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Uncertainty and Capital Structure: Evidence from an Emerging Country

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Abstract
This paper investigates the impact of uncertainty on corporate capital structure. Using a sample consists of manufacturing firms listed in the Vietnamese Stock Market during the period from 2010 to 2019, we find that an increase in uncertainty can lead to a reduction in the corporate use of debt. This result is robust when we use a lag model or a System General Method of Moments to deal with the endogeneity problems. Moreover, our result shows that firms decrease their leverage when facing a high level of uncertainty because the increase in leverage during the heightened uncertainty periods may reduce firms' investment. Given that firms in emerging countries in general and in Vietnam in particular rely significantly on debt financing, the results of our paper suggest that policy makers should have solutions to mitigate the adverse impact of uncertainty on firm leverage.

Key-words: Uncertainty, Capital Structure, Investment, Emerging Country.
JEL Classification Code: G32.

1. Introduction

The corporate capital structure has attracted the attention of many scholars in the world. Many studies have attempted to construct theoretical models explaining why firms prefer to use debt or equity (eg., Modigliani & Miller, 1958; Myers & Majluf, 1984; Bradley, Jarrell & Kim, 1984;

Narayanan, 1988; Dittmar & Thakor, 2007). Based on these models, many studies have examined the determinants of corporate capital structure (e.g., Allen & Mizuno, 1989; Deesomsak, Paudyal, & Pescetto, 2004). However, most of them have focused on the financial characteristics of a firm and have disregarded the potential impacts of economic and political uncertainty on corporate capital structure.

Economic and political uncertainty is referred as to the uncertainty about the future path of government policies. The uncertainty can affect the business environment of all companies and therefore can exert impacts on both the investment and financial policies of companies. For instance, Bernanke (1983) and Rodrik (1991) construct models suggesting that political uncertainty can lead to a delay in firms' irreversible investment. Many studies find empirical evidence supporting this argument (e.g., Kang, Lee, & Ratti, 2014; Baker, Bloom, & Davis, 2016; Gulen & Ion, 2016). Regarding financial policy, an increase in economic policy uncertainty can make a firm follow a more conservative capital structure (Cao, Duan, & Uysal, 2013; Colak, Gungoraydinoglu, & Oztekin, 2018). Additionally, a high level of economic policy uncertainty can result in an increase in firms' cost of debt (Francis, Hasan, & Zhu, 2014) and the cost of equity (Pastor & Veronesi, 2012).

There are two alternative views that can explain how economic and political uncertainty can affect corporate capital structure. In the first view, the impact of economic and political uncertainty on the corporate capital structure can be explained by the supply-side of external capital. When the level of uncertainty is high, the information asymmetry between borrowers and lenders will become more severe, which could increase the agency costs of debt between them. Additionally, the cash flow volatility of firms during the period of heightened uncertainty can be substantial, implying higher default risk during this period. These would deteriorate the external financing environment. Recent studies also find a positive association between economic and political uncertainty and the cost of capital (Gao & Qi, 2012; Francis et al., 2014). To cope with this problem, firms tend to reduce their leverage to reserve the financial flexibility (Cao et al., 2013; Zhang et al., 2015; Colak et al., 2018). In the second view, the relationship between economic and political uncertainty and capital structure could be explained by the demand-side of capital. The main idea of this demand-side is that when firms face a high level of uncertainty, they tend to reduce their investment, especially the irreversible one, and therefore decreasing their financial demands. In support of this idea, some studies show a negative relationship between uncertainty and investments at both corporate and country level (Kang et al., 2014; Baker et al., 2016; Gulen & Ion, 2016). Overall, both views suggest

that a high degree of economic and political uncertainty can exert a negative impact on firms' leverage.

The aim of this study is to examine the impact of economic and political uncertainty on the corporate capital structure using a new setting consisting of manufacturing firms listed in the Vietnamese stock market during the period from 2010 to 2019. Vietnam is an emerging country where firms rely significantly on debt financing, mostly in the form of bank loans. Moreover, like other emerging countries, the information asymmetry and the agency costs in Vietnam are high, which can hinder creditors from supplying credit to the economy, especially in times of high uncertainty. This suggests that the impact of economic and political uncertainty on firm leverage in Vietnam will be substantial. To the best of our knowledge, the topic of the relationship between uncertainty and capital structure has been conducted in only two countries, which are the United States and China (e.g., Cao et al., 2013; Zhang et al., 2015; Colak et al., 2018). By examining this topic with a setting consisting of Vietnamese firms, we can provide an "out-of-sample" test for the recent studies.

