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Government Support and Firm Profitability in Vietnam[1]

Abstract

Existing studies on the linkage between government subsidies and firm financial performance often use a mean regression approach and focus mainly on developed countries. To fill the gap, this study, for the first time, considers the impact of government support activities on the profitability of manufacturing SMEs in a developing country, Vietnam. Using an unbalanced panel dataset covering the period 2009–2015, government financial supports show an insignificant linkage with firm profitability when using OLS. However, a fixed-effect quantile approach reveals that government financial support is negatively related for firms with low profit but is positively related for firms in the high profitability percentile. Our findings also suggest that policymakers should focus on helping start-ups instead of ineffective, informal firms.

Keywords: *government support; profitability; quantile approach; SMEs*

JEL: *C21; C23; D22; D25*

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1. Introduction

The topic of the linkage between government support and firm performance has become a central focus of many researchers, and policymakers around the world. Theoretically, the effect of government support on firm performance has not been explained by one single theory. On the one hand, according to institutional theory (North 1990), government support can provide an additional source of funding, providing firms with more resources when sources are limited. Also, government subsidies enhance the legitimacy of firms. Gaining government support signals that a firm is trustworthy and therefore increases the likelihood of accessing resources from external stakeholders, such as banks and market-based financiers (Pergelova & Angulo-Ruiz 2014). When combined with a firm's own resources, government support can improve organizational capabilities and these in turn improve firm profitability.

On a cautionary note, a rent-seeking viewpoint indicates that government subsidies are not necessarily distributed effectively, because the granting of subsidies is not based on a firm's prospects or social contributions but on political connections or purposes (Bergström 2000). Corruption is widespread in the world, especially in developing countries (Vu, Tran, Nguyen, & Lim 2016). Hence, firms may have to pay informal costs to gain support from the government. Such biases in government support can increase distortions in the efficient allocation of resources among companies, and hence may result in the slow growth of profits or even the reduction of return on assets (Zhang, Li, Zhou, & Zhou 2014)

In the light of the above theoretical perspectives, many empirical studies have been conducted in various countries. The findings are inconclusive, however, making it hard to make general inferences. For example, several previous studies (e.g., Bergström 2000) indicate that government assistance results in a decrease in return on sales. However, Hansen, Rand, and Tarp (2009) show that government assistance helps firms improve their performance.

For methodology, the majority of existing studies use the averages approach. However, if firms are heterogeneous, the influence of government support may be different along different points on the outcome distribution. Also, Moshe Buchinsky (1994) claims that mean estimation has never been a satisfactory approach for carrying out a study on heterogeneous populations. Accordingly, the present study is expected to make several contributions to the literature. First, it draws upon a unique panel dataset to provide initial evidence at the firm level of the effect of varying types of government support on firm profitability in Vietnam. In addition, OLS, or the least absolute deviation approach, only considers the marginal effects of the variables on the conditional mean function of firm performance. Such approaches sidestep the potentially heterogeneous structure of the covariates in conditional distribution (Vu, Holmes, Lim, & Tran, 2014). Furthermore,

the estimates based on the quantile approach are robust to the presence of outliers (Kizhakethalackal, Mukherjee, & Alvi 2013). Hence, using fixed-effect quantile regression estimations, this research is expected to provide a detailed picture of the influence of government support on the entire distribution of firm profitability. Our results show that government financial support has a negative effect on the profitability of firms in the lowest quantile but a positive effect on firms in higher quantiles. Consequently, our results have the potential to move toward reconciling the ambiguity in the literature.

The remainder of the paper is in three parts. Section 2 displays data sources and methodology. Section 3 discusses the empirical results and the sensitivity analysis used to check the robustness of the results. The final section reveals the main findings and discusses some policy implications.

