

FOREIGN CURRENCY DERIVATIVES: HEDGING OR SPECULATION**T. Afza & A. Alam**COMSATS Institute of Information Technology, Defense Road, Off Raiwnd Road,
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ABSTRACT

Asian financial Crises, at one end, if increase the usage of Foreign Currency Derivative (FCD) instruments to hedge exchange rate (ER) exposure, then on the other end, extensive usage of derivative instruments exposes firms to more financial risk, due to speculation. This highlights the academicians concern regarding the relationship between FCD usage and firm's risk in both developed and developing countries. Current study contributes in existing literature, by examining the effect of FCD usage on firm's risk, controlling firm-specific factors, by employing sample data of Malaysian non-financial firms. Empirical findings report that Malaysian firms are using FCD instruments for hedging purposes as its usage minimizes variability in the firm's operating cash flows. While, detailed analysis illustrates that firm's having no Foreign exchange (FX) exposure are using financial hedging instruments along with operational hedging in order to reduce firm's risk in contrast to firms having FX exposure. The findings are robust to alternative specifications like endogeneity and self-selection problem.

JEL Classification: F3, G1, G150c

Keywords: FCDs, Hedging, Speculation, Firm's Risk, Emerging Economy, Malaysia.

Introduction

Over the last few decades, tremendous usage of financial derivative instruments has observed in non-financial firms and especially those that involved in international trade activities. After 97/98 Asian financial crises, non-financial firms faced huge losses due to high volatility in ERs, which negatively affect their expected cash flows (Allayannis and Weston, 2001). Thereafter, corporations started using FCDs to hedge FX exposure in order to minimize cash flow volatility which eventually maximizes firm value. According to BIS quarterly review, usage of OTC FCD instruments increased from \$130 billion in 2001 to \$442 billion in 2010, in terms of daily averages, which depicts enhanced use of derivative instruments in Asian economies (Mihaljek and Packer, 2010). However, large losses occurred due to excessive usage of derivative instruments for speculation induce regulators to put strict regulations on derivative trading which limit the usefulness of derivative treatment (Hentschel and Kothari, 2001).

In contradiction to Modigliani and Miller (1958), hedging theorists argued that under imperfect capital market optimal usage of

derivative instruments minimizes the right tail outcomes of financial distress costs. While, Myers and Smith (1982) and Smith & Stulz (1985) stated that heavily debited firms, having higher financial distress costs, can minimize firm's risk by decreasing opportunistic behavior of fixed claimants. In addition to this, Froot et al. (1993) argued that financially constrained firms having higher inability to convert growth options into assets in place can minimize volatility in firm's operating cash flows by using FCDs, aligned with the firm's investment and financing policies. Moreover, non-financial firms having their cash flows and accounting earnings vulnerable to ER exposure are more likely to use FCDs in order to reduce unpredictability in the firm's operating cash flows and earnings.

Existing finance literature has investigated the determinants of FCD in both developed and Asian countries and found evidence in support of hedging. Fewer studies have directly examined the impact of derivatives on firm's risk in developed countries and Asian countries (Nguyen and Faff, 2010) but for the best of the authors knowledge, till now no study has analyzed the relationship between

derivative usage and firm's risk in Malaysia. Current study, therefore, contributes in existing literature by examining the effect of FCD usage on firm's risk by using sample data of 266 Malaysian non-financial firms listed on Bursa Malaysia for the period of 2004-2010. Moreover, the study conducts an in-depth analysis by segregating the sample data into firms having FX exposure or not, with respect to foreign sales. Study hypothesizes that for firms having no foreign sales, corporations are using FCD instruments for speculative purpose, but, in case of depreciation of home currency, usage of FCD instruments decreases operating cash flow variability. Hedging theorists argued that usage of derivatives reduces variability in operating cash flow, present paper therefore aids in financial literature empirically examine the effect of FCD usage on firm's risk. Additionally, existing literature has mostly measured firm's risk by using market measures, current study here gives new evidence by using operating cash flow variability as a risk measure. The outcome of the study is expected to facilitate policy makers and decision makers in identifying whether corporations of Asian countries having an under-developed derivative market are using FCD instruments for hedging purpose or not?

The contents of the paper are classified into five different sections where existing literature on the relationship between FCD usage and firm's risk is covered in section two. Data description and methodology are explained in section three while section four reports empirical findings and the last section, i.e. section five includes the conclusion, policy implications and limitation.

