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THE EFFECTS OF CORPORATE STRATEGY AND CAPITAL STRUCTURE ON FIRM PERFORMANCE: EVIDENCE FROM CANADA

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ABSTRACT

The corporate strategy and capital structure decisions are important because of the need to maximize shareholders' wealth, and because of the impact such decisions have on the firm's ability to deal with its competitive environment. The purpose of this study is to test the relationships between corporate strategy, capital structure, and firm performance. This study also seeks to extend the findings of Su and Vo (2010). A sample of 91 Canadian manufacturing firms listed on Toronto Stock Exchange (TSX) for a period of 3 years (from 2008-2010) was selected. This study applied co-relational and non-experimental research design. The findings show that both the corporate strategy and capital structure effect the performance of Canadian manufacturing firms. This study contributes to the literature on the factors that affect firm performance. The findings may be useful for the financial managers, investors, and financial management consultants.

KEYWORDS: *corporate strategy, capital structure, sales growth, growth potential, firm size, firm performance.*

INTRODUCTION

This study examines the relations of corporate strategy and capital structure with firm performance in Canada. The corporate strategy and capital structure decisions are crucial for the superior performance of the firm (Su and Vo, 2010). The corporate strategy and capital structure decisions are important because of the need to maximize shareholders' wealth, and because of the impact such decisions have on the firm's ability to deal with its competitive environment.

The capital structure of a firm is a mixture of different securities. In general, firms can choose among many alternative capital structures. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005, p. 438).

Most empirical studies on capital structure and firm performance have been conducted on industrial firms. However, there are a very few studies that show the combined effect of corporate strategy and capital structure on firm performance. Therefore, this study examines the relations of corporate strategy and capital structure with firm performance of the Canadian manufacturing firms. The literature cites a number of variables that are potentially associated with the firm performance. In this study, the selection of exploratory variables is based on the alternative corporate strategy, capital structure, profitability theories, and previous empirical work. The choice of proxy variables can be limited, however, due to data limitations. As a result, the set of proxy variables includes six factors: liquidity strategy, growth strategies (sales growth and growth potential), capital structure, firm size, and firm performance (measured by return on equity).

Su and Vo (2010) have tested variables by collecting data from two Vietnam Stock Exchanges [Hanoi Stock Exchange (HSE) and Ho Chi Minh City Stock Exchange (HOSE)]. This study extends Su and Vo's study by analyzing data from publicly traded Canadian manufacturing firms. The results can be generalized to manufacturing industry.

This study contributes to the literature on the relationship between corporate strategy, capital structure, and firm performance in at least two ways. First, it focuses on Canadian manufacturing firms while a very limited research has been conducted on such firms recently. Second, this study validates some of the findings of previous authors by testing the relationship between liquidity strategy, growth strategies (sales growth and growth potential), capital structure, firm size, and firm performance of the sample firms. Thus, this study adds substance to the existing theory developed by previous authors.

LITERATURE REVIEW

Growth strategies are the corporate level strategies and they influence the performance of the firm. Growth strategies can be achieved through related or unrelated diversification strategies, which in turn, result in better firm performance (Su and Vo, 2010).

Capital structure is the mixture of the debt and equity securities. The seminal work by Modigliani and Miller (1958) on capital structure provided a substantial boost in the

development of the theoretical framework within which various theories were about to emerge in the future. Capital structure also influence the performance of the firm. Previous authors have found mixed results regarding the relationships between capital structure and firm performance. While some authors reported positive relationships (e.g., Ghosh et al., 2000; Hadlock and James, 2002; Berger and Patti, 2006) between capital structure and firm performance, other authors reported negative relationships (e.g., Rajan and Zingales, 1995; Wald, 1999; Booth et al., 2001; Mendell et al., 2006) between debt and firm performance.

Capon et al. (1990, p. 1148) conducted a meta-analysis of results from 320 published studies between 1921 and 1987. Their findings indicate that growth is consistently related to higher financial performance. Growth in assets and sales individually show positive relationships to performance at both industry and firm/business levels of analysis. In addition, authors reported a negative relationship between debt and firm performance.

Kim et al. (1998) through correlation analysis found a positive relationship between firm's liquidity and its performance. They also proposed that the relationship between the liquid assets holding and the firm's growth opportunities may be positive.