2. Data and methodology

2.1. Data source

This study utilizes two data sources. The first is from surveys of manufacturing SMEs in Vietnam conducted by the University of Copenhagen every two years, in 2009, 2011, 2013 and 2015. The surveys cover ten provinces and three regions (South, Central, and North). The surveys provide a wide range of indicators of firm characteristics, including ownership, industry, enterprise history, government support, firm profitability, and other information. This dataset made it possible to analyze the impact of government support on the financial performance of Vietnamese SMEs.

The second data source is provided by the Vietnam aggregated Provincial Competitiveness Index (PCI) survey. Aimed at assessing the institutional quality of provinces or local governments, this survey was conducted by the Vietnam Competitiveness Initiative in collaboration with the Vietnam Chamber of Commerce and Industry for the period 2009–2015.

Together, the two data sources provide a unique province- and firm-level panel dataset. A potential problem with time-variant data is that they are often expressed in current prices. Therefore, our data on current variables are deflated to 1994 prices using GDP deflators to avoid bias that might arise because of inflation. A statistical description of the main variables in our regression estimations is displayed in Table 1 below.[2]

[2] Using GDP deflators, data for current variables are deflated to 1994 prices to avoid biases that might arise because of inflation.

Table 1. Descriptive Statistics of Variables in the Model

Variables	Definitions	Mean	SD
Firm profitability in log	Real profits of firms in year t	4.58	1.46
Value added in log	Value added of firms in year t	5.07	1.61
Financial support	1 if firms got tax exemptions or reductions or loans with preferred interest from the government, 0 otherwise	0.15	0.35
Human resource training support	1 if firms got human resource training support from the government, 0 otherwise	0.012	0.11
Trade promotion support	1 if firms got trade promotion support from the government, 0 otherwise	0.009	0.09
Quality improvement support	1 if firms got quality improvement support from the government, 0 otherwise	0.004	0.06
Export	1 if firm has export activities; 0 otherwise (dummy variable)	0.05	0.22
Firm size in log	Total employment (number)	1.75	1.12
Firm age in log	The number of years since established (number)	2.50	0.68
Innovation	1 if firms introduced new products or had major improvements in existing products or introduced new production processes or technology, 0 otherwise (dummy variable)	0.36	0.48
Leverage	The ratio between total debt and total asset	0.08	0.20
Formal status of firms	1 if firms have a tax code, 0 otherwise	0.67	0.46
Political connectedness	1 if directors are a party member, 0 otherwise	0.08	0.27

Source: authors' calculation based on Vietnamese SMEs.

2.2. Methodology

The OLS estimation is a traditional way of considering the role of government support on firm performance (e.g., Hansen et al., 2009). However, the linkage between export participation and firm growth may be affected by unobserved factors. To deal with the problem, a common method is the use of fixed-effect panel data estimations (Wooldridge 2002). A fixed-effect (FE) regression with panel data can capture unobserved heterogeneity, where these unobservable factors are treated as time-invariant error components (Cameron & Trivedi 2009)

It is noted that the OLS or FE approach considers the conditional mean of the outcome distribution. However, the effect might be different across points on the outcome distribution of firms. As documented by Buchinsky (1994), "'On the average' has never been a satisfactory statement with which to conclude a study on heterogeneous populations." When the normality of residual distributions of each quantile is satisfied, the model of the q^{th} – quantile ($0< q<1$) of the conditional distribution of the dependent variable, with the X_i set of variables, is specified below:

$$Q_q(y_{it}/x_{it}) = a_q + GS_{it}.\beta_q + x_{it}.\delta_q + u_{it}.\alpha_q \quad (1)$$

where y_{it} is measured by two indicators to check robustness (the firm profitability or value added of firm i through time). As guided by the literature (e.g., Hansen et al., 2009), x_{it} is a vector of independent variables, including firm characteristics such as firm size, firm age, innovation, leverage, and formality of firms. The justification for including these variables in the model is as follows. It is expected that firms of greater size and more experience in business are more likely to achieve higher profitability. In addition, innovation is added as an independent variable based on the finding that there is a potential linkage between innovation activities and profitability growth (Coad, Segarra, & Teruel 2016).