Literature Review

According to Modigliani and Miller (1958), under perfect capital market, corporate use of derivative instruments does not affect firm's investment and financing policies as investors are able to hedge risk at their own end. While financial theorists argued that under certain market imperfections, corporations can

increase shareholder's wealth by minimizing firm's risk by employing derivative instruments. (Myers, 1977; Stulz, 1984; Smith and Stulz, 1985; Froot et al, 1993). By using different sample data of both developed and Asian countries, existing empirical studies identify that the corporate use of derivative instruments facilitates firms in reducing operating cash flow variability by hedging financial distress cost, agency cost, FX exposure and managerial opportunistic behavior (Hornig and Wei, 1999; Haushalter, 2000; Nguyen and Faff, 2002; El-Mersy, 2006; Hu and Wang, 2005; Ameer, 2010; Afza and Alam, 2011(a, b & c); Hsu et al., 2009).

Below summarizes a glimpse of existing literature which has directly tested the impact of corporate use of FCD instruments on firm's risk by using different sample data. Most studies have focused the effect on FCD usage on firm's risk in developed countries, like Hentschel and Kothari (2001) by employing sample data of 929 U.S firms for the year of 1990-1993, found in significant positive and negative effect of derivative usage of non-financial and financial firms on firm's equity return volatility. Moreover, results regarding detailed analysis by dividing the sample data according to the portfolio dummies reported similar results. Lastly, study investigated the relationship between derivative usage and CRSP value weighted index and showed similar results.

By employing 312 U.S firms for the period of 1992-1996, Deshmukh and Vogt (2005) examined the sensitivity of hedger firm's cash flows towards investment and found that corporations that used derivative for hedging have lower sensitivity of cash flows towards investment. By using sample data of 326 firms for the period of 1998-2005, Chiang and Lin (2007) depicted significant negative effect of derivative usage on firm's ER exposure, while firm's operational hedging technique is identified as irrelevant of firm's FX exposure. Aysun and Guldi (2011) by using sample data of emerging countries for the period of 1995-2005, illustrated derivative market participation as a decreasing and foreign sales

as an increasing function of firm's FX exposure. Gay et al. (2011) found a significant negative relationship between derivative usage and costs of equity by employing large sample data of U.S firms for the period of 1992-1996 and 2000-2004. Moreover, contrary to large and medium sized firms, derivative usage reduced firm's costs of equity in small sized firms. By studying the effect of 304 European firms, Jorge and Augusto (2011) reported that firm's hedging was a significant determinant of firm's financial risk exposure. By aligning users and non-users on the basis of prosperity to hedge, Bartram et al. (2011) studied the 6,888 non-financial firms for the period of 2000-2001 and documented significant negative effect of financial derivatives on firm's total risk and systematic risk. Nguyen and Faff (2010) studied the relationship between firm's derivative usage and risk, by using sample data of 469 firms for the year of 1999-2000 and reported the insignificant negative effect of foreign currency and interest rate derivative usage on firm's total risk, except FCD instruments which reflected significant negative effect on firm's systematic risk.

Existing literature, concentrated mostly in developed countries, provides mixed evidence regarding the relationship between derivative usage and firm's risk while none of the study has explored that whether corporations are using FCD instruments for hedging or for speculative purpose in Asian country like Malaysia. Few researchers have tested the determinants of hedging policies of Malaysia (Ameer, 2010; Ahmad and Haris, 2012) and the relationship between derivative usage and firm value (Ameer, 2009) but for the best of the authors knowledge, till now no study has explored the effect of FCD usage on firm's risk. Hence, the primary objective of the current study is to identify the relationship between firm's risk and FCD usage by employing sample data of 266 Malaysian firms listed on Bursa Malaysia for the period of 2004-2010. Positive relationship indicates the manipulative or speculative usage of FCD instruments while negative relationship

reflects usage of FCD instruments for hedging purpose. The study is expected to facilitate decision makers in understanding the purpose of usage of FCD instruments and to identify the risk reduction benefits acquire from use of derivative instruments in case of hedging purpose.

