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# TIGHT BUDGETARY CONTROL, BUSINESS STRATEGY, EXTERNAL ENVIRONMENT AND FIRM PERFORMANCE

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*Despite the increasing role of non-financial information and continuous criticisms of budgetary processes, budgetary controls are becoming more integrated with firms' information system to provide cost effective practices and means of tight control. While there has been extensive research on accounting-based budgetary controls, little has been done to understand the effect of tight budgetary controls on firms' performance. This paper reports the findings of a study designed to examine the relationship between tight budgetary control and firms' performance. Additionally, the effects of two contingent factors, namely, business strategy and external environment are considered. Tight budgetary control was measured using an instrument developed by Van der Stede (2001) as a means to re-validate the instrument. Questionnaires were distributed to top managers of manufacturing firms in Indonesia. Using multiple regression analysis, the results indicate that prospector strategy has a positive influence on the relationship between tight budgetary control and firms' performance. However, defender strategy and external environment do not appear to moderate the relationship between tight budgetary control and firms' performance. This study has implications for managers and may assist in the understanding on budgetary control practices in Asian countries.*

**Keywords:** *tight budgetary control, prospector strategy, defender strategy, external environment*

## Introduction

There has been extensive research undertaken to study the accounting-based budgetary controls. Among others are investigations on the effects of budget participation (e.g Brownell, 1981; Connor, 1995), budget emphasis (e.g. Lau, Low and Eggleton, 1995), budget characteristics (e.g. Sharma, 2002) and an

earlier study on the relationship between budget and organizational structure (Bruns and Waterhouse, 1975). For decades, the broad concept of management control has even been referred to as budgetary controls, following the definition by Anthony (1965).

Budget is an integral part of most profit-oriented firms and has a significant effect on individual behavior in organization. Thus, it is not surprising that most prior studies focus on the budget control features that promote individual performance. Equally important, however, is to understand the relationship between budget practice and firms' performance. According to Simons (1988), a common implicit theme in budgeting research is the view that tight budget targets are desirable and lead to better organizational performance. Apart from Simons, however, there were not many studies that explicitly test the relationship.

Merchant (1985a) suggested that tightness of the control system is one of the few macro-constructs that might capture the overall control philosophy of a firm (Van der Stede, 2001). Studying tight budgetary control therefore, may contribute to the understanding of an important part of firms' management control. In developing a measure for tight budgetary control, Van der Stede (2001) outlined how managers exercise tight control through the extensive and intensive use of budget.

This paper reports the findings of a study undertaken with the following objectives: to investigate the relationship between tight budgetary control and organizational performance and to analyse the conditions in which tight budgetary control will enhance organizational performance, namely by identifying business strategy and external environment as the moderating variables.

Building on prior studies, this study will make an important contribution to extend the area of tight control research. While previous studies focused on a narrow definition of budgetary control tightness (e.g. Simons, 1988; Govindarajan, 1988), this study takes one step ahead as it views tight budgetary control in a broader sense by using the instrument developed by Van der Stede (2001). Additionally, this study presents the practice of tight budget in Indonesia, a venue often neglected in past research. Understanding control issues in a less developed country is especially important nowadays with globalization of business environment.

The remainder of this paper is organized as follows. First, the concept of tight budget and tight control is explained. Then, the conceptual framework that forms the focus for this study is presented, followed by formulation of a series of testable hypotheses. In the following section, the research method is outlined detailing the sample and measurement of variables. The results of the study are then provided. The findings of the study are then reviewed while major themes are discussed. In the final section, the limitations of the study are presented and areas for future research are suggested.

## Tight Control and Tight Budgetary Control

Merchant (1985a) suggested that tightness of the control system is one of the few macro-constructs that might capture the overall control philosophy of a firm (Van der Stede, 2001). However, a review of the prior literature suggests that control tightness does not have a consistent definition and operationalization. Tight controls may be viewed from a broad perspective, i.e. they refer to the *high degree of assurance* that people will behave as the organization wishes (Merchant, 1998). Nevertheless, such broad perspective may contribute to a lack of clear definitions and specific operationalizations that may complicate interpretation and replication of research findings (Fisher, 1995).

