

Moderation of Business Environment on Managerial Accounting and Firm Performance

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Abstract: *The key aim of the current research is to explore the link between the adoption of managerial accounting in business and firm performance. Importantly, it tries to investigate the moderation of environmental uncertainty on the influence of management accounting on firm performance. The data was collected from 332 public firms listed on the Vietnamese Stock Exchanges. The findings confirm that the implementation of managerial accounting in organizations was statistically evidenced as a determinant of firm performance. The moderation of environmental uncertainty in the association of the implementation of managerial accounting in business with firm performance was statistically supported. The firms facing high environmental uncertainty will have a tendency to adopt more management accounting to achieve the best possible organizational performance. This research is expected helpful to executives by offering insight into the complex links among environmental uncertainty, the adoption of managerial accounting in business and organizational performance.*

Keywords: *Managerial accounting, Business environment, Firm performance*

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I. Introduction

Research on empirical management accounting has been the key approach to evaluate the extent to which executives are likely successful with their management accounting in different environmental conditions (Kihn 2010). This scholar also emphasizes that, although various forms of empirical management accounting research have been conducted and a great number of topics have been analyzed, it is impossible here to recognize them all. In addition, the environment facing an organization will identify which managerial system fits that organization. Business environment within an organization is extremely imperative for managing business activities, because a change in the business environment will force the organization to make needed changes to fit it with the change (Ajayi 2016). Business environment is regarded as one of the key contingent variables facing an organization (Galbraith 1973). Furthermore, anchored on contingency theory, Galbraith (2002) refers to business environment as the factor that creates contingent conditions on the organization. The perspective of contingency theory highlights that, there is no best way to run an organization and administrative ways are not equally useful.

Previous studies offer the same standpoint and state no managerial system is “best” for all organizational types (Waterhouse and Tiessen 1978; Fisher 1995). In a study by Galbraith (1974), the contingency theory of managerial accounting is employed to explain the role of the contextual variables in affecting the use of managerial accounting. Furthermore, the contingency theory of managerial accounting places an importance of contextual effects on accounting information and firm performance (Harash et al. 2014). Management accounting is a generally recognized essential administrative instrument, which offers executives with useful information for better business decision-making and maintains effective management over organizational resources (Johnson and Kaplan 1987). Management accounting is necessary to organizations; because it provides appropriate business information to facilitate the management of business activities. Based on the contingency theory of managerial accounting, there is no particular managerial accounting practice satisfactory to all organizations or any practice which is satisfactory in all environmental contexts in a single organization (Otley 2016).

To cope with changes in the business environment, new instruments have been introduced to integrate into management accounting and turned its function to more sophistication of using better organizational resources to create more value for the organization (Fullerton and McWatters 2001; Otley 1999). According to the contingency theory of management accounting, a fit between environmental contingencies and management accounting practice of the organization is a causation of improved organizational performance (Donaldson 2001; Venkatraman 1989; Volberda 2012). Management accounting in organizations is determined by various environmental contingencies. External environmental contingencies are uncertain and ever-changing and also

generate problems for organizations. Organizations need to be suitably responsive to the environmental change to survive and obtain the best possible performance in the extremely dynamic business environment (Wang et al. 2012). Management accounting emphasizes systematic aspects of an organization to deal with managerial problems and also pays special attention to external environmental uncertainty in business activities. Grounded on (Wang et al. 2012), it can be suggested that management accounting is dependent on changes in environmental conditions to achieve the highest organizational performance. It is consequently hypothesized that changes in business environment can moderate managerial accounting and organizational performance.

However, to the best of the research's knowledge, existing researchers have not conducted sufficient research on the moderating role on the link between management accounting and firm performance. Organizational environments are changing rapidly in the globe, particularly in Asia, which is extremely susceptible to business environment uncertainty (Wang and Huynh 2014a). However Asia is the most dynamic and fast region and lays a significant role towards an international solution to sustainable economic development. In spite of increasing interest in management accounting, there is comparatively short of organized literature on the adoption of managerial accounting in Vietnam (Ngoc Phi Anh et al. 2011). Vietnam is selected for the current study, due to its most growing nation in the world in general and in Asia in particular. In addition, Vietnam is expected as a participant member of the international trade, making larger contributions to the global economic development. This study tries to evaluate the causal association from managerial accounting to organizational effectiveness, and then especially investigate the moderating role of business environment uncertainty on management accounting and firm performance. The outcomes are expected to provide researchers and executives with a better understanding of the complicated link among business environment uncertainty, management accounting and firm performance.

