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Thesis title:

Budget process design: Top down – Bottom up procedures and the determinants of their adoption

PhD in | Business Administration and Management |

Cycle | XXI Cycle |

Candidate's tutor: | Prof. Angelo DITILLO |

Year of discussion | 2010 |

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Milan, 30th January 2010

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*To my parents,
Gloria, Riccardo, Laura,
and my dear friends*

*That all the love we have given,
all the joy and the peace
we have spread around us,
from one end
to the other end of the world,
will reach us,
filling our hearths up
of His infinite merciful gratefulness.*

Paola

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INTRODUCTION

Recently the budget process has become the subject of considerable criticism and debate in management accounting research. On the one hand, there are researchers who attribute to the budget process the fault of holding companies back in today's rapidly changing and unpredictable environment and advocate its elimination. They deem it as "broken" (Jensen 2001), "a thing in the past" (Gurton 1999), or an "unnecessary evil" (Wallander 1999). On the other hand, there are researchers who defend the use of this control system because of its multi-functionality (Fisher et al. 2000; Hansen and Van der Stede 2004). However, researchers should be careful criticizing the budget process and suggesting eliminating it, because nowadays management accounting research has mainly focused on studying the managerial implications of the budget process and its individual level outcomes, rather than the design of the process itself. In particular, there have been more than forty years of research on budget participation and its economic consequences (budgetary slack and managerial performance) characterized by contradictory findings, lack of integrative theoretical models (Hansen et al. 2003) and limited knowledge on the antecedents of manager's involvement and influence in the budget process (Shields and Shields 1998). The same budget participation construct validity has been questioned and the call for refining its definition and improving its measurement has been launched (Shields and Shields 1998). Despite the cited debate and call for, management accounting research has surprisingly paid little attention to studying the design of the budget process.

This dissertation aims to begin a research program on this topic by defining the nature of the budget process design decision and by empirically investigating which types of budget process companies can adopt.

I argue that there is not a universally superior budget process design. There are rather elements of variability in the budget processes observed in practice that differentiate them (Merchant and Van der Stede 2007). In this respect, nothing

is known about which alternative types of budget process companies can adopt, which design elements differentiate them, and how this adoption depends on the different circumstances in which the companies operate.

Management accounting textbooks distinguish budget processes in two categories: top down and bottom up ones. However their definitions are too broad and vague to be easily empirically translated and they confound two important aspects: the direction of the information flows during the process and the ways in which the targets are defined (unilaterally versus negotiated). Therefore, to begin deepening our understanding of the different budget process designs, the first study of this dissertation reviews ninety studies on budget participation and on negotiated budgets. The focus is on these studies because the construct of budget participation has often been associated with top down - bottom up budget processes in unclear ways and budget negotiations have been sometime considered as a third different approach to budgeting. The review is organized by research stream (budget participation and negotiated budgetary studies) and methodology (surveys, experiments and case studies). Its purpose is to highlight for each group of studies its assumptions, its theoretical conceptualization of the construct of budget participation and its implications for studying the budget process design.

The review provides the foundation for a new conceptualization of top down - bottom up budgeting that is defined by this dissertation as *“the continuum of alternative formal procedures top management can choose to adopt for setting business unit budgets through the budget proposal preparation, negotiation and approval with the business unit managers”*. This definition specifies that top management has an active role in deciding the design of the budget process and that this design decision consists in choosing which procedure to adopt for managing the budget process. It also clarifies that there is a sequential nature of the process that includes three main phases: the preparation, the negotiation and the approval of the budget proposal.

Prior participative budgeting studies have theoretically conceptualized budget participation in three different ways: as the amount of involvement and influence of the subordinates on his final budget (e.g. Brownell 1983), as the process through which subordinates are given involvement and influence over their budget (e.g. Chong 2002; Parker and Kyj 2006), and as top management decision to allow the subordinates to have involvement and influence over their budget (e.g. Dunk 1992; 1993). Despite this variety, they have however measured it always with the same measure by Milani (1975), constraining researchers from realizing the differences. In addition, they mainly focused on studying the effects of budget participation, rather than providing evidence on how this budget participation is implemented and managed inside the companies. Therefore nowadays little is known about what managers do in the different phases of the process (the budget proposal preparation, negotiation and approval) and how they are concretely involved and they have influence on their budget in those phases. I argue that investigating these research questions now is important for understanding the reason behind top management decision to adopt a certain budget process procedure, because by choosing to adopt a procedure top management is deciding to allow a certain desired level of involvement and influence to the managers on their budget. In particular, in this dissertation involvement is defined as the level of managers contribution to the budget process and influence is defined as the managers contribution to the definition of the final budget. In this respect, negotiated budgetary studies (Fisher et al. 2000, 2002a, 2002b, 2006) provide a useful perspective for studying how managers can be involved and have influence on their budget for two main reasons. First, because they clarify that when managers take part to the budget process they negotiate the budget for their organizational unit. Second, because, by defining their experimental setting, they implicitly manipulate the level of managers' involvement and influence on their budget in the budget proposal negotiation and approval phases of the process. These studies however do not consider the phase of budget proposal

preparation; because they assume that the parties decide their budget proposal immediately, during the budget negotiation. In this way they overlook that the managers are involved and have influence on their budget also before negotiating their budget proposal and that, given the sequential nature of the budget process, their actions in the budget proposal preparation phase are likely to affect their behavior in the negotiation phase. Specifically, it is unknown both what they do in the budget proposal preparation phase and how that is going to affect their behavior in the following phases of the process.

These gaps are addressed in the second chapter of this dissertation, with a case study on a negotiated budgetary process in an Italian subsidiary of a multinational company. The study focuses on the initial budget proposal prepared by the managers and it empirically investigates the factors driving managers' behavior in the budget negotiation, measuring it in terms of managers' resistance to changing the initial budget proposal during the negotiation.

The budget proposal has an important role for understanding managers' bargaining behavior because the study of its determination allows better evaluating the choices of the parties' positions at the beginning of the negotiation, and the consideration of its changes during the negotiation summarizes the parties' social interaction.

Based on cognitive dissonance theory and negotiation theory, this study develops and examines three propositions. Given the focus on managers' actions during the phases of the budget process and on the micro-level mechanisms influencing managers' behavior in budget negotiations, a case study design had been preferred to other methods of enquiry. Data have been collected at individual level of analysis with a multi-method approach using interviews, questionnaires, field notes, archival data and direct observation.

This case study highlights what the managers do in the phases of budget proposal preparation, negotiation and approval. In this way, it empirically shows the sequential nature of the process and it provides evidence on the effects of

certain budget process design choices on managers' behavior in budget negotiations. Therefore it gives important insights on how top management can structure the process with the aim to increase the level of involvement and influence of the managers. This is extremely relevant for studying budget process design, because it clarifies that when top management decides to adopt a certain budget process procedure (he designs the budget process), he considers the entire process through which the managers are allowed to be involved and have influence on their budget. Therefore, he decides how to give them a certain desired level of involvement and influence in each of the three budget process phases.

Up to now management accounting research has never investigated top management budget process design decision, hence it is unknown which type of budget process procedures companies adopt, allowing a certain desired level of involvement and influence to the managers, and how this adoption depends on the circumstances in which the companies operate.

These are important research questions for today's management accounting research on budgeting for two reasons. First, because for understanding the outcomes of the process that is nowadays object of criticisms, it is relevant to study not only how companies use this control system, but also how they design it and why. Second, because it is not possible to know how the amount of budget participation changes depending on the organizational and environmental context in which the companies operate, without examining how that context influences top management decision to adopt a certain procedure that allows the manager's to participate.

Therefore, this dissertation presents a second empirical study that contributes to management accounting literature by investigating how top management can differently design the budget process by choosing which formal procedure to adopt on the top down – bottom up continuum of procedures, and which organizational and environmental factors determine this adoption.

This study defines the top down – bottom up continuum of procedures as the continuum of different configurations of three design elements (one for each phase of the budget process), that top management can choose to adopt for giving to the managers a desired level of involvement in the process and influence on their final budget. This dissertation does not directly investigate the process top management uses for deciding the design the budget process. Instead, in line with prior contingency theory studies on budgeting and management control systems design, it investigates its visible outcomes: the types of budget process procedures that are adopted, at present, by the companies. This study uses a configurational approach, based on a congruence notion of fit (Gerdin and Greeve 2004; Drazin and Van de Ven 1985)¹, hence all empirically identified configurations are feasible and effective procedures.

Based on prior participative budgeting literature, that recognizes that the value of managers' participation to the budget process lays in the information exchanges among the subjects (Hopwood 1976; Galbraith 1977), the second empirical study develops a theory on the determinants of companies' adoption of different budget process procedures.

The theory is tested on a sample of middle-large companies operating in Italy. Data collection has been done according to the four steps procedure recommended by Dillman (2007). 141 questionnaires (47%) have been returned by management accountants, of which 128 complete.

The questionnaires have been statistically analyzed, first with a cluster analysis, to identify the adopted top down – bottom up procedures, and then applying a multinomial logit model, to test the theory on the determinants of their adoption.

¹ The use of configurations implies that there are few states of fit between content and structure with companies making 'quantum jumps' from one state of fit to the other. Moreover, with a congruence approach of fit, it is assumed that only best-performing companies survive and therefore can be observed, because fit is the result of a natural selection process. Hence, the research task is to explore the nature of context-structure relationships without examining whether they affect performance.

CHAPTER 1

Top down - bottom up budget process design: Extant literature and research directions

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January 2010

Working paper. Please do not quote or distribute without permission of the author.

Abstract

This study has the purpose to investigate what it means to have a top down or a bottom up budget process. First, it critically evaluates management accounting textbook definitions of top down and bottom up budgetary approaches. Second, it reviews 90 empirical studies on budget participation and budget negotiations to highlight their assumptions, their way of conceptualizing the budget participation construct (that often has been associated with top down – bottom up budgeting in unclear ways) and their implications for studying budget process design. Third, it proposes a new conceptualization of top down – bottom up budgeting as the continuum of alternative formal procedures top management can choose to adopt for setting business unit budgets through the budget proposal preparation, negotiation and approval with the business unit managers. Finally, based on the new definition, it presents some directions for future research.

Keywords

Top down, bottom up, budget process design, procedure, budget participation.

I. Introduction

“There is no universally superior, off-the-shelf budgeting system, so it is not surprising that the systems observed in practice are often quite different from one another” (Merchant and Van der Stede 2007). Management accounting research has widely recognized that companies use their budget process for multiple purposes (e.g. for planning, coordination, motivation, and facilitation of top management oversight) that often are conflicting with each other (Fisher et al. 2000; Hansen and Van der Stede 2004). It has also recognized that the use of budgets as system can be diagnostic or interactive (Simon 1990; Abernethy and Brownell 1999) and that some budget systems work better in certain settings than do others (Merchant 1981). Notwithstanding this apparent common recognition of the need to study budgets in the organizational contexts in which they operate (Otley and Berry 1980), prior research has mainly focused on studying the managerial implications of the process rather than the ways in which the process is structured. There have been more than forty years of research on the managerial implications of the budget process (e.g. budget participation) and on their budgetary outcomes (managerial performance, job satisfaction, budgetary slack).

On the one hand, this research is characterized by conflicting findings and lack of integrative theoretical models (Shields and Shields 1998; Hansen et al. 2003) and, on the other hand, there are not studies on budget process design.

Any management accounting textbook broadly categorizes the budget approaches into top down and bottom up and it provides a simplified description of the budget process listing the sequential flow of the activities that compose it. This is helpful for instructive purposes, but it does not reflect the variety of ways in which companies can structure their budget process. In particular, little is known about what does it mean to have a top down or a bottom up budget process and which type of budget processes companies adopt.

Recent surveys from practice (KPMG 2004; Develin & partners 2005) asked respondents to indicate which type of budget approach their company uses

among these three options: top down, bottom up or a combination of the previous two. Their results show that respectively 55% and 61% of companies declare to use a combination of top down and bottom up budgeting for their budget process and they highlight the presence of an *hybrid approach*. However the authors of these surveys did not provide a precise definition of what the options' meaning was, probably thinking that it was clear in the respondent mind. This left the respondent with the duty to interpret the question and applying it to the context of the company in which he was working. They also asked respondents that answered that their company was using a combination of top down and bottom up budgeting to indicate if this combination was more a top down combination of a bottom up combination. This shows how limited is the knowledge of the different types of budget processes and how superficial is the understanding of these design alternatives.

The purpose of this study is to deepening this understanding, by investigating what it means to have a top down or a bottom up budget process.

First, this paper presents a critical evaluation of the textbook definition of top down and bottom up budgetary approaches. Management accounting textbooks describe these two budgetary approaches as two specific situations related to the beginning of the budget process; however their definitions are too broad and ambiguous. By critically evaluating them, this paper argues for the necessity of their theoretical refinement.

Second, this study reviews extant management accounting literature that provides useful insights on the nature and the characteristics of alternative ways of structuring the budget process. This is in line with recent recommendations for careful construct definition (Bisbe et al. 2007) and theoretical domain specification (Shields and Shields 1998) in management accounting research.

This literature is organized by research stream (budget participation, negotiated budgetary studies) and methodology (surveys, experiments, case studies). The review highlights the assumptions, the ways in which prior studies conceptualize the budget participation construct, that often has been associated

with top down and bottom up budgeting in unclear ways, and its implications for studying the design of the budget process. To better specifying the decisional context that characterizes the choice of adopting a certain budget process design, this study highlights the theoretical lenses adopted by prior management accounting studies. In particular, references are made to participative decision making, goal setting and negotiation studies, to illustrate both what has been and what has been not taken into account from these literatures.

Third, this study proposes a new conceptualization of top down-bottom up budgeting as the continuum of alternative formal procedures top management can choose to adopt for setting business unit budgets through budget proposal preparation, discussion and approval with the business unit managers.

This study therefore contributes to the management accounting literature in many ways.

First, it recognizes the primary role of top management as decision maker and designer of the budget process. Prior studies have often been confusing in theoretically conceptualizing budget participation as an amount or as a process or as a top management decision, and then measuring it always with the same measure. They measure the managerial implications of the budget process design decision (subordinates perceived level of budgetary participation) rather than investigating the decision itself.

Second, this study clarifies the theoretical association between budget process procedures and budget participation. Prior experimental studies often manipulate budget participation by designing different budget settings or negotiation structures, but they do not explicitly recognize it. This study argues that by choosing which procedure to use, top management decides the amount of involvement and influence allowed to the business unit managers in the budget setting process.

Third, this study conceptualizes top management budget process design as a procedural choice. Prior studies recognize the role of procedures, rules and

policy decisions in the budget process, but they often see them as alternatives to budget participation (Lau et al. 1995; Mia 1989; O'Connor 1995) or as a formal aspect of budgeting (Merchant 1981, 1984) or as a formal aspect of budget participation (Francis-Gladney et al. 2004). This study instead attributes to budget process procedures a central role, essential for understanding the ways in which the budget process can be structured, hence its design.

This paper is organized as follows. Section two presents the critical evaluation of the top down - bottom up textbook definition; section three reviews and discusses prior literature; section four introduces the new conceptualization of top down - bottom up budgeting; section five proposes some future research directions and section six concludes.

II. Top down – bottom up budgeting: a critical evaluation of the textbook definition

Management accounting textbooks typically describe budget processes categorizing them according to the use of a top-down or a bottom-up budget approach (Werner and Jones 2004; Anthony and Govindarajan 2003; Garrison and Noreen 2004). A *top down approach* is defined as a situation in which top management starts the budget process sending down budgets and targets, based on the organizational goals and strategies. A *bottom up approach* is defined instead as a situation in which the budget process starts by asking those who will ultimately implement the budget to make proposals and to have an involvement in the process itself. Some management accounting textbooks have recognized that this dichotomy is too strict compared to the reality of the budget process design. For example, Anthony and Govindarajan (2003) and Garrison and Noreen (2004) present also a third approach: a *negotiated approach*. However, they define this third approach very vaguely, as a mix of the two previous approaches.

Previous management accounting studies have defined more extensively a negotiated budget as “*any iterative budget-setting process with the budget*

formally defined through a negotiation process between superiors and subordinates" (Fisher et al. 2000). This definition identifies in the iterations of a formal negotiation process between superiors and subordinates the main characteristic of this third approach. Reading more recent editions of management accounting textbooks with the objective to identify the characteristics of this mixed approach, it emerges that there are many different ways of considering it: from a third alternative way of defining targets (Merchant and Van der Stede 2007) to a precise phase of the budget process where budgets are negotiated (Weetman 2006); from the combination of a top-down approach with the addition of bottom-up phases (Werner and Jones 2004), to a stage of vital importance of the budget process (Drury 2008), and to *'the hearth of the process'* (Anthony and Govindarajan 2007). This confusion shows that it is not clear from management accounting textbooks whether negotiated budget, as defined by Fisher et al. (2000), is a third type of budgetary approach or a necessary phase of any budget process, independently of which approach is used (top down or bottom up).

Therefore textbooks distinguish two, sometime three approaches, and recent evidence finds that companies declare to use more than one approach (KPMG 2004; Develin & partners 2005). This shows that this categorization is too broad and vague to be empirically translated and it opens up the need to carefully evaluate the common textbook definitions of top down and bottom up budgetary approaches to better understand what their meaning is and what their defining characteristics are.

The first critic that I want to raise concerns the use of the word *'approach'* and its sharp contrast with its description as a *'situation'*. An approach refers to the way in which somebody thinks and decides about something. A situation refers to a state of facts that can be described with respect to a certain place and point in time. A situation can be an external manifestation of an approach, in a certain place and point in time, but it cannot be the approach itself.

This denotes the impersonality implied by the previous definitions that do not explicitly recognize the active role of top management in thinking and deciding the way in which the company budget process can be structured. This is a big omission that creates the risk of having also a superficial interpretation of the situation. There are examples in the literature where the approach gets confused with the situation. For example, it is stated that the dichotomy between authoritative and participative process is similar to one between top-down and bottom-up budget processes (Shields 2005). However it is not specified what similar means in this respect and why they would be similar. Another example is when it is affirmed that the top down process is not necessarily participative, because there can be an imposition of the budget by top management, but the bottom up process is always participative (Werner and Jones 2004). Again it is not specified what 'not necessarily' mean, why that would be the case, and what is association between top down – bottom up processes and budget participation.

The second critic to the previous definitions of top down and bottom up budgetary approaches is that they confound two important issues that should be separately considered: the direction of the information flows among the managerial levels and how managers are involved in the process.

Both these issues are relevant for describing budget processes. For example, practitioner oriented literature (Jensen 2003) describe a divisionalized company's budget process as a process beginning in May with top management that estimates the company overall target; continuing in June with business unit (BU) managers using inputs to define a preliminary forecast for the budget of their business unit, whose sum is usually lower than the overall target. Then in July BUs managers negotiate with the Chief Executive Officer (CEO) the allocation of the gap between their forecast and the overall target. Once BUs targets have been agreed upon, a similar process is done within the BUs, using negotiation rounds with the business unit heads, until the company overall target has been allocated. In September a final negotiation begin among

BUs heads and top management for the BUs budget approval and in November top management presents the coming year's budget to the Board of Directors for the last formal approval.

The budget process presented here can be described as top-down, if we consider where does the process starts (top management organizational goals and strategies); bottom up, if we take into account that the definition of targets require the proposals of the BUs managers (input from lower organizational levels); negotiated, if we look at the concrete way in which targets are defined and managers participation takes place. Therefore the distinction among the three budgetary approaches presented in management control textbooks is not so clear cut and the definitions commonly used are not easy to be empirically translated. Where does the budget process start is only one design choice that companies have to make and it explains only superficially how the budget process is actually structured. Other design choices are related to the second aspect: how budgets are defined. In this respect, budgets are usually negotiated between superior and subordinate managers (Umapathy 1987; Howell and Sakurai 1992), therefore it is important to study the structural context in which budgetary decisions are made to better understand which top management design alternatives there are.

The third critic is about the vagueness of the categorization itself. Shields (2005), still confounding the two aspects of the previous definitions, argues that there exists a continuum of budgetary approaches that goes from the extremes of a pure top-down approach (where strategic directions and goals are assigned by top management without any involvement of lower level managers) to a pure bottom-up approach (where strategic directions and goals are self-set by low level managers). If that is the case than the categorization into two (or three) approaches reduces the possible budget design choices to the extremes of this continuum and it overlooks all the alternatives in between. I agree with him that there exists a continuum of budgetary approaches, and I also argue that this continuum is not only characterized by the use of different patterns of actions

made by top management and lower level managers along the process, as he suggested, but it represents top management procedural alternatives: by adopting a certain budget process procedure, top management can decide to differently position the company on the top down – bottom up budget process continuum.

III. Top down - bottom up budgeting in prior research

The theoretical foundations for exploring the meaning of top down-bottom up budget process design are present in prior management accounting research, both in participative budgeting studies and in negotiated budgetary studies. The first ones provide important insights, because budget participation has often been named and associated with top down – bottom up approaches, even if this theoretical association has never been clarified. The second ones because by focusing on the design of budget negotiations and their outcomes, they are reach sources of information on different budget settings. As consequence, this paper reviews and critically evaluates the published empirical studies on budget participation and budget negotiations.

Criteria for studies selection and studies overview

90 empirical studies on participative budgeting and budget negotiations have been identified and reviewed. They have been published from 1972 to 2008 in the following accounting journals: *Accounting and Business Research*; *Advances in Management Accounting*; *Advances in Accounting*; *Accounting, Organizations and Society*; *Behavioral Research in Accounting*; *Critical Perspective in Accounting*; *Journal of Accounting Literature*; *Journal of Accounting Research*; *Journal of Management Accounting Research*; *Management Accounting Research* and *The Accounting Review*. They represent all studies that measure budget participation or that use a budget negotiation as their empirical setting.