Data and Methodology

Current study tests the effect of FCDs on firm's risk by using sample data of 266 Malaysian non-financial firms for the period of 2004-2010. Corporations which stay listed on the Bursa stock exchange for the study period and neither merged nor acquired by any other non-financial firm are included in the sample data. Moreover, financial firms are excluded from the sample data as their specific nature of business activity create biases in the results, which leads to final sample of unbalanced panel data of 1,635 observations per year. According to international accounting standards, corporations are mandatory to disclose their information regarding usage of derivative instruments. Therefore, dummy value "1" is assigned for firms that disclose their use of FCD instruments and 0 otherwise.

Contrary to existing literature, the study uses volatility in operating cash flow and earnings per share as a proxy of a firm's risk as Allayannis et al. (2006) stated that in contrast to market risk measures, accounting, risk variables deal with the actual stability of the firm's financial statements which is directly influenced by managerial decisions and firm's risk management policies along with the other financial and investment policies. Moreover, by using a survey based approach, researchers reported that corporations are using derivative instruments in order to reduce cash flow volatility and to smooth firm's earnings (Faff and Marshall, 2005; Sprcic et al., 2008; Kapitsinas, 2008). Pramborg (2004) also observed that corporations are using derivative instruments to reduce cash flow variability, in order to hedge transaction exposure. Current study, therefore, using volatility in operating

cash flows and volatility in earning per share as firm's risk measures:

$$FR_{it} = \alpha + \beta_1 FCD_{it} + \beta_2 LEV_{it} + \beta_3 FDC_{it} + \beta_4 SIZE_{it} + \beta_5 LIQ_{it} + \beta_6 TAX_{it} + \beta_7 MNGRL_{it} + \beta_8 LFS_{it} + \beta_9 DVRSF_{it} + \varepsilon_{it}$$

Where,

FR = firm risk is measured by S.D of Operating cash flow and S.D of earnings per share of the firm *I* for period *t*.

FCD_{it} = Foreign currency derivative usage is represented by dummy '1' if firm is using foreign currency derivatives and '0' otherwise of the firm *i* for time period *t*

LEV_{it} = leverage is measured by debt to asset ratio of the firm *i* for time period *t*

Facet = financial distress costs are calculated by the ratio of tangible assets to total assets of firm *i* for time period *t*

SIZE_{it} = size is quantified by Log (total assets) of the firm *i* for time period *t*

LIQ_{it} = liquidity is measured by dividing current assets minus inventory to current liabilities of the firm *i* for time period *t*

MNGRL_{it} = managerial ownership is represented by Percentage of managers and employee ownership of the firm *i* for time period *t*

TAXLOSS_{it} = tax loss is measured by dummy '1' if the firm has tax losses and '0' otherwise of the firm *i* for time period *t*

List = foreign sales, are calculated by log on Foreign sales of the firm *i* for time period *t*

DVRSF_{it} = diversification is represented by dummy variable '1' if the firm has a subsidiary in any other country other than the home and "0" otherwise.

In-depth analysis has been done by segregating the sample data into firms having FX exposure or not, measured by foreign sales, in order to test whether the effect of usage of FCD instruments on firm's risk is higher for firms having FX exposure as

compared to corporations having no FX exposure.

Estimated Results

Descriptive statistics in table 1 document mean and standard deviation values of all variables. Summary statistics show that Malaysian firms have on average higher firm's risk as variability in firm's cash flows and earnings per share are 13% and 50% respectively.

	Mean	Std. Deviation
σ_{OCF}	13.745	0.6761
σ_{EPS}	5.519	20.299
LEV	0.412	0.255
FDC	0.328	0.260
SIZE	5.561	0.544
LIQ	2.827	6.758
TAXLOSS	0.720	0.449
MNGRL	11.938	16.663
LMNGRL	4.892	0.760
FS	0.235	0.861
LFS	2.411	2.539
DVRSF	0.580	0.494

Moreover, results report that firms have on the average reasonable debt ratio, though possess higher financial distress costs. However, higher liquid funds are kept as side as a precautionary measure. Firms have lower managerial ownership, 11%, reflect lower chances of agency costs. Corporations report lower FX exposure, as exports are 23.5% of total sales. But at the same time, 58% firms are geographically diversified, indicating that Malaysian firms are more involved in operational hedging.