Some authors define or describe tight control by elaborating on its components, how it can be achieved, or its outcomes (Van der Stede, 2001). Several prior studies address tight controls in relation to budgetary control style (see for example, Simons, 1987; Van der Stede, 2001). Tight controls have been referred to as ‘rigid budgetary control’ and are frequently associated with dysfunctional behaviours. A rigid budgetary control style is one in which employees mostly at management levels are evaluated primarily on whether or not they achieved their budget (Van der Stede, 2001).

Van der Stede (2001) also elaborated three earlier studies in which interpretation of tight control has been narrowed into tight budgetary control i.e. Anthony and Govindarajan (1998), Merchant (1981) and Simons (1995). Tight budgetary control was then summed into five micro-attributes which were then tested to form tight budgetary control construct. The tight budgetary control is held to exist if top management:

- puts much emphasis on achieving the budget;
- does not easily accept budget revisions during the year;
- has detailed interest in specific budget line-items;
- does not lightly tolerate deviations from interim budget targets; and,
- is intensively engaged in budget-related communications.

The broad concept of tight budgetary control proposed by Van der Stede (2001) may be able to capture a broad array of tight budgetary practices exercised in most organizations and operationalizing the concept may enable a clearer interpretation of future research findings.

## Theoretical Development

This study will investigate the relationship between tight budgetary control and firms’ performance defining both in a broader sense. The instrument developed by Van der Stede (2001) that consists of five micro attributes mentioned in earlier section will be adopted and tested. Taking into consideration the changes in contemporary view of measuring firms’ performance, both financial and non-financial aspects of performance

will be measured. Utilizing the contingency approach view, the effects of two contingent factors, namely, business strategy and external environment are considered.

This section describes how business strategy and external environment is conceptualized in this study. It is followed by the theoretical model and hypotheses formulation.

## **Business Strategy**

In the context of the organization as a whole, strategy describes the way that an organization will pursue its goals given the threats and opportunities in the environment and the resources and capabilities of the organization (Rue and Holland, 1989). Business strategy is concerned with how businesses achieve competitive advantage (Slater and Olson, 2001). It has been suggested that the MCS should be tailored explicitly to support the strategy of the business to lead to superior performance (Langfield-Smith, 1997).

The Miles and Snow's (1978) typology provides a description of four strategic orientations: prospectors, defenders, analysers, and reactors (Sim and Teoh, 1997). This typology focuses on the rate of change in products or markets. Prospector firms constantly seek new market opportunities and compete largely through new product-market innovations. Defender firms, on the other hand, operate in relatively stable market domains and compete mainly on the basis of price, quality and service. Analyser firms combine the strongest characteristics of defenders and prospectors. Reactor firms are characterized by the absence of a consistent strategy and are usually viewed as unstable and non-viable.

Porter (1980) proposed that regardless of industry context, organizations can choose one from three generic strategies to compete at the business level. They are cost leadership, differentiation and focus strategies. Cost leadership requires the aggressive construction of efficient-scale facilities, the vigorous pursuit of cost reductions from experience, tight cost and overhead control, the avoidance of marginal customer accounts, and cost minimization in areas like R&D, service, sales force, advertising and so on. Differentiation refers to creating products or services that are perceived industry wide as unique. Focus aims at concentrating on a particular buyer, segment of the product line, or geographic market, thus servicing its narrow strategic target more effectively or efficiently than competitors who are competing more broadly.