In addition, leverage as an indication of the quality of capital structure of firms has been found to partly explain change in profitability (Ranjan & Raychaudhuri 2011; Tsou, Liu, Hammitt, & Wang 2008). Accordingly, this index also is added to the model.

Furthermore, various characteristics of business environment characteristics at provincial levels as well as the formal status of firms might have varying effects on the relationship between government support and profitability (Hansen et al., 2009; Vu et al., 2016). Consequently, these variables also were controlled for in the model.

Finally, government support (GS) is the main interest variable measured by different types of government support, including financial support, human training support, trade promotion supports, and quality improvement support. u_{it} represents unobservable factors The estimation of equation (1) of the q^{th} quantile regression is to minimize the absolute residual value, with the objective function as follows:

$$Q(\beta_q) = \min_{\beta} \sum_{i=1}^{n} \left[\left| y_i - x_i \beta_q \right| \right] = \min \left[\sum_{i: y_{it} \geq x_i \beta} q \,|\, y_i - x_i \beta_q \,| + \sum_{i: y_i < x_i \beta} (1-q) \,|\, y_i - x_i \beta_q \,| \right] \quad (2)$$

The relationship between firm profitability and independent covariates is provided with more detail through the QR estimator. The problem of capturing unobserved factors is discussed through a fixed-effects quantile model (Canay 2011). According to Canay, we conduct an estimation procedure comprising two stages with 2000 replicated bootstraps.

3. Empirical results and discussion

As shown by column 1 of Table 2, a statistically insignificant difference in profitability between firms with and without government support is recorded. These results do not change much in quality when using fixed-effect estimation, controlling for unobserved heterogeneity. However, OLS regression estimates the conditional mean of the outcome distribution that may cloud the role of government support activities in firm profitability at different points, since this linkage may be heterogeneous across the residual profitability distribution. Hence, the linkage between government support activities and firm profitability is re-investigated, using the quantile treatment approach.

Table 2. Linkage Between Government Support and Firm Profitability

VARIABLES	OLS	FE	Fixed effects panel quantile regression				
			q10	q25	q50	q75	q90
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financial support	0.0327	0.0414	–0.0574*	–0.0265	0.0414**	0.0935**	0.1407**
	(0.028)	(0.033)	(0.028)	(0.023)	(0.000)	(0.029)	(0.041)
Human training support	–0.1497+	–0.0890	0.0726	–0.0963	–0.0890**	–0.1414*	–0.1976
	(0.088)	(0.112)	(0.121)	(0.077)	(0.010)	(0.055)	(0.174)
Trade promotion support	–0.2592	–0.0778	–0.1328	0.0463	–0.0778**	–0.2012+	0.0455
	(0.158)	(0.136)	(0.205)	(0.096)	(0.013)	(0.113)	(0.239)
Quality improvement support	0.0376	0.0044	0.2983	0.0513	0.0044	–0.0000	–0.2362
	(0.212)	(0.207)	(0.260)	(0.144)	(0.019)	(0.137)	(0.235)
Export	0.1939**	0.1572	0.1822**	0.1608**	0.1572**	0.1462**	0.2292**
	(0.057)	(0.116)	(0.062)	(0.053)	(0.000)	(0.047)	(0.072)
Firm size in log	0.7773**	0.5219**	0.4714**	0.4992**	0.5219**	0.5349**	0.5529**
	(0.014)	(0.028)	(0.017)	(0.012)	(0.000)	(0.010)	(0.016)
Firm age in log	–0.0626**	0.0122	–0.0380*	–0.0290**	0.0122**	0.0599**	0.0575**
	(0.014)	(0.037)	(0.016)	(0.010)	(0.000)	(0.012)	(0.019)
Innovation	0.0847**	0.0706**	0.0617*	0.0336*	0.0706**	0.0930**	0.0904**
	(0.021)	(0.023)	(0.027)	(0.017)	(0.000)	(0.016)	(0.028)
Leverage	0.3801**	0.2582**	0.0505	0.2224**	0.2582**	0.2880**	0.2932**
	(0.071)	(0.081)	(0.076)	(0.065)	(0.000)	(0.041)	(0.094)
Formal status of firms	0.2705**	0.1176*	0.1112**	0.0635**	0.1176**	0.1677**	0.1208**
	(0.021)	(0.046)	(0.026)	(0.019)	(0.000)	(0.019)	(0.030)
Political connectedness	–0.0460	0.0750	0.0750+	0.0611*	0.0750**	0.0848**	0.0419
	(0.035)	(0.069)	(0.040)	(0.030)	(0.000)	(0.029)	(0.049)