I used Shields and Shields (1998) journals selection criteria and I decided to also extend this review including more accounting journals. The main reason is that, even if there is an overall increasing trend in budget participation studies, more recently they tend to be published in journals recognized as less prestigious according to the international ranking criteria, the so called no top tier journals.

Table 1 classifies the 90 studies by journals and research methods. The 73% of the studies published from 1994 to 2008 are published in no top tier journals (vs. the 27% in top tier journals). Of the studies published in top tier journals from 2000 to 2008 (6), the 80% is given by budgetary negotiation studies. Recent budget participation studies, especially surveys, tend to be published more in no top tier journals (1 in top tier vs. 23 in no top tier). This shift from top tier journals to no top tier ones can be explained more by the general evolution of the topic of participation in the management literature (Miller and Mongue 1986; Wagner 1994) than by the conflicting results of budget participation studies, as it has been argued by Shields and Shields in 1998.

Table 1 also shows that in terms of research method used there is a predominance of surveys over experiments. In particular, budget participation studies use both field and experimental research design, while negotiated budgetary studies (10% of the total number of papers) use only experimental research design. Table 2 shows that the reviewed studies adopt very frequently an individual level of analysis, and that this is particularly true for field studies. About the 91% of surveys uses an individual level of analysis against the 65% of experiments.

More details about the content of the 90 studies can be found in Appendix (page 65). The table in Appendix presents the definition of the theoretical construct of budget participation adopted by each study, the measure that has been used to operationalize the construct, the method and the level of analysis, the description of the sample selected (for the survey) and of the task used (for the experiments) and the description of the respondents/ participants.

This review also includes one paper that uses interviews to investigate budget participation (Poon et al. 2001). Shields and Shields (1998) recognize that qualitative research methods have very rarely been used for studying budget participation. Until 1998 the case studies that have been published on budgeting, tackle the issue of budget participation only indirectly, investigating instead budget uses (e.g. Covaleski and Dirsmith 1983, 1986, 1988; Samuelson 1983). This is surprising considering that case studies, and qualitative research methods in general, are more suited when the objects of study are organizational processes that do not lend themselves easily to quantitative measurement (Yin 1990; Patton 2002). The contribution of this study and of case studies in general, is also taken into account by this review. As consequence only analytical models and pure literature review papers are not included.

Classification of the studies

The studies are here classified by the research stream (budget participation and negotiated budgetary studies) and by the method used (field, experiment, case study). As anticipated, budget participation studies use both field and experimental research designs, while negotiated budgetary studies are only experimental. In addition, field studies on budget participation can be distinguished by the measure of budget participation that they have adopted: those that use Milani (1975) and those that use another measure.

This review presents, for each group of studies, a general overview of the research stream, the ways it has theoretically conceptualized budget participation, and its contribution for understanding the meaning and/or the characteristics of top down – bottom up budget processes.

Budget participation studies: general overview

Budget participation is one of the few construct that have been studied for the last forty years and for which a substantive amount of knowledge has been

produced in the management accounting literature. Notwithstanding the high number of both field and experimental studies, the findings on the effects of budget participation on managerial performance are still contradictory and they have been described as being of low economical significance (Shields and Shields 1998). In particular, the review by Shields and Shields (1998) highlighted that this could be explained by the use of a variety of theoretical and empirical models that considers the budget participation construct as an independent, a moderator and/or a mediator variable, and by the low strength of the links between the assumed reason for budget participation existence and the studied dependent variable. They also recognized that there is a need of expanding the theoretical definition of the construct and improving its operationalization. They noted that the majority of the studies use Milani (1975) six items scale to measure budget participation, due to its reliability, and with the aim of maintaining high findings' comparability among the studies. However, they argued that there are many dimensions of budget participation that are not taken into account by the accounting literature (e.g. voluntary or forced (e.g. corporate policy); formal or informal; direct or indirect; degree (or form) (e.g. none, consultation, joint, self-selection); content (e.g. type of decision or budget); vertical vs. horizontal (e.g. participation between a superior and a subordinate vs. participation among subordinate managers); and individual vs. group (e.g. teams, quality circles). As consequence, they called for incorporating this potential multidimensionality of the construct in the measurement.

This paper partly answers their call, because it investigates the ways in which the construct has been theoretically defined in the management accounting literature; however it does so with the aim of clarifying the contribution of these studies for understanding top down – bottom up budget processes rather than to provide a new definition of the budget participation construct itself. More specifically, this paper argues that the theoretical conceptualization of top down – bottom up budget processes is related, but distinguishable, from the one of

budget participation and that these studies are valuable sources of information for understanding alternative budget process procedures.

Budget participation: evidence from field studies

Budget participation construct

I identified 66 field studies on budget participation. The majority of them (79%) measure budget participation using Milani (1975) six items scale or one of its variations, as Kren (1992) three items scale or Shields and Young (1993) five items scale. Therefore, to analyze the budget participation construct is essential to begin from considering the definition and the operationalization proposed by Milani.

Milani (1975) defines budget participation as the extent to which a subordinate is allowed to select his own course of action. It states that it is a matter of degree: there exists a continuum from no influence to complete subordinate influence in the budget setting process. Having this continuum in mind, he operationalizes the construct with six reflective items on a five point Likert type scale including subordinate perceptions of: the portion of the budget he is involved in setting; the kinds of reasoning provided to the subordinate by a superior when the budget is revised; the frequency of budget related discussions initiated by the subordinate; the amount of influence the subordinate has on the final budget; the importance of the subordinate's contribution to the budget; and the frequency of budget related discussions initiated by the superior, when the budgets are being set. Brownell (1992) using the same measure proposes that the construct is multi-dimensional and that the scale is made up of two dimensions, one measuring the level of involvement and one measuring the level of influence of the subordinate in the budget setting process. In particular, the involvement dimension refers to the social interaction between the superior and the subordinate (e.g. the frequency of budget related discussions); the influence dimension refers instead to the extent to which the subordinate contribute to the definition of the final budget (e.g. the

portion of the budget the subordinate is involved in setting). However Brownell (1992) did not test for this multidimensionality of the construct. Later studies adopt his definition and continue to use the scale by Milani (1975), overlooking the continuum of influence that the second had in mind, and using the multidimensional argument of the first, when confirmatory factor analysis on the items showed the presence of more than one factor.

The consideration of these two studies is already showing the high risk of construct misspecification that is present in this research stream: the domain of the construct is not clearly defined, and consequently also the relationship between the construct and its indicators can be questioned.

Table 3 summarizes the analysis of the budget participation construct. Panel A includes the field studies that use Milani (1975) measure or its variations; panel B includes the field studies that use a different measure.

Three main ways of theoretically conceptualizing budget participation have been identified for both groups of studies.

Budget participation has been defined or as an amount (e.g. extent of involvement and influence; extent of involvement; extent of influence; extent of budget communication and influence); or as a process (e.g. an information exchange process; a negotiation process; a social interaction process; a knowledge sharing process); or as a top management decision (e.g. an opportunity of giving involvement and influence; the adoption of a budgetary policy or procedure; the choice of a certain degree of target imposition; the concession of the possibility to exercise direction, control and authority; the adoption of a certain decision making or leadership style). In particular, the studies using Milani measure have more often conceptualized it as a process or as a top management decision (34.62% each), while those using other measures have more often conceptualized it as an amount (57.14%). Moreover, the studies using Milani and referring to budget participation as a process have more frequently conceptualized it a process of information exchange and negotiation over a performance standard; those that use Milani and refer to

budget participation as a top management decision have more frequently conceptualized it as decision making style or leadership style. The studies that instead do not use Milani and refer to budget participation as an amount have more frequently conceptualized it as the amount of involvement and influence the subordinate has in the budget setting process.

This analysis shows that even if budget participation has been theoretically conceptualized in three different ways (amount, process, top management decision), all 52 studies in panel A use Milani measure for operationalizing their construct. This is coherent with Shields and Shields (1998) claim that management accounting scholars tend to use Milani more for maintaining studies comparability and measure reliability than because the measure better reflects their theoretical construct. For example, when budget participation is conceptualized as the use of a certain top management leadership style (authoritarian vs. participative), asking respondents to indicate the portion of the budgets they are involved in setting or the frequency of budget related discussions initiated by them (items of Milani 1975 Likert type scale), means to proxy top management leadership style with subordinates perceptions of their own behavior. This opens up problems of conceptual specification and operationalization that management accounting researchers have often undermined (Bisbe et al. 2007). Note that for example there is also a study that conceptualizes budget participation as the subordinate need to participate in the budget setting process (Lau and Tan 1998) and still operationalizes it using Milani Likert type scale.

Among the studies that did not use Milani, there are those ones that have adopted a business unit or firm level of analysis instead of an individual level (e.g. Merchant 1981; Merchant 1984). The use of a different level of analysis has stimulated the researchers to adopt another measure, even if they use the same theoretical conceptualization (subordinate amount of involvement and influence in the budget setting process). They have adopted modified versions of Fertakis (1967), Swieringa and Moncur (1975) or Bruns and Waterhouse

(1975) instruments. These are instruments which have been developed in other research fields (organizational behavior, participative decision making) and that have been adopted for measuring respectively the extent of superior pressure induced by the budget process, the extent to which some characteristics of the budget system are present, and the extent to which subjects participate in the planning and budgeting processes.

Implications for studying budget process design

Budget participation field studies recognized that budget participation refers to subordinate involvement and influence in the budget setting process (amount), that it is strongly related to the way in which the budget process is designed (process) and that it is top management that decides on the level of involvement and influence given to business unit managers (top management decision).

These are precious information for understanding what top down – bottom up budget processes are.

First, these studies show that it is somebody else that allows the subordinate to participate in the budget process, by giving him the possibility to select his own course of action, thus there is top management deciding on the extent to which the subordinate is involved in the budget process and have influence on the final budget. However, these studies have measured the extent of subordinate participation (amount) rather than focusing on clarifying the nature of the budget process design decision.

Second, they recognize that there are budget process design choices that need to be done to obtain a higher degree of subordinate involvement and influence. For example, according to Milani (1975), it is a matter of defining the portion of the budget that the subordinate is involved in setting; of deciding the frequency of budget related discussions between superior and subordinate; and of determining the kinds of reasoning that can be used in budget revisions. However these studies are actually taking into account only the results of these design choices: they measure how subordinates perceive their involvement and

influence in the budget setting process, so they assume that the design of the process is exogenously predetermined with respect to subordinates 'participation', which is its outcome.

Third, by highlighting that it is top management that is deciding the level of involvement and influence allowed to the business unit managers, they clarify that the level of budget participation of the subordinates (conceptualized as amount of both involvement and influence) is the result of top management budget process design decision. As consequence, they indicate that to study the characteristics of different budget process procedures, management accounting scholars should paid attention to the highest organizational level. These studies have instead mainly focus on the lower managerial level measuring subordinates' participation, because this allows them to have more variation across individuals. However this variation could also be interpreted as the individual level effect of top management budget process procedural choice.

Budget participation: evidence from experiments

Budget participation construct

I identified 15 experiments that are included in table 3 panel C. The majority of these studies have conceptualized budget participation as a top management decision (66.7%). Among this majority, half of them have seen it as a decision on the extent of control or on the exercise of choice (decision freedom) given to the subordinates in the standard setting process. The studies that did not conceptualize budget participation as a top management decision, have mainly seen it as a consultation and social interaction process between superior and subordinate (20%), and as the amount of subordinate influence in the budget setting process (13%). This illustrates that, differently from field studies, those experimental studies that emphasized the theoretical dimension of involvement (social interaction) interpreted the budget participation construct as a process taking place between superior and subordinate, and those that emphasized the theoretical dimension of influence interpreted it as an amount (the extent to

which subordinates recommendations are included in the final budget (Brownell 1981)).

These experiments are often based on goal setting theory and participative decision making literature.

Those based on the first one compare different goal setting methods: assigned, self-set and participative goals. For *assigned goal* they mean a situation in which the subject is assigned a goal that he is after called to achieve. For *self-set goal* they mean a situation in which the subject is called to choose a goal to which he commits himself. For *participative goal*, they mean a situation in which the goal is set through a discussion with an external party (experimenter), but the final decision on the goal is left to the subject (like in the case of self-set goal).

Two examples of these studies are Tiller (1983) and Kren (1990).

The first study compares an assigned (or no participation) condition with a choice condition. In the first case, the superior decides the performance level for the subordinate and it assigns it to him. In the second case, the subordinate is allowed to choose a budgeted performance level among two predefined budget levels.

The second study compares a self-set condition with an assigned budget condition. In the first case, the subordinate is allowed to present a budget proposal that is accepted immediately by the superior as the subordinate budget level. In the second case, the superior defines and imposes a budget level on the subordinate.

The studies that are based on participative decision making literature usually consider different ways of structuring the budget process to allow certain forms of participation to the subordinates. Among those forms it is possible to find the following ones: choice, voice, explanation, consultation and/or veto.

Two examples of these studies are Cherrington and Cherrington (1973) and Lindquist (1995).

The first study compares four group budgetary control conditions: imposed goal, pseudo-participation, lenient and group based conditions. In the first condition, the superior defines a minimum level of the performance standard that is imposed as budget level on the subordinate manager. In the second condition, the superior defines a minimum level of the performance standard (unknown by the subordinate) and the subordinate is invited to provide performance standard estimates that the superior does not accept as budget level, unless they are higher than the minimum fixed standard. In the third condition, the superior defines a minimum performance standard that is communicated to the subordinate, and subordinate performance standard estimates are accepted by the superior, when they are higher than the communicated minimum standard. Finally, in the fourth condition, there is no a minimum performance standard and the superior immediately accepts the subordinate performance standard estimates as budget level.

The second study (Lindquist 1995) instead compares a voice vs. no voice conditions and a vote vs. no vote conditions. In the voice condition subordinates are allowed to discuss in a budget meeting with the superior their preference for the budget level, while in the no voice condition they are not allowed. In the vote condition subordinates are allowed to present their own budget proposal, while in the no vote condition they have their budget assigned by the superior.

Implications for studying budget process design

These experimental studies contribute to the understanding of top down - bottom up budget processes because, by operationalizing the budget participation construct in their experimental setting, they design different budget process conditions.

The purpose of these studies was investigating the outcomes of those budget process conditions in terms of job satisfaction and subordinate performance. However, manipulating their experimental setting, they show the importance of considering the concrete ways in which the budget setting process is structured.

In particular, they provide insights on how top management can decide to design the budget setting process to allow a high vs. low level of subordinate involvement and influence. For example, they show that subordinates can be allowed to present a budget proposal, they can be allowed to discuss it with the superior manager, and they can be allowed to propose changes and give their opinions before the budget is finalized.

These studies, operationalizing the budget participation construct, indirectly provide insights on the ways in which budget setting processes can be designed, however they do not clarify the nature of budget setting processes. For example, according to Brownell (1981), budget participation is the amount of influence an individual has on a final budget which is jointly set. This definition points to a decision to be made for defining the amount of influence; it specifies that this influence relates to the final budget, and that it is the result of a joint budget setting process between the superior and the subordinate. Therefore this study emphasizes that the amount of influence is the result of a process characterized by the joint contribution of two actors (superior and subordinate), but it does not clarify which type of *'joint'* budget setting process is.

It is the researcher that by choosing the experimental procedure implicitly defines how the joint process is structured. For example, Brownell (1981) experimental setting consists in having the subjects assuming the role of one of four senior managers in an organization, which manufactured and sold a single perishable product, and the task requires the subjects to make two decisions for twenty fiscal quarters: one regarding a recommendation for the budgeted level of unit sales for the quarter, and one regarding the price to be charged for the product during the quarter. The experimental procedure is such that subjects submit their first recommendation, then they are informed of the first recommendation done by the other three managers and, after a short delay, the top management presents the final budget level. Budget participation is manipulated using different weights for computing the weighted average of the

recommendations of the four managers: in the high participative condition a weight of 0.9 is assigned to subject recommendation and a weight of 0.1 is assigned to the other three subjects' recommendations; in the low participation condition the weights are, respectively, 0.05 and 0.95. After being informed of top management determination of the budget, subjects are presented with the percentage deviation of each of the four recommendations from the final decision of top management, to emphasize the effect of the participation induction. Then subjects are presented with the level of advertising expenditure for the incoming quarter and they are required to individually decide on the price to be charged (second recommendation), with the objective that this should produce an actual sales volume exactly equal to the final budget. Departures from the set budget in either directions are considered to be equally undesirable and thus they reduce the level of performance.

If this experimental procedure is critically evaluated, it can be observed that the manipulation of budget participation reflects the influence dimension and that the joint process involves both top management and subordinates (involvement dimension), but the decisions are made individually by the subjects: the subordinates decide and provide the first recommendation, top management communicates the budget level, the subordinates decide and provide the second recommendation, and top management presents the performance report. Therefore, the budget process here designed involves more parties and it includes different phases (budget proposal presentation, final budget definition), but the final budget is not jointly set. It should also be noted that subordinates do not know the mathematical relationship with which top management is setting the final budget level (the budget participation manipulation), hence from their perspective top management is individually deciding on the budget level. What determines if their recommendations are taken more or less into account (the extent of their influence on their final budget) is unknown.

This example shows that these experimental studies are precious sources of information for identifying budget process procedures' characteristics, through the ways in which they try to model the budget process reality in their settings, but they do not clarify the nature of budget processes.

Budget participation: evidence from case studies

Budget participation construct

This review identifies only one case study that explicitly focus on budget participation. Poon et al. (2001) develop a goal interdependence dynamics model of budgetary participation applied within a single budget setting of a major public utility in Hong Kong. The peculiarity of this study is that it employs a critical incident research design to examine the antecedents, process and outcomes of budget participation within a single company setting.

This study defines participative budgeting as *"the process whereby a manager has involvement and influence on the determination of his or her budget"* and it conceptualizes budget participation as the social interaction process used to discuss and resolve budget-related issues (involvement dimension). The authors argue that budgetary participation provides a setting within which managers can exchange information and ideas to make budgetary planning, coordination and control more effective. It gives individuals the legitimacy to discuss organizational issues with superiors and it provides a setting in which individuals can exchange information and ideas to solve problems and agree on future actions.

This study shows that how team managers believe their goals are related affects the dynamics and outcomes of participation. In particular, they find that budget team members who had cooperative goals were found to engage in more open-minded discussion in budget conflict situations, resulting in improved group productivity and stronger interpersonal relationships which, in turn, led to higher-quality budgets. Results were interpreted as suggesting that the benefits of budget participation depends upon establishing strongly cooperative goals

among team members and developing the skills to discuss opposing views open-mindedly.

Implications for studying budget process design

Poon et al. (2001) investigate the effects of budget participation and performance at the group level, because budget programs involve many people, often operating in teams. They argue that budget participation that often involves interaction between participants has ignored interpersonal processes, thus they focus on studying team dynamics and individual goal beliefs in budget conflict situations. Therefore, this study recognizes that budget quality depends both on individual beliefs and individuals' interaction, and that individuals' participation to the process is the participation to situations of conflict, where controversy arises. It also clarifies that the nature of this controversy lies in the approach used for conflict resolution, such that it is the extent to which people discuss problems openly and constructively, they are willing to question the correctness of their own position and they seek to understand opposing views and share information and ideas, that gives rise to higher quality decisions. This is relevant from a budget process design perspective because it suggests that budget meetings are a key phase of the budget setting process and how they are structured could influence the approach people use for solving the budget controversy.

This study uses a critical incident as unit of analysis and it develops interview schedules to cover the whole incident process, from the initial perception of goals interdependence to the interaction phase and its outcomes. Exploring the reasons for the type of goal interdependence perceived by the interviewees, this study finds that the main ones are: shared goals, a trusting attitude, shared rewards and the importance of coordination in completing the task. Only one of them is a personality-type of reason (trusting attitude), the others are specific to the budget context or task. As the authors highlight this suggests that firms can introduce structural arrangements (e.g. through shared goals and common

reward mechanisms) to create a budget context conducive to cooperative goal interdependence. This is relevant from a budget process design perspective; because it suggests that top management has an active role in determining the extent of cooperation or competition that is present among the team members by designing the budget context and introducing structural arrangements. An example of the importance of this suggestion is given also by another finding of this study: individuals' interaction has positive effects, particularly in terms of communication, information, and policy reinforcement. The authors write that top management places a strong emphasis on budget participation. This is coherent with the view that top management has an active role in the budget process design and implementation.

Case studies are particularly well suited for studying budget process dynamics and they can provide very reach and detailed descriptions of how budget processes are designed and implemented.

For example Poon et al. (2001) describe the budget process of this organization in this way:

“Top management assesses the market and sets a strategic framework including the sales volume target. It then sets the budget ‘ceiling’ for each of the business groups. Knowing these targets and constraints, operating management provides details on project plans and cost estimates. The budgets are forwarded to the branch heads, department heads, and the general managers of the business groups for approval. The revised budget is then submitted to the Senior Executive Committee, the Budget Committee, and ultimately to the Board of Directors for final approval. Because there are numerous prior stages and revisions, the budget planning process typically takes about eight months to complete”.

This description provides useful insights on how top management has structured the budget process. It shows that the process begins with top management initiative and the communication of an assigned sales volume target which affects team members participation in the process, because it

represents a ceiling, a constraint, they have to take into account when providing their budget estimates. Then the description presents the use of budget meetings that involve many managers at different managerial levels (at least four levels) beginning from the bottom of the organization. This shows that in this company the extent of budget participation is high. The description then continues saying that budgets are revised in budget meetings and the aggregated budget is then submitted to top management for the final approval. The authors specify that there are many budget revisions and prior stages before the last formal approval is achieved, however it is not indicated how these budget meetings are structured, to what extent the budget is revised, and the time that managers dedicate to these meetings. The paper indicates the length of the process, eight months, which is two times the average length found by recent survey from practice (three – four months). This is at least an indication that the budget process done in this company is complex. Having more details on how the budgets revision and approval process has been designed would have given even more insights on the context in which the budget conflict situations arise. Of the three incidents presented in the paper, only incident B refers to a budget meeting that took place for revising the budget. This incident shows that cooperative goals among different project team leaders allowed keeping expenditures within budgets and improving safety. However, the incident refers to an episode that happened after the budget has been approved, thus after the conflict for budget setting has already been resolved. Knowing more details on the context in which the budget approval took place would have been useful for evaluating the open-mindedness of the people involved in presented controversy.