Abor (2005) took a sample of 22 firms listed on Ghana Stock Exchange over a five-year period (1998-2002). He found a positive association between the ratio of total debt to total assets and return on equity. In addition, he found a positive relationship between i) firm size and profitability, and ii) sales growth and profitability.

Su and Vo (2010) collected data from 261 firm listed on two Vietnam Stock Exchanges [Hanoi Stock Exchange (HSE) and Ho Chi Minh City Stock Exchange (HOSE)]. Through correlation analysis, they found that firm performance is positively correlated with sales growth, growth potential, and liquidity, and ii) negatively correlated with debt ratio and firm size. In addition, researchers found a positive relationship between growth potential and liquidity, and a non-significant relationship between sales growth and liquidity.

In summary, literature review show that liquidity strategy, growth strategies (sales growth and growth potential), capital structure, and firm size influence firm performance.

METHODS

The study applied co-relational and non-experimental research design. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships.

MEASUREMENT

To remain consistent with previous studies, measures pertaining to corporate strategy, capital structure, and firm performance were taken from Su and Vo (2010, p. 63). The study applied co-relational and non-experimental research design. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships.

Liquidity (LI) independent variable was measured by liquidity ratio, which is the ratio of cash plus marketable securities to the book value of assets.

Sales growth (SG) independent variable was measured as current year's sales minus previous year's sales divided by previous year's sales.

Growth potential (GP) independent variable was measured as the firm's market value of equity divided by its book value of assets.

Capital structure (DR) independent variable was measured as debt ratios (total debt to total assets ratio).

Firm size (FS) control variable was measured by logarithm of market value of equity.

To measure firm performance dependent variable, net income after tax scaled by total owners' equity (denoted as ROE) was used.

The following regression models were used to test the interaction between dimensions of corporate strategy:

$$i) \text{Liquidity}_{i,t} = b_0 + b_1 * \text{SG}_{i,t} - b_2 * \text{FS}_{i,t} + \mu_{i,t}$$

where b_0 = Constant of the regression equation

b_1 and b_2 = Coefficient of SG and FS

$$ii) \text{Liquidity}_{i,t} = b_0 + b_1 * \text{GP}_{i,t} - b_2 * \text{FS}_{i,t} + \mu_{i,t}$$

where b_0 = Constant of the regression equation

b_1 and b_2 = Coefficient of GP and FS

The relationship between corporate strategy and firm performance is estimated in the following regression model:

$$iii) \text{ROE}_{i,t} = b_0 + b_1 * \text{SG}_{i,t} - b_2 * \text{LI}_{i,t} - b_3 * \text{FS}_{i,t} + \mu_{i,t}$$

where b_0 = Constant of the regression equation

b_1 , b_2 , and b_3 = Coefficient of SG, LI, and FS

The relationship between corporate strategy, capital structure, and firm performance is estimated in the following regression model:

$$iv) \text{ROE}_{i,t} = b_0 + b_1 * \text{GP}_{i,t} + b_2 * \text{LI}_{i,t} - b_3 * \text{DR}_{i,t} - b_4 * \text{FS}_{i,t} + \mu_{i,t}$$

where b_0 = Constant of the regression equation

$b_1, b_2, b_3,$ and b_4 = Coefficient of GP, LI, DR, and FS

$ROE_{i,t}$ - Return on equity for firm i between 2008-2010.

$LI_{i,t}$ - Cash plus marketable securities to the book value of assets for firm i in time t

$SG_{i,t}$ - Current year's sales minus previous year's sales divided by previous year's sales for firm i in time t

$GP_{i,t}$ - Market value of equity divided by its book value of assets for firm i in time t

$DR_{i,t}$ - Total debt/total assets for firm i in time t

$FS_{i,t}$ - Logarithm of market value of equity for firm i in time t

$\mu_{i,t}$ = the error term

DATA COLLECTION

A database was built from a selection of approximately 400 financial-reports that were made public by publicly traded companies between January 1, 2008 and December 31, 2010. The selection was drawn from Mergent Online [<http://www.mergentonline.com/compsearch.asp>] to collect a random sample of manufacturing companies. Out of approximately 400 financial-reports announced by public companies between January 1, 2008 and December 31, 2010, only 91 financial reports were usable. The cross sectional yearly data were used in this study. Thus, 91 financial reports resulted to 273 total observations. Since random sampling method was used to select companies, the sample is considered as a representative sample.