VARIABLES	OLS	FE	Fixed effects panel quantile regression				
			q10	q25	q50	q75	q90
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	3.4757**	3.9900**	3.7024**	4.0687**	3.9900**	3.9618**	4.3574**
	(0.057)	(0.134)	(0.075)	(0.038)	(0.000)	(0.046)	(0.071)
Observations	7,736	7,736	7,736	7,736	7,736	7,736	7,736
R-squared	0.705	0.554					
Number of panels		3,574					

*Notes: Robust standard errors in parentheses** p<0.01, * p<0.05, + p<0.1. The model controls for year dummies, urban dummy, medium sector dummy, and legal dummy. The number of observations is 7,736.*

Source: authors' calculation based on Vietnamese SMEs.

Interestingly, as shown by column 3 of Table 2 and the graph in Figure 1, a different picture emerges when using quantile regression. The effect is heterogeneous across the quantiles considered. However, a negative linkage is observed between financial support for low-profit enterprises in the 10th percentile, but the linkage is positive and significant for firms with total profitability per year above the median (e.g., in the 70th and 80th percentiles). These results suggest that a mean regression approach has obscured the role of government financial support in improving firm profitability at different points of outcome distribution. The results may be explained by the fact that corruption is widespread in Vietnam, and paying large, frequent bribes to public officials remains a major challenge when doing business (Vu et al., 2016). Hence, the findings here may suggest that the benefit of support for firms in the 10th percentile may be absorbed by the informal costs of support-generating activities.[3] Our results have thus moved toward reconciling the findings of previous studies, as reported in the literature.

For other supports, such as human training support, the influence of government assistance is insignificant or impacts negatively on firm profitability at some percentiles. Such results indicate that the supporting roles of government in these aspects are not effective in boosting firm profitability. As explained by Tran, Grafton, and Kompas (2008), Vietnamese government aid may not be evaluated on firms' performance criteria but based on political connections. In addition, corruption and bribery remain prevalent (Vu et al., 2016). As a result, these may limit the benefits of government support in these aspects.

[3] To explore this issue, we ran a specification in which the log of profit is a dependent variable regressed on an interaction variable between corruption and financial support and independent covariates, as in Model 1. Using this formulation, a negative and smaller effect of the interaction variable (financial support*corruption) on the profitability of firms in the 10th percentile was found. These results are available on request.