II. The Managerial Accounting - Firm Performance Link

Research on accounting has confirmed the use of managerial accounting within a firm as one of the key driving forces of high organizational performance (Yulius 2010; Williams and Seaman 2002; Ajibolade et al. 2010; Wang and Huynh 2013; Mohamed and Jones 2014; Wang and Huynh 2014a; Wang and Huynh 2014b; Mia and Clarke 1999). Management accounting is essential for organizations, because it provides suitable business information to facilitate the management of expenses and the enhancement in organizational efficiency (Kaplan 1983; Johnson and Kaplan 1987). Moreover, Lucas (1997) stresses that, to maintain and thrive in the dynamic business environment, organizations had better accept as much managerial accounting as possible. Advanced managerial accounting had better be paid more attention. That research also concludes that traditional managerial accounting, financially oriented, is not still considered as so useful instruments to support enough business information for the management of organizational business activities in the existing dynamic environment of business (Kaplan 1983; Lucas 1997). Besides traditional management accounting, organizations should select more advanced management accounting. Advanced management accounting is believed to satisfy customers' and other stakeholders' demands.

According to Kaplan et al. (1998), management accounting is a controlling tool used to facilitate decision-making by gathering, handing out and conveying information helping executives plan, systematize, run and evaluate business activities and firm performance. As such, management accounting is likely to enhance customer satisfaction, and eventually organizational performance. Some researchers have evaluated firm performance using financial and non-financial indices. Firm performance is assessed on actual outcomes that the firm has attained its objectives and against those of its industry-average (Droge et al., 2003; Wang and Huynh 2014a; Wang and Huynh 2014b; Hudson et al., 2001; Kaplan and Norton 2007).

Mia and Clarke (1999) claimed that firm performance could be regarded as the extent to which the firm has been successful in obtaining high competitive advantages. These researchers propose a positive causal link from the use of managerial accounting in business to organizational effectiveness. A high using level of managerial accounting will assist managers in improving organizational performance. The function of management accounting in boosting organizational effectiveness has been statistically documented in a study of Williams and Seaman (2002). Several studies have proposed that organizations with high adoption of management accounting enjoy a superior competitive advantage over those with low adoption (Yulius 2010; Ajibolade et al. 2010). Similarly, Wang and Huynh (2013) establish a positive connection between the adopting level of managerial accounting and organizational effectiveness and conclude that the high utilization of managerial accounting information can lead to improving organizational effectiveness. Firms adopting more management accounting practices outperform in their industry due to their competence (Wang and Huynh 2014a; Wang and Huynh 2014b). Achieving core competence faster than rivals and create superior firm value is critical for a firm's survival. In addition, Mohamed and Jones (2014) assert the role of managerial accounting in firms and suggest managerial accounting is enhanced to ensure competitive advantage and custom satisfaction. This research hypothesizes that organizational application of managerial accounting can enhance organizational performance and the following hypothesis could be suggested.

H1: The adoption of management accounting in business can influence firm performance

III. The Role Of Business Environment

Information systems theory, which discusses how users adopt and choose a technology, is employed and adapted to partially describe the proposed model in this research (Davis 1989). This theory analyzes the causal association between external variables and the actual usage behavior of a system, where external variables determine the users' behavior. It is therefore useful in the management accounting context for predicting and assessing executives' adoption of management accounting in business that will improve organizational performance. The contingency theory of management accounting, which relates to environmental conditions in the adoption of management accounting, is also applied to explain the proposed model. The environmental context facing an organization will stipulate which management accounting practices are proper for business (Fisher 1995; Waterhouse and Tiessen 1978). Grounded on the contingency theory of managerial accounting, management accounting seems to hold an extremely vital role in business (Hayes 1977; Gordon and Miller 1976). Managerial accounting appears conditional on the environmental contingencies facing organizational activities. Environmental contingencies are referred to as main contextual conditions, relevant to competitors, customers, suppliers, technologies and social-political issues (Duncan 1972). For Miles et al. (1978), the uncertainty of business environment is referred to as the predictability of environmental conditions of an organization. Grounded on Miller (1993), business environment is classified into six aspects: (1) technology, (2) economy, (3) resources and services used by the company, (4) product market and demand, (5) competition and (6) government policies.