However, different from those studies, we use a new measure of economic and political uncertainty index developed by Ahir, Bloom, and Furceri (2018) in this study. This index covers a wide range of both developed and developing countries, including Vietnam. Additionally, our study is also different from the previous studies because we focus on one industry, namely the manufacturing industry. In Vietnam, firms in this industry employ a high level of debt ratio with the mean of 0.652. As a result, the capital structure of these companies may be extremely sensitive to variations in government policies. Moreover, by using a sample of firms in one industry, we can avoid the complication of heterogeneity in a cross-industry sample. Using the new index, the results estimated from a fixed-effects model show that when Vietnamese economic and political uncertainty increases, firms' leverage reduces significantly. In economic terms, a one standard deviation increase in Vietnamese uncertainty can lead to a decrease in firms' leverage by more than 32 percent. This result is robust when we employ a lag model or a System Generalized Method of Moments (SGMM) model to deal with potential endogeneity problems. Moreover, we indicate that the negative association between economic and political uncertainty and firms' leverage is only existed when the firms are small. This supports the supply-side argument because creditors may be less willing to lend money to these firms during the heightened uncertainty period. Finally, we find that firms reduce their leverage when the level of uncertainty is high because increasing leverage during this period may lead to a decrease in the firms' investment.

Our study contributes to the literature in many aspects. First, our results add to an established line of literature on the determinants of capital structure (e.g., Chau, Deesomsak, & Koutmos, 2016). Second, our results complement a growing literature on the impact of policy uncertainty on firms' investment and financial policies (e.g., Hadani, Bonardi, & Dahan, 2016; Wang, Chen, & Huang, 2014; Borghesi & Chang, 2020). Although our results draw a similar conclusion that economic and political uncertainty negatively impact firms' leverage as in the previous studies, our study is different from them because we employ a new setting with a new index measuring economic and political uncertainty. Finally, our study is one of the first to show that firms decrease their leverage to avoid the negative impact of leverage on their investment during the period of heightened economic and political uncertainty.

The remainder of this paper is structured as follows. Section 2 provides the literature review. Section 3 presents our data and methodology. Section 4 turns to reporting the empirical results. Finally, Section 5 concludes.

2. Literature Review

One of the most famous seminal works related to the capital structure is Modigliani and Miller (1958). By assuming that the market is perfect, they argue that the capital structure should not impact firm value. After that many studies remove the assumption of perfect market conditions and construct models showing that capital structure can matter to firm value. For example, the trade-off theory (Bradley et al., 1984) suggests that companies will have a unique optimal capital structure where the marginal benefits of using debt equal its marginal costs. The benefits include the gain from tax shield or from the reduction in the agency cost whereas the costs contain a high level of interest expenses and bankruptcy risk. Another example is the pecking order theory developed by Myers and Majluf (1984). This theory proposes that companies prefer to use internal over external funds when they have to finance a new investment. Specifically, firms will employ internal funds first, followed by external debt, and finally external equity financing.

Based on these models, many empirical data have investigated the determinants of capital structure using the rich financial data of companies from many countries around the world. Some firm-level financial factors that provide the greatest explanation of capital structure are firm size, firm profitability, firm liquidity, or firm growth (e.g., Chen., 2004; Psillaki & Daskalakis, 2009). In addition to these factors, several country-specific factors, such as inflation or GDP growth are argued

to influence firms' capital structure (Bancel & Mittoo, 2004; De Jong, Kabir, & Nguyen, 2008). However, these studies have disregarded the potential impact of uncertainty about economic and political policies on capital structure.

