm value, agency cost, reduction in overall cost and un-invested cash. Two newly discovered financial determinants of the financial derivatives' usage were reduction in cost and un-invested cash, which revealed the current research contribution to the existing body of knowledge. Moreover, this research provided theoretical, methodological, practical and policy implications. This research built a revised theoretical framework, which provided ground for future research.

**Keywords:** financial derivatives, qualitative research, convergent interviews, snowball sampling, SMEs, Pakistan

### INTRODUCTION

The key role of Small and Medium Sized Enterprises (SMEs) cannot be denied in most of the countries around the globe (Burgstaller and Wagner, 2015; Ayyagari *et al.*, 2007). For example in the Asian region, a large portion of the economic activities can be traced back to SMEs. On average, SMEs account for 63% of all jobs in the private sector, contribute 25% in export and 32% in GDP (Gross Domestic Product) of the countries in Asian region (Yoshino & Wignaraja, 2015). According to Small and Medium Enterprises Development Authority (SMEDA), SMEs constitute 90% of all the businesses in Pakistan. In addition SMEs in Pakistan, contribute 30% in GDP, 25% in export and 78% in employment of the country. Pakistan's exports are

decreasing from last few years due to which their foreign reserves are decreasing and the government is facing a deficit in its annual budget. The export performance of Pakistan decreased from 3.54% to -12.17% in last five years from 2012 to 2016. There are many reasons of poor performance of exports other than poor financing and expertise. The vision 2025 is formulated by the government of Pakistan to defeat the export low performance of the country and to bring foreign reserves in the country so that deficit gap could be filled. In vision 2025, it is decided by the Ministry of Planning, Development and Reforms (MPDR) to increase country's exports to US\$ 150 billion from US\$ 25 billion by considering all the sectors as well (MPDR, 2014).

After acknowledging the key role of SMEs and their contribution in export, employment and GDP of the countries, the government of Pakistan accentuated the significance of SMEs and took them in the vision 2025. What is the purpose of vision 2025? Its rationale is to envision Pakistan upper middle income country and among the top twenty five economies around the world till 2025. The contribution of SMEs is expected to increase to PKR 16 trillion in national GDP, PKR 5.4 trillion in export and 25 million in employment of the country by 2025. It needs to bring radical changes in SMEs' policies based on the importance of statistics given above. It is critical for the SMEs to focus on their expansion, competitiveness and performance both globally and domestically by using different financial instruments. Therefore, it is important for the SMEs to understand and identify the determinants of the usage of the financial derivatives for their improvement.

From the above discussion based on the SMEs' performance and evaluation regarding their contribution in GDP, employment and export, it is apparent that the current performance is not adequate to congregate the vision 2025. Therefore, it is a major challenge for SMEs to improve their performance and its constant growth, which identifies a gap to be filled.

### **LITERATURE REVIEW**

In a globalized competitive financial atmosphere, financial derivatives' contracts such as futures, options, forwards and swaps are widely used by firms to assuage exposure from fluctuations in commodity prices, interest rates and currency. As business practices regarding risk management become more complicated, the devise of these financial derivatives' instruments also show perceptible signs of flexibility and creativity. What is remarkable? Nevertheless, it is an enormous boost in the worth of transactions and the progressively important task in managing risk that financial derivatives have established in the world financial markets in the previous two decades. In 1994, the total estimated value of derivative instruments' contracts outstanding around the world was reported at USD\$ 18 trillion (McAnally 1996). By 2016, however, this figure had increased significantly to USD\$ 543 trillion (Bank for International Settlement, 2016).

According to Modigliani and Miller (MM) approach the usage of financial derivatives do not add value if markets are perfect. On contrary, modern finance theorists added that hedging, using financial derivatives can add value in certain circumstances. Furthermore, Geczy, Minton and Schrand (1997) and Nance, Smith and Smithson (1993) asserted that generally hedging is value adding activity if there is presence of financial distress, agency cost, progressive tax codes and underinvestment costs. Apart from the current disasters of derivatives, which imposed scrutiny upon the usage of financial derivatives, the empirical research studies results show that a company can get significant benefits regarding risk management by using financial derivatives if these financial derivatives are used in a very rational approach.

Generally it is seen that SMEs are very simple internal firms as compared to large organizations, as a result, SMEs are faster at responding, more flexible and acclimating to transformation (Lavia Lopez and Hiebl, 2014). Similarly, SMEs are regularly facing major challenges as compared to larger firms. In addition, SMEs always earn less profit from economies of scale and very few have access to an extensive range of resources (Lavia Lopez and Hiebl, 2014; Burgstaller and Wagner, 2015). Usually SMEs have low equity ratio, these firms are quite susceptible to external incidents as compared to larger firms (Altman et al., 2010). This exemplifies that SMEs face various types of risks same as larger firms and these firms have more threat to their survival due to low level of financial and non-financial resources.

Managers of SMEs can identify considerable risks by using risk management techniques, which could endanger the existence or success of the firm in time to cope with these risks efficiently (Brustbauer, 2014; Miller, 1992). Though, SMEs do not use risk management techniques adequately, mostly due to their constraints as they cannot afford to rededicate resources (Marcelino-Sádaba *et al.*, 2014). Even though in recent years, literature on risk management specific in SMEs is increasing but still it is scrappy, and no organized literature review has been carried out on this topic.

The usage of financial derivatives is not limited to larger organizations but it is available and accessible to the SMEs. SMEs' performance is being improved by the usage of financial derivatives (Hrubosova & Kamenikova, 2007). Pakistan Mercantile Exchange (PMEX) deals in financial futures and commodity derivatives in Pakistan. SMEs in Pakistan which are involved in export and import at huge level, use Karachi Interbank Offer Rate (KIBOR) future contracts that PMEX deals (PMEX, 2016). Therefore, the dearth of literature on the topic of financial derivatives' usage in SMEs business in Pakistan encourages the researcher to investigate this issue comprehensively.

The primary focus of this research is to explore the determinants of the usage of the financial derivatives within SMEs in Pakistan. It is somewhat under explored area in the literature. We contribute in doing so to the existing literature in two ways. We make available qualitative evidence on the comparative importance of the determinants of the usage of the financial derivatives in SMEs. The data will be examined to check whether the outcomes are identical with the evidence and theories which found in the existing body of knowledge.

### **DEFINITIONS OF SMALL AND MEDIUM ENTERPRISES (SMEs)**

It is necessary to define SME first and what makes up SME, even the researcher is passionate to know about the financial derivatives' usage in SMEs (Harif, Osman & Hoe, 2010). Consequently, it is crucial to compare the SMEs' definition in Pakistan with other business associates in South Asia. SMEs' definition criteria vary country to country. There is very capricious isolation among the large, medium, micro and small firms. The issue is that, researchers compare identical and equal with identical and equal in the economies. In order to make comparison among different classes, analogous magnitudes are needed (Hall, 2002). Along with their specific differences SMEs' definitions of Asian countries are shown in table 1 below.