For the purpose of this study, certain industries were omitted due to the type of activity. For example, all the companies from the financial services industry were omitted. In addition some of the firms were not included in the data due to lack of information for the certain time periods.

DESCRIPTIVE STATISTICS

Table 1 shows descriptive statistics of the collected variables. The explanation on descriptive statistics is as follows:

- i) Total observations: $91 \times 3 = 273$
- ii) ROE (Firm performance measured by return on equity): 8.50%
- iii) LI (Liquidity): 19.40%
- iv) SG (Sales growth): 2.60%
- v) GP (Growth potential): 170.90%
- vi) DR (Debt ratio): 35.70%

vii) FS (Firm size): 2.556 million

TABLE 1: DESCRIPTIVE STATISTICS OF INDEPENDENT, DEPENDENT, AND CONTROL VARIABLES (2008-2010)

	Minimum	Maximum	Mean	Std. Deviation
ROE	-0.833	0.554	0.085	0.152
LI	0.000	0.810	0.194	0.186
SG	-0.712	0.965	0.026	0.384
GP	-0.240	8.721	1.709	1.280
DR	0.000	0.924	0.357	0.188
FS	0.406	4.443	2.556	0.684

ROE = Return on equity

LI = Liquidity

SG = Sales growth

GP = Growth potential

DR = Debt ratio

FS = Firm size

Table 2 provides the Pearson correlation for the variables that were used in the regression model. Pearson correlation analysis was used to find i) the interaction between dimensions of corporate strategy, ii) relationship between corporate strategy and firm performance, and iii) the relations of corporate strategy and capital structure with firm performance.

The Bivariate correlation analysis show that that i) Canadian firms' liquidity strategy is positively correlated with SG strategy. The firm performance (ROE) is negatively correlated with liquidity strategy and positively correlated with firm size. In addition, firm performance is negatively correlated with liquidity strategy and debt ratio, and positively correlated with growth potential and firm size (see Table 2) in the Canadian manufacturing industry.

TABLE 2: PEARSON BIVARIATE CORRELATION ANALYSIS

Interaction between Dimensions of Corporate Strategy				
	LI	SG	GP	FS
LI	1	0.243*	-0.043	-0.103
SG		1	-0.032	-0.168
GP			1	0.235*
FS				1

Relationship between Corporate Strategy and Firm Performance				
	ROE	LI	SG	FS
ROE	1	-0.214*	0.127	0.219*
LI		1	0.243*	-0.103
SG			1	-0.168
FS				1

Relationship between Corporate Strategy, Capital Structure, and Firm Performance						
	ROE	LI	SG	GP	DR	FS
ROE	1	-0.214*	0.127	0.314**	-0.263*	0.219*
LI		1	0.243*	-0.043	-0.107	-0.103
SG			1	-0.032	0.046	-0.168
GP				1	0.023	0.235*
DR					1	-0.064
FS						1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

4. REGRESSION ANALYSIS, FINDINGS, AND DISCUSSION

The regression analysis section provides interaction between the dimensions of corporate strategy and present the empirical findings on the relationships between corporate strategy, capital structure, and firm performance of the Canadian manufacturing firms.

INTERACTION BETWEEN DIMENSIONS OF CORPORATE STRATEGY

A positive relationship between SG and LI were found; that is, SG builds firm's liquidity position because cash inflow tend to go up. The findings of this paper are consistent with the findings of Kim et al. (1998) who proposed a positive relationship firm's growth opportunities and liquid asset holdings (see Table 3).

Su and Vo (2010) found a negative relationship between FS and LI. Based on regression analysis, the relationship between FS and LI is not significant at all (see Table 3).