The perspectives based on the contingency theory of management accounting allege that executives encountering a high change in business environment are likely to adopt which management accounting practices are most appropriate in order to help their organizations to survive and grow (Harash et al. 2014). To further support for this standpoint, Wierenga and Ophuis (1997) argue that higher uncertainty of business environment can make managers pay more attention to accounting information, and so have more tendencies to adopt accounting information systems in business. Other studies have also discussed and explored the causal link from business environment and management accounting. External environmental contingencies positively impact the use of managerial accounting in a firm (Haldma and Laats 2002). Moreover, Masrek (2009) confirms a positive causal link from the uncertainty of business environment and the utilization of management information systems. Statistical evidence on a positive linkage between business environments and the application of managerial accounting in an organization is supported (Ibadin and Imoisili 2010; Ajibolade et al. 2010). The previously analyzed reasoning results in a causal link from the uncertainty of business environment to the use of managerial accounting in business.

Institutional theory analyzes and assesses the relationship between an organization and its operating environments (Zucker 1987). The notion of this theory confirms that firm performance is partially determined by the uncertainty of external environments (Scott 2001). The influence of the uncertainty of business environment on firm performance has been also investigated by some previous studies. Choe (2003) proposes that firm performance is improved by executives' timely and suitable responses to changes in business environments. Likewise, Mia and Clarke (1999) emphasize that, organizational effectiveness is deemed as a consequence of a highly uncertain level of business environment. Managers running organizations in high uncertain business environments need to react timely to environmental changes and are hence more alert to business activities. This will help to obtain better firm performance (Ajibolade et al. 2010). Given that firms and their business environments are interacted, firms attempt to understand and respond wisely to changes in business environments in order to achieve competitive advantages over their rivals (Adeoye and Elegunde 2012). Furthermore, Adeoye and Elegunde (2012) provide statistical evidence on a positive influence of environmental uncertainty on firm performance.

Besides, based on Abdallah and Persson (2014), the relationship between the uncertainty of business environments and firm performance is positive and the uncertainty of business environments can enable firms to fit themselves to the changes in business environments to maintain and enhance their firm performance. Vo (2015) exploring how business environments impact on firm performance, documents that external business environments within a firm may contribute extremely to the firm's competitive capability and generate best firm performance. Therefore, a positive effect of environmental uncertainty on firm performance can be conjectured. In addition, environmental uncertainty is found by Priem et al. (1995) as a moderator on the relationship between firm performance and the strategic decision process. Phillips (1999) employs a contingency approach to investigate the role of business environments on firm performance. This scholar finds out that the link between strategic planning and firm performance is moderated by environmental conditions. Furthermore, Wang et al. (2012), drawing on the system perspective, argue that changes in business environments affect the design of a total quality management system in business, leading to best possible firm performance. Therefore, the uncertainty of business environments is evidenced as a moderator on business environments and firm performance (Wang et al. 2012). Overall, this research theorizes the following moderating hypothesis.

H2: The link between the adoption of managerial accounting in business and firm performance can be moderated by the uncertainty of business environment

IV. Methodology

Sample

A population for this research was the 1142 firms listed on the Vietnamese Stock Exchanges. A simple random sampling survey was conducted in the fourth quarter of 2016. The questionnaires were in-person interviewed with executives involved in accounting in the selected firms. Out of the 400 conducted questionnaires, only 332 provided adequately required information for analyses. This number meets the requirements for the sample size stipulated by Hair et al. (2010).