**Table 1**  
**Synthesization of SME's Definitions in Asian Countries**

SMEs' Definitions in Some Asian Countries							
Country	Sector	Number of Employees		Annual Sales (in millions) Home country currency		Total Assets/ Investments (in millions) Home country currency	
		Small	Medium	Small	Medium	Small	Medium
India *	Manufacturing					2.5 - 50	50 - 100
	Services/Trade					1.0 - 20	20 - 60
Malaysia**	Manufacturing	5 - 75	75 - 200	0.3 - 15	15 - 50		
	Services/Trade	5 - 30	30 - 75	0.3- 3	3 - 20		
Indonesia ***		5 - 19	20 - 99	<0.344	<17.20		
Thailand ***		<50	51 - 200			< 2.305	<11.524
Cambodia ***		11 - 50	51 - 200			<0.250	<0.500
Vietnam ***		<30	31 - 200				
Philippines ***		<99	100-199				
Loas ***		<19	<99				

**Legend:**

\* Micro, Small & Medium Enterprises Development (MSMED) Act, 2006

\*\* National SME Development Council (NSDC) 2013

\*\*\*Harif, Hoe and Ahmad (2013)

**Source: developed for this research**

Every country has its own definition for SME. There are different measures to define an SME, which are used by different countries. It is concluded from the above table 1, definitions of different countries that sales turnover and number of employees are two main measures, which most of the countries use to select a firm as an SME. Therefore, this research makes comparison of Malaysia and Pakistan SMEs' definitions because both countries use the same measures to define their SMEs. In Pakistan, there are different institutions that define SME in their own ways, which have considerable differences. In Pakistan, Small and Medium Enterprises Development Authority (SMEDA) is the authority, which directly deals only SMEs in Pakistan. Along with SMEDA, State Bank of Pakistan (SBP) defined SMEs in May 07, 2016 as shown in table 2 below.

**Table 2**  
**Synthesization of SME's Definitions in Pakistan**

Country	Small		Medium	
	Malaysia (table 1)	SMEDA and SBP	Malaysia (table 1)	SMEDA and SBP
No. of employees Services sector	5 - 30.	20 - 50	30 - 75	51 - 100
No. of employees Manufacturing sector	5 - 75.	20 - 50	75 - 200	51 - 250
Annual sales/Sales turnover Services sector	0.3 - 3.0 (RM million)	75.0- 150.0 (PKR million)	3.0 - 20.0 (RM million)	150.0- 800.0 (PKR million)
Annual sales/Sales turnover Manufacturing sector	0.3 - 15 (RM million)	75.0- 150.0 (PKR million)	15.0- 50.0 (RM million)	150.0- 800.0 (PKR million)

**Source: developed for this research**

There is no hard and fast rule for the SMEs' definitions around the world. From table 2 above, it is concluded that Malaysia's SMEs' definition is identical with the Pakistan's SMEs' definition based on measures used by both of the countries. Definition of SMEs in Malaysia provides platform for the definition of SMEs in Pakistan. Only medium size firms are used by this research, which are directly involved in import and export businesses. The new definition of SMEs used by this research is shown in table 3 below.

**Table 3**  
**Definition of SMEs Used for This Research**

Medium Size	Employees	Sales turnover
<b>Manufacturing sector</b>	Full time employees 51-250	Annual sales turnover PKR 150-800 million
<b>Services sector</b>	Full time employees 51-100	Annual sales turnover PKR 150-800 million

**Source: developed for this research**

From the table 3 above, those manufacturing firms, which are medium size and their number of employees not exceeding from 250 employees and sales turnover not exceeding from PKR 800 million, are used in this research.

After thorough searching of the literature, researcher did not find even a single study on the determinants of the usage of the financial derivatives within SMEs in Pakistan. Very few studies worked on the usage of financial derivatives in large firms only.

### **RATIONALES ON THE DETERMINANTS OF THE FINANCIAL DERIVATIVES' USAGE WITHIN SMEs**

What are the factors which SMEs in Pakistan consider before going to use financial derivatives in order to manage their different types of risks? The existing literature on the factors, which influence the usage of financial derivatives in all businesses, is synthesized. It is necessary to take global view by literature through structured approach precisely.

There are many researches, which have been conducted in developed as well as developing countries in the gap of the usage of the financial derivatives. These studies are conducted in the past one and half decade, which include Anderson, Makar & Huffman (2004); Yip & Nguyen

(2012); Borokhovich, Brunarski, Crutchley & Simkins (2004); Ayturk, Gurbuz & Yanik (2016); Rogers (2002) and Dadalt, Gay & Nam (2002). More than hundred articles related to subject matter have been reviewed and retrieved in this literature exercise. After thorough literature practice 15 related articles have been selected based on three characteristics which are fit to the definition of financial derivatives, the most recent articles of last one and half decade and all articles are published at least in referred journals. Total eleven determinants of the usage of the financial derivatives have been synthesized, extorted and recognized as shown in table 4 below.

The first determinant of the usage of the financial derivatives in any business is the *firm size*. This determinant states that management of the firm takes positive impact of firm size in pursuing the usage of the financial derivatives (Rogers, 2002). There are seven (7) out of fifteen (15) selected articles, which have revealed the significance of this determinant as shown in the synthesized table 4 (row 1, column frequency). Therefore, it is evident that firm size has major influence on the usage of the financial derivatives. Thus, it is taken to be investigated for this research due to its importance. The second determinant of the usage of the financial derivatives is *leverage*. This determinant is the third most reported determinant in the past literature. Leverage is defined as the borrowing of funds to make investments in general. But in the context of derivatives' usage, investors control their large positions by small amount of outlay or even nothing else (Berkman & Bradbury 1996; Geczy *et al.*, 1997). This determinant has been reported in four (4) out of fifteen (15) selected articles as shown in the synthesized table 4 (row 2, column frequency). Therefore, due to its frequent use, this determinant has taken to be used in this research. The third most reported and prominent determinant is *cash flow volatility*. Cash flow volatility refers to the fluctuations in the cash flows of the firms (Guay & Kothari, 2003). The firms are required smooth streams of cash flows as the matching concept of international accounting standards requires (Barton, 2001). The usage of financial derivatives is to minimize the cash flow volatility of the firm. Three (3) researchers out of fifteen (15) selected articles provided significant evidences and they also indicated that cash flow volatility prejudiced the firms to use financial derivatives as shown in synthesized table 4 (row 3, column frequency). Therefore, this determinant is considered important to be explored in this research.