TABLE 3: OLS REGRESSION ESTIMATES ON THE RELATIONSHIP BETWEEN LI, SG, AND FS^{A, B, C}

Interaction between Dimensions of Corporate Strategy							
(Relationships between LI, SG, and FS)							
[R ² = 0.063; SEE = 0.182; F = 2.96; ANOVA's Test Sig. = 0.057]							
Regression Equation (A): LI = 0.236 + 0.112 SG - 0.017 FS							
	Unstandardized Coefficients		Standardized Coefficients ^c	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.236	0.075		3.132	0.002		
SG	0.112	0.051	0.232	2.219	0.029	0.972	1.029
FS	-0.017	0.028	-0.064	-0.613	0.541	0.972	1.029

^a Dependent Variable: LI

^b Independent Variables: SG and FS

^c Linear Regression through the Origin

SEE = Standard Error of the Estimate

Note that

- A test for multicollinearity was performed. All the variance inflation factor (VIF) coefficients are less than 2 and tolerance coefficients are greater than 0.50.
- 6.30% (R² = 0.063) of the variance in the degree of LI can be explained by the degree of FS and SG in the Canadian manufacturing industry.
- The analysis of variance (ANOVA) test is also significant at 0.057.

Su and Vo (2010) found a positive relationship between GP and LI and a negative relationship between FS and LI. Non-significant relationships between LI, GP, and FS were found in this study (see Table 4).

TABLE 4: OLS REGRESSION ESTIMATES ON THE RELATIONSHIP BETWEEN LI, GP, AND FS^{A, B, C}

Interaction between Dimensions of Corporate Strategy							
(Relationships between LI, GP, and FS)							
[R ² = 0.011; SEE = 0.187; F = 0.490; ANOVA's Test Sig. = 0.614]							
Regression Equation (B): LI = 0.267 - 0.003 GP - 0.027 FS							
	Unstandardized Coefficients		Standardized Coefficients ^c	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.267	0.077		3.487	0.001		
GP	-0.003	0.016	-0.020	-0.185	0.854	0.945	1.059
FS	-0.027	0.030	-0.098	-0.901	0.370	0.945	1.059

^a Dependent Variable: LI

^b Independent Variables: GP and FS

^c Linear Regression through the Origin

SEE = Standard Error of the Estimate

Note that

- A test for multicollinearity was performed. All the variance inflation factor (VIF) coefficients are less than 2 and tolerance coefficients are greater than 0.50.
- 1.10% (R² = 0.011) of the variance in the degree of LI can be explained by the degree of FS and GP in the Canadian manufacturing industry.
- The analysis of variance (ANOVA) test is not significant at all.

RELATIONSHIP BETWEEN CORPORATE STRATEGY AND FIRM PERFORMANCE

Previous authors (Capon et al., 1990; Abor, 2005; Su and Vo, 2010) found a positive relationship between SG and ROE. While Abor (2005) found a positive relationship between FS and profitability, Su and Vo found a negative relationship between FS and ROE. In addition, Su and Vo (2010) found a positive relationship between LI and ROA. Regression analysis provided in Table 5 shows positive relationships between i) SG and ROE and ii) FS and ROE, and a negative

relationship between LI and ROE (see Table 5). Thus, the finding of this study lend some support to the findings of previous authors.

TABLE 5: OLS REGRESSION ESTIMATES ON THE RELATIONSHIP BETWEEN ROE, SG, LI, AND FS^{A, B, C}

Relationship between Corporate Strategy and Firm Performance							
[R ² = 0.132; SEE = 0.144; F = 4.399; ANOVA's Test Sig. = 0.006]							
Regression Equation (C): ROE = -0.010 + 0.089 SG – 0.201 LI + 0.052 FS							
	Unstandardized Coefficients		Standardized Coefficients ^c	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.010	0.063		-0.161	0.873		
SG	0.089	0.041	0.225	2.161	0.033	0.920	1.086
LI	-0.201	0.085	-0.245	-2.376	0.020	0.937	1.067
FS	0.052	0.023	0.231	2.277	0.025	0.968	1.033

^a Dependent Variable: ROE

^b Independent Variables: SG, LI, and FS

^c Linear Regression through the Origin

SEE = Standard Error of the Estimate

Note that

- A test for multicollinearity was performed. All the variance inflation factor (VIF) coefficients are less than 2 and tolerance coefficients are greater than 0.50.
- 13.20% (R² = 0.132) of the variance in the degree of ROE can be explained by the degree of FS, LI, and SG in the Canadian manufacturing industry.
- The analysis of variance (ANOVA) test is also significant at 0.006.