Economic and political uncertainty is referred as to the uncertainty about the future path of the policies of a government. There is growing literature on the economic consequences of the uncertainty. For example, Bernanke (1983) and Rodrik (1991) build models suggesting that in times of increased economic policy uncertainty firms tend to reduce their investment. Baker et al. (2016) construct indexes to measure economic policy uncertainty for many countries, including the US (hereinafter referred to as BBD index), and empirically confirm the implication of Bernanke (1983) and Rodrik (1991)'s models. Additionally, they show that an increase in economic policy uncertainty can increase the stock price volatility and reduce the employment in industries that are sensitive to policy reforms. Several studies also use BBD index and indicate that economic policy uncertainty affects firms' investment negatively (e.g., Gulen & Ion, 2016; Wang et al., 2014; Kang et al., 2014). And Huy, D.T.N et al (2020) said Fluctuation of stock price in commercial banks in developing countries such as Vietnam will reflect the business health of bank system and the whole economy. Good business management requires us to consider the impacts of multi macro factors on stock price, and it contributes to promoting business plan, financial risk management and economic policies for economic growth and stabilizing macroeconomic factors.

Regarding firms' financial policy, it is arguable that economic and political policy can also exert a significant impact on firms' capital structure. There are two alternative views explaining the potential impact of the former on the latter. On one hand, this impact can be explained by the supply-side of external capital. In essence, during the period of heightened economic and political uncertainty, the agency costs of debt between firms and the lenders may increase because the information asymmetry between borrowers and lenders is severe during this period. Moreover, the volatility of firm cash flow can be substantial in times of high economic policy uncertainty, implying higher default risk during this period. These would deteriorate the external financing environment. As a result, the supply of loans during volatile economic times decreases because banks tend to restrict lending (Barraza & Civelli, 2020; Nakamura, 1999). Firms facing such decreased supplies of finance will find it more costly to raise external finance (Pastor & Veronesi, 2011; Pastor & Veronesi, 2012; Gao & Qi, 2012; Francis et al., 2014). As a result, firms that are concerned with this problem tend to reduce their leverage to reserve the financial flexibility (Cao et al., 2013; Zhang et al., 2015; Colak et al., 2018).

On the other hand, the effect of economic policy uncertainty on the capital structure can be explained by the demand-side of capital. In comparison with the aforementioned supply-side view, the demand effect is illustrated by firms' demand for the external capital. In essence, firms tend to reduce their investment and therefore decreasing their financial demand during the period of high economic policy uncertainty. Some empirical studies find a negative impact of economic policy uncertainty on investments at both corporate and country level (Julio & Yook, 2012; Kang et al., 2014; Baker et al., 2016; Gulen & Ion, 2016). In conclusion, both the supply and demand views suggest a negative relationship between economic and political uncertainty and firms' leverage.

3. Data and Methodology

3.1. Data

Our sample consists of 49 publicly traded companies in the manufacturing industry from 2010 to 2019. The financial data is collected from their annual reports. After we exclude the missing data, our final sample is an unbalanced panel containing 475 firm-year observations.

We source the data of the Vietnamese economic and political uncertainty index from the Federal Reserve Bank of St. Louis. Ahir et al. (2018) construct the economic and political uncertainty index for 143 countries, including Vietnam. In essence, they build this index based on the country reports of the Economist Intelligence Unit (EIU). The country reports cover all the factors affecting the country risk such as politics, economic policy, the domestic economy, foreign and trade payments events. A higher value for this index suggests a higher level of uncertainty. The frequency of this index is quarterly. We compute the annual index as the arithmetic average of the quarterly index in one year. Compared with BBD index, the uncertainty index constructed by Ahir et al. (2018) has two advantages (Ahir et al., 2018). First, the input computing the uncertainty index of Ahir et al. (2018) comes from a single source that can cover the economic and political developments of many countries around the world. Second, the country reports are based on a standardized process and structure. All of this will help to alleviate concerns about the accuracy, ideological bias, and consistency of the index.

In this paper, we also source the information of Vietnamese GDP growth from World Bank.