Researchers utilizing either Miles and Snow's (1978) or Porter's (1980) strategic typology have both claimed that these typologies are the dominant paradigms in the literature and are widely used (e.g. Simons 1987, Sim and Teoh 1997 who used Miles and Snow's typology and; Govindarajan, 1988 and Kumar and Subramaniam, 1997 who used Porter's typology). Frequently mentioned is the congruence between Miles and Snow's and Porter's typologies (Shortell and Zajac, 1990). In this study, however, the Miles and Snow's typology will be used. According to Abernethy and Guthrie (1994), Miles and Snow are very clear in their statement that the control system of a firm should be congruent with its strategy.

## External Environment

Numerous empirical studies (Khandwalla, 1972; Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Yang and Smith, 2000) have shown that the external environment has an effect on the nature of management control design in an organization. The effect of the external environment on control systems is obvious, as control itself is concerned with the processes by which a system adapts to its environment (Emmanuel, Otley and Merchant, 1990). Baines (2001) raised some concern regarding the term ‘environment’ and ‘perceived environmental uncertainty’ (PEU) used in prior literature. Nevertheless, from her literature review, she found that the factors that affect the external competitive environment are the same factors that influenced environmental uncertainty. In fact, Miller (1988) used these two terms interchangeably. Thus, in this study the literature on PEU, in addition to literature on external environment were examined. High environmental uncertainty is presented by a dynamic and complex environment, while low uncertainty is presented by a munificent environment.

## Theoretical Model

As mentioned earlier, utilizing the contingency approach, this study will investigate the relationship between tight budgetary control and organizational performance and the moderating effects of business strategy and external environment.

The theoretical model of this study is presented in Figure 1 below.

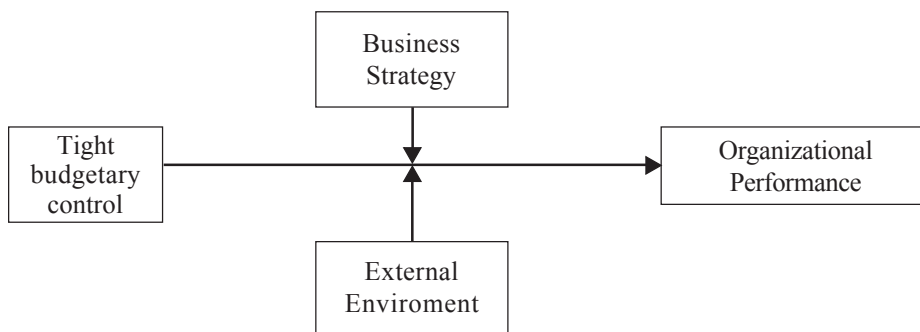


Figure 1: The Theoretical Model

The contingency approach posits that the performance of organizations is highest where there is some congruence (or fit) between control systems design and various contingencies (Modell, 1998). Accordingly, the model in this study stems from the recognition that effective organizations are those which have the appropriate fit between tight budgetary control practice and business strategy pursued within the environment in which these organizations operate.

## Hypotheses Formulation

Research studying the relationship between tight budget and performance has reported inconsistent findings. Stedry (1960) and Simons (1988) for instance, found that performance is greatest when budget is tight. Hopwood (1972) and Kenis (1979), on the other hand, found a negative relationship between tight budget and performance. Notably also, prior studies have inconsistent measures of tight budget. Many defined tight budget goals or budget emphasis for evaluation as tight budget (e.g. Simons, 1988; Hopwood, 1972) thus, far from being comprehensive. Additionally, except for Simons (1988), relationship between tight budget and firms' performance has not been explicitly addressed. Simons (1988) defined firm performance as their ROI. Since budget has remained a significant planning and control system in most organizations, knowing how it contributes towards firm performance will undoubtedly add to the knowledge and practice.

Based on the preceding discussion, the following hypothesis is proposed.

H<sub>1</sub>: There is a positive relationship between tight budgetary control and organizational performance.