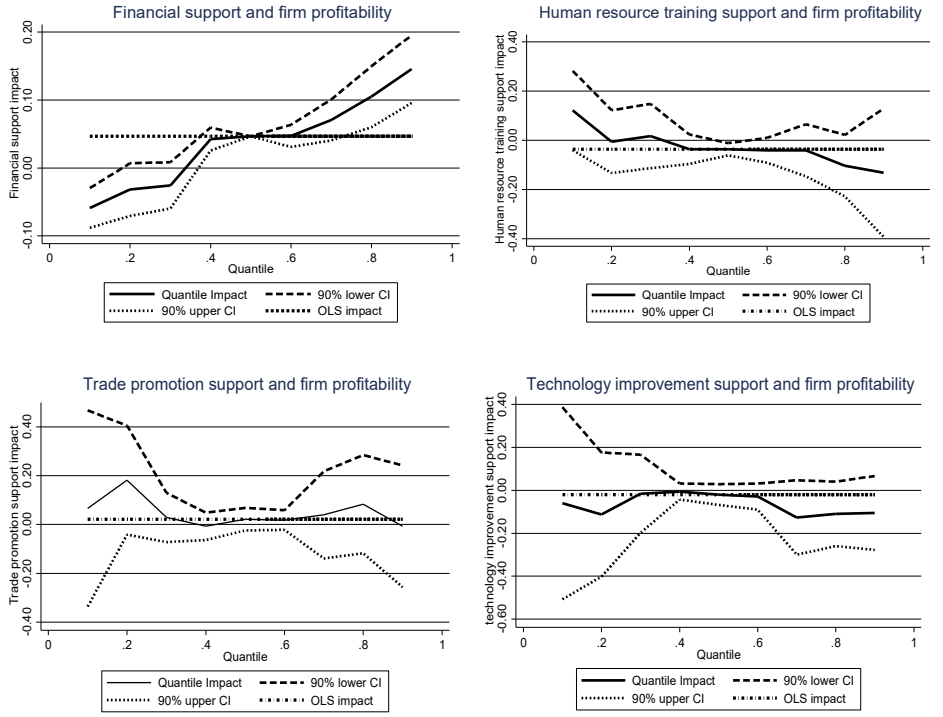

Figure 1. Slope and 90% coefficient intervals for quantile treatment regression

Source: authors' calculation based on Vietnamese SMEs.

Moving on to the firm characteristics variable, Table 2 shows that the effect of firm age and size are reflected clearly in the regression results. Larger firms enjoy higher profit growth. However, older firms have a negative association with firm profit at lower percentiles. Specifically, each year in business is associated with a decrease of 0.04% in firm profit growth, whereas a 1% increase in size is accompanied by nearly 5% growth in profit, keeping other factors constant. A positive association between firm size and firm profit growth contrasts with the findings of Fryges and Wagner (2010). However, this result may be attributed to the fact that larger-sized firms may raise funds more easily, have economies of scale, and are in a better position to recruit qualified human resources than their smaller counterparts (Esteve-Pérez, Mánez-Castillejo, & Sanchis-Llopis 2008). A negative linkage between age and firm profit growth is in line with the majority of the previous empirical results and reflects the fact that when firms become mature, their growth seems to slow down (Nguyen & van Dijk 2012)

In addition to the firm characteristics covariates, the role of innovation and leverage in firm profit growth shows the same pattern. Column 1 of Table 2 indicates that there is a statistically significant difference in profit growth between innovators and non-innovators, and that firms with higher leverage have a higher

profit growth than their counterparts. These results imply that firms with high leverage often forced directors to pursue the strategy of profit maximization, which is in line with the findings of Vu et al. (2016)

As expected, formalization has a positive and statistically significant impact on firm profit growth. As reported by column 2 of Table 2, formal firms' profits rise approximately 12% higher in comparison with informal firms', keeping other factors constant. It can be argued that becoming formal leads to increased access to credit, greater opportunities to engage with large firms and the government, or greater access to training and support programmes (Joshi, Prichard, & Heady, 2013). As a result, there is a positive linkage between formalization and firm profitability. The results are in line with the majority of previous studies (e.g., McKenzie & Sakho 2008; Rand & Torm 2012).

We also verify our main findings by a series of robustness checks. First, Pergelova and Angulo-Ruiz (2014) indicate that the benefits of government support on firm performance depend on market conditions and the business environment in which firms operate. Hence, in a further specification, we add a PCI variable, measuring institutional quality at provincial levels. In addition, firm profitability is replaced by added value in all models. Furthermore, we drop innovation, the formal status of firms, leverage, and political connections because of the possible endogeneity of these variables. However, qualitatively similar results were obtained in all cases, and are available on request.