3.2. Methodology

To investigate the impact of economic and political uncertainty on capital structure, we follow previous studies examining the determinants of capital structure (e.g., Jean J. Chen, 2004; Maria Psillaki & Nikolaos Daskalakis, 2009) and build an empirical model, in which the dependent variable is firms' leverage and the independent variable is the economic and political uncertainty index. The specific model is as follows:

$$Leverage_{it} = \beta_0 + \beta_1 Uncertainty_t + \delta Control_{it} + GDP\_Growth_t + \varepsilon_{it} \quad (1)$$

In Equation 1, i and t index company i and year t, respectively. The dependent variable, Leverage, is calculated as the ratio of total debt over the book value of total assets. The independent variable, Uncertainty, is constructed by Ahir et al. (2018). We expect that the coefficient on Uncertainty will be significantly negative. In Equation 1, we also include a set of firm-characteristic control variables. The first control variable controls the impact of firm size on capital structure (Size). This variable is computed as the natural logarithm of the total assets. The next control variable captures the effects of firm profitability on capital structure (Profitability). We use the ratio of earnings before interest, taxes, depreciation, and amortization (EBITDA) over total assets as the proxy for firm profitability. The final firm-characteristic control variable is the cash ratio (Cash_Ratio), which is measured as the ratio of cash and cash equivalents over total assets.

In addition to firm-characteristics control variables, we also control the effects of the macroeconomic environment on firms' capital structure by including the GDP growth of Vietnam in Equation 1 (GDP_Growth). Finally, ε is the error term of Equation 1. The standard errors are corrected for heteroskedasticity and clustered at the firm level. Variables are winsorized at the 1st and 99th percentile to mitigate the impact of some outliers on our estimation. The definition of all variables in this paper is provided in Table 1.

Table 1- Variable Definition

Variables	Definition
Firm-level variables	
Leverage	The ratio of total debt over total assets.
Size	The natural logarithm of total assets.
Profitability	The ratio of EBITDA over total assets.
Cash_Ratio	The ratio of cash and cash equivalents over total assets.
Investment	The ratio of capital expenditure over total assets.
Country-level variables	
Uncertainty	Vietnam economic and political uncertainty index.
GDP_Growth	Vietnam GDP growth.

This table presents the definition of all variables employed in this study.

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4. Empirical Results

4.1. Summary Statistics

Table 2 provides the descriptive statistics of all variables in this paper. As can be seen from this table, the mean of firm leverage is 0.652, which suggests that Vietnamese manufacturing firms rely substantially on debt to finance their operation. The variation of the Vietnamese economic and political uncertainty index is also large with the mean and the standard deviation being 0.101 and 0.084, respectively. This can help us to investigate the impact of the uncertainty on the capital structure.

Table 2- Descriptive Statistics

Variables	Obs	Mean	Std.Dev	Min	Max
Leverage	475	0.652	1.450	0.055	13.996
Size	475	12.999	1.349	9.705	16.750
Profitability	475	0.150	0.359	-0.457	2.555
Cash_Ratio	475	0.091	0.094	0.002	0.432
Uncertainty	475	0.101	0.084	0.000	0.236
GDP_Growth (%)	475	6.312	0.084	5.247	7.076

This table reports descriptive statistics of variables used in Equation 1.

Table 3 present the correlation matrix for all variables employed in this paper. The result shows that the coefficient of correlation between Leverage and Uncertainty is negative, implying a negative relationship between them. This result, therefore, supports our prediction. However, we should treat this result with caution because it does not consider other factors affecting firms' leverage. The results in Table 4 also indicate that the values of all the correlation coefficients are lower than 0.7, which suggests that our empirical model will not have the multicollinearity problems.

Table 3- Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Leverage	1.000					
(2) Size	-0.233	1.000				
(3) Profitability	-0.059	0.076	1.000			
(4) Cash_Ratio	-0.023	-0160	0.013	1.000		
(5) Uncertainty	-0.119	-0.079	0.004	0.010	1.000	
(6) GDP_Growth	0.113	0.080	0.007	-0.017	-0.580	1.000

This table reports the correlation matrix for variables used in Equation 1.

