

**The Importance of Operational Reasons  
to Budget for Two Budget Forms, and  
their Relationship to Organisational  
Characteristics**

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**A thesis submitted in fulfillment of the  
requirements for the degree of  
Doctor of Philosophy**

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# Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Prabhu Sivabalan

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## Abstract

This thesis investigates a range of operational reasons to budget, their relation to the fixed budget and rolling forecast forms, and their relationships with selected organisational characteristics. Notwithstanding repeated practitioner and academic criticisms of budgeting, budgets appear to be used by most organisations. Why do organisations continue to budget, if budgets are repeatedly criticised? Prior research has suggested that most budget research, and budget criticisms relate to a budget's use for performance evaluation. Following Hansen and Van der Stede (2004), this thesis argues that the disconnect between the high use, and low perceived usefulness of budgeting in practice may be explained by considering the impact of other non-evaluation operational reasons to budget used in practice. This rationale is investigated through three inter-related studies, using a combination of quantitative cross-sectional survey and qualitative case data.

The first study investigates the importance of ten operational reasons to budget, for the fixed budget and rolling forecast forms. Findings show that organisations conduct budgeting for a range of reasons, and that non-evaluation operational reasons to budget such as “control costs”, “coordinate resources” and “board of director monitoring” are more important than the “staff evaluation” reason to budget most often studied in existing research. The first study also found that this range of operational reasons to budget were important for both fixed budgets and rolling forecasts.

The second study investigates relationships between the importance of four of the ten operational reasons to budget (coordinate resources, formulate action plans, staff evaluation and business unit evaluation), and three major organisational characteristics (strategy, autonomy and uncertainty) for both budget forms. The four operational reasons to budget were an elaboration of the two broader operational reasons to budget (operational planning and performance evaluation) proposed by Hansen and Van der Stede (2004). Findings show that contingency relationships between the four operational reasons to budget and organisational characteristics are often different to that found in or implied by prior research. Also, in many instances, relationships for the two detailed reasons to budget within each of Hansen and Van der Stede's (2004) broader reasons and organisational characteristics were different. This supports the need to consider more detailed operational reasons to budget in future budget research.

The final study investigates an organisational setting where a dominant non-evaluation reason to budget had a different contingency relationship to that found in existing budget research. Existing research has argued that in low uncertainty conditions, organisations with a high level of budget emphasis require high budget participation (Lau, et al. 1995). The case organisation operates in low uncertainty conditions, and has high budget emphasis. However, it attained significantly increased budget benefits when it changed from high to low levels of budget participation. The main reason for this difference is that prior research has

conceptualised and measured budget emphasis predominantly from the perspective of a budget's use for staff evaluation. However, the case organisation primarily uses budgets for resource coordination. Its pattern of budget emphasis is more complex, being low for staff evaluation but high for resource coordination. The case emphasises the need for budget research to consider a range of operational reasons to budget other than staff evaluation, in order to understand the nature of the contingency relationships between organisational characteristics and established budgetary variables such as budget emphasis and participation. Different operational reasons to budget appear to impact the nature of these contingency relationships, and therefore, should be acknowledged in budget research.

Overall, this thesis confirms that a range of operational reasons to budget are regarded as important by organisations, and that reasons such as “coordinating resources” and “formulating action plans” are often more important than staff evaluation, the dominant reason considered in extant budgeting studies. This may impact the nature of contingent relationships found in existing research.

# 1 Introduction

## 1.1 Objective and motivation

The objective of this thesis is to investigate the range of operational reasons to budget regarded as important by organisations, their relation to different budget forms, and their linkages to organisational characteristics.

Budgeting is one of the most prevalent management accounting techniques used in organisational practice. Consistently, research has shown the proportion of organisations using budgets to be above 90% (Ekholm and Wallin, 2000), and in some cases as high as 97% (Umapathy, 1987). However, budgeting is increasingly viewed with scepticism by practitioners (Hansen, et al. 2003; Jensen, 2003). A report by Neely, et al. (2001) released by Accenture consultants identified significant problems caused by budgeting in organisations. The research community has also supported this focus, evidenced by academic research in Europe (Wallander, 1999; Jensen, 2003) and North America (Hansen, et al. 2003; Hope and Fraser, 2003) that discuss the implications of budget criticisms for organisations.

The fact that budgeting is used by most organisations, but is also significantly criticised by practitioners appears contradictory. Why is a management accounting technique that is so strongly criticised, used by most organisations? First, it may be that budgeting is embedded in organisations but not used properly (Jensen, 2003). Second, budgeting may be useful on balance but

possess intrinsic technical faults (Wallander, 1999) or behavioural faults (Jensen, 2003; Argyris, 1952) which are difficult to rectify. Third, certain types of organisational characteristics and budgetary characteristics may lend some organisations to be better suited to budgeting in comparison to others (Chenhall, 2003). Finally, variations in the reasons for an organisation to budget may impact the types of benefits, or problems created by budgeting (Hansen, et al. 2003; Hansen and Van der Stede, 2004).

This thesis focuses on the third and fourth rationales to examine the apparent paradox between budget use (high) and perceived usefulness (low). The third rationale is chosen because it has been widely investigated in academic research, and therefore provides a foundation for establishing further research through this thesis. There has been much budget research that has adopted a contingency perspective, as reviewed in Chenhall (2003). However, this stream of research has been argued to have inconsistent findings.

One of the reasons proposed for this inconsistency is a lack of consideration of the fourth rationale, which is an acknowledgement that the relationships between organisational characteristics, budget importance and perceived budget usefulness may vary across different reasons to budget (Hansen and Van der Stede, 2004).

In a recent budgeting study sponsored by the Consortium for Advanced Manufacturing International (CAM-I) practitioner group (Hansen, et al. 2003), practitioners in Europe and North America differed in their approaches on

tackling fundamental problems in the traditional budgeting process. The first approach (ABB – Activity Based Budgeting) recommends that we should improve budgeting by focussing on the planning function of budgeting and adopt an activity focused approach, while the second approach (BB – Beyond Budgeting) argues that budgeting should be abandoned altogether, due to perceived irreconcilable issues associated with the use of budgets for performance evaluation. This thesis investigates the extent to which organisations may attempt to do both – consider reasons to budget other than performance evaluation such as operational planning, without abandoning the budget due to the deficiencies associated with its use for performance evaluation. While prior studies have anecdotally considered different motivations for budgeting in organisations (Barrett and Fraser, 1977), systematic empirical investigations of multiple reasons to budget has not been conducted in extant research, with the exception of Hansen and Van der Stede (2004).

Most contingency studies in budgeting use antecedent, intervening and moderating variables to consider the relationships between budgets and dependent/outcome variables (Luft and Shields, 2003). Depending on the nature of antecedent, intervening and moderating variables, different budget outcomes result. However, relationships between these variables are not clear in existing budget research (Chenhall, 2003). Though patterns are found across some studies, anomalies remain (Chenhall, 2003). This may be partially explained by the nature of the modelling of relationships across budget studies in management accounting research (Luft and Shields, 2003; Shields and Shields, 1998). It may also be explained by the fact that, in existing research, the full range of

organisational reasons to budget has not been mapped, and gaps remain in our understanding of the parameters defining budget use in organisations (Hansen and Van der Stede, 2004; Hansen, et al. 2003).

Following from the above, the “reason to budget” framework developed by Hansen and Van der Stede (2004) attempted to observe a wider set of reasons for budgeting which include, but are not limited to, performance evaluation. Building upon Chenhall (2003) and Hansen, et al. (2003), Hansen and Van der Stede (2004) argued that a reason for inconsistent and often contradictory findings in existing budget research is due to its focus on a budget’s use for performance evaluation reasons only. In their exploratory study, Hansen and Van der Stede (2004) highlighted that organisations with reasons to budget other than evaluation, for example operational planning, may show different and sometimes opposite relationships to organisational and budgetary characteristics, than when evaluation is assumed to be the dominant reason to budget.

Hansen and Van der Stede (2004) argued that their list of two strategic (communication of goals and strategy formation) and two operational (operational planning and performance evaluation) reasons to budget should be researched further in order to establish a more complete typology of reasons to budget. This thesis attempts to achieve this, by providing more detailed categories of reasons to budget within the two operational reasons to budget proposed by Hansen and Van der Stede (2004).



The thesis focuses on the operational reasons to budget framework, as existing contingency research has focused on performance evaluation, one of the two operational reasons identified by Hansen and Van der Stede (2004). Operational budgeting practice has also been researched more extensively than strategic budgeting in organisations, as evidenced by much of the budgeting literature's focus on job related tension (Argyris, 1952; Hopwood, 1972; Otley, 1978), Reliance on Accounting Performance Measures (RAPM) (Hartmann, 2000) and participative budgeting (Shields and Shields, 1998) research areas. Therefore, focusing on operational reasons to budget provides a more established foundation to develop research on reasons to budget, than the strategic reasons to budget.

Also, to investigate all four of Hansen and Van der Stede (2004)'s reasons to budget is beyond the scope of this thesis. Hansen and Van der Stede (2004) argued that "each reason to budget may be the subject of many studies in their own right"(p.436), alluding that even a sequence of related articles in this area are better directed at examining a limited set of reasons to budget as opposed to considering all the possibilities of strategic and operational reasons. The expanded set of operational reasons to budget put forth in this thesis will be investigated and analysed over a series of three related empirical studies (chapters 3, 4 and 5).

## **1.2 Thesis core constructs**

### **1.2.1 Reasons to budget**

In this thesis, three core constructs are studied. The first, is the *reasons to budget* construct as explained above, incorporating ten operational reasons to budget. The ten operational reasons to budget were developed from those in existing research and through discussions with industry practitioners in pilot work conducted for this thesis. These ten operational reasons to budget are investigated in the first of three studies conducted in the thesis<sup>1</sup>.

In the second study, the two operational reasons to budget suggested by Hansen and Van der Stede (performance evaluation and operational planning) are expanded to four more detailed operational reasons to budget sourced from the ten operational reasons to budget used in the first study. Two of the four relate to the operational planning reason to budget proposed by Hansen and Van der Stede (2004). They are resource coordination and formulation of action plans. The other two relate to performance evaluation, the second operational reason proposed by Hansen and Van der Stede (2004). They are staff evaluation and business unit evaluation.

### **1.2.2 Budget forms**

The second core construct is *budget forms*. In organisations to date, two predominant budget forms have been proposed to exist. The first is the fixed

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<sup>1</sup> The focus on alternative operational reasons to budget does not consider the various alternative symbolic expressions which may be associated with budgeting, caused by informal interactions (Arwidi and Samuelson, 1993) and different linguistic mechanisms in the budget process (Samuelson, 1986). While such symbolic expressions may be relevant to budget use in practice, their consideration is outside the scope of this thesis.

budget. It is usually constructed annually and has been widely assumed to be the form of budgeting used by organisations in academic research, beginning with Argyris (1952). The second is the rolling budget or forecast, a newer budgeting phenomena that has not been investigated in budget research (Haka and Krishnan (2005) being the exception). Rolling budgets or forecasts are mainly discussed in anecdotal, case based practitioner publications.

A rolling budget or forecast is a continuously updating forecasting method (Haka and Krishnan, 2005) conducted over fixed, short term periods. This enables an organisation to regularly budget ahead for a set term, For example, an organisation may prepare a rolling budget or forecast 18 months into the future, by updating (rolling over) each month.

When used independently to a fixed budget and regarded as the main driver for the planning and control functions of organisations (usually requiring the abandonment of the fixed budget form), such budgets are termed rolling *budgets* (Leone, 2003). However, when used in tandem with fixed budgets, and supporting the fixed budget as an additional resource of information for planning and control in organisations, the same budgets are termed rolling *forecasts*.

As fixed budget use is very high in organisations (Ekholm and Wallin, 2000) and the rolling form is a recent innovation (Barrett, 2003), most organisations are expected to use rolling forecasts rather than have moved over to full rolling budgets. Due to the exploratory nature of this thesis, and as its focus is primarily

on reasons to budget, the broader concept of rolling forecast is used as a contrast to the more traditional budgeting form of fixed budgets.

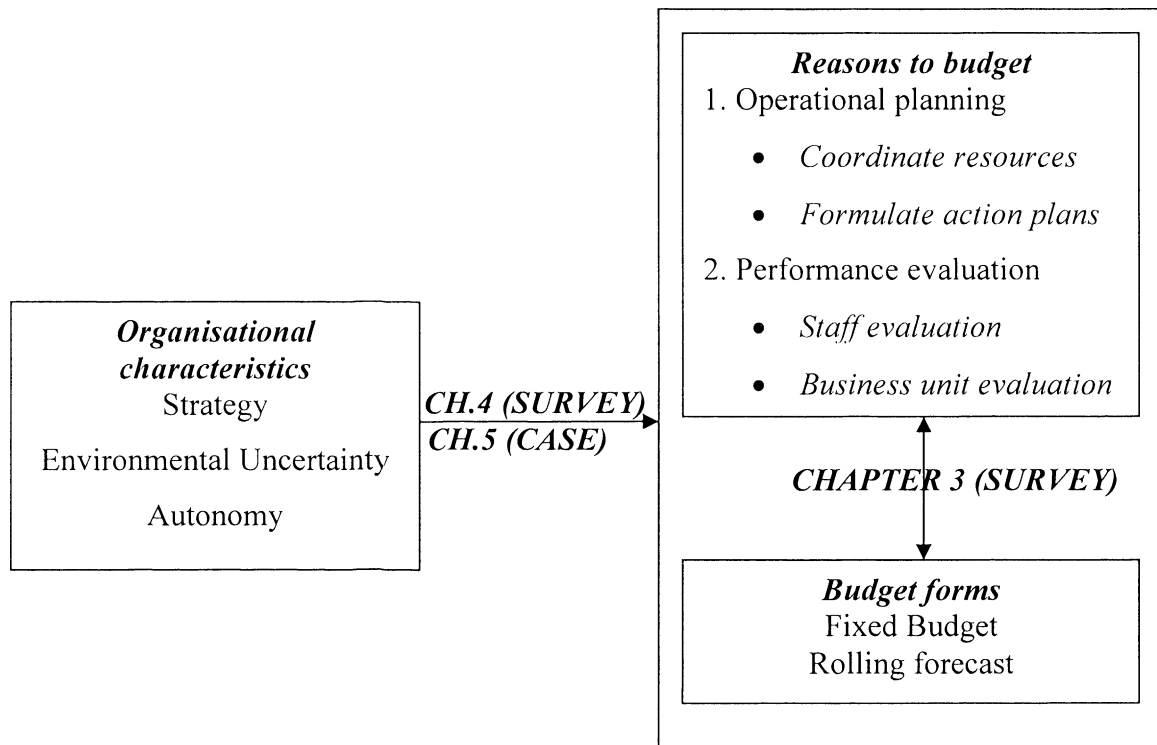
### **1.2.3 Organisational characteristics**

The final core construct is *organisational characteristics*. Organisational characteristics represent the antecedent conditions which effect how operations are conducted in an organisation. Specifically, three major organisational characteristics are considered in this thesis; uncertainty, organisational strategy and task autonomy. Uncertainty and organisational strategy are selected as they have been commonly examined in existing budget research, and their relationship to the importance of conducting budgets has been widely acknowledged in existing research (Govindarajan and Gupta, 1985; Brownell and Hirst, 1986; Brownell and Dunk, 1991). Task autonomy is selected to compare how tightly organisations use budgets to monitor and control individual behaviour (Lau, et al. 1995), and relates to the notion of organisation structure. When an organisation provides greater task autonomy to staff, how will the importance of budgets be affected? On the one hand, greater autonomy may lead to less budget importance, as greater autonomy implies lower staff control, and the use of budget to monitor or evaluate staff will be less. However, organisations may also use budgets as broad boundary setting devices for staff, who are given greater autonomy. The plausibility for both rationales will be investigated, in relation to different reasons to budget.

By sequentially investigating the interaction between the reasons to budget, budget forms and organisational characteristics constructs through three research

papers, this thesis attempts to increase understanding of the use of budgeting in organisations. This is graphically depicted in Figure 1.1.

Figure 1.1: Thesis core constructs



### 1.3 Research framework and questions

The starting point for this thesis, is the investigation of the assertion by Hansen and Van der Stede (2004) that performance evaluation has been the main reason to budget, considered in existing research. To examine this, a chronological overview of research discussing operational reasons to budget is presented, beginning with Argyris (1952). The aim of this review is to support the validity of the argument that performance evaluation has been and remains the primary reason to budget considered in existing research, and that reservations regarding budgeting are largely related to its use for performance evaluation (Hansen, et al. 2003). In conducting this review, the relationships between budget use and

different organisational characteristics will be noted. Also, the discussion of fixed budgets and rolling forecast forms will be acknowledged, and the implications of using these budget forms will be considered. Overall, this review indicates support for the assertion by Hansen and Van der Stede (2004). The performance evaluation reason to budget was by far the predominant reason considered in existing research. Given literature support for this proposition, the first empirical study investigates two of the three core constructs used in this thesis.

The first study has three objectives. Objective 1 investigates the relative importance of different operational reasons to budget in organisations. This is important, as the predominant focus on performance evaluation in existing research is acceptable, if it is also observed in practice to be the dominant reason to budget. If organisations generally regard the performance evaluation reason to budget as more important than the non-evaluation reasons to budget, then non-evaluation reasons to budget will be less relevant to investigate. Chapter 3 therefore investigates if alternative operational reasons to budget are regarded as important by Australian organisations. To investigate objective 1, this study identified 10 operational reasons to budget. The 10 reasons to budget were identified from prior research and from discussions with practitioners.

The second objective of the first study is to observe the adoption of the fixed budget and rolling forecast forms, to validate the extent to which they exist in Australian organisations. Given the abundance of budget criticism, the role of fixed budgets in organisations requires investigation. Such budgets may no

longer be as prevalent as found in past studies (Ekholm and Wallin, 2000; Umapathy, 1987). In fact, rolling forecasts are argued to be a budget form that provides decision useful information to organisations (Haka and Krishnan, 2005) relating to organisational learning, and anecdotal practitioner studies comment on the growth in their use (Bogiages, 2005). Rolling forecasts are also argued to be potential substitutes for the traditional fixed budget, leading to speculation amongst practitioners that greater rolling forecast use in organisations could lead to a reduction in fixed budget use (Lynn and Madison, 2004). The second objective of this study, therefore, investigates the relative use of these two budget forms in organisations.

The third objective of the first study is to investigate the relationship between the reasons to budget construct and the budget forms construct. As rolling forecasts may play either a role alongside fixed budgets in organisations, or in part or in full substitute for them, then rolling forecasts may or may not be based on the same reasons to budget as fixed budgets. This thesis undertakes a comparison of the reasons to budget for both budget forms, in order to better understand why organisations undertake both.

Of the ten reasons to budget considered for the first two objectives, four are selected to investigate the third objective. The reduction of reasons to budget for the third objective is necessary in order to allow the first study to build upon prior research on alternative operational reasons to budget (Hansen and Van der Stede, 2004). The four reasons to budget (coordinate resources, formulate action plans, staff evaluation, and business unit evaluation) were considered because of

their relation to the “operational planning” or “performance evaluation” reason to budget categories used by Hansen and Van der Stede (2004). The remaining six reasons to budget were excluded for two reasons. First, these reasons to budget did not wholly exist in either one of these categories. For example, the “cost control” reason to budget scored highly amongst respondents. However, cost control may relate to both operational planning or performance evaluation. Thus it did not neatly fit into the structure of analysis being used in this thesis, and was not considered. The second reason for excluding some of the ten reasons to budget, is that the importance scores of reasons to budget were lower than the four reasons to budget selected, which meant their impact on organisational behaviour was arguably less. For example, the “manage production capacity” operational reason to budget clearly relates to operational planning, but it’s importance score was statistically significantly lower than the “coordinate resources” and “formulate action plans” reasons to budget that were ultimately selected for the operational planning category used in this thesis. The exception to this rule, is the “staff evaluation” reason to budget. Though it did not score highly, it was included as the comparison of performance evaluation and non-evaluation reasons to budget is a central component of this thesis.

In summary, the three research questions considered in the first study are:

*RQ1: What is the importance of different operational reasons to budget to organisations?*

*RQ2: To what extent do fixed budgets and rolling forecasts exist in organisations, and do they complement or substitute for each other?*

*RQ3: How do different operational reasons to budget relate to the fixed budgets and rolling forecasts forms?*



Results from the first study (chapter 3) suggest that operational planning reasons to budget are regarded as being more important than performance evaluation reasons. This is observed for both fixed budgets and rolling forecasts.

Performance evaluation, the predominant reason for budgeting that is assumed in existing budget research (Hansen, et al. 2003; Hansen and Van der Stede, 2004), is not regarded to be the most important reason by Australian organisations, for both rolling forecasts and fixed budget forms. Also, the vast majority of organisations (97%) continue to use a fixed annual budget, and most of these organisations (65%) use a rolling forecast to support their fixed budget. Of the organisations that use rolling forecasts, more than 95% continue to use a fixed budget. Therefore, contrary to many practitioner claims, the first study finds that rolling forecasts are mainly used as supplements to a fixed budget, and not as a substitute. The first study also finds that if organisations use budgets for performance evaluation, they are used more for business unit evaluation, than staff evaluation. This further supports the notion that budget use for staff evaluation, as identified by Argyris (1952), can be detrimental and organisations instead should focus on a budget's use for operational planning, and for evaluating the performance of business units generally, as opposed to staff individually.

Upon establishing that a range of alternative reasons to budget are used in organisations, and that operational planning reasons to budget are regarded as equally or more important than performance evaluation reasons to budget, the second paper (chapter 4) considers the relationships between three organisational characteristics and four operational reasons to budget, for the fixed budget form

and the rolling forecast form. In doing so, this study contributes to research on alternative reasons to budget in a number of ways. First, the study observes the relationship between operational reasons to budget in greater detail than that considered in Hansen and Van der Stede (2004), the only other study that has explicitly investigated different reasons to budget and their relationship to organisational characteristics. Secondly, the rolling forecast form is treated differently in this study, when compared to Hansen and Van der Stede (2004). In their study, rolling forecasts were classed as a budgetary characteristic, whereas in this study, rolling forecasts are treated as an alternative form to fixed budgets, and their relationship to the uncertainty organisational characteristic is observed. This is conducted, because there are arguments that rolling forecasts are directly influenced by the nature of organisational characteristics (Haka and Krishnan), and that they are a viable alternative to fixed budgets. This requires the study of rolling forecasts separately to fixed budgets, and not only as a budgetary characteristic within a broader budgeting system, as was conducted by Hansen and Van der Stede (2004).

Finally, Hansen and Van der Stede (2004) constructed their study as an exploratory piece, noting that alternative reasons to budget existed, and that in some instances, there were differences in the way different reasons to budget related to organisational and budgetary characteristics. No propositions or hypotheses were presented. Instead, the notion of different reasons to budget was put forth by Hansen and Van der Stede (2004), opening an avenue for further research in this area. Building upon Hansen and Van der Stede (2004), the second study of this thesis takes a more deductive approach, constructing

propositions to predict relationships between organisational characteristics and reasons to budget across both budget forms, and a more detailed list of operational reasons to budget. For the above three reasons, the second study attempts to extend the findings of Hansen and Van der Stede (2004).

In summary, the second study investigates the fourth and fifth research questions of the thesis:

*RQ4: How do organisational characteristics relate to different reasons to budget?*

*RQ5: How are the relationships between organisational characteristics and alternative reasons to budget different for fixed budgets and rolling forecasts?*

The results from Chapter 4 find that different reasons to budget do relate to organisational and budgetary characteristics in different ways, for both fixed budgets and rolling forecasts. Some relationships found are also counter to that expected, based on prior research. By considering operational reasons to budget in more detail, more precise relationships are also found between reasons to budget and organisational characteristics. In investigating the relationship between uncertainty and reasons to budget for the rolling forecast form, it was found that the importance of the reasons for conducting rolling forecasts did not positively relate to uncertainty, and in some instances, showed an inverse relation between the level of uncertainty and the importance of conducting rolling forecasts. This was an unexpected result, as most studies on rolling forecasts have argued for greater rolling forecast importance and use when higher uncertainty environments exist (Haka and Krishnan, 2005).

Chapter 3 and 4 collectively investigated the relationship between the three core constructs, using a cross-sectional survey approach. The final phase of the thesis (chapter 5) uses a case setting to consider how the use of operational planning reasons to budget relates to the environmental uncertainty organisational characteristic differently, in comparison to the staff evaluation reason to budget, established in prior research (Lau, et al. 1995). By considering a case study which shows a budget outcome that is not expected in existing budget research for fixed budgets, this case study emphasises the importance of studying non-evaluation reasons to budget, and the need to expand the existing definition of established budget variables such as budget emphasis, to more completely capture operational reasons to budget in organisations other than staff evaluation.

The third study (Chapter 5) describes how an organisation operating in a low uncertainty conditions with a high budget emphasis, reduced its budget participation, in order to generate improved budget outcomes. Prior budget research has found that in low uncertainty conditions, high budget emphasis is associated to high budget participation (Lau, et al. 1995; Brownell and Hirst, 1986).

The cause for this different result is the reason to budget considered, when defining budget emphasis. Prior research consistently uses the “superior evaluative style” measure developed by Hopwood (1972) and modified by Brownell and Hirst (1986) to determine budget emphasis. This measure only focuses on the use of budgets for staff evaluation, to determine budget emphasis. However, the case organisation investigated in Chapter 5 predominantly uses

budgets for resource coordination, an operational planning reason to budget, and to a lesser extent, for business unit evaluation. The budget emphasis on staff evaluation is low but high for resource coordination. This difference is argued to contribute to the different contingency result.

From a staff evaluation perspective, the case setting in Chapter 5 was consistent with prior budget results. If budget emphasis is viewed from the perspective of staff evaluation, as has been conducted in prior research, then the case organisation has a low budget emphasis. Therefore, in the low uncertainty conditions observed, the low budget emphasis for staff evaluation relates to a low level of budget participation, which improves performance. However, this description only partially explains the case. Overall, the organisation does not have low budget emphasis. It places a high level of budget emphasis on resource coordination. Furthermore, the reasons for budget participation being low do not relate to the lack of incentive for staff to participate when there is a low budget emphasis for staff evaluation (Lau, et al. 1995). It relates to the greater predictability of budgets, which reduces the need for staff to participate in the budget process. This rationale is not only related to budget emphasis for staff evaluation, but broadly to other budget emphasis reasons, such as coordinate resources.

The case illustrates how budget emphasis in organisations may be high and not require budget participation from staff, because budgets may be important for reasons other than staff evaluation, such as resource coordination. This perspective has not been put forward in existing research, largely because budget

emphasis has been defined solely using the staff evaluation reason to budget. The importance of considering alternative operational reasons to budget such as coordinating resources was not considered by Lau, et al. (1995), who constructed their research arguments from a stream of studies that primarily assumes staff evaluation to be the main reason to budget. When the budget emphasis is for reasons other than staff evaluation, the relationships change between uncertainty, budget emphasis and budget participation.

The use of a case study method is deliberate, and chosen for a number of reasons. First, the few studies that have investigated alternative reasons to budget have been survey based. In order to provide a greater level of detail and richness to the debate on how different reasons to budget relate to organisational characteristics, a case approach is necessary. Second, by providing a more grounded analysis of how an organisation's choice of reasons to budget may be affected by organisational characteristics, unexpected variables outside the scope of those investigated in the first two studies may be discovered. Finally, the consideration of relationships between organisational characteristics and budgetary variables using different research methods in order to observe the consistency of results strengthens the findings from the thesis.

In summary, the objective of the third empirical study is to highlight how an organisation which has a reason to budget other than performance evaluation, yields optimal outcomes that are contrary to that expected in existing research. Overall, the research question used for this chapter is:

*RQ6: How does a consideration of different reasons to budget alter observed contingency relationships between environmental uncertainty, budget participation and budget emphasis?*

## **1.4 Conclusion**

In conclusion, the thesis addresses the importance of budgets in organisations by considering a set of operational *reasons to budget* for both rolling forecast and fixed *budget forms*, across a range of *organisational characteristics*, using both a survey and case approach. By doing so, the importance of budgeting may be seen to exist, in ways that go beyond a budget's use for performance evaluation. This should inform the research community about why budgets may continue to be used and regarded as important in organisations, even though budgeting may be heavily criticised.

Overall, the thesis is structured as follows. Chapter two provides a broad literature review which is applicable to all three studies, and focuses on investigating the assertion that performance evaluation is the main reason to budget investigated in budgeting research to date. Upon supporting this, chapter three (first study) examines a list of reasons to budget, and selects four for further investigation, which relate to the two operational reasons to budget proposed by Hansen and Van der Stede (2004). The relative importance of these reasons to budget are also considered, and the operational planning reason to budget is found to be more important to organisations, than the performance evaluation reason budget. Also, relationships between reasons to budget and the two budget forms are surprisingly similar, and rolling forecasts are found to be supplements to the fixed budget, as opposed to substitutes.

Chapter four (second study) then considers the reasons to budget and budget form constructs with the organisational characteristics construct, and finds different relationships between organisational characteristics and the four reasons to budget, for both the fixed budget and rolling forecast. Some relationships reinforce the findings of Hansen and Van der Stede (2004), while others shed more light on their findings, largely due to the fact that the two operational reasons to budget used by Hansen and Van der Stede (2004) were segregated into four more detailed operational reasons to budget for this study.

Chapter 5 (third study) considers how a non-evaluation reason to budget reveals additional contingent relationships, in comparison to prior research. Comparing the results of Lau, et al. (1995) to the case used in chapter five, organisations in low uncertainty conditions with a high budget emphasis may be aligned to low budget participation (case study), and not high budget participation (Lau, et al. 1995), in order to maximise organisational outcomes. The reason for this difference arose from the different reason to budget driving the high budget emphasis. The findings highlight the importance of considering multiple reasons to budget in the same case setting, to obtain a better understanding of the impact of traditional budgetary variables such as budget emphasis.

Finally, chapter six concludes the thesis, bringing together the findings of all three studies and noting the extent to which the objectives of the thesis are achieved. The limitations for this thesis are acknowledged, and implications for future research are provided.



## 2 Literature review

### 2.1 Introduction

To establish a framework that investigates the research questions outlined in Chapter 1, this chapter conducts a general review of how reasons to budget have been studied in existing research. As explained in chapter 1, there are three constructs examined in this thesis. The main construct investigated in this thesis is operational *reasons to budget*, which considers why organisations budget. These reasons to budget will be examined across the fixed budget and rolling forecast *forms*, and compared to different *firm characteristics* which affect these budget forms. While the first two constructs will be reviewed directly, the third construct will only be discussed in aggregate. More specific relationships between firm characteristics and reasons to budget for both budget forms will be examined in the specific literature review sections of the three articles comprising this thesis representing Chapters 3, 4 and 5.

While many budgeting articles discuss technical processes for budgeting and budget benefits within different contexts, this review of budgeting research is limited to articles that discuss reasons to budget, and their links to the two budget forms. The majority of the budget research cited in this study will relate to the fixed budget form, but later in the chapter, more recent research which focuses on the rolling forecast form will be discussed.

A chronological approach is taken to explain the development of the reasons to budget research, as this is perceived to be the most logical method for explaining

how new schools of thought, or research focus, changed over time, and built upon previous perspectives. The chronological categories in this chapter also overlap from section to section, as changes in research focus tend to occur over time, and therefore different articles in the same period may cause a period to be relevant to both categories.

## **2.2 1950's – 1960's: Negative budget effects on employee job tension**

The seminal work of Argyris (1952) is generally considered to be the starting point of budgeting research (Hartmann, 2000). As explained in Shields and Shields (1998):

*“Argyris (1952), the first of many empirical studies published... (it) investigated organisational and behavioural effects of participative budgeting on subordinate managers” p. 49*

Argyris (1952) acknowledged and criticised the adverse impact of budgets on employee job tension. Argyris (1952) investigated the human effects of budgets, and very explicitly perceived budgets to be a source of tension and stress for employees. Though he acknowledged that budgets were a “necessary pressure device... for constantly increasing efficiency”, he argued that employees may perceive tension from the pressure placed by budgets. Though budgets can affect human behaviour positively, Argyris (1952) argued that this effect may not result, proposing that budgets often have the reverse effect on efficiency, as pressure exerted on employees by budgets generates forces which increase job related tension, and in the long run decrease efficiency.

The research of Argyris (1952) was widely accepted, and followed by sporadic research in the 1950's and early 1960's that investigated a similar theme. Wagner (1954) acknowledged the work of Argyris in broadly discussing sources of stress to management in social organisational interactions. Ridgway (1956) specifically investigated the sub-optimal effects of performance measurements on organisations, which directly followed from the works of Argyris. Kahn, et al. (1964) observed the impact of role conflict and ambiguity on stress, and cited the role of accounting measures in positively impacting stress. All these articles shared a common theme, which was a focus on the impact of budgeting on individual job tension, leading to sub-optimal budget and organisational outcomes.

Budgeting research in the 1950's and early 1960's, therefore, largely focused on the impact of budgets on people. While the possibility of employees managing this stress through data manipulation was proposed, it was not empirically researched to the extent of the former question "how do budgets affect people?". Budgets were primarily seen to be an unnecessary source of pressure on employees, who would often capitulate under this stress and not perform to expectation.

From the perspective of the three constructs used in this thesis, performance evaluation of staff appeared to be the only investigated reason to budget. Non-evaluation reasons to budget such as operational planning were not studied. Also, the main budget form referred in Argyris (1952) and subsequent studies of that era

was the fixed budget, conducted annually. Finally, the role of firm characteristics in affecting budgets was yet to be incorporated into the study of reasons to budget.

### **2.3 1960's - 1970's: Negative employee responses to managing budget tension**

Following from the 1950's and early 1960's, research in the 1960's and 1970's went beyond the Argyris (1952) arguments. By now, research had progressed to empirically consider how employees (in return) managed the pressures placed on them by budgets. This emphasised a new dimension of budget criticism, behavioural displacement. Hofstede (1968) conceptualised budget systems in organisations as a game, and investigated the plausibility of managers managing budgetary pressure/tension as explained by Argyris (1952), by managing budget targets. Hofstede (1968) also argued that managers may manipulate accounting numbers during a period to reach budget targets, irrespective of whether budget targets are opportunistically set prior to period commencement. Dearden (1960) similarly argued for the possibility of accounting data manipulation by employees to ease tension caused by budgets on managers. Thus, budgeting research had taken the next step; from investigating how budgets affect people, to now investigating how *people affected budgets*.

Thus, the disadvantages relating to budgets were not only tension induced employee inefficiency as discussed in section 2.2, but incorrect reporting of actual accounting numbers and the manipulation of budget targets in order to manage the job related tension. The nature of advance of the budgeting literatures from the 1950's to the 1960's & 1970's is perhaps best evidenced by the Schiff and Lewin

(1970) research piece, titled “The impact of people on budgets” – a direct and obvious reversal of Argyris (1952)’s text on budgeting, titled “The impact of budgets on people”.

It is also interesting to note, that with the exception of the above budgeting research, the volume of budgeting research in accounting was sparse but progressively growing, from the 1950’s to the 1970’s.

Again, and as highlighted previously, the focus of this body of budget research was primarily on performance evaluation. Budgets were generally perceived to impact organisations negatively, as it adversely affected employee tension, which caused employees to manage this tension by engaging in undesirable behaviours. In the 1970’s, Revsine (1970) argued that budget pressure decreased the dimensions of leadership behaviour, restricting the ability of managers to make decisions effectively and independently.

Hopwood (1972), similar to Argyris (1953), but incorporating the elements of data manipulation as discussed by Dearden (1960) and Hofstede (1968), argued that budgets would negatively impact staff due to increased job tension, and that staff would manipulate budgets to manage this tension and further reduce the utility of budgets.

Overall, this era of research continued to focus on the performance evaluation reason to budget, though in more detail. The predominant budget form considered was still fixed budgets, and the study of firm characteristics and its relevance to

the use of budgets was growing in research, especially after Hopwood (1972) and Otley (1978), as discussed below.

### **2.3.1 1970's: Hopwood (1972)/Otley (1978) opposing findings**

Hopwood (1972) argued that accounting measurements are inevitably imperfect and that there is a need to flexibly use budget performance measures whilst recognising its shortcomings. Hopwood (1972) argued that in high budget emphasis environments, sub-optimal organisational outcomes result from budget use. This line of theorisation was very consistent with prior budgeting studies, and in line with the Argyris (1952) perspective. As described in Hartmann (2000), Hopwood (1972)'s critique of budgeting was universal – whatever the context, high budget emphasis would have negative effects on an organisation.

Otley (1978) disagreed with Hopwood (1972). This was a significant research piece as in almost 30 years of budgeting research, Otley (1978) was the first to argue and *not* find negative effects for budgeting, from an employee evaluation perspective. Otley (1978) was a replication of Hopwood (1972) but found contrary results. The use of budgets for evaluation did not lead to high budget or job related tension, nor reduce job ambiguity and most significantly, Otley (1978) found a positive relationship between budget emphasis and managerial performance. As explained in Hartmann (2000), Otley's findings "falsified" Hopwood (1972)'s results. These contrasting findings of Otley and Hopwood provided impetus for future research to theorise rationales for the differences in findings between these studies. The growth in the study of firm characteristics relating to budgets grew significantly after Otley (1978), as researchers sought for

rational explanations to the differences in findings of these two authors (Brownell and Hirst 1986).

Therefore, the contingency rationale was by far the most popular solution proposed in future research (Subramaniam and Mia, 2003; Ross, 1995). Budgets were argued to be more, or less relevant, depending on the nature of certain firm characteristics. This is clearly observed by a stream of research existing in two related but distinct management accounting research areas - participative budgeting (Brownell and Hirst 1986), and reliance on accounting performance measures (RAPM) literatures (reviewed in Hartmann 2000). A brief discussion of these two literatures is provided below.

#### **2.3.1.1 1970's – present: Participative Budgeting**

Participative budgeting research first arose, to stimulate theoretical discussion on how firms prepare budgets (eg. Hofstede, 1968; Bruns & Waterhouse, 1975; Milani, 1975), and engage in the budgetary process (as explained in Hartmann 2000). In addition, and post Otley (1978), another theoretical motivation was provided for research in this area. As discussed in Brownell and Hirst (1986), participative budgeting research attempted to explain the opposing findings of Otley (1978) and Hopwood (1972), regarding budget effects for performance evaluation. This origin is similarly proposed by Hartmann (2000). It was argued that the competing findings of these papers could be explained by investigating the separate organisational and environmental contexts where the theoretically opposing findings may be applicable. Participative budgeting theorists, therefore, attempted to provide a contingency based solution to the apparent contradiction in findings of Hopwood (1972) and Otley (1978).

For example, Merchant (1981) showed that larger, more decentralised firms will find budgets useful for performance evaluation, if middle and lower level managers are allowed to participate in the budget setting process. Brownell (1985) similarly provided evidence indicating differential effects of budgets, dependent upon budgetary participation and the level environmental complexity.

While the focus on reasons to budget remained on performance evaluation, studies were beginning to acknowledge and understand contexts where budget tension effects on employees could be managed, increased or reduced (as opposed to universally criticising budgets, a common theme uniting budget research in the 1950's and 1960's).

Covaleski and Dirsmith (1983) argued that in organisations where centralised control was not feasible, budgets should be negotiated with middle level managers as opposed to being authoritatively enforced, for maximum budgetary outcomes and achievement of organisational objectives. This was necessary, as organisations with low centralisation usually require middle level managers to exercise autonomy and judgement, and as such these managers possess the best source of knowledge for predicting future organisational operations, and should be consulted in the budget preparation process. An example of theoretical development in this stream of research, is evidenced by Brownell and Hirst (1986) directly using the conflicting findings of Hopwood (1972) and Otley (1978) to motivate a study that explains the moderating effect of task uncertainty on budgetary participation. The authors argued that the findings of Merchant (1981) with respect to budget participation reducing job related tension in high budget



emphasis organisations, only applied when task uncertainty was low, and not high. Brownell and Dunk (1991) also reinforced the findings of Brownell and Hirst (1986), by contributing further independent variables to explain the apparent contradiction in findings between Hopwood and Otley. Therefore, in this way, the participative budgeting research stream attempted to refine our understanding of organisational contexts that possess greater or less relevance for budget emphasis, by emphasising the extent to which staff participation occurred in the budgeting process.

A major review of participative budgeting research by Shields and Shields (1998) identifies almost 50 papers, which concentrate on a variety of organisational antecedents, moderating and intervening variables, and dependent variables used in this stream of research. Participative budgeting research focuses on how budget are prepared, and considers organisational factors that may accentuate or inhibit the performance of organisational or budget outcomes. For example, Mia (1988) argued that participation in budgets would only work in instances where managerial attitude and motivation to work was high, and greater participation was accorded to managers experiencing greater job difficulty (Mia 1989). This identified further impediments to budget relevance. Overall, the impact of the participative budgeting literatures in understanding budget difficulties is best summarised by Shields and Shields (1998), who explain that using economic, psychological and sociological theoretical arguments, the participative budgeting literatures have provided varied explanations for the relevance of budgeting for performance outcomes. This is also acknowledged in Covaleski, et al. (2003).

It is also noted that the principle of decentralisation underpins participative budgeting (Shields and Shields, 1998). The assigning of decision rights to lower and middle level managerial decision making in budget setting requires superiors to assign decision rights (in this case budget participation and setting) to these managers. Hence, and to a large extent, decentralisation of organisational responsibility is required to ensure budget participation occurs effectively.

Two perspectives to participative budgeting research need to be acknowledged. First, this research stream focuses on the operational reasons to budget, as opposed to the different strategic purposes for organisations' budgeting, which makes it especially relevant to this thesis. Second, much of this research stream assumes a link between budgeting and the performance evaluation reason to budget. More specifically, the focus of budgets on evaluation also appears to focus on staff, and less on business units. Dependent variables such as staff satisfaction, attitude, job related tension, motivation/incentives, were related to a firm's inclination to use budgets for staff evaluation. Also the focus of this research appears to be on the fixed budget form, with no established academic research on the rolling forecast. However, firm characteristics and their links to the importance or benefits from the evaluation reason to budget were heavily investigated.

#### **2.3.1.2 1970's – present: Reliance on Accounting Performance Measures (RAPM)**

The RAPM literature studies both the antecedents and consequences of managerial evaluative style in using accounting data (Otley and Fakiolas, 2000), and sources directly from the research of Hopwood (1972) and Otley (1978) (Hartmann and Moers, 1999; Otley and Fakiolas, 2000). The RAPM definition used in this study

sources from Hartmann (2000) which was originally adopted from Harrison (1993); RAPM being “the extent to which superiors rely on, and emphasize those performance criteria which are quantified in accounting and financial terms, and which are pre-specified as budget targets” (p.451). This definition supports a link between the performance evaluation reason to budget and RAPM.

Similar to the participative budgeting research stream, the findings of RAPM studies assist in the understanding the contingent usefulness of budgeting practice, when the evaluation of employees is primarily enforced through accounting performance measures set as budget targets (Harrison 1993). Contexts where accounting measures are less relevant, therefore, proxy for low budget relevance. Not surprisingly, RAPM studies are similar to the participative budgeting literature, in that RAPM motivations originate from the same source, and as a result, find very similar contexts for budget relevance. This research also motivates itself from the polar findings of Hopwood (1972) and Otley (1978) – as discussed in Hartmann (2000)’s review of RAPM. In fact, many management accounting research papers are simultaneously categorised as being within the RAPM and participative budgeting literatures (Otley and Pollanen, 2000).

With the exception of sporadic research to the contrary (e.g. Ezzamel, 1990), RAPM finds that the relevance of accounting performance measures and budget emphasis is greatest in low task uncertainty (Hirst, 1983; Ross, 1995; Imoisili, 1989; Lau, et al. 1995; Abernathy and Brownell, 1997) and low environmental uncertainty contexts (Hirst, 1983; Govindarajan, 1984; Brownell, 1981; Merchant, 1990; Ross, 1995). There is also strong support in this literature, for the effects of

RAPM on slack creation and data manipulation as a response to organisational use of performance measures (Onsi, 1973; as described in Hartmann 2000).

Overall, the RAPM literature investigates contexts where the use of accounting performance measures is not beneficial in evaluating employees.

Within RAPM, employee accountability represents the main source of behavioural displacement (Jensen, 2003). The consequences of behavioural displacement are budgetary slack prior to period commencement (Wallander, 1999), the manipulation of accounting numbers during a period (Jensen, 2003), and the adverse impact on management policies resulting from incorrect numbers, post period end (Hansen, et al. 2003). As identified from the above discussion, the source of behavioural displacement also stems from perceived job tension (Argyris, 1952; Hopwood, 1972), which arises from the accountability placed on individuals being evaluated. Therefore, pressure induced by budgets causes job related tension, and to curb this tension, individuals either manage budget accounting performance measures, or manage actual accounting data to attain budget accounting performance measures. Of course, and anecdotally, it may be noted that tension relating to budgets does not have to relate to the evaluation of managerial performance. Managers, in attempting to secure optimum resource allocations for their business units from superiors, may also manipulate forecasted accounting data (Hansen, et al. 2003). However, the incentive to manipulate is strongest when employee evaluation is related to budget targets, relative to when it is not (Argyris, 1952).

As already established, when observing the effectiveness of performance measures, the RAPM research stream mainly focuses on the use of performance measures on individuals (generally managers), as opposed to business units. This is a result of the RAPM research stream originating from Argyris (1952), that focused on the impact of budgets on the evaluation of individuals (as explained in Hartmann, 2000), and subsequently directed by the differential findings of Hopwood (1972) and Otley (1978), that observed the impact of budgets on job related tension and performance (human behavioural focus). The resulting research stream is therefore very specific, in its treatment of dependent variables. These predominantly relate to the focus on budgets for performance evaluation of staff (Lau, et al. 1995; Ross, 1995; Harrison, 1993; Aranya, 1990; Merchant, 1990; Hirst and Yetton, 1999; Brownell, 1982; Kenis, 1979), as opposed to a more general evaluation of business units.

## **2.4 1990's - present: new budget forms**

As operations became more globally focused and competition increased, practitioners began to question the utility of the fixed budget and searched for alternative budget forms (Jensen, 2003; Hope and Fraser, 2003). The rolling forecast significantly grew in use as a result of this search (Neely, et al. 2001; as per Hansen, et al. 2003).

A rolling forecast (also termed a rolling budget) is a continuously updating budget form. For example, it may report for five quarters (15 months) beginning from the first day of the first quarter, with adjustments made quarterly to “reflect the current market realities faced by the company” (Haka and Krishnan, 2005, p.3). This process continues indefinitely, and is updated every quarter. Therefore, at the end

of the first quarter, the second quarter now becomes the first quarter, and a new fifth quarter is created, commencing 12 months and ending 15 months from the first day of the new first quarter (Haka and Krishnan, 2005). This process allows for firms to view their future over shorter time periods, and also update their budgets every quarter. Of course, the logic of a rolling forecast or rolling budget may be applied for any period, not only quarters. For example, firms may construct 13 monthly rolling forecasts, with budgets updated every month.

As explained in Chapter 1, the concept of a rolling forecast is used in this thesis, as the most inclusive conception of a form of budgeting that is an alternative to the fixed budget form. Consistent with Leone (2003), a rolling “budget” (as opposed to a rolling forecast) is the most complete form of this alternative approach to budgeting, requiring organisations to regularly update their numbers over shorter periods than an annual budget. This requires the complete abandonment of fixed budgets, and the dominant use of rolling budgets for planning and control in organisations. In this thesis, however, a less restrictive conception is used. If an organisation adopts a rolling planning philosophy as part of its budget system, even with the use of a fixed budget, it is classed as using a rolling forecast. As this form of use may not be as sophisticated as that described by Leone (2003), it is termed a rolling “forecast” organisation, and not a rolling “budget” organisation.