To provide additional insight into the linkage between government support and firm profitability, this study explores several further scenarios. First, the linkage between government support and firm profitability is focused on new firms, based on the view that government support can have varying effects through various stages of a firm's development. Interestingly, Table 4 shows that the majority of supports (e.g., financial support) have a positive effect for all start-ups, regardless of percentile distribution. The results support the views of RBV. New enterprises are often small-scale and suffer from financial constraints. Consequently, resources support, especially financial resources from the government, plays an important role in the development of firms (Pergelova & Angulo-Ruiz 2014)

Finally, the Vietnamese SME data consist mainly of household firms, many of which are informal (not registered). Government assistance programs depend on whether or not the firm is a formal one (Loayza 1997). Hence, the linkage between government support and firm profitability is examined further in each sub-group, taking into account the formality of firms. Table 3 shows that, as one would expect, government assistance is beneficial for formal firms with high profitability but is negative for informal firms with low profitability. The reason may be that those engaged in illegal activities, such as tax evasion, which handicaps informal firms, are able to take full advantage of government support (Loayza 1997*).* In addition, the absence of account books and other required documents also hinder informal firms from accessing and using these forms of support effectively (CIEM, 2010).

Table 3. The linkage between Government Support and Firm Profitability by start-up firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**lnprofit**	**lnprofit**	**q10**	**q25**	**q50**	**q75**	**q90**
Financial support	0.0729	0.1331+	0.1714**	0.1331**	0.1331**	0.1326**	0.1997**
	(0.047)	(0.076)	(0.059)	(0.009)	(0.000)	(0.011)	(0.057)
Human training support	–0.1262	0.1823	0.0949	0.1722**	0.1823**	0.1732*	0.3595+
	(0.137)	(0.234)	(0.180)	(0.066)	(0.013)	(0.080)	(0.196)
Trade promotion support	–0.5718**	–0.2882	–0.2645+	–0.3658**	–0.2882**	–0.2783**	–0.3450*
	(0.214)	(0.184)	(0.145)	(0.082)	(0.029)	(0.079)	(0.170)
Quality improvement support	0.0692	0.1199	0.3900*	0.1975*	0.1199**	0.0743	–0.0886
	(0.320)	(0.243)	(0.163)	(0.079)	(0.031)	(0.068)	(0.166)
Export	0.1421+	0.1517	0.0220	0.0861+	0.1517**	0.2015**	0.2786*
	(0.086)	(0.272)	(0.108)	(0.046)	(0.000)	(0.052)	(0.109)
Firm size in log	0.8052**	0.5750**	0.5627**	0.5750**	0.5750**	0.5744**	0.5760**
	(0.024)	(0.064)	(0.026)	(0.003)	(0.000)	(0.007)	(0.032)
Firm age in log	0.0432	–0.0173	0.0150	–0.0173+	–0.0173**	–0.0210	–0.0799
	(0.034)	(0.096)	(0.057)	(0.010)	(0.000)	(0.018)	(0.058)
Innovation	0.0961**	0.0485	0.0533	0.0485**	0.0485**	0.0617**	–0.0047
	(0.034)	(0.048)	(0.044)	(0.005)	(0.000)	(0.015)	(0.042)
Leverage	0.2755**	0.1844	–0.0111	0.1844**	0.1844**	0.2011**	0.3133**
	(0.102)	(0.150)	(0.154)	(0.026)	(0.000)	(0.042)	(0.121)
Formal status of firms	0.1306**	0.0430	0.0553	0.0430**	0.0430**	0.0912**	0.0636
	(0.040)	(0.128)	(0.056)	(0.010)	(0.000)	(0.023)	(0.058)
Political connectedness	–0.1022	0.0079	0.0971	0.0059	0.0079**	0.0024	0.0667
	(0.072)	(0.131)	(0.088)	(0.036)	(0.000)	(0.034)	(0.076)
Constant	3.2392**	4.1175**	3.5979**	4.1175**	4.1175**	4.1288**	4.7201**
	(0.095)	(0.324)	(0.154)	(0.038)	(0.000)	(0.063)	(0.173)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**lnprofit**	**lnprofit**	**q10**	**q25**	**q50**	**q75**	**q90**
Observations	2,955	2,955	2,955	2,955	2,955	2,955	2,955
R-squared	0.698	0.537					
Number of panels		1,856					

*Notes: Robust standard errors in parentheses** p<0.01, * p<0.05, + p<0.1. The model controls for year dummies, urban dummy, medium sector dummy, and legal dummy.*

Source: authors' calculation based on Vietnamese SMEs.