This study seeks to uncover the budgetary control type adopted by high performing organizations given the different conditions faced by organizations. Simons (1987) found that high performing prospectors set tight budget goals and monitor outputs carefully. Defenders, on the other hand, appear to use their control systems less intensively. Contradictory to the argument by Miles and Snow (1978), his findings was supported by an earlier study by Tushman and Nadler (1978) who argue that organizations facing high uncertainty will utilize their control systems to a high degree. Khandwalla (1972) concluded that firms engaged in continual product development and the search for new market segments become differentiated and require elaborate controls, including budgeting techniques, for purposes of integration. The following hypothesis is proposed.

H<sub>2</sub>: There is a positive relationship between tight budgetary control and organizational performance for prospector firms. There is a negative relationship between tight budgetary control and organizational performance for defender firms.

Ezzamel (1990) explained that, in situations of high perceived environmental uncertainty, actual results seldom conform to budget targets. Therefore, elaborate and sophisticated accounting and reporting systems with detailed written explanations of causes of variances are needed, since deviation may not only be due to managerial competency but also due to the unpredictability of environmental changes. This implies that as more unpredictability of changes in environment is perceived, i.e. dynamic and complex environment, a tighter form of budgetary control would be emphasized. The following hypothesis is proposed.

H<sub>3</sub>: There is a positive relationship between tight budgetary control and organizational performance for firms operating in a dynamic and complex environment. There is a negative relationship between tight budgetary control and organizational performance for firms operating in a munificent environment.

## Research Method

### The Sample

Data were collected through a survey questionnaire administered to 165 top management staff of manufacturing firms listed on Jakarta Stock Exchange. Sixty-three questionnaires were completed and sixty-one (37 per cent) questionnaires were usable for analysis. Top management was selected as the sample as they were expected to perform the functions of designing and operating the budgetary control systems of an organization (Anthony and Govindarajan, 2001).

### Measurement of Variables

Four variables were measured in the questionnaire: tight budgetary control, business strategy, external environment and organizational performance. Respondents were instructed to answer each item in the questionnaire for the business unit in which they are responsible for.

#### Tight Budgetary Control

Tight budgetary control was measured using the instrument developed by Van der Stede (2001). Managers were asked to indicate on a 7-point scale the degree of tight budgetary control practices in their organizations. Five dimensions following Van der Stede were considered the attributes of tight budgetary control. The dimensions are as follows :

##### 1. Budget emphasis

The extent to which top management considers achieving the budget is essential on a short-term basis. The higher the score, the more emphasis is placed on achieving the budget and thus, the tighter the budgetary control.

##### 2. Budget revision

Budget revisions during the year. High score indicates low allowance for revisions and thus presented tight budgetary control

##### 3. Budget detail

Top management interest in bottom line versus line item control. High score correspond with detailed budget line item follow-ups, i.e. tight budgetary control

##### 4. Budget deviation

Top managers tolerant for interim budget deviations. High score indicates low tolerant for deviation, thus, indicating tight budgetary control

##### 5. Budget intense

Intensity of budget-related communication. High score indicates intense budget communication, and thus tight budgetary control



Factor analysis was employed to determine how well the items represent their micro attributes. While Van der Stede found all attributes exhibits good reliability and measures the micro attributes, in this study, two attributes namely, the budget deviation and budget intense show Cronbach's alpha below the acceptable level (0.50 and 0.49 respectively) as suggested by Nunnally (1978). Thus, these two attributes were excluded from further analysis and only the remaining three attributes, namely budget emphasis, budget revision and budget detail were factor analysed to test for the unobserved tight budgetary control macro construct. Table 1 summarized the result of the factor analysis for the tight budgetary control micro construct.

Table 1: Tight Budgetary Control Macro Construct

Micro Attributes	Loading Factor
Budget Emphasis	0.832
Budget Revision	0.741
Budget Detail	0.584
Variance explained (%)	52.733
Measures of Sampling Adequacy	0.547
Cronbach's Alpha	0.733

The reliability of the scale is 0.733, which is above the lower limits of acceptability generally considered to be around 0.60 to 0.70 (Nunnally, 1978). The variance explained by the scale is 53 per cent.