4.2. Multivariate Results

Table 4 reports the results estimated from Equation 1. In columns 1, 2, and 3, the estimation methods are pooled OLS, fixed effects, and random effects models. We use the Breusch and Pagan LM test and Hausman test to select which model will be employed. The p-values of the two tests are lower than 0.05, suggesting that we should use the fixed effects model to estimate Equation 1. Using this model also helps us to mitigate the concerns that our estimated results may be biased due to the time-invariant omitted variables. The results in column 2 show that the coefficient on Uncertainty is negative and significant at the 10% level. This suggests that when the level of economic and political uncertainty increases, firms will reduce their leverage. In economic terms, a one standard deviation increase in the uncertainty can lead to a decrease in firms' leverage by more than 32 percent.[1] In columns 1 and 3, the p-values of Uncertainty are 0.131 and 0.109, respectively. This suggests that the statistical impact of uncertainty on firm leverage is marginal. Overall, the results support our prediction and are consistent with the finding of Cao et al. (2013), Zhang et al. (2015), and Colak et al. (2018).

Table 4- The Impacts of Uncertainty on Capital Structure

	Dependent variable: Leverage		
	OLS	FE	RE
VARIABLES	(1)	(2)	(3)
Uncertainty	-1.546	-2.526*	-1.818
	(1.006)	(1.289)	(1.135)
Size	-0.272	-1.500*	-0.621
	(0.204)	(0.769)	(0.409)
Profitability	-0.157	0.815	0.157
	(0.236)	(0.745)	(0.231)
Cash_Ratio	-0.937	-1.895	-1.637
	(0.678)	(1.613)	(1.418)
GDP_Growth	0.203	0.281*	0.221
	(0.151)	(0.154)	(0.150)
Constant	3.176	18.683**	7.642
	(1.990)	(9.215)	(4.657)
Observations	475	475	475
R-squared	0.083	0.254	0.215
LM test (p-value)	0.000		
Hausman test (p-value)	0.027		

This table provides regression results showing the impact of economic and political uncertainty on firm leverage. The sample includes 49 manufacturing companies listed in the Vietnamese stock market from 2010 to 2019. In columns 1, 2, and 3, we use a pooled OLS, a fixed

[1] 32% = (-2.526 * 0.084 / 0.652) * 100%, where -2.526 is the coefficient on Uncertainty in column 2 of Table 3, 0.084 is the standard deviation of Uncertainty and 0.652 is the mean of Leverage.

effects regression, and a random effects regression, respectively. The dependent variable is firm leverage. The definition of all variables is provided in Table 1. The standard errors are reported in parentheses and clustered at the firm level. ***,**,* represent statistical significance at 1%, 5%, and 10% levels, respectively.

4.3. Robustness Tests

In this section, we employ a battery of tests to check the robustness of our results. First, we lag the right-hand side variables of Equation 1 by one year and estimate this equation using a fixed effects model. This helps to mitigate the concerns that the right-hand side variables and firm leverage are codetermined. The results are reported in column 1 of Table 5 and similar to the previous results.

Table 5- Robustness Tests

	Dependent variable: Leverage	
	Lag	SGMM
VARIABLES	(1)	(2)
L.Leverage		0.996***
		(0.107)
Uncertainty	-2.537*	-0.506*
	(1.391)	(0.306)
Size	-1.448**	-0.356
	(0.672)	(0.256)
Profitability	-4.206**	-1.696**
	(1.812)	(0.798)
Cash_Ratio	-0.129	0.200
	(0.718)	(0.514)
GDP_Growth	0.270**	0.114
	(0.116)	(0.082)
Constant	18.704**	4.266
	(8.413)	(2.976)
Observations	426	426
AR(1) test (p-value)		0.309
AR(2) test (p-value)		0.759
Hansen test (p-value)		0.304
R-squared	0.335	0.656

This table provides the results of robustness tests. The sample includes 49 manufacturing companies listed in the Vietnamese stock market from 2010 to 2019. In column 1, we lag the right-hand side variables of Equation 1 by one year. In column 2, we employ a SGMM model. The dependent variable is firm leverage. The definition of all variables is provided in Table 1. The standard errors are reported in parentheses and clustered at the firm level. ***,**,* represent statistical significance at 1%, 5%, and 10% levels, respectively.