With the exception of Leone (2003), no prior studies emphasise the difference in definitions between the rolling *budget* and rolling *forecast* terms, and tend to use them interchangeably (Haka and Krishnan, 2005; Hansen and Van der Stede, 2004). Given the high fixed budget use in organisations (Ekholm and Wallin,

2000; Umapathy, 1987), and the relatively recent adoption of the “rolling” concept, it is assumed that prior research discussing the rolling form refers to the less constrained definition that is rolling *forecasts*.

Most publications on rolling forecasts are practitioner focused. Only a few academic research articles consider the use of rolling forecasts. Hansen, et al. (2003) discussed the challenges perceived by organisations in making the fixed budget work in organisations, and acknowledged the adoption of rolling forecasts as a possible way of managing some of the challenges posed by the fixed budget. Hansen and Van der Stede (2004) considered the rolling forecast, but treated it as one of many intervening budget characteristics, to a firm’s fixed budget in their research model. Therefore, firms in Hansen and Van der Stede (2004) were assumed to be using a rolling forecast, without specific identification of the role of a rolling forecast. That is, whether it was in support of an existing fixed budget, or whether it was run independently of a fixed budget. Furthermore, Hansen and Van der Stede (2004) were predominantly concerned with the existence of a rolling forecast, as opposed to the extent to which it was important in organisations. Hansen, et al. (2003), Jensen (2003), Hope and Fraser (2003) and Ekholm and Wallin (2000) acknowledge the rolling forecast as a plausible alternative to the fixed budget, implying that the rolling forecast may possibly substitute, and not merely complement the fixed budget. Generally, there is a dearth of current academic research on the rolling forecast. This is not surprising, as rolling forecasts are a relatively new innovation. At present, Haka and Krishnan (2005) is the only article which has focused on the utility of rolling forecasts to organisations.

Haka and Krishnan (2005) used an experimental setting to examine the relationship between uncertainty and different budgeting goals. The study adopted a contingency perspective to rolling forecast utility. If an appropriate match was found between the level of uncertainty and either of two broadly defined budget goals (organisational learning and goal commitment), rolling forecasts would positively impact an organisation. Of course, if a match did not exist, rolling forecasts would be sub-optimal for organisations.

Haka and Krishnan (2005) argued that rolling forecasts allowed organisations to engage in organisational learning in the short term, as budget numbers for the upcoming period would be updated more frequently, in comparison to the predominantly annual fixed budget setting. Haka and Krishnan (2005) defined the fixed budget as a “traditional budget”. By updating more frequently, organisations keep budget numbers more relevant and greater organisational learning is facilitated.

However, in more frequently updating budget numbers, a manager’s ability to be committed to one goal or target reduces. This negatively affects a manager’s goal commitment to an organisation. Therefore, the goal of greater organisational learning which a rolling forecast provides, needs to be balanced against the risk of lower goal commitment, due to the continual updating function characterised by the rolling forecast. By continually updating its rolling forecast, increasing organisational learning and keeping accounting numbers relevant, upcoming



targets and goals are in a continuous state of flux. With continual flux, managers are less certain and less committed towards goals.

Haka and Krishnan (2005) therefore proposed that rolling forecast use would be dependent on how important organisational learning and goal commitment were to an organisation. The factor determining the importance of these two goals, was argued to be uncertainty. In high uncertainty environments, Haka and Krishnan (2005) proposed that the importance of organisational learning is greater than goal commitment. Goal commitment would be regarded as less important in an organisation where the future is difficult to predict. However, as uncertainty reduces, the relative importance of the two goals reverses. Lower uncertainty reduces the importance of organisational learning, as lower uncertainty means less environmental change. If change is less, the need to learn by continually updating is reduced and less organisational learning is required. Also, lower uncertainty leads to greater organisational confidence in the relevance of future goals, and so the importance of goal commitment increases. As organisational learning is positively related to rolling forecast use and goal commitment is inversely related, firms would rather use rolling forecasts in periods of high uncertainty to facilitate organisational learning, and be less inclined to use rolling forecasts in low uncertainty environments where learning is not as necessary and goal commitment is more important.

Using an experimental decision setting and 52 subjects recruited from an MBA program, Haka and Krishnan (2005) tested the above arguments. In the experimental decision scenario, subjects were plant managers who were expected

to estimate demand and make purchasing decisions across high uncertainty and low uncertainty manipulations, and identify their organisational learning and goal commitment (dependent variables) during the experiment. A random selection of the respondents worked with a rolling forecast, while the remainder used a fixed budget.

Results from Haka and Krishnan (2005) supported their argument that in high uncertainty environments, subjects using rolling forecasts make better decisions than subjects using the fixed budget, and the reverse was true for low uncertainty environments. They also clearly related the reason for this difference to the greater organisational learning scores for rolling forecast users in the high uncertainty setting, and greater goal commitment attributable to fixed budgets in the lower uncertainty setting.

The research of Haka and Krishnan (2005) may be related to the three core constructs of this thesis. Firstly, the organisational learning budget goal identified by Haka and Krishnan (2005) may be loosely related to the operational planning reasons to budget considered in this thesis, as they represent ex-ante attempts to control organisational behaviour. The goal commitment budget goal may be related to the performance evaluation reasons to budget, as its focus is on an organisation's ability to hold managers accountable to the achievement of goals, which has an evaluation focus. Secondly, the study investigates both fixed budgets and rolling forecasts, as in this thesis. Finally, the impact of the uncertainty firm characteristic on the choice of rolling forecast use, and its fit to organisational goals is clearly elucidated by Haka and Krishnan (2005). This

thesis will similarly consider uncertainty as a firm characteristic impacting rolling forecasts.

An examination of practitioner publications, shows both positive and negative perceptions regarding the way in which rolling forecasts or rolling budgets are perceived by firms. While some see it as a substitute to fixed budgets (Lynn and Madison, 2004; Bittlestone, 2000; Bogiages 2005), existing academic research finds the use of fixed budgets to be very high in organisations (Ekholm and Wallin, 2000) therefore implying that rolling forecasts or rolling budgets, if they exist, don't necessarily substitute for fixed budgets.

Given that the majority of rolling forecast or rolling budget discussions have been within practitioner publications, a brief discussion of their impact within practitioner articles is undertaken. Practitioner research on rolling forecasts or rolling budgets are more prevalent, but mixed in their perceptions of rolling forecast or rolling budget use. However, the positive commentaries on rolling forecasts or rolling budgets significantly outweigh the negative commentaries. The discussion of a selection of practitioner based rolling forecast or rolling budgets articles below provides insights into the expected impact of rolling forecasts in organisations, which will be undertaken in this thesis.

Bittlestone (2000) argues that rolling forecasts allow for better continuous budgeting based on scenario analysis and encourages the use of historical performance as the basis for individual performance evaluation and reward. Gurton (1999) and Kroll (1997) complements Bittlestone (2000) by showing that

consultants believe rolling forecasts to be highly suited to planning in an environment where product life cycles are increasingly short and market conditions change more rapidly, making predictions across annual periods more difficult. This is primarily due to the fact that rolling forecasts don't require a "line-by-line" analysis of budget numbers (Kroll, 1997). Typically, rolling forecasts focus on key numbers only, without requiring a justification of all numbers in the budget, leading to a reduction in budget preparation time (Kroll, 1997).

From an operational planning perspective, rolling forecasts are argued to be superior to fixed budgets. Because fixed budgets cover longer periods, they experience a significantly longer time span between planning and business reality, in comparison to rolling forecasts. Therefore quarterly or rolling forecasts make organisations more responsive to change and more competitive (Gurton, 1999; Myers, 2001), in the event that market factors change mid-period. Myers (2001) argues that too often, fixed budgets are less useful as they are out of date too soon after they are created. This problem is minimised when budgeting more frequently.

From the perspective of evaluation reasons to budget, the perceived utility of rolling forecasts is mixed. By requiring employees from different departments to interact more frequently than if only preparing an annual fixed budget, the rolling forecast assists managers to stay focused on business goals (Kroll, 1997), making performance evaluation easier. It is interesting to note this argument, as it is counter to that put forth by Haka and Krishnan (2005), who proposed that goal

commitment reduces because of the continual updating function of rolling forecasts.

Because rolling forecasts are updated more frequently, they usually generate more accurate budget numbers (Kroll, 1997; Bittlestone, 2000). This also reduces the incidences of free-riding by staff who achieve annual target well before period's end. This is because actual numbers are used to inform budget numbers much more frequently, meaning staff cannot take "free rides" (Myers, 2001).

Notwithstanding the positive comments in relation to the use of rolling forecasts for performance evaluation, Gurton (1999) argues that rolling forecasts can have a negative effect on performance evaluation, as evaluating individuals over shorter periods provides greater challenges for managers. As argued in Gurton (1999) "it is fairly straightforward to link salary to budget when it is an annual event, but once you start running rolling forecasts you need to have a different model for determining salary; and that can be a big headache..." (p.61). Therefore, while rolling forecasts appear to assist the planning function of organisations by introducing scenario analysis and more rapid planning, it requires significant additional resource commitments from firms, in order to execute. This can be overly costly, especially when used for performance evaluation. Notwithstanding this, the link between rolling forecasts and firm profitability has been proposed in an industry study by Accenture and the Cranfield School of Management (Neely, et al. 2001).

Of the three budget constructs used in this thesis, a brief review of rolling forecast practitioner findings reveals that the rolling forecast *form* is generally more beneficial for operational planning *reasons to budget*, than performance evaluation *reasons to budget*. Similar to Haka and Krishnan (2005), practitioners strongly link the prevalence of a rolling forecast to environments which require greater responsiveness and change, implying a higher uncertainty environment. Therefore, uncertainty appears to be the main *firm characteristic* impacting the adoption of rolling forecasts.

## **2.5 2003 – present: alternative Reasons to Budget**

An observation of the reasons to budget in research to date shows an overwhelming focus on the performance evaluation reason to budget. This is acceptable, if performance evaluation is the only reason to budget considered by firms. However, research from 2003 has begun to question this assumption.

Hansen, et al. (2003) focused on practice developments in budgeting, and discussed the Beyond Budgeting (BB) and Activity Based Budgeting (ABB) approach in firms. While the focus of their study was not specifically on any of the three core constructs explained in this study, Hansen, et al. (2003) showed that practitioners were becoming increasingly dissatisfied with the problems associated with the performance evaluation reason to budget. They argued that firms had adopted two broad global approaches to respond to their disillusionment with traditional budgeting. These were the BB and ABB approaches. The BB approach specifically required firms to halt the use of budgets for performance evaluation, while the ABB approach required firms to move away from the departmental

focus inherent in budget setting, to a more activity focused approach to planning. In discussing the implications of their findings, Hansen, et al. (2003) argued that there were two fundamental challenges faced by budgeting. First were the human behavioural difficulties associated to its use for evaluation. Second was the need to take a more activity based approach in order to maximise the outcomes from the operational planning component budgeting. Hansen, et al. (2003) also specifically argued that the rolling forecast form would assist to improve the planning function of budgeting, and that as uncertainty increased, the challenges associated with budgeting would become greater. This will cause organisations to focus on their non-evaluation budget reasons, such as planning, and other budget forms such as rolling forecasts.

Hansen and Van der Stede (2004) was the first article to explicitly investigate multiple reasons to budget, and their relationship to firm characteristics. Given the findings of Hansen, et al. (2003), the need for studies investigating reasons to budget beyond performance evaluation increased. This is important, because the theoretical underpinnings of the majority of budget findings in budget research to date assumes the use of budgets for evaluation, giving less consideration to the possibility that budgets may be used for future planning, without actually being used as a performance evaluation device. Therefore, our understanding of appropriate organisational contexts and firm characteristics that relate to non-evaluation budget reasons is far less. A detailed review of Hansen and Van der Stede (2004) will be conducted, in order to explain the findings of this study, and understand its implications for this thesis.

Hansen and Van der Stede (2004) was the first study to explicitly investigate the prevalence of alternative reasons to budget amongst the same sample of firms, and study their differential relationships to firm and budget characteristics. Explicitly arguing that existing reasons to budget research overly focused on performance evaluation, Hansen and Van der Stede (2004) proposed two operational and two strategic reasons.

The two strategic reasons were “formulation of strategy” and “communication of goals” and the two operational reasons were “operational planning” and “performance evaluation”. The two strategic reasons to budget considered the role of the budget in impacting the overall objectives and goals of the organisation. These have a medium to longer term orientation. The operational reasons to budget considered the use of the budget to control the processes of the organisation, and therefore investigated the role of a budget in influencing the operating activities of organisations. These have a shorter term orientation.

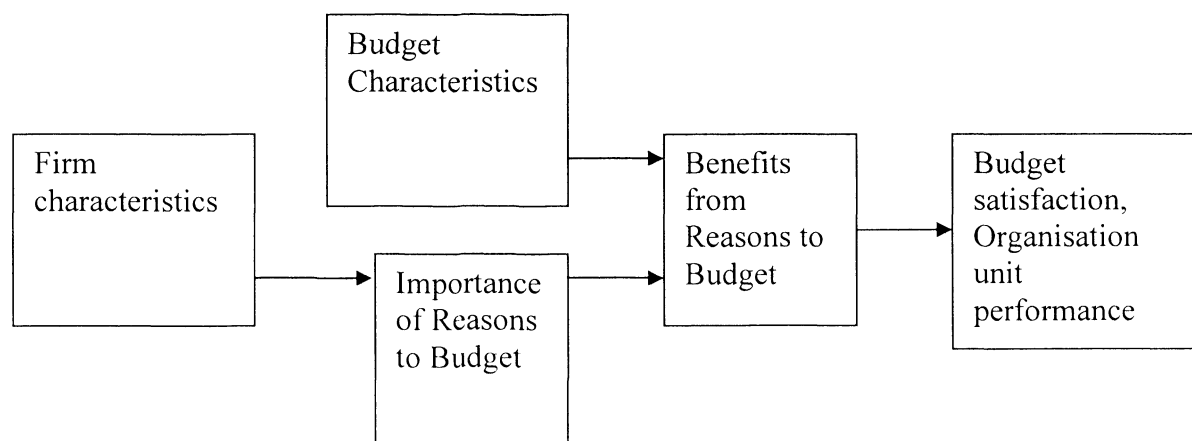
Hansen and Van der Stede (2004) identified their four reasons to budget via discussions with practitioners. They state that this list of four reasons to budget should not be regarded as the complete set of budget reasons, but as simply those selected based on the perceptions of respondents in their study.

The research model used in this study linked three firm characteristics (organisation structure, strategy and environmental uncertainty) to the importance of each of their four reasons to budget. The importance of the four reasons to budget and a selection of budget characteristics (Budget iterations, Use of rolling



forecasts, Budget-strategy link, Budget participation, Budget target difficulty, Budget emphasis) were then related to the benefits from the four reasons to budget. Finally, the benefits from the four reasons to budget were related to Budget satisfaction and organisation unit performance. The broad construct of their model is given in Figure 2.1.

Figure 2.1 Hansen and Van der Stede (2004) model



Given the investigation of such a large and complex model, and the exploratory nature of their study, the authors adopted a grounded approach to their theory building. Hansen and Van der Stede (2004) simply observed and noted differences in the relationships across their research model, for the four reasons to budget, and did not construct hypotheses or propositions for differences between different reasons to budget and firm characteristics, budgetary characteristics or performance.

Their study was conducted using the survey approach, and contained a usable sample of 57. Respondents to the study were members of the Consortium for Advanced Manufacturing – International (CAM-I) group, who were also

responsible for preparing budgets in their respective business units. A two staged least squares regression method was used, whereby the residuals from the first regression between firm characteristics and the importance of the four reasons to budget, were regressed as independent variables with budget characteristics, on the benefits from the reasons to budget. Also, the importance and benefit scores for their four reasons to budget used for the regressions were not the raw scores. Importance scores of the four reasons were regressed against each other, and the resulting residuals were the values used in the first regression. The same was done for the benefit scores, with respect to the second regression. The use of residuals and not raw scores was adopted because Hansen and Van der Stede (2004) wanted to be certain that the importance and benefit values of each reason to budget was discrete and unrelated to any other reason to budget.

Hansen and Van der Stede's (2004) results showed differences across some of the relationships. The discussion of results from Hansen and Van der Stede (2004) is limited to a comparison of their two operational reasons to budget, as this thesis focuses on operational reasons to budget. From the first regression (firm characteristics and importance of reasons to budget), three differences are observed. First, the production task type variable, a measure of uncertainty, was inversely related to the importance of the operational planning reason to budget, but unrelated to the performance evaluation reason to budget. Resource traceability, another measure of uncertainty, was positively related to the importance of the performance evaluation reason to budget, but unrelated to the operational planning reason to budget. Finally, Competition was inversely related

to the importance of the performance evaluation reason to budget, but unrelated to the operational planning reason to budget.

From the second regression (importance of reason to budget, budget characteristics and benefits of reasons to budget), three differences are observed. First, the use of rolling forecasts was positively related to the benefits from the operational planning reason to budget, but negatively related to the importance of the performance evaluation reason to budget. Second, business unit managerial participation in target setting was positively related to the benefits from the performance evaluation reason to budget, but unrelated to the operational planning reason to budget. Finally, the budget emphasis variable was only positively related to the benefits from the performance evaluation reason to budget, but unrelated to the operational planning reason to budget.

Finally, the raw benefit scores from both operational reasons to budget related to budget satisfaction and organisational unit performance, but when considering scores weighted by importance, only the performance evaluation reason to budget shows a significant relationship to organisation unit performance. The weighted scores of both reasons to budget showed a positive relationship to overall budget satisfaction. This reveals that the greater the benefits from an operational reason to budget, the greater the overall budget satisfaction. However, organisational unit performance may not be positively related to benefits from the operational planning reason to budget, as evidenced from the no-result when using weighted scores.

The implications of Hansen and Van der Stede (2004) for this thesis are significant. First, the authors identified that different operational reasons to budget exist, and that they show differential relationships to firm and budgetary characteristics. Also, and as briefly discussed in the rolling forecast section of this chapter, the different reasons to budget differentially relate to the use of the rolling forecast form. Finally, the importance of the organisation structure, strategy and uncertainty firm characteristics in considering the importance of reasons to budget amongst the predominantly fixed period budgeters in the sample provides direction for this thesis to consider, in developing firm characteristics to relate to the importance of reasons to budget.

## **2.6 Conclusion**

Overall, the development of studies discussing reasons to budget has been significant in volume, but narrow in its focus. Studies have predominantly investigated budgets as they are used for performance evaluation. Overall, the review reveals that budgeting research almost unanimously (and specifically) assumed that organisations used budgets for performance evaluation. Also, the focus of existing research has been on the fixed budget form, and with the exception of a few articles, the rolling forecast form is not investigated in existing research. Finally, the uncertainty characteristic appears to be strongly influential on the existence of rolling forecasts in organisations, and the importance of the fixed budget is more broadly influenced by organisation structure, strategy and uncertainty firm characteristics.

While earlier articles were almost unanimously critical of budget practice and their effect on negative employee behaviour, more recent articles have focused on the

different organisational contexts necessary to establish budget relevance, as evidenced from research in the participative budgeting and RAPM research streams. Though the focus of the majority of research to date has been on how budgets should be prepared (participative budgeting) and the use of budgets for performance evaluation (RAPM), (as explained in Hartmann, 2000), a new stream of budget research is emerging that focuses on other budget forms (Haka and Krishnan, 2005; Hansen, et al. 2003) and reasons-to-budget beyond performance evaluation (Hansen and Van der Stede, 2004; Hansen, et al. 2003).

The next three empirical chapters of this thesis attempt to provide a better understanding of the reason to budget, budget forms and firm characteristics constructs investigated in this thesis, utilising both a survey (Chapter 3, 4) and case study (Chapter 5) approach.

# **3 Operational budgeting in practice – exploring alternative reasons to budget and budget forms**

## **3.1 Introduction**

Budgeting is one of the most significant traditional financial management functions. Due to its widespread adoption (Umapathy, 1987; Ekholm and Wallin, 2000) it has been extensively investigated in management accounting practitioner and academic publications. In academic research, budgets have been primarily viewed as a tool for performance evaluation in organisations (Hansen and Van der Stede, 2004). However, when used for performance evaluation, budgeting is argued to be problematic (Argyris, 1952; Hansen, et al. 2003). It is claimed that budgeting pits employees against each other, reduces staff morale (Hope and Fraser, 2003), and negatively impacts an organisation's culture (Jensen, 2003).

Despite these reservations, studies have shown that the annual fixed budget is used by at least 92% of organisations (Ekholm and Wallin, 2000), and in some instances, as high as 97% (Umapathy, 1987). Fixed annual budgets are used in most organisations, irrespective of criticism. In this thesis, it is argued that fixed budgets continue to be used because budget criticisms mostly relate to a budget's use for staff evaluation<sup>1</sup>, while organisations predominantly use budgets for operational planning or business unit evaluation. The reasons to budget which budget criticism is based on is thus not strongly related to the reasons to budget that organisations predominantly have (Hansen and Van der Stede, 2004).

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<sup>1</sup> Discussed in Chapter 2

Chapter 2 supported the prior literature's focus on performance evaluation as a predominant reason to budget. More recent research has called for increasing investigations into reasons to budget other than performance evaluation (Hansen, et al. 2003; Hansen and Van der Stede, 2004). This chapter investigates two of the three core constructs identified in Chapter 1. These are the operational reasons to budget in organisations and two budget forms, the fixed annual budget and the rolling forecast.

The discussion of reasons to budget in this chapter is limited to operational reasons to budget. By limiting the range of reasons to budget studied, a more detailed comparison of similarly categorised (operational) reasons to budget is possible. This is different to existing research on reasons to budget, which has investigated a broader range of strategic and operational reasons to budget, in less detail (Hansen and Van der Stede, 2004).

To date, only one study has explicitly investigated reasons to budget other than performance evaluation (Hansen and Van der Stede, 2004) and findings from this study suggest that when using budgets for reasons other than performance evaluation, the perceived levels of budget importance, budget benefits, and their relationships to organisation and budgetary characteristics may be different. However, Hansen and Van der Stede (2004) observed strategic and operational reasons to budget and adopted a more exploratory research approach without theorising propositions and expected relationships involving different reasons to budget.

If most budget research has focused on the performance evaluation operational reason to budget, and existing research has highlighted the importance of considering operational planning reasons to budget (Hansen and Van der Stede, 2004; Hansen, et al. 2003), there is a need to investigate the extent to which these different operational reasons to budget are regarded as important in organisations, in order to understand why organisations use budgets. This leads to the first research question.

*RQ1: What is the importance of different operational reasons to budget in organisations?*

Budgeting may also be important to organisations because organisations increasingly use alternative budget forms such as rolling forecasts (Haka and Krishnan, 2005; Bogiages, 2005; Lynn and Madison, 2004; Barrett, 2003). The second research question focuses on the use of alternative budget forms to increase the relevance of operational budgets to organisations. In addition to the traditional annual budget, studies have commented on the use of shorter period rolling forecasts to improve the quality of budgeting (Haka and Krishnan, 2005). Rolling forecasts are generally regarded as an alternative management information system to an annual budget (Bogiages, 2005), but evidence on their use in organisations is sparse. Given that research on the existence of fixed budgets has indicated its high use amongst organisations, the idea that rolling forecasts are substitutes to fixed budgets does not seem to be as plausible. The extent to which fixed budgets and rolling forecasts are complements or substitutes needs to be considered. Therefore, the second research question investigates the extent to which rolling forecasts are used in organisations, and their relationship to the fixed budget.

*RQ2: To what extent do fixed budgets and rolling forecasts exist in organisations, and do they complement or substitute for each other?*



The final research question investigates how different reasons to budget relate to the two budget forms. There is a need to understand how various reasons to budget are related to the use of fixed budgets and rolling forecasts, and to compare their similarities or differences. While the first two research questions consider reasons to budget and the two budget forms in isolation, the third research question considers their inter-relationships. This research question is important, as understanding similarities or differences in the motivations for using different budget forms helps us to understand how these budget forms assist in achieving organisational objectives. The third research question therefore is:

*RQ3: How do different operational reasons to budget relate to fixed budgets and rolling forecasts?*

The remainder of this chapter is structured as follows. The next section reviews the relevant literature and develops several propositions relating to the research questions. This is followed by the research method and the results section. Finally, a discussion of conclusions, and suggestions for further research are presented.

## **3.2 Literature review and proposition development**

### **3.2.1 Alternative reasons to budget**

As discussed in Chapter 2, Hansen, et al. (2003) identified planning to be a focus of the activity based budgeting approach, and a movement away from performance evaluation to be the focus of the Beyond Budgeting (BB) approach. In both the above scenarios, operational planning (ABB) and performance evaluation are argued to be the predominant reasons to budget. Hansen, et al. (2003) discussed the above concepts, without testing them on a sample or case setting. To this extent, their research was more normative and descriptive.

Hansen and Van der Stede (2004) adopted a more empirical approach to analyse a broad range of strategic and operational reasons to budget. Hansen and Van der Stede (2004) conducted an exploratory study of two strategic (formulation of strategy and communication of goals) and two operational (performance evaluation and operational planning) reasons to budget, and showed that in addition to performance evaluation, alternative reasons to budget exist and are important uses of budgeting in organisations. Furthermore, as explained in Chapter 2, their results showed that different reasons to budget related to organisation and budgetary characteristics differently. However, Hansen and Van der Stede (2004) did not attempt to theorise the relative importance of these alternative reasons to budget and hypothesise their possible relationships to organisation and budgetary characteristics, choosing instead to adopt a more exploratory approach.

While a large body of budget research has considered the performance evaluation reason to budget, the existence of budget research focusing on operational planning is less prevalent. Studies that have focused on the operational planning reason to budget have not been as critical of human dysfunctional behaviours (Wallander, 1999), as is the case with the performance evaluation reason to budget. For the operational planning reason, criticisms arise from a questioning of the utility of the planning function. For example, it has been argued that the use of budgets for planning when environments are certain is not necessary, as the future is known. Similarly, the use of budgets for planning when environments are uncertain is equally unnecessary, as the future is too unpredictable and sudden shocks in events during a period will result in budgets being incorrect (Wallander, 1999). However, these arguments do not

consider that, irrespective of the level of difficulty, senior management may perceive it as important to have a pre-period financial guide to *coordinate resources* within organisations, in order to manage the pool of resources at their disposal. Managers also need to understand how financial resource availability may constrain their generation/improvement of future operational activities; that is, to *generate/improve action plans*. If action plans are simple to construct as uncertainty is low, then there is an incentive to conduct operational planning, as management confidence in the accuracy of the plan is high. If environments are highly uncertain, then an operational budget which provides some guide on how organisations may use funds is better than the alternative, which is to have no plan at all, and to react to situations as they occur, which could be argued to be a less proactive approach to management.

Therefore, the use of budgets for operational planning appears to be potentially valuable to organisations, though planning can be difficult under certain circumstances. Using budgets for planning may not be easy to accomplish, but in the absence of a better alternative for estimating future resource distribution requirements and identifying alternative courses of action, budgets will continue to be used, and regarded as important by organisations.

The budget's use for performance evaluation, however, introduces a different type of criticism – dysfunctional human behaviour. Criticisms of budgeting arising from its use for performance evaluation are consistently observed across many budget studies, beginning with Argyris (1952), Ridgway (1956), Hofstede (1968) and Hopwood (1972). Hansen, et al. (2003) argue that the majority of European practitioners and academics believe in the need to significantly alter current budgeting practice simply

to ensure its survival, largely due to its negative effect on human behaviour. One possible approach is to reduce the focus of budgets on performance evaluation. When employees perceive the threat of budget based performance evaluation, they experience job related tension, and this may lead to employees managing budget numbers during the budget setting process, or engaging in myopic behaviours during a financial period.

Other reasons to budget have also been discussed, but not explicitly investigated in existing research. For example, “control costs” is a description used as a metric in Hopwood (1972) and later adapted in many budget participation studies (Brownell and Dunk, 1991; Brownell and Hirst, 1986), but is never isolated as a primary reason to budget in organisations. Practitioner publications have also alluded to the role of a budget for forecasting desired selling prices and managing production capacity.

From a reporting perspective, many organisations may need to prepare a budget to provide periodical forecasts to financial markets and other external stakeholders (Merchant and Van der Stede, 2003). Management literature has also focused on the role of management controls in attempting to engender innovative employee behaviour, and a suitably designed budget may assist this purpose. Finally, a budget may be regarded as an important financial control used by directors to monitor an organisation’s progress.

Given the above, the first proposition attempts to support the existence of alternative reasons to budget. Hansen and Van der Stede (2004) called for more research to investigate the use of alternative reasons to budget, and prior to establishing

relationships between operational planning and performance evaluation reasons to budget, we must first verify the relative importance of operational planning reasons to budget in organisations. This leads to the first proposition.

**P1:** A range of operational reasons to budget are regarded as important by organisations.

The propositions that compare the relative importance of the operational planning and performance evaluation reasons to budget relate to research question three, and are discussed later. P1 represents an attempt to answer the first research question. It investigates the level of importance of the full range of operational reasons to budget investigated in this chapter.

### **3.2.2 Alternative budget forms – fixed budgets and rolling forecasts**

The second research question in this chapter investigates how rolling forecasts are used relative to fixed budgets in organisations. In responding to the criticisms of annual budgets, many practitioners have argued for the increased use of rolling forecasts to replace or supplement the annual budget, in order to maintain the usefulness of budgets to organisations (Bogiages, 2005; Lynn and Madison, 2004; Barrett, 2003). A rolling forecast is a budget which is usually produced monthly or quarterly, and continually factors in adjustments to reflect the current market realities faced by companies (Haka and Krishnan, 2005). Existing studies argue that by using rolling forecasts to forecast more frequently than once per annum, companies are able to reduce the detrimental effects of uncertainty on budgeting (Haka and Krishnan, 2005). One of the factors driving the selection of a rolling forecast, is the ineffectiveness of an annual budget to adequately forecast an upcoming period (Bogiages, 2005; Haka and Krishnan, 2005; Hansen and Van der Stede, 2004).

Monthly or quarterly rolling forecasts are argued to be used because it is inherently more difficult to budget over longer periods (Bittlestone, 2000).

The use of rolling forecasts in organisations needs to be supported. Though case based discussions by practitioners explain how rolling forecasts are used in organisations (Bittlestone, 2005), very little empirical research has investigated the prevalence of this form of budgeting. Haka and Krishnan (2005) studied rolling forecasts, but they did not investigate the nature of interaction between rolling forecasts and fixed budgets in organisations. Hansen and Van der Stede (2004) investigated the existence of rolling forecasts in organisations, and found that approximately 23% of their sample used rolling forecasts, but did not investigate the type of rolling forecasts in use. This chapter investigates rolling forecasts alongside fixed budgets, and their possible relationships to alternative reasons to budget.

Though the majority of practitioner studies argue for the use of rolling forecasts, many argue for rolling forecasts to substitute for fixed budgets (Lynn and Madison, 2004; Bittlestone, 2000; Bogiages, 2005). However, this argument appears contrary to the reality of high fixed budget adoption in organisations (Ekholm and Wallin, 2000). This chapter argues that it is more plausible that if rolling forecasts exist in organisations, they would probably complement the fixed budget, and not substitute for it. The rolling forecast would not cause a fixed budget to become obsolete, but rather work in tandem with the fixed budget to achieve organisational objectives. This leads to the second proposition.

**P2:** Organisations use rolling forecasts as a complement to the fixed budget.

### **3.2.3 Budget forms and reasons to budget**

The third research question is investigated using propositions 3-6. This research question attempts to extend the findings of Hansen and Van der Stede (2004), by investigating differences between the importance of different reasons to budget, for the fixed budget and for the rolling forecast forms.

A number of different comparisons are made. The relative importance of the operational planning and performance evaluation reasons to budget will be investigated, for both fixed period budgets (P3) and rolling forecasts (P4). The use of budgets for performance evaluation is examined, between fixed period budgets and rolling forecasts (P5). Finally, a comparison is made between the business unit evaluation and staff evaluation reasons to budget.

Notwithstanding performance evaluation related criticisms, budgeting continues to be used by a majority of companies globally (Ekholm and Wallin, 2000; Umapathy, 1987). If budget criticisms largely relate to the use of budgets for performance evaluation, it is possible that organisations continue to budget for reasons other than performance evaluation. In this chapter, consistent with Hansen and Van der Stede (2004), operational planning is adopted as the main alternative operational reason to budget to performance evaluation. Therefore, if the fixed budget continues to be regarded as important, then this will probably not be due to its use for performance evaluation, given the well regarded problems with using budgets for performance evaluation. Instead, organisations that use fixed budgets would use them more for operational planning and regard operational planning as a more important reason to budget.

However, as explained in Argyris (1952), if the problem of performance evaluation is caused by the job related tension induced on staff, it is likely that the operational planning reasons to budget are only more important than the staff evaluation reason to budget. Business unit evaluation should not display as direct a relationship to individual accountability as staff evaluation, and as such, will not be subject to the dysfunctional behavioural effects of performance evaluation as explained in budget research (Jensen, 2003; Wallander, 1999; Argyris, 1952). Differences between the importance of the operational planning reasons to budget and business unit evaluation are not as clearly established, given that the negative performance evaluation effects on business units is not as well established. This leads to the third proposition.

**P3:** For fixed budgets, irrespective of rolling forecast use, operational planning reasons are more important than the staff evaluation reason to budget

Given the large time interval between budgets under a traditional fixed annual budget, there is a significant lag between planning and business reality. Therefore, the adoption of monthly or quarterly rolling forecasts should make organisations more responsive to change and competitive (Gurton, 1999; Neely, et.al. 2001), in the event that market factors change mid-period. Myers (2001) argues that too often, traditional budgets are “useless” as they are out of date too soon after they are created. This problem is minimised when budgeting more frequently.

By providing a set of forecasts that are more up to date and thereby accurate, rolling forecasts facilitate organisational learning and provide managers with more confidence in the budget numbers that are used for short term operational planning (Haka and Krishnan, 2005; Hansen, et al. 2003).



From a performance evaluation perspective, evidence on the impact of rolling forecasts is mixed. On the one hand, rolling forecasts may be beneficial. The use of rolling forecasts can reduce the incidences of free-riding by staff who achieve annual targets well before period's end. Staff find it more difficult to take "free rides" (Myers, 2001) when their annual targets are met well prior to the end of a period, as under a rolling forecast system, updates to numbers occur monthly or quarterly. Therefore, budgets will be adjusted prior to period end, reducing the "free rider" period. From this perspective, rolling forecasts provide more relevant accounting numbers for performance evaluation.

In contrast, Gurton (1999) argues that rolling forecasts can have a negative effect on performance evaluation, as evaluating individuals over shorter periods provides much higher administrative workloads for management, and the performance evaluation process becomes more cumbersome, consuming more organisational resources.

Therefore, while rolling forecasts appear to assist the planning function of organisations by introducing more up-to-date planning, they require significant additional resource commitments in order to effectively execute a performance evaluation system. Given the above, organisations which use rolling forecasts should attach greater importance to operational planning reasons, than performance evaluation reasons.

**P4:** For rolling forecasts, irrespective of fixed budget use, operational planning reasons to budget are more important than the performance evaluation reasons to budget.

If the use of rolling forecasts for performance evaluation is expected to be low, then organisations which use budgets for performance evaluation possibly will be more inclined to use the fixed budget than the rolling forecast. While the use of the annual fixed budget for performance evaluation can be problematic, organisations which nevertheless use budgets for performance evaluation will regard the difficulties of budgeting for performance evaluation using rolling forecasts to be greater than when using fixed budgets. Constructing a quarterly or monthly performance evaluation system may be too difficult for organisations to properly execute, as argued by Gurton (1999). Haka and Krishnan (2005) also argue that organisations which combine their short term rolling forecast goals with long term budget goals adversely affect the goal commitment of employees, leading to a decrease in the usefulness of rolling forecasts when used for performance evaluation.

Based on the above, organisations that evaluate using budgets will be more inclined to use fixed budgets than rolling forecasts for performance evaluation purposes. This leads to the fifth proposition.

**P5:** The performance evaluation reasons to budget will be of greater importance for fixed budgets than for rolling forecasts, irrespective of the use of either form of budgeting.

Finally, in considering the use of budgets for performance evaluation, two types of performance evaluation are observed from existing research; *staff evaluation*, and *business unit evaluation* (Chenhall, 2003; Hartmann, 2000; Langfield-Smith 1997). However, the different organisational impacts of both of these performance evaluation types are often not considered in existing budget research. The notion of staff evaluation was directly proposed by Argyris (1952) in his discussions of the effect of budgets on creating job related tensions on staff when used for performance

evaluation. This stream of research, which eventually influenced the participative budgeting (Shields and Shields, 1998) and Reliance on Accounting Performance Measures (RAPM) research streams (Hartmann, 2000), focuses strongly on the notion of the individual being affected from performance evaluation, and their behavioural responses leading to potentially detrimental outcomes. However, other studies in this area have focused on business units, identifying these units as being the focus of performance evaluation (Chenhall, 2003).

The evaluation of business units does not relate as directly to staff within the business unit. Managers of business units, for example, may not be held personally accountable for the overall performance of a business unit if circumstances beyond their control led to the sub-performance of the business unit. However, senior management would still be interested to know how the business unit fared, when considering the extent to which organisational goals were reached.

The use of budgets to evaluate staff, therefore, could cause greater job related tension amongst staff than the evaluation of business units. Consequently, organisations may be less inclined to use budgets to evaluate staff, in comparison to using budgets to evaluate business units. This leads to the sixth proposition.

**P6:** The business unit evaluation reason to budget is more important to organisations than the staff evaluation reason to budget.

## **3.3 Research method**

### **3.3.1 Survey approach and sample**

To investigate the propositions, a cross-sectional survey (Appendix A) was used to collect data. The survey method has been used extensively in organisational research (Dillman, 2000), and in management accounting (Van der Stede, et al. 2005). The survey method is often used to obtain data from a large number of organisations, and provides high quality data if constructed properly (Diamond, 2000; as discussed in Van der Stede, et al. 2005).

The cross-sectional survey was sent to 2,400 respondents randomly selected from the Certified Practising Accountants (CPA) Australia member database. This database was used as it was supplied by CPA Australia as part of an industry grant<sup>2</sup>. The CPA professional accounting body is one of the two largest accounting bodies in Australia, and is comprised of approximately 110,000 members around the world, across 92 countries. Given the accounting background of its members, the use of the CPA Australia member database for studying budgeting was deemed appropriate. The seniority of accountants is an important requirement, as more senior accounting staff are more likely to be able to adequately complete questions relating to the conceptual budgeting issues discussed in this thesis. More senior accountants will also reflect on budget relationships in relation to the organisation as a whole and a wider range of staff employed within the organisation. Therefore the responses of senior CPA's are

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<sup>2</sup> Predictive Business Analysis and Balanced Scorecard grant obtained by a team of researchers (Prabhu Sivabalan, Teemu Malmi, Zoltan Matolcsy and David Brown) from the University of Technology, Sydney - School of Accounting in 2002. The grant was to the value of \$30,000 and descriptive results from the study were distributed to CPA Australia members.

more representative of an organisation's experience. Also, better quality data provides greater validity in the testing of propositions.

A sample size of 2,400 members was used as a minimum number of responses of 120 was regarded as being appropriate for statistical testing. By conservatively assuming a response rate of 5%, the overall mailing sample required is 2,400. This conservative sample estimation approach was used to ensure a sufficient level of responses for adequate statistical validity.

A large sample size was also needed, because the grant provided by the CPA Australia organisation required us to study both operations budgeting and the balanced scorecard. The balanced scorecard section of the study, especially, was not expected to have a high adoption rate and therefore a large sample size was required to ensure a sufficiently large respondents sample for statistical analysis. This was also true for the rolling forecast section of the survey. Based on Hansen and Van der Stede (2004) findings, it was expected that approximately one in four organisations may use a rolling forecast, and therefore a large sample was needed to ensure a reasonable response for statistical analysis.

The sample selected from the CPA Australia member database was comprised of members with senior managerial job titles, and employed in medium and large organisations. The Australian Bureau of Statistics defines a medium and large organisation as being one which employs 20 or more staff. Again, in adopting a conservative approach, the 2,400 organisations selected were randomly taken from a pool of CPA members that worked in organisations with 100 employees or more. This

was done as some of the members in the CPA database were likely to possess member information that was not up to date. This precautionary measure attempted to ensure that responses would not have to be excluded for having less than 20 employees.

### **3.3.2 Survey questionnaire**

Questions from the survey were developed following the Dillman (2000) approach. Survey questions were adapted from prior research, and the development of key questions is explained in section 3.3.5. Additionally, extra questions relating to the characteristics of respondents and their organisations were asked, as adapted from prior management accounting research (Hansen and Van der Stede, 2004; Hansen, et al. 2003; Brownell and Hirst, 1986). These comprise the following:

1. Information on respondents
  - a. Position in organisation
  - b. Time in employment
2. Information on respondent organisations
  - a. Organisation size - number of employees
  - b. Industry classification of organisations based on Global Industry Classification Standard (GICS)

### **3.3.3 Survey process**

The survey was mailed to respondents over two stages that were two months apart. The first 1200 surveys were mailed in the first stage and the second 1200 were mailed in the second stage. Surveys were sent over two stages to ensure that any potential discrepancies in the mail-out process would not apply to all organisations concerned, therefore minimising the effect of any potential survey process errors.

A cover letter (Appendix B) was included with the survey, outlining the purpose of the research to respondents. As an incentive to complete the survey, potential respondents were offered a summary report of survey findings. Four weeks after mailing the surveys, as recommended by Dillman (2000), follow-up postcards (Appendix C) were mailed to all respondents, reminding them to complete the survey. Three weeks after the mailing of the postcards, the survey was closed. Postcards were used as a novel reminder for potential respondents, and an e-mail address was provided in the postcards to allow respondents to request additional copies of the surveys in the event they had been misplaced.

### **3.3.4 Survey responses**

In total, 424 respondents returned the survey, representing a raw response rate of 17.7%. To allow a plausible analysis given the sample construction rules and to maintain consistency in the characteristics of organisations surveyed, strategic business units (SBU)'s having less than 20 employees were removed from the sample. Notwithstanding the measures taken to ensure members from organisations under 20 employees did not respond, 41 respondents were excluded because they worked in organisations with less than 20 employees. Also, 52 respondents did not provide any employee size information and were discarded.

The above measures left a usable fixed budget sample of 331 (13.79%) organisations. For the rolling forecast sample, a further 116 (4.83%) organisations did not use rolling forecasts. This left 215 (8.96%) organisations for the usable rolling forecast sample.

The above response rates are low by the standards of management accounting research. Hansen and Van der Stede (2004) reported a much higher response rate, largely due to their sample being sourced from a face-to-face forum of practitioners, and not by mailing surveys to organisations. The low response rates require the use of response and non-response tests to affirm the appropriateness of the sample results by ensuring no systematic biases exist in the results.

### 3.3.4.1 Respondent characteristics

The majority of respondents held senior financial positions in their organisations, as shown in Table 3.1. The three most common titles were financial manager/controller (134 respondents), commercial and business managers (38) and chief financial officers (30). These three titles accounted for 61.96% of the respondents that provided their title information. The remaining respondents were predominantly middle level managers and a small number of financial/business accountants and analysts.

Table 3.1: Respondent position in organisation

| Title                        | Frequency | Valid % | Cumulative % |
|------------------------------|-----------|---------|--------------|
| Financial Manager/Controller | 134       | 41.36%  | 41.36%       |
| Commercial/Business Manager  | 38        | 11.73%  | 53.09%       |
| Chief Financial Officer      | 30        | 9.26%   | 62.35%       |
| Other managers <sup>3</sup>  | 90        | 27.77%  | 90.12%       |
| Business analyst/accountant  | 32        | 9.88%   | 100.00%      |

The average time spent by respondents in their organisations was 7.65 years, with a minimum of 1 month and a maximum of 40 years. Table 3.2 highlights that only 2.75% of respondents had been employed in their organisations for less than a year. Further, the majority of respondents had been employed for more than 5 years (final

<sup>3</sup> “Other managers” includes numerous management titles other than the descriptions given in Table 3.1. Some of these include “Manager Regulatory Reporting”, “State Administrations Manager”, “Manager Business Services”, “Finance Process Leader” and “Manager Group Accounting”.



two categories sum to 56.58% of the sample). This indicates that most respondents probably possessed the requisite knowledge to complete the survey.

Table 3.2: Period of employment of respondents

| Period of employment | Years Employed |         |              |
|----------------------|----------------|---------|--------------|
|                      | Frequency      | Valid % | Cumulative % |
| Under 1 year         | 9              | 2.75%   | 2.75%        |
| 1 to 4.99 years      | 133            | 40.67%  | 43.42%       |
| 5 to 9.99 years      | 94             | 28.75%  | 72.17%       |
| 10 years and over    | 91             | 27.83%  | 100.00%      |

Finally, the average size of the organisations responding was 11,033 employees (see Table 3.3). However, a wide range of organisational sizes was found, from a minimum of 21 to a maximum of 430,000 employees, with a median of 1,000 employees. Most respondents were employed by larger to medium sized organisations with more than 90% of the respondents in organisations with more than 100 employees (only 8.76% of respondents work in organisations with less than 100 employees).

Table 3.3: Size characteristics of respondent companies

| Number of employees | Frequency of companies | Valid % | Cumulative % |
|---------------------|------------------------|---------|--------------|
| Less than 100       | 29                     | 8.76%   | 8.76%        |
| 100 to 999          | 135                    | 40.79%  | 49.55%       |
| 1000 to 9,999       | 98                     | 29.61%  | 79.16%       |
| More than 10,000    | 69                     | 20.84%  | 100.00%      |

The industry distribution of respondents in the sample is shown in Table 3.4. A reasonable spread of organisations was observed from all ten Global Industry Classification Standard categories.

Table 3.4: Respondent industry classification

| Industry Sector             | Number (percentage)       |
|-----------------------------|---------------------------|
| Energy                      | 5 (1.64%)                 |
| Materials                   | 31 (10.20%)               |
| Industrials                 | 101 (33.22%)              |
| Consumer Discretionary      | 61 (20.07%)               |
| Consumer Staples            | 34 (11.18%)               |
| Healthcare                  | 16 (5.26%)                |
| Financials                  | 29 (9.54%)                |
| Information Technology      | 13 (4.28%)                |
| Telecommunications Services | 9 (2.96%)                 |
| Utilities                   | 5 (1.64%)                 |
| TOTAL                       | *304 organisations (100%) |

\* Overall, 304 of the 331 respondents in the usable sample identified their GICS category<sup>4</sup>.

### 3.3.4.2 Response and non-response error measures

Van der Stede et al. (2005) reviewed the management accounting survey based literature, and argued that amongst other factors, three elements of survey research assist to reduce response error. These are *pre-testing*, *follow up procedures* and *non-response bias analysis*. This chapter follows a similar framework to explain the measures taken to minimise the possible response bias or error.

#### 3.3.4.2.1 Pre-testing

All questions developed for the operations budgeting survey were pilot tested amongst a group of senior academics, senior management accounting practitioners and CPA Australia staff. Draft versions of the survey were sent to contacts within these three groups, who were encouraged to suggest areas for improvement.