### Business Strategy

Miles and Snow's strategic typology was utilized. Following Snow and Hrebiniak (1980), respondents were presented with a brief description of a 'defender-type' firm and 'prospecter-type' firm. They were asked to select which description better represents their business unit, relative to other firms in the industry.

### External Environment

According to Tymon, Stout and Shaw (1998), as PEU is a strategic construct, the measurement should represent *top managers' perceptions* of the level of *uncertainty* regarding *external* environment. Following Dess dan Beard (1984) and Tan and Litschert (1994), three dimensions along six segments of environment are used to measure the external environment. These dimensions include environmental munificent, change and complexity along the environmental segments of competitors, economy, technology, government, suppliers and customers.

### Organizational Performance

Organizational performance was measured using a self-rating instrument initially developed by Gupta and Govindarajan (1984), Govindarajan and Gupta (1985) and Govindarajan and

Fisher (1990) and used widely by accounting researchers (Abernethy and Stoelwinder, 1991; Kumar and Subramaniam, 1997; Chenhall and Langfield-Smith, 1998; Yang and Smith, 2000). Although there is concern regarding the use of self-rating measures of performance, there is no clear evidence that objective measures (such as operating profits, cash flows, and return on investment) are either reliable or valid in cross-sectional studies (Abernethy and Stoelwinder, 1995).

Performance was assessed along a multiplicity of dimensions, and the degree of importance was used as a weight in arriving at overall effectiveness. The ten performance dimensions representing financial and non-financial performance criteria include, return on investment, profit, cash flow from operations, cost control, development of new products, sales volume, market share, market development, personnel development, and political-public affairs. On each item, respondents were required to rate the organization's performance relative to corporate standards on a 7-point scale ranging from 'unsatisfactory' (scored 1) to 'outstanding' (scored 7). Then, respondents were required to rate on a 7-point scale the relative importance of each item to their business. Scores for each item were determined by multiplying the respective 'performance' and 'importance' scores. A final single performance score for each firm was calculated by taking a weighted-average of all items.

## Results

### Descriptive Statistics and Correlation Matrix

Descriptive statistics for independent and dependent variables are presented in Table 2. Table 3 presents the correlation matrix among these variables.

Table 2: Descriptive Statistics

Variables	Actual Range	Mean	Median	Standard deviation	Cronbach's alpha
Tight budgetary control	3.6 - 6.3	4.67	5.20	0.6179	0.733
Business Strategy					
<i>Defender</i>	0 - 1	0.44	1.00	0.501	N/A
<i>Prospector</i>	0 - 1	0.25	1.00	0.434	N/A
External Environment					
<i>Munificent</i>	3.3 - 7.0	4.84	5.00	0.733	0.692
<i>Dynamic</i>	2.5 - 7.0	4.98	5.00	0.805	0.754
<i>Complex</i>	2.8 - 7.0	5.19	5.25	0.803	0.793
Organizational performance	3.0 - 5.0	4.32	4.38	0.630	0.875

N/A Not Applicable

Table 3: Pearson Correlations<sup>a</sup>

Variables	1	2	3	4	5	6	7
1. Tight budgetary control							
Business strategy:							
2. Defender	-0.242 <sup>1</sup>	-					
3. Prospector	0.571**	0.509**					
External environment:							
4. Munificent	-0.199	-0.042	-0.110				
5. Dynamic	0.337**	-0.035	0.137	0.127			
6. Complexity	0.267*	-0.174	0.077	0.253*	0.725**		
7. Organizational performance	0.220 <sup>1</sup>	-0.041	0.033	0.248 <sup>1</sup>	0.247 <sup>1</sup>	0.316*	1

<sup>a</sup> N = 61

<sup>1</sup> p < 0.1

\* p < 0.05

\*\* p < 0.01

### Tight Budgetary Control and Organizational Performance

Hypothesis 1 predicts a positive relationship between tight budgetary control and organizational performance. Data for tight budgetary control and organizational performance were correlated for all firms in the sample. Table 3 shows a positive correlation of  $r=0.220$ , at a level of significance  $p=0.089$ . While the relationship is rather weak, it allows support for Hypothesis 1.

