

# Factors that Influence Financial Leverage of Canadian Firms

Amarjit Gill<sup>1</sup> and Neil Mathur<sup>2</sup>

## Abstract

The purpose of this study is to find the factors that influence financial leverage of Canadian firms. A sample of 166 Canadian firms listed on the Toronto Stock Exchange for a period of 3 years (from 2008-2010) was selected. This study applied co-relational and non-experimental research design. The results show that financial leverage of Canadian firms is influenced by the collateralized assets, profitability, effective tax rate, firm size, growth opportunities, number of subsidiaries, and industry dummy. This study contributes to the literature on the factors that influence financial leverage of the firm. The findings may be useful for financial managers, investors, and financial management consultants.

**JEL classification numbers:** G32

**Keywords:** Firm size, profitability, financial leverage, tax rate, collateralized assets, non-debt tax shield.

---

<sup>1</sup> College of Business Administration, Trident University International, 5665 Plaza Drive, CA, 90630, USA, e-mail: agill@tuiu.edu

<sup>2</sup> School of Business Administration, Simon Fraser University, 515 W. Hastings St, Vancouver, BC, V6B 5K3, Canada, e-mail: nmathur@sfu.ca

## 1 Introduction

The purpose of this study is to find the factors that influence financial leverage of Canadian firms. Financial leverage, in the context of this study, is defined as the degree to which a firm utilizes borrowed money. Capital structure choices are the tough choices because higher leverage can lead to risk of bankruptcy. However, this does not mean that financial leverage is always bad. Financial leverage can increase shareholders' return on investment and often there are tax advantages associated with borrowing. Therefore, financial leverage decision is important and a firm can use a specific mix of debt and equity to finance its operations [1].

Firms can choose among many alternative capital structures. For example, firms can issue a large amount of debt or very little debt. Firms have options of arranging lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. They can also issue dozens of distinct securities in countless combinations [2, 3, p. 48].

Modigliani and Miller [12] were the first authors who developed leverage theory. Since then, many researcher followed Modigliani and Miller's [12] path to develop new theory on financial leverage and tried to departure from their assumptions. However, the empirical evidence regarding the alternative theories is still inconclusive [5, 3, p. 48].

The determinants of capital structure have been debated for many years and still represent one of the main unsolved issues in the corporate finance literature. Many theoretical studies and much empirical research have addressed these issues, but there is not yet a fully supported and unanimously accepted theory [6]. Indeed, what makes the capital structure (financial leverage) debate so exciting is that only a few of the developed theories have been tested by empirical studies and the theories themselves lead to different, not mutually exclusive and sometimes opposed, results and conclusions [3, p. 48].

This study examines the factors that influence financial leverage of Canadian firms. A variety of variables that are potentially responsible for determining

leverage decisions in companies can be found in the literature. In this study, the selection of exploratory variables is based on the current empirical studies on capital structure. The choice is sometimes limited, however, because of lack of relevant data. As a result, the final set of proxy variables includes nine factors: collateralized assets, profitability, effective tax rate, non-debt tax shield, firm size, growth opportunities, number of subsidiaries, leverage, and industry dummy. The variables, together with theoretical predictions as to the direction of their influence on debt ratio and proxies, are summarized in Table 1.

Biger *et al.* [5] and Nguyen and Neelakantan [16] have tested variables by collecting data from Vietnamese firms, and Gill *et al.* [8] have tested variables by collecting data from American service firms. This study extends these studies by collecting data from the Canadian manufacturing and service firms. The results can be generalized to manufacturing and service industries.

This study contributes to the literature on the factors that influence financial leverage of the firm in at least two ways. First, it focuses on Canadian manufacturing and service firms, while only limited research has been conducted on such firms recently. Second, this study validates some of the findings of previous authors by testing the relations of financial leverage with collateralized assets, profitability, effective tax rate, non-debt tax shield, firm size, growth opportunities, number of subsidiaries, and industry dummy of the sample firms. Thus, this study adds substance to the existing theory developed by previous authors.