<sup>4</sup> There is no rationale to indicate that any one sector is unfairly biased as a result of non-respondents to this question, and therefore non-respondents to this question are assumed to be similarly distributed across the industries.

Specifically, for the exploratory list of reasons to budget, a list of operational reasons to budget identified from anecdotal practitioner and academic research were put forward to practitioners. Practitioners were given a period of time to reflect on the reasons to budget, and to provide feedback. Feedback from practitioners confirmed the usefulness of the ten operational reasons to budget. No additional operational reasons to budget were suggested, and none were rejected. Therefore, the ten operational reasons to budget were used in the thesis.

Where suggestions for change were recommended for any of the survey questions, they were collated and reflected upon with other members of the research project, and improvements made where considered appropriate. The final draft of the survey was sent to a select few practitioners for completion, as a final test of the survey's applicability to the respondent sample. The mail-out of the survey was only conducted after this final pilot testing phase of the survey concluded.

#### *3.3.4.2.2 Follow-up procedures*

As explained in the "survey process" section, reminder notices (postcards) were mailed four weeks after the surveys were posted. This is within the date range recommended by Dillman (2000) for follow-up contact. Where potential respondents had not completed the survey, an offer was made to re-send the survey instrument by hard copy or soft copy.

#### *3.3.4.2.3 Non-response bias testing*

Non-response bias refers to the potential for systematic differences to exist between respondents and non-respondents from a survey mail-out (Van der Stede, et al. 2005). The main cited concern of non-response bias is that respondents of surveys tend to

self-select, which leads to the possibility that data provided by respondents may not reflect the opinions of all practitioners, thus providing a distorted perception of the phenomena of interest (Groves, et al. 2001). In order to observe the existence of non-response bias, simple tests are recommended.

The first is an observation of the characteristics of early versus late respondents. As surveys were received, they were dated and numbered. The early half of the responses received from both mailout stages were compared to the late half. The mean Likert scores of early and late respondents were compared, and independent samples t-tests were conducted to observe for statistically significant differences between the mean scores of early and late respondents<sup>5</sup>. Only two of the twenty variables tested showed significant differences. Overall, this indicates that the scores of the late respondents do not vary from the scores of the early respondents.

Van der Stede, et al. (2005) argue that it is insufficient to only consider early versus late respondents, as these tests can only be conducted on the organizations that have responded, and do not necessarily indicate that non-response error does not exist. In order to lend more strength to the testing, the second test checks for variation in the nature of the organizations themselves<sup>6</sup>. In this chapter, the industry distribution of organisations in the sample was used to identify the possibility that there may be a

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<sup>5</sup> The independent sample t-test is a parametric statistical test, assuming a normal distribution amongst the sample. A non-parametric Mann-Whitney test was also conducted to ensure that results were consistent irrespective of the distribution of the data set. Results under both tests were very similar, with only 5 of the 74 tests of differences being different across both tests. These five different results were not concentrated on any one proposition, and did not affect the conclusions from any of the propositions investigated.

<sup>6</sup> The industry distribution of the original 2400 firms that were mailed surveys could not be compared to the distribution of the respondent organisations, as the mailing list provided by CPA Australia did not contain the industry classification of member's organisations. These were completed by respondents to the surveys.

concentration of respondents across industries which does not parallel the broader population.

However, an examination of the industry sectors of respondents reveals that this is unlikely. There is wide variation in industry sector groups of organisations responding to the study, indicating that there is no particular bias in respondents towards any single sector (see Table 3.4). Also, the proportions of organisations in each classification group are representative of Australian organisations generally. As expected, materials, industrials, consumer discretionary and consumer staples industries were the most populated categories, and the financial, health care, utilities and energy sectors containing significantly less organisations. This distribution is consistent with the overall distributions of Australian organisations as indicated by the Australian Bureau of Statistics 2006<sup>7</sup>.

Overall, the examination of early versus late respondents, the consideration of respondent characteristics and the examination of industry classification of respondents relative to the broader Australian population supports the argument that the existence of non-response bias is unlikely.

### **3.3.5 Measurement instruments and descriptive statistics**

The *reasons to budget* and *budget forms* constructs are examined in this chapter. In total, ten operational reasons to budget were identified for fixed budgets and rolling forecasts. Given the infancy of alternative reason to budget research, this chapter adopted an exploratory and grounded approach to determining the reasons. Existing

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<sup>7</sup><http://www.abs.gov.au/Websitedbs/c311215.nsf/20564c23f3183fdaca25672100813ef1/faedeff8b88688d0ca256aef001e74c0!OpenDocument>

reasons to budget in research such as staff evaluation and business unit evaluation have been included. These were also identified as reasons to budget in discussions with practitioners. This exploratory approach to determining reasons to budget is similar to that adopted by Hansen and Van der Stede (2004), in identifying their four reasons to budget.

The importance of each reason to budget was measured using a 7-point Likert Scale, with “1” being “No Importance” and “7” being “High Importance”, as used in Hansen and Van der Stede (2004). Respondents were asked the question: “What are the main reasons for preparing the fixed period and rolling forecast, and how important are these reasons?”.

As explained in section 3.3.3, a usable sample of 331 organisations was used for the fixed budget analysis and 215 organisations for the rolling forecast analysis.

Descriptive statistics (mean, minimum, maximum, median and standard deviation) for the ten reasons to budget identified in this chapter are provided for both budget forms, fixed budgets (Table 3.5) and rolling forecasts (Table 3.6). For all variables, the theoretical minimum and maximum values were 1 and 7 respectively. Furthermore, the actual range of scores in the sample was 1 and 7, for all the reasons to budget, as shown in Tables 3.5 and 3.6. This signals a fair distribution of scores for all the operational reasons to budget amongst the usable sample.

Table 3.5: Descriptive statistics of Reasons to Budget – Fixed budgets

| Fixed budget -<br>Importance of Reason to Budget | Mean | Min | Max | Median | Std.<br>Dev. |
|--|------|-----|-----|--------|--------------|
| Control costs                                    | 5.87 | 1   | 7   | 6      | 1.109        |
| Board of director monitoring                     | 5.76 | 1   | 7   | 6      | 1.202        |
| Formulate action plans                           | 5.31 | 1   | 7   | 5      | 1.270        |
| Coordinate resources                             | 5.26 | 1   | 7   | 5      | 1.404        |
| Business unit evaluation                         | 5.16 | 1   | 7   | 6      | 1.557        |
| Encourage innovative behaviour                   | 4.38 | 1   | 7   | 5      | 1.572        |
| Staff evaluation                                 | 4.29 | 1   | 7   | 5      | 1.672        |
| Manage production capacity                       | 4.23 | 1   | 7   | 5      | 2.104        |
| Determine required selling prices                | 4.01 | 1   | 7   | 4      | 1.927        |
| Providing information to external parties        | 3.96 | 1   | 7   | 4      | 1.971        |

Table 3.6: Descriptive statistics of Reasons to Budget – Rolling forecasts

| Rolling forecast -<br>Importance of Reason to Budget | Mean | Min | Max | Median | Std.<br>Dev. |
|--|------|-----|-----|--------|--------------|
| Board of director monitoring                         | 5.84 | 1   | 7   | 6      | 1.353        |
| Control costs  | 5.82 | 1   | 7   | 6      | 1.291        |
| Formulate action plans                               | 5.57 | 1   | 7   | 6      | 1.352        |
| Business unit evaluation                             | 5.18 | 1   | 7   | 6      | 1.633        |
| Coordinate resources                                 | 5.11 | 1   | 7   | 5      | 1.497        |
| Encourage innovative behaviour                       | 4.46 | 1   | 7   | 4      | 1.729        |
| Manage production capacity                           | 4.22 | 1   | 7   | 5      | 2.094        |
| Staff evaluation                                     | 4.14 | 1   | 7   | 4      | 1.794        |
| Determine required selling prices                    | 3.80 | 1   | 7   | 4      | 2.009        |
| Providing information to external parties            | 3.67 | 1   | 7   | 4      | 2.123        |

In addition to the importance of various reasons to budget, respondents were asked to respond to the following question – “At what levels of the organisation is the fixed period or rolling forecast budget used to evaluate performance”. For each of six organisational levels (Corporate, Strategic Business Unit, Unit, Department, Team, Individual), responses were sought on a 7-point Likert Scale, with 1 being “No use” and 7 being “High use”. This question was constructed to assist with the analysis of proposition 5. Descriptive statistics for the responses to these six categories, for both the annual fixed budget and rolling forecast are provided in Table 3.7.

All propositions will be tested by comparing the mean scores of the variables displayed above. It is noted that a fair spread of scores exists for each reason to budget, evidenced by the minimum and maximum for the data set for every reason to budget being 1 and 7 respectively, and the standard deviation for most reasons to budget lying between 1.4 and 2.2.

Table 3.7: Fixed/rolling forecast use for evaluation at different organisational levels

|                                | Mean | Min | Max | Median | Std. Dev. |
|--------------------------------|------|-----|-----|--------|-----------|
| <b><i>Fixed Budget</i></b>     |      |     |     |        |           |
| Corporate                      | 6.12 | 1   | 7   | 6      | 1.147     |
| Strategic Business Unit        | 5.85 | 1   | 7   | 6      | 1.474     |
| Unit                           | 5.58 | 1   | 7   | 6      | 1.634     |
| Department                     | 5.20 | 1   | 7   | 5      | 1.622     |
| Team                           | 4.06 | 1   | 7   | 4      | 2.050     |
| Individual                     | 3.73 | 1   | 7   | 4      | 2.124     |
| <b><i>Rolling forecast</i></b> |      |     |     |        |           |
| Corporate                      | 5.71 | 1   | 7   | 6      | 1.61031   |
| Strategic Business Unit        | 5.56 | 1   | 7   | 6      | 1.76227   |
| Unit                           | 5.07 | 1   | 7   | 6      | 1.94480   |
| Department                     | 4.55 | 1   | 7   | 5      | 1.97449   |
| Team                           | 3.78 | 1   | 7   | 4      | 2.05526   |
| Individual                     | 3.42 | 1   | 7   | 4      | 2.03130   |

This chapter differentiates between the use of budgets for evaluation, and the use of budgets for compensation. Organisations may use budgets to evaluate, but does the evaluation of staff extend to having an impact on their compensation? Respondents were asked to explain the extent to which the compensation of staff at various organisational levels was linked to achieving the fixed budget or rolling forecast (Table 3.8). Respondents were asked “Is compensation related to achieving a fixed period or rolling forecast budget for the following staff in your organisation?”. For each of the six organisational levels (Corporate, Strategic Business Unit, Unit, Department, Team, Individual), responses were sought on a 7-point Likert scale, with “1” being “No staff”, “4” being “about half of the staff at this level” and “7” being



“All staff at this level”. This question will be used to analyse the relationship between a budget’s use for evaluation and compensation, in section 3.4.4.3.

Table 3.8: Budget use for compensation

|                                | Mean | Min | Max | Median | Std. Dev. |
|--------------------------------|------|-----|-----|--------|-----------|
| <b><i>Fixed Budget</i></b>     |      |     |     |        |           |
| Corporate                      | 4.73 | 1   | 7   | 6      | 2.355     |
| Strategic Business Unit        | 4.41 | 1   | 7   | 5      | 2.333     |
| Unit                           | 3.97 | 1   | 7   | 4      | 2.293     |
| Department                     | 3.50 | 1   | 7   | 4      | 2.164     |
| Team                           | 3.07 | 1   | 7   | 2      | 2.113     |
| Individual                     | 3.05 | 1   | 7   | 2      | 2.139     |
| <b><i>Rolling forecast</i></b> |      |     |     |        |           |
| Corporate                      | 2.82 | 1   | 7   | 1      | 2.380     |
| Strategic Business Unit        | 2.67 | 1   | 7   | 1      | 2.251     |
| Unit                           | 2.36 | 1   | 7   | 1      | 2.023     |
| Department                     | 2.17 | 1   | 7   | 1      | 1.880     |
| Team                           | 2.12 | 1   | 7   | 1      | 1.891     |
| Individual                     | 2.13 | 1   | 7   | 1      | 1.882     |

### 3.4 Results

Results will be discussed in four stages. First, an overall analysis of mean scores for the reasons to budget is conducted (RQ1). Second, fixed and rolling forecast mean scores are discussed (RQ2). Third, the relationships between the importance of different reasons to budget for fixed budgets and rolling forecasts are considered (RQ3). Finally, a discussion of results segmented by industry, size and listed/unlisted classifications is presented. Where appropriate, independent sample t-tests are conducted to ascertain the significance of differences in scores.

#### 3.4.1 Reasons to budget

Table 3.9 lists the ten operational reasons to budget in mean rank order for fixed budgets, beginning with the most important reason to budget. It also shows the

percentage of respondents that rated the reasons to budget, with a score of 5 or greater in the 7-point scale. This is considered a rating of “High importance”. Table 3.10 presents the same results for rolling forecasts.

Table 3.9: Operational reasons to budget in rank order – fixed budget

| Fixed budget -<br>Importance of Reason to Budget | Mean | High importance<br>% |
|--|------|----------------------|
| Control costs                                    | 5.87 | 89.29                |
| Board of director monitoring                     | 5.76 | 86.04                |
| Formulate action plans                           | 5.31 | 78.50                |
| Coordinate resources                             | 5.26 | 74.03                |
| Business unit evaluation                         | 5.16 | 75.00                |
| Encourage innovative behaviour                   | 4.38 | 50.16                |
| Staff evaluation                                 | 4.29 | 50.33                |
| Manage production capacity                       | 4.23 | 54.82                |
| Determine required selling prices                | 4.01 | 43.56                |
| Providing information to external parties        | 3.96 | 45.87                |

Table 3.10: Operational reasons to budget in rank order – rolling forecast

| Rolling forecast-<br>Importance of Reason to Budget | Mean | Fixed<br>Budget<br>Rank | High<br>importance % |
|---|------|-------------------------|----------------------|
| Board of director monitoring                        | 5.84 | 2                       | 87.38                |
| Control costs                                       | 5.82 | 1                       | 85.10                |
| Formulate action plans                              | 5.57 | 3                       | 83.57                |
| Business unit evaluation                            | 5.18 | 5                       | 73.30                |
| Coordinate resources                                | 5.11 | 4                       | 68.75                |
| Encourage innovative behaviour                      | 4.46 | 6                       | 49.51                |
| Manage production capacity                          | 4.22 | 8                       | 53.43                |
| Staff evaluation                                    | 4.14 | 7                       | 46.38                |
| Determine required selling prices                   | 3.80 | 9                       | 38.35                |
| Providing information to external parties           | 3.67 | 10                      | 38.83                |

Nine of the fixed budget reasons and 8 of the rolling forecast reasons had a mean score above 4. Given that 4 is the mid-point for responses on a 7-point scale, it is reasonable to assume that nearly all of the operational reasons to budget considered in this thesis are regarded with at least a moderate level of importance by respondents.

To further support this conclusion, the percentage of high responses indicate that for fixed budgets, 8 of the 10 reasons to budget and for rolling forecasts, 5 of the 10 reasons to budget, had more than half the respondents indicating high importance for these reasons to budget. This result is further evidence for the overall importance with which a range of different reasons to budget are regarded by the majority of the sample.

The analysis of reasons to budget for both budget forms reveals two clusters of mean scores. For fixed budgets, Table 3.9 highlights that the “Control costs”, “Board of Director monitoring”, “Formulate action plans”, “Coordinate resources” and “Business unit evaluation” reasons to budget show mean scores greater than 5, while the remaining 5 reasons to budget are at most, 4.38 (Encourage innovative behaviour). Independent sample t-tests indicate statistically significant differences between any one of the top 5 cluster of reasons to budget, and any one of the bottom 5 cluster of reasons to budget (Appendix D), for fixed budgets and rolling forecasts. This pattern is consistent for rolling forecasts. Table 3.10 shows that the same top cluster of reasons to budget for the rolling forecasts exhibit means scores that are significantly greater than the bottom cluster of reasons to budget. Interestingly, the staff evaluation reason to budget which has been most researched in existing budget research, is in the bottom cluster of reasons to budget for both budget forms. This lends support to the argument that a range of reasons to budget are considered important by organisations, and that several other operational reasons to budget are more important than the staff performance evaluation reason to budget.

Overall, results consistently highlight that a range of reasons to budget are regarded as important by organisations. This aligns to proposition 1, which considers the general importance of the operational reasons to budget explored in this chapter. Overall, therefore, P1 is supported. Most reasons to budget are regarded with at least a moderate level of importance in organisations. Though all reasons do not exhibit higher levels of importance, many operational reasons to budget other than performance evaluation are also regarded as important. The confirmation of this proposition is important, as it indicates that the focus of existing budget research needs to broaden and explicitly consider operational reasons to budget other than performance evaluation.

Interestingly, higher ranking operational reasons to budget appear to be related to non-evaluation reasons such as “control costs”, “director monitoring”, “formulating action plans” and “coordinate resources”. As argued in Hansen and Van der Stede (2004), there is a need to observe reasons to budget other than performance evaluation in organisations. From an operational perspective, Hansen and Van der Stede (2004) observed the performance evaluation and operational planning reasons to budget. In order to further the research of Hansen and Van der Stede (2004), propositions three to six consider relationships between two operational planning reasons to budget (coordinate resources and formulate action plans) and two performance evaluation reasons to budget (staff evaluation and business unit evaluation). From Table 3.5 and Table 3.6, the importance of using budgets for operational planning reasons (coordinate resources and formulate action plans) is at least equal to or greater than the two performance evaluation reasons to budget. Furthermore, both operational

planning reasons to budget average over 5 on the importance scale. This affirms that they are regarded as important by organisations and warrant further investigation.

For both budget forms budgets, the two most important reasons to budget are “control costs” and “board of director monitoring”. While the “control costs” reason to budget was expected to be important, the finding of board of director monitoring as a highly important reason to budget is significant. In existing research, there is little acknowledgement of the role of a budget as a useful financial control mechanism for directors to monitor an organisation. Most directors of organisations rely on the budget as a financial synopsis of an organisation’s expectations and as a means of being made aware of the future expected direction of an organisation.

Overall, results indicate that operational budgets significantly assist directors to monitor an organisation’s progress. The examination of this reason to budget in organisations is often not discussed in existing research.

### **3.4.2 Fixed budgets and rolling forecasts**

The second category of relationships relates to the second proposition, and considers the use of rolling forecasts relative to fixed budgets in organisations. Though rolling forecasts are often argued to be substitutes for fixed budgets, this chapter finds that fixed budgets continue to be used extensively in organisations, consistent with Ekholm and Wallin (2000) and Umapathy (1987). 97% of the respondents surveyed continue to use a fixed budget. Also, 64% of these respondents used a rolling forecast. This is interesting, because it reflects that almost all organisations use a fixed budget, and almost two thirds use a rolling forecast to complement a fixed budget, not substitute for it. Evidence for the complementary use of fixed and rolling

forecasts in organisations is emphasised by the similarity in organisational reasons for budgeting, for the fixed budget and rolling forecast. The ranking of reasons to budget by importance in Table 3.5 and Table 3.6 reveals little difference in the relative importance of reasons to budget for fixed budgets and rolling forecasts. The general ranking of reasons to budget from top to bottom follows a similar pattern for both budget forms. Some reasons to budget moved up or down by one position at most, when comparing the fixed budget and rolling forecast rankings. Differences in the ranking are therefore negligible, and reveal that organisations generally use both budget types for similar reasons. This observation is interesting, because when the pattern of reasons to budget for both budget forms are similar, there may be an expectation that the newer budget form (rolling forecast) is replacing the old (fixed budget). However, this is not the case.

The high rolling forecast adoption rate amongst the sample was surprising; it is far higher than that recorded by Hansen and Van der Stede (2004). 215 of the 331 (65%) usable sample of organisations use a rolling forecast, while only 13 of 57 (23%) organisations in Hansen and Van der Stede (2004) used rolling forecasts. This possibly indicates that rolling forecasts as a practice is growing strongly in organisations.

The majority of rolling forecast users use it as a complement, as opposed to a substitute, to a fixed period budget – only 8 of the 215 (4%) organisations using a rolling forecast do not use a fixed period budget. Results from this chapter indicate that the majority of organisations still use an annual fixed period budget, but seek to reinforce fixed period budgets with rolling forecasts. Overall, proposition 2 is

supported. Rolling forecasts appear to complement, and not substitute for a fixed budget. It is possible that the high simultaneous adoption of fixed budgets and rolling forecasts in organisations may not be a function of the reinforcing role of rolling forecasts, but rather a loose coupling of both systems. That is, they both coexist within the same organisation but operate independently of each other. Given the similar ranking of reasons to budget for fixed budgets and rolling forecasts (Table 3.9 and Table 3.10), this rationale is less likely, but nevertheless acknowledged.

Evidence regarding the frequency of rolling forecasts preparation across a broad cross-section of organisations is also sparse in existing research. In this chapter, the majority of the 215 rolling forecast organisations prepared monthly (116 or 53%) monthly or quarterly (87 or 40%) rolling forecasts. A few conducted them half yearly (12 or 5%), while a very small number of organisations prepared rolling forecasts every two months (2 or 1%) or every four months (2 or 1%). In order to observe if the reasons to budget differed with the frequency for conducting a rolling forecast, the importance scores of the ten reasons to budget for rolling forecasts were compared between the monthly and quarterly rolling forecast frequencies. These were selected as they were the frequencies selected by all almost organisations that use a rolling forecast, and there were sufficient responses to allow for a meaningful analysis.

Results from Table 3.11 indicate that none of the ten operational reasons to budget show statistically significant differences between the reason to budget importance for monthly and quarterly rolling forecast users. This indicates that organisations preparing rolling forecasts do not have different reasons for preparing such budgets, over different periods.

The majority of fixed budget organisations prepared budgets annually. However, a small percentage did not. 36 of the 331 (11%) fixed budget organisations did not prepare fixed budgets annually. Completing the traditional fixed budget over non-annual periods is unexpected, and therefore the mean scores for the non-annual fixed budget reasons to budget were compared against the same scores for the annual fixed budgeting organisations. It is plausible that organisations construct fixed budgets for non-annual periods because they are motivated by different reasons to budget.

Results in Table 3.12 indicate only one statistically significant difference between the two groups. The staff evaluation reason to budget is more important for non-annual fixed budgets, than annual fixed budgets. This result is unexpected, and possibly indicates that organisations which conduct fixed budgets over non-annual periods, do so primarily to evaluate staff. For the remaining nine operational reasons to budget, findings indicate that organisations do not have different reasons for conducting rolling forecasts, for different periods.

Table 3.11: Monthly vs Quarterly Rolling forecast users

| Reason to Budget                          | Monthly Rolling | Quarterly Rolling | t- statistic |
|---|-----------------|-------------------|--------------|
| Control costs                             | 5.76            | 5.88              | -0.648       |
| Board of director monitoring              | 5.94            | 5.67              | 1.381        |
| Formulate action plans                    | 5.69            | 5.43              | 1.294        |
| Coordinate resources                      | 5.12            | 5.05              | 0.326        |
| Business unit evaluation                  | 5.29            | 5.16              | 0.555        |
| Encourage innovative behaviour            | 4.54            | 4.31              | 0.902        |
| Staff evaluation                          | 4.25            | 4.00              | 0.961        |
| Manage production capacity                | 4.28            | 4.11              | 0.573        |
| Determine required selling prices         | 3.79            | 3.68              | 0.379        |
| Providing information to external parties | 3.69            | 3.75              | -0.192       |



Table 3.12: Annual vs Non-annual Fixed Budget users

| Importance of Reason to Budget            | Annual Fixed | Non-Annual Fixed | t- statistic   |
|---|--------------|------------------|----------------|
| Control costs                             | 5.89         | 5.65             | 1.121          |
| Board of director monitoring              | 5.75         | 5.8611           | -0.663         |
| Formulate action plans                    | 5.30         | 5.39             | -0.452         |
| Coordinate resources                      | 5.28         | 5.11             | 0.787          |
| Business unit evaluation                  | 5.16         | 5.15             | 0.038          |
| Encourage innovative behaviour            | 4.34         | 4.69             | -1.231         |
| Staff evaluation                          | 4.20         | 5.00             | <b>-3.056*</b> |
| Manage production capacity                | 4.29         | 3.76             | 1.330          |
| Determine required selling prices         | 4.04         | 3.81             | 0.649          |
| Providing information to external parties | 3.94         | 4.11             | -0.477         |

\*p<0.01

### **3.4.3 Reasons to budget, fixed budgets and rolling forecasts**

Tables 3.5, 3.6, 3.9, and 3.10 uniformly show that a range of reasons to budget other than performance evaluation appear to be equal to or more important than the evaluation reasons to budget. However, to what extent does this general observation specifically apply to the relationship between operational planning and performance evaluation reasons to budget? Proposition 3 argues that the coordinate resources and formulate action plans reasons to budget should be significantly more important than the staff evaluation reason to budget, for fixed budgets. In order to statistically test this proposition, an independent samples t-test was conducted on the mean scores of the three reasons to budget relating to this proposition. The two operational planning reasons to budget (coordinate resources and formulate action plans) were compared against the staff evaluation reason to budget.

The results in Table 3.13 support a statistically significant positive difference between the mean importance scores for the operational planning reasons to budget and the staff evaluation reason to budget. This difference is significant to  $p < 0.001$ . Non-evaluation reasons to budget such as “coordinate resources” and “formulate action plans” are regarded as being significantly more important in organisations than the staff evaluation reason to budget, for fixed budgets. Overall, non-evaluation reasons to budget are more important than the staff evaluation reason to budget. Proposition 3 is therefore supported.

Table 3.13: Operational Planning – Performance Evaluation comparison

| Reasons to Budget Compared                          | Budget Form  | t-statistic    |
|---|--------------|----------------|
| Coordinate Resources and Staff Evaluation           | Fixed (P3)   | <b>8.543**</b> |
| Formulate Action Plans and Staff Evaluation         | Fixed (P3)   | <b>8.041**</b> |
| Coordinate Resources and Staff Evaluation           | Rolling (P4) | <b>5.905**</b> |
| Formulate Action Plans and Staff Evaluation         | Rolling (P4) | <b>8.471**</b> |
| Coordinate Resources and Business Unit Evaluation   | Rolling (P4) | -0.137         |
| Formulate Action Plans and Business Unit Evaluation | Rolling (P4) | <b>2.379*</b>  |

\*\* $p < 0.01$ , \* $p < 0.05$

Proposition 4 argues that rolling forecasts are used more for operational planning than performance evaluation. Results indicate mixed support for this proposition. Four sets of independent sample t-tests were made, comparing the two operational planning reasons to budget and the two performance evaluation reasons to budget (Table 3.13). The two operation planning reasons are ranked higher in importance than the two staff evaluation reasons, and independent sample t-tests indicate that the statistical difference between both operational planning reasons and the staff evaluation reason is significant to  $p < 0.01$  and  $p < 0.05$ .

However, the difference between the operational planning reasons and the business unit evaluation reason is not as conclusive. Only the “Formulate action plans” reason

shows a statistically significant difference to the business unit evaluation reason.

Proposition 4 is supported in relation to three of the four comparisons.

Proposition 5 investigates whether organisations were more inclined to use fixed budgets for performance evaluation, as opposed to rolling forecasts. This proposition was examined by using independent sample t-tests to consider the significance of the differences of the mean scores between the performance evaluation responses for both staff evaluation and business unit evaluation, for fixed budgets and rolling forecasts. This led to two sets of comparisons, shown in Table 3.14. No statistically significant relationship was found between the fixed and rolling forecast scores for staff evaluation or business unit evaluation. In both instances, the positive t-statistic indicates that the evaluation scores for fixed budget evaluations were greater than rolling forecast evaluation scores. However, these differences are not significant. Therefore, this proposition is not supported.

Interestingly, an additional test for P5 shows different results. Following are the mean score responses to the question “At what levels of the organisation is the fixed period or rolling forecast used to evaluate performance?” (see also Table 3.7). For various organisational levels, respondents had to respond using a 7-point Likert scale, with “1” being “No use” and “7” being “High use”. The results in Table 3.15 indicate partial support for this proposition 5 when considering this area of use. At all levels of the organisation, from the “Corporate” to the “individual” level, the mean score for evaluation is higher for fixed annual budgets than the mean score for rolling forecasts. However, statistically significant differences are only observed for the “Corporate”, “Unit” and “Departmental” level of analysis.

Table 3.14: Comparison of Reasons to Budget Mean Scores

| Reason to Budget                   |            | Reason to Budget                   |            |               |
|------------------------------------|------------|------------------------------------|------------|---------------|
| Description                        | Mean score | Description                        | Mean score | t-statistic   |
| Staff Evaluation – Fixed           | 4.29       | Staff Evaluation – Rolling         | 4.14       | 0.178         |
| Business Unit Evaluation – Fixed   | 5.16       | Business Unit Evaluation - Rolling | 5.18       | 0.095         |
| Business Unit Evaluation – Fixed   | 5.16       | Staff Evaluation – Fixed           | 4.29       | <b>6.974*</b> |
| Business Unit Evaluation – Rolling | 5.18       | Staff Evaluation - Rolling         | 4.14       | <b>5.841*</b> |

\*p<0.01

These results indicate that while organisations are generally more inclined to use a fixed annual budget for performance evaluation, this difference is only significant at more collective levels of analysis, leaning towards business unit evaluation. Not surprisingly, the highest levels of management (corporate) continue to be evaluated on the fixed annual budget, and not the rolling forecast. Rolling forecasts appear to be more short-term operational tools of management, and not used to evaluate the overall performance of an organisation, as is the responsibility of “Corporate”. As the levels of analysis cascade down to departments and more specific individual responsibilities, the difference between fixed annual budgets and rolling forecasts reduces to a point where there is no statistically significant difference, for the performance evaluation of “teams” and “individuals”. Overall, proposition 5 is still not accepted, based on the comparison of mean results in Table 3.14. However, it is interesting to note the existence of variation in the way fixed budgets and rolling forecasts are used for evaluation, at different organisational levels as indicated in Table 3.15.

Table 3.15: Budget use for staff evaluation - different organisational levels

| Evaluation Mean scores  | Fixed period budgets | Rolling forecasts | Significance of mean difference |
|-------------------------|----------------------|-------------------|---------------------------------|
| Corporate               | 6.12                 | 5.77              | <b>t=2.688*</b>                 |
| Strategic Business Unit | 5.85                 | 5.62              | t=1.493                         |
| Unit                    | 5.58                 | 5.14              | <b>t=2.454*</b>                 |
| Department              | 5.20                 | 4.60              | <b>t=2.969*</b>                 |
| Team                    | 4.09                 | 3.81              | t=0.832                         |
| Individual              | 3.74                 | 3.45              | t=1.171                         |

\*p<0.05

The final proposition (P6) investigates the extent to which there is a significant difference in the perceived importance of the business unit evaluation and staff evaluation reasons to budget. In order for this proposition to be supported, there must be a statistically significant difference between the importance of these two reasons in favour of business unit evaluation. This effect must exist for both fixed budgets and rolling forecasts. Result from the independent sample t-tests reveals that a statistically significant difference, for both fixed budgets and rolling forecasts (see Table 3.14). Therefore, proposition 6 is supported.

This result highlights that business unit evaluation is more important in organisations than staff evaluation, and research that focuses on business unit evaluation as opposed to staff evaluation therefore should have greater relevance for practice.

Organisational research is mixed in its consideration of performance evaluation from a business unit perspective or staff perspective (Chenhall, 2003). While earlier research in this area (Argyris, 1952) focused more on individual level performance evaluation effects, more recent research as explained in RAPM, as described in

Hartmann (2000), has considered the evaluation of business units. Results from this chapter suggest that the adoption of budgets for business unit evaluation is more important, and therefore should be given greater focus in existing management accounting budget research on performance evaluation.

### **3.4.4 Segment analysis**

This section analyses the findings arising from different segmentations of the sample. Results from this section support the relevance of the above results to specific segments. The findings also highlight interesting relationships not previously discussed in extant research.

#### **3.4.4.1 Industry effects**

To what extent is the existence of a range of important reasons to budget identified in proposition 1 applicable to the different industries comprising the sample? To examine the importance of the range of reasons to budget across the different industries, the mean scores of the ten reasons to budget were segmented into the 10 GICS (Global Industry Classification Standard) types as shown in Table 3.16. Results show a consistent spread of importance scores above 4 for a range of reasons to budget, for all ten industries.

Results from Table 3.16 indicate a similar spread of importance scores for the 10 operational reasons to budget, across all the GICS industries. Table 3.5 and Table 3.6 showed that the importance of using budgets for staff evaluation is lower than most other reasons to budget, and specifically, the operational planning reasons to budget such as “coordinate resources” and “formulate action plans”.

#### **3.4.4.2 Size analysis**

To examine if the importance of the reasons to budget was consistent across different organisation sizes, the sample was split into organisations employing less than 1000 employees, and more than 1000 employees. A 1000 employee size value was selected, as it was the median value for the usable sample. Independent sample t-tests were conducted for statistically significant differences between the two segments.

Table 3.17 and Table 3.18 indicate no systematic trend. Significant differences are only observed in 2 of the 20 pairs of importance scores investigated for fixed budgets (Table 3.17) and 1 of the 20 pairs for rolling forecasts (Table 3.18). Furthermore, the t-tests for differences in means are both positive and negative, indicating that larger organisations do not necessarily regard the fixed or rolling forecasts with greater importance than smaller organisations.

#### **3.4.4.3 Performance evaluation - compensation**

One of the fundamental reasons for staff dysfunctional behaviour when budgets are used for staff evaluation is the risk of adverse economic outcomes affecting staff that do not meet budget expectations. Research argues that when staff do not achieve a budget, they may be penalised through lower incentive payments (Brownell and Hirst, 1986; Argyris, 1952).

Table 3.16: Importance of Reason to Budget by Industry

| Fixed Budgets          | Control costs | Coordinate Resources | Identify selling prices | Manage production capacity | Staff Evaluation | Business Unit Evaluation | Provide Information to External Parties | Formulate Action Plans | Encourage Innovative Behaviour | Board of Director Monitoring |
|------------------------|---------------|----------------------|-------------------------|----------------------------|------------------|--------------------------|---|------------------------|--------------------------------|------------------------------|
| Energy                 | 6.40          | 3.60                 | 3.40                    | 3.20                       | 5.40             | 5.60                     | 5.80                                    | 5.20                   | 3.40                           | 6.00                         |
| Materials              | 5.64          | 5.46                 | 4.43                    | 5.21                       | 4.11             | 5.32                     | 4.79                                    | 5.14                   | 4.32                           | 5.92                         |
| Industrial             | 5.92          | 5.04                 | 4.19                    | 4.27                       | 4.03             | 5.29                     | 3.39                                    | 5.23                   | 4.26                           | 5.73                         |
| Cons. discretionary    | 5.73          | 5.43                 | 4.36                    | 4.16                       | 4.63             | 5.31                     | 4.02                                    | 5.65                   | 4.94                           | 5.95                         |
| Cons. Staples          | 5.95          | 5.04                 | 4.42                    | 5.14                       | 4.01             | 4.81                     | 3.84                                    | 5.07                   | 4.04                           | 5.19                         |
| Health care            | 5.19          | 5.52                 | 3.25                    | 4.64                       | 4.46             | 5.13                     | 5.00                                    | 5.77                   | 4.40                           | 6.17                         |
| Financial              | 6.18          | 5.22                 | 3.52                    | 3.54                       | 4.64             | 5.04                     | 3.70                                    | 5.05                   | 4.42                           | 5.37                         |
| Information technology | 5.37          | 5.31                 | 4.15                    | 4.40                       | 4.46             | 5.08                     | 4.00                                    | 5.31                   | 4.00                           | 6.15                         |
| Utilities              | 6.15          | 5.20                 | 4.20                    | 3.40                       | 5.20             | 4.40                     | 3.60                                    | 5.80                   | 4.20                           | 6.31                         |
| Telecommunications     | 6.56          | 5.78                 | 3.89                    | 4.91                       | 4.67             | 5.80                     | 4.77                                    | 5.48                   | 5.04                           | 5.40                         |
| Rolling forecasts      | Control costs | Coordinate Resources | Identify selling prices | Manage production capacity | Staff Evaluation | Business Unit Evaluation | Provide Information to External Parties | Formulate Action Plans | Encourage Innovative Behaviour | Board of Director Monitoring |
| Energy                 | 6.67          | 3.67                 | 2.67                    | 1.67                       | 3.67             | 5.00                     | 4.33                                    | 5.67                   | 3.67                           | 4.00                         |
| Materials              | 5.69          | 5.21                 | 4.44                    | 5.06                       | 3.91             | 5.21                     | 4.38                                    | 5.98                   | 4.47                           | 5.94                         |
| Industrial             | 5.48          | 5.00                 | 3.74                    | 4.26                       | 3.85             | 5.34                     | 3.24                                    | 5.58                   | 4.14                           | 5.89                         |
| Cons. discretionary    | 6.16          | 5.63                 | 3.72                    | 4.36                       | 4.73             | 5.40                     | 3.81                                    | 6.06                   | 4.97                           | 6.11                         |
| Cons. Staples          | 6.04          | 4.86                 | 5.04                    | 5.30                       | 4.63             | 5.20                     | 4.13                                    | 5.46                   | 4.78                           | 5.37                         |
| Health care            | 6.44          | 5.56                 | 4.22                    | 4.78                       | 3.67             | 5.11                     | 4.89                                    | 5.56                   | 5.27                           | 6.43                         |
| Financial              | 5.77          | 4.35                 | 3.08                    | 2.92                       | 3.92             | 4.70                     | 3.90                                    | 4.85                   | 4.11                           | 5.21                         |
| Information technology | 5.45          | 4.80                 | 3.55                    | 4.02                       | 4.00             | 4.91                     | 2.73                                    | 5.36                   | 3.82                           | 6.00                         |
| Utilities              | 6.17          | 5.00                 | 4.00                    | 4.83                       | 4.83             | 5.53                     | 3.33                                    | 4.83                   | 5.33                           | 6.33                         |
| Telecommunications     | 6.00          | 6.00                 | 1.00                    | 1.00                       | 5.00             | 5.00                     | 2.00                                    | 6.00                   | 4.00                           | 6.00                         |



The threat of adverse staff evaluation leading to falling income drives a staff member's inclination to bias their contributions in the budget setting process in favour of their individual interests (Lau, et al. 1995; Argyris, 1952). Therefore, budgets may be problematic when used for staff evaluation when budgets link to compensation.

Table 3.17: Organisational size analysis for reasons to budget (fixed budget)

| Importance of Reason to Budget               | Smaller | Larger | t- statistic  |
|--|---------|--------|---------------|
| Coordinate Resources                         | 5.26    | 5.25   | 0.061         |
| Form Action Plans                            | 5.25    | 5.37   | -0.823        |
| Staff Evaluation                             | 4.41    | 4.18   | 1.197         |
| Bus. Unit Evaluation                         | 5.35    | 4.97   | <b>2.149*</b> |
| Control costs                                | 5.94    | 5.79   | 1.170         |
| Determine required selling prices            | 4.09    | 3.93   | 0.686         |
| Manage prod'n capacity                       | 4.15    | 4.32   | -0.718        |
| Provision of information to external parties | 4.16    | 3.77   | <b>1.694*</b> |
| Encourage innovative behaviour               | 4.49    | 4.26   | 1.295         |
| Board of director monitoring                 | 5.84    | 5.68   | 1.186         |

\*p<0.10

Table 3.18: Organisational size analysis for reasons to budget (rolling forecast)

| Importance of Reason to Budget (Rolling)     | Smaller | Larger | t- statistic   |
|--|---------|--------|----------------|
| Coordinate Resources                         | 5.07    | 5.15   | -0.411         |
| Form Action Plans                            | 5.50    | 5.68   | -0.971         |
| Staff Evaluation                             | 4.27    | 3.97   | 1.189          |
| Bus. Unit Evaluation                         | 5.29    | 5.04   | 1.042          |
| Control costs                                | 5.86    | 5.76   | 0.602          |
| Determine required selling prices            | 3.80    | 3.79   | 0.045          |
| Manage prod'n capacity                       | 3.92    | 4.60   | <b>-2.276*</b> |
| Provision of information to external parties | 3.88    | 3.40   | 1.608          |
| Encourage innovative behaviour               | 4.47    | 4.43   | 0.129          |
| Board of director monitoring                 | 5.76    | 5.96   | -1.030         |

\*p<0.10

Results from this chapter, however, indicate that the implementation of budgets for staff *compensation* is significantly lower than the implementation of budgets for staff *evaluation*. This applies to all levels of an organisation, from "Corporate" to "Individual". Table 3.19 shows the difference in use between evaluation and

compensation, for fixed budgets and rolling forecasts at various organisational levels. Independent sample t-tests indicate statistically significant differences between all pairs shown. It is also interesting to note that as the level of analysis moves from “Corporate” to “Individual”, the level of use declines. This result is consistent for both evaluation and compensation, for the fixed budget and rolling forecast.

This finding explains why the use of budgets for performance evaluation amongst the sample is moderately important though budget criticism for staff evaluation continues to be high (Jensen, 2003; Wallander, 1999). Organisations appear to be using budgets to evaluate staff but not necessarily compensate staff. This reduces the potential risk of staff engaging in dysfunctional behaviour during the budget setting process. It is possible that organisations consider the detrimental effects which results when using budgets to compensate staff, and have reduced their focus on budget based compensation to maintain the importance of staff evaluation.

Proposition 6 is also supported by the results shown in Table 3.20. Table 3.20 examines the statistical significance of differences between fixed budgets and rolling forecasts for evaluation, and compensation separately. The use of budgets for evaluation at the “SBU” level is significantly higher than the “individual” level, for fixed budget and rolling forecast forms.

Table 3.19: Evaluation versus compensation

| Level      | Fixed Budget Evaluation mean score     | Fixed Budget Compensation mean score     | T- statistic   |
|------------|--|--|----------------|
| Corporate  | 6.12                                   | 4.73                                     | <b>8.942*</b>  |
| SBU        | 5.85                                   | 4.41                                     | <b>8.748*</b>  |
| Unit       | 5.58                                   | 3.97                                     | <b>9.436*</b>  |
| Department | 5.20                                   | 3.50                                     | <b>10.355*</b> |
| Team       | 4.06                                   | 3.07                                     | <b>5.507*</b>  |
| Individual | 3.73                                   | 3.05                                     | <b>3.663*</b>  |
| Level      | Rolling forecast evaluation mean score | Rolling forecast compensation mean score | T-statistic    |
| Corporate  | 5.79                                   | 2.82                                     | <b>13.798*</b> |
| SBU        | 5.65                                   | 2.67                                     | <b>13.971*</b> |
| Unit       | 5.16                                   | 2.36                                     | <b>13.193*</b> |
| Department | 4.64                                   | 2.17                                     | <b>12.078*</b> |
| Team       | 3.83                                   | 2.12                                     | <b>8.042*</b>  |
| Individual | 3.47                                   | 2.13                                     | <b>6.306*</b>  |

\* p<0.01

Results indicate that the use of fixed budgets for evaluation is only higher than rolling forecasts at more aggregated organisational levels (Corporate, Unit and Department). At individual levels, differences between the use of fixed budgets and rolling forecasts for evaluation is not significant. However, when using budgets to affect compensation, staff from all organisational levels are more likely to use fixed budgets than rolling forecasts.

The use of fixed budgets for determining compensation is significantly greater than the same use for rolling forecasts, which emphasises that fixed budgets still have a role to play in organisations, when compared to the rolling forecast. If rolling forecasts are used, they are used for evaluation more than for compensation. This is evidenced by the higher "rolling forecast evaluation" scores, relative to the "rolling forecast compensation" scores displayed in Table 3.20.

Table 3.20: Fixed budget vs. rolling forecasts for evaluation and compensation

| Level      | Fixed Budget Evaluation mean score   | Rolling forecast Evaluation mean score   | t- statistic   |
|------------|--------------------------------------|--|----------------|
| Corporate  | 6.12                                 | 5.79                                     | <b>2.389*</b>  |
| SBU        | 5.85                                 | 5.65                                     | 1.288          |
| Unit       | 5.58                                 | 5.16                                     | <b>2.393*</b>  |
| Department | 5.20                                 | 4.64                                     | <b>3.165*</b>  |
| Team       | 4.06                                 | 3.83                                     | 1.132          |
| Individual | 3.73                                 | 3.47                                     | 1.241          |
| Level      | Fixed budget compensation mean score | Rolling forecast compensation mean score | t-statistic    |
| Corporate  | 4.73                                 | 2.82                                     | <b>8.400**</b> |
| SBU        | 4.41                                 | 2.67                                     | <b>7.877**</b> |
| Unit       | 3.97                                 | 2.36                                     | <b>7.722**</b> |
| Department | 3.50                                 | 2.17                                     | <b>6.848**</b> |
| Team       | 3.07                                 | 2.12                                     | <b>4.968**</b> |
| Individual | 3.05                                 | 2.13                                     | <b>4.771**</b> |

\*\* p<0.01, \*p<0.05

Finally, it was thought that directors of listed organisations may regard the importance of the “Board of Director monitoring” reason to budget as more important than for non-listed organisations, as the importance of the periodical reporting of forecasts is greater in listed organisations. However, results indicated no significant difference in the mean importance scores for listed and unlisted organisations.

### 3.5 Summary and conclusions

In relation to the first research question of this paper, organisations regard a range of reasons to budget with at least a moderate level of importance. In addition to supporting the arguments of Hansen and Van der Stede (2004) regarding alternative reasons to budget, this finding establishes a foundation to compare operational planning and performance evaluation reasons to budget in research question 3.

Overall, the findings from this chapter strongly support the assertion that a range of

operational reasons to budget exist in organisations, and are regarded as important (Proposition 1).

The second research question investigated the role of rolling forecasts next to the fixed budget. Findings from the chapter lend support to the role of rolling forecasts as complements to, and not substitutes for, fixed budgets. Rolling forecasts were found to be used extensively in organisations, and usually in tandem with a fixed budget. This finding is useful, as predominantly practitioner based literature on rolling forecasts is unclear in its consideration of rolling forecasts as complements or substitutes to a fixed budget.

The period of rolling forecast (monthly or quarterly) is not motivated by different operational reasons to budget. The importance of all ten reasons to budget were not significantly different for monthly and quarterly rolling forecast users.

The third research question investigated the relationship between different reasons to budget, for both budget fixed budget and rolling forecast forms. Fixed budgets are regarded as more important for operational planning than for staff evaluation (Proposition 3). The fact that organisations are more inclined to use rolling forecasts for operational planning than performance evaluation (proposition 4) indicates that rolling forecasts are not adopted by organisations to improve performance evaluation, but instead focus on more frequent corrections to operational planning related financial predictions. This result is consistent with Hansen, et al. (2003), and aligns to the complementary use of both budget forms in most Australian organisations.

The final two propositions investigate how organisations use budgets for performance evaluation across both budget forms. Fixed budgets were expected to be used for performance evaluation to a greater extent than rolling forecasts, but this could not be supported. However, the difference between fixed budgets and rolling forecast use for performance evaluation appears to exist at group level evaluations more than individual level evaluations. It is only significant at the higher “corporate” levels of the organisation, than the more specific “teams” and “individual” organisation levels. The traditional annual budget is more important than the rolling forecast for performance evaluation reasons, but not significantly so at the operational levels of an organisation (teams and individuals). The importance of adopting budgets for “evaluation” is also significantly greater than for staff compensation decisions. This possibly indicates practitioner criticisms of the rolling forecast are leading to a change in the way the budget is adopted in organisations. While a budget may still be used for evaluation, it is less likely to be used to influence staff compensation. This finding potentially explains the continued importance placed on budgeting by organisations.