Therefore Poon et al. (2001), and case study evidence in general, contribute to budget process design because they allow investigating the effects and the dynamics of people interaction. They provide reach descriptions of how budget processes take place in the organizational reality. These descriptions give precious information on the different phases of the process in which managers

are involved and have influence. Also management accounting textbooks describe the different phases of the budget process. For example, Drury (2008) illustrates the budget process using the following phases: communication of the details of the budget policy; determination of the factor that restricts performance; preparation of the sales budget; initial preparation of the other budgets; budgets negotiation; budgets coordination and review; budgets final acceptance; and budgets reviews during the year. Anthony and Govindarajan (2007) describe it instead with the following phases: development of an initial budget proposal on the basis of top management guidelines; negotiation of the budgets; review and approval of the budgets; and update and revision of the budgets. Even if there are differences, each description of the business unit budget setting process includes at least three sequential stages: a first phase of budget proposal preparation, in which business unit managers are required to prepare a proposal for their business unit budget; a second phase of budget proposal negotiation, in which they negotiate their budget proposal with the top management; and a third phase of budget proposal approval, in which the final budget is finalized and approved. These phases represent the three main phases of any budget process.

Negotiated budgetary studies: general overview

Negotiated budgetary studies are a recent research stream in the management accounting literature. They begin with Chalos and Daka (1979), that did not publish their study in a main accounting journal, and they had their main theoretical developments starting with Fisher et al. (2000).

I identified 8 studies (8.88% of the total) that recognized in the negotiation the nature of budget setting processes. In fact they define negotiated budgets as *“any iterative budget-setting process where both superiors and subordinates participate”* (Fisher et al. 2000) and they clarify that *“such processes can vary from a series of budget reviews and revisions to formal negotiation procedures”*.

All these studies use an experimental research design and their experimental setting involves one superior and one subordinate manager. Their research design is grounded in experimental economics, thus they use a very stylized setting that minimizes task descriptions, participants interactions and dialogues, and they use economic incentives to drive participants' behaviors (Maines et al. 2006; Haynes and Kachelmeier 1998). In particular, their tasks are production tasks that consist in decoding numbers into letters (Chow 1983). Their participants are negotiating face to face, but they can communicate only by writing their offers on a negotiation form (except Nabil and Notz 2007). Thus they consider the involvement dimension of participation, by clarifying the iterative nature of the budget-setting process, rather than the communication between superior and subordinate. They take into account also the influence dimension of participation when they compare the initial proposals with the final budget levels obtained by the participants. Their setting uses a slack inducing incentive contract for motivating subordinate behavior and a profit maximizing contract for motivating superior behavior. The reason is given by their assumptions that the subordinate prefers to minimize his level of effort, introducing slack in his proposal to obtain a final budget that is easier to be achieved, while the superior prefers to set a final budget that is challenging but achievable, to avoid demotivating the subordinate.

These studies focus on the economic aspects of budget negotiations (profit maximization and budgetary slack reduction) and they overlook the role of parties' social motives (Sprinkle 2003). For example, they do not consider the parties' pro-social or egoistic orientation (De Dreu et al. 2000) and the parties self or other concerns (Rhoades and Carnevale 1999), which according to the negotiation and organizational behavioral literature are relevant in explaining negotiators behaviors.

Moreover, these studies consider budget negotiations as isolated events. In fact they are all single period studies, except Fisher et al. (2006) that provide evidence on some differences between single period and multi-periods budget

negotiations. In this respect, this study shows that temporal interdependence matters for budget negotiation outcomes and that the expectations of future negotiations between the same parties make them to behave more cooperatively than they would do otherwise. Multi-period negotiations are more realistic than single period negotiations for budget setting, because of the nature of the job relationship that exists between the superior and the subordinate manager. This is not a one shot game between two extraneous parties, but rather a continuative social exchange between familiar parties working in the same organization.

Budget participation construct

Table 3 panel E shows that these studies have conceptualized budget participation as information exchange and budget negotiation process for setting performance standards.

Negotiated budgetary studies assume that subordinates participate in the budget setting process because they take part to budget negotiations. Therefore these studies see budget negotiation as the way through which managers participation is made concrete, because in their experimental settings subordinates negotiate their budget with the superior manager in a budget setting meeting. They recognize that the budget process is a process in which superior and subordinate exchange offers and counter-offers with the purpose of obtaining an agreement on a final budget level.

The notion of agreement is central in negotiation processes. An agreement between the parties is the most important outcome of a negotiation (Pruitt and Carnevale 1993; Druckman 1977; Bazerman e Lewicki 1983; Sebenius 1986). Negotiated budgetary studies (Fisher et al. 2000; 2002a; 2002b; 2006) define the achievement of an agreement between the parties as the exchange of the same offer and counteroffer within four negotiation rounds. This notion of agreement is similar to the agreement for the definition of a common price for a product, in bilateral monopoly situations (Rubin and Brown 1975), though it

assumes a pattern of concession making among the parties within a fixed number of information exchanges, implying the adoption of a distributive approach to the negotiation. However, budgetary negotiations are peculiar because they present both characteristics of distributive and integrative negotiations (Fisher et al. 2006). On the one hand, there is conflict among the parties, because the subordinate wants to obtain a low budget to minimize his level of effort and the superior wants to set a high budget to have subordinate maximizing his performance; on the other hand, budgetary negotiations are mix-motive because the resulting budget have the potential to affect the amount of firm revenues which represents the joint payoff of the parties.

Negotiation literature shows that in many negotiation situation there is integrative potential because parties' interests are neither completely opposed nor completely compatible, allowing agreements that satisfy both parties aspirations to a greater extent than a simple 50-50 compromise (Fisher and Ury 1981; Pruitt and Carnevale 1993; Raiffa 1982). In these cases, negotiation agreements can be achieved exchanging information on parties' preferences and interests such that the integrative potential can be realized (Harinck and Ellemers 2006). Therefore, fixing four sequential offers and counteroffers exchanges as sufficient for achieving an integrative agreement might not be realistic. Negotiated budgetary studies (Fisher et al. 2002; 2006) design their setting such that if the agreement is not achieved within four exchanges of offers and counteroffers, thus the parties do not exchange the same budget level, the parties are in a situation of impasse. In this case the process concludes and the budget is set by the superior manager. These studies hence defined an imposition rule that attributes final authority to the superior manager. Of the eight negotiated budgetary studies identified, only one study (Nabil and Notz 2007) has theoretically conceptualized budget participation as a top management decision. It defines it as the presence of an empowering organizational culture (vs. the presence of a traditional culture), where the empowering culture is determined by two elements: superior's empowering

style, as reflected in the encouragement to freely negotiate; and superior's intervention process in failed negotiations (a process that encourages the search for integrative solutions and avoids imposed compromises that dampen the desire to negotiate). The findings of this study show that the empowering organizational culture produces more integrative budget negotiation outcomes, greater convergence, and greater satisfaction with the outcome than the traditional organizational culture, which is instead characterized by the perception of budget negotiations as distributive zero-sum games.

Implications for studying budget process design

Budget negotiation processes give subordinates a high vs. low level of involvement and influence in setting their budget, depending on how they are designed.

Negotiated budgetary studies, even not citing budget participation, implicitly operationalize it by designing the budget negotiation structure and they concentrate on studying the effects of different negotiation structures on budgetary outcomes (budgetary slack and subordinate performance). Based on goal setting literature, they compare two methods of setting the budgets: unilateral assignment and budget negotiation. In particular, unilateral assigned budgets are budgets that are unilaterally decided by the superior or by the subordinate manager (so they are equal respectively to assigned budgets and to self-set budgets); and negotiated budgets are instead budgets that are defined through a negotiation process between one superior and one subordinate manager where they achieve an agreement. Negotiated budgets are therefore different from all goal setting methods considered in goal setting studies. In particular, they are not equal to participative goals because, when goals are participatively set, the final authority on the budget level does not depend on the achievement of any agreement among the parties, but it is still delegated to the subjects, who did not bear the risk of having an imposed goal. For example, Fisher et al. (2000) compare budgets set unilaterally by the

superior, or by the subordinate manager, with budgets set through a negotiation process, and they find that they differ in a manner consistent with social norms and/or information transfer occurring during the negotiation. More specifically, they find that negotiating the superior obtains a final budget level that is lower than the one he would unilateral assign, because he makes concessions to the subordinate even if he would have the authority not to do so. The authors argue that this is coherent with the information asymmetry between the parties and with the exchange of information from the subordinate to the superior manager. This study also considers the effects of different conditions related to how the budget negotiation begins: it compares two situations, one where the subordinate begins the negotiation and one where the superior begins it. Findings support the view that negotiating the subordinate acts strategically by choosing an initial negotiation position that is lower than the one he would unilaterally choose, while the superior does not. As consequence, the subordinate obtains a budget level closed to his desired level, while the superior obtains a budget level that is below the one he would unilaterally choose. Fisher et al. (2000) allows both the superior and the subordinate to begin and to terminate the negotiation process. The successive studies (Fisher et al. 2002a; 2006) instead allow only the subordinate to begin the negotiation and only the superior to terminate it in the case of impasse.

Fisher et al. (2000; 2002a; 2002b; 2006) design their budget negotiations to take place face to face between superior and subordinate, even if they exchange written offers and counteroffers and the task is carried out through computers. Only Nabil and Notz (2007) made the participants to talk during the negotiation process and tape recorded the dialogues. This decision is a design choice that better approximate the reality of budget processes, but it introduces potential threats to the internal validity of the experiment. Nevertheless, organizational behavior literature has often adopt this approach for the experimental settings, introducing the use of protocols to codify the dialogues,

because this allows to deepening the knowledge of parties' strategic motives and reactions (Weingart et al. 1990).

Therefore, negotiated budgetary studies contribute to the study of budget process design because they recognize in the negotiation the nature of any budget process. Moreover, they highlight what are the characteristics of budget negotiations, especially their structure and their mixed motive setting. Finally, they present some important design elements that companies can use to structure their budget setting process, like which subject is going to make the first proposal in the negotiation; which type of negotiation media is used; which notion of agreement is adopted and who has the final authority to set the budgets in the case of negotiation impasse.

Summary of the contribution of prior literature

Prior studies highlight the following three important aspects of budget process design.

First, it is top management that designs the company budget process. Even if field studies often assume that the structure of the process is exogenously determined and they focus on subordinates' perceptions of involvement and influence, part of them also recognizes that it is top management that decides on the budget process design: for example, on the adoption of a participative budgetary policy (Chong and Tan 2003; 2005), or on the use of participative management structures (Nouri and Parker 1996); or on the degree of target imposition (Brownell 1983; Kren 1992). Experimental studies manipulate the structure of the process creating different experimental conditions for operationalizing the budget participation construct. They often state that subordinates are allowed to have voice, or choice, or vote in the budget setting process, recognizing in this way that the budget process design decision is not taken by them, or by the immediate superior manager, but it is prerogative of the highest organizational levels. It is thus top management that has the necessary authority to decide how to structure the budget process.

Second, top management designs the process with the aim of giving business unit managers a desired level of involvement and influence in setting their business unit budget. Fields studies often state that subordinates are given an opportunity of involvement and influence (e.g. Chong and Chong 2002; Chong et al. 2005) and they recognize that this opportunity gives them the possibility to exercise control and authority on the areas over which they are responsible (Dunk 1992; Dunk 1993; Chong and Chong 2002). They also specify that by designing the budget process a certain degree of participation congruence is obtained such that there is a match between the chosen (desired) level of involvement and influence and the level of involvement and influence that is perceived by the subordinates (Clinton and Hunton 2001). Both budget participation experimental studies and negotiated budgetary studies implicitly have used different budget process settings to operationalize the extent of managers' involvement and influence. In this way they recognized that to obtain a certain (desired) level of managers' involvement in the process and managers' influence on the final budget, it is necessary to differently structure the budget process.

Third, the design of the budget process is a procedural choice. Prior studies show that when top management designs the budget process he has to consider the different activities that subordinates do along the process (budget proposal preparation, budget proposal discussion or negotiation, budget proposal revision and/or approval), because it is by participating in these activities that they are allowed a certain level of involvement and influence on their budget. Some field studies show that when superior and subordinate are deciding on the budget level to be set they use a decision making procedure (Magner et al. 1995, 1996); others maintain that they are involved in an information exchange process (Brownell and Hirst 1986; Brownell and Dunk 1991; Dunk 1989, 1990, 1992; Shields and Young 1993), or a negotiation process that involves a two-way exchange of private information (e.g. Onsi 1973; Lau and Eggleton 2003). These studies and negotiated budgetary studies

sustain that diverse budgetary outcomes are obtained from the design of different budget processes (e.g. unilaterally vs. negotiated budgets). As already argued their experimental procedures are precious sources of information for identifying different budget process characteristics, because they illustrate the multiple activities that subordinates can be allowed to do along the process.

Procedural considerations are not new in the budget participation literature. Prior studies investigate the intervening role of procedural justice in the participation – performance relationship. They specify that employers seek increased employees' participation in order to introduce fairness into the budget process (Lindquist 1995) and that participation is a criterion that is used when evaluating the fairness of a decision making process like budgeting (Magner et al. 1995). Also negotiated budgetary studies recognize that procedural fairness considerations matter for explaining budgetary outcomes (Fisher et al. 2002a). They show that when superior imposes a budget after a failed negotiation, this has a detrimental effect on subordinate performance, because the subordinate perceives the budget setting process as unfair. Therefore the appraisal of any budget process alternative cannot be separated from its procedural evaluation. Based on the evidence of this literature review, this paper argues that when top management designs the budget process he is choosing to adopt a budget process procedure, with which he allows business unit managers to have a certain level of involvement in the process and influence on the final budget. This design choice needs to be interpreted considering a set of alternative procedures that goes from an extreme top down procedure to an extreme bottom up one.

IV. Top down – bottom up budget processes: a new conceptualization

Recently management accounting researchers' attention has been pointed toward the importance of constructs' conceptual specification as a first necessary phase preceding any conceptual model development (Bisbe et al. 2007). This paper defines top down - bottom up budgeting as *the continuum of*

alternative formal procedures top management can choose to adopt for setting business unit budgets through budget proposal preparation, negotiation and approval with business unit managers. By choosing which procedure to use, top management decides the level of involvement in the process and the level of influence on the final budget allowed to the business unit managers.

The first component of this constitutive definition is the word '*continuum*'. It suggests that top down vs. bottom up budgeting is not a dichotomy between two opposite budgetary approaches but it is a set of many alternative budget procedures.

The second component of this definition is given by the words '*formal*' and '*procedure*'. The second one means that they are not one-time states of the budget process (situations), as textbooks define them. They are procedures, thus they are composed by multiple sequential stages. Moreover they are formal procedures, so they are sequences of stages that are recognizable by business unit managers (e.g. declarative procedures) and they are formally defined (e.g. reported in written documents).

The third component of this definition, '*that top management can choose to adopt*', clarifies that the position of the company along the top down - bottom up budgeting continuum is not a matter of a naturally occurring budgetary imprint in the company, but it is generated by conscious actors (top management) budget process design choices. By deciding which formal procedure is going to be adopted in the company, top management expresses his active role of guidance and leadership towards the other managers.

The choice of the formal procedure is done '*for setting business unit budgets*' (fourth component). Top management focus is on the first level of management, on the top of the organizational hierarchy, where the needs and the benefits of having managers participating in the budget process are higher. It is at the highest level that managers have more autonomy and more budget responsibility; so it is to them that top management procedural choice is addressed.

The last part of the definition, '*through budget proposal preparation, negotiation and approval with business unit managers*', specifies that the formal procedure is composed by three phases: budget proposal preparation, budget proposal negotiation and budget proposal approval. Budget proposal preparation is the first phase of the budget process, in which business unit managers are required to prepare a proposal for their business unit budget. Budget proposal negotiation is the intermediate phase of the budget process, in which business unit managers negotiate their budget proposal with the top management (the Ceo and/or the general director). Finally, budget proposal approval is the third phase of the budget process, in which business unit managers budget is finalized and approved.

By choosing which budget process procedure to adopt on the top down – bottom up continuum, top management gives business unit managers involvement and influence in these three phases of the budget process. Hence, both involvement (manager contribution to the process) and influence (manager contribution to the final budget) originate from the way in which the interaction between top management and business unit managers is structured in each phase.

V. Top down – bottom up budget processes: research directions

The definition of the top down - bottom up budget processes as the continuum of procedures that top management can choose to adopt for setting the business unit budgets offers new directions for management accounting research. In particular, it shifts management accounting researchers' attention from studying the managerial implications of the process to the ways the budget process itself can be structured. The benefits of this change are apparent, considering the importance of knowing better the object of interest to fully interpret the resulting effects that it can produce. Prior research limits the budget process to the description of its phases and it focuses on investigating budget participation and its performance effects or budget negotiations and their

economic outcomes. It is not surprising that prior studies' results are conflicting, because they overlook the ways in which the process is structured. Only by understanding top management design decision it is possible to evaluate its implications on managers' behavior and on business unit or company performance.

This study provides multiple research indications for studying budget process design. Among these indications, three are considered to be particularly valuable, because of their expected contribution in this early stage of research. First, it is essential to explore what are the procedures that can be adopted to design different budget processes and what are their characteristics. This research question can be addressed identifying which elements compose and differentiate them.

Prior experimental evidence provides some insights on how different budget settings and different negotiation structures can be designed. However, the insights of these research streams need to be integrated with each other and with the findings of other literatures, like participative decision making, goal setting and negotiation studies, to create a more solid theoretical base. Moreover, more empirical evidence on the reality of budget processes is necessary. As showed by this review, case studies and more generally qualitative evidence on budget process design are very limited. Nevertheless, they represent the best research methodology to collect detailed examples of different budget processes and to in-depth analyze the budget process procedures. They are especially valuable for identifying which are the design elements that better can explain the difference between one procedure and the others and for building exploratory theoretical frameworks.

Second, it is relevant to investigate why (under what circumstances) top management would prefer to choose a certain budget process procedure.

Prior studies focus on understanding in which circumstances budget participation is more beneficial. They dedicate less attention to studying the antecedents of budget participation and the reason for its existence. Shields

and Shields (1998) argue that this is one of the reasons why the findings of these studies were contradictory. This review clarifies that there is no one universal best way for designing the budget process, but that instead there are multiple ways, depending on the position top management wants its company to take on the top down – bottom up continuum of procedures. As consequence, top management will choose to adopt a certain procedure depending on the circumstances in which the company operates. This is coherent with prior contingency theory studies on the design of management control systems (Chenhall 2003). The investigation of the conditions determining a certain top management procedural choice would be a valuable contribution to understand companies' budget process design choices: first, there is neither theory nor evidence on which budget process procedures do companies adopt, and thus on which alternative procedures contribute to companies' survival (selection fit); second, there is neither theory nor evidence on how different contingencies are related to the adoption of different top down – bottom up procedures. In particular, top down – bottom up budget process procedures can be seen as different combinations of design elements, thus they are well suited to be studied using a configurational approach. This would contribute to the debate in the management accounting literature on the importance of using an aggregate approach when studying multi-facets objects as management control systems (Chenhall 2003; Gerdin and Greve 2004).

Third, it is important to study the managerial and behavioral effects of adopting a certain budget process procedure.

Prior studies provide evidence on the managerial implications of the budget process, especially in terms of budget participation and its effects on managerial performance, budgetary slack and job satisfaction. They do not explicitly investigate the effects of different type of budget process procedures on those outcomes. Even when they implicitly have taken them into account, *i)* they did not recognize the role of top management in designing the budget process; *ii)* their change was only limited to one element of the budget process

procedure (e.g. budget discussion yes vs. not, budget proposal yes vs. not, negotiation face-to-face vs. computerized, final authority yes vs. not); *iii*) they do not investigate the effects of that change on the social exchange relationship between the parties; for example justice considerations, pro-social vs. egoistic orientation, self-concerns vs. other party concerns and trust have not been examined. Addressing this research question will contribute to building more integrative theoretical models that allow associating the choice of different budget process procedures with different effects and consequences. Among these effects, this review highlighted the presence of the amount of subordinates involvement and influence in the budget setting process (budget participation as amount). More specifically, it argues that, by choosing a certain procedure, top management is deciding to allow a certain (chosen) level of involvement and influence to the subordinates. This points out that, contrary to prior studies, this paper expects the amount of participation to be an effect of the top management budget process design choice rather, than a driver of the economic outcomes decided by any superior manager. The variation in budget participation measured by prior studies is the difference in the individual perceptions of participation declared by the subordinate managers, however there is a desired level of participation and an actual level of participation (Clinton and Hunton 2001), the first one is what drives top management design choice, the second one is the result of the implementation of the chosen budget process procedure.

VI. Conclusion

This theoretical review focused on the meaning of top down - bottom up budgeting.

In line with recent recommendations for careful construct definition (Bisbe et al. 2007) and theoretical domain specification (Shields and Shields 1998) in management accounting research, this study began by critically evaluating the common textbook definition of top down and bottom up budgetary approaches

and it continued by reviewing extant management accounting literature that provides useful insights on the nature and the characteristics of different types of budget processes. The literature has been organized by research stream (budget participation, negotiated budgetary studies) and methodology (surveys, experiments, case studies).

This review highlighted the assumptions of the different research streams; the ways in which they conceptualized the budget participation construct, which has often been theoretically associated with top down and bottom up budgeting in unclear ways; and the implications for studying the design of the budget process.