**Table 4**  
**Synthesization of Non-Pakistan Literature on the Determinants of the Usage of Financial Derivatives in all Businesses**

	The Determinants of the usage of the Financial Derivatives in All Businesses	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Frequency	To be used for this research
1	Firm Size	x	✓	✓	x	x	✓	✓	x	x	x	x	✓	x	✓	✓	7	✓
2	Leverage	x	✓	✓	x	x	✓	x	x	x	x	x	x	x	✓	x	4	✓
3	Cash flow volatility	x	x	x	✓	x	x	✓	x	✓	x	x	x	x	x	x	3	✓
4	Underinvestment Problem	✓	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1	✓
5	Financial distress cost	✓	✓	✓	x	x	x	✓	x	x	x	✓	x	x	x	✓	6	✓
6	Reduction in taxes	x	x	x	✓	x	✓	x	x	x	x	✓	x	x	x	x	3	✓
7	Reduce Exchange rate exposure	x	x	x	x	x	x	x	✓	✓	✓	x	x	x	x	x	3	✓
8	Firm Value	x	x	x	x	✓	x	✓	x	x	x	x	x	x	x	x	2	✓
9	Reduce interest rate exposure	x	x	x	x	x	x	x	✓	✓	x	x	x	x	x	x	2	✓
10	Liquidity	x	✓	x	x	x	✓	x	x	x	x	x	x	x	x	x	2	✓
11	Agency Cost	x	x	x	x	x	x	x	x	x	x	✓	x	✓	x	x	2	✓
	<b>Total</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>		<b>11</b>

**Legend:**

1= Bartram, Brown &amp; Fehle (2009)

2= Nguyen &amp; Faff (2002)

3= Berkman, Bradbury, Hancock &amp; Innes (2002)

4= Benson &amp; Oliver (2004)

5= Bartram, Brown &amp; Conrad (2011)

6= Heaney &amp; Winata (2005)

7= Mallin, Ow-Yong &amp; Reynolds (2010)

8= Hentschel &amp; Kothari (2001)

9= Zhang (2009)

10= Nguyen &amp; Faff (2003)

11= Sprcic &amp; Sevic (2012)

12= Rossi (2013)

13= Fauver &amp; Naranjo (2010)

14= Khumawala, Ranasinghe &amp; Yan (2016)

15= Alnassar &amp; Chin (2015)

**Source: developed for this research**

The next determinant taken from the non-Pakistan literature is *underinvestment problem* as shown in the synthesized table 4 (row 4, column frequency). The underinvestment problem refers to the level to which the owners or shareholders of the firm do not invest in low risk investment. The debt holders are saved by shareholders if the firm uses the funds of debt holders in low risky projects and the streams of their returns are steady. These steady streams do not generate the excess returns for the shareholders (Cariola, Rocca & Rocca, 2005). Only one study confirmed the underinvestment problem as the determinant of the financial derivatives' usage. In addition, even the underinvestment problem has been reported with the lowest frequency therefore, this determinant could be further examined in this research. The fifth (5) determinant of the usage of the financial derivatives is *financial distress cost* that is extracted from the non-Pakistan literature. Financial distress is referred to the situation when a firm is not able to make payments to creditors that may lead to the firm toward bankruptcy. Firms take additional debts in order to continue their operations, which are associated with several costs that are collectively known as financial distress costs (Altman & Hotchkiss, 2010). Six (6) out of fifteen (15) selected articles reported this determinant in their studies as shown

in the synthesized table 4 (row 5, column frequency). Therefore, based on its significance, this determinant is taken to be investigated in this research. The next sixth (6) important determinant of the usage of the financial derivatives is *reduction in taxes* as shown in the synthesized table 4 (row 6, column frequency). Firms can enjoy two types of tax reduction incentives by using financial derivatives. First they can increase the debt capacity due to which their taxable income reduces as well as their taxes are reduced. On the other hand, firms use financial derivatives to reduce the expected tax liability on the condition that the tax function is convex (Donohoe, 2015). Three (3) researchers out of fifteen (15) selected articles indicated that the usage of financial derivatives is inclined to the reduction in taxes. Thus, reduction in taxes is kept as the determinant for further investigation in this research in the perspective of Pakistan SME businesses.

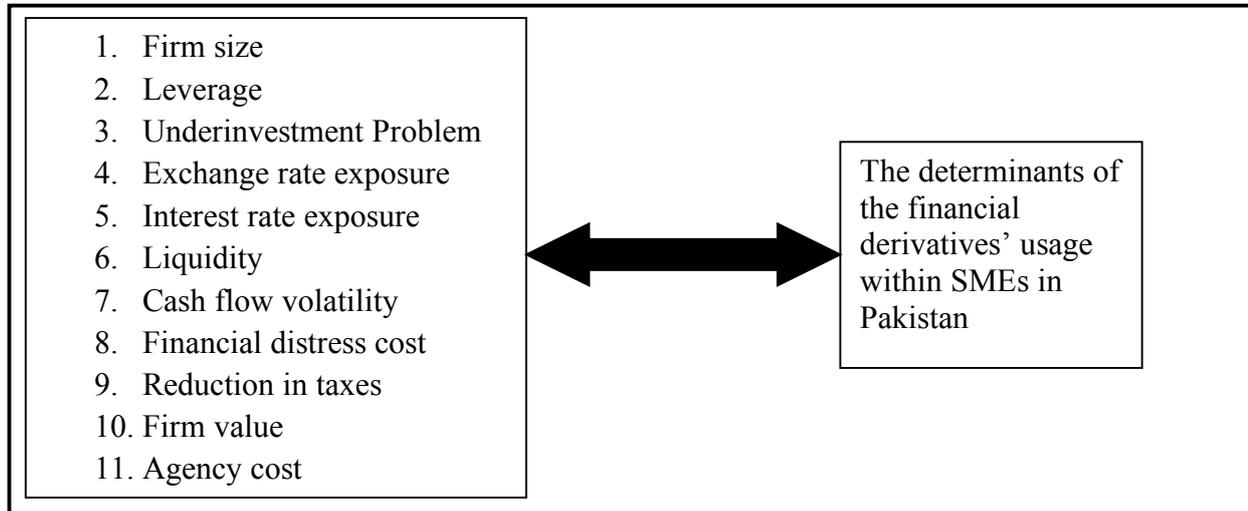
The next determinant extracted from the non-Pakistan literature is *exchange rate exposure* as shown in the synthesized table 4 (row 7, column frequency). The exchange rate exposure imputes to the level to which the value of the firm is induced by the foreign exchange rate maneuver. Firms use different investment strategies such as the usage of financial derivatives to lessen the exchange rate exposure (Dohring, 2008). From the literature, three (3) studies alluded the significance of exchange rate exposure in the usage of financial derivatives. Therefore, this determinant is considered to be examined in this research due to its intendment. The next eighth (8) succeeding determinant in the synthesized table 4 (row 8, column frequency) is *firm value*. Firm value is the economic measure of a business, which reflects the market value. This determinant states that management of the firm takes positive impingement of firm value in influencing the usage of financial derivatives (Jin & Jorion, 2006). There are only two (2) out of fifteen (15) selected articles, which had shown the significance of this determinant. Thus, it is taken to be investigated in this research due to its importance. Next, ninth (9) determinant is the *interest rate exposure*, which has been extricated from the non-Pakistan literature. The interest rate exposure is an amount of financial loss faced by the firms due to adverse interest rate uncertainty. In addition, the firms face common risk due to expeditious escalation in the interest rate, when they are employed in refinancing the debt (Carneiro & Sherris, 2008). From the literature review, two (2) researchers out of fifteen (15) selected articles confirmed the correlation between the usage of financial derivatives and interest rate exposure as shown in the synthesized table 4 (row 9, column frequency). Thus, this determinant is taken to be inquired in this research.

