

Has the Risk and Value of Firm Influenced by Foreign Currency Derivatives? A Case Study of Conventional Banks from Pakistan

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Abstract

Purpose of the study is that is there any effect of using foreign currency derivative on the risk or the value of the firm under the effect of firm risk. The study also assesses scientifically the effect of subordinate use firm risk and firm value in the business of banks in Pakistan.

Present study comprises of analyzing the impact of foreign currency derivative utilization on firm value of conventional banks of Pakistan for the time of 2014-2020. Study theorized that conventional banks are utilizing financial derivatives for avoiding risk, use of foreign currency derivatives builds firm value or not.

Findings of the study describes that the Conventional banks in Pakistan are using the foreign currency derivatives to avoiding the risk as they use the respective derivatives to increase their firm value. Study also indicate that the market of derivatives is still un-established in Pakistan So, the firms cannot bear the higher trading cost of respective derivatives in state of higher risk which limits the value increasing incentives of derivative usage

The study provides fresh insights on value reliance of foreign currency derivative usage.

Keywords: Foreign Currency Derivatives, Conventional Banks Firm Value and Firm Risk.

Introduction

1.1 Study Background

Derivatives being long-lasting financial instruments, they have been used quite extensively in the last two or three decades. The last two decades have observed a thoughtful expansion in the use of derivatives. The analysts have investigated numerous explanations behind derivatives that are increasing with such sensational significance among firms. The impetus behind derivatives use is for dampening risk, financial distress cost, expenses of agency as well as for reducing the agency conflicts. The shakiness of pretax income is also lessened due to derivatives that consequently diminishes the tax liability.

Even though the figures of derivatives are available extensively and the derivatives as well has been researched. Till date the effect of derivatives usage on firm value and risk is mixed and has limited literature and different inferences depending upon the various factors in every country. For illustration, there are studies where firms that use derivatives; total risk, unsystematic risk have degenerated although market risk did not show any significant revolution.

1.1.1 Derivatives

According to Karaba (2015), derivatives are financial instrument that are used for either hedging purposes or for speculation purposes. if view from bank's perspective, derivative is an off-balance sheet items keeping the profit and risk factors associated with it aside. However as traditional off balance sheet items, letter of credits or loan commodities, derivatives are different from them. As with the derivative usage, trading and hedging are involved, therefore, derivative has a direct effect on interest rate risk and foreign exchange risk.

Majority of the derivative including futures contracts, options contracts, and credit default swaps are based on following underlying assets; foreign exchange, interest rate,

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equity and commodity (Karaba, 2015). The purpose to use derivative is letting down the risk that companies face when they entangle in hedging activities (Made Reina Candradewi, 2017).

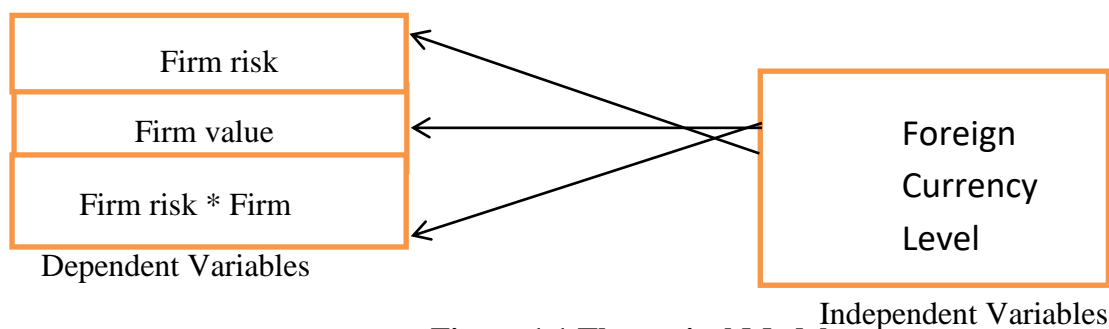


Figure 1.1 Theoretical Model

Literature Review

Most of the prior literature on this research has been conducted on non-financial firms, insurance firms. There are very few researches in which financial firms are employed as sample. The existing literature on this research has been concentrated to interest rate derivative usage.

Karaba (2015) Examined The risk and use of derivatives: evidence from European banking sector. The aim behind the study was to examine the role of derivatives in financial market. Moreover the aim was also to analyze the impact of derivatives on risk as well the performance of banks. The data period for the study was for ten years .i.e 2003-2013. A sample of 261 banks was the final sample for the study. The data for European banks were collected that were listed in stock exchange of the respective countries. Multiple linear regression and ordinary least square was estimated. The findings of the study suggested that linear relationship occurred between the systematic risk and derivative usage. Moreover fixed effect and random effect model was also employed and the findings suggested that systematic risk and derivative usage have positive linear relationship between them.