Table 4. The linkage between Government Support and Firm Profitability Decomposed by the Formality/Informality of Firms

VARIABLES	q25	q50	q75	q25	q50	q75
	Formal firms			Informal firms		
	(1)	(2)	(3)	(4)	(5)	(6)
Financial support	0.0204	0.0826**	0.1264**	−0.0685*	−0.0382**	−0.0301
	(0.032)	(0.000)	(0.038)	(0.035)	(0.000)	(0.029)
Human training support	−0.0427	−0.0348*	−0.1106	−0.2380*	−0.3083**	−0.2060
	(0.072)	(0.014)	(0.103)	(0.111)	(0.049)	(0.130)
Trade promotion support	0.0141	−0.0816**	−0.1070	0.1272	0.1400+	0.0759
	(0.100)	(0.020)	(0.130)	(0.120)	(0.077)	(0.066)
Quality improvement support	−0.0857	−0.0699*	−0.0829	0.1470**	−0.0176**	−0.1776**
	(0.126)	(0.028)	(0.173)	(0.028)	(0.000)	(0.028)
Export	0.1028*	0.1178**	0.1321**	0.2941**	0.2763**	0.2403**
	(0.050)	(0.000)	(0.044)	(0.067)	(0.021)	(0.056)
Firm size in log	0.5281**	0.5459**	0.5571**	0.4660**	0.4660**	0.4417**
	(0.015)	(0.000)	(0.014)	(0.010)	(0.000)	(0.013)
Firm age in log	−0.0076	0.0351**	0.0710**	−0.0156**	−0.0156**	−0.0073
	(0.016)	(0.000)	(0.017)	(0.005)	(0.000)	(0.007)
Innovation	0.0726**	0.1102**	0.1380**	−0.0647**	−0.0647**	−0.0518**
	(0.022)	(0.000)	(0.021)	(0.013)	(0.000)	(0.020)
Leverage	0.2406*	0.2902**	0.3259**	0.1251**	0.1251**	0.1374**
	(0.101)	(0.000)	(0.042)	(0.023)	(0.000)	(0.031)
Political connectedness	0.1418**	0.1621**	0.1704**	−0.1526**	−0.1526**	−0.1501**
	(0.035)	(0.000)	(0.037)	(0.025)	(0.002)	(0.037)
Constant	4.1254**	4.1604**	4.2882**	3.4736**	3.3901**	3.3083**
	(0.064)	(0.000)	(0.060)	(0.077)	(0.021)	(0.060)
Observations	5,212	5,212	5,212	2,524	2,524	2,524

*Notes: Robust standard errors in parentheses** p<0.01, * p<0.05, + p<0.1. The model controls for year dummies, urban dummy, medium sector dummy, and legal dummy.*

Source: authors' calculation based on Vietnamese SMEs.

4. Conclusion

This study is the first to examine the role of types of government support on SME profitability in Vietnam. Based on the empirical results from the micro-econometric analysis, several main findings are as below.

Regarding traditional firm characteristics factors, the empirical results are generally consistent with other international empirical studies. For example, larger firms have a higher probability of survival and growth than their counterparts. In addition, firm age has a negative association with profit growth at low percentiles. Furthermore, it is not surprising that innovators who have flexible policies are able to respond quickly to market demand and achieve greater profitability than non-innovators. Furthermore, the study finds evidence of a difference in profit growth between formal and informal firms.

