

Determinants of Financial Derivatives Use of Listed Non-Financial Firms: Evidence from Vietnam

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Abstract

This article aims to gain insights into the factors that determine the use of derivatives by Vietnamese firms. As such, we run a Logit regression model to examine and find the partial effects of the firms' characteristics on their decision to use derivatives. Then, we monitor and discuss the empirical findings and make recommendations. We find that firm size, leverage, tax loss carried forward, dividend-payout ratio, managerial compensation, managerial stockholding, and quick ratio have a positive and significant relationship to the firm's decision to use derivatives to hedge. Moreover, this study provided empirical evidence that firms with managers who have overseas and financial backgrounds tend to hedge more. In practical terms, the results of this study are beneficial to subjects such as policymakers, listed companies, investors, and shareholders.

Keywords: Derivatives use, hedging, Vietnamese firms, non-financial, hedging decision.

1. INTRODUCTION

In the last two decades, the number of research studies attempting to explain why firms hedge has increased dramatically. Evidence shows that derivative instruments use has increased over the past few years, making derivatives an integral component of a company's overall risk management portfolio (Berkman & Bradbury, 1996; Bodnar, Hayt, and Marston, 1998). Numerous arguments have been proposed to explain why corporate risk management activities enhance firms' value. Prior surveys (Berkman et al., 1997; Bodnar et al., 1998) indicate that non-financial companies are progressively employing risk management to protect their performance against financial risks such as foreign exchange and interest rate risk. Risk management theories suggest that firms use derivatives if market imperfections make volatility unaffordable. Through hedging, companies can reduce the quantity of corporate tax paid and the cost of financial distress (Mayers & Smith, 1982; Smith & Stulz, 1985). Ross (1998) and Leland (1998) posit that hedging decreases the likelihood of financial distress, thereby increasing debt capacity and the associated tax benefits. When external financing is more exorbitant, hedging can also ensure a company has sufficient cash flow to finance investments (Myers & Majluf, 1984; Froot, Scharluf, and Stein, 1993). DeMarzo and Duffie (1995) and Dadalt, Gay, and Nam (2002) argue that financial hedging enhances the informativeness of corporate earnings as a measurement of managerial skill. Lastly, according to several studies, hedging activity is motivated by managerial risk aversion (Stulz, 1984; Smith & Stulz, 1985). It is still being determined whether hedging activity motivated by managerial risk aversion is a value-adding strategy. According to Tufano (1996), hedging motivated by managerial incentives is not intended to increase shareholder value.

The FED has continuously adjusted interest rates to control inflation after the COVID-19 pandemic. With its position as the world's largest and most influential financial institution, this increase in the interest rate impacts the global economy, including Vietnam. Businesses need to determine the maximum extent of the risks that can affect their financial situations and the likelihood of their impact through quantitative and qualitative aspects. Moreover, financial derivative transactions have been formed to minimize the risk of possible losses for firms. One of the advantages of derivatives is that the diversity of these transactions allows businesses to use them to

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minimize or eliminate risks. In the context of Vietnam, many businesses use loans not as an additional source of capital but as their primary source of financing.

Along with economic growth, the demand for loans also increased significantly. As Vietnam's economy recovers after COVID-19, enterprises are gradually returning to production and business. In June 2022, the State Bank of Vietnam announced credit growth of 8.16 percent. The high increase shows that the demand for loans is increasing rapidly when businesses need capital to restore production and operation after the pandemic. Under the pressure of high inflation and the impact of the Government's anti-inflation measures, commercial banks' lending interest rate level in the market had abnormal fluctuations. It caused many economic disturbances, affecting the business sector the most. Therefore, to ensure profitable business activities and sustainable development, enterprises must actively and proactively use derivative instruments to prevent interest rate risk by exploiting and using derivatives to hedge risks from fluctuations in market interest rates.