This study contributes to the management accounting literature by proposing a new conceptualization of top down - bottom up budgeting as the continuum of alternative formal procedures top management can choose to adopt for setting business unit budgets through budget proposal preparation, negotiation and approval with the business unit managers.

This new conceptualization specifies three main aspects that are important for studying budget process design.

First, it highlights the primary role of top management as decision maker and designer of the budget process. Prior studies have often been confusing in their theoretical conceptualization of budget participation (as amount, as process or as top management decision) and they have measured the managerial implications of the design decision (subordinates perceived level of budgetary participation), rather than investigating the ways in which the budget process has been structured.

Second, it clarifies the nature of top management design decision. It is a procedural choice. Prior studies recognized the role of procedures, rules and policy decisions in the budget process, but they have often seen them as alternative to budget participation (Lau et al. 1995; Mia 1989; O'Connor 1995) or as a formal aspect of budgeting (Merchant 1981, 1984) or as a formal aspect of budget participation (Francis-Gladney et al. 2004). This study explains that

when designing the budget process top management is choosing which procedure to use for setting the business units budgets, thus he is considering the entire budget process with its three phases: budget proposal preparation, negotiation and approval.

Third, it posits that budget participation is an effect of the chosen budget process procedure. Prior studies have focused on studying budget participation and its effects, mainly on managerial performance, budgetary slack and job satisfaction. This study specifies that it is top management that, by choosing which procedure to adopt for the business unit budget setting process, gives business unit managers' involvement in the process and decides the amount of influence they have on their budget.

This new conceptualization of top down – bottom up budgeting provides many indications for future research on budget process design and, in particular, this study proposes the investigation of three main research areas.

First, it calls for exploring the characteristics of the procedures that can be adopted to design different budget processes.

Second, it proposes to identify the reasons and circumstances in which top management would prefer to choose a certain budget process procedure.

Third, it suggests to study the managerial and behavioural effects of adopting a certain budget process procedure.

Therefore, by proposing this new conceptualization, this study contributes to the management accounting literature because it provides both a new perspective and new research directions for studying budget process design.

Table 1– Trend publications (top tier vs. no top tier journals), by method

Total publications				Trend top tier publications		Trend no top tier publications	
1972	1982	12	13.33%	11	91.66%	1	8.33%
1983	1993	33	36.66%	27	81.81%	6	18.18%
1994	2008	45	50.00%	12	26.66%	33	73.33%
90				50		40	

Top tier publications	50
Experiments:	17
<i>Accounting, Organizations and Society</i>	5
<i>Journal of Accounting Research</i>	2
<i>The Accounting Review</i>	10
Surveys:	33
<i>Accounting, Organizations and Society</i>	18
<i>Journal of Accounting Research</i>	5
<i>The Accounting Review</i>	10

No top tier publications	40
Experiments:	6
<i>Journal of Management Accounting Research</i>	2
<i>Decision Sciences</i>	1
<i>Advances in Accounting</i>	1
<i>Advances in Management Accounting</i>	1
<i>British Accounting Review</i>	1
Surveys:	33
<i>Accounting & Business Research</i>	6
<i>Advances in Accounting</i>	6
<i>Advances in Management Accounting</i>	5
<i>Behavioral Research in Accounting</i>	4
<i>Journal of Management Accounting Research</i>	3
<i>British Accounting Review</i>	3
Interviews:	1

Table 2 – Trend publications (top tier vs. no top tier journals), by method and level of analysis

<i>Top tier journals</i>					
Method	Level of analysis		Method	Level of analysis	
Experiments	Individual	13	Surveys	Individual	29
	Business unit	0		Business unit	2
	Team	4		Team	1
	Firm	0		Firm	1
		17			33
<i>No top tier journals</i>					
Method	Level of analysis		Method	Level of analysis	
Experiments	Individual	2	Surveys	Individual	30
	Business unit	2		Business unit	1
	Team	1		Team	0
	Firm	1		Firm	2
		6			33

Table 3 Panel A – Budget participation construct in field studies using Milani (1975)

Budget participation construct in field studies using Milani (1975)		Number	%	% on 90
Amount	amount of involvement and influence in the budget setting process	1		
	amount of influence in the budget setting process	2		
	amount of involvement in the budget setting process	6		
	amount of involvement and influence on a jointly set budget	2		
	budget communication and budget influence	2	25%	14.44%
		13		
Process	process of giving involvement and influence in setting the budget	2		
	information exchange and negotiation over the standard	5		
	information exchange during the budget setting process	3		
	information exchange for bottom up request for resources	4		
	communication between superior and subordinate	2		
	social interaction for a joint decision process	1		
	process of knowledge sharing	1		
		18	34.62%	20.00%
Top management decision	opportunity of giving involvement and influence in setting the budget	1		
	act and opportunity of giving involvement and influence in budget setting	1		
	allow to exercise direction, control and authority	3		
	budgetary policy or procedure	4		
	degree of target imposition in budget setting	4		
	decision making style and leadership style (authoritarian vs. participative)	5		
		18	34.62%	20.00%
Need	subordinate need to participate	1		1.11%
Not clearly stated		2		2.22%
	Total	52^a	100.00%	57.78%

^a Of these 52 studies: 45 use Milani (1975); 3 use a three items version; 2 use a five items version; 2 use Milani (1975) with different anchors.

Number	Papers
1	P.Brownell (1983) AOS
2	V.K.Chong et al. (2006); K. Milani (1975)
6	V.K.Chong and D.M.Johnson (2007); C.M.Lau and S.L.C. Tan (2006); H.Nouri and R.J. Parker (1998); J.J. Quirin et al. (2004); K.Wentzel (2002); K.Wentzel (2004)
2	F.A.Gul et al. (1995); L.Mia (1989)
2	A.S.Maiga (2005); A.S.Maiga and F.A.Jacobs (2008)
13	
2	V.K.Chong (2002); R.J.Parker and L.Kyj (2006)
5	P.Brownell and McInnes (1986); A.S.Dunk (1990); A.S.Dunk (1993); C.M.Lau and C.Buckland (2000); C.M.Lau and I.R.C.Eggleton (2003)
3	R.H.Chenhall and P.Brownell (1988); L.Kren and A.S.Maiga (2007); M.A.Leach-Lopez et al. (2007)
4	P.Brownell (1985); P.Brownell and M.Hirst (1986); P.Brownell and A.S.Dunk (1991); A.S.Dunk (1989)
2	L.Kren (2003); C.M.Lau and E.W.Lim (2002)
1	R.H.Chenhall (1986)
1	A.Agbejule and L.Saarikoski (2006)
18	
1	V.K.Chong et al. (2005)
1	V.K.Chong and K.M.Chong (2002)
3	P.Brownell (1982); A.S.Dunk (1992); A.S.Dunk (1993)
4	C.M.Lau and S.L.C.Tan (2003); C.M.Lau and S.L.C.Tan (2005); N.Magner et al. (1995)
4	P.Brownell (1983) JAR; L.Kren (1992); C.M.Lau et al. (1995); C.M.Lau et al. (1997)
5	G.L.Harrison (1972); V.Frucot and W.T.Shearon (1991); N.Magner et al. (1996); L.Mia (1988); N.O'Connor (1995)
18	
1	C.M.Lau and J.J. Tan (1998)
2	P.Brownell (1982) JAR; V.Frucot and S.White (2006)
52	Total

Table 3 Panel B – Budget participation construct in field studies not using Milani (1975)

Budget participation construct in field studies not using Milani (1975)				
Amount		Number	%	% on 90
	amount of influence and involvement in the budget setting process	3		
	amount of influence in the budget setting process	1		
	amount of involvement in the budget setting process	2		
	budget communication and budget influence	1		
	budget proposal preparation and influence	1		
		8	57.14%	8.88%
Process				
	process of giving involvement and influence in setting the budget	1		
	information exchange during the budget setting process	2		
		3	21.43%	3.33%
Top management decision				
	exercise choice	1		
	degree of target imposition in budget setting	1		
	degree of participation congruence	1		
		3	21.43%	3.33%
	Total	14	100.00%	15.55%
Number	Papers			
3	K.A.Merchant (1981); K.A.Merchant (1984); J.F.Shields and M.D.Shields (1998)			
1	S.R.Lyne (1992)			
2	D.G.Searfoss (1974); D.G.Searfoss and R.M.Monczka (1973)			
1	L.Francis-Gladney et al. (2004)			
1	I.Kenis (1979)			
8				
1	M.Onsi (1973)			
2	A.S.Dunk (1992); M.D.Shields and S.M.Young (1993)			
3				
1	P.Brownell and K.A.Merchant (1990)			
1	N.Aranya (1990)			
1	B.D.Clinton and J.E.Hunton (2001)			
3				
14	Total			

Table 3 Panel C – Budget participation construct in experimental studies

Budget participation construct in experimental studies		Number	%	% on 90
Amount	amount of influence in the budget setting process	2		
		2	13.33%	2.22%
Process	consultation and social interaction in the budget process	3		
		3	20%	3.33%
Top management decision	extent of control exercise choice budgeting regime degree of target imposition in budget setting structure of the budget setting meeting	4 2 1 1 2		
		10	66.67%	11.11%
Total		15	100.00%	16.66%

Number	Papers
2	P.Brownell (1981); M.F.Foran and D.T.Decoster (1974)
2	
3	S.Byrne and F.Damon (2008); T.Libby (1999); M.P.Licata et al. (1986)
3	
4	D.J.Cherrington and O.J.Cherrington (1973); F.P.Daroca (1984); L.Kren (1990); T.M.Lindquist (1995)
2	M.G.Tiller (1983); S.M.Young (1985)
1	D.C.Kim (1992)
1	W.S.Waller (1988)
2	C.C.Chen and K.T.Jone (2004); C.W.Chow et al. (1988)
10	
15 Total	

Table 3 Panel D – Budget participation construct in case studies

Poon et al. (2001) – interviews		Number	%	% on 90
Process	social interaction to resolve budget-related conflicts	1		
Total		1	100.00%	1.11%

Table 3 Panel E – Negotiated budgetary studies

Negotiated budgetary studies		Number	%	% on 90
Process	information exchange and negotiation over the standard	7		
		7	87.5%	7.77%
Top management decision	empowering culture	1		
		1	12.5%	1.11%
Total		8	100.00%	8.88%

Number	Papers
7	P.Chalos and S.Haka (1979); J.G.Fisher et al. (2000); J.G.Fisher et al. (2002) AOS; J.G.Fisher et al. (2002) TAR; J.G.Fisher et al. (2006); F.W.Rankin et al. (2008); S.M.Young et al. (1993)
1	E.Nabil and W.W.Notz (2007)
8	Total

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APPENDIX - Review of 90 studies on budget participation and budget negotiations

Study <i>in alphabetical order</i>	Theoretical construct	Measure	Method and level of analysis	Sample / task	Respondents
Agbejule and Saarikoski (2006)	Budget participation is a process in which participating individuals share information and knowledge.	Measure Milani (1975), but different anchors: e.g. which category below describes the reasoning provided by your superior when budget revisions are made? The reasoning is 1 = very arbitrary and /or illogical; 7 = very sound and /or logical.	<ul style="list-style-type: none"> Survey Individual 	15 different business units in companies from different Finnish manufacturing sectors.	124 middle-level managers from different functional areas who bore responsibility for managing the costs and profit of their own responsibility area; 83/124 usable.
Byrne and Damon (2008)	Consultative budgeting process: a decision process in which subordinates are involved, but the superior makes the final decision = risk of pseudo-participation.	<ul style="list-style-type: none"> - Subordinate involvement - Voice (tentative budget set by superior but possibility of communicating subordinate preferred budget) vs. no voice (budget set and imposed by superior). - Explanation (rationale) vs. no explanation for the set budget; same vs. different across 4 periods. - Superior final authority. 	<ul style="list-style-type: none"> Experiment Individual 	2X2 between-subjects factorial design (voice vs. not voice; explanation vs. not explanation) and a 2X4 within subjects factorial design (same explanation vs. different explanation period 1 to 4)	171 undergraduate students

Brownell (1981)	Amount of influence an individual had on a final budget which is jointly set.	Extent to which subjects' recommendation is reflected in the final budget	<ul style="list-style-type: none"> Experiment Individual 	Two decisions: 1) recommendation for sales budget (proposal submission); 2) subordinate choice of the price.	Undergraduate students and managerial personnel from a manufacturing company
Brownell (1982) JAR	Budgetary participation in the planning phase.	Milani (1975), 2 factors: 1 is "Reasoning given by superior for budget revisions".	<ul style="list-style-type: none"> Survey Individual 	Managers from a large San Francisco Bay Area manufacturing company.	48 cost center managers
Brownell (1982) TAR	Non participative structure; Non-participative process involving procedure specifications and rules setting; high means participation substantial control over the budget, low participation denies such decentralized highly participative process.	Milani and Hofstede (only Milani is used)	<ul style="list-style-type: none"> Survey Individual 	Middle level cost center managers in a large manufacturing company.	48 middle level cost center managers in manufacturing and distribution functions: 8 separate functional divisions in the organization, chosen by plant management
Brownell (1983) AOS	Involvement and influence in budget formulation It is a role characteristic of each subordinate.	Milani (1975) and Hofstede (1967)	<ul style="list-style-type: none"> Survey Individual 	One large manufacturing company.	48 middle level cost center managers in manufacturing and distribution functions

Brownell (1983) JAR	Participation of lower management in budget setting alleviates the consequences of imposed, non participative budget targets (legitimization). Top down: imposed, non participative budget targets.	Milani (1975) 1 factor found; Hofstede (1967)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Unknown number of corporations	224 middle-level managers, 122/140 usable
Brownell (1985)	Decentralized decision making and bottom up request for resources.	Milani 1975 (and Hofstede 1967 as check)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	One large multinational in the electronics and computer industry.	Marketing and R&D managers
Brownell and Hirst (1986)	Information exchange: opportunity for managers to gain access to resources (bottom up requests) which can be used to buffer task performance from the unanticipated effects of others, and to introduce new and better means for addressing the tasks.	Milani (1975) and Hofstede (1967)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Line managers in one large manufacturing company headquartered in Sydney, Australia.	92 line managers from a wide variety of functions (i.e., marketing, production, research, and administration); 76 responses

Brownell and McInnes (1986)	Participative set goal: opportunity to negotiate a budget easy to attain; opportunity to influence the goal and exercise control; ego involvement; legitimization of negative sanctions.	Milani and Hofstede They do not correlate	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Middle level managers of three companies, two in the electronic industry and one in the steel industry	224 middle level managers from different functional areas selected by management (140 returned).
Brownell and Dunk (1991)	Information exchange: opportunity for managers to gain access to resources (bottom up requests) which can be used to buffer task performance from the unanticipated effects of others, and to introduce new and better means to address the tasks.	Milani (1975)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Manufacturing organizations in the Sydney, Australia, metropolitan area employing more than 100 employees (Kompass Australia 1988)	118 managers (79 responses, 67%), representing a total of 46 companies.

Brownell and Merchant (1990)	Top-down vs. negotiation; it is a mean of pooling the experience and knowledge of budgeted managers and their superiors and it offers the potential to assist in resolving these uncertainties. Way to exercise choices making departmental level decisions.	Modified version of Swieringa and Moncur's [1975] instrument: sum of the factor scores on 2 items: (1) "the budget is finalized only when I am satisfied with it" and (2) "new budgets include changes I have suggested."	<ul style="list-style-type: none"> Survey Business unit level 	19 electronics firms	201 production department managers (146 usable, 72.74%).
Chalos and Daka (1989)	Negotiation methodology of a budgetary standards: negotiated vs. imposed budgetary standards. Negotiation process, depending on whether the budget is imposed (superior choice and final authority) or participatively set = negotiated.	2 conditions: imposition (standard is set by superior), participation (the two are negotiating the standard and then the superior sets the standard)	<ul style="list-style-type: none"> Experiment, 2X2X2 design Firm level of analysis 	Standard negotiation between one superior and one subordinate	240 MBA students, pairs of 1 superior (firm) and 1 subordinate

Chen and Jones (2004)	Participation as structure of the budget setting meeting. There is not an individual target.	<ul style="list-style-type: none"> - Individual estimates of the group performance are required (bottom up proposals for the group estimate). - No communication allowed during the meeting. - Group performance target assigned (equal to the average of the three group members proposed group estimates and the formula is known by all subjects). 	<ul style="list-style-type: none"> ▪ Experiment, 3 (feedback) X 2 (interdependence) within subject design ▪ Team level 	Independent vs. joint (team) construction of toy castles with Lego blocks	144 undergraduate management students
Chenhall (1986)	Joint decision process, based on personal exchanges and social interaction between dyads (superior and subordinate).	Milani (1975); Authoritarianism F-scale Adorno et al. (1950); Foran and Decoster (1974)	<ul style="list-style-type: none"> ▪ Survey ▪ Dyadic analysis 	9 manufacturing organizations in a single industry	Departmental managers and supervisors , 39 pairs (27 profit centers & 12 cost centers).
Chenhall and Brownell (1988)	Information exchanges over the task (not quantified); means' ends approaches (alternatives' comparison); and performance evaluation criteria.	Milani (1975)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual level 	Middle level managers from a large manufacturing company	36 middle level managers (profit centers of the different divisions)
Cherrington and Cherrington (1973)	Participation: amount of control in budget formation (no control to complete control).	Four conditions of budgetary control: imposed; pseudo-participation; lenient; group based.	<ul style="list-style-type: none"> ▪ Experiment 3x4 design: reward structure and budgetary control ▪ Team level 	two tasks, 1 superior and 3 subordinates (group)	230 undergraduate students

Chong (2002)	Def.: Process whereby subordinates are given the opportunities to get involved in and have influence on the budget setting process (Brownell 1982). Participation is seen as a cognitive mechanism for gathering, exchanging, disseminating job-relevant information.	Milani (1975), 2 factors (influence and involvement) with different effect on performance: involvement with influence (+); without involvement without influence (-).	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Randomly selected manufacturing firms located in Sydney, Australia, from Kompas Australia (1998).	160 middle-level managers: 2 from each firm, from different functional areas. 97/160 usable.
Chong and Chong (2002)	Participation in the budgeting process is defined as an act and an opportunity. Giving involvement and influence in the process, it increases subordinates' feeling of control and ego-involvement over the budgets.	Milani (1975) 2 items, not loading correctly: reasoning of budget revision (Job-relevant information), Influence on the final budget (budget goals commitment).	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	80 manufacturing companies randomly drawn from Kompas Australia (1996/7) business directory.	120 middle-level managers. 79/120 usable.
Chong and Johnson (2007)	Participation is a valuable motivational tool in ensuring subordinates' acceptance of the budgets goals.	Milani (1975)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	185 manufacturing firms randomly chosen from 2001 Who's Who of Australia electronic database.	355 middle level managers. 135/355 usable.