The number tenth (10) determinant of the usage of financial derivatives is *liquidity*. Liquidity is the measure of the level to which a firm has adequate cash to arrange its short term and paramount obligations. It also invokes the ability to novice the short term assets into cash without loss in the value of the asset (Hicks, 1962). Two (2) researchers out of fifteen (15) selected articles confirmed association between the usage of financial derivatives and liquidity of the firm as shown in the synthesized table 4 (row 10, column frequency). Therefore, based on its implication, this determinant is taken to be explored in this research. The lasta determinant of the usage of financial derivatives is the *agency cost* as shown in the synthesized table 4 (row 11, column frequency). Agency cost is the name of a phenomenon, which influences the subtle behavior that is implemented by the management of the firm for their private benefits and to the spoil of other parties such as lenders (Tufano, 1998). Two (2) studies out of fifteen (15) selected articles confirmed the relationship between the agency cost and the usage of financial derivatives. Therefore, this determinant is considered important to be investigated in this research.

In conclusion, total eleven (11) determinants of the usage of the financial derivatives have been synthesized and rationalized for this research from the fifteen (15) selected articles from the

non-Pakistan literature as shown in the last column of the synthesized table 4. The preliminary theoretical framework is prepared to further investigate the determinants of the financial derivatives’ usage within Pakistan SMEs. The preliminary theoretical framework is shown in figure 1 below.

**Figure: 1**  
**Preliminary Theoretical Framework**



**Source: Developed for this research**

**RESEARCH ISSUE**

What are the financial determinants for the SMEs businesses in Pakistan to use financial derivatives?

**RESEARCH METHODOLOGY**

This study gets on new grounds of investigation in the financial derivatives’ usage, hence choosing a realism paradigm to uncover the “realities” on vital financial determinants that could influence the financial derivatives’ usage within SMEs in Pakistan as shown in table 5 below.

**Table 5**  
**Dimensions, which Make Realism Paradigm Appropriate for This Research**

	<b>Relationship</b>	<b>Respondents</b>	<b>Information</b>	<b>Data Collection</b>	<b>Data Type</b>
<b>Realism</b>	Mutual	Focus	Extensive	Systematic	Non-Statistic
Convergent Interviews	<ul style="list-style-type: none"> <li>• Interviewer</li> <li>• Interviewee</li> </ul>	<ul style="list-style-type: none"> <li>• Insiders</li> <li>• Research itself</li> </ul>	<ul style="list-style-type: none"> <li>• Rich</li> <li>• Deep</li> </ul>	<ul style="list-style-type: none"> <li>• Discovery</li> <li>• Process</li> </ul>	<ul style="list-style-type: none"> <li>• Contextual</li> <li>• Exploratory</li> </ul>