When the underlying market in the world and Vietnam experienced many fluctuations due to macroeconomic conditions, the derivatives market played an active role as a new investment channel, helping firms diversify investment cash flows, minimize risks, and seize profitable opportunities. Although derivatives are effective hedging instruments for most financial and non-financial firms in Vietnam, this study only examines the factors affecting the decision to use derivatives of listed non-financial firms in Vietnam. The reason behind this choice is that this study focuses on the hedging purpose of derivatives, while financial firms usually use derivative instruments for speculating, hedging, and arbitrage.

Although Vietnamese-listed non-financial firms use derivatives widely, there needs to be more evidence on the extent and nature of derivatives use, primarily due to the lack of data. Most of the prior research into derivative usage has focused on developed economies, with little similar research on emerging economies like Vietnam. This is mainly because Vietnam firms provided little or no information on derivatives use in their annual reports. As a result, there has yet to be a complete and reliable report on derivative use in Vietnam. This study aims to find the relationship between the decisions to use derivatives and firms' characteristics in Vietnam, providing solutions and recommendations for Vietnamese firms in risk management procedures.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1. Financial Distress and firm's decision to use financial derivatives

The term "financial distress cost" refers to the additional costs that a company faces in addition to the cost of running a business, such as a higher cost of financing. Companies in distress have a more difficult time completing their financial obligations, which increases the likelihood of default. Distress costs may include the requirement to sell assets rapidly and at a loss to meet immediate necessities. The imperfect market theory points out that if a company fails to meet its financial obligations, it will undoubtedly face financial difficulties and even bankruptcy. Managers have the incentive to reduce financial distress if it is too costly. Hedging can potentially increase value by lowering the estimated cost of financial distress. Hedging reduces cash flow volatility and value variance, reducing the number of states where the hedging firm confronts financial difficulties. In case of financial distress, hedging may reduce the expected cost of financial distress by minimizing opportunistic action that stockholders put under bondholders (Mayers & Smith, 1987; Bessembinder, 1991).

Hypothesis 1: There is a positive relationship between the financial distress costs and the firm's decision to use derivatives.

2.2. Corporate taxes

In the context of tax regimes (convex schedule - the relationship between the amount of income and the actual tax rate is convex), firms have the option to mitigate their tax liability through corporate hedging strategies that serve to decrease the level of pre-tax income volatility (Graham & Smith, 1999). The convexity observed in tax schedules can be attributed to the progressive increase in marginal tax rates with taxable income and the constraints imposed on special tax preference items, such as the finite duration of tax losses carryforward or carryback provisions. Therefore, when a company experiences reduced earnings or financial losses, it may not be able to leverage the advantages offered by these regulations fully (Stulz, 2002).

Hypothesis 2: The higher the tax burden, the more likely firms are to use financial derivatives.

2.3. Agency theory and underinvestment problem

In an imperfect market where information asymmetries exist, the interests of a firm's stakeholders (e.g., managers, shareholders, bondholders, employees, etc.) might be incongruent. Firms with risky debt and poor firm value, in particular, may not demonstrate optimal investment behavior. This is because if fixed payment commitments are substantial, logical managers might decide not to invest even in projects with a positive Net Present Value (NPV), as the realization of such investments primarily benefits bondholders (Myers, 1977; Smith et al., 1990). This problem is called: "underinvestment". It is believed to be mitigated through the process of debt contract revision or renegotiation, reduction of the outstanding debt's maturity period, or the issuance of a lesser amount of debt. However, it is important to note that these solutions may result in supplementary expenses.

Froot, Scharfstein, and Stein's (1993) framework for analyzing corporate risk management in the presence of costly external financing demonstrates the manifestation of derivatives in an "underinvestment" scenario. In this context, implementing a hedging program may generate value if two specific conditions are present: firstly, the firm must possess a viable growth option set, and secondly, the firm must face financial constraints that limit its ability to undertake these options. In this context, the implementation of hedging strategies via derivatives is deemed advantageous as it serves to safeguard the continuity of internal fund generation from being impeded by external variables, such as unfavorable fluctuations in exchange rates, interest rates, or commodity prices. The significance of derivatives lies in their ability to facilitate the maintenance of a sufficient level of financial flexibility or the mitigation of dependence on expensive external funding sources.