This chapter has also emphasised the importance of considering reasons to budget that may have been overlooked in extant research, such as the high importance of budgets as a device to assist the board of directors to monitor an organisation. The existence of objective financial forecast documentation which allows directors to consider the progress of an organisation represents a significant control mechanism for directors. This reason to budget may also explain why budgets continue to be adopted by almost all organisations, though it is operationally criticised.

Budgeting is widely used in practice, but also widely criticised in existing research (Jensen, 2003; Hope and Fraser, 2003; Wallander, 1999). In Chapter 1, it was explained that a CAM-I study found that there existed two broad approaches to addressing the problems posed by budgeting in organisations (Hansen, et al. 2003). The first is the beyond budgeting (BB) approach and the second is the activity based budgeting (ABB) approach. Results from this study indicate that budgeting amongst the sample appears to combine aspects of ABB perspective and the BB perspective. Organisations attempt to focus more on operational planning reasons for budgeting, which relates to the ABB approach, but they are not necessarily reducing their focus on performance evaluation, as evidenced by the relatively high business unit evaluation score. They are only reducing their focus on staff related performance evaluation – which characterises the arguments of the BB perspective. Therefore, the two approaches to improving budgeting as described by Hansen, et al. (2003) may not be mutually exclusive, and instead appear to be adopted together by many organisations.

Overall, this chapter supports the existence of reasons to budget other than performance evaluation, the continued high use of fixed budgets in organisations, the widespread use of rolling forecasts as complements to the fixed budget, and that there is greater importance placed on operational planning than performance evaluation, especially when evaluation is related to staff as opposed to business units. In order to better understand the impact of budgeting on organisations, future studies that focus on reasons to budget which include, but are not limited to performance evaluation, will benefit our understanding of budget relevance in organisations.

Furthermore, studies which further investigate individual operational reasons to budget, and their relationships to commonly studied organisational characteristics will better inform the relevance of reasons to budget for different types of organisations, and improve our knowledge of contingency relationships between commonly studied antecedent organisation characteristics and budget importance in existing studies.

Finally, more case research which investigates the exploratory findings of this chapter is recommended, as case based evidence provides a richer context to understand the impact of alternative reasons to budget, and investigates the subtle organisational considerations that are usually too difficult to obtain from survey results.



## 4 Organisational characteristics, alternative reasons to budget and two budget forms

### 4.1 Introduction

This chapter provides more detailed evidence on the relationship between organisational characteristics and the importance of four operational reasons to budget, which are *coordinating resources*, *formulating action plans*, *business unit evaluation* and *staff evaluation*, for the fixed budget and rolling forecast forms.

For over five decades, operational budgeting has been criticised by practitioners and academics (Argyris, 1952; Hopwood, 1972; Jensen, 2003). The main focus of these criticisms have related to a budgets' use for performance evaluation (Hansen, et al. 2003; Hansen and Van der Stede, 2004). Notwithstanding this criticism, budgeting continues to be used by most organisations internationally<sup>6</sup>. Why is there such an apparent difference between budget use (high), and perceived budget usefulness (low)?

Hansen and Van der Stede (2004) proposed that a reason for this difference is a lack of studies considering reasons to budget other than performance evaluation. They proposed that organisations do not gauge budget relevance by only reflecting on one reason to budget (that is, performance evaluation). The literature review of reasons to budget in Chapter 2 showed support for this point of view. Also, the first study reported in this thesis (Chapter 3) showed that a wide range

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<sup>6</sup> Three studies over the last two decades have shown that traditional annual budgeting is prevalent in at least, if not more than 92% of organisations surveyed (Umapathy, 1987; Ekholm and Wallin, 2000; CPA Australia Budgeting Industry Report 2006).

of reasons to budget are regarded as important by organisations and many non-evaluation reasons to budget were regarded as more important than performance evaluation, for both fixed budgets and rolling forecasts. Given this, there is merit in the arguments of Hansen and Van der Stede (2004) that alternative non-evaluation reasons to budget need to be further investigated. An outcome of considering non-evaluation reasons to budget, is that relationships between organisational characteristics and budget importance may be different to those expected from existing research, which has focused on performance evaluation reasons to budget. This is especially important to consider, because existing contingency research on budgeting contains conflicting evidence on the relationship between organisational characteristics and budget relevance (Chenhall, 2003). This leads to the fourth research question considered in this thesis.

*RQ4: How do organisational characteristics relate to different reasons to budget?*

In addition to the traditional fixed budget which has been investigated in prior research, this chapter acknowledges another budget form, the rolling forecast. Rolling forecasts are argued by practitioners and academic researchers to be growing in use largely due to dissatisfactions with the fixed budget (Haka and Krishnan, 2005; Hansen, et al. 2003).

Prior research has investigated a range of reasons to budget for fixed budgets (Hansen and Van der Stede, 2004) but has not examined the impact of organisational characteristics on the importance of reasons to budget for rolling forecasts. Though Hansen and Van der Stede (2004) considered rolling forecasts,

they regarded the use of rolling forecasts as a budgetary characteristic within a budget system which was focused on the traditional fixed budget. Recent research has argued for relationships between organisational characteristics (uncertainty), and the importance of rolling forecasts (Haka and Krishnan, 2005). However, Hansen and Van der Stede (2004) did not model the rolling forecast variable in a manner which considered this possibility. Therefore, this chapter provides a modified approach to studying the relationship between alternative reasons to budget and budget forms by regarding the rolling forecast form independently to the fixed budget form. Relationships between organisational characteristics and different reasons to budget for rolling forecasts should not only be investigated in isolation, but also compared to the same relationships for fixed budgets. This is particularly important, given that organisations are increasingly using fixed budgets and rolling forecasts in tandem (see Chapter 3). This gives rise to the fifth research question considered in this thesis.

*RQ5: How are the relationships between organisational characteristics and alternative reasons to budget different for fixed budgets and rolling forecasts?*

Hansen and Van der Stede (2004) is one of the few studies which argues that budgets may be important irrespective of the nature of the organisational characteristics impacting an organisation. As argued in Hansen and Van der Stede (2004), most organisations will find budgets relevant, but for different reasons. Support for this perspective is also observed in Hansen, et al. (2003), which briefly discussed the possibility that organisations may use budgets for planning without subsequently using it for performance evaluation, and citing the beyond budgeting philosophy as evidence for the movement away from using

budgeting as a performance evaluation device. Further support for this position was provided in Chapter 3.

Hansen and Van der Stede (2004) not only showed that different reasons to budget existed in organisations, but noted that they had differing relationships to different organisational and budgetary characteristics, for a sample of 57 predominantly large organisations. Understandably, little theoretical basis was provided for the different relationships (no propositions/hypotheses development), as the paper was exploratory in its orientation, and attempted to observe if differences exist, without attempting to predict directional associations.

This chapter extends the work of Hansen and Van der Stede (2004) by taking a more deductive approach and hypothesising relationships between organisational characteristics and the importance of different reasons to budget. Given the dearth of research on non-evaluation reasons to budget, research from a broader control systems perspective used to assist in informing these arguments.

The ten reasons to budget discussed in chapter 3 are reduced to 4 operational reasons to budget for this chapter. This is required for two reasons. First, and as discussed in chapter 3, the mean importance scores of the reasons to budget appeared to be separated into two clusters. Though all reasons to budget showed at least moderate importance, more emphasis will be placed on the top 5 reasons to budget, as they are relatively more influential in organisations. Three of the four reasons to budget considered in this chapter (coordinate resources, formulate action plans and business unit evaluation) were selected from the top 5 reasons to

budget reported in chapter 3. The remaining two reasons to budget in the top cluster were not selected because this study attempts to build upon the operational planning/ performance evaluation operational reasons to budget categories used by Hansen and Van der Stede (2004). The two reasons to budget eliminated were “Control costs” and “Board of director monitoring”. Though they scored highly in importance, and while both may be tied to operational planning and performance evaluation, they do not lie wholly within either one of these two categories and therefore were not considered.

The fourth reason to budget (staff evaluation) was selected from the lower importance cluster of reasons to budget. This reason to budget is included as it is the reason to budget which has been assumed to exist for operations budgeting since Argyris (1952), and needs to be compared against the more contemporary operational planning reasons to budget.

Overall, the four reasons to budget are comprised of two operational planning (coordinate resources, formulate action plans) and two performance evaluation (staff evaluation, business unit evaluation) reasons to budget. These four reasons to budget will be used to investigate the propositions in this chapter.

## **4.2 Theoretical framework and proposition development**

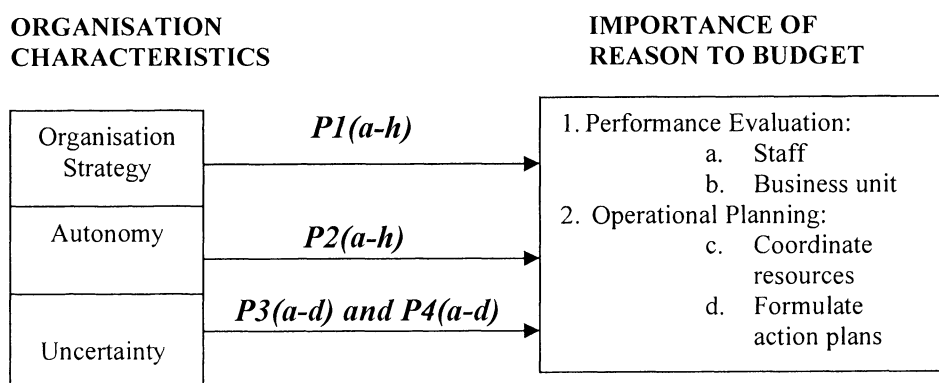
This chapter adopts a contingency perspective, incorporating independent and dependent variables previously investigated in budgeting studies. The contingency model used in this chapter is adapted and modified from the model used in Hansen and Van der Stede (2004), and is summarised in Figure 4.1. As

the survey was constructed and distributed before Hansen and Van der Stede (2004) was published, and the focus of the chapter is more operational than strategic, definitions of certain organisation and budgetary characteristic variables are different to those used in Hansen and Van der Stede (2004). However, all variables used in this chapter relate to key variables used in Hansen and Van der Stede (2004), and as far as possible the model is aligned to the relevant sections of the framework used in Hansen and Van der Stede (2004).

This chapter focuses on the relationship between organisational characteristics and the importance of reasons to budget. In addition to this relationship, Hansen and Van der Stede (2004) also examined the relationship between budgetary characteristics and the benefits from reasons to budget, and the link between reason to budget benefits and organisational performance. This chapter takes a different approach. Operational reasons to budget are examined in more detail, by considering more specific operational reasons to budget than those considered in Hansen and Van der Stede (2004).

The framework to be used in this study is summarised in Figure 4.1.

Figure 4.1: Research Model



As observed from Figure 4.1, the analysis of relationships between organisational characteristics and reasons to budget will be divided into four sets of propositions. Proposition 1 (a to h) examines the relationships between strategy and alternative reasons to budget, for fixed budgets and rolling forecasts. Proposition 2 (a to h) considers the relationships between the level of autonomy and alternative reasons to budget, for fixed budgets and rolling forecasts. Proposition 3 (a to d) examines the relationships between environmental uncertainty and the alternative reasons to budget for fixed budgets, while Proposition 4 (a to d) considers the same relationships for rolling forecasts.

In the third and fourth sets, relationships between uncertainty and the importance of the four reasons to budget are discussed separately, because existing research evidence indicates that rolling forecasts and fixed budgets relate differently to uncertainty (Haka and Krishnan, 2005; Hansen and Van der Stede, 2004; Hansen, et al. 2003).

The following sections describe the alternative reasons to budget and the relationships between the variables for the four sets of propositions.

#### **4.2.1 Alternative reasons to budget**

In their exploratory paper proposing alternative reasons to budget, Hansen and Van der Stede (2004) proposed four reasons to budget; performance evaluation, operational planning, strategy formulation and the communication of goals.

Hansen and Van der Stede (2004) argued that two of these reasons to budget were short term and *operational* in nature (performance evaluation and operational

planning), while two were long-term and *strategic* (strategy formulation and communication of goals). This chapter focuses on the two *operational* reasons to budget (operational planning and performance evaluation)<sup>7</sup>.

Also, while Hansen and Van der Stede (2004) examined operational planning and performance evaluation as single categories, this chapter expands these by proposing that each of these two operational reasons to budget contain two more specific reasons. *Operational planning* facilitates two functions, *resource coordination* and the *formulation of actions*. *Performance evaluation* can be conducted for either *staff evaluation* and/or *business unit evaluation*.

Operational planning may be conducted to accommodate the allocation of resources required by different departments within an organisation (resource coordination)<sup>8</sup>, as per Wallander (1999). Furthermore, within departments, and on a more managerial level, it forces organisations to engage in organisational learning (Haka and Krishnan, 2005) about different courses of action to be conducted in future periods, acting as a means for making organisations plan for future activities (formulation of actions). Both these reasons relate to operational planning, but may have different relationships to organisational or other budgetary variables. For example, organisations may plan (budget) to generally

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<sup>7</sup> As discussed in Chapter 1, this is done for two reasons. First, Hansen and Van der Stede (2004) argued for more research that specifically investigates individual reasons to budget in greater detail. Second, performance evaluation, the main reason to budget covered in budget research to date, is an operational reason. By choosing another operational reason (operational planning), a more consistent comparison is made between both categories of reasons to budget.

<sup>8</sup> Hansen and Van der Stede (2004) specifically mentioned “resource coordination” as a reason to budget that should be investigated in further studies, and regarded it as a possible strategic reason to budget. This chapter considers resource coordination as an annual distribution activity, and treats it as an operational reason to budget.



allocate funds across departments (resource coordination), but may not use budgets to help pre-determine specific courses of action within departments.

Hansen and Van der Stede (2004) argued that the majority of budget research focused on the negativities of budgeting associated with performance evaluation. An investigation of the behavioural assumptions that drive the arguments of this thesis, as discussed in Chapter 2, especially for the “job related tension” variable, shows that the focus of performance evaluation is more specifically on staff evaluation (Argyris, 1952; Hopwood, 1972; Otley, 1978; Hope and Fraser, 1997; Wallander, 1999; Jensen, 2003). However, organisations may not use a budget to evaluate only staff. Many organisations may use budgets to evaluate business units, as opposed to managerial staff individually (as noted in Chapter 3). This type of performance evaluation poses a lower direct threat to staff. Under such circumstances, staff will be less inclined to engage in accounting or operational practices in order to manage the performance evaluation process. Relationships between organisation and budgetary characteristics to these two performance evaluation reasons to budget, therefore, may not be the same.

#### **4.2.2 Strategy and reasons to budget**

As explained in Langfield-Smith (1997), Mintzberg (1978) defines strategy as a pattern of decisions about an organisation’s future. However, these decisions only generate meaning when they are implemented through organisational processes (Simons, 1995; Miles and Snow, 1978). Therefore, in order for strategies to operationally affect an organisation, they must relate to the management control systems that govern organisational processes (Govindarajan

and Gupta, 1985). Strategy is concerned with the longer term aspirations of organisations, and may occur at multiple levels of organisational activity (Johnson, 1987).

Though the academic discussion of organisational strategy emerged as early as the 1950's, organisational strategy was not investigated in management accounting until the 1980's (Langfield-Smith, 1997). When introduced as a variable, most management accounting research attempted to analyse the relationship between strategy and elements of organisational management control systems (Langfield-Smith, 1997; Daniel and Reitsperger, 1991; Govindarajan and Gupta, 1985). Strategy was regarded as an antecedent to the selection of management control systems. An alignment of strategy to management control systems was necessary for organisational objectives to be achieved (Simons, 1995).

The strategy variable has been adopted in different ways, as indicated by the different strategy typologies used in management accounting research. Strategy may exist on a corporate level, focusing on the acquisitions and divestments of organisations, and the financial structures of organisations (Johnson and Scholes, 1989). It may also exist on a business unit level, defining the operational approaches taken by business units to maintain competitiveness (Porter, 1980). Examples of the more popular strategy typologies that have been used are cost leader/differentiator typology explained by Porter (1980), the Miles and Snow (1978) strategy model of defenders, prospectors and analysers and the Business

Mission related Build, Hold, Harvest and Divest typology discussed in Govindarajan and Gupta (1985).

In this thesis, the cost leader/differentiator strategy typology is used. The “cost leader/differentiator” typology is selected for two reasons. First, the typology applies at a business unit level, and has a more operational focus than other more corporate and mission level typologies which are less suited to the “operational” reasons to budget considered in this thesis. Secondly, this typology was used by Hansen and Van der Stede (2004), and therefore allows for some comparison with existing research on reasons to budget.

Generally, formal management controls (such as budgetary controls) are seen to be more aligned to cost leaders as opposed to differentiators, as the importance of accounting number measurements for controlling an organisation is greater in a cost control environment, than a more qualitative product differentiation environment (Langfield Smith, 1997). Hansen and Van der Stede (2004) found no statistically significant relationship between the extent of differentiation and the importance of the *operational planning* reason to budget or the *performance evaluation* reason to budget. This chapter re-investigates this relationship, by comparing the cost leader/differentiator strategy to the four operational reasons to budget.

For the two operational planning reasons to budget, it is proposed that competitive strategy type should relate to the *formulation of action plans* more than the *coordination of resources*.

The importance of using budgets to coordinate resources in organisations is difficult to differentiate across either of the two strategy types. Whatever the strategy adopted by an organisation, resources are required. All business units are concerned with generating sufficient resources in order to operate satisfactorily. While the focus of cost leaders on managing costs is high, differentiators still incur costs and on an aggregate reporting level, need to request for expenditure allocations and have a cost boundary to be aware of. Therefore, the importance of using budgets to coordinate resources across sections of an organisation should be the same, in differentiator and cost leader organisations. Finally, the effects outlined above should be the same for fixed budgets as for rolling forecasts, as there is no evidence to indicate that the type of strategy adopted by an organisation should be differently related to either of the two budget forms.

**P1a:** For fixed budgets, irrespective of rolling forecast use, strategy is unrelated to the *coordinate resources* reason to budget.

**P1b:** For rolling forecasts, irrespective of fixed budget use, strategy is unrelated to the *coordinate resources* reason to budget.

However, when organisations budget in order to formulate action plans, relationships with strategy are more likely to be observed. Differentiator organisations are driven by the need to maximise perceived customer value, and are less standardised than cost leader organisations. The action plans of differentiators, therefore, are more likely to be subject to change and modification, in accordance with customer needs and sentiment. Programmable and predictable repetitive processes that are often characteristic of cost leaders (Langfield-Smith, 1997; Govindarajan and Gupta, 1985) are less related to differentiators. This potentially causes the formulation of actions in

differentiators to be more difficult to relate to a budget. Therefore, the importance placed on using budgets for formulating action plans in differentiators should be lower. In a cost leader organisation, standardisation is emphasised, and the focus on cost is higher. The importance of budgets to formulate action plans, therefore, should be higher for cost leaders than for differentiators. This leads to two propositions.

**P1c:** For fixed budgets, irrespective of rolling forecast use, the greater the application of a differentiator strategy, the less the importance of the *formulation of action plans* reason to budget.

**P1d:** For rolling forecasts, irrespective of fixed budget use, the greater the application of a differentiator strategy, the less the importance of the *formulation of action plans* reason to budget.

Staff evaluation and business unit evaluation reasons to budget should show different relationships to organisation strategy. The way an organisation evaluates staff should be different for a cost leader as opposed to a differentiator. The more differentiated a product offering, the less inclined organisations will be to use formal financial control systems such as budgets (Govindarajan and Gupta, 1985; Langfield-Smith, 1997) to evaluate staff. When the value drivers affecting revenues and costs are more qualitative, they are more difficult to link to financial numbers, and therefore the inclination to evaluate staff should be less, as it is not as appropriate. However, for cost leaders, costs are the primary driver of performance (Govindarajan and Gupta, 1985). Furthermore, standardisation of processes that is a characteristic of cost leaders lends itself to better financial forecasting. The use of budgets to evaluate staff working with these processes, therefore, should be greater. When the strategy of the organisation is to keep costs to a minimum, then the use of budgets to monitor staff should be given high importance. At the very least, the budget based staff evaluations in such

organisations should be greater than in differentiator organisations, where modes of staff evaluation may be more qualitative or non-financial, as the relative focus on customer service and quality is greater (Chenhall, 2005; Chenhall and Langfield-Smith, 1998). Therefore, the following propositions are generated.

**P1e:** For fixed budgets, irrespective of rolling forecast use, the greater the application of a differentiator strategy, the less the importance of the *staff evaluation* reason to budget.

**P1f:** For rolling forecasts, irrespective of fixed budget use, the greater the application of a differentiator strategy, the less the importance of the *staff evaluation* reason to budget.

However, when evaluating business units, organisations are held financially accountable, irrespective of competitive strategy. The majority of organisations operate under financial constraints (Lapsley and Llewelyn, 1995) and would be expected to adhere to a budget, as a budget is usually the most formal and accepted device for measuring such financial constraints (Ekholm and Wallin, 2000). The importance of budget based performance evaluations of business units, therefore, should be the same, irrespective of strategy type.

**P1g:** For fixed budgets, irrespective of rolling forecast use, strategy is unrelated to the importance of the *business unit evaluation* reason to budget.

**P1h:** For rolling forecasts, irrespective of fixed budget use, strategy is unrelated to the importance of the *business unit evaluation* reason to budget.

### **4.2.3 Autonomy and reasons to budget**

The concept of autonomy used in this chapter is sourced from the discussion of centralisation and hierarchical structures in Donaldson (2001), and Gordon and Narayanan (1984). Donaldson (2001) argues that the key concept defining more hierarchical organisations is the extent to which top management prescribes to

employees “...how to do their job” (Donaldson, 2001; p.22). Discussing this in relation to organisation structure, Donaldson (2001) argues that less hierarchical organisations are more decentralised, leading to top management allowing lower level business unit employees to “...exercise autonomy in decision making” (Donaldson, 2001; p.22). When lower levels of an organisation are less controlled by top management, then the level of autonomy granted is greater. Departments are provided decision rights; that is, departments are provided more control over their decision making, without the express consent of senior management. Gordon and Narayanan (1984) similarly regarded the key element to structure as being autonomy, and regarded this as the extent to which authority is delegated.

The centralisation concept may also be used to define autonomy. A centralised system exists when roles are formalised and there is use of rules and documents<sup>9</sup> in order to enforce top management’s pursuit to make decisions about what should happen in organisations (Burns and Stalker, 1961). In a centralised system, subordinate departments are provided comprehensive documentation regarding what is expected of them (Donaldson, 2001), as top management expects operational activities to be conducted specifically and in accordance with the approaches prescribed. Therefore, more centralised organisations approach decision making less autonomously, requiring lower level departments to adhere to documented behavioural constraints (Merchant and Van der Stede, 2003).

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<sup>9</sup> Described by Hage (1965) and Pennings (1992), as explained in Donaldson (2001).

The existence of documentation and an orientation to detail is a key factor characterising centralisation (Merchant and Van der Stede, 2003). Formal management control systems are used to enforce the proliferation of documentation and detail. From a financial perspective, one of the most commonly used management control devices is a budget. Therefore, the greater the centralisation, the greater the use of a budget for enforcing control throughout an organisation. Also, centralisation is negatively related to autonomy. The freedom provided by top management to lower management levels to engage in independent decision making is less likely in centralised organisations.

Combining the discussion of autonomy with a consideration of hierarchies and centralisation, inferences may be made on the relationship between autonomy (Donaldson, 2001) and the four operational reasons to budgets used in this chapter. Operationally, top management in organisations have the option of granting higher or lower levels of autonomy to business units. The greater the level of autonomy provided, the greater the independent decision making given to lower level business units.

Given that the operational budget is a formal management control device implemented by top management over lower level business units, there may be a relationship between the levels of autonomy granted, and the importance of the four reasons to budget. When greater autonomy exists, the implementation of managerial controls to govern staff behaviour may decrease or increase. This chapter argues that different reasons to budget alter the general relationship between autonomy and the importance of budgeting in organisations.



From a performance evaluation perspective, past budgeting research has proposed relationships between hierarchical structures and control outcomes (Chenhall, 2003). This suggests a negative relationship between autonomy and the importance of budgeting for performance evaluation. However, in their study of the operational planning and performance evaluation reasons to budget, Hansen and Van der Stede (2004) found no significant relationships between organisational structure and the importance of their operational planning and performance evaluation reasons to budget.

Though existing research argues for a negative relationship between the level of autonomy and the importance of formal management controls such as budgets, the importance of the coordinate resources reason to budget should be unrelated to the level of autonomy. Generally, whatever the level of autonomy granted to business units, all units require resources, and will request these resources. While units that are granted greater autonomy will not be controlled as tightly, a request for funds still needs to be made at the start of the period. Top management at a minimum may not be as strict in their critique of the amounts requested, but a budgetary document which outlines an amount required must be submitted, in order for top management to be aware of an amount to provide. Therefore, irrespective of the level of autonomy, the importance of budgeting to coordinate resources should be the same.

**P2a:** For fixed budgets, irrespective of rolling forecast use, the level of autonomy is unrelated to the importance of the *coordinate resources* reason to budget

**P2b:** For rolling forecasts, irrespective of fixed budget use, the level of autonomy, is unrelated to the importance of the *coordinate resources* reason to budget

The use of budgets to assist with formulating action plans, however, should be negatively related to the level of autonomy. When autonomy is low, and lower level business units are monitored and directed to a greater extent, the use of budgets to define the boundaries of their action plans will be more tightly imposed. In high autonomy settings, organisations are less likely to constrain the action plans of departments using budgets. While departments may submit a budget to top management during the resource coordination process, top management will not expect these departments to use budgets as a tool for explaining their action plans. This is because more autonomous departments are not subjected to a rigorous monitoring of their activities (Donaldson, 2001). The relative importance of using budgets to formulate action plans, therefore, should be less in high autonomy conditions.

**P2c:** For fixed budgets, irrespective of rolling forecast use, the higher the autonomy, the lower the importance of the *formulate action plans* reason to budget.

**P2d:** For rolling forecasts, irrespective of fixed budget use, the higher the autonomy, the lower the importance of the *formulate action plans* reason to budget.

The importance of using budgets for the staff evaluation reason to budget should be negatively related to the level of autonomy. When greater autonomy is given by top management to business units, the use of formal financial controls to evaluate staff within those units should be less. An example of such business units are research and development (R&D) divisions (Perrow, 1967), where the direct use of budgets to evaluate staff may not be high. Conversely, business units

with lower autonomy and which are subject to greater monitoring will have their budgets used by top management to evaluate staff to a greater extent. In such hierarchical organisations, decisions, rewards and punishments flow down the organisation (Kalagnanam and Lindsay, 1999). Budgets are more likely to be used to determine rewards and punishments. Therefore, the less the autonomy given to business units, the greater the imposition of budgetary controls for staff evaluation. The importance of budgets for staff evaluation should be negatively related to the level of autonomy given in organisations, and this effect should be the same for fixed budgets and rolling forecasts.

**P2e:** For fixed budgets, irrespective of rolling forecast use, the higher the autonomy, the lower the importance of the *staff evaluation* reason to budget

**P2f:** For rolling forecasts, irrespective of fixed budget use, the higher the autonomy, the lower the importance of the *staff evaluation* reason to budget

Notwithstanding the above points in relation to staff evaluation, the importance of budgets to evaluate business units should not be related to the level of autonomy.

Whatever the level of hierarchies or centralisation in organisations, every organisation has a limited pool of funds to allocate and will use budgets to make evaluations on a business units' consumption of the same funds. The use of budgets to evaluate staff may not be high when autonomy is greater. However, the use of budgets to reflect on the spending of business units will be considered. Therefore, the importance of the business unit evaluation reason to budget should not be related to the level of autonomy.

**P2g:** For fixed budgets, irrespective of rolling forecast use, the level of autonomy is unrelated to the importance of the *business unit evaluation* reason to budget

**P2h:** For rolling forecasts, irrespective of fixed budget use, the level of autonomy is unrelated to the importance of the *business unit evaluation* reason to budget

#### **4.2.4 Environmental uncertainty and reasons to budget for fixed budgets**

Uncertainty is one of the most commonly used antecedents in management control research. Interest in uncertainty as a variable grew in importance as a result of early contingency theorists (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Thompson, 1967; Hage and Aiken, 1969; Pugh, et al. 1969) who presented evidence that organisations are broadly influenced by environments and technology. This laid the foundation for a relationship between controls and uncertainty in environments. Controls exist in organisations to guide behaviour (Gresov, et al. 1989), and the extent to which uncertainty affects an organisation defines management ability to control behaviour. Thus, the extent to which uncertainty exists in an organisation influences how controls are selected and enforced. In this thesis, uncertainty is viewed from the perspective of the environment affecting an organisation. This variable is termed environmental uncertainty in management accounting research, and is widely used (Luft and Shields, 2003; Chenhall, 2003).

The reliance on accounting performance measures (RAPM) research stream proposes that greater environmental uncertainty is usually negatively related to the use of budgetary controls and formal accounting performance measures (Hartmann, 2000). From a performance evaluation perspective, greater uncertainty reduces fixed budget relevance. The extent to which this is consistent for all four operational reasons to budget, however, is unclear.

In their study, Hansen and Van der Stede (2004) found a significant negative relationship between uncertainty measures (resource traceability and degree of competition) and the performance evaluation reason to budget. Hansen and Van der Stede (2004) found that higher resource traceability and lower competition (lower uncertainty) increased the importance of budgets as a performance evaluation device. They found no relationship between uncertainty and the operational planning reason to budget. However, the extent to which their results applied to both types of performance evaluation and operational planning reasons to budget used in this chapter has not been investigated.

Though Hansen and Van der Stede (2004) found no relationship between environmental uncertainty and their operational planning reason to budget, it is argued that the importance of planning in uncertain environments should be greater than in stable environments (Birnberg, 1998). When organisational conditions are less certain and goal adherence is a higher risk proposition (Collier and Berry, 2002), then the importance of institutionalising controls to assist with operational planning should be greater. Though the development of budgets is more difficult in uncertain environments, the need to plan is greater when an organisation is uncertain of the future than if the future is known with certainty. This should apply to both operational planning reasons to budget. Greater uncertainty should, therefore, increase the importance for budgeting to coordinate resources, and formulate action plans.

**P3a:** For fixed budgets, irrespective of rolling forecast use, the higher the environmental uncertainty, the higher the importance of the *coordinate resources* reason to budget.

**P3b:** For fixed budgets, irrespective of rolling forecast use, the higher the environmental uncertainty, the higher the importance of the *formulate action plans* reason to budget.

As explained in Chapter 2, the majority of research in RAPM and participative budgeting in the 1980's and 1990's focused on performance evaluation, but were more balanced in their discussion of budget usefulness. Budgeting for performance evaluation was argued to be appropriate, if certain antecedents existed in an organisation, and the level of uncertainty was regarded as one of these key antecedents (Brownell and Hirst, 1986; Govindarajan, 1984; Hirst, 1983). Greater levels of uncertainty in organisations adversely affected the accuracy of budgets, and therefore, from the point of view of evaluating staff, reduced its importance. Generally, the perspective put forth was that the greater the uncertainty, the less relevant a budget was for the performance evaluation of staff (Brownell and Hirst, 1986; Brownell and Dunk, 1991).

Similar to Hansen and Van der Stede (2004), it is argued here that greater uncertainty will negatively affect staff budgetary evaluation. Employees are not inert resources, like other resources in organisations. Employees are active and knowledgeable, and capable of response. Staff would regard being evaluated on financial predictions as being less relevant in more uncertain environments. This leads to greater job related tension, leading to sub-optimal work performance (Argyris, 1952). In response to this, management will be less inclined to evaluate staff using budgets in conditions of high uncertainty, and therefore place less importance on the use of budgets for staff evaluation. Evidence for this has been cited often in management accounting research (Jensen, 2003; Hartmann, 2000).

**P3c:** For fixed budgets, irrespective of rolling forecast use, the higher the environmental uncertainty, the lower the importance of the *staff evaluation* reason to budget.

However, unlike Hansen and Van der Stede (2004), it is argued that the use of budget numbers for business unit evaluation should not change, whatever the level of uncertainty. Organisations measure and report organisation performance given the performance of its business units, whatever the environmental uncertainty. In pursuit of organisational learning (Haka and Krishnan, 2005), organisations are anxious to understand deviations from budgets, irrespective of the uncertainty present. Though deviations from budgets may be tolerated in higher uncertainty environments, the importance of evaluating performance is equally important.

**P3d:** For fixed budgets, irrespective of rolling forecast use, environmental uncertainty is unrelated to the *business unit evaluation* reason to budget.

#### **4.2.5 Environmental uncertainty and reasons to budget for rolling forecasts**

Rolling forecasts are a newer form of budgeting, and increasing in prominence (Haka and Krishnan, 2005). As established in chapter 3, they are usually conducted monthly or quarterly. While Hansen and Van der Stede (2004) found that rolling forecasts were prevalent in 23% of North American organisations surveyed, results from Chapter 3 show that rolling forecasts are prevalent in a much larger 65% of Australian respondents. The use of rolling forecasts in organisations is growing, primarily because such budgets are argued to provide a smaller window of forecasting error, and align closer to actual data, thereby improving their utility to organisations (Neely, et al. 2001; Bittlestone, 2000).

In this chapter, the environmental uncertainty organisation characteristic is compared to the importance of the four reasons to budget, for rolling forecasts. Existing research on rolling forecasts, though sparse, has argued that uncertainty is the primary factor affecting the importance of operational rolling forecasts (Haka and Krishnan, 2005).

The positive relationship between uncertainty and the importance of a budget form is unusual. Traditionally, budgetary controls have been argued to suit more certain environments (Govindarajan and Gupta, 1985; Langfield-Smith, 1997). However, this is precisely why rolling forecasts have been argued to assist organisations. Rolling forecast numbers improve on fixed budget numbers due to their updating function, which facilitates organisational learning, as argued in Haka and Krishnan (2005). Therefore, whether rolling forecasts are used to generally *coordinate resources* or more specifically provide information that assists in *formulating action plans*, they are likely to be more important when environments are more uncertain. This leads to the following two propositions.

**P4a:** For rolling forecasts, irrespective of fixed budget use, the higher the environmental uncertainty, the higher the importance of the *coordinate resources* reason to budget.

**P4b:** For rolling forecasts, irrespective of fixed budget use, the higher the environmental uncertainty, the higher the importance of the *formulate action plans* reason to budget.

Evidence on the relationship between the importance of rolling forecasts for performance evaluation, and uncertainty is mixed. From the perspective of uncertainty management, rolling forecasts assist organisations to evaluate performance, as such budgets increase the relevance of budgetary targets through



better alignment with changes in environmental conditions (Bittlestone, 2000). The greater the uncertainty, the greater the importance of updating frequently. Fixed budgets are less useful for performance evaluation in more uncertain environments, as the ability of an organisation to adequately budget a future annual period is reduced. Rolling forecasts avoid this by creating more frequent and shorter budgeting periods. This reduces the probability of budget inaccuracy (Neely, et al. 2001, Gurton, 1999). Rolling forecasts also minimise incidences of staff slack, especially if annual targets are met well prior to the end of a period. Such incidences are arguably more prevalent in a higher uncertainty environments, where budget numbers change more often, to suit different circumstances (Myers, 2001). This leads to a re-evaluation of budget targets and a reduction in staff slack. Therefore, the more uncertain an environment, the more likely it is that organisations will employ rolling forecasts.

However, alternative arguments propose that if rolling forecasts are used for performance evaluation, they cause less goal commitment amongst staff in conditions of greater uncertainty (Haka and Krishnan, 2005). If rolling forecast numbers require greater alterations from period to period, and are used for performance evaluation, staff are less certain of their goals and do not work to a committed target. In contrast, the fixed budget, though less accurate, especially in more uncertain environments, at least provides staff with a fixed target to work towards. This increases their goal commitment. As a result, irrespective of accuracy, the fixed budget produces greater goal commitment amongst staff than the rolling forecast. From this point of view, the greater the uncertainty, the

lower the goal commitment, and therefore the lower the importance of using rolling forecasts for staff evaluation.

Overall, therefore, arguments for the relationship between uncertainty and the importance of rolling forecasts for staff evaluation are mixed. On the one hand, targets become more accurate if rolling forecasts are used. On the other, goal commitment is lower, as budget based targets are continually changing. In this chapter, the negative effect of a reduction in goal commitment is argued to take precedence over the more accurate budget impact. This rationale sources from information theory. Information theory builds into much of the economic literature (Friedman, 1957), and argues that the value of information is defined not by the quality of the information itself, but in the perceived usefulness of the information to the user. In this instance, it is less relevant that rolling forecasts provide better quality information for performance evaluation by being more accurate. What matters is that functionally, rolling forecast information lowers the goal commitment of its users, and, therefore, should be regarded as less important by organisations, for both staff and business unit evaluation. This leads to the final two propositions.

**P4c:** For rolling forecasts, irrespective of fixed budget use, the higher the environmental uncertainty, the lower the importance of the *staff evaluation* reason to budget.

**P4d:** For rolling forecasts, irrespective of fixed budget use, the higher the environmental uncertainty, the lower the importance of the *business unit evaluation* reason to budget.

The propositions developed in this section are summarised in Table 4.1.

Table 4.1: Proposition Summary

| <b>Reason to budget</b>     | Coordinate Resources | Formulate Action Plans | Staff Evaluation | Business Unit Evaluation |
|-----------------------------|----------------------|------------------------|------------------|--------------------------|
| <i>Fixed budget</i>         |                      |                        |                  |                          |
| 1. Strategy (P1 a,c,e,g)    | <b>0</b>             | -                      | -                | <b>0</b>                 |
| 2. Autonomy (P2 a,c,e,g)    | <b>0</b>             | -                      | -                | <b>0</b>                 |
| 3. Uncertainty (P3 a,b,c,d) | <b>+</b>             | <b>+</b>               | -                | <b>0</b>                 |
| <i>Rolling forecast</i>     |                      |                        |                  |                          |
| 1.Strategy (P1 b,d,f,h)     | <b>0</b>             | -                      | -                | <b>0</b>                 |
| 2. Autonomy (P2 b,d,f,h)    | <b>0</b>             | -                      | -                | <b>0</b>                 |
| 4. Uncertainty (P4 a,b,c,d) | <b>+</b>             | <b>+</b>               | -                | -                        |

- = negative relation; 0= no relation; + = positive relation

### 4.3 Research method

In addition to the research methods discussion in chapter 3, the justification and discussion of the Partial Least Squares structural equations modelling approach used in this chapter are provided. Design characteristics and descriptive data are also presented for measures which were not presented in chapter 3.

#### 4.3.1 Structural equations modelling

The regression method used to study the relationships between organisational characteristics and alternative reasons to budget is based on structural equations modelling (SEM). This method is chosen as it is regarded to be appropriate for the nature of variables used in the chapter, and the exploratory relationships being observed. SEM models exhibit two significant benefits (Hair, et al. 1998). First, they are an effective method for managing multiple relationships simultaneously, without compromising statistical efficiency, and second, they assess relationships comprehensively and provide an effective transition from exploratory analysis, to confirmatory analysis. Structural equations modelling (SEM) is also appropriate for survey based research in the social sciences, as this technique allows the

researcher to infer complex causal relationships amongst variables that are directly observable (Mjoen and Tallman, 1997).

In doing so, however, a structural equation model requires a higher level of complexity, implicitly assuming that the researcher possesses a sound knowledge of the conditions for appropriate usage, and the assumptions driving the analysis (Chin, 1997). If these are not considered, the results of SEM may not be indicative of the relationships being pursued by the researcher.

There are two broad types of SEM – factor based covariance techniques, and variance based techniques. The factor based covariance technique is the most widely accepted of the two, and is most appropriate for use as a regression device, when extant theory in a research area is strongly present, and the aim of the research is to test and develop existing theory. When this is not the case, that is when a field of study is in its infancy or being explored at an early stage, the variance based technique is more appropriate.

Given that this chapter relies on a number of exploratory variables and indicators that have not been significantly examined in existing research, the variance based technique is deemed to be more appropriate.

### **4.3.2 Partial least squares regression**

Partial Least Squares (PLS) regression is a variance based technique used within the SEM statistical family. Because the creation of variables and indicators are not established, PLS assumptions regarding the nature of data are more precautionary. For example, PLS regression does not assume any random error

variance or measure specific variance in its testing. That is, all observed variances in measures are assumed to be useful for identifying relationships. This is particularly helpful in a research setting involving new variables which have not been previously tested in great detail, such as the alternative reasons to budget and autonomy variables. It is also more aligned to the use of formative indicators and reflective indicators, unlike other SEM approaches which adopt factor based covariance techniques, and are primarily suited to reflective indicators only (Rossiter, 2002). The importance of specifying variables in SEM as formative or reflective indicators is explained below.

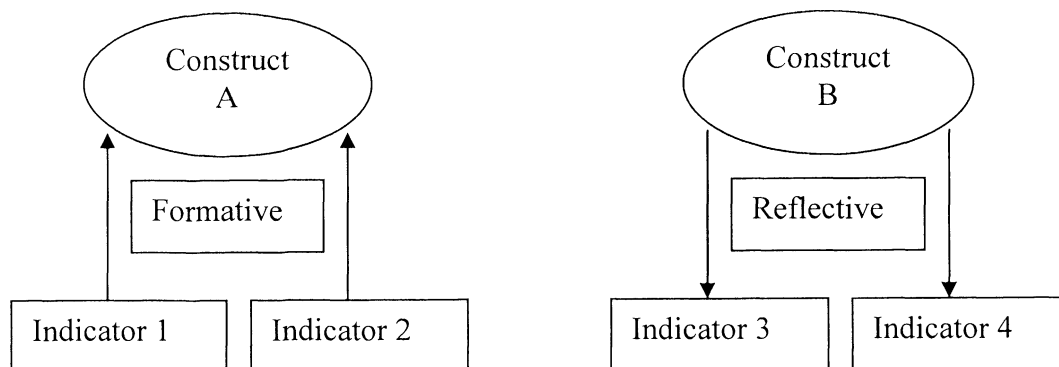
Conceptual relationships in research involving the SEM technique are explained using variables and indicators. A variable is a broad concept which is investigated. It is a conceptual tool used to describe a phenomenon of interest (Edwards and Bagozzi, 2000). Indicators make up a variable and are the aspects which are measured. Indicators may be financial data, or Likert scale responses, and in PLS, any number of indicators may be used to measure a variable.

In PLS, indicators may be regarded as formative or reflective in their relationship to a variable (Chin, 1998). A formative indicator is defined by four characteristics, as explained in Jarvis, et al. (2003). Firstly, the direction of causality is from the indicator to the variable. This means that the indicator exists independently of the variable, and is not a result of the variable (Bisbe, et al. 2006). Secondly, in instances where many indicators make up a variable, there should be little reason to expect the different indicators to be interchangeable. Formative indicators thus do not require internal consistency, or are subject to the

factor analysis and data reduction methods often applied in standard regression models (Jarvis, et al. 2003; Bagozzi, 1984). Thirdly, there is little reason to expect a set of formative indicators to be correlated to a variable, therefore co-variation between the indicators of a formative variable may not be high (Jarvis, et al. 2003; Bagozzi, 1984). Finally, a conceptual consideration of the nomological net of the indicators, that is the antecedents and effects of indicators, should be different for each formative indicator (Bisbe, et al. 2006). This is because formative indicators are not thematically related (Bagozzi, 1984) and, therefore, do not share similar cause and effect factors.

Graphically, a formative indicator is represented by an arrow from the indicator to the variable, as shown for indicators 1 and 2 for Construct A in Figure 4.2.

Figure 4.2: Formative/Reflective Indicators



The characteristics of a reflective indicator are the opposite of the formative indicators. Firstly, the direction of causality is from the variable to the indicator (Bisbe, et al. 2006; Jarvis, et al. 2003). The reflective indicator is a manifestation or a result of the variable (Bagozzi, 1984). Secondly, reflective indicators should be interchangeable. Removing one reflective indicator from a variable should not

change the nature of the relationship between the variable and other indicators (Jarvis, et al. 2003). This relates to the third criteria, which is that reflective indicators should co-vary with one another (Bagozzi, 1984), and a change in one indicator should lead to a similar change in another indicator (Jarvis, et al. 2003). Finally, the nomological set should be similar for reflective indicators; that is, reflective indicators should share similar antecedent causes and effects, as they are probably thematically related. Graphically, a reflective indicator is represented by an arrow from the variable to the indicator, as shown for indicators 3 and 4 for Construct B in Figure 4.2.

The choice of selecting an indicator as formative or reflective is important. When multiple indicators exist for a single variable, mis-specification of an indicator can lead to different results observed between variables (Diamantopoulos and Siguaw, 2002; Rossiter, 2002; Law and Wong, 1999). Furthermore, the common use of data reduction methods to eliminate variables with low factor loadings in social science research (Jarvis, et al. 2003; Rossiter, 2002) is discouraged for variables with formative indicators. This is because formative indicators do not share similar themes and do not co-vary. Therefore, there is no benefit in using data reduction to only allow the consideration of formative indicators which display composite reliability. It would be entirely consistent for formative indicators to exhibit low correlation (Bollen and Lennox, 1991). Factor analysis and data reduction approaches are more suited to reflective indicators (Jarvis, et al. 2003), where co-variation is expected between indicators to the same variable and therefore eliminating an indicator should not alter the expected results between the variable concerned and other variables.

Interestingly, Rossiter (2002) explains that when researchers are satisfied that a single indicator measures a variable, this indicator may be described as a concrete indicator. The identification of the relationship direction between variable and indicator for concrete single indicators is less relevant, as it does not affect the nature of relationships between variables. Factor analysis and data reduction cannot be conducted on a single indicator – variable relationship. No further data reduction is possible. Irrespective of the direction of relationship between variable and indicator, the single data set is used to measure the variable. Furthermore, the relationship between the indicator and the variable is often ambiguous for single indicator variables, as the consideration is more conceptual. For single indicators, the researchers' opinions often vary. Firstly, researchers may opine that a variable was created by researchers to investigate an indicator which has always existed in practice (formative). Alternatively, researchers may argue that the same indicator was used for the measurement of the variable (reflective), and is therefore a function of the variable. The decision is highly dependent on the point of view of the researcher. Jarvis, et al. (2003) acknowledges this difficulty, stating that answers to the four questions they propose which help select a formative or reflective indicator may be challenging, as they may appear contradictory.

Because the consideration of indicator type is less relevant for single indicator variables, and PLS is equally suited to the consideration of formative and reflective indicators, this chapter will consider each indicator variable relationship independently and make a decision where factors are perceived to lean towards



one of the relevant indicator types. The indicator decisions which result are a conceptual judgement of the researcher, and therefore subjective. Disagreements regarding the classification of indicators have even been considered amongst researchers that drive social science research in this area<sup>10</sup>. However, whatever the direction of the relationship, the results between variables should not vary for single indicator variable relationships. Results, therefore, should be consistent, irrespective of the classification of single indicator variables.

It is also important to acknowledge that the conceptual definition of a formative indicator is more important than the mathematical evidence which often correlates to the perceived conceptual reality (Jarvis, et al. 2003; Rossiter, 2002). Even if a set of indicators may exhibit low co-variation (a formative indicator characteristic), they should be regarded as reflective indicators if the researcher fundamentally believes that they are thematically connected and that the indicators were formed to measure the variable. The alternative applies for formative indicators.