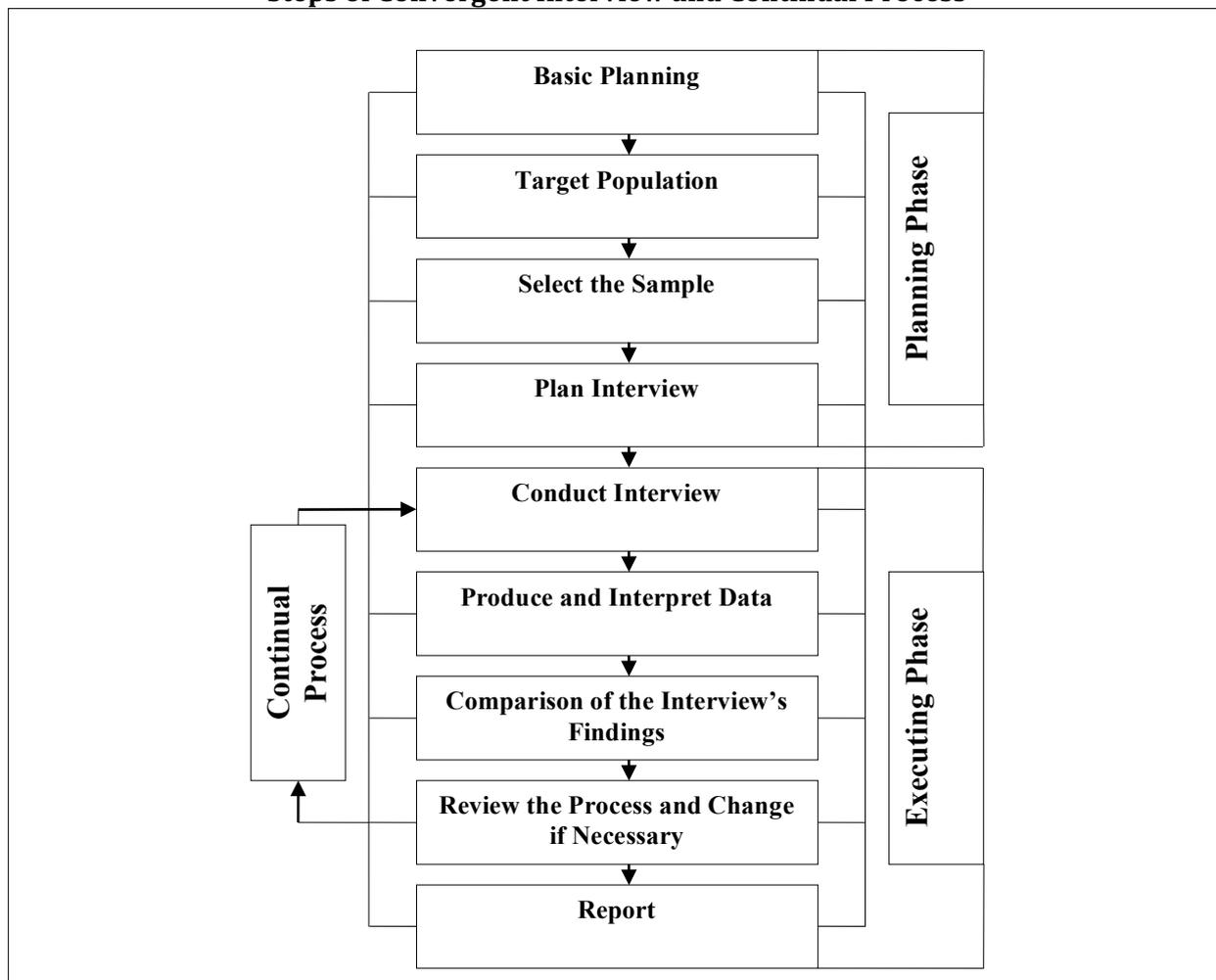
**Source: developed for this research**

Realism paradigm is considered appropriate for this research based on the truth, which is useful, solves the problem, and uses convergent interviews. Thus a qualitative research methodology was employed by this research. The strength of the qualitative approach lies in its ability to provide rich data (Jack & Anderson, 2002). It provides a more realistic feel of the real world and flexible ways of collecting, analyzing and interpreting data of the phenomenon under investigation (Jean Lee, 1992). There are three (3) reasons due to which qualitative research methodology is used in this research. The objective of the research was the first and foremost reason to use qualitative research in this research (Parkhe, 1993). This research was

interested to investigate the low researched area of what are the determinants for the SMEs businesses in Pakistan to use financial derivatives. The type of information required was the second reason for this research. It is difficult to understand complex phenomenon without using detail and in-depth qualitative data, which can be achieved by bringing psychologically close to the subject matter under study (Carson & Coviello, 1996; Guba & Lincoln, 1994). Sample size was the final reason of using qualitative research for this research. A large number of SMEs in Pakistan are working, a small sample was used based on convenience sampling to gather data as qualitative methodology requires in the marketing area (De Ruyter & Scholl, 1998).

For this study, data was collected using the converging interview technique. There are four convergent interviews' strengths that justified and supported its utilization for this research. First, it can significantly aid for improving the credibility of the qualitative findings (Dick, 1998). Secondly, it allows the relative structured approach for categorizing about what essentially needs to be incorporated within its reach in an initializing stage (Harif, Chee, Hussain, Mohd Isa, Othman & Din, 2011). Thirdly, it is data driven and emergent approach that provides a reliable, valid and rigorous data collection process (Harif & Hoe, 2016). Lastly, it permits the researchers deep data collection than several other interview types as they make effort to gain insight into the understanding of informant's situations. The converging interviewing process is shown in Figure 2 given below.

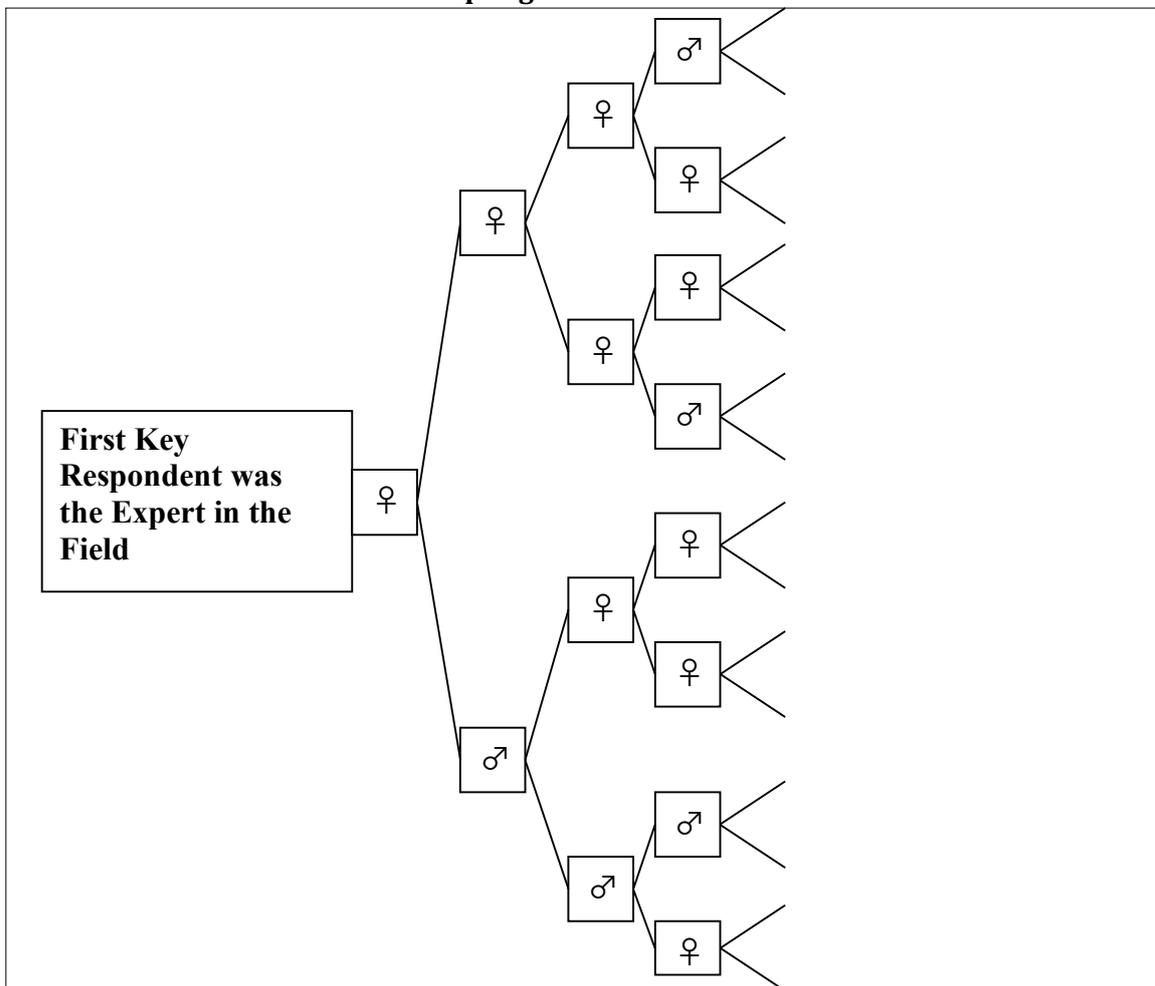
**Figure: 2**  
**Steps of Convergent Interview and Continual Process**



Source: developed based on Dick (1998)

The validity and reliability issue is much vital and usually cannot be ignored in convergent interview and qualitative research without having any exception (William & Lewis, 2005). The validity and reliability provide effective examination about the fitness of measure, which is reflected as essential element for addressing the research. Both reliability and validity depend upon the quality of research design. The reliability of convergent interviews was attained by two different approaches in this research. In first approach, reliability was achieved by using structured interview administration process while conducting convergent interviews. In second approach, a structured process was planned to attain reliability, which include recording, writing and interpretation of data. Construct validity of this research was obtained by two famous approaches namely triangulation of interview questions and flexibility of interview protocol. This research used internal validity for sample selection and information richness was obtained from the financial experts in their field in SME businesses in Pakistan. External validity in this research was obtained by sample selection in terms of generalizeability, which was possible by theoretical replication (Yin, 1989).