Hypothesis 3: There is a positive relationship between the Agency costs and the firm's decision to use derivatives.

2.4. Substitutes for hedging

There are various options a company can employ to mitigate risk aside from hedging (Nance, Smith & Smithson, 1993). A firm's employment of off-balance-sheet hedging instruments is subject to the impact of its choices regarding other financial policies. Therefore, an effective method to mitigate the conflict between shareholders and bondholders is for the company to decrease the debt component in its capital structure. However, in reality, a shift in capital structure is rarely pursued with the intention of risk management. Substituting debt with equity typically involves substantial transaction expenses, leading to the loss of interest tax shields. To proxy for the substitutes for hedging, this study uses the firm's dividend payout ratio - which is calculated as the yearly dividend per share divided by the earnings per share (EPS) or divided by the net income dividend payout ratio on a per share basis.

Hypothesis 4: There is a positive relationship between the dividend payout ratio and the firm's decision to use derivatives.

2.5. Managerial incentives

A manager, who may also be referred to as a supervisor, is responsible for executing management duties and overseeing or guiding subordinates in carrying out designated assignments within an establishment. The impact of financial risk management on internal corporate decision-making, future development strategies, and, ultimately, corporate value is significant due to issues related to information asymmetry and principal-agent costs. Managers also play a crucial role in generating corporate value and directing the course of corporate decision-making.

Previous studies on risk management have employed fairly straightforward indicators of executive intentions. Tufano's (1996) research reveals a positive correlation between hedging by gold mining companies and the value of executive stock holdings and a negative correlation with the number of stock options managers hold. Previous research has incorporated these variables in cross-sectional investigations (Geczy et al., 1997) and has yielded inconclusive results regarding the association between managerial motives and hedging. Managers who seek to decrease the risk that they are exposed to due to their inadequately diversified human capital stake and wealth invested in the firm may affect the choice to employ derivatives (Smith & Stulz, 1985). The author uses managerial stockholding (the number of shares held by the CEOs scaled by the total number of shares issued) to measure this theory.

Hypothesis 5: The more risk-averse the managers are, the more likely the firm will use the derivatives.

3. SAMPLE AND DESCRIPTIVE STATISTIC

This study includes data from 345 non-financial companies listed on Ho Chi Minh Stock Exchange (HOSE) from 2016 to 2021. Firms are categorized as either users or non-users of financial derivatives by examining their annual reports, specifically about information disclosures about using derivatives. Only data from 345 non-financial companies are examined in this study, the author excludes all financial companies (banks, insurance, and securities companies). The rationale behind exclusively selecting non-financial firms is rooted in our study's emphasis on end-users. Given the dual role of financial companies as buyers and sellers of derivatives, the data might be biased, so financial firms have been excluded from the analysis. Of all the 404 listed companies in HOSE, the author dropped 39 financial companies because they might use derivatives for hedging and trading purposes. Then the data was left with 365 non-financial firms. The final data is 345 firms due to the non-availability of annual reports for the period of 2016 to 2021. Many companies have not issued their 2022 annual report data during the research period, so the author has selected the time spanning from 2016 to 2021. All the data is obtained from companies' annual reports and financial statements by the author. Financial and derivatives use data not disclosed in the annual reports, and financial statements can be sourced from stock market-focused websites such as Vietstock, cafef, dstock. Following the data selection procedure, a sample of 345 companies with 1961 firm-year observations is employed.

Table 1: Descriptive statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
DERIV	1961	0.11	0.313	0	1
lnFirmSize	1961	20.836	1.655	16.619	26.683
LEV	1961	46.499	20.813	-29.45	99.17
lnNOLs	1961	0.053	0.16	0	0.796
MTBV	1961	-0.115	0.284	-5.634	1.951
LIQ	1961	0.426	0.908	0	11.91
DIV	1961	4.349	5.077	0	45
ManComp	1961	4876.2	7031.5	65	90346
ManStock	1961	0.04	0.096	0	0.655
OverseasBG	1961	0.074	0.199	0	1
FinBG	1961	0.178	0.205	0	1
ROA	1961	6.642	7.969	-51.72	54.65
QUICK	1961	1.905	3.392	0	62.7