## **2 Literature Review**

There are many theories which explain the behavior of the firm in making financial leverage decisions. Each theory presents a different explanation of corporate financing. For example, Myers and Majluf [15] presented Pecking Order

Theory which states that the firms prefer to use their internal sources of financing to equity financing. If internal financing does not meet the needs of the firm, they use external financing. First firms apply for bank loan, then for public debts, and as a last resort, equity financing is used. Thus the profitable firms are less likely to opt for debt for new projects because they have the available funds in the form of retained earnings [10, p. 220].

Afza and Hussain [3, p. 220] describe that debt is considered as a way to highlight investors' trust in the firm. If a firm issues debt, it provides a signal to the market that the firm is expecting positive cash flows in the future. Thus, the higher level of debt shows the confidence of the managers in future cash flows but another impact of the signaling factor is the problem of under pricing of equity. If a firm issues equity instead of debt for financing its new projects, investors will interpret the signal negatively.

Among other explanations about a firm's behavior in choosing its capital structure is the agency theory given by Jensen and Meckling [10] which identifies the possible conflict between shareholders' and a manager's interests because the share of a manager is less than 100% in the firm. The managers are an agent to shareholders; they try to transfer wealth from bondholders to shareholders by borrowing more debt and investing in risky projects [10, 2011, p. 220]. Fama and French [7] also argue that the use of excessive debt creates agency problems among shareholders and creditors.

Myers [14] explains that agency costs of debt may cause firms to take riskier investment after the issuance of debt to expropriate wealth from the firm's bondholders because the firm's equity is effectively a stock option.

Because capital structure influences corporate profitability, it is important to find the significant factors that influence firms' choices of leverage. Biger *et al.* [5] and Gill *et al.* [8] describe that collateralized assets, income tax, non-debt tax shield, corporate profitability, firm size, and growth opportunities influence capital structure choices of the firm. The findings of previous authors on financial

leverage (also called leverage) are as follows:

Roden and Lewellen [19] took a sample of US firms from 1981 through 1990 and found a positive relationship between profitability and leverage.

Majumdar and Chhibber [11] collected data from Indian firms and found a negative relationship between corporate profitability and leverage.

*et al.* [16] used data collected by International Finance Corporation (IFC) from 1980 to 1990 and analyzed capital structure choices of the firm in 10 developing countries. Authors reported a negative relationship between firm's profitability and leverage.

Huang and Song [9] employed a database which contained the market and accounting data from more than 1000 Chinese listed companies up to the year 2000. Authors found that leverage in Chinese firms increases with firm size, non-debt tax shields and fixed assets, and decreases with profitability and correlates with industries.

Abor [1] collected data from listed firms in Ghana and found a positive relationship between profitability and leverage.

Nguyen and Neelakantan [16] used small and medium Vietnamese firms to collect data and found that leverage is positively related to firm growth and firm size, and negatively related to tangibility.

Biger *et al.* [7] collected data from enterprise's census 2002-2003 conducted by the General Statistical Office, Vietnam. Through correlation analysis, they found that financial leverage in Vietnamese firms increases with firm size, and decreases with profitability and with non-debt tax shield. Financial leverage also correlated with industry characteristics. They also found that i) firm's leverage increase with fixed assets and decrease with growth opportunities and ii) corporate income tax has the negative albeit small effect on firm's financial leverage.

Gill *et al.* [8] collected data from American firms and found that leverage is negatively correlated with profitability and collateralized assets.

Al-Qaisi [4] collected data from United Arab Emirates (UAE) and found a

negative relationship between profitability and leverage, and a positive relationship between firm size and leverage.

Odit and Gobardhun [19] collected data from Mauritius firms. The authors found a positive association between leverage, asset structure, and firm's growth.

Afza and Hussain [3] used pooled data regression model on the sample of 26 firms of Automobile sector of Pakistan and found that capital structure is negatively correlated with profitability and positively correlated with taxes.

In summary, the literature review shows that collateralized assets, profitability, income tax, non-debt tax shield, firm size, growth opportunities, and industry influence financial leverage of the firm. Table 1 below summarizes the factors that influence financial leverage, definitions, and theoretical predicted signs.