Bae, Kim, and Kwon (2017) Examined the use of Currency derivatives for hedging: New evidence on determinants, firm risk and performance. The main aim of the paper was to investigate the effect of currency derivatives that are used for hedging purposes on the firm risk and value of Korean firm. Korean firms were selected as sample. Regression was employed to empirically investigate the effect. The findings of the study suggested that firms use more currency derivative for hedging purpose when they have more exports, more foreign currency debt and higher exchange rate. Moreover, the findings also revealed that currency derivative usage does not lower firm risk but increases the value of the firm, particularly in case of sell transactions. Furthermore, currency derivative usage by firm that has high exposures result in lower firm risk and firm value as well. The study suggested that currency derivatives work for hedging purposes and result in higher firm values when the exposures are lower.

Alam and Afza (2017) Investigated the Impact of derivative usage on firm risk and value: A comparative analysis of Pakistan and Malaysia. The objective of the study was to empirically investigate the impact of usage of derivative on risk and value of the Malaysian and Pakistani firms. The study compared the non-financial firms of Malaysia and Pakistan. 166 firms from Pakistan and 266 from Malaysia were selected as sample for this study. The non-parametric univariate tests were employed to investigate the significant impact of derivative usage on firm risk and firm value. The findings of the study advocated that

Malaysian non-financial firms have insignificant impact of derivative usage with the value of firm while with respect to Pakistan; the derivative usage has significant impact on value of the firm.

Made Reina Candradewi (2017) Researched the Determinants of derivatives usage and its effect on firm risk: Evidence from Indonesian Non-Financial Firms.. The main purpose of the study was to analyze the effect of corporate governance, firm performance on the usage of derivatives. The mediating role of corporate governance and firm performance towards risk was also evaluated. Moreover the effect of derivative usage on firm risk was also evaluated. The non-financial firms listed in Indonesian stock exchange were the sample of the study. 2015 was the period of the study. Regression analysis was used to test the hypothesis of the study. The findings of the study put forward that firm performance is negative and significant with derivative usage. The findings also proved that derivative usage has negative and substantial association with firm risk. The study also found a mediating relation between total asset turnover and firm risk. The further research can also be conducted on corporate governance variables.

Research Design

Research Design

The study is based on secondary data involving quantitative data from the annual reports of Commercial banks of Pakistan. Foreign Currency Derivative usage is selected as Independent Variable and Firm risk (total risk, systematic risk and unsystematic risk) foreign currency risk and Firm Value proxied by Tobin's Q, Return and Economic Value Added (EVA) are dependent variables. The study also evaluated the interaction effect of FCD and Firm Value under influence of firm risk. Data from 2010-2016 was collected.

Purpose and Type of Investigation

Quantitative data was used to determine the effect of foreign currency derivative usage on firm value. Also, the moderating role of firm risk was also tested between Foreign currency level and firm value.

Sample and Population

Target Population

Public and Private Banks of Pakistan listed in Pakistan stock exchange are the target population for this study.

Sampling Technique

Random Sampling is conducted for the research.

Sample

The sample included 3 public and 17 private Banks of Pakistan to determine the effect of derivative usage on firm risk and Value. Therefore, a total of 20 banks were selected as sample for this research.

Data Collection

Instrument

Annual reports from 2014-2020 were used to collect data that were generated from the website of respective bank. The websites of Pakistan Stock Exchange and other respective stocks were also explored to collect the necessary data for the study.

Statistical technique.

Descriptive statistics, PROCESS technique by Hayes, (2012) was employed to evaluate the data.

Statistical tool

SPSS was used to interpret and analyze the results.

RESULTS

Testing moderation effect of firm risk between FCL and firm Value

Table 1 Moderation

Model	Coefficient			Interaction coefficient	F stat
	constant	Der	FR		
FCL-TR-Tobin's Q Adj R ² =.3342	.3077	4.6655***	2.2174	-15.564***	22.75***
FCL-TR-Return Adj R ² =.2023	.0766	-1.2924***	1.1975	8.7880***	11.49***
FCL-TR-EVA Adj R ² =.2166	.0016	.357***	.2095	-1.519***	12.530***
FCL-SR-Tobin's Q Adj R ² =.3268	.5219***	3.1967***	.1145	-.8261	22.0039***
FCL-SR-Return Adj R ² =.1925	-.0432	.3315	.2413***	.3282	10.8053***
FCL-SR-EVA Adj R ² =.1909	.0259***	.1936***	.0066	-.0586	10.6965***
FCL-UnSR-Tobin's Q Adj R ² =.7593	.8614***	1.0061***	-.0405***	.4180***	143.0307***
FCL-UnSR-Return Adj R ² =.0645	.1974***	.0714	-.0145***	-.0099	3.1270***
FCL-UnSR-EVA Adj R ² =.5137	.0464***	.0487***	-.0015***	.0265***	48.5804***
FCL-FX-Tobin's Q Adj R ² =.7490	.9463***	.3896	4.4918***	-43.0646***	135.2556***
FCL-FX-Return Adj R ² =.0556	.2054***	.0614	1.5458***	.3044	2.6697***
FCL-FX-EVA Adj R ² =.5017	.0510***	.0108	.1718***	-2.6906***	45.6514***

The PROCESS technique by Hayes, (2012) was conducted on the independent and dependent variable with the inclusion of moderator. The moderation is said to occur when 0 does not lie between upper- and lower-class limits. The interaction effect will be significant and moderation has occurred. In other words, moderation is said to occur when the direction or strength of the relation between independent and dependent variable is affected by third variable (moderator) (Dardas & Ahmad, 2015). PROCESS technique also generated the low, medium and highest levels of risk and evaluate the effect of FCD on Firm Value. So, the moderation effects tests whether there is an interaction affect and if so then at what level of risk that effect is highest, lowest or average. However, there is still ambiguous literature on

the testing of moderation. According to Bennett (2000) the moderation affect occurs if interaction affect has substantial extent of variance in the dependent variable.