Dependent variable

The mean value of the dependent variable (DERIV) for the use of financial derivatives in Vietnamese listed companies is 0.11, which means that the proportion of Vietnamese listed companies using financial derivatives during the period of 2016 to 2022 is only 0.11%. The minimum value of the dependent variables of financial derivatives is 0, and the maximum value is 1. In addition, Vietnamese listed companies using financial derivatives for hedging practice is still in its infancy; the overall level is relatively low, and there is still a big gap compared with companies in developed countries (In compare with the results from prior studies on developed markets).

Independent variables

The author uses the natural logarithm of firm size. It has an overall mean of 20.84, a standard deviation of 1.66, and varies between 16.62 and 26.68. This can be interpreted that the scale of Vietnamese listed companies is dominated by large firms, with a small proportion of small and medium-sized enterprises. The mean value of the leverage is 46.5, indicating that almost half of total assets consists of total debt on average. In addition, the leverage has an overall standard deviation of 20.81 and varies between -29.45 to 99.17. The natural logarithm of net tax loss carries forward has the mean of 0.053 and the SD of 0.16, varies between 0 to 0.8. The market-to-book-value ratio has the mean of -0.115 and the SD of 0.284, varies between -5.634 to 1.951.

The liquidity has a mean of 0.43 and the SD of 0.91, varies from 0 to 11.91. The low mean of liquidity indicates that most companies in the data have quite low liquidity. The dividend yield has a mean value of 4.35 percent and a standard deviation of 5.1 percent. In addition, the lowest dividend payout is 0 percent and the highest of that is 45 percent. This indicates that Vietnamese firms tend to pay dividends to shareholders, and the dispersion level of dividend payout ratio among firms is not significant. In terms of managerial incentives, the mean of executive compensation is 4,876; the mean of executives' shareholding is 0.04 percent, the mean of the proportion of managers who have overseas management background is 0.074, and the mean of manager's financial background is 0.178. It shows that the executive compensation of companies was higher, the executives held less shares, the proportion of management team with overseas background was 7.4 percent, and the proportion with financial background was 17.8 percent.

Control variables

From the results of the control variables, the average value of the return-on-asset is 6.642; the minimum value is -51.72 and the maximum value is 54.65. The quick ratio has the mean of 1.91 and the SD of 3.4, varies from 0 to 62.7. This low mean value indicates that most firms are less likely to pay their current obligations using liquid assets, this consists with the low mean of the liquidity.

4. RESEARCH METHOD AND VARIABLE CONSTRUCTION

4.1 Measuring variables and model specifications

4.1.1. Dependent variable – firm's decision to use derivatives

The research objective was to identify the variables that influence the determination of firms to engage in hedging activities through the use of derivatives. The dependent variable is a set of dummy variables with binary value, with a value of "1" assigned to a firm(i) that uses a derivative instrument at a given time(t) and "0" otherwise

4.1.2. Independent variables

Firm size

The variable is denoted as the natural logarithm of Firm Size ($\ln FirmSize$), where Firm Size is calculated by multiplying the Total number of Shares allotted by the company with the current market price of each share. The argument put forward by Ang, Chua, and McConnell (1982) suggests that the escalation of distress costs is comparatively lower than the increase in firm size. This suggests that in the case of larger firms, the costs associated with bankruptcy may carry less weight. Due to the relatively small proportion of distress costs in relation to asset size, larger firms may lack the incentive to mitigate such expenses. Smaller firms exhibit the converse. Firms may have a stronger motivation to engage in hedging activities in order to mitigate the risk of insolvency, which could result in a significant loss of their assets.

Leverage

The leverage (LEV) is calculated by the sum of current and non-current liabilities, scaled by total assets (i.e., the liabilities to assets ratio), as previously defined. According to Myers (1984), it is recommended that firms with higher risk should reduce their borrowing, assuming all other factors remain constant. The attribution of leverage was made in relation to the costs of financial distress. A position with high leverage positively correlates with the likelihood of a firm experiencing financial distress. Consequently, firms with a high degree of leverage exhibit a greater inclination to employ derivatives to mitigate the heightened likelihood of financial difficulty resulting from their leverage.