Table 1: Proxy variables definition and predicted relationship

Proxy Variables	Definitions	Predicted sign
Leverage (MTL)	Total liabilities divided by total assets	+/-
Collateralized Assets (MCA)	Fixed assets divided by total assets	+/-
Profitability (ROA)	Earnings before interest, tax, depreciation divided by total assets, lagged one year period	+/-
Effective Tax Rate (METR)	Income tax divided by earnings before tax	+/-
Non-Debt Shield (MNDTS)	Depreciation and amortization expenses divided by total assets	+/-
Firm Size (LnS)	Natural logarithm of firm sales, lagged one year period	+/-
Growth Opportunity (GTA)	Change in total assets between two consecutive years (2008-2009) scaled by previous year fixed assets (2008)	+/-
Subsidiaries (SUB)	Total number of subsidiaries of the firm	+/-
IndDum	Industry dummy	+/

### 3 Method

#### 3.1 Measurement

To remain consistent with previous studies, measures pertaining to determinants of financial leverage (except number of subsidiaries) were taken from Gill *et al.* [8, p. 50]. They used cross sectional yearly data and measured the variables as follows:

$MCA_{i,t}$  independent variable was measured as the ratio of fixed assets to total assets.

$ROA_{i,t}$  independent variable was measured as earnings before interests, tax, and extraordinary income scaled by total assets.

$METR_{i,t}$  independent variable was measured as an average of effective income tax rate.

$MNDTS_{i,t}$  independent variable was measured as depreciation and amortization expenses divided by total assets.

$LnS_{i,t}$  independent variable was measured as natural logarithm of sales.

$GTA_{i,t}$  independent variable was measured by the percentage of change in total assets.

$MTL_{i,t}$  dependent variable was measured by average total liabilities divided by total assets.

$SUB_{i,t}$  control variable was measured as total number of subsidiaries.

$IndDum_{i,t} = IndDum$  is used as industry code.

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

This study used panel data for the period 2008-2010 and an Ordinary Least Square (OLS) regression model to estimate the factors that influence financial leverage of the firm. The model is as follows:

$$\text{MTL}_{i,t} = \beta_0 + \beta_1 \text{MCA}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{METR}_{it} + \beta_4 \text{MNDTS}_{it} + \beta_5 \text{LnS}_{it} + \beta_6 \text{GTA}_{it} + \beta_7 \text{SUB}_{it} + \beta_8 \text{IndDum}_{it} + \mu_{it}$$

where  $b_0$  = constant of the regression equation

$b_1, b_2, b_3, b_4, b_5, b_6, b_7,$  and  $b_8$  = Coefficient of MCA, ROA, METR, MNDTS, LnS, GTA, SUB, and IndDum

Note that all variables were calculated using book value. 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.

### 3.2 Data Collection

A database was built from a selection of approximately 800 financial reports from 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 and service companies. Out of approximately 800 financial reports announced by public companies between January 1, 2008 and December 31, 2010, only 166 financial reports were usable. The cross sectional yearly data was used in this study. Thus, 166 financial reports resulted to 498 total observations. Since the random sampling method was used to select companies, the sample is considered a representative sample.

For the purpose of this research, certain industries were omitted due to the type of activity. For example, all 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 time periods being studied.



### 3.3 Descriptive Statistics

Table 2 shows descriptive statistics of the collected variables. The explanation on descriptive statistics is as follows:

- i) Total observations:  $166 \times 3 = 498$
- ii) Manufacturing firms: 91; Service firms: 75
- iii) MTL (Leverage): 39.50%
- iv) MCA (Collateralized assets): 50.50%
- v) ROA (Profitability): 10.30%
- vi) METR (Effective tax rate): 15.20%
- vii) MNDTS (Non-debt tax shield): 4.80%
- vii) LnS (Firm size): 2.420 million
- ix) GTA (Growth opportunity): 8.60%
- x) SUB (Average number of subsidiaries): 9.494

Table 2: Descriptive Statistics of Independent, Dependent, and Control Variables (2008-2010)