Second, to deal with endogeneity problems, we use a SGMM model to estimate Equation 1. We add the one-year lag value of Leverage to the right-had side of this equation to capture the dynamic effects of the model. The advantage of this model is that we do not need to find any new instrumental variables for endogenous variables. In essence, this model employs the lags of endogenous variables as the instruments for the endogenous variables. The post-estimation tests of the model confirm the validity of the results. The p-values of AR(2) test and Hansen test is higher than 0.1, suggesting that the lags of endogenous variables are appropriate instruments. The main results estimated from the SGMM model are reported in column 2 of Table 4 and remain intact. Regarding the dynamic effects of the model, we find a significantly positive value of the lag of Leverage. This suggests that the current year's leverage is positively associated with the previous year's leverage.

Next, we will regress Equation 1 for two subsamples, one including small firms and one consisting of large firms. We argue that creditors will be less willing to lend money to small companies than to large companies because small companies may have lower collateral and higher default risk than large companies. As a result, we expect that the negative impact of uncertainty on firm leverage only exists for the sample with small companies. Firms with the size that is lower than the median will be classified as small firms. Otherwise, they will be classified as large firms. The results from this analysis are reported in Table 6.

Table 6- Regression Results for Small and Large Companies

	Dependent variable: Leverage	
	Small	Large
VARIABLES	(1)	(2)
Uncertainty	-3.353**	0.106
	(1.474)	(0.096)
Size	-2.550***	0.080
	(0.918)	(0.060)
Profitability	1.818*	-0.495***
	(0.956)	(0.080)
Cash_Ratio	-3.258	-0.109
	(2.214)	(0.117)
GDP_Growth	0.198	-0.017
	(0.192)	(0.014)
Constant	30.426***	-0.407
	(10.619)	(0.804)
Observations	238	237
R-squared	0.403	0.206

This table provides regression results for large and small companies. The sample includes 49 manufacturing companies listed in the Vietnamese stock market from 2010 to 2019. In column 1, the subsample consists of small companies. In column 2, the subsample includes large companies. The dependent variable is firm leverage. The definition of all variables is provided in Table 1. The

standard errors are reported in parentheses and clustered at the firm level. ***,**,* represent statistical significance at 1%, 5%, and 10% levels, respectively.

We report the estimation results for the groups of small and large companies in columns 1 and 2 of Table 6, respectively. Whereas the coefficient on Uncertainty is negative and significant at the 5% level in column 1, it is insignificant in column 2. These results suggest that the negative effect of economic and political uncertainty on firm leverage only exists for small companies, which is consistent with our prediction.

4.4. Uncertainty, Firm Leverage, and Investment

In previous sections, we have shown that economic and political uncertainty impact negatively on firm leverage. In this section, we extend our analysis by examining why firms reduce their leverage in times of heightened uncertainty. To do this, we will regress a model where the dependent variable is firm investment, measured by capital expenditure over the book value of total assets, and the independent variables are Vietnam uncertainty index and firm leverage. Additionally, we include an interaction term between the two independent variables to examine the impact of leverage on investment at the different level of uncertainty. We also add some control variables that are argued to affect firm investment to the equation. The results are presented in Table 7.

Table 7- Impacts of Uncertainty and Leverage on Firm Investment

	Dependent variable: Investment	
	FE	SGMM
VARIABLES	(1)	(2)
L.Investment		0.144**
		(0.064)
Uncertainty	0.240	0.468
	(0.145)	(0.286)
Leverage	0.011***	0.012
	(0.004)	(0.014)
Uncertainty * Leverage	-0.364*	-0.861*
	(0.189)	(0.521)
Size	0.032**	0.027***
	(0.016)	(0.010)
Profitability	-0.147*	-0.023
	(0.083)	(0.048)
Cash_Ratio	0.007	-0.075
	(0.045)	(0.099)
GDP_Growth	-0.017***	-0.016**
	(0.005)	(0.007)
Constant	-0.253	-0.208*
	(0.215)	(0.117)
Observations	426	377
AR(1) test (p-value)		0.001
AR(2) test (p-value)		0.444
Hansen test (p-value)		0.631
R-squared	0.066	0.031

This table provides regression results showing the impact of uncertainty and leverage on firm investment. The sample includes 49 manufacturing companies listed in the Vietnamese stock market from 2010 to 2019. In columns 1 and 2, we use a fixed-effects model and a SGMM model, respectively. The dependent variable is firm investment. The definition of all variables is provided in Table 1. The standard errors are reported in parentheses and clustered at the firm level. ***,**,* represent statistical significance at 1%, 5%, and 10% levels, respectively.