Table 2 reports univariate analysis results by segregating the sample data into firms that are using FCD instruments and not. Result show that users are significantly different from non-users in terms of a firm's risk as users of FCD instruments have lower volatility in operating

cash flows and higher volatility in earnings per share. Regarding other variable results show that users are statistically different from non-users in terms of firm specific characteristics except tax losses. In order to test whether firms having FX exposure, with respect to foreign sales, differ from firms having no FX exposure in terms of FCD usage and firm's risk or not, the study classifies the sample data on the basis of firms having FX exposure or not. Results' document that firms having FX exposure are using more FCD instruments,

and the results are statistically different from corporations having no FX exposure. Corporations having FX exposure have lower cash flow variability, but higher volatility in earnings per shares as compared to firms having no FX exposure. Regarding other variables, except liquidity and tax losses, corporations having FX exposure is statistically different from firms having no FX exposure in terms of firm specific characteristics.

Table 2: Univariate Test for Firms using FCD Instruments			
	Users (503)	Non-Users (1221)	Mann-Whitney U Test
	Mean	Mean	
σ_{OCF}	0.059991	0.1716	0.000***
σ_{EPS}	8.153924	4.450772	0.000***
LEV	0.4265	0.4047	0.092*
FDC	0.3597	0.3155	0.000***
SIZE	5.7087	5.4941	0.000***
LIQ	1.9696	3.1999	0.077*
TAXLOSS	0.7018	0.7305	0.226
MNGRL	13.9937	11.0216	0.008**
LMNGRL	5.1893	4.7650	0.000***
FS	0.4347	0.1496	0.000***
LFS	3.7078	1.8247	0.000***
DVRSF	0.6958	0.5250	0.000***
Univariate Test for Firms using FCD Instruments			
	FS > 0 (856)	FS = 0 (889)	Mann-Whitney U Test
	Mean	Mean	
FCD	0.426859	0.1654	0.000***
σ_{OCF}	0.1117	0.1623	0.000***
σ_{EPS}	7.1026	3.9817	0.020**
LEV	0.3980	0.4244	0.081*
FDC	0.3299	0.3259	0.033**
SIZE	5.6367	5.4877	0.000***
LIQ	2.9166	2.7379	0.567
TAXLOSS	0.7114	0.7300	0.387
MNGRL	11.8610	12.0265	0.063*
LMNGRL	5.0362	4.7543	0.000***
DVRSF	0.0019	0.4005	0.000***

***, ** and * are significant at 1%, 5% and 10%

	Dependent Variable: σ_{OCF}			Dependent Variable: σ_{EPS}		
	1	2	3	4	5	6
Variables	All Firms	FS = 0	FS >0	All Firms	FS = 0	FS >0
Constant	-1.721***	-1.67***	- 1.715***	-1.289***	-0.75**	- 1.586***
FCD	-0.204***	-0.44***	-0.105**	0.087	0.05	0.12
LEV	0.197**	0.317**	0.13**	0.337***	0.352***	0.28**
FDC	-0.143*	-0.106	-0.11*	0.108*	0.046	0.222**
SIZE	0.015	-0.019	-0.064	0.231***	0.132**	0.292***
LIQ	-0.001	0.026**	-0.005	0.002	0	0.003
TAXLOSS	0.02	0.114*	-0.066	0.058	0.099*	-0.01
MNGRL	0.001	0	0.002**	-0.001	0.001	-0.003**
LFS	-0.027**	-----	-0.023**	0	-----	-0.001
DVRSF	0.064	0.025	0.174**	0.072**	0.055	0.113**
D-W Test	2.156	2.168	2.088	1.929	2.1	1.895
Adjusted R Square	0.05	0.065	0.044	0.085	0.052	14
F Statistics	6.873***	5.255***	3.487***	11.367***	4.399***	9.966***

***, ** and * are significant at 1%, 5% and 10%

Unreported correlation results reflect no issue of multicollinearity with independent variables for all firms and for the sub-sample data. Table 3 studies the effect of FCD usage on firm's risk, measured by both volatility in operating cash flows and earnings per share. Specification 1 documents empirical findings by employing volatility in operating cash flows as a dependent variable. Results depict significant negative effect of FCD usage on firm's volatility in operating cash flows, indicating the Malaysian non-financial firms are using FCD instruments as hedging instruments, consistent with (Nguyen and Faff 2010). In addition to it, firms are more geographically diversified, which increase the firm's risk exposure and motivate firms to use FCD as a hedging tool. Regarding control variables, study report significant positive effect of financial distress costs and negative effect of foreign sales on firm's risk, indicating that Malaysian firms having higher financial distress costs but lower FX exposure have lower variability in the firm's operating cash flows.