**Figure: 3**  
**Snowball Sampling Process for This Research**



Source: developed for this research

Therefore Pakistan medium size firms were taken as population for this research, which fall under the SMEs definition of this research. Sampling approach or strategy explains how respondent’s convergent interviews were identified and selected. The purpose of this qualitative research was to discover, explore and obtain in-depth understanding of the determinants of the usage of financial derivatives in SME businesses in Pakistan. The information related to the phenomenon of interest or subject matter is obtained from the

financial experts in SME businesses. It shows that, sample was selected carefully with purpose in this research. Thus, this qualitative research deployed the purposive sampling technique. Moreover, this qualitative research used snowball sampling. A purposive snowballing technique resulted when the above described two sampling techniques were combined and this purposive snowball sampling technique was used in this research. Snowball sampling has an advantage that one respondent refers the researcher to the other respondent, it saves the time and researcher has a good introduction for the next respondent.

It is necessary to determine sample size in addition to sampling strategy. This research determined sample size based on the saturation principle. Using snowball sampling technique more interviewees were added until an agreed stable pattern, saturation, and divergence on the determinants was obtained. Interviews were stopped when stability was reached, agreement about the previous interviewees' questions was achieved and disagreement was explained (Naire & Riege 1995).

This research used convergent interview protocol as its research instrument. The convergent interview protocol contained a set of semi structured and pre-defined interview questions. Various issues were decided before going for every next interview. There was a combination of open ended research questions including opening questions, probe questions and ending questions. Thematic analysis technique was used to identify, analyze and report the themes or patterns within interview data collection (Braun & Clarke, 2006). This technique cleanly organized and explained the data in detail. It also interpreted many facets of research phenomenon under study very frequently. This technique had six phases while doing analysis, which had been suggested by the researcher and were used in this research (Braun & Clarke, 2006). These six phases included; become familiar with the data, initial codes' generation, search themes, review themes, define and name the themes and generate the report.

### **FINDINGS**

This section presented a brief profile of the respondents participated in this research. All of them held top management position of Chief Finance Officers (CFOs) in their respective firms. Each of the respondents was in manufacturing industry specialties. Total twenty firms were under the classification of medium-sized. The number of full-time employees hired by these firms was ranging from fifty one (51) to two hundred and fifty (250) registered workers. The profile of respondents contributed in this research is shown in table 6 below.

**Table 6**  
**The Profile of Interviewees Contributed in This Research**

Respondents	Code of Respondent	Position of Respondent	SMEs Sector	Year of Establish	Annual Turnover PKR'mil	Number of Employees
1	MGCF01	CFO	Manufacturing	1998	713.00	234
2	MGCF02	CFO	Manufacturing	1992	761	247
3	MGCF03	CFO	Manufacturing	1987	743	199
4	MGCF04	CFO	Manufacturing	1995	573.0	219
5	MGCF05	CFO	Manufacturing	1992	651.0	187
6	MGCF06	CFO	Manufacturing	1999	423.00	200
7	MGCF07	CFO	Manufacturing	1993	685	196
8	MGCF08	CFO	Manufacturing	1993	711	224
9	MGCF09	CFO	Manufacturing	2001	614.0	237
10	MGCF10	CFO	Manufacturing	1988	779	201
11	MGCF11	CFO	Manufacturing	1995	627.0	217
12	MGCF12	CFO	Manufacturing	1998	537.0	241
13	MGCF13	CFO	Manufacturing	1983	691	211
14	MGCF14	CFO	Manufacturing	1997	744	207
15	MGCF15	CFO	Manufacturing	1995	781	213
16	MGCF16	CFO	Manufacturing	1993	683	180
17	MGCF17	CFO	Manufacturing	1998	796	245
18	MGCF18	CFO	Manufacturing	2002	588.0	161
19	MGCF19	CFO	Manufacturing	2000	723	177
20	MGCF20	CFO	Manufacturing	1992	631.0	219

**Source: Developed for this research**

In total, 20 respondents from 20 firms participated in this research, which indicated the stability or saturation was reached at this point. For the purpose of this research, all 20 respondents fulfilled the criteria of the SME definition adopted in this research. The actual snowballing of 20 respondents was followed as explained, which was according to the snowballing technique described in the research methodology above. These conditions implied that the data collected from these respondents were valid in regard to this research, hence, established a solid foundation to proceed with data analysis. The results of thematic analysis of financial determinants of financial derivatives' usage taken from transcription of interviews were shown in Appendix 1.

**Table 7**  
**Summary of Data Analysis of the Core Financial Determinants of the Financial Derivatives' Usage with Respect to the Preliminary Theoretical Framework**

Core Financial Determinants of Financial Derivatives' usage from Preliminary Theoretical Framework		Respondents from SMEs Business in Pakistan																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Frequency
		MGCF01	MGCF02	MGCF03	MGCF04	MGCF05	MGCF06	MGCF07	MGCF08	MGCF09	MGCF10	MGCF11	MGCF12	MGCF13	MGCF14	MGCF15	MGCF16	MGCF17	MGCF18	MGCF19	MGCF20	
1	Firm Size	✓	x	x	✓	x	✓	✓	x	x	x	✓	x	x	x	x	✓	x	✓	x	x	7
2	Leverage	✓	✓	✓	✓	✓	x	✓	✓	x	x	✓	x	x	x	x	✓	x	x	x	x	9
3	Underinvestment Problem	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0
4	Exchange Rate Exposure	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	18
5	Interest Rate Exposure	x	x	x	x	✓	x	✓	✓	✓	x	✓	x	✓	x	x	x	✓	x	x	✓	8
6	Liquidity	✓	✓	✓	✓	x	✓	x	✓	✓	✓	✓	✓	x	x	✓	✓	✓	✓	✓	x	15
7	Cash Flow Volatility	x	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	x	✓	✓	x	x	✓	✓	✓	x	14
8	Financial Distress Cost	x	x	x	x	x	x	x	x	x	x	✓	x	x	x	x	x	x	x	x	x	1
9	Reduction in Taxes	✓	x	✓	x	✓	x	x	✓	✓	✓	✓	✓	x	x	✓	x	x	✓	x	✓	11
10	Firm Value	x	x	x	x	x	x	✓	✓	x	x	✓	x	✓	x	x	x	✓	x	x	✓	6
11	Agency Cost	✓	x	x	✓	✓	✓	x	✓	x	x	✓	x	✓	x	x	✓	✓	✓	✓	x	11
12	Reduction in cost*	x	x	x	x	x	x	x	x	x	x	x	✓	x	x	x	x	x	x	x	x	1
13	Un-invested cash*	✓	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1