The use of factor analysis to determine loadings which influences data reduction is not relevant when using formative indicators, as formative indicators are not expected to co-vary (Bisbe, et al. 2006; Diamantopolous and Siguaw, 2002). As a result, factor based co-variance statistical techniques such as Amos and Lisrel are less appropriate for these variables (Jarvis, et al. 2003). This study uses PLS because PLS is a variance based technique which is independent of factor based co-variance, and therefore does not require the use of factor analysis to eliminate

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<sup>10</sup> See Rossiter (2005), where Rossiter produces a research note challenging Diamantopolous regarding the classification of indicators as formative or reflective in Winklhofer and Diamantopolous (2003).

low factor loading indicators. This characteristic of PLS enhances the suitability of PLS for testing using formative indicators.

The PLS regression method used in this chapter uses path analysis, which is different to the 2SLS regression method used by Hansen and Van der Stede (2004). Unlike Hansen and Van der Stede (2004), this chapter uses the raw scores of the reason to budget importance variables, and not the residual values resulting from regressing the reason to budget variables with one another. Hansen and Van der Stede (2004) used residual values as they wished to capture the unique component of each reason to budget separate to the other three, then test this unique component for its relationship to organisational characteristics. However, in this chapter, the focus of reasons to budget is only on operational reasons to budget, and therefore the full spectrum of strategic and operational reasons to budget do not exist from which to extract a unique element. Therefore, this chapter adopts raw scores for the reason to budget importance variables in the PLS regression.

### **4.3.3 Variable descriptions and statistics**

Seven variables are used in this chapter, which relate to the three organisational characteristics (strategy, autonomy and uncertainty) and four operational reasons to budget for the two budget forms. Definitions and justifications for the four operational reasons to budget variables were provided in chapter 3. In this chapter, the same will be provided for the strategy, autonomy and environmental uncertainty organisational characteristics.

### **4.3.3.1 Strategy**

The strategy variable has been explained in a number of ways in existing management accounting research. As explained in section 4.2.2, the “cost leader/differentiator” typology (developed by Porter (1980)) is used in this chapter.

A cost leader is an entity which focuses on efficiently producing generic products and engages in standardisation to maximise cost reduction (Porter, 1980), thereby attaining profitable operations. A differentiator organisation differentiates its product/service offering from other competitors in the marketplace, usually incurring a higher cost to do so, but charges a premium price, thereby earning a profit. While this typology has been widely discussed and used in management accounting control research (Govindarajan and Gupta, 1985; Govindarajan and Fisher, 1990; Langfield-Smith, 1997), its relationship to alternative reasons to budget has only been investigated in Hansen and Van der Stede (2004).

The strategy variable was operationalised using indicators selected from prior research (Chenhall and Langfield-Smith, 1998). The indicators extracted and used in this chapter are perceived to be positively related to differentiator organisations, as developed by Miller, et al. (1992), and used in Chenhall and Langfield-Smith (1998). The strategy variable is comprised of eleven indicators, relating to three categories - delivery/service, flexibility and low cost/price. Respondents were asked to “rate the degree of emphasis placed on the following product/service priorities” within their unit (Appendix B, Section A, Question 5).

The priorities are:

- a. Provide high quality products
- b. Provide fast deliveries
- c. Make dependable delivery promises
- d. Product availability (broad distribution)
- e. Provide effective after sales service and support
- f. Make changes in design and introduce new product
- g. Provide unique product features
- h. Make rapid volume and/or product mix changes
- i. Customise products and services to suit customer needs.
- j. Low price
- k. Low production costs

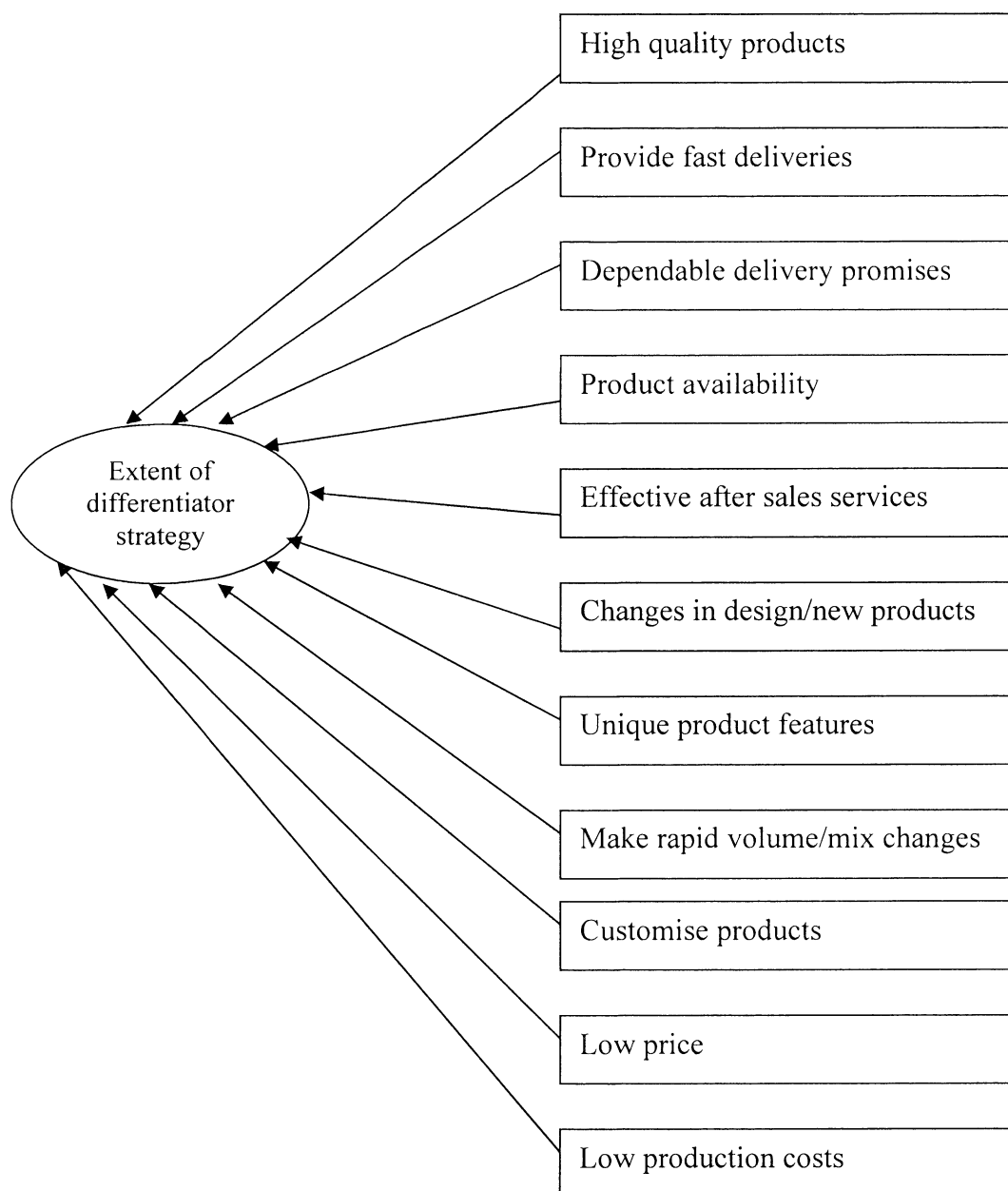
The eleven priorities were measured on a Likert Scale from 1 to 7, “1” being Low Emphasis and “7” being High Emphasis.

All 11 indicators may be classed as being formative to the strategy variable.

Though Miller, et al. (1992) and Chenhall (2005) created the indicators to measure the variable, the indicators may not co-vary, because they relate to three different components of the strategy variable. Also, indicators may be independent from each other, and be thematically different. For example, “product availability” and “provide effective after sales service and support” may not be related. An organisation may have products readily available, but not provide effective after sales service and/or support. The same may be argued for the relationship between “provide fast deliveries” and “make dependable delivery

promises”. Often, making dependable delivery promises requires organisations to be conservative in their estimate of delivery times, which is the opposite of providing fast deliveries. Therefore, the indicators measure different types of content, which may not be strongly related, and are perceived to be formative indicators. Graphically, the relationship between the strategy variable and its indicators for fixed budgets and rolling forecasts is depicted in Figure 4.3.

Figure 4.3: Strategy Variable – Indicator Relationship



Descriptive statistics for each indicator are provided in Table 4.2 (fixed budgets) and Table 4.3 (rolling forecasts). The “Low price” and “Low production costs” indicators were both reverse scored because they are positively aligned to the cost leader strategy. The variable, however, measures the extent of differentiator strategy.

Though multiple measures were used for the same variable, factor analysis will not be undertaken to test the goodness of fit of the indicators. This is because these variables are formative indicators and therefore not expected to co-vary (Jarvis, et al. 2003). As explained previously, the PLS statistical method is better suited to testing formative indicators without requiring data reduction through factor analysis as it is a variance based technique and thus not limited by the factor based covariance approach as adopted by other SEM techniques.

#### **4.3.3.2 Autonomy**

The autonomy variable considers the extent to which business unit managers operate independently from senior management when planning operations for an upcoming period. Unlike the strategy variable, the indicator for the autonomy variable had not been explicitly translated into a measure in prior research and, therefore, this measure was developed in conjunction with feedback from practitioners and academics.

The autonomy variable is proxied by a single question, which asks “To what extent do units in your organisation exercise autonomy from senior management for the planning of unit operations for an upcoming period?” (Appendix B,

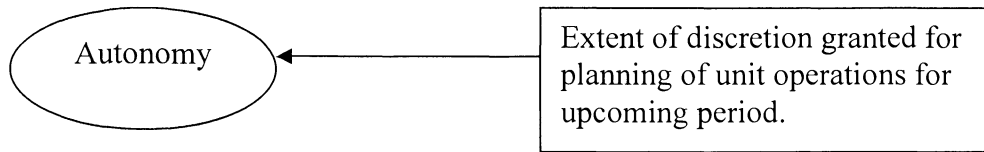
Section D1, Question 1). A 7-point Likert scale describing the “Level of Autonomy” was used, from 1=Nil (nil autonomy) to 7=High (High autonomy). Descriptive statistics on the autonomy variable are provided in Tables 4.2 and 4.3.

Because this indicator had not been used previously, pilot tests conducted on the survey variables, as discussed in Chapter 3, were particularly important in order to validate the indicator. Pilot respondents who completed and commented on the survey were questioned on the appropriateness of this question, and the extent to which it captured the concept of autonomy when firms prepared plans for an upcoming period. The final question used in the survey incorporated their feedback.

For single indicators, the choice of formative or reflective indicator to the variable is less relevant. As explained previously, the relevance of factor analysis which eliminates indicators is irrelevant, when only a single indicator exists. Having only a single indicator, the question of common or differing themes between indicators is also not relevant. The only relevant question as highlighted in Jarvis, et. al (2003) is the direction of causality between the variable and the indicator. If the indicator is a defining characteristic of a construct, then the indicator has a formative effect on the variable. However, if the indicator is a manifestation of the construct, then the indicator is reflective of the variable. In this study, the autonomy variable was measured by observing the discretion provided by superiors to departments for an upcoming period (Figure 4.4). The indicator is a defining characteristic of the autonomy concept measured in this

thesis, and is therefore formatively related to the autonomy variable, using the criteria developed by Jarvis, et al. (2003).

Figure 4.4: Autonomy Variable – Indicator Relationship



Being a single indicator variable, factor analysis and composite reliability measures to ascertain convergent validity are not required for this indicator.

#### **4.3.3.3 Environmental uncertainty**

The environmental uncertainty variable comprises external and internal uncertainty as discussed in Hansen and Van der Stede (2004). Four indicators of uncertainty are used for this variable. They are competition, supply, demand and technology uncertainty. The indicators relating to this variable were derived from the environmental uncertainty measures used in Hansen and Van der Stede (2004), Gordon and Narayanan (1984) and Govindarajan (1984).

Gordon and Narayanan (1984) measured environmental uncertainty using a series of questions which targeted the predictability of 5 elements; the organisation's economic, industrial, technological, competitive and customer elements. The first two sources relate to strategic effects of environmental uncertainty and the remaining three relate to operational sources. The three operational sources of environmental uncertainty (technological, competitive and customer) were used in this thesis, as the focus of the thesis is on operational reasons to budget. Also,



the selection of “predictability” as the Likert scale descriptor was adapted from the terminology used by Gordon and Narayan (1984).

The final indicator for environmental uncertainty was sourced from Govindarajan (1984). Govindarajan (1984) identified customers, suppliers, competitors and regulatory groups as the sources of environmental uncertainty. This chapter adapted the supplier uncertainty indicator from Govindarajan (1984). The customer and competitor sources of uncertainty were already identified from Gordon and Narayanan (1984), while the regulatory groups uncertainty measure was not considered as the effects of regulatory groups uncertainty were perceived to be related to supply, demand and competition uncertainty and thus did not require inclusion.

Competition, supply and demand uncertainty are sourced from factors outside an organisation’s boundaries and therefore termed “external uncertainty”. This terminology is similar to that used in Hansen and Van der Stede (2004). The impact of organisational technologies on operations as discussed in Gordon and Narayanan (1984) relate to processes within organisations, and therefore is termed internal uncertainty. In this study, these two types of uncertainty are regarded as two separate variables.

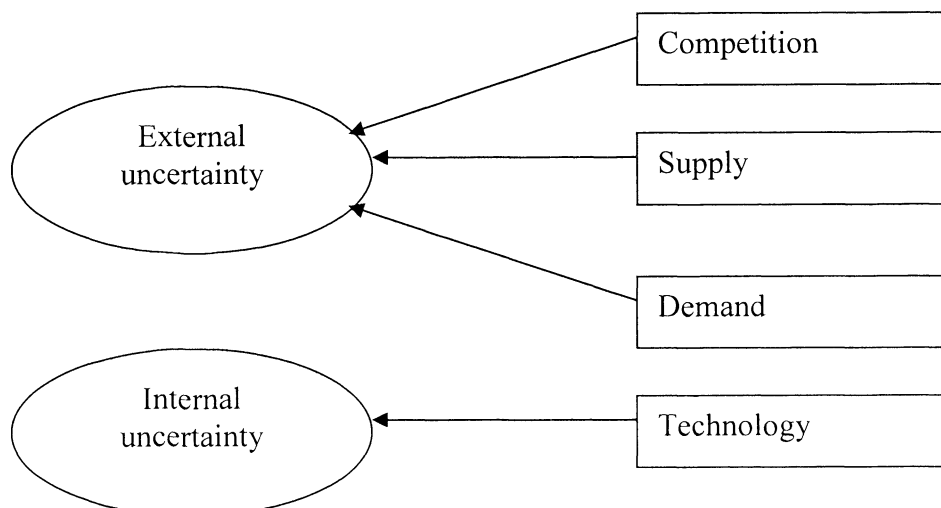
The three external uncertainty indicators may be regarded as formative indicators to the external uncertainty variable. Though the three indicators measure a similar theme (uncertainty), they do not measure the same content. The three indicators measure quite disparate elements of uncertainty that need not be

related. For example, demand uncertainty and supply uncertainty measure very different types of uncertainty, and may not co-vary. Competition uncertainty may also not relate to demand and supply certainty. Because the different types of external uncertainty may not co-vary they are independent of one another to some extent and exhibit the characteristics of formative indicators.

The technology uncertainty indicator is also a formative indicator to the internal uncertainty variable. This is because the technology uncertainty variable relates to the sequences and processes existing in an organisation, which significantly impacts the measurement of internal uncertainty in organisations. Because it is a defining characteristic of the internal uncertainty variable, the relationship between the technology uncertainty indicator and the internal uncertainty variable is regarded as formative. Technology uncertainty was proposed in Hansen and Van der Stede (2004), and also used in this study.

Graphically, the relationship between the external and internal uncertainty variables and the four indicators are depicted in Figure 4.5.

Figure 4.5: Environmental uncertainty variables – indicator relationships



In order to measure environmental uncertainty, predictability was used as the measurement scale (Gordon and Narayanan, 1984). Respondents were asked “What is the predictability of the following elements of the environment that your unit operates in?”.

The four elements were:

1. Your competitor’s actions
2. Market supply for the inputs to your products/services
3. Market demand for your products/services
4. Impact of technology on operations

Respondents were provided a 7-point Likert scale for each of the above four elements, with 1= Not predictable and 7= Highly predictable (Appendix A, Section D2, Question 1).

Descriptive statistics for both uncertainty variables are shown in Tables 4.2 and 4.3. As explained for the strategy indicators, composite reliability and factor analysis tests were not undertaken on the three external uncertainty indicators (competitors, supply, demand) to assess their goodness of fit. These are formative indicators and using PLS, factor based co-variation is not required, therefore allowing for all indicators comprising the variable to be considered.

#### **4.3.3.4 Reasons to budget**

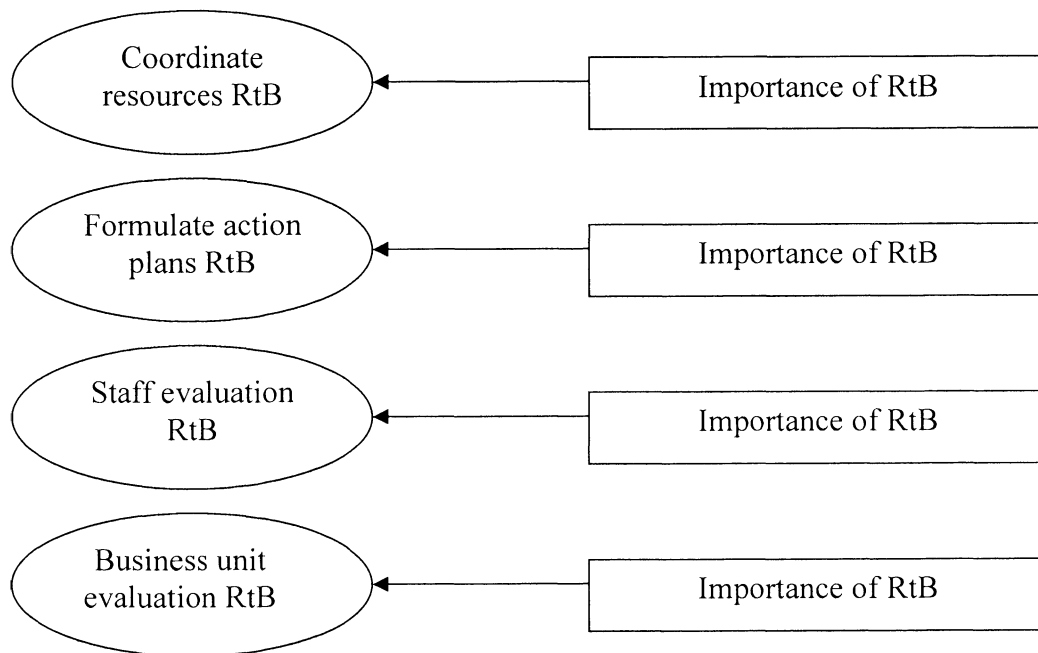
In addition to the justifications and descriptive statistics provided for the four reasons to budget variables across both budget forms provided in Chapter 3, the

extent to which the variables are formative or reflective needs to be discussed. There are four operational reasons to budget, as described previously, and these are regressed with the strategy, autonomy and uncertainty organisational characteristics, for fixed budgets and rolling forecasts separately. In the survey, respondents separately identified the importance of the four operational reasons to budget for fixed budgets and rolling forecasts, giving a total of eight variables.

There is only a single indicator for each variable. These indicators are a defining characteristic of their respective reason to budget variables. The importance score of a reason to budget clearly characterises the reason to budget variable.

Therefore, these indicators are formative in their relation to the variables (Jarvis, et al. 2003). Graphically, the relationship between the variables and their indicators are shown in Figure 4.6.

Figure 4.6: Budget reason to budget (RtB) variable – indicator relationship



In chapter 3, 331 organisations comprised the usable sample for fixed budgets and 215 organisations for the rolling forecast. In this chapter, organisations with non-annual fixed budget periods were excluded from the sample to ensure a clear demarcation between annual fixed budget organisations as described in extant research, and organisations using rolling forecasts. This resulted in a usable sample of 292 fixed budget organisations. As most fixed budget organisations also used the rolling forecast, the number of rolling forecast organisations reduced from 215 in chapter 3 to 189 in this chapter. Descriptive statistics for the reason to budget scores for this reduced sample of fixed budget and rolling forecast respondents are provided in Tables 4.2 and 4.3.

#### **4.3.3.5 Reason to budget benefits**

In the original research design it was intended that perceived benefits for each reason to budget would be included as variable, similar to the research model used by Hansen and Van der Stede (2004). Accordingly, the survey design included questions on the *benefits* of the four operational reasons to budget (Appendix A, Section A, Question 6). Perceived benefits were to be measured on a single item scale for each reason to budget of “1” equals “Low benefits” to “7” equals “High benefits”, consistent with the approach used by Hansen and Van der Stede (2004).

However, in the final version of the questionnaire, the scale for the benefits of reasons to budget was accidentally mis-specified, due to a transposition error. The scale anchors for the importance of reasons to budget was used instead of the perceived benefits scale, with “1” equals “Low importance” to “7” equals “High importance” (Appendix A, Section A, Question 6). Therefore, survey

respondents completed the reasons to budget benefits question using this incorrect scale.

Two tests were conducted to investigate if the “reason to budget benefit” responses could still be used for data analysis. The first was to conduct a Pearson correlation on the sets of “importance” and “benefit” scores for the reason to budget. A statistically significant correlation was observed for all the paired samples of “importance” and “benefits” scores for the reasons to budget. This indicated that the incorrect recording of the scale for benefits using the text “importance” may have caused the correlation of “benefit” scores to “importance” scores. Conversely, it could be argued that a correlation would be expected to be observed, between the importance of a reason to budget and its perceived benefit.

Given the above inconclusive interpretation of the findings, the second test compared the benefit responses to the qualitative responses of respondents regarding their overall impressions of their operations budgeting system (Appendix A, Section A, Question 10). Some of the responses to this question provided a proxy for budget benefits. The qualitative responses to this question were analysed and coded on a 1 to 7 benefits scale, with “1” being low benefits and “7” being high benefits. These scores were then compared to the scores for the same respondents for their mis-specified “reason to budget benefits” question. The results showed no statistically significant correlation between the two measures. The lack of correlation between the responses for reason to budget benefits and the qualitative proxy for reason to budget benefits further supported that the mis-specified scale anchors may have led to the benefit responses being

incorrectly completed. Overall, the above two tests indicate that the incorrect scale may have led respondents not to focus on perceived benefits when responding to the “reason to budget benefits” question. Therefore, this variable was not considered in the thesis.

## **4.4 Results and discussion**

Findings for the relationships between strategy, autonomy, uncertainty and the four reasons to budget are described in the section below. Table 4.4 and Table 4.5 outline the path coefficients, p-values and t-statistics for each relationship. Figure 4.7 and Figure 4.8 display the significance of the relationships in diagrammatical form.

### **4.4.1 Findings for strategy and reasons to budget**

Relationships between the extent of differentiator strategy and the importance of the four operational reasons to budget were proposed for the fixed budget and rolling forecast forms. In total, eight sets of relationships were tested. Results for the two operational planning reasons, that is the “coordinate resources” reason to budget and “formulate action plans” reason to budget are discussed first, and presented in Tables 4.4 and 4.5.

No relationship was expected between the extent of differentiator strategy and the importance of the “coordinate resources” reason to budget, for both fixed budgets (P1a) and rolling forecasts (P1b). However, results showed a significant positive relationship for both. Therefore, both propositions are rejected. Similarly, a

negative relationship was proposed between the extent of differentiator strategy and the importance of the formulate action plans reason to budget for fixed budgets (P1c) and rolling forecasts (P1d). Results showed the reverse - a positive relationship for both. Therefore, these two propositions are rejected.

For the performance evaluation reasons to budget, a negative relationship was proposed between the extent of differentiator strategy and the importance of the staff evaluation reason to budget, for fixed budgets (P1e) and rolling forecasts (P1f). Both relationships showed a significant positive relation. Therefore, both propositions are rejected. Finally, no relationship was expected between the extent of differentiator strategy and the importance of the business unit evaluation reason to budget, for fixed budgets (P1g) and rolling forecasts (P1h). However, results indicated a statistically significant positive relationship in both cases. Therefore, both propositions are rejected.

While none of the eight propositions for the relationship between the extent of differentiator strategy and importance of reasons to budget were accepted, the results are interesting because they present a counter set of findings to those of Hansen and Van der Stede (2004). While Hansen and Van der Stede (2004) found no relation between the extent of differentiation and operational planning or performance evaluation reasons to budget, this chapter finds a positive relationship for both categories.



Table 4.2: Descriptive statistics - fixed budget sample

| Organisational Characteristics and Importance of Reason to budget variables – Fixed Budgets | Mean | Median | Minimum | Maximum | Standard Deviation |
|---|------|--------|---------|---------|--------------------|
| Coordinate Resources Reason to Budget   | 5.28 | 5.28   | 1       | 7       | 1.42               |
| Formulate Action Plans Reason to Budget   | 5.30 | 5      | 1       | 7       | 1.27               |
| Staff Evaluation Reason to Budget   | 4.20 | 4      | 1       | 7       | 1.66               |
| Business Unit Evaluation Reason to Budget   | 5.16 | 5.16   | 1       | 7       | 1.51               |
| High quality products (strategy)  | 5.87 | 6      | 1       | 7       | 1.26               |
| Low production costs (strategy)   | 3.04 | 3      | 1       | 7       | 1.52               |
| Make changes in design (strategy)   | 4.39 | 5      | 1       | 7       | 1.79               |
| Unique product features (strategy)  | 4.51 | 5      | 1       | 7       | 1.82               |
| Make rapid volume/mix changes (strategy)  | 3.59 | 3.59   | 1       | 7       | 1.74               |
| Provide fast deliveries(strategy)   | 4.99 | 5      | 1       | 7       | 1.59               |
| Make dependable delivery promises (strategy)  | 5.65 | 6      | 1       | 7       | 1.29               |
| Effective after sales service (strategy)  | 5.01 | 5.01   | 1       | 7       | 1.73               |
| Product availability (strategy)   | 4.89 | 5      | 1       | 7       | 1.71               |
| Customise products and services (strategy)  | 4.86 | 5      | 1       | 7       | 1.72               |
| Low price (strategy)  | 4.20 | 4      | 1       | 7       | 1.62               |
| Autonomy  | 4.60 | 5      | 1       | 7       | 1.51               |
| Competition Uncertainty – External  | 3.61 | 3      | 1       | 7       | 1.40               |
| Supply Uncertainty – External   | 3.20 | 3      | 1       | 7       | 1.35               |
| Demand Uncertainty – External   | 3.33 | 3      | 1       | 7       | 1.31               |
| Technology uncertainty – Internal   | 3.47 | 3      | 1       | 7       | 1.38               |

\*median score is a decimal point as blank responses from respondents were replaced with mean scores for the variable.

Table 4.3: Descriptive statistics - rolling forecast sample

| Organisational Characteristics and Importance of Reason to budget variables – Rolling forecasts | Mean | Median | Minimum | Maximum | Standard Deviation |
|---|------|--------|---------|---------|--------------------|
| Coordinate Resources Reason to Budget   | 5.12 | 5      | 1       | 7       | 1.48               |
| Formulate Action Plans Reason to Budget   | 5.52 | 6      | 1       | 7       | 1.35               |
| Staff Evaluation Reason to Budget   | 4.08 | 4      | 1       | 7       | 1.75               |
| Business Unit Evaluation Reason to Budget   | 5.14 | 5.14   | 1       | 7       | 1.58               |
| High quality products (strategy)  | 5.94 | 6      | 1       | 7       | 1.26               |
| Low production costs (strategy)   | 2.99 | 3      | 1       | 7       | 1.47               |
| Make changes in design (strategy)   | 4.45 | 5      | 1       | 7       | 1.80               |
| Unique product features (strategy)  | 4.58 | 5      | 1       | 7       | 1.85               |
| Make rapid volume/mix changes (strategy)  | 3.51 | 3.51   | 1       | 7       | 1.70               |
| Provide fast deliveries(strategy)   | 5.03 | 5      | 1       | 7       | 1.64               |
| Make dependable delivery promises (strategy)  | 5.66 | 6      | 1       | 7       | 1.32               |
| Effective after sales service (strategy)  | 5.16 | 6      | 1       | 7       | 1.70               |
| Product availability (strategy)   | 5.01 | 5.01   | 1       | 7       | 1.62               |
| Customise products and services (strategy)  | 4.98 | 5      | 1       | 7       | 1.68               |
| Low price (strategy)  | 4.28 | 4      | 1       | 7       | 1.58               |
| Autonomy  | 4.73 | 5      | 1       | 7       | 1.48               |
| Competition Uncertainty – External  | 3.62 | 3      | 1       | 7       | 1.40               |
| Supply Uncertainty – External   | 3.16 | 3      | 1       | 7       | 1.32               |
| Demand Uncertainty – External   | 3.34 | 3      | 1       | 7       | 1.30               |
| Technology uncertainty – Internal   | 3.45 | 3      | 1       | 7       | 1.38               |

\*median score is a decimal point as blank responses from respondents were replaced with mean scores for the variable.

Table 4.4: Results of PLS regression and path coefficients – fixed budgets

| Variable relationship investigated <i>FIXED BUDGET</i>              | Proposition ( <b>significance p&lt;.10</b> ) | Path coefficient | t-stat / <b>significance (p&lt;.10)</b> |
|---|--|------------------|---|
| Strategy – Importance of RtB (coordinate resources)                 | P1a (reject) – no relation expected          | <b>0.2470</b>    | <b>3.6886</b>                           |
| Strategy – Importance of RtB (formulate action plans)               | P1c (reject) – opposite sign CL exp          | <b>0.3080</b>    | <b>4.4787</b>                           |
| Strategy - Importance of RtB (staff evaluation)                     | P1e (reject) – opposite sign CL exp          | <b>0.2790</b>    | <b>4.4264</b>                           |
| Strategy - Importance of RtB (business unit evaluation)             | P1g (reject) – no relation expected          | <b>0.2280</b>    | <b>3.6983</b>                           |
| Autonomy – Importance of RtB (coordinate resources)                 | P2a (reject) – no relation expected          | <b>0.1190</b>    | <b>2.0997</b>                           |
| Autonomy – Importance of RtB (formulate action plans)               | P2c (reject) – opposite sign lower           | <b>0.1050</b>    | <b>1.5680</b>                           |
| Autonomy – Importance of RtB (staff evaluation)                     | P2e (reject) – opposite sign lower           | <b>0.1820</b>    | <b>3.2117</b>                           |
| Autonomy – Importance of RtB (business unit evaluation)             | P2h (reject) – no relation expected          | <b>0.1030</b>    | <b>1.6689</b>                           |
| External Uncertainty – Importance of RtB (coordinate resources)     | P3a (reject)                                 | -0.0020          | 0.0268                                  |
| Internal Uncertainty - Importance of RtB (coordinate resources)     |  | <b>-0.0880</b>   | <b>1.4426</b>                           |
| External Uncertainty – Importance of RtB (formulate action plans)   | P3b (reject)                                 | -0.0650          | 0.6809                                  |
| Internal Uncertainty - Importance of RtB (formulate action plans)   |  | -0.0280          | 0.5277                                  |
| External Uncertainty – Importance of RtB (staff evaluation)         | P3c (reject)                                 | <b>-0.1140</b>   | <b>1.6537</b>                           |
| Internal Uncertainty - Importance of RtB (staff evaluation)         |  | <b>0.1250</b>    | <b>2.2749</b>                           |
| External Uncertainty – Importance of RtB (business unit evaluation) | P3d (reject) – no relation expected          | <b>-0.1490</b>   | <b>1.8800</b>                           |
| Internal Uncertainty - Importance of RtB (business unit evaluation) |  | -0.0410          | 0.7392                                  |

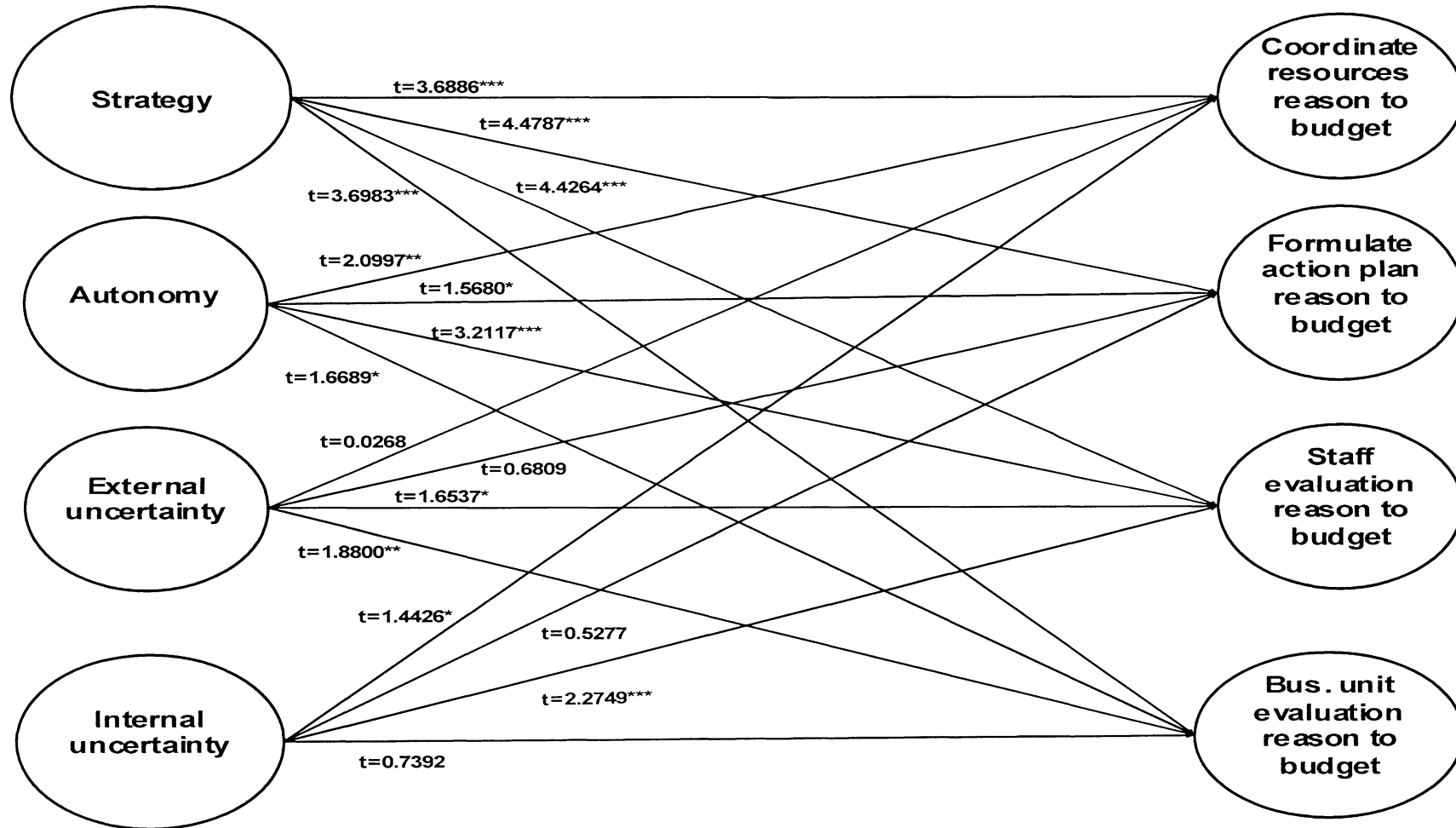
Significant relationships in **Bold**, Propositions accepted in *Italics*, RtB = Reason to Budget

Table 4.5: Results of PLS regression and path coefficients – rolling forecasts

| Variable relationship investigated <i>ROLLING FORECAST</i>          | Proposition ( <b>significance p&lt;.10</b> ) | Path coefficient | t-stat / <b>significance (p&lt;.10)</b> |
|---|--|------------------|---|
| Strategy – Importance of RtB (coordinate resources)                 | P1b (reject) - no relation                   | <b>0.2620</b>    | <b>3.2808</b>                           |
| Strategy – Importance of RtB (formulate action plans)               | P1d (reject) – opposite sign                 | <b>0.2980</b>    | <b>4.0495</b>                           |
| Strategy - Importance of RtB (staff evaluation)                     | P1f (reject) – opposite sign                 | <b>0.3600</b>    | <b>5.2185</b>                           |
| Strategy - Importance of RtB (business unit evaluation)             | P1h (reject) – no relation                   | <b>0.3110</b>    | <b>4.0615</b>                           |
| Autonomy – Importance of RtB (coordinate resources)                 | <i>P2b (accept) – no relation</i>            | <i>0.0090</i>    | <i>0.1771</i>                           |
| Autonomy – Importance of RtB (formulate action plans)               | P2d (reject) – opposite sign                 | <b>0.1180</b>    | <b>1.7001</b>                           |
| Autonomy – Importance of RtB (staff evaluation)                     | P2f (reject) – opposite sign                 | <b>0.0850</b>    | <b>1.3346</b>                           |
| Autonomy – Importance of RtB (business unit evaluation)             | P2h (reject) – no relation                   | <b>0.1070</b>    | <b>1.4882</b>                           |
| External Uncertainty – Importance of RtB (coordinate resources)     | P4a (reject)                                 | -0.0350          | 0.4993                                  |
| Internal Uncertainty - Importance of RtB (coordinate resources)     |  | -0.0500          | 0.7245                                  |
| External Uncertainty – Importance of RtB (formulate action plans)   | P4b (reject) – opposite sign                 | <b>-0.1300</b>   | <b>1.4829</b>                           |
| Internal Uncertainty - Importance of RtB (formulate action plans)   |  | -0.0070          | 0.1007                                  |
| External Uncertainty – Importance of RtB (staff evaluation)         | P4c (reject) – opposite sign                 | -0.0660          | 0.8471                                  |
| Internal Uncertainty - Importance of RtB (staff evaluation)         |  | <b>0.1070</b>    | <b>1.5376</b>                           |
| External Uncertainty – Importance of RtB (business unit evaluation) | <i>P4d (accept) – negative relation</i>      | <b>-0.1120</b>   | <b>1.4455</b>                           |
| Internal Uncertainty - Importance of RtB (business unit evaluation) |  | -0.0450          | 0.6049                                  |

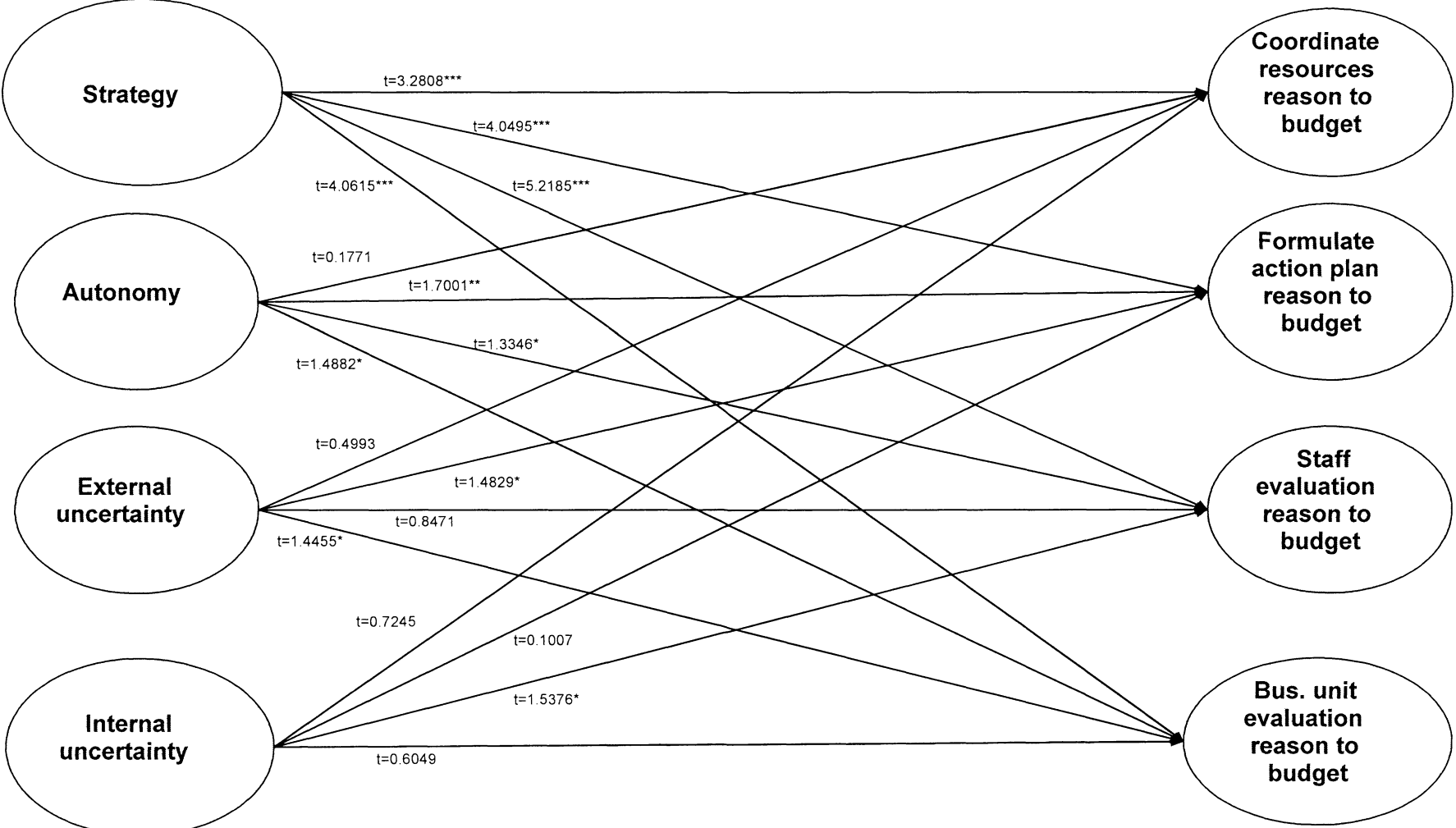
Significant relationships in **Bold**, Propositions accepted in *Italics*, RtB = Reason to Budget

Figure 4.7: Fixed Budget PLS Results



\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

Figure 4.8: Rolling forecast PLS Results



\*\*\* p<0.01; \*\* p<0.05; \* p<0.10

These results are especially unexpected for the performance evaluation reasons to budget. Management accounting research generally expects differentiator organisations to place a lower focus on the use of formal financial MCS for performance evaluation, than cost leaders (Langfield-Smith, 1997). As organisations become more differentiator focused, their reliance on formal financial MCS such as budgets was expected to decrease, as their focus on non quantitative MCS such as quality and customer service were thought to be greater (Porter, 1980) than budgetary based quantitative MCS. Consistent with this rationale, this chapter proposed a negative relationship for the staff evaluation reason, but argued that the business unit evaluation reason was unrelated because all organisations consider the use of budgets for evaluating the performance of business units to be equally important. However, the results suggest that differentiator organisations regard operational budgeting as more important for performance evaluation, than cost leader organisations.

The results highlight that operational budgets are increasingly used for performance evaluation, and are regarded as more important in this role by organisations traditionally not expected to place a high reliance on budgets for performance evaluation. One possible explanation for this finding is the way in which organisations regard their control systems, as discussed in Simons (1995). Where differentiator organisations consider organisational controls as boundary systems, they may use budgets to evaluate aggregate spending limits without tightly governing the nature of spending itself throughout a period, as often occurs in cost leader organisations. What is interesting, and not explicitly discussed by Simons (1995), is that the results from this chapter suggest that when using budgets this way,

differentiator organisations regard budgets as *more important* than in cost leader organisations.

For the two operational planning reasons to budget a similar rationale may be proposed. Results indicate that budgets do not reduce in importance when a differentiator strategy is emphasised. Again, it may be that a more intensive application of a differentiator strategy leads to a budget being regarded differently. While a cost leader organisation may use budgets tightly for resource coordination purposes, a differentiator organisation could use a budget loosely for resource coordination, regarding it as a boundary system (Simons, 1995) for informing departments on aggregated expenditure ceilings. Therefore, from the perspective of coordinating resources, budgets are still important. Again, this result possibly indicates that the higher importance placed on budgets need not imply tight controls. Differentiators using budgets to coordinate resources loosely by specifying boundaries to expenditures, may still regard budgeting as more important than cost leaders who apply budgets for resource coordination through a more tightly controlled justification process (Simons, 1995).

Alternatively, the result may also indicate that though differentiators place a lower focus on accounting numbers during a period in coordinating their operations, the need to request funds from top management and have a pool of funds available for expenditures during a period is higher, as expenditures in differentiator organisations are less standardised. Therefore, managers of differentiator organisations make more concerted attempts to secure funds during the resource coordination process and to consider budgets when developing action plans.



Another argument explaining the positive relationships may be the negative relationship that usually exists between the importance of action controls and results controls (Merchant and Van der Stede, 2003). The importance of results controls such as performance evaluation is greater when the ability to develop action controls during a period is less, and vice versa. In this context, differentiator organisations may place greater importance on formal financial MCS such as budgets for evaluation. Their action controls are less standardised and more qualitatively focused, and are therefore more difficult to measure than the action controls in cost leader organisations. When action controls during a period are less important, the reliance on cost based results controls is greater, for operational planning or performance evaluation reasons.

The results and direction of statistical significance between the extent of differentiator strategy for the four reasons to budget were the same for fixed budgets (Table 4.4) and rolling forecasts (Table 4.5). Both showed significant positive relationships. This indicates that the budget form used by an organisation does not change the importance of a reason to budget. The similar results observed for fixed and rolling forecasts was as expected as it was previously argued that the impact of rolling forecasts did not arise from changes in firm strategy, but rather perceptions of uncertainty in environments. Chapter 3 showed that almost all rolling forecast users continue to use a fixed budget, and, therefore, the reasons to budget for rolling forecasts should be similar to fixed budgets.

Hansen and Van der Stede (2004) did not find significant relationships between their strategy variable and either of their operational planning or performance evaluation reasons to budget. However, significant positive relationships are found between the strategy variable used in this chapter and all four operational reasons to budget. One reason for this may be the further sub-categorisation in this chapter of the two operational reasons to budget used by Hansen and Van der Stede (2004). By providing more specific reasons to budget, it is possible that relationships between organisational antecedents and reasons to budget are more clearly observed.

#### **4.4.2 Findings for autonomy and reasons to budget**

The second set of relationships considered the relation between the level of autonomy granted to business units during the budget setting process, and the importance of the four operational reasons to budget. Eight propositions were put forward; four in relation to fixed budgets and four for rolling forecasts. The results for fixed budgets are shown in Table 4.4, and the results for rolling forecast are shown in Table 4.5.

The two operational planning reasons to budget are considered first.

P2a and P2b proposed no relation between the level of autonomy granted to business units for planning their activities, and the importance of the coordinate resources reason to budget. Results showed a positive significant relationship for fixed budgets (P2a) and no relationship for rolling forecasts (P2b). Therefore, P2a is rejected and P2b is accepted.

It was originally argued that irrespective of the autonomy granted to business unit managers, all business units needed to identify to senior management their funds

required, in order for management to be aware of their expected outlays for an upcoming period. Hence there should be no reason for the level of autonomy to affect the importance of the coordinate resources reason to budget. This was observed for rolling forecasts (P2b), but not for fixed budgets (P2a).