Detailed analysis has been done by dividing the sample data into firms having FX exposure, with respect to foreign sales in order to test whether a significant difference exists between firms having FX exposure or not, with respect to the effect of FCD usage on firm's risk. Specification 2 shows empirical findings for firms having no FX exposure and reports significant negative effect of FCD usage on firm's volatility in operating cash flows. This might be because Malaysian firms having no FX exposure are using FCD instruments in order to hedge their import payments. Moreover, Malaysian firms are more geographically diversified, which increases their financial risk, and increases the likelihood of usage of the FCD instrument for hedging purposes, supporting complementary hypothesis that firms are using financial hedging in aligned with operational hedging for reducing firm's risk, supported by Kim et al. (2006). About control variables, leverage, liquidity and tax losses, identify as a significant determinant of volatility in firm's operating cash flows. Specification 3

examines the effect of FCD usage on firm's risk for corporations having FX exposure, with respect to foreign sales and depicts significant negative effect FCD usage on firm's risk, however magnitude of this effect is lower than that of firm's having no FX exposure. This is because of higher involvement of Malaysian firms in operational and natural hedging which serve as a substitute of financial hedging. With respect to firm specific variables, findings identify financial distress costs, managerial ownership, foreign sales and diversification as a significant determinant of firm's volatility in operating cash flows.

Regression results regarding the effect of FCD usage on firm's risk, measured by the variability in the firm's earnings per share in specification 4 document insignificant effects of FCD usage on firm's volatility in earnings per share, suggesting that Malaysian firms are using FCD instruments in order to smooth cash flows rather than firm's earnings. Regarding other firm specific variables, leverage, size and geographically diversified firms are found to be a significant determinant of firm's variability in earnings per share. Summarizing the estimated findings, results show that corporations are using FCD instruments to hedge cash flows, i.e.; short term exposures, supported by Pramborg (2004). Alike previous analysis, subdivision of sample data on the basis of FX exposure illustrates insignificant positive effect of FCD usage on firm's risk, in case of no FX exposure as shown in specification 5. Findings therefore provide robustness to earlier results that the purpose of using FCD instruments is to minimize the volatility in firm's operating cash flow, i.e; transaction exposure, rather than unpredictability in the firm's earnings per share. Similar to previous results, usage of FCD derivative instruments insignificantly affects the firm's volatility in earnings per share in specification 6. Regarding control variables, study illustrate financial distress costs, size, managerial ownership and diversification as a significant determinant of

corporation's unpredictability in earnings per share.

Robustness Tests

As a robustness check, study re-classifies the sample data by identifying firms having FX exposure or not, in terms of foreign sales and geographical diversification. Unreported empirical findings illustrate consistent estimates that usage of FCD instruments minimizes operating cash flow variability for all firms, especially for firms having no FX exposure. This indicates that Malaysian firms have independent subsidiaries therefore their FX exposure is irrelevant of the parent company. However, firms having FX exposure, with respect to both geographical diversification and foreign sales, are using naturally hedging technique which puts downward pressure on firm's FX exposure. Alike previous results, firm's FCD usage are irrelevant of variability in earnings per share.

In order to deal with heterogeneity problem, study further estimates fixed/random effect model as illustrated in table 4. Unreported regression results show insignificant value of Hausman test, indicating that the random effect model gives better estimates in comparison to fixed effect for all specifications. The findings are robust to earlier results that usage of FCD Instruments reduces firm's variability in operating cash flows significantly for all firms and for sub sample data as shown in specifications 1-3. Result regarding the effect of FCD instruments on firm's variability in earning per share reports significant positive effect of FCD usage on firm's volatility in earnings per share in specification 4. This implies that usage of FCD instruments increases firm's operating expenses which lead to volatile earning per share. However, for the sub sample data, the findings illustrate insignificant relationship between FCD usage and volatility in earnings per share in specification 5. Whereas, signs, turn to be significant positive in specification 6. This indicates that Malaysian non-financial firms are using FCD instruments for reducing

operating cash flow variability, but at the same time due to amateur derivative market usage of FCD put upward pressure on firm's operating

expenses, lead to increase in unpredictability in earnings per share.