Chong et al. (2005)	Budgetary participation as a process whereby subordinates are given the opportunity to get involved in and have influence on the budget setting process (Brownell 1982).	Composite score of budget participation six-item scale (Milani 1975). Dimensional analysis of involvement and influence (involvement is the dimension that is principally responsible for the results): 3 items loaded on each of the two factors.	<ul style="list-style-type: none"> Survey Individual 	Kompass (1999) directory, services sector. Australia business financial	141 senior managers. 77/141 usable.
Chong et al. (2006)	Participative budgeting as influence on the budget setting process.	3 items from Milani (1975), like Kren (1992) and Magner et al. (1996)	<ul style="list-style-type: none"> Survey Individual 	141 firms randomly selected from Kompas Australia (1999) business directory	141 senior managers. 74/141 usable.
Chow Cooper Waller (1988)	Participative budgeting as budget setting meeting between one superior and one subordinate manager.	Budget setting meeting where superior makes a first proposal, subordinate has the time to think and tell the superior the budget he chooses (subordinate choice and final authority).	<ul style="list-style-type: none"> Experiment, 2X2 full factorial design Individual 	Task adapted by Chow (1983)	40 college students

Clinton and Hunton (2001)	There is an actual degree of participative budgeting (a choice made by decision makers) and a perceived degree of participative budgeting (subordinates perception). <i>Degree of participation congruence:</i> match between actual and desired level of participation, given the context.	Bruns and Waterhouse (1975), 6 items on each of these three dimensions: participation in planning, participation in budgeting, interaction with superior regarding budget influence.	<ul style="list-style-type: none"> Web survey Company level 	386 firms in the publishing, manufacturing, chemical and product industries	386 accounting personnel (from accountant to CFO), 1 respondent by each firm.
Daroca (1984)	Informational influence on group decision making in a participative budgeting context.	<ul style="list-style-type: none"> Individual choice Group decision (voting rule: consensual decision) Individual final decision Leader groups (vs. leaderless groups) based on informational influence.	<ul style="list-style-type: none"> Experiment Team level 	Setting budget for R&D and marketing unit.	120 undergraduate students
Dunk (1989)	Replication of Brownell and Hirst (1986): information exchange	Milani (1975): theoretical range 6-30, so the scale was anchored from 1 to 5.	<ul style="list-style-type: none"> Survey Individual 	30 firms randomly selected from consumer product manufacturing organizations located in the north of Britain.	26 production managers

Dunk (1990)	Superiors: gain access to subordinates' private information; Subordinates: negotiate with the superior over the standards for performance evaluation and negotiate easier operating budgets (manipulate the participation process); Agreement (dyadic analysis?)	Milani (1975): theoretical range 6-30, so the scale was anchored from 1 to 5.	<ul style="list-style-type: none"> Survey Individual 	30 randomly selected product organizations located in the north of the United Kingdom.	26 cost center managers (manufacturing)
Dunk (1992)	Mapping and encoding of manufacturing processes (means-end relationships).	Reliance on budgetary control (Hopwood 1972)	<ul style="list-style-type: none"> Survey Business unit level 	30 manufacturing organizations located in the north of Britain were randomly selected	26 production managers
Dunk (1992) BAR	Participative budgetary process: an effective vehicle for exercising control over activities that managers are responsible for. Participation may enable managers' authority to be exercised.	Milani (1975): range 1-30.	<ul style="list-style-type: none"> Survey Individual 	30 consumer product manufacturing organizations were drawn from firms located in the north of Britain	26/30 production managers

Dunk (1993) AOS	Information exchange (factors taken into account to set the objectives, for problem solving and role clarification); opportunity to influence plans and their means of implementation as well as the activities of the area of responsibility, increasing the capacity to exercise direction and control.	Milani (1975) 1 factor, correlated with Hofstede (1967)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	61 manufacturing organizations employing more than 100 people located in the Sydney, Australia, metropolitan area listed in the Kompas Australia business directory	118 managers (79 respondents)
Dunk (1993) TAR	Information exchange on local information used for standard setting. Negotiation (Lukka 1988).	Milani (1975) 1 factor, correlated with Hofstede (1967)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	61 manufacturing organizations employing more than 100 people located in the Sydney, Australia, metropolitan area listed in the Kompas Australia business directory.	118 managers (79 respondents)

Fisher et al. (2000)	Participation = unilateral assignment vs. budgetary negotiation process	<p>Negotiation structure:</p> <ul style="list-style-type: none"> - Subordinate vs. superior initial proposal; - Negotiation face to face written on a negotiation form (no dialogue) - 4 sequential offer-counteroffers for agreement - If no agreement, superior vs. subordinate final authority. 	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	3X2 design. Face to face budget negotiation between one superior and one subordinate managers. Task adapted by Chow (1983)	185 undergraduate students
Fisher et al. (2002a)	Participation = Budget negotiation between superior and subordinate dyads.	<p>Negotiation structure:</p> <ul style="list-style-type: none"> - Subordinate initial proposal (estimate); - Negotiation face to face written on a negotiation form - 4 sequential offer-counteroffers for agreement - If no agreement, superior final authority. 	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	Face to face budget negotiation between one superior and one subordinate manager. Task adapted by Chow (1983) 2 conditions: information asymmetry on subordinate capability (present vs. absent).	104 undergraduate students
Fisher et al (2002b)	Participation = Budget negotiation between superior and subordinate dyads.	<p>Negotiation structure:</p> <ul style="list-style-type: none"> - Subordinate initial proposal (estimate); - Negotiation face to face written on a negotiation form - 4 sequential offer-counteroffers for agreement - If no agreement, superior final authority. <p>-Information on coworkers.</p>	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	2 (resource allocation by superior or fixed amount of time) X2 (information asymmetry about other subordinates bids and counteroffers and superior offers and counteroffers and the final budget level) X3 (periods) mixed factorial design.	164 participants

Fisher et al. (2006)	Participation = Budget negotiations between superior and subordinate dyads.	<p>Negotiation structure:</p> <ul style="list-style-type: none"> - Subordinate initial proposal (estimate); - Negotiation face to face written on a negotiation form - 4 sequential offer-counteroffers for agreement - If no agreement, superior final authority. - Single vs. 3 periods negotiation 	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	<p>Face to face budget negotiation between one superior and one subordinate manager. Task adapted by Chow (1983)</p> <p>2 conditions: single period (no expectations) vs. multiple periods (first year is with expectations of future negotiations)</p>	58 undergraduate students
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Foran and Decoster (1974)	<p>It is a process of joint decision-making by two or more parties in which the decisions have future effects on those making them (Vroom). Amount of participation: the amount of influence on the decision and plans agreed upon.</p> <ul style="list-style-type: none"> • Communication channels and media • Individual vs. group budget • Superior final authority • Bottom-up proposals • Free choice <p><i>Multi-step process:</i> participation (influence); involvement (ego involvement); free choice of proposed standards and feedback about the results of planning.</p>	<p>Groups X oral communication to achieve consensus on an overall estimate, everybody talk with the superior at the same time VS. group X written communication, individual talk with superior, ending when superior accepts each subordinate estimate (proposals)</p>	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual and team level 	<p>2X2X2 design, channels (wheels vs. all), authoritarianism leader (high vs. low), type of feedback (favorable vs. unfavorable).</p>	<p>81 undergraduate accounting students, 2 leaders and others as group</p>
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Francis-Gladney et al. (2004)	<p>Budgetary communication with the immediate supervisor (<i>upward-flowing</i>), budgetary explanation, and budgetary feedback (<i>downward-flowing</i>). Budgetary participation is the extent to which a manager has an opportunity to voice opinions about and have influence on his or her budget.</p> <p>Budget meetings are the “forced (e.g. corporate policy)” dimension of budgetary participation (Shields and Shields 1998).</p>	<p>- <i>Budgetary participation with the immediate supervisor</i> (8 items based on previous budgeting studies rephrased in an active way) (e.g. Brownell and Merchant 1990; Kren 1992; Milani 1975; Swieringa and Moncur 1975).</p> <p>- <i>Mandatory budget meetings</i> (necessary under a literal or strict interpretation of written policies) <i>with supervisor and budget meetings with budget staff</i> measured with the following items: “In the budget preparation process, what is the minimum number of times that you have to meet: (1) with your immediate supervisor (with or without budget officials and/or other managers being present); and (2) only with budget officials?”</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>766 business operating locations with annual sales exceeding \$50 million, each from a unique company, was drawn from a database of over 10,000 operating locations maintained by a large utility for marketing purposes.</p>	<p>148 managers employed by 94 different companies.</p> <p>Two questionnaires sent to the location’s chief accounting officer for distribution to two different managers with significant budget responsibility.</p>
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Frucot and Shearon (1991)	Participative decision making (decentralized decision making and fewer rules): it is a management technique. Involvement in the participatory budgeting process, which is part of the firm communication system.	Milani (1975)	<ul style="list-style-type: none"> Survey Individual 	Mexico city area, 21 companies.	83 managers different functional areas (34 in financial area), sample selected using contacts of three banks, so not random (83 usable responses)
Frucot and White (2006)	Participative budgeting. When participation is used, its level is still predominantly defined at the top of the organization.	Milani (1975)	<ul style="list-style-type: none"> Survey Individual 	Unspecified number of corporations (it is probably 184).	184 managers executive program in a US university, 178/184 usable.
Gul et al. (1995)	Participation: decentralized decision making (<i>control package</i>). Amount of influence and involvement that an individual manager has on a jointly-set budget (Milani 1975).	Milani (1975)	<ul style="list-style-type: none"> Survey Individual 	37 Hong Kong manufacturing companies (not random)	170 questionnaires to Chinese Managers, 54 returned (32%); 11 were supervisors, 20 middle managers and 17 senior managers.
Harrison (1992)	<ul style="list-style-type: none"> Participative decision making Consultation, voice, influence Group decisions vs. individual decisions 	Milani (1975)	<ul style="list-style-type: none"> Survey Individual 	Department and retail stores in Singapore (117/142) and Australia (101/137).	Matched samples of middle-level managers in the merchandising and buying functions

Kenis (1979)	Participation as a budgetary goal characteristic: <i>amount and form of participation</i> (budget style of upper management). Def.: Extent to which managers participate in preparing the budget and influence the budget goals of their responsibility centers.	Steers (1976)	<ul style="list-style-type: none"> Survey Individual 	Plants in New Jersey Philadelphia area (19 plants of 16 companies).	Department heads and managers controllers of the plants. 169/298 questionnaires
Kim (1992)	Participative budgeting: specific managerial style in which subordinates are permitted to participate with their superiors in setting their performance budget (Locke and Schweiger 1979). Participation is a budgeting regime where subordinates select performance goals jointly with their superiors (Young 1985).	Subordinates self-set the type of budget they prefer (tight vs. loose).	<ul style="list-style-type: none"> Experiment Individual 	Task: budgeted billable hours.	81 undergraduate seniors majoring in accounting at one of the big ten universities in the USA

Kren (1990)	Participation in setting performance goals: as perceived control of individuals over a goal.	Bottom up proposal (accepted immediately) vs. assigned budget: they were asked to give two values. Implied subordinate or superior initial and final authority.	<ul style="list-style-type: none"> Experiment Business unit level 	Cognitive difficult task 2X2 design: incentives (budget based or none), participation (participative imposed) vs.	44 students as segment managers in a decentralized corporation (segment profit and loss)
Kren (1992)	Participative goal setting vs. imposition: <ul style="list-style-type: none"> opportunity to influence the budget before it is finalized; preparation of a participatory budget (active role); involvement in considering and evaluating alternative budget goals. 	3 items version of Milani (1975), similar to participative decision making scale (Vroom)	<ul style="list-style-type: none"> Survey Individual 	96 Fortune 500 manufacturing firms	Maximum 2 executive-level profit center managers (at the hierarchical level immediately below the CEO and with budget responsibility). Identified from the Dun and Bradstreet Reference Book of Corporate Management and randomly selected for each company. Tot. 192 managers, 80 responses from 63 companies

Kren (2003)	Communication between superiors and subordinates. There is a demand for participation.	<p>Variation of Milani (1975), from (1) = strongly disagree to (7) = strongly agree.</p> <ul style="list-style-type: none"> - I am involved in setting all of my budget. - My superior clearly explains budget revisions. - I have frequent budget-related discussions with my superior. - I have a great deal of influence on my final budget. - My contribution to the budget is very important. - My superior initiates frequent discussions when the budget is being prepared. 	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	44 S&P 500 firms	92 profit center managers. 49/92 usable answers.
Kren and Maiga (2007)	Participation is an organizational solution to the information asymmetry (a way for superior to get access to local information, if subordinate communicates or reveals it).	<p>Variation of Milani (1975) as Kren (2002).</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	44 S&P 500 firms	92 profit center managers. 49/92 usable answers.

Lau and Buckland (2000)	Communication channel between superior and subordinate and the opportunity to influence budget targets through consultation and negotiation. Decentralized decision making power and authority (participative structures, 'democracy')	Milani (1975), 1 factor found	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	50 mining companies were selected randomly from the Norwegian oil and gas industry.	Three different functional heads (150) . 71/150 usable.
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Lau and Eggleton (2003)	<p>Budgetary participation is likely to be a <i>bargaining process</i> involving a two-way exchange of private information between the superior and the subordinate (vs. only from the subordinate to the superior). Exchange of private information to bargain and arrive at budget targets that are acceptable to both parties.</p> <p>Superior always has the option of reverting to a 'top-down', <i>non-participative style of budget setting</i>, denying the manager the chance to exert influence and acquire the alleged benefits from the act of participating.</p>	(Milani 1975), 1 factor found	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>237 Australian manufacturing organizations and 177 Singaporean manufacturing organizations with more than 100 employees, randomly selected from Kompas Australia and Kompas Singapore.</p>	<p>240 production managers: 120 and 120. 103 (52 and 51) usable.</p>
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Lau and Lim (2002)	High vs. low budgetary participation. Participation is allowed. It allows subordinate of opinions, arguments and concerns (voice) and superior communication of explanations.	Milani (1975), 1 factor found	<ul style="list-style-type: none"> Survey Individual 	70 manufacturing companies employing more than 100 employees, randomly chosen from the list of manufacturing companies published in Kompas Australia (1997).	183 functional heads. 83/183 usable responses.
Lau and Tan (1998)	Participation is to subordinates need to participate in the budget target setting process, to ensure the budget targets were reasonable. (Even participating), subordinates were likely to be suspicious and might react negatively to imposed budget targets.	Milani (1975), 1 factor found	<ul style="list-style-type: none"> Survey Individual 	20 financial institutions in Australia and 30 financial institutions in Singapore.	Randomly selected sample of 320 middle-level managers, 160 (104 usable) from Australia and 160 (88 usable) from Singapore.

Lau and Tan (2003)	<p>Def.: Subordinates opportunity to interact and communicate with their superiors and to influence their budget targets. Whenever top management adopts an evaluative style which places heavy reliance on accounting data (high budget emphasis) it also adopts a <i>high budgetary participative policy</i>.</p>	Milani (1975), 1 factor found.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	100 organizations with more than 100 employees randomly selected from manufacturing organizations in Kompas Singapore (2000).	Average of 3 functional heads from each company. 152/300 usable respondents.
Lau and Tan (2005)	<p>Procedures involving participation are procedures which place control of the process in the hand of those affected by it: they give considerable freedom of communication (voice), enable more involvement and independence. There is an act of allowing participation in the decision process.</p>	Milani (1975), 1 factor found.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Sample of 100 organizations selected randomly from the list of manufacturing organizations in Kompas Singapore 2000.	Average of 3 functional heads from each company. 152/300 usable respondents.
Lau and Tan (2006)	<p>- 'Voice'</p> <ul style="list-style-type: none"> - Involvement - Open discussion and information exchange - Communication 	Milani (1975), no factor analysis	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	100 manufacturing organizations	300 senior managers (functional heads), 152/300 usable respondents.

Lau et al. (1995)	<p>Participative vs. imposed budgets</p> <ul style="list-style-type: none"> • identification of cause-effect relationships; • rules, policies and procedures, as substitutes of participation; • high budgetary participation strategy. 	Milani (1975)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	80 Singapore manufacturing companies with more than 100 employees each; sampled randomly from the list of manufacturing firms published in Kompas: Register of Industry and Commerce of Singapore (1992).	240 functional heads: 3 respondents in each company: heads of production, sales or marketing and a staff functional area (e.g. personnel, administrative or accounting). 129/240 (54%).
Lau et al. (1997)	<p>Participation as the opposite of hierarchies = equality of decision making power.</p> <p>This study replicates Brownell and Dunk (1991) findings.</p>	Milani (1975), no factor analysis.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	80 Singapore-located manufacturing companies with more than 100 employees, randomly selected from Kompas Singapore (1992), and 62 companies, representing all the Western Australian manufacturing companies with more than 100 employees listed in Kompas Australia (1992).	Three different functional heads (production, marketing and service) from each company: 410 divided in 240 (107 usable) from Singapore and 170 (90 usable) from Australia.
Leach Lopez et al. (2007)	There is an information communication aspect of budget participation.	Milani (1975), no factor analysis	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Companies in the US and US controlled companies in Mexico.	45 US middle managers working in USA and 102 Mexican middle managers working for US controlled companies in Mexico.

Libby (1999)	<p>Consultative budgeting process, defined by Vroom (1983) as a decision process in which subordinates are involved (participatory process), but the superior makes the final decision = risk of pseudo-participation.</p>	<ul style="list-style-type: none"> - Subordinate involvement - Voice (tentative budget set by superior but possibility of communicating subordinate preferred budget) vs. no voice (budget set and imposed by superior). - Explanation (rationale) vs. no explanation for the set budget. - Superior final authority. 	<ul style="list-style-type: none"> Experiment Individual 	2X2 design (voice vs. not voice; explanation vs. not explanation).	171 undergraduate students
Licata et al. (1986)	<p>Participation involves a face to face interaction of two individuals, a superior and a subordinate, for the purpose of establishing a budget that is acceptable to both parties.</p> <p>The effectiveness of such participation depends on the manner in which both superior and subordinate act in and react to the participation process.</p>	<p>Participation process:</p> <ul style="list-style-type: none"> - Superior initial proposal - Face to face budget meeting - Subordinate estimates of performance - Superior final authority (assigned goal). <p>Participation (outcome of the process) is subordinate influence over the final budget = (superior final budget assigned - superior initial estimates of the budget).</p>	<ul style="list-style-type: none"> Experiment Individual 	1 factor design: internal vs. external superior. Participants were all supervisors; the subordinate role was played by an actress.	127 undergraduate accounting students

Lindquist (1995)	Participation in decision making (high process-control). Any level less than full decision control is 'pseudo participation'. Continuum: no input, voice, vote, voice and vote, choice.	Different levels of participation in decision making (process-control): voice, vote. Vote (proposal presentation) requires students to keep in mind production requirements (proposal constraints).	Experiment ▪ Individual	2X2X2 full factorial design: fair vs. unfair budget, voice vs. not voice, vote vs. not vote. Task involved building a toy castle from Lego-Blocs.	111 full-time undergraduate students, reduced set of 86 (43 men and 43 women) was obtained after a necessary yoking of subjects.
Lyne (1992)	- Desired vs. allowed participation - Influence on the budget	1) Within your company various groups will have influence when the budget is being drawn up. Indicate how much influence each of the following groups has in your company (from 1 to 7): • Top central management • Top divisional management • People throughout the firm • Accountants • Any other group (please state) 2) Now indicate how much influence you think each group ought to have when the budget is being drawn up.	Survey ▪ Individual	13 companies listed in a national trade directory in six countries in the south west of England (size criteria: annual turnover greater than £10m and more than 500 employees).	80 respondents from 3 users groups: accountants at all levels, senior non financial managers and first line managers (the lowest level of management where there is direct involvement with budget data in the course of normal work, e.g. heads of departments or cost-centres).

Magner et al. (1996)	<ul style="list-style-type: none"> - Participative decision making - Interactions with the superior - Communication by the subordinates. 	3 items scale by Kren (1992), adapted by Milani (1975)	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Unspecified number of corporations, max. 16.	95 organizational managers from more than 20 countries (max 6 managers from each company), different functional areas and hierarchical levels.
Maiga (2005)	Budget participation as budget communication (the extent to which information is exchanged between superiors and subunit managers about factors that affect the budget) and budget influence (the degree to which subunit managers perceive that they have command over the process that establishes the criteria under which they may be evaluated).	Milani (1975), 2 factors as in Hassel and Cunningham (1996, 1993) the two dimensions are conceptually independent (multinational corporations), thus this study develops hypotheses for each dimension.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	2 Fortune 500 firms located in the U.S.	237 strategic business unit managers selected by corporate headquarters. Criteria: (1) each participant should have budget responsibility in the subunit; (2) each unit would be an investment center; (3) each manager must have held the position for at least 2 years with the business unit. 173/237 usable responses.

Maiga and Jacobs (2008)	<ul style="list-style-type: none"> - Positive communication - Delegated authority - Information exchange 	Milani (1975), 1 factor found	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Manufacturing companies in the U.S.A. selected by mailing list from the Industry Week series on manufacturing excellence.	650 managers (plant managers; manufacturing, operations, marketing, research, distribution managers). Criteria: (1) subunit budget responsibility; and (2) subunit as investment center. 251/650 usable responses.
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Merchant (1981)	<p>Corporate level of analysis. It is middle level managers' participation to budget-related activities:</p> <ul style="list-style-type: none"> • influence on budget plans; • personal involvement in budgeting; • time spent budgeting. <p>Administrative vs. interpersonal control strategy. Big companies, higher participation, but infrequent interpersonal interactions.</p>	<p>Modified version instrument by Swieringa and Moncur (1975)</p> <p>3 characteristics of formalized budgeting:</p> <ol style="list-style-type: none"> 1. <i>Importance of Meeting Budget</i> <ul style="list-style-type: none"> • Required explanations of variances • Reactions to expected budget overruns • Link with corporate reward system 2. <i>Formality of Communications</i> <ul style="list-style-type: none"> • Infrequent interactions with subordinates • Infrequent interactions with superiors 3. <i>Participation</i> <ul style="list-style-type: none"> • Influence on budget plans • Personal involvement in budgeting • Time spent budgeting. 	<ul style="list-style-type: none"> ▪ Survey ▪ Firm level 	<p>19 organizations in the electronics industry. The industry is chosen because of tremendous diversity in product markets faced and production technologies used in different departments in the same firm. In addition electronics firms tend to be decentralized, so managers have significant autonomy and are relatively low in the managerial hierarchy.</p>	<p>Middle manufacturing managers at the lowest managerial level. 170/201 usable responses.</p>
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Merchant (1984)	<p>Departmental level of analysis. Formality of budget use includes: greater importance placed on meeting the budget; more formal budget communications patterns; and greater manager participation in budgeting activities.</p> <p>Poor performers: lower budgeting autonomy (lower participation) and greater requirements to explain budget variances.</p>	<p>Modified version instrument by Swieringa and Moncur (1975) 3 characteristics of formalized budgeting (same as Merchant 1981).</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Business unit level 	<p>19 organizations in the electronics industry. The industry is chosen because of tremendous diversity in product markets faced and production technologies used in different departments in the same firm. In addition electronics firms tend to be decentralized, so managers have significant autonomy and are relatively low in the managerial hierarchy.</p>	<p>Manufacturing managers at the lowest managerial level. 170/201 usable responses.</p>
Mia (1988)	<p>Budget participation as a mechanism for information exchange. Budgeting style: participative vs. non participative (authoritarian)</p>	<p>Milani (1975)</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>One large quoted Australian company, doing business in diversified fields, it has 5 operating divisions (profit centers) engaged in importing and distribution of automobiles, and manufacturing and selling of furniture, plastic building products, gardening equipment and electrical goods.</p>	<p>Lower and middle level managers of different functional areas. 83/115 answers.</p>

Mia (1989)	<p>Participative process. Mechanism for information exchange (subordinates get more information on their job). Participation in decision making.</p> <p>Rules, policies and standard can substitute for the need of participation.</p> <p>Def.: amount of influence and involvement that an employee perceives he or she has on a jointly-set budget (Milani 1975; Brownell 1979).</p>	<p>Milani (1975), 1 factor found</p> <p>Participative style as company selection criteria, and opportunity to participate as respondent selection criteria.</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>6 companies in New Zealand: 1 food manufacturer, 1 furniture and wood producer, 1 automobiles assembler, 2 retail services providers and 1 banking services provider. These companies have been: (a) using a comprehensive budgeting systems; (b) using a participative style of budgeting in all departments/ sections.</p>	<p>93 middle-level managers.</p> <p>2 criteria for selecting participants:</p> <p>(1) had been working for the company for at least 6 months; and (2) was holding a management position and was responsible for preparing and/or implementing the budget or target for his department.</p> <p>76/93 responses.</p>
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Milani (1975)	Extent to which a subordinate is allowed to select his own courses of action. Continuum from no influence to complete subordinate influence (degree).	<ul style="list-style-type: none"> • the portion of the budget he is involved in setting; • kinds of reasoning provided to the foreman by a superior when the budget is revised; • frequency of budget related discussions initiated by the foreman; • amount of influence the foreman has on the final budget; • importance of foreman's contribution to the budget; • frequency of budget related discussions initiated by the foreman's superior when the budgets are being set. 	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	1 large producer of heavy equipment	88 foremen at one manufacturing plant
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Nabil and Notz (2007)	Participation as the presence of an empowering culture characterized by norms of decentralized hierarchical structures, consultation, and negotiation. Negotiation and bargaining are encouraged and desirable, reflecting senior management belief in the strength of negotiated solutions (Schein 1992).	<ul style="list-style-type: none"> - Free negotiation among subordinates, with superior final authority. - Different forms of superior intervention (compromise; final offer). - Negotiation on multiple issues (logrolling). - 2 negotiation rounds, impasse offer requested by both parties to get the permission to negotiate the second round. 	<ul style="list-style-type: none"> ▪ Experiment ▪ Business unit level 	2X2 design. Face-to-face negotiation of a reallocation of 2 mil. \$ budget cut among two 'mega units' (departments) of a university	84 subjects forming 42 dyads
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Nace et al. (1995)	Participation in a decision making procedure. Participation is more than voice and influence: voice and influence in decision making are closely related to participation; budgetary participation encompasses the concept of influence. Opportunity to participate and budgetary procedures depend on the immediate supervisor, but also on many officials above him.	Milani (1975), 1 factor found.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	44 persons attending a 10 week executive development program for international managers sponsored by a major European university and 12 persons who had previously attended the program.	Managers at geographic locations (average of 2081 employees) and with an average of 135 subjects under their formal authority. They belong to different functions and different organizational levels.
Nissim Aranya (1990)	Participation: degree to which budget objectives are imposed. The role of superiors in participation and evaluative style should be coherent.	Dermer (1973) 6 items measure and Swieringa and Moncur (1972) scale found to be irrelevant in the interviews (there is not superior-subordinate relationship).	<ul style="list-style-type: none"> ▪ Survey ▪ Franchisees level (Business Units) 	Large retail drug company, 235 franchisees store in Canada.	223 managers (100 responses).