With regard to the connection between government support and firm profit growth, various types of government support have different impacts on firm profitability. Interestingly, estimates of the ordinary least squares (OLS) indicate that there is no linkage between government financial support and firm profitability. However, the estimate of effects using the fixed effects quantile regression method reveals that government financial support has a negative association with the profitability of firms in the low quantile but a positive association for firms in higher quantiles. This result suggests that the role of government support on firm profitability can be obscured when using a mean regression approach.

Regarding policy implications, changes in the financial government supports' status of firms are accompanied by an improvement in profit growth of firms. This suggests that financially supporting policies of government (e.g., tax exemptions or loans with low interest rates) could be effective since they may help firms improve the growth in profitability.

Vietnam is considered a successful example of a transitional economy, shifting from a centrally planned economy to a market-oriented one. Specifically, the economy has achieved great progress in economic growth with an annual average GDP growth rate of 6.7% during the 1986–2013 period (Nguyen & Tran 2014). In addition, the GDP per capita growth of low and middle-income countries was always lower than that in Vietnam during the period 1988–2006 (Markussen et al., 2012). The high success in economic growth and development has helped Vietnam to successfully reduce poverty. According to the World Bank (2012) and Nguyen, Tran, and Vu (2017), the poverty rate in Vietnam fell from nearly 60% in the early 1990s to nearly 17% in 2012. Therefore, the government policy in Vietnam can be a good example for other transitional economies with similar characteristics and conditions.

APPENDICES

Appendix 1: List of industries in terms of the level of technology.

Group 1: Low technology
D15: Food and beverages
D16: Cigarettes and tobacco
D17: Textile products
D18: Wearing apparel, dressing and dyeing of fur
D19: Leather and products of leather; leather substitutes; footwear
D20: Wood and wood products, excluding furniture
D21: Paper and paper products
D22: Printing, publishing, and reproduction of recorded media
D23: Coke and refined petroleum products and nuclear fuel
D36: Furniture and other products not classified elsewhere
D37: Recycles products

Group 2: Medium technology
D24: Chemicals and chemical products
D25: Rubber and plastic products
D26: Other non-metallic mineral products
D27: Iron, steel and non-ferrous metal basic industries
D28: Fabricated metal products, except machinery and equipment

Group 3: High technology
D29: Machinery and equipment
D30: Computer and office equipment
D31: Electrical machinery apparatus, appliances, and supplies
D32: Radios, television and telecommunication devices
D33: Medical equipment, optical instruments
D34: Motor vehicles and trailers
D35: Other transport equipment

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Streszczenie

WSPARCIE RZĄDOWE A RENTOWNOŚĆ PRZEDSIĘBIORSTW W WIETNAMIE

Istniejące badania dotyczące związku między subwencjami rządowymi a wynikami finansowymi przedsiębiorstw często wykorzystują średnie podejście oparte na analizie regresji i koncentrują się głównie na krajach rozwiniętych. Aby wypełnić tę lukę, badanie to po raz pierwszy bierze pod uwagę wpływ działań wspierających rząd na opłacalność MŚP produkcyjnych w kraju rozwijającym się, jakim jest Wietnam. Wykorzystując niezbilansowany panel danych, obejmujący okres 2009–2015, wykazano, że rządowe wsparcie finansowe ma niewielki wpływ na rentowność jeśli zastosuje się zwykłą metodę najmniejszych kwadratów (OLS). Jednak metoda regresji kwantylowej z efektami stałymi pokazuje, że wsparcie finansowe ma negatywny wpływ na rentowność w przypadku firm o niskich zyskach, ale wpływa pozytywnie w przypadku firm o wysokim percentylu rentowności. Wyniki przeprowadzonych badań sugerują również, że decydenci powinni skupić się na wspieraniu start-upów, a nie nieefektywnych firm niezarejestrowanych.

***Słowa kluczowe**: wsparcie rządowe; rentowność; metoda regresji kwantylowej; MŚP*