	Dependent Variable: σ_{OCF}			Dependent Variable: σ_{EPS}		
	1	2	3	4	5	6
Variables	All Firms	FS = 0	FS >0	All Firms	FS = 0	FS >0
Constant	-1.721***	-1.29***	0.73**	-1.289***	-14.35**	-1.586***
FCD	-0.21***	-0.45***	-0.07*	2.26*	0.09	3.55*
LEV	0.17**	0.27**	0.11	7.77***	7.58***	7.85**
FDC	-0.23**	-0.16*	-0.15*	-2.19	-1.03	-3.62
SIZE	0.02	-0.07	-0.11*	0.28**	0.281	3.90**
LIQ	-0.01*	0.01*	0	0.07	0.11	0.07
TAXLOSS	0.004	0.11*	-0.02	0.09	0.25	-0.08
MNGRL	0.001	0	0	-0.06*	-0.027*	-0.09*
LFS	-0.02*	-----	0.04**	0.4**	-----	0.41
DVRSF	0.001	0.05	0.003**	0.64	-0.36	1.96
F Statistics	65.17***	65.64	64.66***	59.86***	62.38***	31.68**

***, ** and * are significant at 1%, 5% and 10%.

Study, in addition to it, tests the endogeneity problem as it is expected that corporations are using FCD in their expectation of minimizing firm's risk. The study uses two stage least square regression method in order to control the endogeneity problem. By employing OLS regression techniques for measuring the effect of FCD usage on firm's risk while LOGIT model is used to estimate the effect of volatility in firm's operating cash flow on firm's FCD usage. Study then employs the predicted values of each derivative usage and firm's risk as an explanatory model in second stage. Similar to Lookman (2004), liquidity is used as a potential instrumental variable as hedging theorists argue that firms are holding large cash as a precautionary motive which serves as a substitute of derivative usage. Specification 1 in table 5 shows second stage regression results, along with all other control

variables, findings are consistent with the previous results that usage of FCD instruments minimizes firm's risk significantly.

Study moreover uses the treatment effect model in order to control self-selection problem, as chances are there that corporations using FCD instruments are systematically different from firms that opt not to use FCDs. Study therefore estimates the effect of treatment effect indicator, FCD usage, on the outcome variable, firm's risk measured by the variability in operating cash flows. The findings are robust to earlier results, as documented in specification 2 of Table 5, that Malaysian firms can reduce firm's volatility in operating cash flows by using FCD derivative instruments. The significant Inverse mill ratio indicates the presence of a self - selection problem.

Dependent Variable: σ_{OCF}		
	1	2
Const	2.16***	-1.02***
FCD	-1.53*	-1.98**
LEV	0.19*	0.29**
FDC	-0.06	-0.21**
SIZE	0.132	-0.02
TAXLOSS	-0.06	0.02
MNGRL	0.003	0.003
LFS	0.048	-0.02**
DVRSF	0.03	0.01
Wald Chi²	29.22**	33.69***
Inverse Mills Ratio	-----	1.07**

***, ** and * are significant at 1%, 5% and 10%.

Conclusion and Implications

Considering the usage of FCD for both hedging and speculation, researchers have mostly examined the effect of FCD usage on firm's risk in countries having developed derivative market, though the results are not conclusive in nature. Extending the existing literature, the primary contribution of the current study is to empirically test the risk reduction effects of FCD usage by using Malaysian firm's as their derivative market is still an amateur. Empirical findings imply that despite of under-developed or growing derivative market, usage of FCD instruments decreases volatility in firm's operating cash flows ranging from 20.2-20.4%, suggesting that Malaysian corporations are using financial derivatives for hedging purpose. Study further supports complementary hypothesis, aligned with Kim et al. (2006) [32], that operationally hedged firms are using financial hedging in parallel, to hedge firm's ER exposure. Sub sample data analysis

suggests that Malaysian firms having no FX exposure are able to reduce firm's operating cash flows with greater extent, from 42.5%-44%, as compared to corporations having FX exposure, varies from 9.5%-10.5%, as usage of FCDs provides fewer risk reduction benefits for firms that are employing operational and natural hedging techniques along with the financial hedging. The findings are robust while controlling heterogeneity, indignity and self-selection problem.

Current study tests the risk reduction benefits of FCD usage and finds empirically prove that Malaysian firms are using FCD instruments for hedging purpose. Study helps corporations in identifying the risk reduction incentives of using FCDs for firms no FX exposure as they are unable to minimize their risk through operating and natural hedging techniques. Moreover, study facilitates policy makers in understanding the role of FCD usage in minimizing firm's risk and to identify the need of developed exchange traded derivative market.

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