Net operating loss carryforwards

According to scholarly literature, it has been theorized that implementing a progressive tax schedule within a firm may result in the firm deriving value from risk management practices (Smith & Stulz, 1985; Graham & Rogers, 2002). The existing net operating loss carryforwards (NOLs) scaled by total assets are used as indicators of tax burden. The study revealed that among the various tax credits under consideration, the NOLs exhibit a consistent reporting pattern. Consequently, the metric above was utilized to depict tax credits in the analysis. The regression analysis employed the natural logarithm of Net Operating Loss Carried-forward ($\ln NOLs$) that remained unutilized.

Market-to-book value

According to Myers' (1977) research, issuing claims that hold a higher priority than equity can result in the development of incentives for a firm's equity holders to engage in underinvestment. The study conducted by Bessembinder (1991) provides evidence that using hedging techniques can decrease the motivation to engage in underinvestment. This is because hedging can alter an individual's future circumstances from default to non-default outcomes. Firms with greater growth opportunities and higher leverage are prone to the underinvestment problem and, thus, are inclined towards hedging. The market-to-book ratio (MTBV) was used as a potential growth prospect metric. This ratio is determined by dividing the capital expenditures, as previously defined, by the book value of total assets. It is worth mentioning that previous research examining the correlation between the utilization of currency derivatives and the market-to-book value ratio failed to demonstrate the anticipated positive association.

Liquidity

The firms might be more willing to hedge if there exists the inability to transform growth opportunities into tangible assets, which is attributed to immediate financial constraint constraints (Froot, Scharfstein & Stein 1993). So, liquidity is an effective measurement of a firm's availability of internal funding.

Dividend payout ratio

A lowered dividend payout ratio can potentially mitigate the necessity of employing derivatives to decrease agency costs (Berkman, 1996).

Managerial stock holding

To examine the correlation between managerial stock ownership and the use of derivatives for hedging purposes, it would be advantageous to employ a proxy that gauges the proportion of overall managerial assets invested in the organization. Based on the available data from previous research, it is not possible to obtain the complete amount of wealth held by managers. Consequently, the proportion of shares held by the CEO of the firms was utilized.

Total compensation

In comparison to regular shareholders, managers tend to exhibit lower levels of diversification due to their human capital and their compensation arrangements, which are closely linked to the firm's overall value. As a result, employees will likely demand supplementary remuneration in the event that they perceive a heightened level of risk associated with the organization. Therefore, the aversion to managerial risk creates a motivation for corporate hedging as the management of risk has the potential to decrease the equilibrium of managerial compensation. According to Smith and Stulz's (1985) findings, compensation packages that result in a concave relationship between a manager's expected utility and a firm's value will likely incentivize managers to engage in more hedging activities. It is suggested that managers who possess a substantial portion of the company's stocks should take a more proactive role in managing risks.

Proportion of managers with overseas backgrounds

Not many studies paid attention to the managers' overseas educational and experience backgrounds. The author wants to find out the relationship between the manager's overseas background and the intensive of using derivative instruments to hedge. The foreign financial derivatives market had developed for many years before the establishment of that in Vietnam, so managers with overseas backgrounds might be more experienced in this field.

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4.1.3. Control variables

Return-on-asset

ROA reflects the profitability of a business. ROA informs investors about the profits generated from the capital invested (or the number of assets). The higher the ROA, the more money the import-export business makes on less investment. The higher the ROA, the lower the financial pressure of import-export enterprises, and the less the enterprises will use derivative financial instruments (Singh & Upneja, 2007; Bartram et al., 2009).

Quick ratio

The quick ratio has been identified as the favored indicator of liquidity in certain research studies, including those conducted by Berkman and Bradbury (1996), Tufano (1996), Geczy et al. (1997), Howton and Perfect (1998), and Graham and Rogers (2002). The more likely the business will be able to pay its debts when they are due or past due. The higher the quick ratio, the greater the debt repayment capacity of the firm. Thus, the financial pressure on firms is low, and firms tend to limit the use of derivative financial instruments (Bartram et al., 2009).