Descriptive Statistics (N = 492)				
	Min	Max	$\bar{x}$	$\sigma$
MTL	0.051	0.801	0.395	0.177
MCA	0.021	0.971	0.505	0.282
ROA	-0.833	0.727	0.103	0.153
METR	-0.439	0.930	0.152	0.203
MNDTS	0.000	0.317	0.048	0.040
LnS	0.703	4.169	2.420	0.697
GTA	-0.480	0.883	0.086	0.204
SUB	0.000	78.000	9.494	12.157

N = Number of observations

Min = Minimum

Max = Maximum

$\bar{x}$  = Mean score

$\sigma$  = Standard deviation

Table 3 provides the Pearson correlation for the variables used in the regression model. The findings are as follows:

Overall, financial leverage is positively correlated with LnS, SUB, and IndDum, and negatively correlated with GTA. The leverage is positively correlated with LnS and negatively correlated with ROA and GTA in the Canadian manufacturing industry. The Leverage is positively correlated with LnS and SUB in the Canadian services industry (see Table 3).

Table 3: Pearson Bivariate Correlation Analysis

Entire Sample (N = 498)									
	MTL	MCA	ROA	METR	MNDTS	LnS	GTA	SUB	IndDum
MTL	1	-0.042	-0.065	-0.065	0.009	0.468**	-0.205**	0.257**	0.284**
MCA		1	-0.099	-0.225**	0.257**	0.051	0.050	-0.045	-0.075
ROA			1	0.261**	-0.057	0.182*	0.220**	-0.090	0.024
METR				1	-0.072	0.236**	0.030	0.124	0.016
MNDTS					1	-0.010	0.053	-0.140	-0.135
LnS						1	-0.112	0.272**	0.124
GTA							1	0.025	0.004
SUB								1	0.132
IndDum									1
Manufacturing Industry (N = 273)									
	MTL	MCA	ROA	METR	MNDTS	LnS	GTA	SUB	
MTL	1	0.032	-0.207*	-0.121	0.085	0.479**	-0.323**	0.169	
MCA		1	-0.211*	-0.278**	0.353**	-0.078	0.234*	-0.181	
ROA			1	0.195	-0.075	0.189	0.274**	-0.207*	
METR				1	-0.158	0.191	-0.037	-0.032	
MNDTS					1	0.042	0.037	-0.290**	
LnS						1	-0.127	0.201	
GTA							1	-0.174	
SUB								1	
Service Industry (N = 225)									

	MTL	MCA	ROA	METR	MNDTS	LnS	GTA	SUB
MTL	1	-0.081	0.121	-0.010	-0.011	0.412**	-0.075	0.292*
MCA		1	0.053	-0.158	0.099	0.211	-0.162	0.044
ROA			1	0.372**	-0.009	0.173	0.139	-0.025
METR				1	0.115	0.295*	0.128	0.248*
MNDTS					1	-0.045	0.085	-0.009
LnS						1	-0.097	0.310**
GTA							1	0.155
SUB								1

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

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

## 4 Regression Analysis

In this section, we present the empirical findings on the factors that influence financial leverage of Canadian firms. The Ordinary Least Square (OLS) model with a cross section weight of seven sectors (consumer products, services, utilities, health care, information technology and communication, industrials, materials) from manufacturing and services industries was used to perform data analysis. The results are as follows:

Overall, positive relationships between i) LnS and MTL, ii) SUB and MTL, and iii) IndDum and MTL were found. Negative relationships between i) METR and MTL and ii) GTA and MTL were found. No significant relationships between i) MCA and MTL, ii) ROA and MTL, and iii) MNDTS and MTL were found (see Table 4).

In the Canadian manufacturing industry, a positive relationship between LnS and MTL was found. Negative relationships between i) ROA and MTL, ii) METR and MTL, and iii) GTA and MTL were found. No significant relationships between i) MCA and MTL, ii) MNDTS and MTL, and iii) SUB and MTL were found (see Table 4).

In the Canadian service industry, positive relationships between i) ROA and MTL, ii) LnS and MTL, and iii) SUB and MTL were found. Negative relationships between i) MCA and MTL and ii) METR and MTL were found. No significant relationships between i) MNDTS and MTL and ii) GTA and MTL were found (see Table 4).