Nouri and Parker (1996)	<p>'High involvement' organization: participatory management structures give low level managers great input in decision-making. Subordinates have influence on and are involved in setting the budget (submit budget estimate).</p>	Milani (1975), no factor analysis.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	One large United States based multinational firm.	203 managers from different functional area, selected by the long-term planning committee. Sent out by internal mail system. 135/203 usable answers.
Nouri and Parker (1998)	<p>Participative decision making as subordinate's involvement in the creation of budget.</p>	Milani (1975), no factor analysis.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	One large multinational corporation engaged primarily in chemical production.	203 (135) American managers and supervisors identified by top management as having budget responsibilities. Respondents were chosen from a variety of functional areas.

O'Connor (1995)	<p>Participation: participative/consultative style of management both in the planning and the performance evaluation stage of the budget cycle.</p> <p>Participation vs. detailed and complete instructions on how to do the job.</p>	<p>Participation in planning (Milani, 2 factors, and Hofstede) and participation in performance evaluation (level of importance when the performance is being evaluated by the superior: (a) comparative performance of other managers at the subordinate's level; (b) subordinate's explanation of deviations from budget, including any planned corrective action; and (c) uncontrollable factors which explain deviations from budget).</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>62 manufacturing firms in Singapore, local and foreign companies. For the foreign companies: companies whose home country head office falls in a country identified by Hofstede (1980) as having a moderate to low power distance score.</p>	<p>282 Middle-level managers, 180/282 responses</p>
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Onsi (1973)	<p>Managers influence on the budget process through bargaining.</p> <p>Budget communication and its need, indicates the dimensions of: budget procedure, budget participation, and the relevancy of budget in decision-making.</p>	<p>Budget participation / communication (4 items):</p> <ul style="list-style-type: none"> - I receive "goals" from top management that I use as a basis for developing the departmental budget (proposal constraints). - I attend meetings of line management where budget variances are discussed - My boss listens to my ideas for improving the budget and increasing productivity (voice) - In this plant my private interests are taken account as much as possible. 	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>7 multinational corporations having major divisions in Upstate New York. Manufacturing companies, with decentralized organizational systems and formal budget systems.</p>	<p>132 managers who reported directly to divisional managers selected from</p> <ul style="list-style-type: none"> - Group A (44): divisional controllers, budget directors, and cost analysts; - Group B (44): manufacturing managers; - Group C (44): sales managers. <p>107/132 responses.</p>
Parker and Kyj (2006)	<p>Budget participation increases upward information sharing (process with which individuals are involved and have influence on setting the budgets that directly affect them). Frequent and wide range discussions.</p>	<p>Milani (1975), 1 factor found as much as possible.</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>3 firms (1 trucking, 2 manufacturing)</p>	<p>70/114 usable questionnaires.</p>

Poon et al. (2001)	Participative budgeting: the process whereby a manager has involvement and influence on the determination of his or her budget. Budget participation is modeled with a goal interdependence dynamics model.	<ul style="list-style-type: none"> - Type of goals (cooperative, competitive and interdependent). - Budget ceiling (target and constraints) - Budget committee 	<ul style="list-style-type: none"> ▪ Interviews ▪ Project level 	A large listed public utility in Hong Kong	64 interviews with project managers (qualitative and quantitative analysis)
Quirin et. al (2004)	<ul style="list-style-type: none"> - Information gathering - Involvement in the creation of the budget - Sense of input - Degree of control 	Milani (1975), anchored as 1 = very little and 7 = very much.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	15 large U.S. companies	240 managers (16 randomly selected employees from each company). 98/240 usable responses.
Rankin et al. (2008)	Participative budgeting as a negotiation process between superior and subordinate managers.	<ul style="list-style-type: none"> - Negotiation process - Mode of communication - Final authority (subordinate vs. superior: acceptance vs. rejection) 	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	2X2 factorial design (budget communication: factual assertion Yes/No; final authority: superior/subordinate)	120 undergraduate students, computer based

Searfoss (1976)	Superior-subordinate interaction (involvement), because of superior goal directive and goal evaluative effort = form of leadership.	Pressure induced via the budget process (Fertakis 1967), 15 items asked to superiors: <ul style="list-style-type: none"> - budget preparation (3 items: e.g. I have assisted in preparing the budget for my department) - changes to the budget (3 items: e.g. new budgets have included changes I have suggested) - superior behavior (3 items: e.g. my superior has listened to my problems in budget matters) - budget variances (3 items: e.g. I have personally investigated budget variances in my department) - budget wording (1 item) - reception of budget information by telephone calls (1 item). 	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	Manufacturing divisions in 5 different industrial organizations. The five divisions represented three different industries.	Plant sites data collection from the all population of the manufacturing divisions: 75 general foremen and 267 foremen.
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Searfoss and Monczka (1973)	<p>Perceived participation in the budget setting process is only a part of the perceived participation in the overall budget process (e.g. participation in budget performance evaluation). Discussions regarding goals (involvement) have little effect on performance unless coupled with goal setting.</p> <p>The level of participation is higher at the higher organizational levels (from foreman to general foreman to superintendent).</p>	<p>Measure of participation by general foremen (superior) 15 items, as in Searfoss (1976)</p>	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	<p>Manufacturing divisions in 5 different industrial organizations. The five divisions represented three different industries.</p>	<p>Plant sites data collection from the all population of the manufacturing divisions: 75 general foremen, 267 foremen and some superintendents.</p>
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Shields and Young (1993)	Participation: it is a process for transferring information from subordinate to superior. It exists because the superior needs to learn about the environment.	5 items mix of Milani and Brownell measures: <i>Anchored: (1) "Extremely unimportant" and (7) "Extremely important":</i> (1) How important is it the manager's contribution to the setting of the budgets? (2) How important is it that budgets include changes that were suggested by the managers? (3) How important is it that a budget is not finalized until a manager is satisfied with it? <i>Anchored by: (1) "Not at all influential" and (7) "Extremely influential":</i> (4) How influential do you feel that the managers are in setting the budgets? <i>Anchored by: (1) "Extremely infrequently" and (7) "Extremely frequently":</i> (5) How frequently does central management initiate budget-related discussions with the managers?	<ul style="list-style-type: none"> ▪ Survey ▪ Firm level 	487 firms from Standard and Poor's 500	98 usable responses from corporate controllers
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Shields and Shields (1998)	Participative budgeting: process in which a manager is involved with, and has influence on, the determination of his or her budget. Several dimensions of participation in the OB literature: voluntary or forced; formal or informal; direct or indirect; degree (or form) (e.g. none, consultation, joint, self-selection); content; vertical vs. horizontal; and individual vs. group (Locke and Schweiger 1979; Lawler et al. 1989; Wagner 1994).	None. It measures the reasons why participative budgeting exists and it is used.	<ul style="list-style-type: none"> Survey Individual 	Variations on all dimensions (size, industry, respondent hierarchical level, type of responsibility centers/ budget)	60 managers, graduates of an Executive MBA program (small and non random sample), 63/75 usable answers.
Tiller (1983)	Participation = perceived decision freedom (choice) vs. No participation = assigned performance level. There are different modes of participative budgeting.	Assigned (non participation) vs. allowed choice of a budgeted performance level between 650 and 400 grams (participation); high vs. low pay condition; high vs. low budget (650 vs. 400 grams).	<ul style="list-style-type: none"> Experiment Individual 	2X2X2 completely crossed factorial design; production task (sort randomly ordered, colored cards according to color)	152 subjects (19 in each of the 8 experimental conditions)

Young (1985)	Participation: process whereby the superior selects the form of the compensation contract and the subordinate is permitted to select a specific value for each parameter in the contract (Baiman 1982). Participation = self-selection of the work standard.	<ul style="list-style-type: none"> - Subordinates budget proposal (estimate) - Meeting with the manager used for providing performance feedback and wait for subordinates self-selecting work standards - Subordinates self-set work standard = subordinate final authority limited to incentive contract parameters. 	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	Negotiation of a compensation contract between one superior, one subordinate and a manager. 2 conditions asymmetric information: performance report communicated to the manager or no communication. Two production periods.	43 full-time MBA students (40 usable)
Young et al. (1993)	Participative budgeting as negotiation process involving groups of subordinates.	<ul style="list-style-type: none"> - Group bottom up proposals (best estimate); - Feedback on performance level in the previous period; - Negotiation among group members until a work standard is chosen; - Communication of the standard to the supervisor (group self-set). 	<ul style="list-style-type: none"> ▪ Experiment ▪ Team level 	3X2 design: intra-group cooperation (present, absent); intergroup competitive feedback (always ahead, just ahead or behind, always behind the leading group); three production periods.	96 undergraduate students
Waller (1988)	Participative budgeting process: goals assigned by the experimenter vs. participatively set (goal revised individually by the participants).	Superior initial and final authority vs. superior proposal and subordinate final authority.	<ul style="list-style-type: none"> ▪ Experiment ▪ Individual 	Workers who performed a production task for three periods; two incentive schemes (truth vs. slack inducing).	51 upper-level accounting major students.

Wentzel (2002)	Participation has a crucial role in whether adjustments were made to team set budget targets. Team set budget revisions are possible through direct interaction between the supervising Vice-presidents and the responsibility area managers.	Milani (1975), five items to measure the level of involvement (missing item: kinds of reasoning provided by my superior when budget is revised); no factor analysis.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	One large urban hospital that was in the middle of a 5 year restructuring program, focus on downsized budgets.	88 (74) cost center managers (area Before each manager had almost complete control over his budget and participated in setting it.
Wentzel (2004)	Participatory budget setting, where managers hold private information (information exchange is possible).	Milani (1975), five items to measure the level of involvement (missing item: kinds of reasoning provided by my superior when budget is revised); no factor analysis.	<ul style="list-style-type: none"> ▪ Survey ▪ Individual 	One large urban hospital that was in the middle of a 5 year restructuring program, focus on downsized budgets.	88 (74) cost center managers (area Before each manager had almost complete control over his budget and participated in setting it.

CHAPTER 2

Drivers of resistance to changing the budget proposal: A case study of a negotiated budgetary process

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January 2010

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Abstract

This study focuses on the budget proposal and it investigates the drivers of manager's behaviour in budget negotiations, measuring it as manager's resistance to changing the initial budget proposal. Based on cognitive dissonance theory and negotiation theory, this study develops three propositions that are investigated with a case study on an Italian subsidiary of a multinational company.

Data were collected with a multi-method approach using interviews, questionnaires, archival data and direct observation.

Findings indicate that manager's perceived freedom of choice of the initial budget proposal and manager's negotiation of a proposed budget with each of the low level manager he supervises, before negotiating his budget proposal with the superior, increase manager's resistance to changing the initial budget proposal, in the negotiation; and that, instead, manager's perceived level of initial information asymmetry with the superior reduces manager's resistance to changing the initial budget proposal.

Keywords

Negotiated budgetary process, resistance to change, budget proposal, information asymmetry, budget participation.

I. Introduction

Almost all middle-large enterprises have formal budgeting programs (Umapathy 1987) whose outcome is generally defined through negotiations between superiors and subordinates (Howell and Sakurai 1992; Anthony and Govindarajan 1994).

Despite the high frequency of using negotiations to discuss and define the budgets, there are few empirical studies concerning the effects of negotiated budget processes (Fisher et al. 2000; 2002a 2002b; 2006). These studies show how negotiated budgets are different from unilaterally defined ones in terms of targets' set and economic consequences (budgetary slack and performance) and how superior and subordinate use different negotiation strategies, coherently with the nature of information asymmetry existent between them.

However, the evidence provided so far is lacking in many respects (Fisher et al. 2002a; 2006).

First, prior studies assume that the parties decide their budget proposal immediately during the budget negotiation. However in reality there is a phase, prior to the budget negotiation, in which the parties are preparing their budget proposal, so that their expectations for their final budgets get concrete in the determination of the proposed budget. How this phase of the budget process is designed and which effects this phase has on the managers' behaviour in budget negotiations and on the negotiation outcomes is unknown. In this respect, negotiation literature (Bazerman et al. 2000) highlights the essentiality of the budget proposal preparation phase because investigating how the budget proposal is determined allows understanding the choices of the parties' initial positions in the budget negotiation. Moreover, it is the budget proposal that, by being modified during the negotiation process, represents the concrete expression of managers' bargaining behaviour and it summarizes the results of the parties' social interaction. Therefore, it is only focusing on the budget proposal preparation and on its changes that management accounting

researchers can better understand managers' behaviour in budget negotiations and their resulting behavioural and economic outcomes.

Second, prior studies do not address the role of the psychological factors affecting individual's behaviour in budget negotiations, but in reality negotiator's behavior is the result of the psychological processes that are activated in his mind when facing the budget process procedure and the other party's bargaining behaviour. In this respect, negotiation theory shows the importance of considering negotiator's cognition to explain individual reactions to a negotiation process (Bazerman et al. 2000; Carnevale and Pruitt 1992). Cognitive dissonance theory (Curhan et al. 2004) and the theories on the psychological biases related to the exchange and the interpretation of the information (Tetlock et al. 1989; Svenson 1992) are useful for exploring such processes.

Third, prior studies are all laboratory experiments that use students as subjects, so they adopt a very stylized setting for studying budget negotiations. However, field studies on how firms are designing and managing managers' involvement and influence in the budget process offer a richer and complementary evidence, as they allow a better understanding of the organizational factors and the micro-level mechanisms involved in the budget negotiations.

This study extends prior negotiated budgetary studies (Fisher et al. 2000, 2002a, 2002b, 2006) in four ways. First, it investigates how the budget proposal preparation phase of the budget process is designed and which effects this design has on managers' behaviour in the budget negotiation. Second, it addresses the role of the psychological factors influencing individual's behaviour during budget negotiations, considering manager's perception of free choice and commitment to the initial budget proposal, and the psychological biases that are influencing the process of information sharing between the parties. Third, it investigates what happens to (middle) manager's behaviour during the negotiation of his budget proposal with the superior, when first he has (or he has not) negotiated a proposed budget with each of the low level

manager he supervises. Fourth, it is methodologically based on a case study design of a firm's negotiated budgetary process involving managers, instead of using an experimental design conducted with students. This study integrates prior negotiated budgetary studies and it also extends prior participative budgeting studies, because it provides evidence of what managers concretely do when they participate in the budget process and how the process can be designed to allow them a certain level of involvement and influence in setting their budget.

The purpose of this study is therefore to investigate the factors driving manager's behaviour in budget negotiations, measuring it as the degree of manager's resistance to changing the initial budget proposal. This is done exploring the micro-level mechanisms involved in the negotiated budgetary process with reference to three research questions: what are the effects of manager's perceived freedom of choice of the initial budget proposal on manager's bargaining behaviour? What happens to manager's bargaining behaviour when a (middle) manager negotiates a proposed budget with each of the low level managers he supervises before of negotiating his budget proposal with the superior (vs. he only negotiates his budget proposal with the superior)? What are the effects of the manager's perceived level of initial information asymmetry on manager's bargaining behaviour?

More specifically, the first research question is relevant because manager's bargaining behaviour is driven by the psychological processes that are activated in his mind when he is negotiating his budget. In this respect, participative budgeting studies applying cognitive dissonance theory (Tiller 1983) highlight the importance of taking into account manager's initiative (choice) when investigating manager's reactions to the information provided by others.

As regards the second research question, following also Fisher et al. (2002a) suggestion, this study investigates an issue which has not been explored by management accounting research yet: the effects of having a (middle) manager negotiating his budget proposal with the superior, when first he has (or has not)

negotiated a proposed budget with each of the low level manager he supervises. This issue is important because the budget process consists not only in the budget negotiation and approval phases, as prior negotiated budgetary studies assume, but also in a preparation phase, where the (middle) manager is involved by preparing his initial budget proposal. What he does in the preparation phase to decide his budget proposal and which effects this has on his behaviour when he is negotiating it with his superior is unknown and it deserves attention, given also the sequential nature of the budget process.

Concerning the third research question, Fisher et al. (2002a) studied the effects of information asymmetry on the level of budgetary slack and subordinate performance in budget negotiations. However, it is unknown what effects the information asymmetry has on manager's bargaining behaviour, measured as the degree of manager's resistance to changing the initial budget proposal, and which psychological processes related to information exchange and interpretation it can generate. For example, prior studies overlooked that the perception of the initial discrepancy of information between the parties creates the perception of the size of the bargaining conflict (Rappoport 1965; Summers 1968) and hence it influences their compromising behaviour and the final budget level.

Negotiation theory and cognitive psychology are used as theoretical foundations of this study, considering cognitive dissonance theory (Festinger 1957; Aronson 1968), the psychological role of commitment, the psychological biases related to the process of information exchange and interpretation (Tetlock et al. 1989; Svenson 1992) and subjects' resistance to change studies (Jermias 2001).

The research design is a single case study on an Italian subsidiary of a multinational company. Data were collected with a multi-method approach using interviews, questionnaires, archival data and direct observation.

The main contribution of this study is to highlight what are the drivers of manager's behaviour in the budget negotiation, measuring it as the degree of resistance to changing the initial budget proposal.

First, this study highlights that giving a manager the possibility to freely choose an initial budget proposal to be presented in the negotiation increases manager's feelings of emotional attachment and commitment to that budget proposal and hence it increases his resistance to changing it during the negotiation. Second, it shows that having a manager negotiating his budget proposal, after that he has first negotiated a proposed budget with each of the low level managers he supervises, increases his feeling of responsibility for the results of the negotiation of the initial budget proposal with his superior, such that he becomes more resistant to changing that proposal during the negotiation.

This study, therefore, points out that top management should pay attention when designing the budget process, because these choices directly influence the manager's bargaining behaviour: during the negotiation the manager adapts his negotiation strategy being steadier on his initial position; hence he is more resistant to changing the initial budget proposal, reducing the likelihood of achieving a consensual agreement between the parties.

Third, differently from prior studies (Fisher et al. 2002a), this study recognizes that information asymmetry has a positive role in budget negotiations, because the initial discrepancy in information is a lever that stimulating the information sharing between the parties contributes to reducing manager's resistance to changing the budget proposal and, consequently, to facilitating the achievement of the agreement. This study shows that this happens because there are psychological processes influencing manager's adjustments of his resistance to changing the initial budget proposal. When the manager perceives low informational difference with the counterpart at the beginning of the negotiation (low initial information asymmetry), he is more confident in the goodness of his budget proposal, and he is less open-minded in interpreting the information exchanged during the negotiation, such that he is less likely to reevaluate his initial budget proposal. When he perceives a high informational difference with the counterpart at the beginning of the negotiation (high initial information

asymmetry), he is less confident in the goodness of his budget proposal, and more open-minded in interpreting the information exchanged during the negotiation, such that he is more likely to reevaluate his initial budget proposal. Therefore, the objective for top management should not be to reduce as much as possible the existent information asymmetry between superior and subordinates, because this is a source of slack creation (Fisher et al. 2002a), but instead to design the process considering that the (perceived) information asymmetry is a lever for stimulating the information sharing between the managerial levels.

Fourth, this study focuses on the process in which the managers are allowed to be involved and have influence on their budget, through the budget proposal preparation, negotiation and approval phases. Therefore, it adopts a new perspective for studying budget process design by integrating budget participation and negotiated budgetary studies, because only by investigating what it means for the managers to participate in the budget process (to negotiate his budget) and how this participation concretely takes place (with budget negotiations), it is possible to understand how a more effective and efficient design of the budget process can be obtained. In this respect, this study emphasizes that the manager's involvement and influence in preparing the budget proposal and in negotiating it, foster the vertical information sharing among the different managerial levels, and it has been perceived as being important, motivating and useful for reaching the targets. In addition, it suggests the relevance of deciding who between the parties begins the negotiation by presenting at first his budget proposal. This possibility allowed to the middle managers has been an important aspect of manager's perceived contribution to the process, because it gives him a psychological advantage in the negotiation by allowing the revelation of his budget preference, without any influence of the initial budget proposal of the counterpart.