The unexpected positive result for fixed budgets (P2a) possibly indicates that business unit managers granted greater autonomy regarded the resources coordination process as more important, as the aim of the budget for these managers is to set broad expenditure boundaries for their activities. These managers may not have their activities tightly monitored, but they still need to negotiate a request for funds from top management. Though senior management may not require them to justify the detail of their expenditures, such business units managers may be held accountable for the performance of their business unit at the end of a period. As discussed in Merchant and Van der Stede (2003), lower action control relevance in higher autonomy conditions may lead to greater results control relevance. Expecting this, business units granted more autonomy during the budget setting process may place greater importance on the amounts obtained during the resource coordination process.

Another possible explanation for the fixed budgets result is that when autonomy is high, the importance of budgets does not decrease, but instead the mode of use changes, as discussed in the prior strategy section. From being a direct behavioural constraint, a budget instead changes into a boundary system (Simons, 1995) and, as discussed previously, top management place greater emphasis on the coordination process, in order to maximise their boundaries for spending.

The different relationships found for fixed budgets (P2a) and rolling forecasts (P2b) is unexpected. It is possible that because resource coordination occurs annually, organisations use fixed budgets more for resource coordination than rolling forecasts, and, therefore, the rationales discussed above which relate to fixed budgets apply less to rolling forecasts, leading to the expected no relationship observed for rolling forecasts.

Unlike the coordinate resources reason to budget (P2a and P2b), the results for fixed and rolling forecasts are the same for the formulate action plans reason to budget (P2c and P2d). Propositions 2c and 2d proposed a negative relationship between the autonomy and the importance of the formulate action plans reason to budget for fixed budgets (P2c) and rolling forecasts (P2d). Both propositions are rejected, as a positive statistically significant relationship was found for both propositions.

The potential explanations for these unexpected findings are similar to the arguments put forth for P2a and P2b. Budgets are possibly used as loose boundary systems in high autonomy conditions when formulating action plans and regarded with greater importance, than when they are used as tightly controlled planning systems in low autonomy conditions. Again, this result suggests that though budgets may be used loosely when autonomy is greater for planning activities, it is still regarded as more important than when it is applied tightly in less autonomous organisations.

P2e and P2f proposed a negative relationship between autonomy and the importance of the staff evaluation reason to budget for fixed budgets (P2e) and rolling forecasts

(P2f). Results indicate a positive, statistically significant relationship for fixed budgets (P2e) and rolling forecasts (P2f). Therefore, both propositions are rejected.

These results may possibly be explained by the fact that when more autonomy is granted during a period, top management places more emphasis on budgets as a determinant of staff evaluation, as described by Merchant and Van der Stede (2003). In high autonomy conditions, action controls are more difficult to implement and outcomes based results controls are relied on by organisations to analyse organisational performance. Financial outcomes are an objective method for evaluating staff. In more autonomous settings, organisations are less able to control employees during a period and, therefore, rely on financial results as a means for evaluating behaviour. Organisations which exercise greater autonomy may, therefore, place greater importance on using budgets for staff evaluation. In lower autonomy conditions, processes during a period are monitored tightly and, therefore, conducting staff evaluations at the end of an annual period may be less important. These arguments are similarly applicable for both fixed budgets and rolling forecasts.

No relationship was expected between the level of autonomy and the importance of the business unit evaluation reason to budget, for fixed budgets (P2g) and rolling forecasts (P2h). Both propositions are rejected, as the results show a statistically significant positive relationship for both. Again, and similar to the result for the formulate action plans reason to budget, greater autonomy is positively related to the importance of the business unit evaluation reason to budget. As autonomy increases, it is plausible that budgets continue to be important, but as a loose boundary system for evaluating business units. Again, results from this study suggest that the

importance placed by high autonomy organisations that use a budget loosely for performance evaluation exceeds the importance placed by lower autonomy organisations that are likely to use budgets more tightly.

Alternatively, and similar to the rationale provided for the relationship between the level of autonomy and the importance of the staff evaluation reason to budget for fixed budgets (P2e), the importance of using budgets for performance evaluation increases in higher autonomy settings. Top management in more autonomous organisations exert less direct control of business units during a period. Therefore, the importance of budgets to evaluate business units at the end of a period is possibly greater. This result is equally applicable to fixed budgets (P2g) and rolling forecasts (P2h), as it is more likely that rolling forecasts are used for business unit evaluation, than staff evaluation, as evidenced by the mean importance scores for these two reasons to budget (Tables 4.2 and 4.3).

Overall, it is interesting to note that Hansen and Van der Stede (2004) found no significant relationship between their measure of structure and their operational planning and performance evaluation reasons to budget. Given that the notion of assigning decision rights which defines the autonomy variable is a theme often alluded to in discussions of structure (Donaldson, 2001), the two variables may be regarded as being similar. A possible reason for the positive relationships found in this study may be the sub-categorising of the two operational reasons to budget used in Hansen and Van der Stede (2004) into the four in this chapter. By providing a more detailed set of reasons to budget, significant relationships are found for all four

reasons to budget for fixed budgets (P3a,c,e,g) and three of the four for rolling forecasts (P2d,f,h).

Though most propositions were rejected, significant relationships were obtained which have not been found when these reasons to budget were treated more aggregately in prior research. This possibly supports the need to consider more detailed operational reasons to budget, in order to understand the different impacts of organisational characteristics such as autonomy on the importance of operational reasons to budget.

#### **4.4.3 Findings for environmental uncertainty and reasons to budget for fixed budgets**

Hansen and Van der Stede (2004) found no relationship between environmental uncertainty and their operational planning reason to budget. This chapter proposed a positive relationship between the level of uncertainty and the importance of the coordinate resources reason to budget for fixed budgets (3a). This proposition is rejected as a significant negative relationship was found between these two variables.

The negative relationship was unexpected, as the use of budgets for operational planning was thought to be less important in low uncertainty conditions, where predictability was high. The need to have a plan when the future is relatively more certain was thought to be lower. Results possibly indicate that the greater certainty appears to drive organisations to place greater importance in budgeting for coordinating resources. Organisations place greater importance on the accuracy of budget numbers in the planning process. Organisations may also find the importance

of budgets for operational planning to be less in high uncertainty conditions, as budgeting becomes too difficult and costly. The cost of developing a budget outweighs the benefits of having a plan in more uncertain conditions.

Proposition 3b argued for a positive relationship between the level of uncertainty and the importance of the formulate action plans reason to budget. This proposition is rejected. No relationship was found between the importance of this reason to budget, and external uncertainty. This result is similar to Hansen and Van der Stede (2004), who found no relationship between uncertainty and the importance of their operational planning reason to budget. It is also counter to much of the established research, which argues for a greater focus on formal financial management control systems in low uncertainty conditions (Chenhall, 2003; Lau, et al. 1995).

When the operational planning reason to budget adopted by Hansen and Van der Stede (2004) is sub-categorised into “coordinate resources” and “formulate action plans”, a relationship is found for one of these sub-categories. Though Hansen and Van der Stede (2004) found no relationship, one of the two sub-categories showed significant relationships. This provides support for further detailed categorisations of operational reasons to budget.

Proposition 3c proposed a negative relationship between uncertainty and the importance of the staff evaluation reason to budget, similar to the Hansen and Van der Stede (2004) finding for their performance evaluation reason to budget. A negative relationship was observed for external uncertainty, and a positive relationship was



observed for internal uncertainty. Overall, Proposition 3c is rejected as results are not conclusive.

However, the opposing direction and significance of both uncertainty types is interesting. The results may be explained by the possibility that external sources of uncertainty may be perceived to be less controllable, and as a result, staff are not expected to adhere to budgets when such external uncertainty is high. However, internal based technology uncertainty is intrinsic to an organisation, and therefore senior management possibly expect staff to manage this uncertainty. In higher internal uncertainty conditions, management place greater emphasis on staff evaluation, to provide staff with an incentive to take measures which manage these uncertainties.

No relationship was expected between the level of uncertainty and the importance of budgets for business unit evaluation (P3d). As expected, results showed no relationship between the level of internal uncertainty and the importance of the business unit evaluation reason to budget. However, results showed a significant negative relationship between the level of external uncertainty and the importance of the business unit evaluation reason to budget. This result is unexpected, as organisations were thought to consider the evaluation of business units to be important whatever the level of uncertainty. All organisations were expected to evaluate their units in order to reflect on their performance. The negative relationship possibly indicates that organisations may still continue to evaluate in order to possess a general view of the performance of a business unit, but will place less importance on business unit evaluation when uncontrollable factors are present.

#### **4.4.4 Findings for environmental uncertainty and reasons to budget for rolling forecasts**

P4a investigated the relationship between the level of uncertainty and the importance of the coordinate resources reason to budget, for rolling forecasts. Hansen and Van der Stede (2004) did not investigate the relationship between uncertainty and rolling forecasts. Therefore, the results from this chapter provide a first indication of the similarities and differences in relationships between organisational characteristics and the importance of rolling forecasts.

P4a proposed a positive relationship between the coordinate resources reason to budget and the level of uncertainty. Results indicated no relationship. Given that the mean importance score for resource coordination using rolling forecasts is high, the result possibly indicates that irrespective of the level of uncertainty, rolling forecasts are used for resource coordination in organisations.

This finding is counter to the general expectation that rolling forecasts are more useful in more uncertain environments, especially because they facilitate organisational learning (Haka and Krishnan, 2005). The result possibly emphasises that organisations with low uncertainty find it important to conduct operational budgets over shorter periods than organisations with higher uncertainty, as budgets will always be more accurate when forecasted over a shorter period, and therefore advantageous. It is interesting that the perceived importance of more accurate budgets does not appear to reduce when the relevance of rolling forecast adjustments are less, as would be expected for less uncertain environments.

P4b proposed a positive relationship between the level of uncertainty and the importance of the formulate action plans reason to budget. This proposition is rejected, as results indicate a significant negative relationship between external uncertainty and this reason to budget. Rolling forecasts appear to be regarded as less important when used for formulating action plans when external sources of uncertainty increase. This result indicates that the benefit of more accurate numbers provided by rolling forecasts are outweighed by the probability that higher uncertainty may lead to greater deviations between budget and actual numbers. What is interesting about these results is that it is argued that rolling forecasts were originally introduced to improve budgeting in high uncertainty conditions. They were expected to help facilitate organisational learning (Haka and Krishnan, 2005) through more frequent updating and also improve budget accuracy. The lower importance of rolling forecasts for formulating action plans as uncertainty increases suggests otherwise.

P4c proposed a negative relation between environmental uncertainty and the importance of the staff evaluation reason to budget. Results indicated no relationship for external uncertainty, and a significant positive relationship for internal uncertainty. P4c therefore is rejected. This result for internal uncertainty is interesting, as the direction of the significant relationship is opposite to that expected. Greater internal uncertainty resulted in more importance being placed on the use of budgets for staff evaluation.

It is possible that as a means of control, budgets are still used, but more loosely. When used more loosely, with a greater tolerance for deviations, budgets at least

provide organisations in uncertain environments with a loose guide as to how business units perform, and facilitate discussions regarding deviations from budgets.

Therefore, budgets are more important in high uncertainty conditions than in conditions where uncertainty is lower and budget numbers are known to be relevant.

When regarded for evaluating business units in lower uncertainty environments, budgets may be used, but they are not regarded as important, as the information gained from performance evaluation may have been expected, and from a management perspective, perceived to be less important.

As explained in the discussion of relationships between environmental uncertainty and the importance of the fixed budget reasons, this finding may be explained by the perception of controllability in uncertainty. External sources of uncertainty are more difficult to control, as their source lies outside the boundaries of an organisation.

Hence, management may be resigned to finding other non-budget based forms of performance evaluation in adjudging staff performance. However, if technology uncertainty is related to organisational processes within an organisation, then management may be less inclined to exempt employees from performance evaluation.

Management possibly regards it as the responsibility of employees to operate with the internal sources of uncertainty, and adhere to performance levels.

Management may also change the focus of budgetary evaluation to a loose boundary system approach (Simons, 1995), as opposed to a tightly controlled budget based performance evaluation system when technology uncertainty is greater. Under such situations, budgets would be regarded as being more important, as the need to be evaluated based on resource boundaries becomes even more important than when

conditions are uncertain. However, when external uncertainty is high, management is aware that employees have little control over these sources and, therefore, reduce their reliance on budgets for the performance evaluation of staff as uncertainty increases.

P4d proposed a negative relationship between environmental uncertainty and the importance of using rolling forecasts for business unit evaluation. This proposition is accepted, as results indicated a negative relationship between business unit evaluation and external uncertainty. Similar to the arguments developed previously, greater external uncertainty appears to make organisations wary of using budgets for performance evaluation. This largely may be attributed to the lower controllability faced by business unit managers, and therefore organisations do not attempt to gauge the performance of business units when uncertainty is high, using rolling forecasts.

The different results found for P4c and P4d also emphasise the difference between staff evaluation and business unit evaluation in organisations. A positive relationship was found for staff evaluation (P4c), while a negative relationship was found for business unit evaluation (P4d). Hansen and Van der Stede (2004) found a negative relationship between uncertainty and the importance of their performance evaluation reason to budget. When sub-categorising performance evaluation into staff and business unit evaluation, a positive and negative relationship is observed for both respectively, highlighting that a more aggregated consideration of the reason to budget may not entirely explain the relationship between organisational characteristics and the performance evaluation reason to budget. The systematic observation of different and significant findings from all four sets of propositions highlights the benefit from studying more detailed operational reasons to budget.

## **4.5 Conclusions and suggestions for future research**

By applying a section of the Hansen and Van der Stede (2004) model to an expanded set of four operational reasons to budget, results are obtained which further our understanding of the relationships between organisational characteristics and the importance of operational reasons to budget. The results also raise questions for future research to consider.

The first research question for this chapter investigated the relationship between organisational characteristics and the importance of different operational reasons to budget. Overall, the operational planning reasons to budget appeared to exhibit different relationships to the performance evaluation reasons to budget for the uncertainty organisational characteristic. While greater uncertainty was related to the staff evaluation reasons to budget, it always showed an opposite relation to that for the two operational planning reasons to budget. These findings were opposite to that expected. It was originally proposed that lower uncertainty environment would be better suited to the performance evaluation reasons to budget, and higher uncertainty would be better suited to the operational planning reasons to budget.

For the strategy and autonomy organisational characteristics, the two operational planning reasons to budget showed similar relationships to the two performance evaluation reasons to budget. Consistently, a greater extent of differentiation strategy and greater level of autonomy were related to more importance being placed on all four operational reasons to budget. This result was also unexpected, as the extent of differentiator strategy was not thought to be aligned to the importance of any of the four reasons to budget. Similarly, higher levels of autonomy was thought to result in

less importance being placed on budgets. The findings possibly hinted at the need for future studies to consider the way in which budgets are implemented in organisations. The extent to which they are implemented loosely as a boundary system or more tightly as a traditional monitoring mechanism, may provide further insights into the way they relate to organisational characteristics.

The second research question for this chapter required a comparison of how the relationships between organisational characteristics and the importance of reasons to budget may differ between fixed budgets and rolling forecasts. In some instances, these relationships were the same. The strategy variable showed a positive relationship to the importance of the four reasons to budget for the fixed budget and the rolling forecast. This indicates a consistent relationship between organisational characteristics and importance of the four reasons to budget, whatever the budget form.

The autonomy organisational characteristic generally showed similar relationships to the four reasons to budget for both budget forms, with the exception of the “coordinate resources” reason to budget. For fixed budgets, a greater level of autonomy was related to higher levels of importance for the coordinate resources reason to budget. However, no relation was observed for rolling forecasts.

Relationships between uncertainty and the reasons to budget varied across both budget forms for three of the four reasons to budget. Lower uncertainty led to a more important “coordinate resources” reason to budget for fixed budgets, but no relation was observed for rolling forecasts. The importance of the “formulating action plans”

reason to budget was not related to the level of uncertainty for the fixed budget but negatively related for the rolling forecast. Lower levels of uncertainty was related to the importance of the staff evaluation reason to budget for fixed budgets, while no relation was observed for rolling forecasts. Finally, and contrary to the different relationships observed for the above three reasons to budget, lower levels of uncertainty was related to more importance being placed on the business unit evaluation reason to budget, for both fixed budgets and rolling forecasts.

Overall, the degree of differences observed between relationships findings for both research questions possibly emphasise the benefits of expanding the two operational reasons to budget used by Hansen and Van der Stede (2004) to the four operational reasons to budget used in this chapter, and the consideration of fixed budgets and rolling forecasts in parallel. This research area is quite recent and in its developmental stage. However, the observation of differences is encouragement for the simultaneous consideration of more detailed reasons to budget in research. In this chapter, only two propositions were accepted, though 22 of the 32 relationships investigated showed statistically significant relationships. This indicates that there are relationships between variables, however the exploratory nature of this research makes it difficult to predict the directionality of relationships between variables. Therefore, future research which collectively studies these variables in order to observe systematic trends in relationships between organisational characteristics and different reasons to budget will provide beneficial insights.

Furthermore, many competing perspectives exist in management control systems, in relation to the relationship between organisational characteristics and the importance



of budgets. Certain perspectives offer opposing relationships to other perspectives. For example, greater uncertainty may lead to the greater use of action controls over results controls (Merchant and Van der Stede, 2003), as results are difficult to measure. Alternatively, greater uncertainty may also cause the institution of processes which define action controls to be more difficult, and therefore organisations revert to a greater emphasis on analysing outcomes and place greater emphasis on results controls.

To this end, more research is needed which observes different reasons to budget together in the same research setting, in order to better understand the way organisational characteristics affect budget relevance. While this chapter expanded the two operational reasons to budget proposed by Hansen and Van der Stede (2004), further studies that focus on the strategic reasons to budget in more detail will provide further insights into reasons to budget. Hansen and Van der Stede (2004) also observed the importance and benefits of reasons to budget, and considered organisational and budgetary characteristics. This chapter focused on the importance of an expanded set of operational reasons to budget, and their relationship to organisational characteristics. Future studies that consider the benefits from reasons to budget and budgetary characteristics will provide more insights into this research area.

Studies that focus on the impact of new budget forms, such as the rolling forecast, and its general relationship to all alternative reasons to budget and organisational and budgetary characteristics, will also provide valuable guidance to organisations seeking to adopt new budget forms such as the rolling forecast.

This thesis used an exploratory single item construct for autonomy. Future research may use other established constructs that similarly proxy for autonomy. For example, the organisational structure measure used in Gordon and Narayanan (1984) may reinforce the robustness of the findings regarding the relationship between the importance of the different operational reasons to budget and autonomy.

Finally, the use of more case studies to specifically investigate the alternative reasons to budget suggested by Hansen and Van der Stede (2004) will provide a richer data set for analysis, within more specific contexts.

# **5 Budget participation and budget emphasis in low uncertainty conditions – considering alternative reasons to budget**

## **5.1 Introduction**

Management accounting research has focused significant attention on the role of budgeting in organisations (Shields and Shields, 1998). This has led to specific directional relationships being observed between the relevance of budgets to key organisational and budgetary characteristics (Chenhall, 2003; Shields and Shields, 1998; Hartmann, 2000; Langfield-Smith, 1997). A dominant stream of budget research is participative budgeting (Shields and Shields, 1998; Shields and Young, 1993), and one of the most investigated antecedent organisational characteristics in management accounting research is environmental uncertainty (Chenhall, 2003; Luft and Shields, 2003).

Most participative budgeting studies focus on the positive relation between participation and its effects, such as its impact on better budgets and decision making (Parker and Kyj, 2006; Magner, et al. 1996; Shields and Shields, 1998; Nouri and Parker, 1998). The few studies that have studied the relationship between causal antecedents such as uncertainty and budget participation have been survey based and find different relationships, depending on the level of uncertainty.

Lau, et al. (1995) built upon a stream of inter-connected studies by Brownell (1982), Hirst (1983), Brownell and Hirst (1986) and Brownell and Dunk (1991)

in studying the relationship between participative budgeting and budget emphasis. Considering uncertainty as a possible explanatory factor affecting this relationship, Lau, et al. (1995) finds that when uncertainty is low, high budget emphasis must be accompanied by high budget participation in order to achieve superior outcomes. However, when uncertainty is high, regardless of budget emphasis, a higher budget participation style is needed. Lau, et al. (1995) argued that budget participation must be high in higher uncertainty environments, but only needs to be high in low uncertainty environments if budget emphasis is high.

These findings infer that a low budget participation/high budget emphasis combination is not effective when environmental uncertainty is low. Using the case of a public utilities organisation, this study investigates how this combination may still benefit an organisation, due to the primary focus of budget emphasis in the organisation being related to reasons to budget other than staff evaluation.

A key factor limiting the general applicability of findings in prior studies has been their reliance on the staff evaluation reason to budget. This focus is not surprising, as the pioneering studies of this stream of research (Brownell, 1982 and Hirst, 1983), sought to explain the difference in findings between two budgeting studies; Hopwood (1972) and Otley (1978). Both these studies viewed budgeting as a source of job related tension to employees, arising from its role as a staff evaluation device.

As discussed in Chapter 2, studies that have since attempted to explain the opposing findings of Hopwood (1972) and Otley (1978) have resulted in the development of two large areas of budget research. The first is participative budgeting and the second is the “Reliance on Accounting Performance Measures” (RAPM) research stream. The majority of the budget emphasis/participation studies have investigated variables relating to these two research streams. These studies predominantly consider budgets from the perspective of its use for the performance evaluation of staff (Hansen and Van der Stede, 2004).

This is further evidenced by how budget emphasis is measured. The most used measure for determining high/low budget emphasis has been budget evaluative style (Lau, et al. 1995; Ross, 1995; Brownell and Dunk, 1991; Brownell and Hirst, 1986). This measure was originally developed by Hopwood (1972) and focuses on the use of budgets for a superior’s evaluation of subordinates (Hopwood, 1972). Consequently, the degree of budget emphasis on reasons to budget other than performance evaluation is not captured by this measure.

What, therefore, is the relationships between common variables such as uncertainty, budget emphasis and budget participation, if organisations place budget emphasis on reasons to budget other than performance evaluation? If budget emphasis is different for other reasons to budget, does it have the same relationship to uncertainty and organisational performance as found for the performance evaluation reasons to budget?

Existing research acknowledges the difficulty in observing systematic relationships between organisational characteristics and budgetary variables, due to inconsistent findings across studies (Chenhall, 2003). This thesis considers the argument that one of the reasons for these inconsistencies arises from budgets being viewed only as a staff evaluation device (Hansen and Van der Stede, 2004). Its emphasis for other reasons, such as operational planning, have not been widely considered (Hansen and Van der Stede, 2004; Hansen, et al. 2003).

The previous three chapters in this thesis investigated the viability of the alternative reasons to budget construct. Chapter 2 conducted a literature review of the reasons to budget considered in budget research, and found that the claims of Hansen and Van der Stede (2004) were valid. The reason to budget predominantly investigated in budgetary research was performance evaluation. Chapters 3 and 4 furthered this investigation, using a cross-sectional survey. In Chapter 3, the relative importance placed by organisations on performance evaluation and non-evaluation reasons to budget was investigated, for fixed budgets and for rolling forecasts. It was found that organisations consider a range of reasons to budget other than performance evaluation, such as operational planning reasons like resource coordination, as important for both fixed budgets and rolling forecasts. In Chapter 4, relationships between organisation characteristics and reasons to budget were shown to be different for performance evaluation reasons to budget as opposed to operational planning reasons to budget.

If operational planning reasons to budget are regarded as more important than performance evaluation reasons to budget (Chapter 3), and they relate differently to organisation characteristics (Chapter 4), then how do they relate to other accepted budgetary characteristics in the management accounting literature, such as budget emphasis and budget participation? How do commonly held relationships between these factors differ, and how may we improve our understanding of the contingent relationships involving these factors in current research, by considering alternative operational reasons to budget? These considerations lead to the research question adopted for this chapter:

*RQ6: How does a consideration of reasons to budget other than performance evaluation alter observed contingency relationships between environmental uncertainty, budget participation and budget emphasis?*

The above research question will be investigated by observing a budget system change, and noting the impact of the change on the level of budget participation in the organisation. While the level of uncertainty and budget emphasis are found to remain constant through the budget change, the change in budget participation and organisational outcomes achieved are inconsistent with the findings from existing research.

Budget research has advocated that in low uncertainty conditions, organisations with high budget emphasis require high budget participation (Lau, et al. 1995). Budget participation impacts the sharing of information between superiors and subordinates, and greater information sharing is generally assumed to positively affect job performance (Parker and Kyj, 2006), which leads to improved organisation outcomes. This is argued to be especially so in low uncertainty

situations, as stability is greater, and the likelihood of budgets being accurate and relevant are higher (Lau, et al. 1995). The possibility that *lower* budget participation could be *beneficial* to organisations adopting a high budget emphasis has not been found, in low uncertainty conditions. Prior research finds that organisations operating in low uncertainty environments and with a high budget emphasis require high levels of budget participation (Lau, et al. 1995; Harrison, 1993; Harrison, 1992).

By considering a case where the predominant reason to budget is not the performance evaluation of staff, but primarily resource coordination and to a lesser extent, business unit evaluation, the relationships between participative budgeting and budget emphasis (Lau, et al. 1995) are shown to be different. This does not infer that the results from prior research are incorrect. The objective of this chapter is to show that when operational reasons to budget other than performance evaluation are considered, the nature of the contingency relationships found between budget emphasis, budget participation and uncertainty change. Specifically, in low uncertainty situations, high budget participation may not be more beneficial even if organisations have a high budget emphasis where the primary reason to budget is resource coordination, an operational planning reason to budget discussed in Chapters 3 and 4.

This chapter contributes to the thesis by highlighting that different relationships to those reported in Lau, et al. (1995) are found in settings where greater importance is placed on a non-performance evaluation reason to budget (resource coordination).



This chapter also considers the relationship between organisational characteristics and the benefits from budget use in an organisation. This perspective expands upon the focus on “budget importance” in Chapters 3 and 4.

## **5.2 Literature Review**

### **5.2.1 Budget emphasis and uncertainty**

The “budget emphasis” variable has been studied extensively in management accounting research. Brownell and Hirst (1986) define budget emphasis as:

*“...the evaluative styles of managers, which vary in terms of their reliance on accounting based performance assessments...”(p.241)*

The Hopwood (1972) budget emphasis measure is the most prevalently used for determining budget emphasis in management accounting research. Hopwood (1972) identified eight possible criteria that superiors may use to measure subordinate performance in an organisation. Only two of the eight were accounting based, and they are “meeting a budget” and “controlling costs”. The remaining six criteria were non-accounting based. They are “cooperation with colleagues”, “getting along with the boss”, “effort put into the job”, “concern with quality”, “attitude towards the work and company”, and “ability to handle the men”.

Hopwood (1972) proposed that the order in which superiors ranked their reliance on these eight indicators to evaluate subordinate performance, categorised them into one of four evaluative styles. First, managers who ranked the “meeting a

budget” indicator in their top three of eight indicators, was regarded to have a Budget Constraining (BC) evaluative style. Second, managers who ranked the “controlling costs” indicator in their top three of eight, displayed a Profit Conscious (PC) evaluative style. Third, managers who ranked both “meeting the budget” and “controlling costs” in their top three, were regarded as having a Budget-Profit Style (BP). Finally, managers who did not have “meeting the budget” or “controlling costs” in their top three, were regarded as having a Non-Accounting style (NA). The criteria for the four styles are summarised in Figure 5.1.

Figure 5.1: Hopwood (1972) budget emphasis typology

| Evaluative style          |          | <i>Controlling Costs</i> |          |
|---------------------------|----------|--------------------------|----------|
|                           |          | Top 3                    | Bottom 5 |
| <i>Meeting the Budget</i> | Top 3    | BP                       | BC       |
|                           | Bottom 5 | PC                       | NA       |

Alongside the budget emphasis variable, uncertainty has been one of the most explored variables in management accounting research. This variable forms an important basis for theorising in management control related contingency research (Luft and Shields, 2003; Chapman, 1997). Many studies relating uncertainty to various aspects of formal management control systems such as budgets have been conducted (Chenhall, 2003; Tymon Jr., et al. 1998; Govindarajan, 1984). Uncertainty has been primarily described from the perspective of tasks (Lau, et al. 1995; Harrison, 1993, Brownell and Hirst, 1986) and the environment (Hansen and Van der Stede, 2004; Tymon Jr., et al. 1998). These two views of uncertainty (tasks or environment) are not perceived to affect the relationship between variables studied in this chapter differently, and therefore uncertainty is collectively considered from both perspectives.

Generally, a negative relationship is observed between the level of uncertainty in an organisation, and the use of formal management control systems such as budgets (Tymon Jr., et al. 1998). Brownell and Hirst (1986) found that the combination of low uncertainty and high budget emphasis in organisations related to less job related tension. Similarly, Govindarajan (1984) found that managers apply more formal financial management controls when there is low perceived environmental uncertainty.

Consistent with an inverse relationship between uncertainty and budget emphasis, Govindarajan (1984) found that high environmental uncertainty organisations use more subjective appraisal controls, as opposed to budgetary controls. Govindarajan (1984) also argued that higher performance only results from an alignment between environmental uncertainty and the use of management controls. That is, more formal and financial budgetary controls suited low uncertainty conditions while high uncertainty conditions aligned to more subjective controls. Overall, therefore, there is a strong argument for a negative relationship between formal financial management reporting controls and an organisation's perceived uncertainty.

In a review of contingency relationships in existing management accounting research, Chenhall (2003) argues that the link between uncertainty and the relevance of budgetary control systems is mixed but marginally in favour of a negative relationship. In the presence of high uncertainty, high budget emphasis organisations require the support of interpersonal and flexible controls, which

may not be budget focused. These results are supported by Lau, et al. (1995) and Ezzamel (1990).

Brownell and Dunk (1991) also showed that uncertainty is negatively related to budget emphasis (Brownell and Dunk, 1991). Brownell and Merchant (1990) showed that the lower the knowledge of relations between input and output units (a higher uncertainty proxy), the more difficult it is for budget numbers to maintain relevance.

All the above studies that consider the relationship between uncertainty and budget emphasis measure budget emphasis using a form of the “superior evaluative style” framework developed by Hopwood (1972), which was expanded by Brownell and Hirst (1986). This measure assumes that the budget will be used by a superior to evaluate a subordinate, and therefore emphasises the evaluation of staff, and not business units, as discussed in Chapter 3 and Chapter 4. Emphasis placed on budgets for reasons other than performance evaluation, such as resource coordination, are not considered as forming part of the budget emphasis construct.

If organisations do not place a high level of importance on performance evaluation based on “meeting the budget” or “controlling costs”, but instead use budgets for an operational planning reason such as resource coordination as investigated in this thesis, the Hopwood (1972) measure may define an organisation as having low or moderate budget emphasis, even though managers place a high emphasis on budgets in terms of resource coordination.

Further, Chapter 4 emphasised a further sub-categorisation of the “performance evaluation” and “operational planning” operational reasons to budget discussed in Hansen and Van der Stede (2004) into the “staff evaluation” and “business unit evaluation”, and the “coordinate resources” and “formulate action plans” operational reasons to budget respectively. From the perspective of these four more detailed reasons to budget, it is observed that the budget emphasis definition only considers one of the four, “staff evaluation”, as it focuses on the reliance on accounting information by superiors when evaluating subordinates. There is a risk that by narrowing the definition of budget emphasis to “staff evaluation”, other indicators of budget emphasis relevant to other reasons to budget may not be captured.

Overall, results from prior research suggest that budgets are relevant for performance evaluation in low uncertainty environments as future numbers are easier to predict and therefore be relied upon for evaluation. In high uncertainty environments, the use of budgets is less effective, as budgets are intrinsically more difficult to generate when the future is less predictable. The “superior evaluative style” measure of budget emphasis used in research appears to focus on the staff performance evaluation reason to budget, and does not consider other reasons to budget such as resource coordination.

### **5.2.2 Environmental uncertainty, budget emphasis and budget participation**

From a performance evaluation perspective, prior research has argued that the inverse relationship between budget emphasis and uncertainty may be mitigated

by the level of budget participation in organisations (Lau, et al. 1995). The effectiveness of budgeting in high budget emphasis organisations was related to greater budget participation by staff (Shields and Shields, 1998), and this effect should be greater in high uncertainty environments.

Budget participation is defined as the extent to which relevant staff are involved in, and have influence on the determination of their budget (Poon, et al. 2001; Shields and Shields, 1998). If organisations wish to have high budget emphasis when uncertainty is also high, budget systems require higher participation from staff (Lau, et al. 1995; Govindarajan, 1984). This is because greater staff involvement and the information sharing that characterises higher budget participation (Parker and Kyj, 2006) increases the likelihood that information will be provided which reduces role ambiguity. This should benefit organisations with a high budget emphasis (Chenhall and Brownell, 1988).

Evidence from prior research systematically observes that at all levels of uncertainty, organisations with a high budget emphasis should be positively affected by greater budget participation. This is because budget participation positively affects the provision of job relevant information, irrespective of the level of uncertainty (Kren, 1992). Lau, et al. (1995) found that high budget emphasis organisations will always require greater budget participation, whatever the level of task difficulty. Harrison (1992, 1993) showed that the relationships between budget emphasis and budget participation were constant across different national cultures.

Other studies have argued that high budget participation only assists when environmental uncertainty is low. Brownell and Hirst (1986) argued that high budget emphasis organisations require high budget participation in low task uncertainty environments. They did not study the requirement for budget participation when uncertainty is high. Brownell and Dunk (1991) found a positive relationship between budget emphasis, budget participation and firm performance, only in low task uncertainty situations. All these studies used original or adapted forms of the *superior evaluative style* framework developed by Hopwood (1972), to measure budget emphasis. As explained in the previous section, this measure of budget emphasis focuses on the use of budgets for performance evaluation of staff.

Lau, et al. (1995) built upon the research of Brownell (1982), Brownell and Hirst (1986), Chenhall and Brownell (1988), Brownell and Dunk (1991), Harrison (1992), and Harrison (1993, 1992) to investigate the three way interaction between budget emphasis, budget participation and uncertainty, which they defined as task difficulty. Lau, et al. (1995) aimed to use their findings to generalise the results of research on budgetary participation and budget emphasis across multiple cultures, to supplement Harrison (1993, 1992).

Lau, et al. (1995) defined budget emphasis as “superior evaluative style”. In their study, two sets of hypotheses were generated involving the level of uncertainty, budget emphasis and budget participation. The first set examined the relationship between task uncertainty, budget emphasis, budget participation and

job related tension, while the second set examined the relationship between task difficulty, budget emphasis, budget participation and managerial performance.

For the first set of hypotheses<sup>11</sup>, Lau, et al. (1995) argued that in low uncertainty situations, high (low) budget emphasis and high (low) budget participation were required for lower job related tension. They also hypothesised that in high uncertainty situations, both high budget emphasis and low budget emphasis organisations require high budget participation to lower job related tension.

For the second set of hypotheses, Lau, et al. (1995) proposed that organisations experiencing low task difficulty and having a high (low) budget emphasis require high (low) budget participation in order to improve managerial performance. In high task difficulty conditions, both high budget emphasis and low budget emphasis organisations require high budget participation to improve managerial performance.

Lau, et al. (1995) obtained data using a cross-sectional survey mailed to 240 functional heads from 80 manufacturing organisations based in Singapore with more than 100 employees each. Usable responses from 112 functional heads were used to test the hypotheses.

Results from their study indicated no support for the first set of propositions concerning the relationship between the level of uncertainty, budget emphasis, budget participation and job related tension. However, the second set of

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<sup>11</sup> A null hypothesis citing no relationship between budget emphasis, budget participation and task uncertainty affecting job related tension was also mentioned, but is not considered in this chapter.



propositions was supported. The results showed a positive interaction between high (low) budget emphasis, high (low) budget participation and managerial performance in low task difficulty situations. A positive interaction was also found between budget participation, high task difficulty and greater managerial performance, irrespective of budget emphasis. Overall, Lau, et al. (1995) found that in low uncertainty conditions, organisations with a high budget emphasis require high budget participation in order to improve managerial performance. In high uncertainty conditions, Lau, et al. (1995) found that whatever the level of budget emphasis, high budget participation was required to improve managerial performance.

When uncertainty is low, organisations only need high budget participation if budget emphasis is high (Lau, et al. 1995). If budget emphasis is low, then budgets are not used or regarded as important, and therefore active budget participation is not necessary. If budget emphasis is high, higher participation is necessary, as it assists employees to contribute to the budget setting process and also understand the numbers being set, against which they will be evaluated.

Budget participation first affects operational planning and control (Shields and Shields, 1998) prior to affecting performance evaluation. In higher uncertainty conditions, budget numbers are more accurate when participation is high.

Therefore, organisations with a high budget emphasis benefit from the more accurate budget numbers arising from greater participation, which positively impacts performance (Kren, 1992).

However, when uncertainty is low, it may not be as important to have high levels of staff participating in the budget setting process. If participation is high in low uncertainty conditions, the greater costs of high participation would most likely outweigh the benefit of more accurate numbers. The Lau, et al. (1995) results are not surprising from a performance evaluation perspective, but should be re-examined when an organisation primarily budgets for reasons other than performance evaluation.

If budgets are not used for performance evaluation, or primarily for reasons other than performance evaluation, the need for high budget participation when budget emphasis is high may be questioned in low environmental uncertainty conditions.

The key difference between this study and Lau, et al. (1995) is the different consideration of budget emphasis, by including reasons to budget other than performance evaluation (such as coordinate resources), and to capture budget emphasis when performance evaluation is focused on business units, as opposed to superior/subordinate based staff evaluation.

### **5.3 Research design and case description**

A case study attempts to provide a richness of interpretation in findings usually more difficult to obtain in other forms of research (Yin, 1989). This chapter adopts a case based approach as most budget participation research to date has been conducted via survey research (Shields and Shields, 1998), and research that investigates individual organisation situations in greater depth should help clarify or update existing relationships in organisational research (Yin, 1989).

The explanation put forth in this case was not the original focus of the investigation of the research setting. Initially, the financial controller of the asset management division of the case organisation commented that his organisation had stopped budgeting and had yielded greater benefits from doing so. This led to the project first being initiated to examine the elimination of budget emphasis, somewhat similar to a “beyond budgeting” scenario (Hansen, et al. 2003; Hope and Fraser, 2003). However, upon studying the case, it became apparent that the organisation still maintained a high budget emphasis. What had occurred was a significant reduction in budget participation. Given that the organisation operated in a low uncertainty environment, this eventuality was thought to be unusual, as it was contrary to the findings of Lau, et al. (1995).

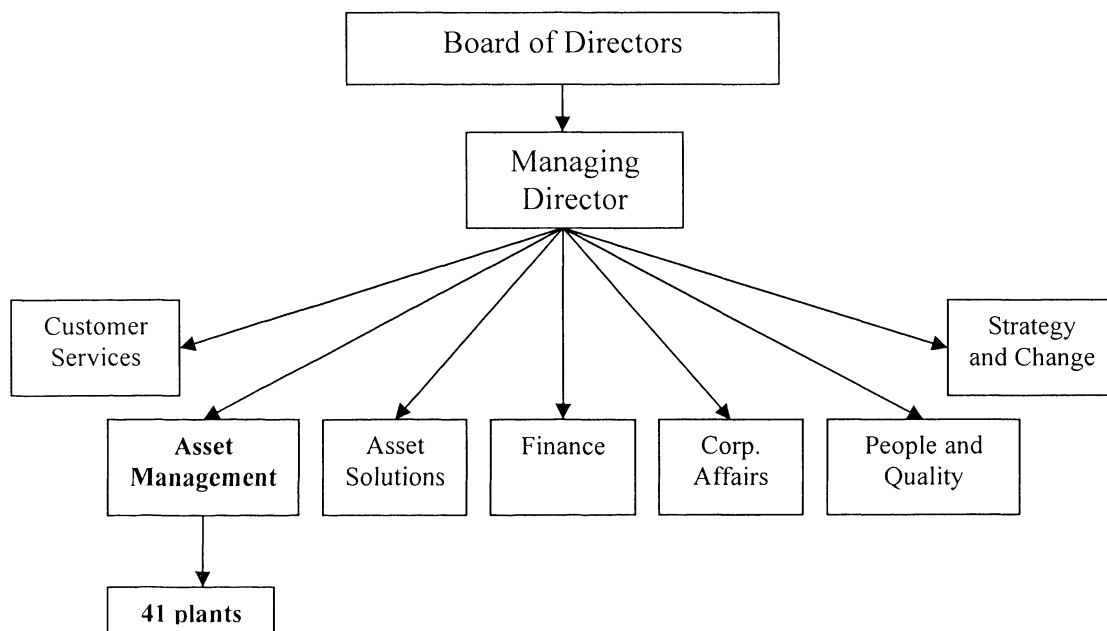
### **5.3.1 Organisation Background**

The case organisation is anonymously titled Organisation A for confidentiality reasons. Organisation A is a large public utilities firm based in Australia, supplying an essential public resource to a general populace of approximately 4.5 million. The organisation is large, and operates as a state owned monopoly. There exists no other competitor in the delivery of this organisation’s core product. The organisation manages assets of AUD \$11 billion, with approximately 3,500 staff and annual capital works programs in excess of AUD \$500 million. Its assets are mainly comprised of 41 operating plants and an extensive infrastructure network linking its core product from source points to consumers.

Though the organisation is state owned, its focus on efficiency and profitability is clear, and quite akin to a commercial organisation. As mentioned by the

Financial Controller of its Asset Management Division (Mr. FC), one of its three equal primary aims is “to be a successful business”. Furthermore, the organisation is effectively structured as a private corporation, with the state government being the sole shareholder. Annually, the organisation is expected to generate “dividends” that are returned to the shareholder (state government).

Figure 5.2: Organisation A Management Structure



The organisation structure of Organisation A is shown in Figure 5.2. Being a large, government owned corporation, it is not surprising to note that Organisation A is hierarchical in structure. Specifically, the management of 3,500 staff across operating plants and administrative headquarters requires many divisions and business units. At a macro level, the organisation is headed by the board of directors, with the managing director (CEO) responsible for the functioning of the organisation. Seven broad divisions are each responsible for a different arm of activities for Organisation A.

The focus of the case on the “Asset Management” Division of Organisation A is primarily because this division is responsible for the budgeting processes of the operating plants of the organisation. As such, its focus on operational reasons to budget is relevant for this thesis. Secondly, the financial controller for the Asset Management Division was the original point of contact in the case study.

Therefore, the majority of data relating to this case was provided by sources from this Division. The financial controller for this Division also explained that the budget processes in this Division were similar to the processes in other Divisions of the organisation. This attests to the applicability of the findings to the organisation as a whole.

The case setting investigated was highly appropriate, as it considered a change in a budget system, from high to low budget participation, and was not merely an analysis of a low budget participation organisation. Therefore, incremental changes are highlighted and actual differences in effects over time are considered. If an existing low budget participation scenario had been examined, it could always be challenged by the question “what if they had high participation? Budget outcomes could have been better”. By observing the change to the budgeting system in 1999, and noting the differences in budget process pre-1999 and post-1999, more robust results may be obtained.

The change to the operations budgeting system was driven by Mr BM, who believed that budgets could be prepared to the same quality, with lower staff participation in the budget setting process.

### **5.3.2 Key staff respondents**

Typically, case based research is conducted using face-to-face and/or telephone interviews and site visits to key staff in the setting investigated (Yin, 1989). For this study, site visits and other interactions over a 2 year period had resulted in information being gathered from five key staff in Organisation A. Twelve site visits were undertaken to both the operating plants (3) and organisational headquarters (9), making contact with five personnel. This was conducted to obtain a balanced perspective of the change in budget systems. The five individuals are:

#### Financial

- Asset management controller: driver of budget change (Mr FC)
- Accounts administrator: headquarters (Mr AA)

#### Operational

- Plant level senior officer: administration (Mr BM)
- Operating plant manager (Mr PM)
- Operations project manager: special projects (Mr SP)

Of the five personnel, two provided information via the conduct of formal face-to-face and telephone interviews (Mr FC, Mr BM). The remaining three provided information through semi-structured discussions which were documented by the researcher upon returning from the site visit. All interviews were conducted in semi-structured form, with the interviewer loosely guiding the direction of the discussion on budget systems in Organisation A. Due to relatively unstructured interview process, no formal interview guidelines were established for the interviews conducted.

While direct quotes are provided for Mr FC and Mr BM, the discussions and commentaries of Mr AA, Mr PM and Mr SP are integrated into the description of the case, as these semi-structured discussions better informed the researcher about the background of the organisation, the description of the organisation's characteristics, and change in the budget system, that is explained below.

Findings and analysis for four variables will be considered from the study of Organisation A interview responses and other archival documents such as minutes from planning meetings, annual budget summary charts and publicly available information on Organisation A such as annual reports. The four variables are the uncertainty, budget emphasis, reasons to budget and budget participation variables. All findings interpreted from the case were cross-checked with Mr. FC, the primary research contact in the organisation and driver of the budget system change.

## **5.4 Case findings and analysis**

### **5.4.1 Uncertainty**

The level of uncertainty impacting Organisation A is considered through two elements, external uncertainty and internal uncertainty, as used in Chapters 3 and 4. Uncertainty relating to transactions involving three external sources is analysed; competitors, suppliers and customers. The fourth measure of uncertainty focuses on the internal nature of process technologies used by the organisation (Perrow, 1967).

Organisation A operates as a monopoly within its jurisdiction, and has no competitors to the supply of its core product. It also operates within an environment where the volume of its demand is highly predictable, as population growth is easy to ascertain and is highly correlated to demand for Organisation A's core product. The resource offered by Organisation A is used by almost all consumers within its jurisdiction. Given the above, uncertainty relating to market competition and consumer demand is low.

The availability of supply for Organisation A's core product is determined by environmental factors, and cannot be fully guaranteed. However, in the history of the organisation, effective demand has never exceeded supply. In times of low supply, the organisation undertakes extensive marketing activities to limit the population's use of its essential resource, thus driving down demand.

Organisation A even has the power to implement restrictions on the use of its product, which if breached, attract severe financial penalties, including possible prosecution. Therefore, the threat of such measures in times of low supply restricts use, and ensures that the supplies of the organisation's core product has never fallen below 25% of Organisation A's maximum capacity, when observing levels over the last five decades. Given the high level of control over consumer use of its resource limiting supply side shortage, the availability of supply is almost certainly guaranteed, and therefore of low uncertainty.

The definition of technology uncertainty is often misunderstood (Donaldson, 2001). Perrow (1967) was a pioneering theorist of technology uncertainty and referred to technology not only as a hardware or layout of fixed assets, but to the



cognitive processing involved in completing a task (Donaldson, 2001). In Organisation A, the majority of operational tasks and processes undertaken are standardised, using a highly automated approach with standardised processes having remained unchanged for many years. These, therefore, are regarded to be of low uncertainty. There is also a low probability for shocks in the process, due to the highly automated processes of the organisation limiting the impact of human error in processes (Merchant and Van der Stede, 2003). From an operational process perspective, therefore, as described by Perrow (1967), the level of technology uncertainty in the organisation is low.

Overall, all four uncertainty elements considered in the study are low. There is a low uncertainty of business environments (competitors, demand and supply) and tasks (technology uncertainty).

## **5.4.2 Budget emphasis and reasons to budget**

To illustrate the need for a more expanded definition of budget emphasis, budget emphasis in organisation A will be analysed using data observed from the case, and compared to the emphasis placed on the two key indicators proposed by Brownell and Hirst (1986), which were adapted from Hopwood (1972), as discussed in Section 5.2.1.