Construct measurement

Adoption of management accounting in business (AMA) was measured applying a scale with five points. The six items were used to construct this variable: (1) balanced scorecard (AMA1), (2) total quality management (AMA2), activity based costing (AMA3), variance analysis (AMA4), cost volume profit analysis (AMA5) and (6) traditional budgeting (AMA6), adapted from previous research (Lucas 1997). Uncertainty of business environment (UBE) was evaluated on a five-point scale ranging from (1) always to (5) very difficult to be predicted. The five items were employed for this variable: (1) services and resources used by the firm- UBE1, (2) product market and demand- UBE2, (3) competition- UBE3, 4) economy- UBE4 and (5) technology- UBE5, adapted from Miller (1993).

Firm performance (FIP) was according to both non-financial performance and financial performance. Non-financial performance was calculated with the three items: (3) quality in products or services- FIP3, (4) innovativeness- FIP4 and customer satisfaction- FIP5, adapted from Kaplan and Norton (2007) and Hudson et al. (2001). Financial performance was measured on the two items: (1) return on equity- FIP1 and return on asset- FIP2, adapted from Droge et al. (2003). A five-point scale from 1.no growth, 2.a little growth, 3.average growth, 4.fast growth to 5.very fast growth was applied. These items were compared to the sector mean during the last year.

V. Data Analyses

This research employs reliability analysis and exploratory factor analysis to verify the validity and reliability of the constructs. To discover the causal links, this research performs multiple regression analyses. The moderating effect was tested with hierarchical regression analysis.

VI. Empirical Findings

Table 1: Reliability analysis

Constructs	Item-total correlations	Alphas
Adoption of management accounting (AMA)		0.875
Balanced scorecard (AMA1)	0.791	
Total quality management (AMA2)	0.653	
Activity based costing (AMA3)	0.620	
Variance analysis (AMA4)	0.664	
Cost volume profit analysis (AMA5)	0.674	
Traditional budgeting (AMA6)	0.676	
Uncertainty of business environment (UBE)		0.871
Resources and services used- UBE1	0.719	
Product market and demand- UBE2	0.624	
Competition- UBE3	0.654	
Economy- UBE4	0.730	
Technology- UBE5	0.759	
Firm performance (FIP)		0.899
Return on equity- FIP1	0.764	
Return on asset- FIP2	0.706	
Quality in products or services- FIP3	0.777	
Innovativeness- FIP4	0.780	
Customer satisfaction- FIP5	0.726	

Table 1 displays the results of reliability analysis. The reliability analysis was applied to check the consistency of dimensions in their own constructs. The item-total correlations vary from 0.620 to 0.791 for Adoption of management accounting (AMA), from 0.624 to 0.759 for Uncertainty of business environment (UBE), from 0.706 to 0.780 for Firm performance (FIP). These figures all exceed 0.5, the lowest threshold suggested by Hair et al. (2010). Furthermore, The Alphas range from 0.871 through 0.899 that are all in excess of 0.7, the minimum preferable level stipulated by Hair et al. (2010). It is hence concluded that the items in the

research model are internally consistent with their own scales. All 16 items are consistent with their own three constructs of AMA, UBE and FIP and reliable for next analyses. These items were undergone through a exploratory factor analysis to check scale validity.

The results of the exploratory factor analysis are shown in Table 2. This analysis was employed to assess the validity of constructs. The validity of convergent was checked reliant on factor loadings which should be more than 0.4 (Hair et al. 2010). The validity of discriminant was evaluated based on cross-factor loadings which should be greater than the 0.3 value proposed by Hair et al. (2010). All factor loadings are well greater than the 0.4 level. All cross-factor loadings are in excess of the 0.3 value. KMO achieves a value of 0.927, more than the 0.7 limit proposed by Hair et al. (2010). The communalities all exceed the smallest level of 0.5 (Hair et al. 2010). The analyses were significant at the 1% level. These results reasonably assure that all the items in the research model meet the validity of construct. Therefore, the three composite constructs of AMA, UBE and FIP were calculated by averaging their own items. These constructs continue through regression analyses.