Table 4: Regression Estimates on Factors Influencing Financial Leverage<sup>a, b, c</sup>

Entire Sample (N = 498)								
[R <sup>2</sup> = 0.357; SEE = 0.146; F = 10.896; ANOVA's Test Sig. = 0.000]								
Regression Equation (A): MTL = 0.162 – 0.066 MCA – 0.102 ROA – 0.163 METR + 0.341 MNDTS + 0.099 LnS – 0.119 GTA + 0.002 SUB + 0.078 IndDum								
	Unstandardized		Standardized Coefficients <sup>c</sup>			Collinearity Statistics		
	Coefficients		Beta	t	Sig.	Tolerance	VIF	
	B	Std. Error						
(Constant)	0.162	0.043		3.725	0.000			
MCA	-0.066	0.043	-0.105	-1.525	0.129	0.869	1.150	
ROA	-0.102	0.106	-0.068	-0.961	0.338	0.824	1.214	
METR	-0.163	0.061	-0.187	-2.682	0.008	0.842	1.188	
MNDTS	0.341	0.295	0.078	1.154	0.250	0.901	1.110	
LnS	0.099	0.016	0.452	6.339	0.000	0.806	1.241	
GTA	-0.119	0.058	-0.137	-2.037	0.043	0.906	1.104	
SUB	0.002	0.001	0.131	1.904	0.059	0.859	1.164	
IndDum	0.078	0.023	0.219	3.343	0.001	0.955	1.047	
Manufacturing Industry (N = 273)								
[R <sup>2</sup> = 0.402; SEE = 0.138; F = 8.051; ANOVA's Test Sig. = 0.000]								
Regression Equation (B): MTL = 0.129 + 0.013 MCA – 0.283 ROA – 0.144 METR + 0.049 MNDTS + 0.118 LnS – 0.175 GTA + 0.000 SUB								
	Unstandardized		Standardized Coefficients <sup>c</sup>			Collinearity Statistics		
	Coefficients		Beta	t	Sig.	Tolerance	VIF	
	B	Std. Error						
(Constant)	0.129	0.059		2.168	0.033			

MCA	0.013	0.064	0.020	0.197	0.844	0.718	1.394
ROA	-0.283	0.133	-0.211	-2.136	0.036	0.731	1.368
METR	-0.144	0.073	-0.180	-1.980	0.051	0.859	1.164
MNDTS	0.049	0.353	0.013	0.139	0.889	0.791	1.264
LnS	0.118	0.020	0.548	5.907	0.000	0.829	1.206
GTA	-0.175	0.078	-0.211	-2.236	0.028	0.803	1.245
SUB	0.000	0.002	-0.019	-0.199	0.842	0.774	1.292

---

**Service Industry (N = 225)**

[R<sup>2</sup> = 0.311; SEE = 0.147; F = 4.253; ANOVA's Test Sig. = 0.001]

Regression Equation (C): MTL = 0.274 - 0.155 MCA + 0.325 ROA - 0.288 METR + 0.463 MNDTS + 0.088 LnS - 0.095 GTA + 0.003 SUB

---

	Unstandardized		Standardized Coefficients <sup>c</sup>			Collinearity Statistics	
	Coefficients		Beta	t	Sig.	Tolerance	VIF
	B	Std. Error					
(Constant)	0.274	0.066		4.141	0.000		
MCA	-0.155	0.063	-0.274	-2.473	0.016	0.851	1.174
ROA	0.325	0.182	0.204	1.783	0.079	0.800	1.250
METR	-0.288	0.109	-0.321	-2.628	0.011	0.698	1.432
MNDTS	0.463	0.571	0.085	0.810	0.421	0.943	1.060
LnS	0.088	0.025	0.422	3.598	0.001	0.760	1.315
GTA	-0.095	0.091	-0.113	-1.044	0.300	0.895	1.117
SUB	0.003	0.001	0.274	2.415	0.019	0.809	1.236

---

<sup>a</sup> Dependent Variable: MTL

<sup>b</sup> Independent Variables: MCA, ROA, METR, MNDTS, LnS, GTA, SUB, and IndDum

<sup>c</sup> Linear Regression through the Origin

SEE = Standard Error of the Estimate

Also 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.
- 35.70% (R<sup>2</sup> = 0.357) of the variance in the degree of MTL can be explained by the degree of IndDum, GTA, METR, MNDTS, SUB, MCA, ROA, and LnS in Canada.