Table 2: Variable definitions

Variable	Measurement method	Expected sign	Source
DERIV	Dummy variable takes the value of 1 if a firm uses any type of financial derivatives. Otherwise, takes 0.	N/A	Firms' annual reports
lnFirmSize	The size of a firm, calculated as the natural logarithm of total market value of equity plus total liabilities.	+	Author's calculation
LEV	Firm's leverage use, calculated by the sum of current and non-current liabilities, scaled by total assets.	+	Author's calculation
lnNOLs	Calculated by the natural logarithm of the Net operating loss carried-forward divided by the Total assets	+	Author's calculation
MTBV	The market-to-book value ratio, calculated by dividing the capital expenditures by the net book value of total assets.	+	Author's calculation
LIQ	The liquidity ratio calculated by the cash and cash equivalent divided by firm size.	-	Finance Vietstock
DIV	The dividend-payout ratio, calculated by dividing the dividend per share by earning per share.	+	Finance Vietstock
ManStock	The total percentage of stock held by members of board of managers	+	Firms' annual reports
ManComp	The compensation of members of board of managers	+	Author's calculation
OverseasBG	The proportion of managers who have overseas background or experience in the board of managers	+	Author's calculation
FinBG	The proportion of managers who have financial background or experience in the board of managers	+	Author's calculation
ROA	The return-on-assets ratio, which reflects the profitability of a company. Calculated by dividing the net income by the total assets.	-	Finance Vietstock
QUICK	The quick ratio, calculated as the total sum of Cash and Short-term investment scaled by current liabilities.	-	Finance Vietstock

Notes: This table provides the definitions and calculation methods of all variables used in this paper.

4.2. Model specification

$$\log \left[\frac{P_i(DERIV = 1|X_i)}{1 - P_i(DERIV = 1|X_i)} \right] = \alpha + \beta_1 \times \ln FirmSize_{it} + \beta_2 \times LEV_{it} + \beta_3 \times \ln NOLs_{it} + \beta_4 \times MTBV_{it} + \beta_5 \times LIQ_{it} + \beta_6 \times DIV_{it} + \beta_7 \times ManStock_{it} + \beta_8 \times ManComp_{it} + \beta_9 \times OverseasBG_{it} + \beta_{10} \times FinBG_{it} + \beta_{11} \times ROA_{it} + \beta_{12} \times QUICK_{it} + \beta_{13} \times \sum_k IndustryDummy_k + \beta_{14} \times \sum_l YearDummy_l + \varepsilon_{it}$$

Where:

$\frac{P_i(DERIV = 1|X_i)}{1 - P_i(DERIV = 1|X_i)}$: the odds ratio of logistic regression equation.

P_i : the probability of financial derivatives use of a firm

X : independent variables

IndustryDummy: Industry dummy, specified by The HOSE Industrial Classification

YearDummy: Year dummy

α : the intercept

β : the coefficients of the independent and control variables

ε : residual term

i : firm

t : time

5. FINDINGS AND DISCUSSION

The impact of Financial Distress on firm's decision to use financial derivatives

According to the results, at the 99% confidence level, firm size is “incentive” factors for a firm to use derivatives—larger firms are more likely to use derivatives. Firm size (lnFirmSize) positively and significantly correlated to the decision to use derivatives. The marginal effect of firm size is 0.037, which shows the significance that when the total assets of a firm increase by 1 percent, the probability that the firm uses derivatives increases by 3.7 percent.