### **5.4.2.1 Observed budget emphasis**

Budget emphasis is high in the Asset Management Division, but not in relation to staff evaluation. As explained previously, the Division has a hierarchical structure. 41 operating plants are pooled under this Division, and each plant is classed as a sub-division/unit. Budgeting in Organisation A is primarily

conducted to coordinate resources for the upcoming annual period. As a secondary measure, the budgets are also used to loosely monitor a business units' adherence to monthly cost spending limits. Annually, the State Government provides appropriations to Organisation A, and these aggregate amounts are distributed to all departments and operating plants. As mentioned by Mr BM:

*“In here we budget to make sure that corporate provides plants with what they ask for (funds). Without a budget, you know, we won't know how much each plant gets to spend next year.”*

The emphasis placed on budgets is high for determining appropriations to individual departments and plants; that is, to coordinate resources. Furthermore, and characteristic of a government owned public utility organisation, the budget based superior evaluative style as discussed in Hopwood (1972), Brownell and Hirst (1986) and Lau, et al. (1995), is less relevant to this organisation. Mr FC stated that bonuses based on budgets were only paid to members of the board of directors and senior corporate managers, and even then, bonus percentages were quite low (approximately 6% of base salary), and not material. Beyond the coordinate resources reason to budget, and as a secondary measure, they are used to consider the adherence of business units to the budget levels agreed to at the commencement of a period. This form of evaluation is strictly at a business unit level, and not specifically on staff. As highlighted by Mr FC:

*“Definitely... the numbers we come up with will be used at the end of the period, to see if departments have stuck to their spending levels. But you know, that's not why we budget. The budget is made up to help us work*

*out how much each plant should be getting, ...departments have never ever overspent, so corporate does not worry about that too much, anyway... ”.*

#### **5.4.2.2 Brownell and Hirst (1986) measure of budget emphasis**

Brownell and Hirst (1986) adapted the Hopwood (1972) conception of budget emphasis discussed in section 5.2.1. Brownell and Hirst (1986) partitioned the four evaluative styles suggested by Hopwood (1972) in order to define “High” and “Low” budget emphasis. This definition is used in this chapter, because it is the same as that used in Lau, et al. (1995) and it allows the determination of high and low budget emphasis, which Hopwood (1972) did not specifically consider. Brownell and Hirst (1986) characterised organisations with a Budget Constrained (BC) style or a Budget-Profit (BP) style as high budget emphasis organisations, and organisations with a Profit Conscious style or a Non-Accounting style as low budget emphasis organisations. Brownell and Hirst (1986) also expanded the six non-accounting indicators of Hopwood (1972) to eight, by applying two changes. First, the “Attitude towards the work and company” indicator was separated into two questions, “Attitude towards the work” and “Attitude towards the company”. Second, a new indicator, “Cooperation with individuals outside the firm” was included. Therefore, Brownell and Hirst (1986) generated ten indicators, two being accounting based and eight being non-accounting based, as listed below:

Accounting based indicators

1. Meeting the budget
2. Controlling costs

Non-accounting indicators

3. Cooperation with colleagues
4. Getting along with the boss
5. Effort put into the job
6. Concern with quality

7. Attitude towards the work
8. Attitude towards the company
9. Ability to handle the men
10. Cooperation with individuals outside the firm

Finally, Brownell and Hirst (1986) changed the Hopwood (1972) definition of a “high” ranking requirement for the two accounting indicators, from the top three of eight indicators, to the top four of ten indicators. The budget emphasis (BE) definition used by Brownell and Hirst (1986) is summarised in Figure 5.3.

Figure 5.3: Brownell and Hirst (1986) budget emphasis typology

| Evaluative Style          |          | <i>Controlling Costs</i> |          | Budget Emphasis |
|---------------------------|----------|--------------------------|----------|-----------------|
|                           |          | Top 4                    | Bottom 6 |                 |
| <i>Meeting the Budget</i> | Top 4    | BP                       | BC       | High BE         |
|                           | Bottom 6 | PC                       | NA       | Low BE          |

The determination of the superior evaluative style in Organisation A is conducted by considering the level of emphasis placed on the two accounting indicators used by Brownell and Hirst (1986), in order to identify the superior evaluative style dominant in Organisation A. Responses relating to the accounting indicators are obtained from discussions with Mr FC, the most senior of the individuals interviewed. Responses on the eight non-accounting evaluative indicators are derived from the semi-structured discussions conducted with all five interviewees.

#### 5.4.2.2.1 “Meeting the budget” accounting indicator

The first indicator is the “Meeting the budget” accounting indicator. In organisation A, budgets are not actively used by superiors to evaluate subordinates. While there is a consideration of the extent to which departments have met their budgets, the emphasis on budgeting for this purpose is low,

primarily because traditionally, as explained by Mr. FC, departments have always operated within budget limits. Individually, such evaluations of superiors on subordinates are not prevalent. The organisation may use budgets generally to note the adherence of the actual numbers to the budgeted performance expected from the departments, but this does not impact the evaluations of departmental managers specifically, or their employees. Therefore, the extent to which superiors use the “meeting the budget” criteria to evaluate subordinates, is low in Organisation A. Budgets are used to some extent for investigating if costs have been met on a departmental level, but is given low importance on a superior/subordinate individual level.

#### *5.4.2.2.2 “Controlling costs” accounting indicator*

The second Brownell and Hirst (1986) indicator relates to the extent to which a superior evaluates subordinates on their controlling of costs. Budgets are clearly used to control costs in organisation A. However, the control of costs is not enacted through superior/subordinate evaluation, as defined by Brownell and Hirst (1986), but rather the coordination of resources at the start of the period. As explained by Mr. BM, the budget is primarily used as a means of communicating to departments the amounts they are permitted to spend in a period. Therefore, the evaluation of subordinates by considering the extent to which they have engaged in controlling costs as defined is not evident.

#### *5.4.2.2.3 “Non-accounting” indicators*

The extent to which individual non-accounting indicators were used to evaluate performance was more difficult to ascertain, as none of the eight non-accounting indicators were formally considered within Organisation A as criteria for

measuring performance. However, the semi-structured discussions with the five staff revealed sufficient information to indicate that three of the eight indicators were important from a superior/subordinate evaluation perspective. First, the “effort put into the job” indicator was mentioned in discussions as the means by which individual work was judged. Mr BM commented that the “efforts” of Mr PM during a period took precedence over the explicit observation of his adherence to budget.

The “concern with quality” indicator was also a strong informal source of continual evaluation, especially for Mr FC. Mr. FC often commented that the attention to detail and the amount of thinking that his employees put into a task was a strong indicator he considered when reflecting on his employees work. These characteristics relate to the focus placed on the quality of output by his employees.

Third, the “attitude towards the work” indicator was regarded as important in the organisation. Mr FC often commented on staff perceptions of their workload and the extent to which staff were inclined to willingly adopt and complete complex tasks as being a source of satisfaction to him. To the extent that these satisfactory perceptions translate into positive evaluations, there is sufficient evidence to indicate that the “attitude towards the work” variable is regarded as important by superiors in Organisation A when evaluating subordinates.

#### *5.4.2.2.4 Overall perceived budget emphasis – Brownell and Hirst (1986)*

Overall, the Brownell and Hirst (1986) definition of budget emphasis applied in this section infers that Organisation A exhibits a low level of budget emphasis. Superiors in Organisation A do not place a high emphasis on evaluating subordinates by regarding the extent to which they meet a budget. This precludes the BP or BC evaluative styles, as shown in Figure 5.3. Superiors in Organisation A also do not evaluate subordinates by considering the extent to which they engage in controlling costs. Furthermore, the semi-structured discussions with key staff indicated that superiors in Organisation A often revert to non-accounting indicators to evaluate staff. These specifically relate to the “effort put into the job”, “concern with quality” and “attitude towards the work”. Given that the non-accounting indicators are regarded as more important by superiors to evaluate subordinates than the two accounting indicators, Organisation A exhibits a low budget emphasis, as defined by Brownell and Hirst (1986).

#### *5.4.2.2.5 Broadening the conceptualisation of budget emphasis*

Notwithstanding Organisation A being defined as a low budget emphasis organisation using the Brownell and Hirst (1986) superior evaluative style definition, evidence from the case indicates that Organisation A places significant emphasis on the budget for resource coordination prior to the commencement of a period, as opposed to staff evaluation during or at the end of a period. Organisation A primarily uses a budget for resource coordination, and to a lesser extent, for evaluating business units generally. Governmental approval of funds distribution in Organisation A requires budgets to be used for

the resource coordination process. Therefore, budgets have always been emphasised and regarded as important by Organisation A. Senior management must annually approve funding co-ordination distributions to administrative departments and operating plants. In addition, budgets are used to a lesser extent to evaluate business units.

The discrepancy between the low budget emphasis classification using the Brownell and Hirst (1986) definition as opposed to the high budget emphasis clarification established from case evidence indicates that the existing definition of budget emphasis used in Brownell and Hirst (1986), adapted from Hopwood (1972), does not consider emphasis on budgets for reasons other than performance evaluation.

Given the above, an alternative definition of budget emphasis is required, which considers both performance evaluation and non-evaluation reasons to budget such as resource coordination in determining budget emphasis. The broadened conception of budget emphasis should expand the set of accounting indicators recommended by Brownell and Hirst (1986), to include accounting indicators other than those related to staff evaluation. The conceptual consideration of budget emphasis should not be limited to budget evaluative style. For example, as shown by this case, it should broadly consider the general emphasis placed on a budget for resource coordination, and the emphasis placed on a budget for business unit evaluation or staff evaluation. The sole use of staff evaluation as the criteria for defining budget emphasis limits the analysis of budget emphasis for other important reasons to budget.



Based on the Merchant and Van der Stede (2003) planning/control/feedback loop for conceptualising management controls, the resource coordination reason to budget relates to the role of a budget as a *planning* control device, prior to the commencement of a period. The *control* and *feedback* stages of the loop relate to the performance evaluation of business units or staff using budgets. If organisations place a high budget emphasis on any one of these three broad sets of operational reasons to budget, they should be characterised as a high budget emphasis organisation, in relation to that reason to budget. Therefore, the budget emphasis of an organisation should be judged from the perspective of different reasons to budget.

Using such a broader conception, an organisation may have three types of budget emphasis. Using the terminology of Hopwood (1972) and Brownell and Hirst (1986), superiors who place emphasis on *employees meeting a budget*, characterise high budget emphasis for staff evaluation reasons. Superiors who place emphasis on *departments meeting a budget*, characterise a high budget emphasis for business unit evaluation. If superiors place emphasis on budgets to *distribute resources amongst departments*, budget emphasis is high, for resource coordination purposes. Organisations that do not use budgets for any of these three reasons to budget, are low budget emphasis organisations for all these reasons to budget. In this chapter, the analysis of budget emphasis is limited to the three reasons to budget considered as important in Organisation A. However, the focus of budget emphasis may be expanded to a wider range of operational reasons to budget, as considered in Chapters 3 and 4.

With this broader conceptualisation of budget emphasis, it is apparent that budget emphasis in Organisation A is high, for resource coordination reasons.

Organisation A is therefore both a high budget emphasis organisation for resource coordination, and a low budget emphasis organisation for staff evaluation, using this broader conception of budget emphasis. If an organisation exhibits a high budget emphasis for any of the three reasons to budget, it is classified as a high budget emphasis organisation, in relation to that reason to budget. It can only be defined as an overall low budget emphasis organisation if it exhibits a low budget emphasis for all the three reasons to budget. Therefore, organisations may have a high budget emphasis for operational planning reasons (coordinate resources), or either of two performance evaluation reasons (staff evaluation and business unit evaluation). The change in Organisation A's budget system in 1999 does not affect its budget emphasis, which has always been high from a resource coordination perspective and low from a staff evaluation perspective.

### **5.4.3 Budget participation**

To define budget participation in this case, the six elements of participation as proposed by Milani (1975) and adopted in Parker and Kyj (2006) are used. The Milani (1975) framework for budget participation is selected as it is one of the more widely used techniques for identifying budget participation (Parker and Kyj, 2006; Kren, 1992; Brownell and Dunk, 1991). All respondent comments that related to the following six Milani (1975) elements of participation, were noted:

1. Portion of budget set by subordinate
2. Provision of reasoning by superior in budget revisions
3. Frequency of subordinate driven budget discussion with superior
4. Subordinate influence on final budget
5. Importance of subordinate contribution to final budget
6. Frequency of budget discussions initiated by superior when budgets are set.

#### **5.4.3.1 Pre-1999: High budget participation system**

Prior to the introduction of the new budgeting system in 2000, Organisation A adopted a very detailed and highly labour intensive zero based budgeting process which required high levels of participation. As identified by the plant level accountant Mr BM, each of the operating plants submitted a detailed budget, providing forecasted numbers for 270 accounts which required detailed justifications. These budget numbers were sent to a corporate committee which would then decide on the appropriateness of budget requests and confirm the budgets, or suggest revisions. There were two components to the operating budget, as explained by Mr. BM – a routine operational budget based on “normal expected operations” and a non-routine request for funds, usually related to miscellaneous low-value infrastructure maintenance. All plant managers were expected to annually prepare an operating budget, based on routine and non-routine operating expenditures.

Mr BM stated that the level of justification for budget numbers required significant staff effort and participation, which he argued to be unnecessary and

which consumed significant staff time and costs. Key operational staff spent large amounts of time with plant level accountants to determine accounting numbers. Furthermore, the majority of these tasks were related to justifications that were immaterial, as noted by Mr BM:

*“Basically, we had to justify every single budget number that went to corporate. This applied to ridiculous levels of detail, for example I once saw this budget where we had to research an umbrella’s price, can you believe it? An umbrella’s cost! I had to work out the number of umbrellas requested by a plant to come up with a budget number that made up a “miscellaneous cost” item. For a company with an annual budget in the hundreds of millions, why are we expected to justify such a small amount? It’s time wasting and frustrating for all staff involved in the setting process.”*

The lack of materiality in justifying the majority of the budget numbers was accentuated by the fact that the majority of Organisation A’s costs were in their twenty largest accounts. Approximately 90% percent of every plant’s budget related to these twenty accounts, with the remaining two hundred and fifty accounts sharing the final 10% of the budget. This led to a large volume of justification, on accounting values that were primarily small and of little relevance to the overall budget of a plant. Therefore, while budgeting was very detailed and accurate, the majority of budget related work was non-value adding as it was immaterial. A frustrating aspect for Mr BM in the budget participation process was that manager justifications were often not considered on a plant by plant basis by corporate. When requesting budget revisions, the corporate

committee would often recommend mass and similar percentage drops for budgets across all plants, irrespective of operational manager needs and the unique individual situations facing managers of operating plants. Plant managers therefore would submit revised requests based on these often inappropriate constraints.

Table 5.1: Pre-budget change participation summary

| Milani (1975) elements   | Level of participation   |
|--|--|
| 1. Portion of subordinate budget setting involvement                     | <b>Strong</b> - operational staff needed to justify all 270 accounts   |
| 2. Provision of reasoning by superior to subordinate in budget revisions | <b>Weak</b> – Corporate committee recommends a fixed percentage reduction for department, little rationale given   |
| 3. Frequency of subordinate driven budget discussions with superiors     | <b>Strong</b> – subordinates usually argue for more during budget revisions, repeatedly citing specific justifications as rationale for more budget funds. |
| 4. Subordinate perceived influence on final budget                       | <b>Moderate</b> – Subordinates provide first iteration, then corporate committee identifies spending constraints and only allows a certain amount.         |
| 5. Importance of subordinate contribution to budget                      | <b>Strong</b> – Without subordinate assumptions and explanation of justifications, budgets not possible.   |
| 6. Superior driven budget discussions in setting process                 | <b>Strong</b> – Accounting representatives of corporate actively engage with plant managers in order to set budget numbers.                                |

The frequency of discussion between accounting representatives of corporate and operational plant managers was usually quite high, as accounting representatives would continually liaise with managers to determine the appropriateness of budget values and to provide a high level of justifications, on a line by line basis. Therefore, operational manager influence and contribution to the budget was usually welcomed and regarded as being very important. Overall, the level of participation in the pre-1999 budget was high, as summarised in Table 5.1.

The role of this budget process was seriously questioned by staff from multiple levels of operations, leading to a review in 1999. This led to the introduction of a new budgeting system in 2000.

#### **5.4.3.2 Post – 1999: Low budget participation system**

In 1999, the value-add of the high level of staff participation in the budget setting process was questioned. As argued by Mr FC:

*“We are an organisation that operates as a monopoly, in a market where our customer base is largely predictable. Why do we need to think about our budgets? What really, could happen to cause our budgeting system to be incorrect? If you look at our budget numbers over the last decade or so, nothing’s changed, really – so why do we work so hard to make these predictions, these budget numbers every year? You know, why do we go through this whole budget setting process in such a detailed and labour intensive way, when nothing really changes?”*

The new budgeting system attempted to accomplish three primary objectives, according to Mr FC. First, it attempted to aggregate accounts and reduce the number of accounts reported from 270 in the old system to 120 accounts.

Second, the new budgeting system attempted to reduce the quantity of justifications required to be made by operational staff, for all budget items. If an amount remained unchanged or displayed constant rates of change over prior periods, the level of justifications and participation required by staff was reduced. Zero based budgeting was limited to accounts that in the opinion of plant managers, would show unexpected movements. The remaining accounts were developed incrementally from prior period numbers, therefore requiring

less effort than a zero based budgeting system. The level of detail required in the budget was significantly reduced, which led to the level of budget participation being lower.

Many of the budget values not expected to change from year to year were “benchmarked” from a previous year’s value, and adjusted downwards by a small percentage (usually between 2-3%) in order to provide plant managers an incentive to pursue lower costs for the coming period. Therefore, the effort and participation that traditionally accompanied the creation of a future budget number was replaced by a commitment to make costs lower than in previous years by using prior year benchmarks as budgets. This approach, which departs from traditional budgeting, is made possible by the fact that Organisation A operates in a low uncertainty environment. Mr FC argued that his organisation was perfectly placed to take a benchmarking approach as their budgeting numbers did not change from period to period, making prior period numbers more relevant to future periods.

In the event that prior year numbers are expected by a plant manager to change, they may request a change to a benchmark. However, Mr. FC argued that this occurred very sporadically, and when it did occur, the process was more easily facilitated as these deviations were small in number and easily addressed promptly by head office.

The new budgeting system placed more focus on plant managers to lower and not just maintain costs, and reduced the detrimental effects of the gaming process

which may lead to dysfunctional behaviour, in budget setting (Jensen, 2003; Wallander, 1999). This was done by establishing fixed benchmarks based on prior period figures. What is particularly interesting is that this change lowered budget participation by staff.

The key reason for the lower budget participation is the lower justifications expected by head office, from the operational budgets provided by plants. The need for operational managers to be actively involved in the budget process was now lower.

Though staff influence on the final budget and the importance of their input is less, this did not appear to concern the staff, as the low uncertainty impacting the organisation does not require high levels of staff involvement in the budget setting process. Prior period values are seen by all as an appropriate proxy for future period values. Overall, the level of participation in the post-1999 budget was weak to moderate, as summarised in Table 5.2.



Table 5.2: Post-budget change participation summary

| Milani (1975) elements   | Level of staff participation  |
|--|---|
| 1. Portion of subordinate budget setting involvement                     | <b>Moderate – Less</b> than before, as most staff justification only occur if unnatural deviations expected from prior period.                          |
| 2. Provision of reasoning by superior to subordinate in budget revisions | <b>Weak – Same</b> as for old system - corporate committee simply recommends a fixed percentage budget reduction for department, little rationale given |
| 3. Frequency of subordinate driven budget discussions with superiors     | <b>Moderate – Less</b> budget revisions than before, as requirement for justifications is less.   |
| 4. Subordinate perceived influence on final budget                       | <b>Weak – Less</b> subordinate input than before, as most budget numbers kept to prior period benchmarks  |
| 5. Importance of subordinate contribution to budget                      | <b>Moderate – Less</b> importance than before, subordinate assumptions and explanation of justifications only required on exceptions.                   |
| 6. Superior driven budget discussions in setting process                 | <b>Moderate – Less</b> engagement than before due to benchmarking approach.   |

#### 5.4.4 Outcomes from budget system change

Post-1999 Organisation A still had a high budget emphasis for resource coordination and low budget emphasis for staff evaluation, but much lower budget participation, owing to its consolidation of account sizes and focusing on benchmarking from prior periods as opposed to detailed forecasting and justifications from plant managers. As a result of this new approach, administrative time and cost savings were generated, as mentioned by Mr. BM:

*“It’s funny that we are actually now achieving more goals by doing less than before. Now, we don’t really make staff involve themselves in the budget, we just use last year’s numbers for most of our accounts, and we have had no problems with this new system”.*

Therefore, the post 1999 budget system was more beneficial than the pre-1999 budget system, because the new process yielded greater goal attainment, as

indicated by Mr BM, but with lower budget participation. This is primarily because staff participation was not necessary to maintain the quality of budget numbers, in the low uncertainty environment within which Organisation A operates. Furthermore, because most staff performance was not evaluated using budgets, there was no performance evaluation related need for staff to be involved in the budget setting process, as indicated by Lau, et al. (1995).

One explanation for the source of cost savings is the reduction of budgetary slack in the budget setting process by plant managers. Budgetary slack occurs when managers protect themselves from the downside risk of missing budget targets (Van der Stede, 2000), by negotiating highly achievable targets. In high budget participation settings, it is plausible that managers have greater scope for building budgetary slack into their budget estimates during the budget preparation process, thereby overstating cost budgets. A more tightly controlled budgeting system that reduces staff participation, such as the budget change implemented, may minimise the creation of budgetary slack, and this may explain a proportion of the cost reduction.

In addition to the potential for lower budgetary slack, lower budget participation also resulted in operational costs savings. Mr FC stated that Organisation A estimated that 55% of a AUD \$60 million drop in operating costs from 1999 to 2000 for the Asset Management Division and the 41 operating plants can be attributed to the savings from the new budget system. This equates to a budget related saving of approximately AUD \$33 million, from a total operating cost base of \$951 million. This saving can be attributed to two areas, administration

and operations. Administratively, the equivalent cost of preparing a budget in estimated time savings has been estimated to be approximately \$6.6 million. This is 20% of the budget system savings. This saving, however, may not represent an actual cost reduction, but rather the effective cost effect of a reduction in staff time devoted to the budget setting process. The remaining AUD \$26.4 million relates to actual cost reductions introduced by the new benchmarking system, which benchmarked a 2-3% annual cost reduction in budget values.

## **5.5 Discussion of findings**

Prior research has shown that in low uncertainty environments, organisations with a high budget emphasis require high budget participation in order to maximise performance (Brownell and Hirst, 1986; Lau, et al. 1995). Findings from this chapter show that an organisation in low uncertainty conditions and exhibiting high budget emphasis, adopted a low level of budget participation to improve performance.

The reason for this difference in findings is the different reason to budget to which the high budget emphasis related, as opposed to that focused in prior budget research. The superior evaluative style framework used in prior budget research to measure budget emphasis, considers budget emphasis from a staff evaluation perspective. However, as established in Chapters 3 and 4, organisations may use budgets for a range of different operational reasons, many of which are regarded as more important than staff evaluation. The dominant operational reason to budget for the organisation, was resource coordination. As

a secondary reason, the organisation also used budgets for business unit evaluation. The use of budgets for staff evaluation was not as prevalent.

If the case analysis had only focused on budget emphasis for staff evaluation, the findings from this study are consistent with prior research. The traditional definition of budget emphasis shows that Organisation A has a low budget emphasis for staff evaluation (as discussed in section 5.4.2.2.4). In a low uncertainty environment, and with a low budget emphasis for staff evaluation reasons, prior research would expect that budget participation should be low, to maximise performance.

However, though this result is consistent from this perspective, this chapter has found an important difference to the general arguments in Lau, et al. (1995). In Lau, et al. (1995), an organisation in a low uncertainty environment and with a low budget emphasis on staff evaluation did not require staff to participate, primarily because staff had no incentive to engage in organisational learning in relation to a budget. If staff were not evaluated, then they had less incentive to engage in budget participation. The primary focus of the requirement for low participation is on the weak link between budgetary goal achievement and subordinate reward. As explained in Lau, et al. (1995):

*“In low budget emphasis and low task uncertainty situations, subordinates are unlikely to be concerned with the accuracy of budgetary goals because of the absence of a link between budgetary goal achievement and the reward system” pp.360-361*

In contrast, the focus of the arguments for lower budget participation when budget emphasis for staff evaluation is low as observed in the case, is not staff incentives but operational predictability. In a low uncertainty environment, the need for staff to participate is less, as budget numbers are more predictable, and easily determined. Therefore, even with a scenario where high budget emphasis for staff evaluation exists, there is no need associated with operational predictability issues for staff to participate, where uncertainty is low.

If an organisation places a high importance on the use of budgets for resource coordination and business unit evaluation, as observed in this case, budget emphasis in the organisation is high. However, the question is – does this form of high budget emphasis require the same links to budget participation and performance as prior research has established for the staff evaluation reason to budget? Findings from this study indicate that it does not. Greater operational predictability characterises a low task uncertainty environment, which causes the need for budget participation to be low, though budget emphasis may be high for these other reasons to budget. When an environment is predictable, then budget numbers are similarly predictable. This reduces the need for staff to undertake research activities to estimate budget numbers, as prior year values are strong predictors of future numbers. Furthermore, stable operating inputs for future periods mean that the selection of operational input values that are required to create a budget are more easily determined. This should reduce the required number of budget iterations between senior management and departments, and should also require less staff effort in each iteration. These factors contribute to

the appropriateness of low budget participation, in low uncertainty environments with a high budget emphasis for resource coordination reasons.

Mr FC argued that there is no value-add in investing additional resources into predicting budget numbers in low uncertainty conditions, as budget numbers are highly predictable. Budget numbers don't inform senior management of anything new, or which they do not already expect. This argument was similarly put forth by Wallander (1999), when critiquing the usefulness of budgets in organisations. Therefore, the need for budget participation is less, though budget emphasis for resource coordination is high, in low uncertainty conditions.

The case showed that a low uncertainty/high budget emphasis mix requires low budget participation for higher performance. However, there are three other combinations of uncertainty and budget emphasis for resource coordination which have not been examined in this case. These are the "low uncertainty/low budget emphasis", "high uncertainty/low budget emphasis" and "high uncertainty/high budget emphasis" combinations.

In a "low uncertainty/low budget emphasis" combination, budget participation should be low to maximise performance, because the organisation does not place emphasis on using budgets as a management control device. This reduces the need to budget, whatever the level of uncertainty. When the need to budget is lower, the need for budget participation should be less, irrespective of the uncertainty impacting an organisation. This argument may, therefore, also be used for the "high uncertainty/low budget emphasis" scenario.

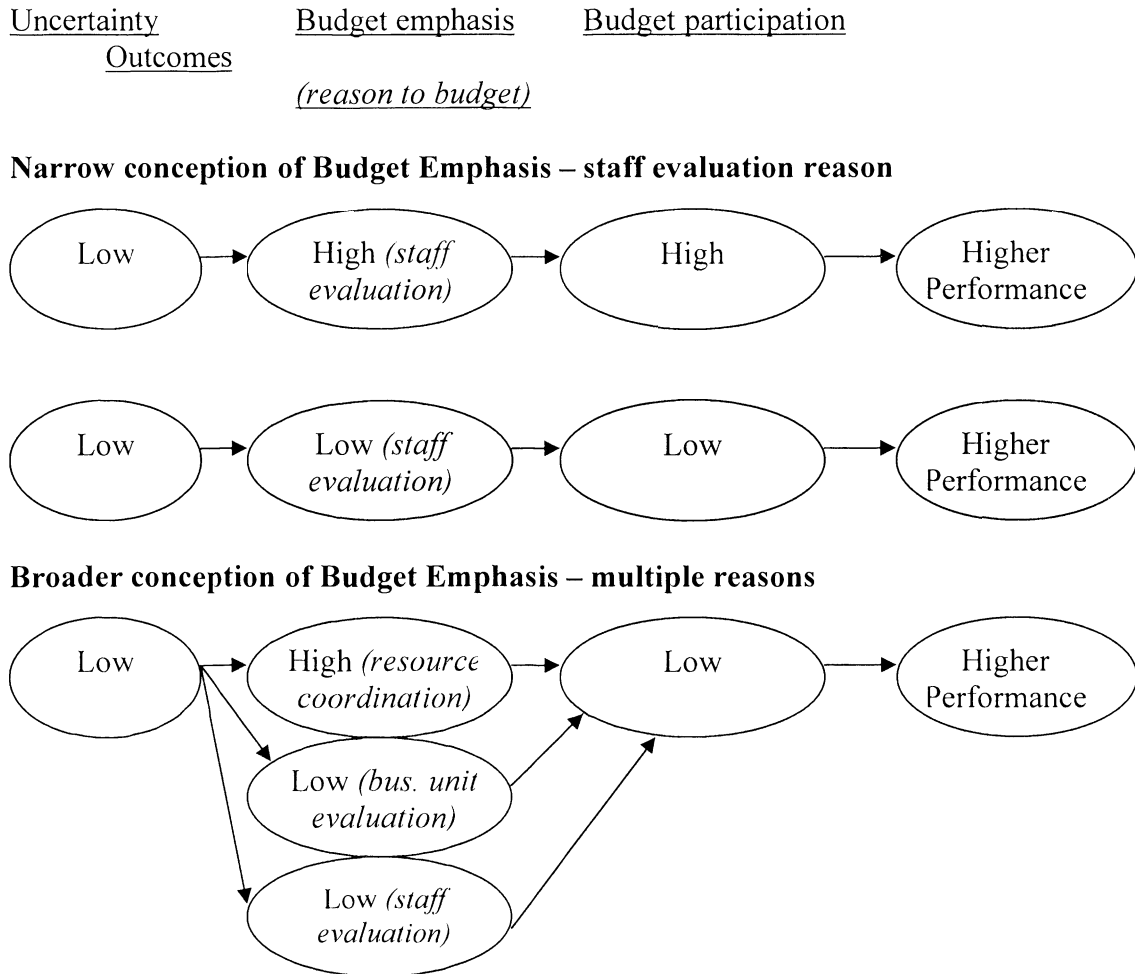
However, the “high uncertainty/high budget emphasis” scenario should require a high level of budget participation. If budget numbers are difficult to predict in higher uncertainty conditions, the need for staff to participate in order to generate better budget numbers for coordinating resources should be greater. Also, because budgets are given high emphasis, management will pressure staff to participate in the budget process, in order to improve the resource coordinating function. Therefore, organisations subject to high uncertainty conditions and with a high budget emphasis for resource coordination should require high budget participation.

Overall, this case proposes that in a low uncertainty environment, even high budget emphasis organisations will regard budget participation as being low, if the reason for high budget emphasis does not relate to the evaluation of staff, but coordinating resources. This perspective has not been put forward in existing research. An illustration of this difference is provided in Figure 5.4.

The relationship between uncertainty, budget emphasis, budget participation and performance may be influenced by budget emphasis considerations other than staff performance evaluation. This broader conception assists to better inform the contingency relationships in this area of research. For example, in a low uncertainty environment, if the budget emphasis for business unit evaluation was high, the need for budget participation may still be high, as departmental managers will make staff participate in the budget setting process to ensure a

greater knowledge of the budgets imposed by senior management on departments.

Figure 5.4: Traditional budget emphasis research vs. case findings



Managers may not be individually evaluated, but will still participate heavily in the budget process. In such circumstances, organisations with a low budget emphasis for staff evaluation reasons may be associated with high budget participation, as budgets are regarded as important for business unit evaluation.

Also, relationships between organisational characteristics, budget emphasis and budget participation may be influenced differently, depending on the operational reason to budget influencing budget emphasis. In this chapter, the only



organisational characteristic investigated was uncertainty, and three operational reasons to budget were considered. If other operational reasons to budget are considered, then relationships between these four variables may vary in ways currently not acknowledged in budget research. For example, organisations operating in a low uncertainty environment and with a high budget emphasis for director monitoring reasons (Chapter 3), may implicitly require high budget participation from staff, because directors perceive the budget as being important, which motivates staff to participate in the process in order to satisfy director requirements.

There are multiple alternative rationales for the relationship between organisational characteristics and the budget emphasis placed on different reasons to budget, which differentially affects budget participation. By focusing on staff evaluation as the dominant reason to budget for defining budget emphasis, extant research does not investigate other possible contingency relationships which may exist.

## **5.6 Conclusions**

Hansen and Van der Stede (2004) argued that extant budget research considers budgets in relation to their use for performance evaluation. A detailed investigation of budgeting in organisations that use budgets for other reasons reveals alternative relationships between budget variables and organisational characteristics, such as a plausible link between low uncertainty, high budget emphasis and low budget participation.

Lau, et al. (1995) proposed that organisations with a high budget emphasis and which operate in low task difficulty environment, require a high level of budget participation to maximise performance outcomes. Budget emphasis was defined using the Hopwood (1972) conceptualisation, which focuses on the use of budgets for superior/ subordinate performance evaluation.

This chapter provides evidence that appears to contradict Lau, et al. (1995). A case where an organisation with a high budget emphasis and which operated in a low uncertainty environment, generates improved outcomes by significantly lowering budget participation. The key driver for the difference between this finding and the findings of Lau, et al. (1995) is the chapter's consideration of reasons to budget other than staff evaluation when ascertaining the level of budget emphasis. In this chapter, Organisation A primarily used budgets to coordinate resources, an operational planning category of reasons to budget (Hansen and Van der Stede, 2004). As a secondary reason, budgets were used to evaluate business units. The use of budgets for staff superior/subordinate evaluation was not as important, and this difference appeared to explain the differences in findings to those of Lau, et al. (1995).

Though the old budget system in Organisation A was accurate, it was also time and resource consuming. In an environment where most operational factors were predictable, there was a lower perceived need by management to undertake the full forecasting process in its entirety. The need for budget participation was not as great, as most operational staff were not evaluated using a budget, and in a low uncertainty environment, budget numbers are easily predicted. Building upon this rationale, management approved the introduction of a new system that

maintained the budget emphasis of the organisation, while reducing the need for budget participation, through the use of benchmarking. The majority of the accounting numbers reported in budget reports was not actually forecasted, but benchmarked from prior year figures.

The findings for this chapter may be argued to be consistent with Lau, et al. (1995), from the perspective that in low uncertainty environments, organisations with a low budget emphasis on staff evaluation, do not require high budget participation. However, this chapter extends the analysis of Lau, et al. (1995) by considering relationships when budget emphasis is considered from the perspective of different reasons to budget. Findings highlight that it is possible for budget emphasis to remain high for reasons other than staff evaluation, and budget participation to remain low. This expanded perspective to the consideration of relationships between organisation characteristics such as uncertainty, and commonly studied budget variables such as budget emphasis and budget participation, has not been put forth in extant research.

With the exception of Hansen and Van der Stede (2004) and the studies conducted in Chapter 3 and Chapter 4, the impact of different reasons to budget has not been explicitly investigated in prior research. From this perspective, future research that focuses on the role of operational budgeting in organisations should note the specific reasons to budget of the organisations studied and their relative importance. Also, more case based research that investigates the impact of non-evaluation reasons to budget will further inform the budgeting literatures of how various reasons differently relate to commonly studied organisational and budgetary characteristics.

# 6 Conclusions, limitations and suggestions for future research

## 6.1 Introduction

This thesis investigated the existence of a range of operational reasons to budget in organisations, their relation to different budget forms, and their linkages to a range of organisational characteristics.

This chapter is comprised of four sections. The first discusses the three constructs investigated in this thesis. The second summarises the six research questions investigated in this thesis, and the findings for each research question. The third provides an overall summary of the contributions from the thesis, and their implications for extant academic research. The fourth section explains the limitations of the study and provides suggestions for future research.

## 6.2 Thesis constructs

Overall three constructs are examined in this thesis. The first is the alternative *reasons to budget*, the second is *budget forms* and the third is *organisational characteristics*. This thesis investigates these three constructs through six research questions, using the cross sectional survey method (chapters 3 and 4) and case method (chapter 5).

Chapter 2 presented a background literature review of reason to budget research and highlighted that performance evaluation remains the predominant reason to

budget examined in extant budget research, as indicated by Hansen and Van der Stede (2004). This focus was primarily due to the growth in budgeting research sourcing from the seminal work of Argyris (1952), which focused on the impact of budgets on job related tension. The focus on budgets and job related tension caused by performance evaluation, as subsequently studied by Hopwood (1972) and Otley (1978), led to the development of two dominant areas of budgeting research, participative budgeting and the Reliance on Accounting Performance Measures (RAPM) literatures, which both focused on performance evaluation as the main reason to budget in organisations.

Hansen and Van der Stede (2004) conducted an exploratory study investigating alternative reasons to budget, and proposed two operational and two strategic reasons to budget. This thesis extended the research of Hansen and Van der Stede (2004) by studying alternative operational reasons to budget in more detail, and adopted a more deductive approach to supplement the exploratory approach used by Hansen and Van der Stede (2004).

Prior research has also examined the impact of different *budget forms*. Almost all extant budget research focuses on the fixed annual budget form. The rolling forecast was proposed by practitioners as an alternative to fixed budgets, and is growing in use in organisations (Haka and Krishnan, 2005). Research on rolling forecasts in management accounting is sparse, with the exception of Hansen and Van der Stede (2004) and Haka and Krishnan (2005). In this thesis, findings from the investigation of both budget forms contributes to the understanding of the

similarities and differences in the relationships between these two budget forms and different operational reasons to budget.

Existing budget research has also examined various *organisational characteristics* and their relationship to budgetary variables (Hansen and Van der Stede, 2004; Chenhall, 2003). This thesis adopted a similar approach to Hansen and Van der Stede (2004), by considering the relationship between three organisational characteristics and four operational reasons to budget. Relationships between the “strategy”, “autonomy” and “environmental uncertainty” organisational characteristics and a range of different reasons to budget are proposed, for the fixed budget and rolling forecast forms.

### **6.3 Summary of findings**

The summary of the findings for the six research questions examined in the thesis are divided into three sections. The first is “Reasons to budget and budget forms”, and relates to the first three research questions. The second is “Organisational characteristics, reasons to budget and budget forms”, and relates to the fourth and fifth research questions, while the third is “Organisational characteristics, budget emphasis, reasons to budget and budget participation” and relates to the sixth research question. The six research questions in this thesis were:

*RQ1: What is the importance of different operational reasons to budget to organisations?*

*RQ2: To what extent do fixed budgets and rolling forecasts exist in organisations, and do they complement or substitute for each other?*

*RQ3: How do different operational reasons to budget relate to the fixed budget and rolling forecast forms?*

*RQ4: How do organisational characteristics relate to different reasons to budget?*

*RQ5: How are the relationships between organisational characteristics and alternative reasons to budget different for fixed budgets and rolling forecasts?*

*RQ6: How does a consideration of different reasons to budget alter observed contingency relationships between environmental uncertainty, budget participation and budget emphasis?*

### **6.3.1 Reasons to budget and budget forms**

The first research question investigated if a range of different reasons to budget were regarded as important by organisations. The further testing of this is important, as the need to investigate a range of operational reasons to budget in organisations is only relevant if these reasons are considered as important by organisations; particularly in relation to the performance evaluation reason to budget that has dominated prior research. Findings from chapter 3 highlight that a range of operational reasons to budget are considered as important by organisations. These were *control costs, coordinate resources, determine required selling prices, manage production capacity, accurate evaluation of staff performance, allows us to evaluate units, allows us to provide information that is used by external parties, allows us to generate/improve action plans, encourage innovative behaviour, and to allow the board of directors to actively monitor the organisation*. Most of the ten reasons to budget were rated as being as at least moderately important. If the majority of the reasons to budget considered in this thesis were regarded as being at least moderately important or higher, it is reasonable to conclude that a range of operational reasons to budget are regarded as important by organisations.

While most of the operational reasons to budget were important, they could be separated into two clusters. The “control costs”, “board of director monitoring”, “coordinate resources”, “formulate action plans”, and “business unit evaluation” were in a cluster of higher importance, while the “encourage innovative behaviour”, “manage production capacity”, “staff evaluation”, “determine required selling prices” and “providing information to external parties” reasons to budget were in a cluster of relatively lower importance. Results highlighted statistically significant differences between the importance scores of the upper cluster and the lower cluster. These two clusters also appeared to persist across all ten GICS industries examined in the thesis. This result implies that while organisations may budget for many reasons, the importance of budgeting for a specific set of reasons to budget such as those in the upper cluster, possibly drives their budget use. Therefore, budget research focusing on the upper clusters of reasons to budget will provide greater relevance to organisations.

Further, non-evaluation reasons to budget such as “coordinate resources” and “formulate action plans” were significantly more important than the traditional “staff evaluation” reason to budget in organisations, as evidenced by their existence in the upper cluster of reasons to budget, while staff evaluation was in the lower cluster. Business unit evaluation was still less important than some non-evaluation reasons to budget, but it was significantly more important than the staff evaluation reason to budget and was placed in the upper cluster of importance. Overall, findings from the first research question not only supported that a range of reasons to budget were important, but also that the non-performance evaluation



reasons to budget were regarded as more important than the performance evaluation reasons to budget, especially in relation to staff evaluation. If organisations budgeted for evaluation reasons, evaluation was conducted on business units as a whole.

The second research question focused on *budget forms*. This research question considered the role of rolling forecasts relative to fixed budgets in organisations. Much practitioner research had regarded rolling forecasts as a substitute to fixed budgets. Many practitioner based studies argue that the rolling forecasts were introduced to replace the fixed budget. However, the continual high adoption of fixed budgets as suggested in prior research (Ekholm and Wallin, 2000) and in anecdotal discussions with practitioners, suggests that rolling forecasts should exist in tandem with a fixed budget. This implies a complementary relationship. Therefore, are rolling forecasts substitutes, or complements to the fixed budget?

Findings from Chapter 3 indicated that approximately 97% of respondents used a fixed budget, and rolling forecasts were used by almost two thirds of respondents. Importantly, the significant majority of rolling forecast users also prepared a fixed budget. This indicates that rolling forecasts are used alongside the fixed budget. Therefore, unlike the assertions of much of the practitioner literatures, rolling forecasts complement and do not substitute for the fixed budget. Interestingly, the adoption rate for rolling forecasts amongst the sample was higher than in prior research. In Hansen and Van der Stede (2004), rolling forecast users comprised 23% of the sample. In this study, the adoption rate of respondents was nearly two

thirds, significantly greater than Hansen and Van der Stede (2004). This reflects that rolling forecast use is rapidly growing among organisations.

The importance of the different reasons to budget for rolling forecast users was also compared, for the two most common rolling forecast periods. The reason to budget importance scores were compared for “monthly” and “quarterly” rolling forecast users. This was examined to investigate if different rolling forecast period users were motivated by different reasons to budget. Results indicated that the “board of director monitoring” and “formulation action plans” reasons to budget showed significantly higher importance scores for monthly rolling forecast users. This finding may indicate that shorter monthly rolling forecast periods allow for budget numbers to be regarded with greater confidence, and therefore given more importance than longer quarterly rolling forecast periods. This difference was only observed for two of the ten reasons to budget, and this effect should not be assumed for all operational reasons to budget.

The third research question compared the importance of the range of operational reasons to budget for both budget forms. Findings indicate that the level of importance attached to the ten operational reasons to budget considered in this thesis is similar, for fixed budgets and rolling forecasts. The two clusters of reason to budget importance noted in the discussion for the first research question was similarly observed for fixed budgets and rolling forecasts. This suggests that organisations are motivated in similar ways when constructing fixed budgets and rolling forecasts. As both budget forms serve generally the same purposes, and they both have a high adoption rate amongst Australian organisations, findings

from this thesis support that fixed budgets and rolling forecasts are complementary rather than substitutes for each other.

There was mixed support for the greater use of fixed budgets for performance evaluation, relative to rolling forecasts. This was evidenced through the significantly higher scores for the use of fixed budgets for performance evaluation and compensation, in comparison to the use of rolling forecasts for performance evaluation and compensation. However, importance scores for the business unit evaluation reason to budget indicated no significant difference between fixed budgets and rolling forecasts. Similarly, no significant difference was observed for the importance of the staff evaluation reason to budget, for fixed budgets and rolling forecasts. This alternatively indicates that performance evaluation is similarly important for both reasons to budget. Therefore, evidence regarding the relative importance of performance evaluation reasons for fixed budgets and rolling forecast is mixed.

Overall, the findings in relation to the third research question indicate that organisations are motivated by the same reasons to budget, for fixed budgets and rolling forecasts. However, it is possible that organisations regard fixed budgets as more suited for performance evaluation than rolling forecasts.

### **6.3.2 Organisational characteristics, reasons to budget and budget forms**

Upon establishing the existence of a range of operational reasons to budget other than performance evaluation in Chapter 3, their relationships to organisational

characteristics was investigated in the fourth and fifth research questions considered in Chapter 4. Four operational reasons to budget were identified and studied in greater detail in Chapter 4. Two of these reasons to budget were “coordinate resources” and “formulate action plans”, and related to operational planning. The other two reasons to budget were “staff evaluation” and “business unit evaluation”, and related to performance evaluation.

The fourth research question investigated the relationships between three organisational characteristics (organisational strategy, autonomy and environmental uncertainty) and the importance of the four operational reasons to budget. Unexpected results emerged, when comparing these relationships. For example, the importance of all four reasons to budget was positively related to the extent of differentiator strategy, for both budget forms. This relationship was not expected, because traditionally, cost leader organisations had been posited to align to the use of formal managements control systems such as budgets.

Results from our study systematically showed otherwise. More differentiator focused organisations regarded reasons to budget with greater importance than organisations with a cost leader focus, for the two operational planning and the two performance evaluation reasons to budget. Differentiator organisations possibly placed a greater importance on budgets for operational planning, because such organisations consider budgets as a boundary system, defining the limits of expenditure, as argued in Simons (1995). Further, these organisations may rely heavily on budgets for evaluation reasons, because processes are usually less standardised in such organisations. Because organisations struggle to maintain

action controls in less standardised conditions, the use of results controls such as the adoption of budgets for performance evaluation are regarded with greater importance. Broadly, this result also supports the reality of high budget use in organisations. Most organisations continue to find a budget important, because, irrespective of competitive strategy, organisations require a budget.

A positive relationship between the level of autonomy and the importance of the reasons to budget was observed across both budget forms, for all but the coordinate resources reason to budget for rolling forecasts. Similar to the above strategy discussion, this result indicates that greater autonomy may lead to the budget being regarded as important, but used differently. In more autonomous settings, the budget is used to identify the boundaries for expenditures, and superiors do not actively control subordinates during a period. Subsequently, at the end of a period, because control was not exercised during a period, subordinates consider the importance of budgets for performance evaluation to be greater than in organisations with less autonomy.

For the environmental uncertainty characteristics, findings showed that greater levels of uncertainty led to less importance being placed on the two operational planning reasons to budget. This was not expected, because greater uncertainty was thought to lead to higher importance for the operational planning reasons to budget. This unexpected result indicated that organisations regard it as more important to budget when the future is certain, and the greater likelihood of budget accuracy in less uncertain environments provides incentive for organisations to place more importance on a budget. This finding also implies

that organisations regard the benefit of budget accuracy which arises from predictability to outweigh the drawback of predicting the expected.