In column 1, the results are regressed from a fixed effects model. The coefficient on the interaction term is significantly negative. This indicates that using a higher level of leverage will reduce firm investment more significantly during the periods of heightened economic and political uncertainty. In column 2, we employ a SGMM model to estimate the effects of uncertainty and leverage on firm investment. Our results estimated from this model remains similar to those in column 1. Overall, these results suggest that firms reduce their leverage to alleviate the negative impact of leverage on firm investment in times of high uncertainty.

5. Conclusion

The aim of this study is to examine the effect of economic and political uncertainty on the capital structure of Vietnamese listed firms in the manufacturing industry. Using a fixed effects model, we find a negative association between economic and political uncertainty and firm leverage. This result is robust when we use a different model specification and a different econometric method. Additionally, we find that this relationship only exists when firms are small, which is in line with the notion that creditors are less willing to lend money to small firms when the uncertainty is high. Finally, we find that firms decrease their leverage to avoid the negative impact of leverage on firm investment during the period of heightened uncertainty.

The finding of this study suggests some policy implications to policy makers and firms' managers. First, given that firms in emerging countries in general and in Vietnam in particular rely remarkably on debt financing, policy makers should have some solutions to mitigate the negative impact of uncertainty on firm leverage. Second, firms' managers should be aware of the negative impact of leverage on firm investment in times of high uncertainty and therefore using debt financing reasonably during these times.

References

Ahir, H., Bloom, N., & Furceri, D. (2018). The world uncertainty index. *Working paper*.

Allen, D.E., & Mizuno, H. (1989). The determinants of corporate capital structure: Japanese evidence. *Applied Economics, 21*(5), 569-585.

Baker, S.R., Bloom, N., & Davis, S.J. (2016). Measuring economic policy uncertainty. *The quarterly journal of economics, 131*(4), 1593-1636.

Bancel, F., & Mittoo, U.R. (2004). Cross-country determinants of capital structure choice: a survey of European firms. *Financial management, 33*(4), 103-132.

Barraza, S., & Civelli, A. (2020). Economic policy uncertainty and the supply of business loans. *Journal of Banking & Finance, 121*, 105983.

Bernanke, B.S. (1983). Irreversibility, uncertainty, and cyclical investment. *The quarterly journal of economics, 98*(1), 85-106.

Borghesi, R., & Chang, K. (2020). Economic policy uncertainty and firm value: The mediating role of intangible assets and R & D. *Applied Economics Letters, 27*(13), 1087-1090.

Bradley, M., Jarrell, G.A., & Kim, E.H. (1984). On the existence of an optimal capital structure: Theory and evidence. *The journal of Finance, 39*(3), 857-878.

Cao, W., Duan, X., & Uysal, V.B. (2013). *Does political uncertainty affect capital structure choices.* Workingpaper, University of Oklahoma.

Chau, F., Deesomsak, R., & Koutmos, D. (2016). Does investor sentiment really matter? *International Review of Financial Analysis, 48*, 221-232.

Chen, J.J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business research, 57*(12), 1341-1351.

Çolak, G., Gungoraydinoglu, A., & Öztekin, Ö. (2018). Global leverage adjustments, uncertainty, and country institutional strength. *Journal of Financial Intermediation, 35*, 41-56.

De Jong, A., Kabir R., & Nguyen, T.T. (2008). Capital structure around the world: The roles of firm- and country-specific determinants. *Journal of Banking & Finance, 32*(9), 1954-1969.

Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: Evidence from the Asia Pacific region. *Journal of Multinational Financial Management, 14*(4-5), 387-405.

Dittmar, A., & Thakor, A. (2007). Why do firms issue equity? *The Journal of Finance, 62*(1), 1-54.

Francis, B.B., Hasan, I., & Zhu, Y. (2014). Political uncertainty and bank loan contracting. *Journal of Empirical Finance, 29*, 281-286.