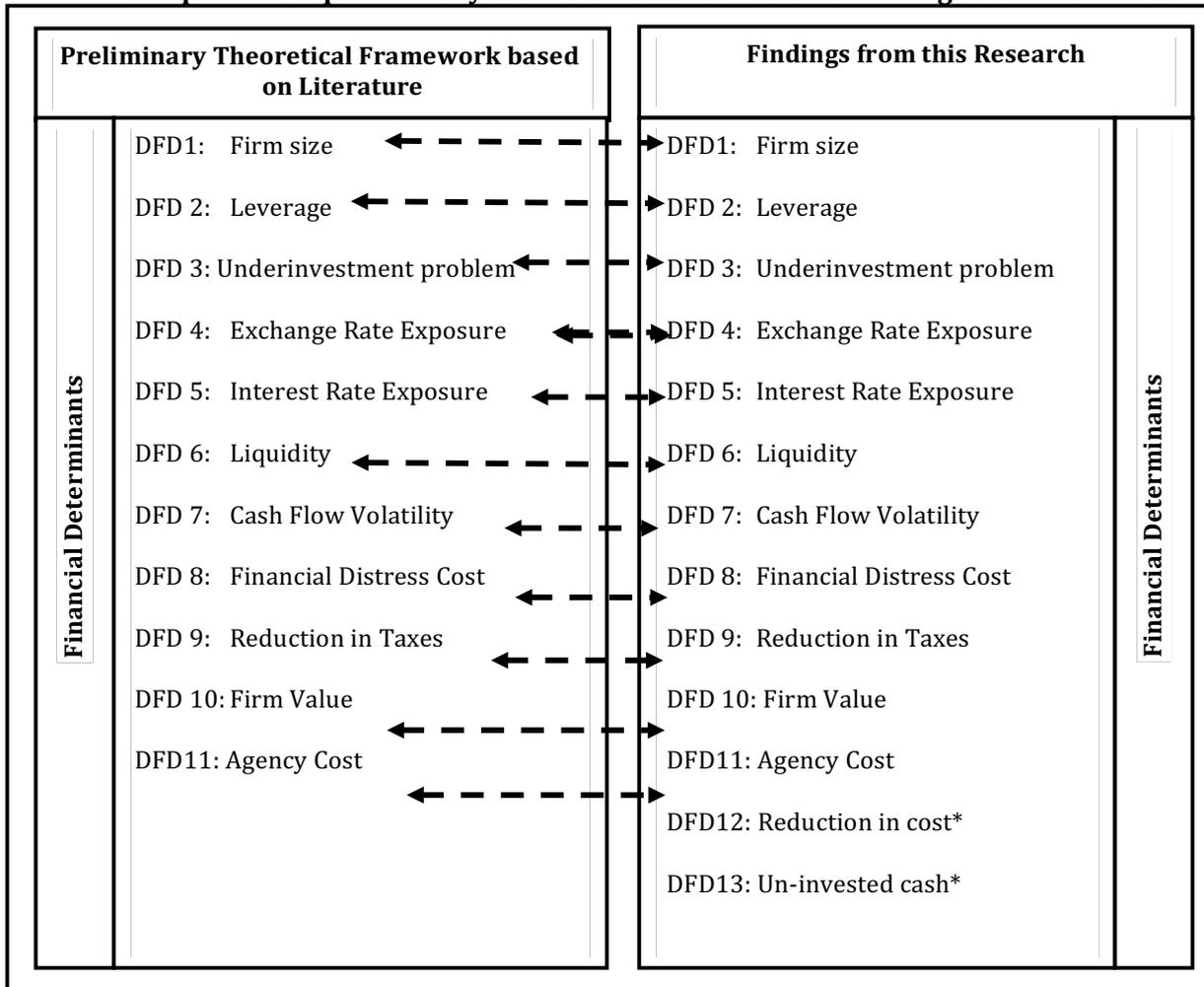
**Legend:**

- ✓ Determinant considered by interviewees
- X Determinant not considered by interviewees
- \* Newly discovered financial determinant

**Source: Developed for this research based on analysis of field data**

In summary, total twelve (12) out of thirteen (13) financial determinants of the financial derivatives' usage inclusive of two newly discoveries are Firm Size, Leverage, Exchange Rate Exposure, Interest Rate Exposure, Liquidity, Cash Flow Volatility, Financial Distress Cost, Reduction in Taxes, Firm Value, Agency Cost, Reduction in cost, Un-invested cash are confirmed by interviewees. One financial determinant, underinvestment problem is not confirmed by even single interviewee due to which underinvestment problem is discarded from this research. Therefore, the findings of interviews have answered the issue of this research. The comparison of prior research findings and current research findings is shown in figure 6 below.

**Figure: 6**  
**Comparison of preliminary theoretical framework and findings of this research**



**Legend:**

← - - - - - → Similar determinants in preliminary theoretical framework and findings of this research