The remainder of the paper is organized as follows. Section two reviews the literature on participative budgeting and negotiated budget processes. Section

three uses cognitive dissonance theory and negotiation theory to develop three exploratory propositions on the drivers of manager's behaviour in budget negotiations. Section four describes the research design and the procedure used for the data collection and analysis. Section five illustrates the case study, describing the company and its budget process. Finally, section six and seven contain findings and conclusions.

II. Literature review

Management accounting research has widely studied budget participation and its effects on managerial performance, but the empirical results of these studies are still showing contradictory findings. Some authors (Brownell 1981 and 1982; Schuler and Kim 1976; Bass and Leavitt 1963; Becker and Green 1962) found the existence of a positive significant relationship between budget participation and performance, others (Kenis 1979; Ivancevich 1976; Steers 1976; Milani 1975; Foran and Decoster 1974) did not find any significant difference in results using participative vs. non participative budgeting. Creating even more confusion, some others found a negative relationship, highlighting that an authoritarian goal setting process could lead to higher performance compared to situations where these goals have been participatively obtained (Blumenfield and Leudly 1969; Bryan and Locke 1967; Stedry 1960).

Over the years researchers' attention has focused on the identification of the possible intervening variables in this relationship and, more recently, it concentrates on understanding the antecedents of budget participation (Shields and Shields 1998) and the multiple roles of budget (Hansen and Van der Stede 2004; Chong et al. 2006). These studies showed that the effects of budget participation are contingent on many organizational, individual and environmental characteristics and that budgets are multi-functional. However, they theoretically conceptualized budget participation in three different ways: as the amount of involvement and influence of the subordinates on their final

budget (e.g. Brownell 1983), as the process through which subordinates are given involvement and influence over their budget (e.g. Chong 2002; Parker and Kyj 2006), and as top management decision to allow the subordinates to have involvement and influence over their budget (e.g. Dunk 1992; 1993). Even if these studies used different conceptualizations for the same construct, they have always measured it with the same measure by Milani (1975). In this way, they do not allow the researchers to recognize the active role of top management in designing the budget process, allowing a certain level of involvement and influence to the managers. In addition, they focused on the effects of budget participation, while not providing evidence on how this budget participation is implemented and managed inside organizations. Therefore, it is not clear what managers do during the budget process and how they are concretely involved and they are allowed to have influence on their budget.

In this respect, survey evidence shows that almost all middle-large enterprises have formal budgeting programs whose outcome is generally defined through negotiations between superiors and subordinates (Umapathy 1987, Howell and Sakurai 1992).

Despite the high frequency of using negotiations to discuss and define the budget, management accounting research has not recognized the importance of negotiated budgetary studies for understanding budget process design. Evidence of this situation is the complete separation between the two research streams: participative budgeting and negotiated budgets.

This study argues that management accounting research can gain a lot from integrating the two streams, because negotiated budgetary studies provide a new perspective for exploring the design and the implementation of managers' participation in the budget process. They do not explicitly investigate budget participation but, based on goal setting studies (Locke and Latham 1990; Latham et al. 1982; Latham et al. 1988), they assume that the presence of managers' participation corresponds to the use of budget negotiations and that the absence of participation corresponds to unilateral budget setting. Therefore,

they provide a new perspective, because they focus on what managers concretely do when taking part to the budget process: they are involved and have influence on their budget by negotiating the budget for their organizational unit.

Chalos and Daka (1989) has been the first study applying a negotiation methodology to the study of budgeting. Assuming that participatively set goals are equal to negotiated ones, it experimentally compares negotiated vs. imposed budgetary standards in the presence of skills and 'state of nature' asymmetries. This study shows that budgetary negotiations give higher return both to the firm (superior) and to the manager (subordinate), when environmental uncertainty exists.

More recently, the laboratory studies concerning the effects of negotiated budgetary processes (Fisher et al. 2000; 2002a; 2002b; 2006) show that the budget level obtained using a negotiation process is different from the one obtained using a unilateral settlement by one of the parties. They argue that this is due to superior and subordinate use of different negotiated strategies and it is coherent with the nature of information asymmetry existent between them. Fisher et al. (2000) finds that the superior tends to choose an initial position which is not significantly different from his desired budget level (the one he would unilaterally choose) and that he makes concessions to the subordinate during the process, which lead him far away from his desired level. These concessions are a reply to the information provided by the subordinate during the process and/or they are made to respect a social norm of reciprocity. The subordinate instead chooses an initial position significantly inferior to his desired level (the one he would unilaterally choose) and this allows him to make concessions to the superior. These concessions increase his initial proposed target level, making his final budget near to his real objective. These differences in the initial positions of the parties have found to be smaller in negotiations where an agreement has been reached, compared to the case of no agreement. Fisher et al. (2002a) specifically investigates the effects of

information asymmetry on negotiated budgets and it identifies them in different initial positions of the parties involved (coherently with Fisher et al. 2000) and in the generation of higher level of budgetary slack.

Negotiated budgetary studies design their budget process by defining their experimental setting and they compare different conditions and negotiation structures. For example, Fisher et al. (2000) compare a setting that allows subordinate to begin the negotiation, it includes four exchanges of offers and counteroffers and, in the case of impasse, it gives the final authority on the budget level to the superior (or to the subordinate); with a setting that allows the superior (or the subordinate) to choose a budget level and to have final authority on that decision (unilaterally set budget). However, their setting is exogenously determined and it is assumed to be unchanged over multiple periods (Fisher et al. 2006). Therefore, these studies do not address the fundamental questions of who is deciding on the way in which the budget process is going to be structured and how this structure of the process can be changed or modified.

Negotiated budgetary studies focus on the economic consequences (budgetary slack and performance) of using budget negotiations. For example, they show that the budgetary slack is higher when the subordinate accepts the budget and the superior has the final authority for defining it, compared to the opposite case. They also present evidence of a negative impact on performance, when the superior imposes the budget after a negotiation failure between the parties (Fisher et al. 2000) and they attribute this result to justice considerations (Fisher et al. 2002a). Moreover, they clarify that, after the budget negotiation, the subordinate has to exercise an effort to obtain its pay-off, and the level of effort he is willing to exercise is a function of the negotiation process (Fisher et al. 2000) and of his level of commitment to the final budget generated by that process (Jermias 2001). Therefore, studying better the negotiation process in which managers are involved and have influence on their budget is important for understanding its economic outcomes. Prior studies however address the

economic consequences of budget negotiations before of investigating what are the effects of using budget negotiations on managers' bargaining behaviour. This is a big omission because the reasons behind those economic outcomes are assumed rather than being empirically tested. For this reason it is unknown which psychological processes are activated in managers' mind when confronted with budget negotiations and what are the factors that drive those psychological processes.

This study argues that the managers adapt their behaviour to the negotiated budgetary process in which they are involved and through which they can influence their budget, and they do so by reacting both to the used budget process procedure and to the other party's bargaining behaviour.

Concerning the first aspect, according to prior negotiated budgetary studies the budget process consists in separate budget negotiations, where budgets are negotiated between the single subordinate and his immediate superior. However, the budget process has more phases than the one of budget negotiation.

Management accounting textbooks describe the budget process in different ways but they always refer to three main phases: the phase of budget proposal preparation, the phase of budget proposal negotiation and the phase of budget proposal approval (Drury 2008; Anthony and Govindarajan 2007).

Negotiated budgetary studies focus on the second and the third of these phases, because they consider managers involvement and influence on their budget in the budget negotiation which can conclude, or with an agreement between the parties on the final budget level, or with an imposition by one of them on a chosen budget level.

These studies hence overlook the first phase, because they assume that the parties decide their budget proposal immediately during the meeting. However the phase prior to the budget negotiation is very important, because it represents the phase in which parties' expectations for their final budgets get concrete in the determination of the proposed budget. How this phase of the

budget process is structured and which effects this has, on the managers' behaviour in the budget negotiation and on the negotiation outcomes, is unknown.

This study argues that it is essential to explore how managers' define their budget proposal for three main reasons. First, this is the first phase of the budget process in which they are involved and they have influence on their budget, hence investigating how it is structured is helpful for better understanding managers' participation in the overall budget process. Second, the budget proposal defined in the first phase is the one that is then used as reference in the budget negotiation, thus investigating how it is determined allows better understanding of the choices of the parties' initial positions in the budget negotiation. Third, it is the budget proposal prepared in the first phase that, by being modified during the negotiation, represents the concrete expression of managers' bargaining behaviour and it summarizes the results of the parties' social interaction during the negotiation.

Concerning the second aspect, other party's bargaining behaviour, negotiation literature provides the distinction among two possible negotiation approaches: distributive and integrative² and some major bargaining strategies and tactics: to make concessions (concession making); to discuss and make counteroffers (contending); to develop a problem-solving strategy searching for a win-to-win solution; to wait, and to withdraw from the negotiation (Pruitt and Carnevale 1993). This last option is not possible in budget negotiations because they cannot be solved walking away and thus definitely interrupting the process, since in any case targets need to be defined between those two parties (Umapathy 1987; Fisher et al. 2000).

² The distributive approach considers the value of the agreement as given and to be distributed among the parties, which are therefore seen as enemies; the integrative approach sees the value of the agreement as a value that can be increased through the cooperation among the parties, which are therefore perceived as partners.

Parties involved in a negotiation are constantly reacting to other party's behaviour. These reactions and the information exchanges that take place between the parties have been studied in the negotiation literature in terms of matching and mismatching (Pruitt and Carnevale 1993; Walton 1987). Matching consists in mimicking other party's behaviour; mismatching consists in having an opposite behaviour: to ask more if the other is asking less and to make quicker concessions if the other is making concessions very slowly (De Dreu 2003; Naquin 2003). Therefore, negotiation literature focuses on concession making and compromising behaviour when studying negotiators' reactions to the proposal of the counterpart.

Negotiated budgetary studies assume that the parties are necessarily exchanging offers and counteroffers, alternatively and for four rounds, to define the subordinate budgeted performance level. However, their setting simplifies a lot the reality of budget negotiations. First, not necessarily the parties have to exchange offers and counteroffers, because they could simply wait other party's revelation of preferences and do not match the offer. Second, not necessarily the exchanges alternate between them, because the parties could also make sequential offers on multiple budget items. For example, they can adopt a strategy that in the negotiation literature is defined as logrolling and that consists in looking for possibilities of compensation among the items object of negotiation. Third, what parties exchange during the negotiations are not necessarily only budget offers. The parties can also exchange information, for example to justify their presented proposal. The nature of the information exchanged has not been investigated by prior studies, where the parties were usually allowed to communicate only writing their offer – counteroffer on a negotiation form. However, it is exactly in the information exchanges among the subjects that lay the origins of the value of managers' participation to the budget process (Hopwood 1976; Galbraith 1977). Prior participative budgeting studies clarify that information asymmetry is one of the motivations at the origin of the subordinate need to participate in the process (Shields and Shields 1998), both

with respect to the economic theories and to the psychological ones. Following the first ones, the superior wants to discover the information regarding the subordinate task and the environment in which it is done, to reduce his degree of perceived uncertainty (Christensen 1982; Baiman and Evans 1983; Penno 1984; Kirby et al. 1991). With respect to the second ones, instead, it is the information sharing among the parties, and the cognitive processes through which this information is elaborated and interpreted, the way through which the quality of the decisions taken is improved (Locke and Schweiger 1979; Locke and Latham 1990).

If management accounting researchers aim at providing evidence on what the managers do when they participate in the budget process and to extrapolate the underlying rationales of managers' behaviours in those circumstances, the attention should be focused on exploring the micro-level mechanisms that are generated by the designed budget process. In particular, this study focuses on how managers define their budget proposal, which information exchanges take place during the negotiation and which cognitive processes those exchanges activate in their minds, such that the budget proposal is or is not subjected to changes.

The concept of resistance to changing the budget proposal that is used in this paper refers to the negotiator's intransigence about concession making with reference to the initial budget proposal. This concept is similar to the one of resistance to yielding derived from the work by Kelley, Beckman, and Fischer (1967) that refers to the negotiator's intransigence about concession making in general (e.g. Druckman 1994).

III. Propositions development

In this exploratory stage of researching budget process design and its effects on manager's behavior it is premature to develop testable hypotheses. There is rather an opportunity for developing propositions that can be subject to a first empirical analysis and successive theoretical refinement.

In the budget proposal preparation phase, managers are involved in a decision making process whose aim is the determination of the proposed budget with which they want to enter the negotiation phase. They are thus choosing the proposed target with which they want to influence the determination of their final budget. Making this choice, they select their desired future performance level (degree of target difficulty) and they are conscious of the behavioural consequences of their choice (Tiller 1983), because they know the level of effort that they have to exercise for achieving the chosen budget³. In this situation Tiller (1983) shows that cognitive dissonance theory (Festinger 1957; Aronson 1968) applies. This theory posits that individuals need to be sure that their behaviour matches with their attitude towards the event. When they found themselves to act in a way that is not in line with their attitude, they perceive tension (a cognitive dissonance) and try to reduce it to come back to a state of cognitive fit. This dissonance is derived from the inconsistency of the behaviour freely chosen by the subject (the budget proposal) with the adverse consequences deriving from that choice (the effort required to achieve it). In particular, they are motivated to take actions to reduce this cognitive dissonance as long as they perceive to have freely chosen the target, they have to increase their effort to reach it, and they feel to be responsible for the choice made, such that they internally recognize and accept the causes of the obtainable results (Tiller 1983).

The cognitive dissonance is reduced increasing the individual level of commitment to achieve the target and, consequently, the effort exercised (Tiller 1983). This psychological role of commitment is generated when the individual is strongly emotionally attached to a chosen alternative and it is reinforced when he obtains a favourable feedback concerning that alternative (Jermias 2001).

³ In line with previous literature on negotiated budget (Fisher et al. 2000, 2002a, 2006), it is assumed in this paper that for the managers (subordinates) obtaining easier to achieve targets is more attractive than highly difficult ones, as the final targets are linked to incentives.

Therefore, according to cognitive dissonance theory, this study argues that manager's determination of the budget proposal is a source of psychological commitment, such that when a manager feels to have freely chosen his proposal in the budget proposal preparation phase (manager's freedom in choosing the initial budget proposal consists in his perception of the extent to which he is able to select his own course of action without any constraints), he can be expected to have a higher level of resistance to changing it in the negotiation phase.

The rationale behind this expectation is that when the manager chooses his proposal he follows a decision making process through which, depending on his perception of being able to freely selected his budget proposal, he interiorizes it, developing a feeling of emotional attachment and commitment to it. In the negotiation phase he perceives a cognitive dissonance originated from the comparison of his selected proposal with the counteroffer of the other party, such that due to these feelings of attachment to his proposal, when he receives information about the attractive characteristics of the counter-offer, he starts collecting information to confirm the superiority of his selected proposal while ignoring the conflicting information. Therefore, in the negotiation phase he can be expected to increase the desirability of his choice, due to his commitment to it, denigrating the other party's alternatives (Jermias 2001). Note that eventual factors that constrain his ability to select his budget proposal (e.g. the presence of budget proposal targets) can be expected to reduce his perceived freedom of choice of the initial budget proposal, and hence also his emotional attachment to it.

This argument is also supported by the evidence on defensive bolstering (Tetlock et al. 1989) and by the theory of differentiation and consolidation (Svenson 1992). The first one shows that an individual, with a strong declared commitment to a certain alternative, dedicates the majority of his mental effort to justify his decision. The second one demonstrates that before making a choice (e.g. before choosing the budget proposal), the individual tends to

differentiate all the alternatives increasing the perceived differences among them, but once a choice has been made, he tends to consolidate the information to support the chosen alternative (Phillips 2002).

Thus I propose that:

Proposition 1. Having a manager perceiving to be able to freely choosing his initial budget proposal, in the budget proposal preparation phase, is positively related to his resistance to changing it, in the budget proposal negotiation phase.

According to the negotiation literature, negotiations can be differently structured depending on the number of the parties involved: they can be designed among individuals at various organizational levels and as single or multi-parties (Beersma and De Dreu 2002). For example, negotiations can be carried out only between the two managers or between one manager and a group of subordinates. These structural choices have implications both in terms of defining the negotiation procedure to be used and in terms of manager's motivation and bargaining behaviours (Beersma and De Dreu 2002).

Management accounting research is lacking on these issues, as also Fisher et al. (2002a) suggest. This study aims to shed light on what happens to manager's bargaining behaviour when, before of negotiating his budget proposal with the superior, he has negotiated a proposed budget with each of the low level managers he supervises. In this regard, I can expect that both his negotiation strategy and his bargaining behaviour will be affected, such that he will have a higher level of resistance to changing his initial budget proposal.

The rationale behind this expectation is that he will feel to have a higher level of responsibility toward the low level managers he supervises for the result of the negotiation with his superior, such that he will resist the changes to the initial budget proposal that he has prepared, and discussed with them in the form of separate low level managers' budgets.

This argument is in line with negotiation studies on resistance to yielding and accountability. They show that accountability to constituents leads to contentious behaviour and low joint benefit in settings with integrative potential (e.g. O. Ben-Yoav and D.G. Pruitt 1984; Carnevale et al. 1981) and it encourages slow concession making and failure to reach an agreement.

Therefore I propose that:

Proposition 2. Having a (middle) manager negotiating his budget proposal with the superior after that he has negotiated a proposed budget with each of the low level managers he supervises, is positively related to his resistance to changing the budget proposal.

Prior negotiated budgetary studies have investigated the effects of information asymmetry on the economic consequences of budget negotiations (Fisher et al. 2002a). They define information asymmetry as superior missing knowledge of subordinate performance capabilities. They manipulate it communicating (or not) to the superior the number of letters the subordinate has correctly decoded in the last training session and by informing the subordinate of this communication. They found that information asymmetry influences the initial positions of the parties (like in Fisher et al. 2000) and that, when the difference between the initial positions taken by the superior and the subordinate is due to the presence of information asymmetry, it is not true that having a small difference leads to a higher easiness of achieving an agreement between the parties. The authors were not able to explain why this effect has been obtained. This study argues that the reasons are related to the psychological processes which are influencing manager's behaviour in budget negotiations (manager resistance to changing his initial budget proposal) and that have been ignored by prior studies. In particular, the difference between the initial positions of the parties at the beginning of the budget negotiation influences their perception of initial information asymmetry and their successive interpretation of the information exchanged during the negotiation.

This study defines information asymmetry as the perception of the initial level of discrepancy in information between superior and subordinate in the budget negotiation. Even if the subordinate can already have expectations about this level of discrepancy in information when he is preparing the budget proposal, it is only in the negotiation phase that he can have the perception of this discrepancy, because it is only in that phase that the initial positions of the parties are revealed.

I expect to find that the perceived level of initial information asymmetry is negatively related to manager's resistance to changing the initial budget proposal.

The expectation is that in a situation of low initial information asymmetry manager's resistance to changing the initial budget proposal is more likely to be high, because the perception of symmetry of information between the parties makes him to see his initial budget proposal as the best possible one, and hence he is less open-minded in interpreting the information exchanged during the negotiation, such that he is less likely to reevaluate his initial budget proposal.

In a situation of high initial information asymmetry instead manager's resistance to changing the initial budget proposal is more likely to be low. This because the perception of asymmetry of information between the parties, pushes him to be less sure about the optimality of his initial budget proposal, and hence he is more open-minded in interpreting the information exchanged during the negotiation, such that he is more likely to reevaluate his initial budget proposal.

This argument is in line with the negotiation literature on compromising behaviour. These studies see the distance between the parties' initial positions as the indication of the size of the bargaining conflict perceived by the parties and they show that it drives the amount of yielding allowed by the parties and their attitude toward belief change (Rappoport 1965; Summers 1968; Rozelle and Druckman 1971; Druckman and Rozelle 1975).

This leads to the following proposition:

Proposition 3. The perceived level of initial information asymmetry between the parties is negatively related to manager's resistance to changing the initial budget proposal.

IV. Research design

The research has been conducted through a single case study on an Italian subsidiary of a multinational company in the elevator industry. I have called the company "Automatic Plc" to preserve its anonymity.

The choice of a case study design is the most appropriate method of empirical enquiry here for several reasons. First, budgetary practices and procedures have traditionally been investigated within the organizational context in which they operate (Argyris 1952; Hofstede 1968; Hopwood 1972; Otley 1978). Experimental research, which has been previously used by the researchers to study this topic (Fisher et al 2000; 2002a, 2006), is necessarily a highly simplified version of the complexity of the reality of the budget process; instead a case study design gives the possibility to integrate prior studies with the factors originated by the organizational context in which the process takes place. Moreover, a case study design allows exploring what managers do when they participate in the budget process, because it allows taking into account the different phases on the budget process and the activities in which managers are involved. Second, qualitative studies are necessary where the organizational processes involved do not lend themselves easily to quantitative measurement (Yin 1990; Patton 2002). This study combines the use of quantitative and qualitative measurement to examine the micro-level mechanisms involved in budget negotiations, investigating in the field both negotiations' dynamics and managers' cognitive processes.

In choosing the setting my decision has been guided by the need to identify a company with budget negotiations done among different organizational levels, hence I used two selection criteria: the use of budget negotiations among the

managerial levels and the presence of a high level of geographical dispersion of the company's activities. Automatic Plc has been selected on the basis of these requirements, confirmed by a preliminary investigation: it is a subsidiary of a multinational company that operates with subsidiaries dispersed on the Italian territory, and it is doing a negotiated budgetary process among the different managerial levels. Therefore, it represents a suitable context for conducting this research.

Data collection and analysis

Preliminary case study investigations have been conducted with two exploratory interviews, with the company Chief Financial Officer and the management control department director, to collect background information about the company (history, mission, strategic directions and organizational structure), and to understand the design and management of the budget process. Field notes, archival data and interviews transcript were the main sources of information in this phase.