### Tight Budgetary Control, Business Strategy and Organizational Performance

Hypothesis 2 predicts a positive relationship between tight budgetary control and organizational performance for prospector firms and a negative relationship between tight budgetary control and organizational performance for defender firms.

Following Schoonhoven (1981), to test the hypothesis the most appropriate method would be to run two regression equations as follows:

$$Y = C_1 + B_1X_1 + B_2X_2 + e \dots (1)$$

$$Y = C_1 + B_1X_1 + B_2X_2 + B_3X_1X_2 + e \dots (2)$$

where, Y = is weighted average performance score

X<sub>1</sub> = Tight budgetary control

X<sub>2</sub> = Business strategy (defender and prospector)

X<sub>1</sub>X<sub>2</sub> = the interaction between tight budgetary control and business strategy

The regression will be run twice for both defender and prospector strategies. The B<sub>1</sub> and B<sub>2</sub> in equation (2) cannot be interpreted since their values can be altered by shifting the

points of origin (see Allison, 1977; Southwood, 1978). The results of these regressions are presented in Table 4.

Table 4: Regressions Results for Hypothesis 1

Variables	Defender		Prospector	
	(1)	(2)	(1)	(2)
Tight budgetary control ( $X_1$ )	0.212 <sup>1</sup>	0.181	0.284 <sup>1</sup>	0.174
Business Strategy ( $X_2$ )	0.017	-0.410	-0.199	-5.373*
Tightness X Strategy ( $X_1 X_2$ )		0.084		0.908*
R <sup>2</sup>	0.046	0.050	0.061	0.126
R <sup>2</sup> changes		0.002		0.065
F value	1.474	1.002	1.881	2.736 <sup>1</sup>

<sup>1</sup> p < 0.10

\* p < 0.05

As presented in Table 4, the introduction of the interaction term increases the R<sup>2</sup>. Nevertheless, the sign of B<sub>3</sub> is positive and significant only with Prospector Strategy. This indicates that tight budgetary control is desirable and enhances firms' performance only for prospector firms. The expected negative relationship between tight budgetary control and firms' performance for defender firms is not found in this study. Thus, Hypothesis 2 is only partly supported.

### Tight Budgetary Control, External Environment and Organizational Performance

Hypothesis 3 predicts a positive relationship between tight budgetary control and organizational performance for firms operating in a dynamic and complex environment. However, for firms operating in a munificent environment, it predicts a negative relationship between tight budgetary control and organizational performance.

Again, to test the hypothesis the most appropriate method would be to run two regression equations (see Schoonhoven, 1981), as follows:

$$Y = C_1 + B_1 X_1 + B_2 X_2 + e \dots (1)$$

$$Y = C_1 + B_1 X_1 + B_2 X_2 + B_3 X_1 X_2 + e \dots (2)$$

where, Y = weighted average performance score

X<sub>1</sub> = Tight budgetary control

X<sub>2</sub> = External environment (munificent, dynamic and complex)

X<sub>1</sub> X<sub>2</sub> = the interaction between tight budgetary control and external environment

The regression will be run for each environmental dimension separately, i.e. munificent, dynamic and complexity. The B<sub>1</sub> and B<sub>2</sub> in equation (2) cannot be interpreted since their

values can be altered by shifting the points of origin (see Allison, 1977; Southwood, 1978). The results of these regressions are presented in Table 5.