The results of the interaction effect depicted that for total risk, there is an interaction effect with the entire performance variable (Tobin's Q, Return and EVA). However, there was no interaction effect with systematic risk. While there is an interaction effect of FCD with Tobin's Q and EVA under the influence of Unsystematic risk. No moderation effect was found with Return. Similarly, interaction effect of FCD was found with Tobin's Q and EVA under the influence of Exchange rate risk but no moderation effect was witnessed with Return. For all the moderation models, the interaction outcome explained the significant amount of variance in Tobin's Q. while a relatively less amount of variance was explained in EVA and Return respectively. Moreover, the main findings of the result explained that FCD usage has decreased firm in the presence of firm risk.

The conditional effect of moderation tested the risk at varying levels and generated the effect of FCD usage on Firm Value. After probing the risk levels from low to high, the conditional effect showed that effect on firm value has decreased with the use of FCD. As the risk is increasing, most of the effects on firm value are decreasing. However as depicted from the results above, there was no interaction affect with systematic risk. When conditional affects were observed the effect, size was significant for the systematic risk in case of Tobin's Q.

Conclusion

The study demonstrates the effect of foreign currency derivative usage on firm Value in the commercial banking sector of Pakistan. Furthermore, the study also probes the moderating role of firm risk while evaluating the effect of FCD on firm value. the sample of 20 Commercial banks listed on Pakistan stock exchange for the year 2010-2016 was selected. The results depicted that usage of foreign currency derivative has increased the firm value in Commercial banks in Pakistan and banks are using the FCD for risk management purposes. The moderation effect of FCD and firm value under the influence of total risk, systematic risk, unsystematic risk and exchange rate risk has decreased the firm value. The first reasons for the value decrease are because of the transaction cost that banks are unable to manage. The gains in derivative activities are less than the costs that is required to perform the derivative activities. Financial professional is required to make the decision whether firm should hedge or not. Whether the firm will be able to manage the equilibrium of gains and costs associated with hedging. Furthermore, investors in Pakistan are not well informed about the usage of derivatives and incentives associated with it due to which firm value incentive with derivative usage is limited. The study will facilitate the policy makers, financial analysts and investors about the Pakistani bank's purpose of using derivatives. Moreover, the study will have its contribution for the banking industry of Pakistan.

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APPENDIX

Conditional effects at varying levels of moderator and descriptive statistics

Total risk	Low		Medium		High	
	effect	Se	Effect	Se	Effect	Se
Tobin's q	3.6291***	.6194	2.8757***	.3644	1.9273***	.3851
Return	-.7072***	.8607	-.2819	.2122	.2536	.2242
EVA	.2565***	.0514	.1829***	.0302	.0904***	.0319

Systematic risk	Low		Medium		High	
	effect	Se	Effect	se	Effect	Se
Tobins q	2.965***	.4191	2.5057***	.3104	1.8219***	.4431
Return						
EVA						

UnSystematic risk	Low		Medium		high	
	Effect	Se	Effect	se	effect	Se
Tobins q	-.7069***	.2734	1.1231***	.20116	3.060***	.1883
Return						
EVA	-.0633***	.0296	.0561***	.0218	.1788***	.020

FX risk	Low		Medium		High	
	effect	Se	Effect	Se	Effect	Se
Tobins q	2.8821***	.1904	.5618***	.2239	-1.1366***	.2997
Return						
EVA	.1665***	.0205	.0215	.0241	-.0846***	.0323

descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FCL	140	.00	1.28	.1765	.17008
total risk	140	.04	.35	.1261	.05864
systematic risk	140	-1.52	4.62	1.0182	.92026
unsystematic risk	140	-19.45	19.18	.3574	6.29237
Beta FX	140	-.21	.14	-.0092	.05856
Tobinsq	140	.14	9.67	1.0529	.74347
EVA	140	-.03	.57	.0562	.05686
Return	140	-.52	1.28	.2015	.39546
Valid N (listwise)	140				

Variables	Measurement
Tobin's Q	$((\text{No. of shareholders} \times \text{stock's Price}) + \text{total liabilities}) / \text{total Assets}$
Return	$((\text{Ending stock price} - \text{initial stock price}) + \text{cash dividend}) / \text{initial stock price}$
EVA	Net operating profit after tax - (invested capital * WACC)
WACC	$W_k k_d (1 - T) + w_e k_e$
Invested capital	Total equity / total liabilities
Total risk	Standard deviation of daily share return
Systematic risk	Co-efficient of market model regression
Unsystematic risk	Standard deviation of error term from market model
Exchange rate risk	Net income of offshore banking units / net income of parent bank
FCL	The sum of purchase and sale of volume of derivative usage