The causal link from management accounting to firm performance in the research model was investigated by employing a regression analysis. The findings were exhibited in Tables 3 and 4. The results indicate that the adoption of management accounting in business and firm performance are interrelated. The adoption of management accounting in business statistically affects firm performance at a 1% significance level with a 0.572 affecting coefficient. The goodness of fit achieves an F value of 122.298 at a 1% significance level. The use of managerial accounting in firms explains 27% of the variance in firm performance. This means that a higher adopting level of managerial accounting in business can result in more improved firm performance. Hence, Hypothesis 1 was statistically supported.

Table 2: Factor Loadings

Items	Factor Loadings			Communalities
	1	3	4	
AMA1	0.832			0.759
AMA2	0.739			0.590
AMA3	0.670			0.541
AMA4	0.729			0.601
AMA5	0.760			0.627
AMA6	0.738			0.612
UBE1			0.812	0.700
UBE2			0.671	0.559
UBE3			0.733	0.610
UBE4			0.809	0.707
UBE5			0.836	0.747
FIP1		0.777		0.727
FIP2		0.809		0.692
FIP3		0.797		0.742
FIP4		0.821		0.752
FIP5		0.749		0.677
KMO	0.927			
Sig	0.000			

Table 3: Regression Analyses

Model		Coefficients	Std. Error	t	Sig.	F	Sig.
1	Intercept	1.636	0.146	11.197	0.000	122.298	0.000
	AMA	0.572	0.052	11.059	0.000		
2	Intercept	1.950	0.149	13.096	0.000	84.952	0.000
	AMA	0.176	0.083	2.115	0.035		
	UBEAMA	0.104	0.018	5.916	0.000		

Dependent variable: Firm performance (FIP)

The moderation of environmental uncertainty on the relationship between the adoption of management accounting in business and firm performance is investigated by applying a hierarchical multiple regression analysis. First, the interaction “UBEAMA” of UBE and AMA was calculated by multiplying UBE with AMA. Then, this interaction was entered into the research model to conduct the hierarchical multiple regression analysis. The results were also presented in Tables 3 and 4. AMA was first included into Model 1 to run ordinary least squared regression, followed by entering the interaction “UBEAMA” into Model 2. The statistics in Model 1 offer significant support for Hypothesis 1 at the 1% level. The addition of the interaction “UBEAMA” in Model 2 makes an increase in the explanatory power of the research model from 27% (Model 1) up to 34.1% (Model 2). Besides, the effect of the interaction “UBEAMA” on firm performance is statistically

significant at the 1% level. The goodness of fit is significant at a statistical level of 1%. These findings provide statistical support for the moderation of environmental uncertainty on the link between the use of managerial accounting and organizational effectiveness. Hypothesis 2 was significantly supported. The results imply that, higher environmental uncertainty make executives pay more attention to management accounting and so leading to more enhanced firm performance. At the same time, it also strengthens the connection between managerial accounting and organizational performance.

Table 4: Model Summary

Model	R	R ²	Adj R ²	Change Statistics				
				R ² Change	F Change	df1	df2	Sig. F Change
1	0.520	0.270	0.268	0.270	122.298	1	330	0.000
2	0.584	0.341	0.337	0.071	35.004	1	329	0.000

VII. Conclusion

This work tries to study the causal linkage between the adopting level of managerial accounting in organizations and organizational performance. Especially, it attempts to discuss and explore the moderation of environmental uncertainty on the effect of managerial accounting on organizational performance. The findings recommended that the adopting of managerial accounting in business statistically affects organizational performance. A high adopting level of management accounting in business will result in improved firm performance.

Importantly, this research revealed that the uncertainty of business environments imposes a moderating effect on the causal linkage from the application of managerial accounting in business and organizational effectiveness. The uncertainty of business environments is deemed to strengthen the impact of managerial accounting on organizational performance. When executives perceive their business environments highly uncertain, they tend to adopt more management accounting in business, so can obtain better firm performance for their organizations. Some limitations are acknowledged for this research. First, it bases the research data on single informant. There hence occurs a bias problem for the data. A multi-informant design should be employed for future research to deal with the potential bias. Second, the current research was performed in Vietnam, a emerging country. The results are expected for using in other regions. Hence, care should be taken into account, when applying the findings from this research.

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