- 40.20% ( $R^2 = 0.402$ ) of the variance in the degree of MTL can be explained by the degree of SUB, METR, GTA, LnS, MNDTS, ROA, and MCA in the Canadian manufacturing industry.
- 31.10% ( $R^2 = 0.311$ ) of the variance in the degree of MTL can be explained by the degree of SUB, MNDTS, ROA, MCA, GTA, LnS, and METR in the Canadian services industry.
- The analysis of variance (ANOVA) tests are also significant at 0.000 and 0.001(see Table 4).

## **5 Discussion, Conclusion, Implications, and Future Research**

The main purpose of this study was to find the factors that influence financial leverage of Canadian firms. This was achieved by collecting data from the Canadian manufacturing and service industries. Findings show that the factors that determine financial leverage are different in the manufacturing and service industries.

The regression analysis results show that financial leverage (dependent variable) is:

- i) Positively related to firm size. This finding is similar to the findings of Huang and Song [9], Nguyen and Neelakantan [16], Biger *et al.* [5], and Al-Qaisi [4].
- ii) Positively related to number of subsidiaries.
- iii) Positively related to industry dummy. This finding is similar to the findings of Biger *et al.* [5] in which they found that financial leverage differ based on industry characteristics.
- iv) Negatively related to effective tax rate. This finding is similar to the findings of Biger *et al.* [5] but contradicts with the results of Afza and Hussain [3] who shows a positive relationship between tax rate and leverage.
- v) Negatively related to growth opportunities of the Canadian firms. This finding

is similar to the findings of Biger *et al.* [5] but contradict with the findings of Odit and Gobardhun [17] who show a positive relationship between growth opportunities and leverage.

vi) Negatively related to collateralized assets. This finding is similar to the findings of Nguyen and Neelakantan [16] and Gill *et al.* [8] but contradicts with the findings of Biger *et al.* [5].

vii) Positively related to profitability of the Canadian service firms and negatively related to profitability in the Canadian manufacturing firms. The findings from the Canadian service industry is similar to the findings of Roden and Lewellen [19] and Abor [1] but contradicts with the findings of Majumdar and Chhibber [11], Booth *et al.* [6], Huang and Song [9], Biger *et al.* [5], Gill *et al.* [8], Al-Qaisi [4], and Afza and Hussain [3]. The findings from the Canadian manufacturing industry are similar to the findings of Majumdar and Chhibber [11], Booth *et al.* [6], Huang and Song [9], Biger *et al.* [5], Gill *et al.* [8], Al-Qaisi [4], and Afza and Hussain [3] but contradicts with the findings of Roden and Lewellen [19] and Abor [1] (see Table 5).

Table 5: Previous Findings Related to Factors that Influence Financial leverage

Author	Previous Findings Related to Factors that Influence Financial Leverage
Roden and Lewellen [19]	► Found a positive relationship between profitability and leverage.
Majumdar and Chhibber [11]	► Found a negative relationship between corporate profitability and leverage.
Booth <i>et al.</i> [6]	► Reported a negative relationship between firm's profitability and leverage.
Huang and Song [9]	► Found that leverage increases with firm size, non-debt tax shields and fixed assets, and decreases with profitability and correlates with industries.

Abor [1]	► Found a positive relationship between profitability and leverage.
Nguyen and Neelakantan [16]	► Found that leverage is positively related to firm growth and firm size, and negatively related to tangibility.
Biger <i>et al.</i> [5]	► Found that financial leverage increases with firm size, and decreases with profitability and with non-debt tax shield. Financial leverage also correlated with industry characteristics. They also found that i) firm's leverage increase with fixed asset and decrease with growth opportunities, ii) corporate income tax has the negative albeit small effect on firm's financial leverage.
Gill <i>et al.</i> [8]	► Found that leverage is negatively correlated with profitability and collateralized assets.
Al-Qaisi [4]	► Found a negative relationship between profitability and leverage and a positive relationship between firm size and leverage.
Odit and Gobardhun [19]	► Found a positive association between leverage, asset structure, and firm growth.
Afza and Hussain [3]	► Found that capital structure is negatively correlated with profitability and positively correlated with taxes.