Gao, P., & Qi, Y. (2012). Political uncertainty and public financing costs: Evidence from US municipal bond markets. *Working paper*.

Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. *The Review of Financial Studies, 29*(3), 523-564.

Hadani, M., Bonardi, J.P., & Dahan, N.M. (2017). Corporate political activity, public policy uncertainty, and firm outcomes: A meta-analysis. *Strategic Organization, 15*(3), 338-366.

Huy, D.T.N., Thach, N.N., Chuyen, B.M., Nhung, P.T.H., Tran, D.T., & Tran, T.A. (2021). Enhancing risk management culture for sustainable growth of Asia commercial bank-ACB in Vietnam under mixed effects of macro factors. *Entrepreneurship and Sustainability Issues, 8*(3), 291.

Hang, T.T.B., Nhung, D.T.H., Huy, D.T.N., Hung, N.M., & Pham, M.D. (2020). Where Beta is going–case of Viet Nam hotel, airlines and tourism company groups after the low inflation period. *Entrepreneurship and Sustainability Issues, 7*(3), 2282.

Huy, D.T.N. (2015). The Critical Analysis of Limited South Asian Corporate Governance Standards After Financial Crisis. *International Journal for Quality Research, 9*(4), 741-764.

Huy, D.T.N. (2012). Estimating Beta of Viet Nam listed construction companies groups during the crisis. *Journal of Integration and Development, 15*(1), 57-71

Huy, D.T.N., Loan, B.T., & Anh, P.T. (2020). Impact of selected factors on stock price: a case study of Vietcombank in Vietnam. *Entrepreneurship and Sustainability Issues, 7*(4), 2715-2730. https://doi.org/10.9770/jesi.2020.7.4(10)

Huy, D.T.N., Dat, P.M., & Anh, P.T. (2020). Building and econometric model of selected factors' impact on stock price: a case study. *Journal of Security and Sustainability Issues, vol.9*(M), 77-93.

Huy D.T.N., Nhan V.K., Bich N.T.N., Hong N.T.P., Chung N.T., & Huy P.Q. (2021). Impacts of Internal and External Macroeconomic Factors on Firm Stock Price in an Expansion Econometric model—A Case in Vietnam Real Estate Industry. *Data Science for Financial Econometrics-Studies in Computational Intelligence*, 898. http://doi-org-443.webvpn.fjmu.edu.cn/10.1007/978-3-030-48853-6_14

Julio, B., & Yook, Y. (2012). Political uncertainty and corporate investment cycles. *The Journal of Finance, 67*(1), 45-83.

Modigliani, F., & Miller, M.H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review, 48*(3), 261-297.

Myers, S.C., & Majluf, N.S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics, 13(*2), 187-221.

Nakamura, T. (1999). Risk-aversion and the uncertainty–investment relationship: a note. *Journal of Economic Behavior & Organization, 38*(3), 357-363.

Narayanan, M.P. (1988). Debt versus equity under asymmetric information. *Journal of Financial and Quantitative Analysis, 23*(1), 39-51.

Psillaki, M., & Daskalakis, N. (2009). Are the determinants of capital structure country or firm specific? *Small business economics, 33*(3), 319-333.

Pastor, L., & Veronesi, P. (2011). Uncertainty about government policy and stock prices. *Meeting Papers, 86*.

Pastor, L., & Veronesi, P. (2012). Uncertainty about government policy and stock prices. *The journal of Finance, 67*(4), 1219-1264.

Rodrik, D. (1991). Policy uncertainty and private investment in developing countries. *Journal of Development Economics, 36*(2), 229-242.

Kang, W., Lee, K., & Ratti, R.A. (2014). Economic policy uncertainty and firm-level investment. *Journal of Macroeconomics, 39*, 42-53.

Wang, Y., Chen, C.R., & Huang, Y.S. (2014). Economic policy uncertainty and corporate investment: Evidence from China. *Pacific-Basin Finance Journal*, *26*, 227-243.

Zhang, G., Han, J., Pan, Z., & Huang, H. (2015). Economic policy uncertainty and capital structure choice: Evidence from China. *Economic Systems, 39*(3), 439-457.