RELATIONSHIP BETWEEN CORPORATE STRATEGY, CAPITAL STRUCTURE, AND FIRM PERFORMANCE

Su and Vo (2010) found a negative relationship between GP and ROE and a positive relationship between LI and ROE. Abor (2005) found a positive relationship between FS and profitability. While some authors (e.g., Ghosh et al., 2000; Hadlock and James, 2002; Abor, 2005; Berger and Patti, 2006) reported a positive relationships between capital structure and firm performance, other authors (e.g., Rajan and Zingales, 1995; Wald, 1999; Booth et al., 2001; Mendell et al.,

2006; Capon et al., 1990; Su and Vo, 2010) reported a negative relationship between debt and firm performance.

In this study, a positive relationship between GP and ROE, and negative relationships between LI, DR, and ROE were found. The finding of this study lend some support to the findings of the above author. In addition, regression analysis shows a non-significant relationship between FS and ROE (see Table 6).

TABLE 6: OLS REGRESSION ESTIMATES ON THE RELATIONSHIP BETWEEN LI, GP, AND FS^{A, B, C}

Relationship between Corporate Strategy, Capital Structure, and Firm Performance							
[R ² = 0.236; SEE = 0.136; F = 6.656; ANOVA's Test Sig. = 0.000]							
Regression Equation (D): ROE = 0.082 + 0.034 GP - 0.181 LI - 0.231 DR + 0.025 FS							
	Unstandardized Coefficients		Standardized Coefficients ^c	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.082	0.068		1.197	0.235		
GP	0.034	0.012	0.285	2.940	0.004	0.943	1.061
LI	-0.181	0.078	-0.221	-2.319	0.023	0.976	1.024
DR	-0.231	0.077	-0.286	-3.006	0.003	0.982	1.019
FS	0.025	0.022	0.111	1.131	0.261	0.930	1.076

^a Dependent Variable: LI

^b Independent Variables: GP, LI, DR, and FS

^c Linear Regression through the Origin

SEE = Standard Error of the Estimate

Note that

- A test for multicollinearity was performed. All the variance inflation factor (VIF) coefficients are less than 1.08 and tolerance coefficients are greater than 0.92.
- 23.60% (R² = 0.236) of the variance in the degree of ROE can be explained by the degree of FS, DR, LI, and GP in the Canadian manufacturing industry.
- The analysis of variance (ANOVA) test is also significant at 0.000.

CONCLUSION

In conclusion, both the corporate strategy and capital structure of the firm influence firm performance. Results show that growth strategies (sales growth and growth potential) improve the firm performance and firm's liquidity position. However, over expansion may lead to firm's failure. Therefore, corporate strategies should be used carefully. The lending institutions should also consider the over expansion and the liquidity position of the manufacturing firms to mitigate risk. For example, inventory may not be very liquid.

Although interest on debt is tax deductible, a higher level of debt increases default risk, which in turn, increases the chance of bankruptcy for the firm. Therefore, the firm must consider using an optimal capital structure. The optimal capital structure includes some debt, but not 100% debt. In other words, it is a "best" debt/equity ratio for the firm, which in turn, will minimize the cost of capital, i.e., the cost of financing the company's operations. In addition, it will reduce the chances of bankruptcy.

Table 1 shows that the average total debt to total assets ratio is 35.70% in the Canadian manufacturing industry. That is, the high gearing ratio starts eroding the profitability of the firm and tax benefits start to disappear. This may be one of the reasons for the negative relationship between capital structure and firm performance (see Table 6). Once gearing ratio goes up, the cost of debt also goes up because of the high default risk, which in turn, increases the liability payments of the firm. During the economic downturn, sales level tends to go down which cause cash inflow problems for the corporations. Consequently, firms start defaulting liability payments. Therefore, it is important for lenders to understand and review liquidity of assets on a yearly basis to control the companies. This, in turn, may reduce the default risk and may minimize losses for the lending institutions.

LIMITATIONS

This study is limited to the sample of Canadian manufacturing industry firms. The findings of this study could only be generalized to manufacturing firms similar to those that were included in this research. In addition, sample size is small.

FUTURE RESEARCH

Future research should investigate generalizations of the findings beyond the Canadian manufacturing sector. Important control variables such as industry sectors from different countries, etc., should be used to determine other factors that influence the relationship between corporate strategy, capital structure, and firm performance. This study focused on internal forces that influence the financial performance of the firm. The future study may seek to test macroeconomic variables such as business cycle.

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