Table 5: Regression Results for Hypothesis 2

Variables	Munificent Environment		Dynamic Environment		Complex Environment	
	(1)	(2)	(1)	(2)	(1)	(2)
Budget Tight ( $X_1$ )	0.279*	-0.314	0.146	-0.434	0.139	-0.019
E. Environ. ( $X_2$ )	0.261*	-0.323	0.153	-0.453	0.218*	0.063
$X_1X_2$		0.116		0.115		0.030
$R^2$	0.137	0.142	0.082	0.087	0.120	0.120
$R^2$ changes		0.005		0.004		0.001
F	4.604*	3.157*	2.595 <sup>1</sup>	1.799	3.944*	2.595 <sup>1</sup>

<sup>1</sup>  $p < 0.10$

\*  $p < 0.05$

As presented in Table 5, external environment do not appear to moderate the relationship between tight budgetary control and organizational performance. In fact, both munificent environment and complexity appear to have a direct relationship with firm's performance. Thus, Hypothesis 3 is not supported.

## Concluding Discussion

This study seeks to uncover the budgetary control type adopted by high performing organizations given the different business strategies pursued and external environmental conditions faced by organizations. It utilizes the instrument developed by Van der Stede (2001) as an attempt to test the measurement in a different setting. The attributes suggested as the measure of tight budgetary control include:

1. The extent to which top management considers the achievement of the budget is essential on a short-term basis. (Budget emphasis).
2. Budget revisions during the year. (Budget revision).
3. Top management interest in bottom line versus line item control. (Budget detail).
4. Top managers tolerance for interim budget deviations (Budget deviation).
5. Intensity of budget-related communication (Budget intense).

In general, these findings confirm earlier findings by Van der Stede (2001) that several control attributes are to a large extent complementary. However, while Van der Stede found that tight budget control was represented by four micro-attributes, namely budget deviation, budget detail, budget intense and budget emphasis, in this study, only three micro-attributes were found to represent tight budget control namely, budget emphasis, budget revision and budget detail. Among the factors not studied here is the national culture. Since it may have an impact on the meaning of budgetary control (Van der Stede,

2001), differences in culture (i.e. Asian and the West) could explain the variation found in this study. Although it was too early at this stage to arrive at any conclusion regarding the broad concept of the measurement, it obviously requires further investigation.

In testing the proposed hypotheses, only Hypothesis 1 and a part of Hypothesis 2 were supported. We do not expect strong direct relationship between tight budgetary control and organizational performance as we expect several factors to moderate the relationship. The expectation leads to the testing of Hypothesis 2 which supports an earlier study by Simons (1987, 1988). It was found that there is a positive relationship between tight budgetary control and organizational performance for prospector firms. While Simons only studied relationship with tight budget goals, in this study a broad measure of tight budgetary control was utilized as mentioned earlier. Nevertheless, the findings still support earlier finding to suggest that the strategy followed by firms, specifically, the prospector firms, influences the tightness of budgetary control. This study, however, did not find that the external environment moderates the relationship between tight budgetary control and organizational performance. Thus, the proposition that tight budgetary control are desirable and lead to better organizational performance for firms operating in a dynamic and complex environment is not supported. The proposition of a negative relationship between tight budgetary control and organizational performance for firms operating in a munificent environment is also not supported. Instead, munificent and complex environment was found to have a direct relationship with organizational performance.

A number of limitations, which provide opportunities for further research, could have influenced the results of this study. This study was undertaken in Indonesia using a questionnaire survey. As with other studies using this methodology, the response relies heavily on the understanding of the respondents. While the results of validity and reliability tests provide sufficient confidence in the measures, a similar study with multi-method could yield more powerful results.

The current study only focused on accounting-based control i.e. budgetary control. Thus, findings from the study may be limited. Budgetary controls are only a subset of the overall control systems and most firms use a combination of results control, action controls and personnel controls which may reinforce each other (Merchant and Van der Stede, 2003). It is suggested that future research should take a broader view of management control system. Finally, efforts should continue to develop means of gathering research data in Asian countries as well as to establish a stronger tradition of accounting research.

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