Table 3: The Logistic results

DERIV	Coef.	dy/dx	St.Err.	t-value	p-value	Sig
lnFirmSize	0.589	0.037	0.073	8.06	0.000	***
LEV	0.023	0.001	0.006	4.07	0.000	***
lnNOLs	2.282	0.142	0.46	4.96	0.000	***
MTBV	-0.278	-0.017	0.257	-1.08	0.280	
LIQ	0.001	0.000	0.179	0.01	0.996	
DIV	0.062	0.004	0.021	2.98	0.003	***
ManComp	0.002	0.000	0	3.88	0.000	***
ManStock	3.709	0.231	0.825	4.49	0.000	***
OverseasBG	2.067	0.128	0.397	5.20	0.000	***
FinBG	1.715	0.107	0.42	4.08	0.000	***
ROA	-0.042	-0.003	0.015	-2.76	0.006	***
QUICK	0.073	0.005	0.029	2.52	0.012	**
Intercept	-14.42	-	1.666	-8.65	0.000	***
Industry Dummies			YES			
Year Dummies			YES			
Observations			1961			
Pseudo r-squared			0.377			
Prob > chi2			0.000			
Chi-square			511.711			

Notes: dy/dx is the marginal effect of the explanatory variables on the probability of using derivatives. Probability (Prob>chi2) is the p-value of the LR test statistic. Under the null hypothesis, the LR test statistic is asymptotically distributed as a Chi-square variable, with 6 degrees of freedom. Pseudo R-squared is the likelihood ratio index. This is an analog to the R2 reported in linear regression models. It has the property of lying between 0 and 1. p-values are in parentheses. *,**,***Significant 10, 5, and 1 percent levels, respectively

The impact of Corporate taxes burden on firm's decision to use financial derivatives

Two proxies for the corporate taxes burden are leverage (LEV) and net tax loss carries forward (lnNOLs) have a positive and significant relationship with firm's decision to use financial derivatives at 99% of confidence level. When the leverage of a firm increases by 1 percent, the firm has the probability of using derivatives increased by 0.1 percent. This shows that although leverage has an impact on firm's incentive to use derivatives, the impact is not significant. The marginal effect of tax loss carries forward is 0.142 which can be interpreted that when the taxes increase by 1 percent, the firm has the probability of hedging increases by 14.2 percent. This is the second highest impact on firm's decision to use financial derivatives.

The impact of Agency theory and Underinvestment problems on firm's decision to use financial derivatives

When it comes to agency theory and underinvestment problems, both proxies for this theory are statistically insignificant at the lowest confidence level of 90%. So, this study did not find any impact of agency theory and underinvestment problems on a firm's decision to use derivatives to hedge.

The impact of Substitutes for hedging on firm's decision to use financial derivatives

The dividend payout ratio is the measurement of Substitutes for hedging. As stated in the statistic descriptive, the dividend payout of Vietnamese firms is quite high; firms are more likely to pay dividends to their shareholders. If the dividend payout increases by 1 percent, firms will increase the likelihood of using derivatives to hedge by 0.4 percent.

The impact of Managerial incentives on firm's decision to use financial derivatives

Surprisingly, managerial incentives have the biggest impact on firms' decision to use derivatives when all proxies for this theory are statistically significant. The strongest impact is managers' stockholding, with a marginal effect of 0.231. If managers' stockholding of a firm increases by 1 percent, the probability of a firm using financial derivatives to hedge will increase by 23.1 percent. In contrast, the managers' compensation is significant, but the impact is not significant due to the low marginal effect value.

6. CONCLUSION

Derivative financial instruments have become essential for enterprises operating in the Vietnamese stock market and businesses in general. The study analyzed non-financial enterprises listed on HOSE to comprehend the determinants influencing the adoption of financial derivatives by said enterprises. Utilizing the acquired data, the investigation assessed the influence of various factors on using financial products as a risk mitigation strategy by implementing the Logit model. The findings indicate that among the ten independent factors examined, eight factors significantly impact the determination of firms to employ financial derivatives. These factors include the size of the firm, its leverage, net operating loss carryforward, market-to-book value, liquidity, dividend payout ratio, managerial stockholding, managerial compensation, the proportion of managers with overseas background, the balance of managers with a financial experience, return-on-assets, and quick ratio. The utilization of financial derivatives by non-financial companies listed on the Vietnamese stock exchange is primarily influenced by two factors, namely managerial stockholding and net operating loss carryforward.

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