---

## 5.1 Conclusion

In conclusion, financial leverage of the Canadian firms is influenced by the collateralized assets, profitability, effective tax rate, firm size, growth opportunities, number of subsidiaries, and industry in which Canadian firms operate.



## 5.2 Limitations

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

## 5.3 Future Research

Future research should investigate generalization of the findings beyond the Canadian manufacturing and service sector.

## References

- [1] J. Abor, The effect of capital structure on profitability: empirical analysis of listed firms in Ghana, *Journal of Risk Finance*, **6**(5), (2005), 438-445.
- [2] J. Abor, Debt policy and performance of SMEs: Evidence from Ghanaian and South African Firms, *The Journal of Risk Finance*, **8**(4), (2006) 364-380.
- [3] T. Afza and A. Hussain, Determinants of capital structure: A case study of automobile sector of Pakistan, *Interdisciplinary Journal of Contemporary Research In Business*, **2**(10), (2011), 219-230.
- [4] K. Al-Qaisi, The capital structure choice of listed firms on two stock markets and one country, *The Business Review, Cambridge*, **16**(2), (2010), 155-160.
- [5] N. Biger, N.V. Nguyen and Q.X. Hoang, The determinants of capital structure: Evidence from Vietnam, *International Finance Review*, **8**, (2008), 307-326.
- [6] A. Booth, A. Demircuc-Kunt and V. Maksimovic, Capital structure in developing countries, *Journal of Finance*, **56**(1), (2001), 87-130.
- [7] E.F. Fama and K.R. French, Taxes, financing decisions, and firm value, *The Journal of Finance*, **53**, (1998), 819-843.

- [8] A. Gill, N. Biger, C. Pai, and S. Bhutani, The determinants of capital structure in the service industry: evidence from United States, *The Open Business journal*, **2**, (2009), 48-53.
- [9] S.G. Huang and F.M. Song, The determinants of capital structure: Evidence from China, School of Economics and Finance and Center for China Financial Research, The University of Hong Kong Press for SSRN (2001). [[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=320088](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=320088)]
- [10] M. Jensen and W. Meckling, Theory of the firm: managerial behaviour, agency costs and ownership structure, *Journal of Financial Economics*, **3**, (1976), 305-360.
- [11] S.K. Majumdar and P. Chhibber, Capital structure and performance: evidence from a transition economy on an aspect of corporate governance, *Public Choice*, **98**(3-4), (1999), 287-305.
- [12] F. Modigliani and M. Miller, The cost of capital, corporation finance and the theory of investment, *The American Economic Review*, **48**(3), (1958), 261-297.
- [13] G. Morri and C. Beretta, The capital structure determinants of REITs. Is it a peculiar industry? *Journal of European Real Estate Research*, **1**(1), (2008), 6-57.
- [14] S.C. Myers, Determinants of corporate borrowing, *Journal of Financial Economics*, **9**, (1977), 147-76.
- [15] S.C. Myers and N.S. Majluf, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics*, **13**, (1984), 187-221.
- [16] T.D. Nguyen and R. Neelakantan, Capital Structure in Small and Medium-sized Enterprises: The Case of Vietnam, *ASEAN Economic Bulletin*, **23**(2), (2006), 192-211.
- [17] M.P. Odit and Y.D. Gobardhun, The determinants of financial leverage of SME's in Mauritius, *The International Business & Economics Research*

*Journal*, **10**(3), (2011), 113-125.

- [18] R.G. Rajan and L. Zingales, What do we know about the capital structure? Some evidence from international data, *Journal of Finance*, **50**, (1995), 1421-1460.
- [19] D.M. Roden and W.G. Lewellen, Corporate capital structure decisions: evidence from leveraged buyouts, *Financial Management*, **24**(2), (1995), 76-87.