Unexpectedly, the importance of the staff evaluation reason to budget was the only reason which was positively related to the level of uncertainty. This finding is the reverse of the relationship generally identified in much of the existing research, as reviewed in Chenhall (2003). It was originally proposed that lower uncertainty environments were better suited to the adoption of budgets for staff performance evaluation, but results indicated the opposite relationship. This highlights that in high uncertainty conditions, organisations are more concerned with evaluating staff performance, as they are less certain of the likelihood of staff achieving evaluation targets. In less predictable environments, the benefit of being aware of an outcome, outweighs concerns that the budget numbers used for evaluation are less likely to be appropriate. Interestingly, this rationale appears to be inconsistently related to the discussion of the relationship between uncertainty and the importance of the operational planning reasons to budget. Findings for the operational planning reasons to budget implied that the benefit of having certainty regarding budget accuracy outweighed the drawback that the predicted budget numbers were expected. The findings for the performance evaluation reasons to budget infer otherwise; when environments are uncertain, the lack of certainty in budget numbers is outweighed by the benefit of having an objective measure to predict outcomes.

Overall, findings relating to the fourth research question revealed unexpected insights into relationships between organisational characteristics and the four

operational reasons to budget. The differences emphasise the importance of considering alternative reasons to budget collectively in organisations. The findings also show that relationships between organisational characteristics and the operational planning reasons to budget can be different to the same relationships for the performance evaluation reasons to budget.

The fifth research question observed the similarities and differences in relationships between organisational characteristics and the importance of the four operational reasons to budget, for fixed budgets and rolling forecasts. Results indicated no differences between the relationships for the strategy characteristics. Fixed budgets and rolling forecasts showed a positive relationship between the different reasons to budget and the extent of differentiator strategy, for all four reasons to budget.

The only difference for the autonomy characteristic between the two budget forms was for the “coordinate resources” reasons to budget. Greater autonomy led to more importance being placed on the coordinate resources reason to budget for fixed budgets, but no relationship was observed for rolling forecasts. This result appears to infer that irrespective of the level of autonomy, organisations regard the importance of creating rolling forecasts to be the same, when using budgets to coordinate resources. However, organisations place greater importance on the fixed budget as autonomy increases. Both budget forms placed a similar importance on the coordinate resources reason to budget, therefore this difference is not a function of the rolling forecast being less important than the fixed budget.

As autonomy increases, it is likely that organisations rely on the fixed annual budget for reporting more than the rolling forecast, which may explain this result.

For the fixed budget, greater environmental uncertainty was related to less importance being placed on the coordinate resources reason to budget. No relationship was observed for rolling forecasts. For the rolling forecast, greater uncertainty was related to less importance for the formulate action plans reasons to budget. No relationship was observed for fixed budgets. Greater environmental uncertainty led to less importance being placed on the coordinate resources reason to budget for fixed budgets, but no relationship was observed for rolling forecasts. Conversely, greater environmental uncertainty led to a lower importance being placed on the formulate action plans reason to budget for rolling forecasts, but no relationship was observed for fixed budgets.

Similarities for relationships between organisational characteristics and the importance of the reasons to budget were also observed for both budget forms. Greater internal environmental uncertainty resulted in greater importance being placed on the staff evaluation reason to budget, for fixed budgets and rolling forecasts. Further, greater external environmental uncertainty led to less importance being placed on budgets for business unit evaluation reasons, for both fixed budgets and rolling forecasts.

Though many results were counter to those expected, they were insightful because differences were observed in the nature of relationships between organisational characteristics and the importance of different operational reasons to budget.



Overall, results from Chapter 4 indicated support for the notion that different reasons to budget relate differently to organisational characteristics (RQ 4) and that these relationships can be different for the fixed budget and rolling forecast form (RQ5), predominantly in relation to the uncertainty characteristic.

Given that different relationships were noted for different reasons to budget, there is support for the argument that budget reasons need to be studied collectively in the same setting, in order to better understand how budgets affect organisations. The study of individual budget reasons in prior studies may have led to inconsistent results, the majority of this research considered only one operational reason budget, staff evaluation. Organisations with a dominant operational reason to budget other than staff evaluation may show different contingency relationships, and the findings of existing budget research in relation to the organisation may not be relevant, as it has focused on staff evaluation. Ideally, research considering the range of reasons to budget existing in organisations when studying the organisational impacts of budgeting, will provide a more holistic set of findings.

### **6.3.3 Organisational characteristics, budget emphasis, reasons to budget and budget participation**

The sixth research question was investigated in Chapter 5, and considered how non-evaluation operational reasons to budget provide a more complete consideration of contingency relationships between environmental uncertainty, budget emphasis and budget participation. The case method was used to show how the focus of reasons to budget on staff evaluation in prior research, limits the

scope of findings which relate organisational and budgetary characteristics. It was noted that the Hopwood (1972) “superior evaluative style” measure for approach to measuring budget emphasis only considers a budget’s use for performance evaluation, and not other reasons to budget. Budget emphasis for reasons other than performance evaluation therefore cannot be related to this definition of budget emphasis.

The case investigated Organisation A, a large public sector utility that operates in a low uncertainty environment. Organisation A also had a high level of budget emphasis, but primarily for resource coordination purposes.

Prior research argued that in a low uncertainty environment, organisations with a high budget emphasis require a high level of budget participation (Lau, et al. 1995). Chapter 5 findings suggest the opposite. In a low uncertainty environment, the case organisation has a high budget emphasis but is better suited to lower budget participation. The cause for this difference appears to be the dominant reason to budget noted in Chapter 5. The measure for budget emphasis used by Lau, et al. (1995) draws upon Brownell and Hirst (1986), which originally sourced from Hopwood (1972). This measure of budget emphasis only considers its use for performance evaluation. In the case studied, the organisation primarily used budgets for coordinating resources (an operational planning reason established in Chapter 4). For this reason to budget, lower budget participation is sufficient, as budget numbers are predictable. Though the organisation has a high budget emphasis, it does not require high budget participation. If the organisation had placed emphasis on budgets for performance evaluation, the need for staff

budget participation to be high would have been evident, as staff need to understand what is expected of them, and be involved in the setting of the budget number, though it is predictable. In the absence of a performance evaluation reason to budget, however, high budget participation is not a requisite. Therefore, the difference in the contingent relationship found by Lau, et al. (1995) and Chapter 5, may be explained by the different operational reason to budget considered.

It may be argued that the case organisation observed in Chapter 5 would have been defined by the Lau, et al. (1995) definition of budget emphasis as being of low budget emphasis, as the organisation did not use budgets for staff evaluation. As a result, the low budget participation observed in the organisation is not surprising, as prior research has argued that in a low uncertainty environment, organisations with a low budget emphasis do not require high budget participation. However, the driving factor for low budget participation in this study is predictability which arises from low uncertainty. In prior research which focused on the staff evaluation reason to budget, the rationale driving the low uncertainty, low budget emphasis, low budget participation relationship is the lack of incentive for staff to participate, as they are not evaluated on budget numbers. Furthermore, the prior studies did not directly observe the nature of effect of a non-evaluation reason to budget in their consideration of contingency relationships. This was conducted in Chapter 5, in addressing the sixth research question.

Overall, by adopting a multi-method approach comprising both survey and a case study, and a combination of exploratory (Chapter 3) and more deductive, empirical research (Chapter 4 and 5), this thesis attempts to emphasise the importance of studying budget reasons other than performance evaluation, and stresses the importance of acknowledging similarities or differences in the relevance of organisational characteristics, when comparing different reasons to budget for both the fixed budget and rolling forecast forms.

## **6.4 Summary of contributions**

The investigation of the reasons to budget, budget forms and organisational characteristics, revealed findings which contribute in five ways to existing budget research.

The first contribution is the empirical affirmation of a range of operational reasons to budget beyond performance evaluation. Chapter 3 findings emphasised that a range of operational reasons to budget, many of which do not relate to performance evaluation, are regarded as important or more important than the performance evaluation reason by organisations. This provides motivation for future research to further investigate the non-evaluation reasons to budget.

The second contribution of the study is a comparison of the staff evaluation reason to budget and the business unit evaluation reason to budget in the same organisational setting. Results from the thesis show that business unit evaluation is regarded as more important than staff evaluation. Budget research should investigate the impact of business unit evaluation on budgetary decision making

as much as staff evaluation. At present, the majority of budget research focuses on the staff evaluation reason to budget.

The third contribution is the empirical validation that rolling forecasts are a complement to fixed budgets, not a substitute. Much of the practitioner based literature on rolling forecasts has argued that it is a substitute to the fixed budget. This thesis finds that rolling forecasts are used in tandem with fixed budgets in organisations, and therefore rolling forecasts act as a complement to the fixed budget.

The fourth contribution of the thesis is the provision of empirical evidence regarding the similarities and differences in the relationships between the three organisational characteristics and the importance of the different reasons to budget for fixed budgets and rolling forecasts. Similar relationships were observed between the importance of the four reasons to budget, and the strategy and autonomy organisation characteristics, while different relationships were observed for the uncertainty characteristic.

The final contribution of the thesis is the consideration of the limitations of the superior evaluative style concept developed by Hopwood (1972), to measure budget emphasis. By adopting a case approach, the focus of the Hopwood (1972) budget emphasis measure on the use of budgets for performance evaluation was shown to be limited. When investigating an organisation with a primary reason to budget that was related to operational planning (resource coordination), and a secondary reason to budget related to business unit evaluation and not staff

evaluation, contingency results counter to that expected were found. Therefore, the need for the budget emphasis concepts to capture reasons to budget other than performance evaluation was emphasised.

Overall, this thesis contributes to existing management accounting research by empirically supporting the existence of a range of operational reasons to budget, across both the fixed budget and rolling forecast form, and showing that the relationship between different organisational characteristics and these reasons to budget may be similar or different, depending on the type of organisational characteristic.

## **6.5 Limitations and suggestions for future research**

The methodological or theoretical limitations of this thesis require acknowledgement, and these lead to the generation of potential areas for further research.

The consideration of the findings from the use of the cross sectional survey method may be limited, due to the reliance of this method on respondent interpretation, which may be inconsistent across the sample. To the extent that results may be affected by the different interpretations of respondents, the findings of this thesis may be distorted. However, care was taken to explain the definitions of key variables in the survey, and the contact numbers and email addresses of survey researchers was made available to all respondents, in the event that respondents were unsure of the meaning behind the survey questions. Space was also given to respondents to provide their comments on the survey, and this may

have been used by respondents to highlight their uncertainties when responding to the survey. No comments regarding the clarity of the survey questions, or problems with interpreting the meanings of survey questions was reported.

The partial least squares model used in Chapter 4, included a number of variables and indicators. Due to the lack of well defined theoretical relationships between many of these variables (especially non-evaluation reasons to budget), it is possible that the model could be *saturated*. This occurs when all exogenous variables in the model are related to the endogenous variables. As a result, findings from ordinary least squares regression techniques for such variables are often mis-specified. The partial least squares regression technique minimises the likelihood of this mis-specification. Furthermore, the extent to which relationships between variables and their indicators may be formative or reflective may be open to interpretation. A possible method for considering how the model may be improved would be the investigation of areas where positive, negative and no relationships were observed. Specifically, *no relationship* areas may signal the need for further model clarification.

The survey approach used in this thesis focused on considering the breadth of reasons to budget, and the relationships between a range of organisational characteristics and the importance of four operational reasons to budget. This broad investigation is limited in that it restricts the depth of analysis, on each characteristic and reason to budget. The case method in Chapter 5 provided more detail, but only for the uncertainty organisational characteristic, and two of the four operational reasons to budget (coordinate resources and business unit

evaluation). More case studies investigating the role of alternative reasons to budget are critical to clarify and expand the findings in this research area. Such studies will provide clarity on how alternative budget reasons actually enact in firms. This allows for a quality of in-depth interpretation to this relatively new research stream, which broad based survey studies are unable to achieve.

The case method used in Chapter 5 was applied in a public utilities firm, which may be argued to be less representative of traditional private sector organisations as studied in the survey component of the research. However, the state government running the public utility clearly provides an accountability structure similar to many large private firms, and even regards itself as the primary “shareholder”, to which the public utility is expected to remit dividends at the end of its annual reporting period. For this reason, the alignment of this public utility to private firms is argued to be closer than what would usually be the case.

Further research which investigates the same contingency relationships but focused on organisations based wholly in the private sector will provide findings that support or clarify the relationships identified from the Chapter 5 case research.

Further research involving alternative reasons to budget is needed to further extrapolate the implications of the findings in prior alternative budget reasons research (Hansen and Van der Stede, 2004) and this thesis. Though this thesis further developed Hansen and Van der Stede (2004)’s two operational budget reasons, future research should investigate the two strategic reasons proposed by Hansen and Van der Stede (2004) in greater detail. This will provide insights into



the longer term implications of a range of reasons to budget, as opposed to the more short-term operational reasons to budget studied in this thesis.

Alternatively, future research may consider a range of operational reasons to budget as used in this thesis, but for a different set of organisational characteristics.

The findings from this thesis focus on a “Western” culture, comprising a first world economy with lower power-distance staff interactions (Ittner and Larcker, 1998), greater political macroeconomic change, and more structured approaches in conducting economic transactions between organisations. Studies that investigate the relevance of budget reasons in more “Eastern” economies, where the reverse of the above characteristics may be applicable to different degrees (Harrison 1993, 1992), may provide interesting insights into the impact of national and organisational culture on the relationship between organisational characteristics and different reasons to budget.

Finally, budget studies focusing on rolling forecasts are less evident in existing research, and rolling forecasts require further investigation, mainly due to the significant growth in the use of rolling forecasts over the past decade. It is unusual that a management accounting innovation with a high adoption rate has been studied so little in existing academic research, and the need for further research that provides insights into this budget form will benefit practitioners applying rolling forecasts in practice, or academics studying the application of rolling forecasts.

Additional research focusing on the separate investigation of rolling budgets and rolling forecasts is necessary, to better understand the benefits of undertaking higher order adoptions of the rolling forecast form (Leone, 2003). Specifically, research that separately reports data on rolling budgets and rolling forecasts will provide guidance on the different organisational impacts of both rolling types.

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# Appendices

## Appendix A: Survey Questionnaire

### In confidence Best practice in budgeting and balanced scorecard use October 2004

#### **Purpose of this Survey**

The purpose of this survey is to collect information about how firms in Australia use various management accounting practices. Predominately we are interested in budgeting and balanced scorecard use. The relationship between the firms strategy, environment and general control systems will also be investigated. This information will assist in identifying those factors that contribute to best practice in the Australian Market.

The results of this study will contribute directly to the quality of CPAA course material.

#### **Who is conducting this survey?**

The Survey is being conducted by Professor Teemu Malmi and two PhD students in accounting, David Brown and Prabhu Sivabalan, Faculty of Business, University of Technology, Sydney.

#### **Confidentiality**

The answers to this questionnaire are completely anonymous. There is no identification number of any kind on the questionnaire. However, to let me know that your questionnaire has been returned, please return the enclosed postcard separately in the mail so that I can mark your name off the mailing list. This way no reminder questionnaire will be sent to you. Also we will know to send your invitation to a joint CPAA / UTS seminar and the CPAA / UTS Best Practice Benchmark Kit

#### **Token of appreciation**

1. As a token of thanks for your willingness to collaborate with us, we have set up an *online learning resource* that you can use to consider some current issues in management accounting.
2. As a further token of our appreciation of your collaboration, we would like to invite you a *seminar* and discussion of current best practice in Strategic Budgeting, hosted by CPA Australia and the University of Technology, Sydney.
3. If you are unable to attend, we will send you a *CPAA / UTS Best Practice Benchmark Kit* based on this study as a further token of our appreciation.

#### **Due date**

Please complete this form and return it within 14 days. Please use the reply paid envelope provided. No stamp is required.

#### **Help available**

If you wish to enquire further about the study or need any help in completing the form, please contact Paul Brown, UTS research assistant on

## Format and length of survey

This survey has five sections. Each section should take between three to six minutes to complete. The sections are:

**SECTION A – YOUR BUSINESS UNITS VIEWPOINT ON BUDGETING**

**SECTION B – THE BALANCED SCORECARD**

**SECTION C – GENERAL MANAGEMENT SYSTEMS**

**SECTION D – STRATEGY AND ENVIRONMENT**

**SECTION E - INFORMATION ABOUT YOUR COMPANY**

## Please start here:

First we would like to know some details about yourself

1. How many years have you worked for your current employer: \_\_\_\_\_ Years
2. What is your position: \_\_\_\_\_

## SECTION A – YOUR BUSINESS UNITS VIEWPOINT ON BUDGETING

### A.1 Type of budget

The purpose of this section is to find what type of budgets you prepare

1. Does your company prepare budgets:  
 No → **PLEASE SKIP TO SECTION B**  
 Yes
2. How would you characterize your budgeting (*please tick more than one if appropriate*):  
 Yearly (or other fixed period) budget  
 Rolling forecasting  
 Activity based budgeting  
 Zero based budgets
3. Do you prepare long-term (3-5 year) financial plans based on:  
 Revenues  
 Expenses  
 We do not prepare based on revenues or expenses



4. How applicable are these statements to your unit?

|  | Strongly Disagree |   |   |   |   | Strongly Agree |   |
|--|-------------------|---|---|---|---|----------------|---|
| Budget information is used by managers to continuously <b>interact with superiors</b> about day-to-day operations.                                 | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Budget information is used by managers to continuously <b>interact with subordinates</b> about day-to-day operations.                              | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Budget information is used by the board of directors ( <i>excluding the managing director</i> ) <b>during the year</b> to monitor the organisation | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Budget information is <b>not used</b> by managers to continuously <b>interact with other staff</b> about day-to-day operations.                    | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |

## A.2 Trends in budgeting

The purpose of this section is to identify any major trends in budgeting.

1. To what extent have the following factors caused changes to your budget/forecasting practices?

| Factor   | Not applicable | No changes to budget process |   |   | Significant changes to budget process |   |   |   |
|--|----------------|------------------------------|---|---|---------------------------------------|---|---|---|
| Increased Information technology integration with suppliers  | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Increased Information technology integration with buyers   | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Greater dependence on industry (supply) value chain  | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Information Technology has made the development and upkeep on <b>rolling forecast</b> budgeting easier                 | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Information Technology has made the development and upkeep of <b>fixed period forecast</b> budgeting easier to prepare | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Balanced scorecard implementation  | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |
| Other trend:<br>_____  | 0              | 1                            | 2 | 3 | 4                                     | 5 | 6 | 7 |

2. To what extent has information technology (IT) improved the budgeting process in your unit over the last five years?

| <i>No improvement</i> |   |   | ... |   | <i>Significant improvement</i> |   |
|-----------------------|---|---|-----|---|--------------------------------|---|
| 1                     | 2 | 3 | 4   | 5 | 6                              | 7 |

3. If information technology (IT) has improved the budgeting process in your unit, please explain how below:

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### A.3 Fixed period and rolling forecast budgeting

The purpose of this section is to find how you use fixed period and rolling forecast budgeting. **Please only answer the questions that apply to the type of budgets you prepare.** If you prepare both budget types, then please complete both categories of questions.

**If you do not use either fixed period or rolling forecast budgeting, please skip to section B**

1. How frequently do you

prepare fixed period budgets:

- Yearly  
 Every six months  
 Other period: \_\_\_\_\_ months

update (roll) your rolling forecast budgets:

- Monthly  
 Quarterly  
 Other period: \_\_\_\_\_

2. How long before a period starts, do you begin preparing your fixed period budget :

\_\_\_\_\_ months

3. If you use rolling forecasts, when did you first implement it? \_\_\_\_\_ years ago.

We do not use rolling forecasts

4. When determining your fixed period and / or rolling forecast budget, please identify the extent to which your unit uses the following information sources.

| <u>Information sources</u>                               | <i>Fixed period budget:</i> |   |   |          |   |   |   | <i>Rolling forecast budget:</i> |   |   |          |   |   |   |
|--|-----------------------------|---|---|----------|---|---|---|---------------------------------|---|---|----------|---|---|---|
|  | No use                      |   |   | High use |   |   |   | No use                          |   |   | High use |   |   |   |
| Professional & industry associations                     | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Macroeconomic sources (e.g. <i>GDP</i> )                 | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Industry intelligence services (e.g. <i>AC Nielson</i> ) | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Sales force / Customer information                       | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Market research / marketing department                   | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Suppliers information / purchasing department            | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Informal personal networks                               | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Business Intelligence                                    | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |
| Other sources  | 1                           | 2 | 3 | 4        | 5 | 6 | 7 | 1                               | 2 | 3 | 4        | 5 | 6 | 7 |

5. What are the main reasons for preparing the fixed period and / or rolling forecast budget, and how important are these reasons?

| <u>My units reasons</u>  | <i>Fixed period budget</i> |   |   |                      |   |   |   | <i>Rolling forecast budget</i> |   |   |                      |   |   |   |
|--|----------------------------|---|---|----------------------|---|---|---|--------------------------------|---|---|----------------------|---|---|---|
|  | No Importance              |   |   | Very High Importance |   |   |   | No Importance                  |   |   | Very High Importance |   |   |   |
| Control costs  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Coordinate resources   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Determine required selling prices  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Manage production capacity   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Accurate evaluation of staff performance   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Allows us to evaluate units  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Allows us to provide information that is used by external parties (eg financial analysts, regulatory bodies, etc.) | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Allows us to generate / improve action plans   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| To encourage innovative behaviour (e.g. to expand opportunity-seeking, creativity and learning)                    | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| To allow the board of directors (excluding the managing director) to actively monitor the organisation             | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Other (please list):   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |

6. What are the main benefits your organisation accrues from preparing the fixed period and/or rolling forecast budget?

| <u>Realised benefits</u>   | <i>Fixed period budget</i> |   |   |                      |   |   |   | <i>Rolling forecast budget</i> |   |   |                      |   |   |   |
|--|----------------------------|---|---|----------------------|---|---|---|--------------------------------|---|---|----------------------|---|---|---|
|  | No Importance              |   |   | Very High Importance |   |   |   | No Importance                  |   |   | Very High Importance |   |   |   |
| Control costs  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Coordinate resources   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Determine required selling prices  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Manage production capacity   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Accurate evaluation of staff performance   | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Allows us to evaluate units  | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Allows us to generate / improve action plans                                       | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Innovative behaviour (e.g. to expand opportunity-seeking, creativity and learning) | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |
| Provides information that helps us understand our strategic uncertainties          | 1                          | 2 | 3 | 4                    | 5 | 6 | 7 | 1                              | 2 | 3 | 4                    | 5 | 6 | 7 |

**Question six continued:** What are the main benefits your organisation accrues from preparing the fixed period and/or rolling forecast budget?

| <u>Realised benefits</u>   | <i>Fixed period budget</i> |   |   |   |   |   |   | <i>Rolling forecast budget</i> |   |   |   |   |   |   |
|--|----------------------------|---|---|---|---|---|---|--------------------------------|---|---|---|---|---|---|
|  | No Importance              |   |   |   |   |   |   | Very High Importance           |   |   |   |   |   |   |
| Allows the board of directors (excluding the managing director) to actively monitor the organisation | 1                          | 2 | 3 | 4 | 5 | 6 | 7 | 1                              | 2 | 3 | 4 | 5 | 6 | 7 |
| Other (please list):   | 1                          | 2 | 3 | 4 | 5 | 6 | 7 | 1                              | 2 | 3 | 4 | 5 | 6 | 7 |

7. When using fixed period budgets for performance evaluation, are the **benchmarks / targets**:  
 → If fixed period or rolling forecast budgets are not used for performance evaluation **PLEASE SKIP TO QUESTION 9**

| Fixed period budget <b>benchmarks / targets</b> :                                | rolling forecast budget <b>benchmarks / targets</b> :                                |
|--|--|
| <input type="checkbox"/> Fixed   | <input type="checkbox"/> Fixed   |
| <input type="checkbox"/> Flexible ( <i>targets altered if context changes</i> )  | <input type="checkbox"/> Flexible ( <i>targets altered if context changes</i> )      |
| <input type="checkbox"/> Fixed period budget not used for performance evaluation | <input type="checkbox"/> Rolling forecast budget not used for performance evaluation |

8. At what levels of the organisation is the fixed period or rolling forecast budget used to evaluate performance:

a. **Fixed period budget** used to evaluate performance:

| <u>Level</u>                                | No use |   |   |   |   |   |   | High use |   |   |   |   |   |   |
|---|--------|---|---|---|---|---|---|----------|---|---|---|---|---|---|
| 1. Corporate                                | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. SBU                                      | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Unit                                     | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Department                               | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Team                                     | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Individual                               | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Other level ( <i>Please elaborate</i> ): | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |

b. **rolling forecast budget** used to evaluate performance:

| <u>Level</u>                                | No use |   |   |   |   |   |   | High use |   |   |   |   |   |   |
|---|--------|---|---|---|---|---|---|----------|---|---|---|---|---|---|
| 1. Corporate                                | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. SBU                                      | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Unit                                     | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Department                               | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Team                                     | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Individual                               | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Other level ( <i>Please elaborate</i> ): | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 1        | 2 | 3 | 4 | 5 | 6 | 7 |

9. Is compensation related to achieving a fixed period or rolling forecast budget for the following staff in your organisation:

a. compensation related to achieving a **fixed period budget**

| <u>Level</u>                                | No staff |   | About half of staff<br>at this level |   |   | All staff at this<br>level |   |
|---|----------|---|--------------------------------------|---|---|----------------------------|---|
|   | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 1. Corporate                                | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 2. SBU                                      | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 3. Unit                                     | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 4. Department                               | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 5. Team                                     | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 6. Individual                               | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 7. Other level ( <i>Please elaborate</i> ): | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |

b. compensation related to achieving a **rolling forecast budget**:

| <u>Level</u>                                | No staff |   | About half of staff<br>at this level |   |   | All staff at this<br>level |   |
|---|----------|---|--------------------------------------|---|---|----------------------------|---|
|   | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 1. Corporate                                | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 2. SBU                                      | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 3. Unit                                     | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 4. Department                               | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 5. Team                                     | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 6. Individual                               | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |
| 7. Other level ( <i>Please elaborate</i> ): | 1        | 2 | 3                                    | 4 | 5 | 6                          | 7 |

10. Overall, please tell us what you think of your budgeting system?

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## SECTION B – THE BALANCED SCORECARD

### B.1 Level of Implementation.

The purpose of this section is to find whether you have considered using the Balances Scorecard and if you have implemented it, the extent of your implementation

1. Please tick next to the following statement that 'best' describes your business units consideration/adoption of The Balanced Scorecard (BSC). PLEASE TICK ONE ONLY.

- |                          |  |                          |
|--------------------------|--|--------------------------|
| <input type="checkbox"/> | <b>Not considered:</b> The BSC has not been seriously considered   | <b>Skip to section C</b> |
| <input type="checkbox"/> | <b>Implemented then abandoned:</b> The BSC was implemented but it is not being pursued at this time  |                          |
| <input type="checkbox"/> | <b>Gaining acceptance:</b> Analysis is complete and the BSC model has project / implementation team support, but information is not yet used outside of the project / implementation team or senior accounting and management. |                          |
| <input type="checkbox"/> | <b>Used extensively:</b> Commonly used by non-accounting upper management or departments and considered a normal part of the management system for:<br>_____ years _____ months.   |                          |

2. For the BSC do you use any of the following in the process of management reporting:

- Microsoft Excel or another spreadsheet package
- Stand alone software
- A module of an ERP system

## B.2 Perspectives and measures

The purpose of this section is to find how your organization decided upon what perspectives and measures to include in your Balances Scorecard

1. For your main area of responsibility (SBU), how frequently do you report on the measures for your perspectives to managers? (*tick the one that most closely applies*)

|   | Not used                 | Daily                    | Weekly                   | Monthly                  | Quarterly                | Yearly                   | NA                       |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Financial perspective                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Customer perspective                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Internal business process perspective         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Learning and growth perspective               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Environmental perspective                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Supplier perspective                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Government perspective                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other perspectives<br><i>Please elaborate</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

2. For your main area of responsibility, have you defined your measures following an assumed cause and effect logic between (*please tick more than one if applicable*)

- Perspectives
- Individual measures
- Perspectives and Individual measures
- No, we have not used an assumed cause and effect

3. For your company, do the following participate in defining what is measured in the 'measures' contained in the BSC for the following organisational levels? (*please mark choice*)

|                                      |  | <u>Participants</u>      |                          |                          |                          |                          |                                   |
|--------------------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------------|
| <u>Level</u>                         |  | Corporate                | Senior Executives        | Senior Managers          | Middle Managers          | Staff                    | Other.<br><i>Please elaborate</i> |
| <b>Organizational Level Measures</b> | 1. Corporate                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 2. SBU                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 3. Unit                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 4. Department                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 5. Team                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 6. Individual                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 7. Other level.<br><i>Please elaborate</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
| _____                                |  |                          |                          |                          |                          |                          |                                   |
| _____                                |  |                          |                          |                          |                          |                          |                                   |

4. For your company, do the following participate in setting the 'targets' contained in the BSC for the following organisation level?

|                                      |  | <u>Participants</u>      |                          |                          |                          |                          |                                   |
|--------------------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------------|
|                                      |  | Corporate                | Senior Executives        | Senior Managers          | Middle Managers          | Staff                    | Other.<br><i>Please elaborate</i> |
| <u>Organizational Level Measures</u> | 1. Corporate                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 2. SBU                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 3. Unit                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 4. Department                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 5. Team                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 6. Individual                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                      | 7. Other level.<br><i>Please elaborate</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |

5. For your main area of responsibility, do you set performance targets to your measures?
- All of them
  - Some of them
  - Only financials
  - Other: \_\_\_\_\_
6. For your main area of responsibility, what is the main purpose of your scorecard (*please choose the one that applies the most*):
- To provide a good overall view on current operations, or
  - Assist in implementing strategy
  - Other: Please elaborate \_\_\_\_\_
7. For your main area of responsibility, have you used strategy maps (*in developing your BSC*):
- I am not familiar with the term strategy maps.
  - No
  - Yes      If yes, have you:
    - defined your measures based on your map, or
    - is your map drawn based on your existing measures
8. Please, indicate the extent to which you agree with the following statements on the scale provided:

|  | Strongly Disagree |   | Neutral |   |   | Strongly Agree |   |
|--|-------------------|---|---------|---|---|----------------|---|
|  | 1                 | 2 | 3       | 4 | 5 | 6              | 7 |
| Non Financial BSC data is used for management performance evaluation | 1                 | 2 | 3       | 4 | 5 | 6              | 7 |
| Non Financial BSC data is used for management Compensation           | 1                 | 2 | 3       | 4 | 5 | 6              | 7 |
| Non Financial BSC data is used for staff performance evaluation      | 1                 | 2 | 3       | 4 | 5 | 6              | 7 |
| Non Financial BSC data is used for staff Compensation                | 1                 | 2 | 3       | 4 | 5 | 6              | 7 |

### B.3 Benefits of the BSC

The purpose of this section is to find what benefits the Balances Scorecard has delivered your organisation

1. On the scale provided please rate the following:

|  | Strongly Disagree |   | Undecided |   |   | Strongly Agree |   |
|--|-------------------|---|-----------|---|---|----------------|---|
| The BSC has helped us in developing strategy (further)   | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us to get more focus on our strategy  | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us in clarifying and communicating strategy   | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The Balanced Scorecard has helped reduce management focus on short term financial performance measures                       | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped link long term strategic planning with short term activities / actions                                    | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us provide a common language for managers, strategic planers and other staff to communicate               | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us provide a forum for individuals to share their specific work knowledge with other staff in the company | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us give stronger consideration of non-financial drivers of performance                                    | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us give better consideration to stakeholders  | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us enhance the investment in intangibles  | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |
| The BSC has helped us enable managers to question the relevance of the organisations strategy and objectives                 | 1                 | 2 | 3         | 4 | 5 | 6              | 7 |

#### B.4 Success Questions – Outcomes

The purpose of this section is how successful you considered the implementation of the Balanced Scorecard in your organisation / SBU

1. Overall, how successful do you believe the BSC initiative in your firm has been?

| Very successful |   |   |   | Very unsuccessful |   |   | Can not tell |
|-----------------|---|---|---|-------------------|---|---|--------------|
| 1               | 2 | 3 | 4 | 5                 | 6 | 7 | 0            |

2. To what extent have dollar improvements resulted from the BSC implementation?

| Significant dollar improvements |   |   |   |   | No dollar improvements |   | Can not tell |
|---------------------------------|---|---|---|---|------------------------|---|--------------|
| 1                               | 2 | 3 | 4 | 5 | 6                      | 7 | 0            |

3. To what extent have you been able to meet the strategic objectives set for your organisation?

| Fully |   |   |   |   |   | Not at all | Can not tell |
|-------|---|---|---|---|---|------------|--------------|
| 1     | 2 | 3 | 4 | 5 | 6 | 7          | 0            |



## SECTION C – GENERAL MANAGEMENT SYSTEMS

The purpose of this section is to find out about the type of management systems, planning and performance mechanisms of your SBU.

- The following are descriptions of management systems commonly used within organisations. This is a two part question.

Part A: Please assess the extent to which each category is **relied upon** in achieving desired organisational outcomes in your business.

Part B: Please also rank each category in the **order of importance** in achieving desired organisational outcomes (*with 1 being the most important and 4 being the least important*).

|   | <i>Low<br/>reliance</i> |   |   |   |   |   |   | <i>Extensive<br/>reliance</i> |                      |
|---|-------------------------|---|---|---|---|---|---|-------------------------------|----------------------|
| Formal, information based mechanisms that measure performance against a standard or target. These mechanisms include budgets, balanced scorecards and incentive compensation systems.     | 1                       | 2 | 3 | 4 | 5 | 6 | 7 |                               | <input type="text"/> |
| Administrative procedures and policies within the organisation. These include standard operating procedures, human resource management and codes of conduct.                              | 1                       | 2 | 3 | 4 | 5 | 6 | 7 |                               | <input type="text"/> |
| Social control aspects of the organisation. This relates to the shared values and beliefs of employees, socialisation processes, and formally expressed statements of vision and purpose. | 1                       | 2 | 3 | 4 | 5 | 6 | 7 |                               | <input type="text"/> |

- Indicate the extent to which the following mechanisms are used in achieving desired organisational outcomes.

|  | <i>Low<br/>use</i> |   |   |   |   |   |   | <i>Extensive<br/>use</i> |
|--|--------------------|---|---|---|---|---|---|--------------------------|
| Formal strategic planning  | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| Formal yearly planning process                                       | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| <b>Performance evaluation based on:</b>                              |                    |   |   |   |   |   |   |                          |
| Quality assessment (Quality awards, Six Sigma, ISO requirements etc) | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| Shareholder value added measures (MVA, EVA, CFROI etc)               | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| Subjective/qualitative criteria                                      | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| 360 degree assessment  | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |
| Pre-determined objectives  | 1                  | 2 | 3 | 4 | 5 | 6 | 7 |                          |

## SECTION D – STRATEGY AND ENVIRONMENT

### D.1 Strategy

The purpose of this section is to find out something about the strategy and strategic management of your organisation or business unit.

- To what extent do units in your organisation exercise autonomy from senior management, for the following key functions?

| <i>Key Functions</i>                            | <i>Level of Autonomy</i> |   |   |             |   |   |   |
|---|--------------------------|---|---|-------------|---|---|---|
|   | <i>Nil</i>               |   |   | <i>High</i> |   |   |   |
| Planning of unit strategy for upcoming period   | 1                        | 2 | 3 | 4           | 5 | 6 | 7 |
| Planning of unit operations for upcoming period | 1                        | 2 | 3 | 4           | 5 | 6 | 7 |

- On the scale provided please rate the following with regard to your unit:

|   | Strongly Disagree |   |   |   |   | Strongly Agree |   |
|---|-------------------|---|---|---|---|----------------|---|
| Our strategy is simple and straightforward                              | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Our strategic objectives are extremely challenging                      | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Identifying our strategies is harder than effectively implementing them | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |
| Our strategy can be captured by quantitative measures                   | 1                 | 2 | 3 | 4 | 5 | 6              | 7 |

- Please rate the degree of emphasis placed on the following product / service priorities within your unit.

|   | Low Emphasis |   |   |   |   | High Emphasis |   |
|---|--------------|---|---|---|---|---------------|---|
| Provide high quality products                     | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Low production costs                              | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Make changes in design and introduce new products | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Provide unique product features                   | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Make rapid volume and/or product mix changes      | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Provide fast deliveries                           | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Make dependable delivery promises                 | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Provide effective after sales service and support | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Product availability (broad distribution)         | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Customise products and services to customer needs | 1            | 2 | 3 | 4 | 5 | 6             | 7 |
| Low price   | 1            | 2 | 3 | 4 | 5 | 6             | 7 |

4. Achieving our strategic objectives depends on (please rate on this continuum the strategy that is most important to your strategic business unit)

| Both Equally important  |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1   | 2 | 3 | 4 | 5 | 6 | 7 |   |
| our organization succeeding in carrying out major capital investments |   |   |   |   |   |   | our organization succeeding in getting employees involved and improving their performance |

## D.2 Your division / units environment

The purpose of this section is to find out something about the environment in which your unit operates

1. What is the predictability of the following elements of the environment that your unit operates in?

| <u>Element of the environment</u>                             | Not Predictable |   | Average |   |   | Highly Predictable |   |
|---|-----------------|---|---------|---|---|--------------------|---|
|   | 1               | 2 | 3       | 4 | 5 | 6                  | 7 |
| <i>Your competitors' actions</i>                              | 1               | 2 | 3       | 4 | 5 | 6                  | 7 |
| <i>Market supply for the inputs to your products/services</i> | 1               | 2 | 3       | 4 | 5 | 6                  | 7 |
| <i>Market demand for your products/services</i>               | 1               | 2 | 3       | 4 | 5 | 6                  | 7 |
| <i>Impact of technology on Operations</i>                     | 1               | 2 | 3       | 4 | 5 | 6                  | 7 |

2. Compared to five years ago, how would you view the elements below, in your unit today?

| Factor   | Significantly less today |   | No change |   |   | Significantly more today |   |
|--|--------------------------|---|-----------|---|---|--------------------------|---|
|  | 1                        | 2 | 3         | 4 | 5 | 6                        | 7 |
| Uncertainty of tasks conducted in unit                           | 1                        | 2 | 3         | 4 | 5 | 6                        | 7 |
| Uncertainty of environment surrounding unit                      | 1                        | 2 | 3         | 4 | 5 | 6                        | 7 |
| Extent to which company is de-centralised                        | 1                        | 2 | 3         | 4 | 5 | 6                        | 7 |
| Extent of interaction between sub-units when determining budgets | 1                        | 2 | 3         | 4 | 5 | 6                        | 7 |

3. To what extent have environmental factors caused changes to your budget/forecasting practices?  
1-7 no changes to significant changes

| No changes |   |   |   |   | Significant changes |   |   | Can not tell |
|------------|---|---|---|---|---------------------|---|---|--------------|
| 1          | 2 | 3 | 4 | 5 | 6                   | 7 | 0 |              |
|            |   |   |   |   |                     |   |   |              |

4. How would you rate your financial performance against that of your competitors?

| Significantly above average |   | Average |   |   | Significantly below average |   |
|-----------------------------|---|---------|---|---|-----------------------------|---|
| 1                           | 2 | 3       | 4 | 5 | 6                           | 7 |
|                             |   |         |   |   |                             |   |

## SECTION E - INFORMATION ABOUT YOUR COMPANY

The purpose of this section is to find out something about sized and characteristics of your organisation

1. Are you a publically listed company?  No  
 Yes
  
2. In which country is the head office located, for your company?  
 Australia  
 U.S.A.  
 U.K.  
 Japan  
 Other (*please specify*)  
\_\_\_\_\_
  
3. How many employees does your company currently employ?  
\_\_\_\_\_ Number of employees in you company  
\_\_\_\_\_ Number of employees in your SBU
  
4. Approximate annual sales in dollars of your company, as stated in last years financial accounts?  
\$ \_\_\_\_\_ Annual sales in dollars
  
5. Approximate value of total assets in dollars of your company, as stated in last years financial accounts?  
\$ \_\_\_\_\_ Total value of Assets
  
6. Which of the following broad categories best describes your company: (*please mark all that apply*)  
 A single firm that is not a division or a subsidiary of another firm  
 A division or a subsidiary of a larger firm or group  
 The head office of a larger firm  
 The holding company of a group of companies  
 A firm that is organised around Strategic Business Units  
 A firm that does not have Strategic Business Units  
 Other (*please specify*)  
\_\_\_\_\_

7. Which of the following broad categories best describes your company's principal industry?  
*The list below is the same as the GICS (Global Industry Classification Standard) used to classify all companies listed at ASX.*

**Energy**

- 101010 Energy Equipment & Services
- 101020 Oil & Gas

**Materials**

- 151010 Chemicals
- 151020 Construction Materials
- 151030 Containers & Packaging
- 151040 Metals & Mining
- 151050 Paper & Forest Products

**Industrials**

- 201010 Aerospace & Defence
- 201020 Building Products
- 201030 Construction & Engineering
- 201040 Electrical Equipment
- 201050 Industrial Conglomerates
- 201060 Machinery
- 201070 Trading Companies & Distributors
- 202010 Commercial Services & Suppliers
- 203010 Air Freight & Logistics
- 203020 Airlines
- 203030 Marine
- 203040 Road & Rail
- 203050 Transportation Infrastructure

**Consumer Discretionary**

- 251010 Auto Components
- 251020 Automobiles
- 252010 Household Durables
- 252020 Leisure Equipment & Products
- 252030 Textiles, Apparel & Luxury Goods
- 253010 Hotels Restaurants & Leisure
- 254010 Media
- 255010 Distributors
- 255020 Internet & Catalogue Retail
- 255030 Multiline Retail
- 255040 Specialty Retail

**Consumer Staples**

- 301010 Food & Drug Retailing
- 302010 Beverages
- 302020 Food Products
- 302030 Tobacco
- 303010 Household Products
- 303020 Personal Products

**Health Care**

- 351010 Health Care Equipment & Supplies
- 351020 Health Care Providers & Services
- 352010 Biotechnology
- 352020 Pharmaceuticals

**Financials**

- 401010 Banks
- 402010 Diversified Financials
- 403010 Insurance
- 404010 Real Estate

**Information Technology**

- 451010 Internet Software & Services
- 451020 IT Consulting & Services
- 451030 Software
- 452010 Communications Equipment
- 452020 Computers & Peripherals
- 452030 Electronic Equipment & Instruments
- 452040 Office Electronics
- 452050 Semiconductor Equipment & Products

**Telecommunications Services**

- 501010 Diversified Telecommunications
- 501020 Wireless Telecommunication Services

**Utilities**

- 551010 Electric Utilities
- 551020 Gas Utilities
- 551030 Multi-Utilities & Unregulated Power
- 551040 Water Utilities

## Appendix B: Survey questionnaire cover letter

15 November 2004

**CPA Australia**  
ABN 64 008 392 452

Mr/Mrs/Ms XXXXX  
XXXXXXXXXX  
XXXXXXXXXXXXXXXX

**CPA Centre**  
Level 28, 385 Bourke Street  
Melbourne VIC Australia 3000  
GPO Box 2820AA  
Melbourne VIC Australia 3001  
T 61 3 9606 9606  
F 61 3 9670 8901  
[www.cpaaustralia.com.au](http://www.cpaaustralia.com.au)

Dear Mr/Mrs/Ms XXXXXX

I am writing to you seeking your participation in research that CPA Australia has commissioned with the University of Technology Sydney. The research canvasses the valuable views of experienced accountants and managers across a spectrum of business types from medium to larger size. Every endeavour has been made to ensure the privacy of our members is maintained throughout the research project.

The research, which involves completion of the attached confidential questionnaire, investigates current budgeting practices and the use of Balance Scorecard techniques. The objective of the research is to broadly identify relationships between the firms' strategy, strategic business environment and management systems. As such, the outcomes will provide vital information for identifying paths towards best practice in these aspects of business management, and further, provide direct input into various CPA Australia training initiatives such as the CPA Program.

The survey questions are in the main form of scorings or rankings, and based on discussions with a test group, the total questionnaire should be completed within 15 to 20 minutes.

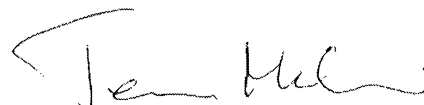
To provide you with an opportunity for an ongoing involvement in the research outcomes, the University is offering survey participants a range of opportunities to access results from the study.

Thank you in advance and we look forward to your co-operation with this survey.

Yours sincerely



**Kevin Lewis**  
Director Policy & Research  
CPA Australia



**Professor Teemu Malmi**  
School of Accounting  
University of Technology, Sydney

## **Appendix C: Follow-up postcard**

Dear (prefix, last),

Recently, a CPA/UTS survey was sent to you seeking your opinion on the use of budgets and Balanced Scorecards.

If you are one of the many people who have already completed and returned the questionnaire to us, please accept our sincere thanks. We will be sending you a CPA/UTS Best Practice Benchmark Kit, as well as an invitation to the Best Practice seminar as soon as we have analysed the results.

If you have not already completed the questionnaire, please do so as soon as possible. We are especially grateful for your help as this information will assist in providing a benchmark for best practice in Australia, and contribute directly to the quality of CPA Australia course material.

If you did not receive a survey, or if it was misplaced, please email Paul Brown ([paul.j.brown@uts.edu.au](mailto:paul.j.brown@uts.edu.au)) and we will mail you a replacement promptly.

*Signature*

## Appendix D: T-tests for differences between upper and lower clusters of reasons to budget

|  |                                     | LOWER CLUSTER                  |                  |                            |                         |                                  |
|--|-------------------------------------|--------------------------------|------------------|----------------------------|-------------------------|----------------------------------|
| U<br>P<br>P<br>E<br>R<br><br>C<br>L<br>U<br>S<br>T<br>E<br>R | FIXED BUDGET                        | Encourage innovative behaviour | Staff evaluation | Manage production capacity | Determine selling price | Information for external parties |
|  | Control costs                       | 13.577*                        | 13.770*          | 12.031*                    | 14.631*                 | 14.764*                          |
|  | Board of Director monitoring device | 12.276*                        | 12.530*          | 11.053*                    | 13.517*                 | 13.671*                          |
|  | Formulate action plans              | 8.050*                         | 8.468*           | 7.636*                     | 9.824*                  | 10.037*                          |
|  | Coordinate Resources                | 7.312*                         | 7.752*           | 7.080*                     | 9.152*                  | 9.374*                           |
|  | Business unit Evaluation            | 6.162*                         | 6.626*           | 6.154*                     | 8.075*                  | 8.307*                           |
|  | ROLLING BUDGET                      | Encourage innovative behaviour | Staff evaluation | Manage production capacity | Determine selling price | Information for external parties |
|  | Control costs                       | 9.079*                         | 10.935*          | 9.363*                     | 12.189*                 | 12.450*                          |
|  | Board of Director monitoring device | 9.076*                         | 10.899*          | 9.364*                     | 12.140*                 | 12.402*                          |
|  | Formulate action plans              | 7.324*                         | 9.189*           | 7.827*                     | 10.560*                 | 10.883*                          |
| Coordinate Resources   | 4.087*                              | 5.955*                         | 4.970*           | 7.526*                     | 7.961*                  |                                  |
| Business unit Evaluation                                     | 4.393*                              | 6.185*                         | 5.225*           | 7.696*                     | 8.116*                  |                                  |

\*p<0.01; Values are t-statistics, in favour of upper cluster.