\* Newly discovered determinants

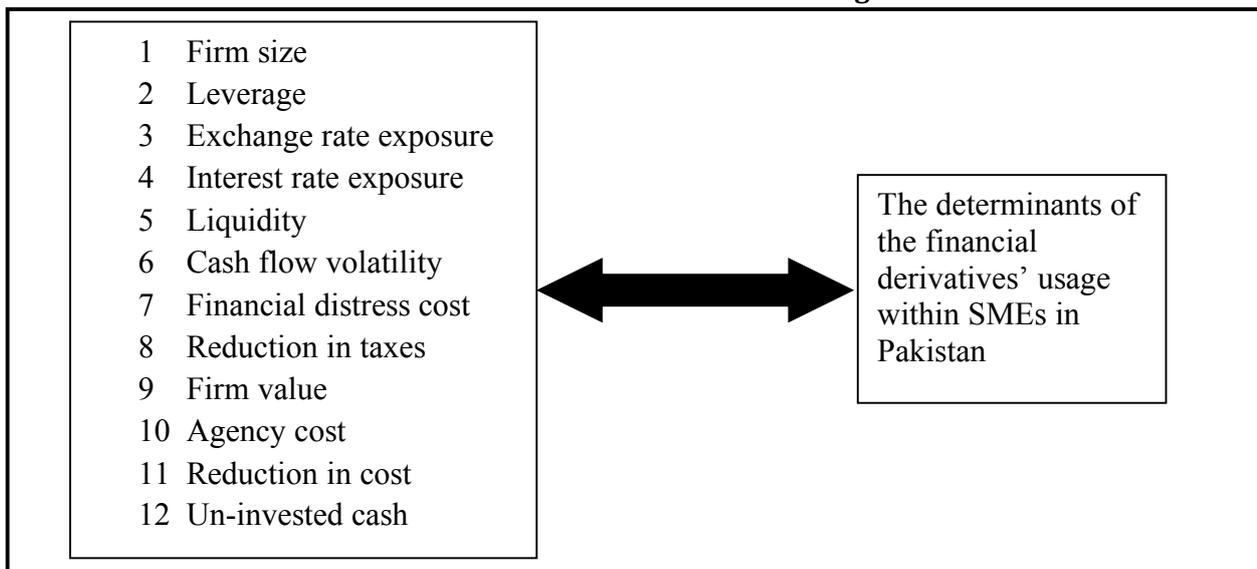
**Source: Developed for this research**

**CONCLUSION**

This section concluded the research problem. Due to distinctive features of SMEs as compared to large firms, this research was taken to understand the financial determinants of the financial derivatives’ usage within SMEs in Pakistan. In the same way, the financial determinants of the financial derivatives’ usage within SMEs were identified. The preliminary theoretical framework was developed based on the past literature, which was found in general business settings. In the preliminary theoretical framework total eleven (11) financial determinants were listed. Though, the literature did not divulge sufficiently the financial determinants of the financial derivatives’ usage within general business settings. In reality, this research found twelve (12) financial determinants; firm size, leverage, exchange rate exposure, interest rate exposure, liquidity, cash flow volatility, financial distress cost, reduction in taxes, firm value, agency cost, reduction in cost and un-invested cash including two newly emerged financial determinants of the financial derivatives’ usage within SMEs in Pakistan. One determinant, underinvestment problem was discarded because none of the respondent mentioned or confirmed this determinant. There was a slim difference between the prior literature and current research findings due to some reasons. These differences may be due to different research methodology used in this research, because prior researches used quantitative

research methodology. This research utilized qualitative research methodology, which facilitated this research to explore the problem deeper and generated findings, which were not established earlier due to which there was a slim difference between two findings. Further, the prior studies were conducted in general business setting despite small firms, which may be the second reason of difference between two findings. In conclusion, a minor amendment was made in this preliminary theoretical framework of this research after the whole discussion. This revised preliminary theoretical framework provides a foundation for discussion to conclude the research problem of this research: "How and why the financial determinants of the financial derivatives' usage could be established within SMEs in Pakistan". The revised preliminary framework is shown in figure 8 below.

**Figure: 7**  
**Revised Theoretical framework based on findings of this research**



**Source: developed for this research**

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## APPENDIX 1

### Results of Thematic Analysis of Financial Determinants of the Financial Derivatives' Usage

Size of the firm (CFD1) | Liquidity as I mentioned earlier (CFD6) | Leverage (CFD2) | Foreign Exchange Exposure regarding risk (CFD4) | Foreign Exchange exposure (CFD4) | Liquidity of the firm (CFD6) | Leverage level (CFD2) | Foreign Exchange rate (CFD4) | Liquidity (CFD6) | Leverage (CFD2) | Firm size (CFD1) | Liquidity Risk (CFD6) | Leverage (CFD2) | Foreign exchange risk (CFD4) | Interest Rate (CFD5) | Leverage (CFD2) | Foreign exchange transactions (CFD4) | Firm size (CFD1) | Foreign exchange exposure (CFD4) | Liquidity (CFD6) | Foreign currency risks (CFD4) | Interest rate risks (CFD5) | Firm size (CFD1) | Leverage (CFD2) | Leverage (CFD2) | Interest rate fluctuations (CFD5) | Liquidity (CFD6) | Foreign exchange risk exposure (CFD4) | Interest rate risk (CFD5) | Foreign exchange risk (CFD4) | Liquidity (CFD 6) | Liquidity parameters (CFD6) | Foreign exchange risk exposure (CFD4) | Firm size (CFD1) | Liquidity (CFD6) | Interest rate exposure (CFD5) | Leverage (CFD2) | Liquidity risk (CFD6) | Foreign exchange risk (CFD4) | Foreign exchange risk (CFD4) | Interest rate risk (CFD5) | Foreign currency fluctuations (CFD4) | Liquidity (CFD6) | Foreign exchange exposure (CFD4) | Liquidity position of the firm (CFD6) | Leverage exposure (CFD2) | Foreign exchange transactions (CFD4) | Firm size (CFD1) | Interest rate risk exposure (CFD5) | Foreign exchange exposure (CFD4) | Liquidity (CFD6) | Risk exposure (CFD5) | Firm size (CFD1) | Liquidity risk (CFD6) | Foreign risk exposure (CFD4) | Liquidity (CFD6) | Fluctuations in foreign exchange (CFD4) | Interest rate Fluctuations (CFD5) | Taxes matter a lot (CFD9) | Different costs of transactions (CFD11) | Fluctuations in cash flow (CFD7) | Capacity of the firm/firm value (CFD10) | Taxes matter (CFD9) | Fluctuations in cash flow (CFD7) | Cost of using financial derivatives (CFD11) | Cash flow (CFD7) | Taxation rules or policies (CFD9) | Cost of transactions for FDs (CFD11) | Cost involved in using FDs (CFD11) | Fluctuations in our cash flows (CFD7) | Overall value of the firm (CFD10) | Cash flow fluctuations (CFD7) Tax benefits (CFD9) | Third party services cost (CFD11) | Cash flow fluctuations (CFD7) | Firm value (CFD10) | Taxes reduction (CFD9) | Cash flow situation (CFD7) | Taxes have vital key role (CFD9) | Cash flow volatility (CFD7) | Firm value (CFD10) | Tax considerations (CFD9) | Agency cost (CFD11) | Cash flow fluctuations (CFD7) | Reduction in cost based on decisions (CFD11) | Reduce taxation cost (CFD9) | Volatility of cash flows (CFD7) | Firm value (CFD10) | Cost of using financial derivatives (CFD11) | Firms see their cash flows (CFD7) | Financial distress cost (CFD8) | See impact on taxes (CFD9) | Agency cost (CFD11) | Agency cost (CFD11) | Fluctuation in cash flow (CFD7) | Firm value (CFD10) | Cash flow volatility (CFD7) | Taxes matter which affect profitability (CFD9) | Agency cost (CFD11) | Agency cost (CFD11) | Cash flow volatility (CFD7) | Firm value (CFD10) | Reducing taxes (CFD9) |

(CFD1) Firm size

(CFD2) Leverage

(CFD3) Underinvestment

(CFD4) Foreign exchange

(CFD5) Interest Rate exposure

(CFD6) Liquidity

(CFD7) Cash flow volatility

(CFD8) Financial distress cost

(CFD9) Reduction in taxes

(CFD10) Firm value

(CFD11) Agency cost