The two company members agreed on sponsoring the research project and I was having a desk in the management control department and free access to the company for all the period of study. This allowed me to observe all phases related to the development of the budget for one year. I had the possibility to interact with all management control department members, with the accounting staff, with divisional and lower level managers. This gave me a broad perspective on the complete budget process done at Automatic Plc, thanks to which I identified in the design and the effects of the budget proposal preparation and negotiation phases the focus of my attention, while maintaining the knowledge of the peculiarities of the organizational context in which they took place.

Data collection lasted 10 months. Data have been collected, at individual level of analysis, all over the period of study with a multi-method approach⁴ using field notes, questionnaires, interviews, archival data⁵ and direct observation. Table 1 reports an overview of the data collection strategy.

First, I directly observed the budget's negotiations meetings as a silent curious visitor taking field notes. One month after, I administered a questionnaire to the divisional manager and the district managers. The purpose was to collect evidence on the perceptions of budget participation, on the budget process in general, and specifically concerning the budget negotiation, for using them as descriptive guidance in the in-depth interviews. All twenty managers sent me back the questionnaire by email in one week time. Table 2 reports the questions asked in the questionnaire, together with the measurement scales used. When existent, I adopted the measures used by prior studies; in all other cases I developed new measures.

After collecting all questionnaires, I interviewed the divisional and the district managers, the Chief Financial Officer, the head of the control department and three management accountants (twenty-five persons). Therefore both parties involved in the negotiation were used as key informants. The interviews were semi-structured based on the questionnaire answers, lasted around 2 hours and interviewees' anonymity was guaranteed. Interviews were recorded and transcribed.

Data have been analyzed using the following procedure. The questionnaire answers obtained by all twenty managers have been statistically processed and descriptive statistics have been obtained (table 3). The reliability of the measures has been assessed using Cronbach Alpha and factor analysis with

⁴ The use of a multi-method approach has been preferred as it allows better capturing the multi facets of the negotiation dynamics and the underlying factors driving them, increasing the validity of the findings (Creswell 2003).

⁵ Archival data included internal company documents, internal employee survey results, archival records, research articles, and business press reports. Due to the high strategic relevance some of these sources cannot be publicly disclosed.

Principal Component Analysis without rotation. All variables have a Cronbach Alpha higher than 0.7. The factor analysis give one factor solution for all variables, except two. Budget participation measured with Milani (1975) scale has two factors. The item (*the frequency of budget-related discussions with the superior initiated by me*) loaded on the second factor, hence it has been deleted from the scale. Organizational commitment, measured with Mowday et al. (1979) scale, has two factors. This is coherent with the organizational behaviour literature that identifies an affective and a continuance dimension of this construct (Meyer and Allen 1984), hence all items of both dimensions have been retained. The questionnaire answers have been descriptively interpreted and used as guidance for the successive in depth-interviews. Interviews have been codified using a thematic coding procedure. Archival data of the negotiation phase have been comparatively evaluated across districts and across managerial level. Field notes have been content analyzed. Finally, all the evidence collected has been triangulated to validate the findings (Patton 2002; Yin 1990).

A research report has been written and checked with the interviewers and a discussion of the research results with the Chief Financial Officer and the management control department director has also been carried out.

V. The case study

Automatic Plc

Automatic Plc is the Italian subsidiary of a multinational company operating in the elevator industry. Automatic Corporation is present in more than forty nations; it employs more than 38.000 employees who contribute to producing and commercializing around 20.000 elevators and escalators each year and to serving 520.000 elevators and escalators, providing maintenance and repairmen services. The group is pursuing a growth strategy based on its geographical expansion, on its strong position as innovation leader and on the

obtainment of concessions for big projects. Automatic Plc is geographically dispersed on the Italian territory, where it faces the competition of other three big multinationals and thousands of small service companies. It uses a well spread subcontracting net of suppliers and its customer focus is oriented to both private and public clients. Nowadays Automatic Plc has a turnover of 200.000 Euro and 1.300 employees.

Automatic Plc is organized in three divisions: elevators instalment, escalators and services. This study focuses on the service division that provides services of maintenance, repairmen and substitution of the elevators and escalators. This division is geographically dispersed in districts, each of them having from one to four geographical responsibility centers, each one with a city manager. Both the districts and the geographical responsibility centers are profit centers, whose responsibility is defined in a bounded geographical area (the district or the city).

Automatic Plc budget process

Automatic Plc budget process is the third part of the planning, programming and control process. The planning cycle is managed at the worldwide headquarter level. Plans are defined for three to five years involving the subsidiary top management and they are reviewed annually. The programming cycle is managed by the worldwide headquarter and by the country subsidiaries. It defines macro objectives for each country subsidiaries on a three year horizon. The budgeting cycle is organized yearly; it consists in the operationalization of the first year of the program and it is managed through all the subsidiaries. Both at group and at subsidiary level there is the top management intention to manage this process in the most effective way. There is a budgeting manual that the headquarter top management distributes across the subsidiaries and there are written guidelines defined by each subsidiary top management to diffuse the budget methodology and to intensively educate managers to its use.

There is a common information system, which guarantees high quality and reliability of the data base and a common reporting system, which enables the subsidiaries to exchange information with the worldwide headquarter using a common interface.

In the Italian subsidiary targets are linked to the incentive system: each manager is responsible for the achievement of a set of targets that are balanced including subsidiary specific targets and role specific ones (at district or at geographical responsibility center level, depending on the manager organizational position).

There is not a formally defined budget committee and the role of guidance of the budget process is instead covered by the subsidiary top management. There is however, in the service division, a specific coordination committee, which is formed by all district managers who meet once a month to discuss monthly results, end year forecasts and specific arguments of interest.

Automatic Plc budget process can be described in four phases. Figure 1 presents a graphical description of the budget process.

The first phase is in Spring when the overall amount of the financial budget of Automatic Plc (Italian subsidiary) is defined. This phase consists in having the managing director of the Italian subsidiary to take part to an international meeting with the worldwide headquarter top management and all the other subsidiaries managing directors. During this meeting each subsidiary managing director separately discuss his subsidiary budget with the headquarter top management, such that he can come back to his country with the set financial budget.

The second phase, from August to September, is the phase in which the divisional level budget is defined. Budget manual, budget calendar, general and business specific guidelines and forms' instructions are distributed by the worldwide headquarter and by the subsidiary top management. This phase includes an investments approval process, where the requests of resources by the lower level managers are collected, consolidated and approved at

subsidiary level and sent to the worldwide headquarter for a further approval. Despite this participatory first step where low level managers are required to prepare and send their requests for resources, in this second phase the budget process continues within the subsidiary involving only the highest organizational levels: the subsidiary managing director, the three divisional managers, the Chief Financial Officer (CFO) and the management accounting director. A budget negotiation is used to allow each divisional manager discussing with the subsidiary managing director to define his divisional budget. During the negotiation the CFO and the management accounting director are providing support helping them in translating their objectives in targets. The results of these negotiations are the financial targets for the three divisions: elevators instalment, escalators and services.

Because of the worldwide headquarter request to each subsidiary to define the budget at divisional level, both for budget responsibility attribution and for consolidation reasons, in October management accountants insert these data in the group reporting system, they collect the required forms filled out by the divisional managers and they send all the information to the headquarter. In November these annual divisional targets are spread on a monthly base. This allows the divisional managers to implement the monthly variance analysis, which is an important control mechanism used in Automatic Plc and requested by the worldwide headquarter for monitoring the activity of the Italian subsidiary. The budget process of Automatic Plc does not conclude here, there are in fact other two very important phases carried out within the service division of Automatic Plc and on which the headquarter does not provide any constraints. In the third phase, that takes place in November – early December, each manager of a geographical responsibility center (city manager) is involved in the budget process by individually participating in a negotiation with the district manager, during which he is allowed to present his budget proposal for his own responsibility center (the city). He negotiates with the district manager his proposal to achieve an agreement on his responsibility center budget. In this

negotiation the management accountant is again always present and supporting the parties. The outcomes of this third phase of the process are the proposed budgets for each geographical responsibility center (the cities) and the budget proposal for each district. The budget proposal of each district includes the city proposed budgets, their consolidation and coordination, and the district level costs. In those districts where there is only one geographical responsibility center (one city), this role is covered by the district manager himself, thus he prepares both the budget for the city and the budget proposal for the district.

The fourth phase of the budget process, taking place in December, is the most critical one because it integrates the second and the third phase: the divisional manager of the service division (who had set his divisional budget in the second phase) and each district manager participate in the budget process to set the district budget. The participation consists again in the involvement of each district manager in a budget negotiation with the divisional manager, always with the support of both the head of the control department and the management accountant. These budget negotiations are structured such that each district manager begins presenting his initial budget proposal for the district. The parties negotiate groups of line items included in the income statement (per package approach), using an information tool for conducting sensitivity analysis. This fourth phase is the more critical of the all process, because it should sum the advantages of the decomposition of the company budget into the divisional budgets (defined in the second phase) with those of the aggregation of the company activities obtained with the definition of the cities' budgets (defined in the third phase).

The third and the fourth phases of the process here presented have been adopted in Automatic Plc as a design solution for introducing more managers' participation in the service division. In particular, the subsidiary top management made this decision with the aim of increasing the level of targets' sharing between the managerial levels and of having managers to internalize more their targets. This design choice appears to be consistent with the

organizational structure of the division and with the drivers of the service business: the division is geographically dispersed, because suppliers and clients are also dispersed, and the satisfaction of clients' needs, through a prompt service intervention, is a key success factor in this business.

This study has been done in the second year of implementation of this budget process procedure and it is specifically focused on the definition of the district budgets, for which there are not budget proposal targets provided by the worldwide headquarter.

The propositions are investigated with respect to the budget negotiations used for defining the district budgets, thus those between the divisional manager of the service division and each district manager. What it is discussed in the findings section with respect to the district budget proposal preparation phase hence refers to the third phase of the process described above, while what it is discussed with respect to the district budget negotiation phase refers to the fourth phase.

VI. Findings

Proposition 1 posits that having a manager perceiving to be able to freely choosing his initial budget proposal, in the budget proposal preparation phase, is positively related to his resistance to changing it, in the negotiation phase.

In Automatic Plc all district managers had being allowed to prepare and then present their district budget proposal being involved in a negotiation with the divisional manager, because top management decided to use the same negotiation structure for the budget negotiations involving managers at the same organizational level. Therefore, the empirical setting does not allow observing and comparing the situation of managers being able to choose or not being able to choose the district budget proposal. What instead the setting permits, and it is the focus of proposition 1, is investigating the effects of managers' perception of being able to freely select their district budget proposal on managers' resistance to changing it during the negotiation.

In the questionnaire district managers have been asked to judge the budget proposal that they have prepared, in the budget proposal preparation phase, and then individually presented to the divisional manager, in the negotiation phase. From their answers it emerges that they perceive to have developed a realistic proposal given the situation of their district and that it was a good solution considering the information they had. On average, they answer that they had not overestimated the resources required (upward biasing), as well as that they had not prudentially defined it or underestimated it to frame to their favour the discussion (budgetary slack). In the interviews, the divisional manager states instead of being sure of the opposite, he was conscious of the district managers' incentive to ask more resources and to reduce the initial budget proposal. He stated that he intervened regulating and adapting his behaviour during the negotiations.

The interviews complement the questionnaire evidence by clarifying that there is one aspect related to the budget proposal preparation phase that influences district managers' perception of having freely selected the budget proposal: the presence of subsidiary top management guidelines.

Top management guidelines were provided to guide the preparation of the district managers budget proposals. They include few parameters determined at subsidiary level, in order to comply with those provided by the worldwide headquarter for the first and the second phase of the process. For example, a minimum percentage of increase in the number of new elevators subject to maintenance services decided at divisional level by the headquarter. The strength with which these parameters were perceived as constraining the district managers in choosing their budget proposals varied among the districts. Some district managers were seeing the guidelines as a useful reference in the budget proposal preparation phase (phase three), because they provide important indications to be considered when developing the city budgets with the city managers; some others were seeing them more as a limitation of their contribution to the process.

District managers confirm in the interviews that they perceived to have decision freedom in selecting their initial budget proposal: in the end, they had to decide which budget proposal for their district they wanted to present in the negotiation with the divisional manager, and in doing so, they took into account all the aspects of the district local reality, which were not included in the guidelines. Thus, there are differences between the parameters included in the guidelines and the selected budget proposals, that can get reconciled in the negotiation.

With respect to the effects of their perceived freedom of selection of the budget proposal on their bargaining behaviour, district managers were more committed to their presented budget proposal. This commitment positively affected their resistance to changing the budget proposal during the negotiation with the divisional manager. I observed that bargaining they acted following psychological processes which made them able to consider only part of their knowledge to support their ideas and to also distort their decisional criteria to justify their initial decisions. For example, during a negotiation I observed a district manager who was complaining, not about the amount of the target the superior was counter-offering instead of the one he proposed, but about the criteria with which that amount has been calculated: *"I was not discussing the target, but the computations with which it has been obtained"*. In another occasion I observed a district manager supporting his proposal justifying the reasons behind his choice with these words: *"Of course, I am sure of my numbers, I know my clients and the payment terms they can afford, so I also knew if that target would have been really achievable or not. I felt it was too much, given our clients conditions and I explained him why"*. This is an example of district manager's consciousness about the efforts required to achieve his budget proposal and of his belief in the goodness of his choice. In fact district managers' resistance to change became more evident in the negotiations, when the divisional manager would have liked to assign targets which were much higher than the real ability of achievement by the districts, and when the district managers were strongly committed to their presented proposal. In those cases,

district managers reacted as presented above, by emphasizing the desirability of their proposal and justifying their preference versus the alternative proposal made by the divisional manager. As the divisional manager told me in the interview, the result of the negotiation also depends on the ability of the district manager to propose and sustain his argument. He told me that *"Many times I listen what they tell me, if it is in line with their necessities and I understand the problem and I can manage anyway to adjust the things, I make them concessions; otherwise I try to find solutions which allow me to bypass the problem and anyhow to reach my objectives. I cannot make concessions without being able to recover them on other points of the income statement"*. He also added that *"My opinion is that it depends a lot on the person, on his leadership and his ability to propose himself and on finding the right mechanisms to bring on the dialogue. The same argument can be approached in different ways. I think that the difference is done by the person, especially in the service business"*. This shows the divisional manager approach to the negotiations, which was a principle-oriented one, using a kind approach based on dialogue with the person, and a stronger one with the targets that have been set.

When I asked him why the district managers were allowed to choose their budget proposal he told me that the purpose of giving them this possibility was to motivate them, to have them to interiorize more their proposal such that they could enter the negotiation phase believing more in the numbers they were presenting. In this respect, it emerges from the questionnaire and it has been stated in the interviews by another district manager that: *"The frequency of budget discussions is low, they are concentrated in a very limited amount of time (1 month) and there are few rare possibilities of interim revision"*, given also that the divisional budget is constrained, because it has been defined at aggregate level in the second phase of the process. In this respect also the management accountant who follows the negotiation phases told me that: *"It would be necessary to evaluate more together with the district managers their*

proposals, before of the negotiation with the divisional manager, such that they could be “stronger” presenting a target that they have already internalized”.

Therefore, managers' perception of being able to freely select their initial budget proposals is an important factor influencing their behaviour in budget negotiations. As expected, supporting proposition 1, having them perceiving to be able to freely choosing their proposal increased their resistance to changing it in the negotiation, because it increased the level of commitment they had to it. This emotional attachment activated in their mind psychological processes that influenced the information sharing process: they collected information to confirm the superiority of their proposal while ignoring the conflicting information. Thus, negotiating, they were more resistant, increasing the desirability of their proposal and denigrating the other party's alternatives.

Proposition 2 posits that having a (middle) manager negotiating his budget proposal with the superior, after that he has negotiated a proposed budget with each of the low level managers he supervises, is positively related to his resistance to changing the initial budget proposal.

Top management decision to design the process such that, in the third phase, the district managers of those districts that have more than one responsibility center (cities) are negotiating a proposed budget with each of the city managers they supervise, has been taken after that, in the previous budgeting cycle, city managers were also involved in the fourth phase of the process: together with the district manager, they were also present to negotiate the district budget with the divisional manager. In that occasion, they were not really contributing to the negotiation of the district budget, as the divisional manager explained in the interview, because they were too focused on their “small garden” (the city budget) instead of considering the most important district dimension. Given the not encouraging results of the previous year, subsidiary top management has decided to introduce the third phase of the process with the aim of having city managers participating, while being aware that their cities belong to a bigger dimension (the district). Therefore, the process has been changed such that, in

those districts, with more than one responsibility center manager, the district manager has first to negotiate a proposed budget with each of the city managers (phase three) and then to negotiate the district budget with the divisional manager (phase four). When the district budget has been agreed with the divisional manager, district managers have then been assigned the task to spread the resulting targets on the city budgets of the geographical responsibility centers in their district and to report them to the city managers. Therefore, the empirical setting at the time of this study allowed comparing, in the fourth phase of the process, the district managers that were also the only city manager in their district, with the district managers that were having from two to four city managers in their district. The first ones individually prepared both the city and the district budget proposal and they negotiated the district one with the divisional manager. The second ones negotiated the proposed city budgets with the city managers (phase three) and then they negotiated with the divisional manager the district budget proposal, developed taking into account the agreed city budgets.

District managers of the districts having more than one city, when interviewed, have described the process they used to develop their district budget proposal as an information sharing process with their city managers and the divisional controller. This last one explained in the interview that during the negotiations between the city managers and the district managers some items of the proposed city budgets were more critical than others for the district manager, because of the lower level employees' incentive systems related to them. Therefore the district managers had to discuss more with the city managers on those items.

Both in the questionnaire and in the interviews, the effects of these different structure of the budget proposal preparation phases for the district managers have been identified in an increased perception of responsibility of the district managers role in the process that influenced their negotiation strategy. As I could observe during the negotiations with the divisional manager, those district

managers that had previously negotiated a proposed budget with the city managers, were steadier on the initial budget proposal during the discussions, compared to those that had individually prepared it.

The management accountant who was present to all negotiations noted a difference between the districts with only one city (whose budget responsibility was given to the district manager), and those with two or more city managers: district managers used different approaches, when they could not resist the negative requests by the divisional manager to increase the targets compared to those they initially proposed. He explained that: *“Something that happened concerns those district managers who are also responsible for more city managers. When they faced the requests of increasing their proposed targets, some have assigned them to the budget of their city managers and some have instead assigned them to the budget of the whole district. This could be seen as a different approach to the discussion”*. And he also added: *“The district manager, who has previously discussed the budget with the city managers in his district, can feel to be more responsible toward them and then he can prefer to input those higher requests to his district budget more than to those of the city managers, to whom after he has to provide explanations for. This perception of higher responsibility can thus have affected his allocation decision”*. So the higher level of responsibility toward the city managers influenced the district managers bargaining behaviour: when they could not resist the requests to increase the initial budget proposal they tried to logrolling, thus to compensate the requests for higher targets at city level with higher targets at district level. Always the management accountant explained that it can happen that the different cities’ budgets are not equilibrated in term of efforts required and that adjustments are necessary. This absence of balance is often related to the district costs that are allocated to the city budgets. As he affirmed *“It is necessary to arrive at the end of the process where the budget is accepted by the managers, at all organizational levels, with the maximum degree of detail, such that it cannot be re-discussed again”*. When I asked him

why this is important, he replied that their signature on the budget (sign of their acceptance) is essential to guarantee that they take that numbers as their main objective for next year and he added that their incentives are related to those numbers, so this is a second guarantee that they will work for achieving them.

Therefore, supporting proposition 2, having the district managers negotiating the initial budget proposal with their superior, after that they have negotiated a proposed budget with each of the city managers they supervise, increased their level of responsibility toward the city managers. This design choice for the budget proposal preparation phase had strong behavioural implications on the district managers' attitude during the negotiation phase with the divisional manager: they were steadier on their positions and more resistant to changing the district budget proposals. When they could not resist the requests to increase their proposed targets they tried to logrolling, allocating the increase between the city and the district budgets.

Proposition 3 posits that the perceived level of initial information asymmetry between the parties is negatively related to manager's resistance to changing the initial budget proposal.

To understand the origin of the perceived level of initial information asymmetry between the parties in this empirical setting, is necessary to begin with describing the way in which the budget negotiations were structured.

The budget negotiations were organized such that each district manager was participating in a formal meeting with the divisional manager, done at the headquarter of the Italian subsidiary, with the specific aim to discuss the district budget. The atmosphere of the meetings was formal: the meetings were taking place in a room where there were only one big table, some chairs, one laptop and one projector. The divisional manager waited for the district manager at the entry of the room, which was already prepared by the management accountant with the laptop with installed the sensitivity analysis software and the projector. Only the divisional manager, the district manager, the head of the control department, the management accountant and me, were allowed to be in the

room during the meetings. After entering the room the parties took a sit on two sides of the table next to each other. The negotiations were structured such that the management accountant loaded the initial budget proposal for the income statement of the district, prepared by the district manager, and showed it to everybody in the room. This way of proceeding gives to the district manager the opportunity to have a first mover advantage over the divisional manager in revealing his district budget proposal. Then the management accountant showed the budget proposal of the divisional manager for that district, such that the comparison between the two triggered the realization of the size of the conflict existent between the parties: a small difference between the initial positions made them to perceive a low level of initial information asymmetry between them (e.g. in the questionnaire they replied that they perceived to have the same information at the beginning of the negotiation); a large difference between the initial positions made them to perceive a high level of information asymmetry between them (e.g. in the questionnaire they replied that they perceived not to have the same information at the beginning of the negotiation). The difference in this perceived level of information asymmetry was also coherent with the geographical proximity of the districts from the headquarter of the Italian subsidiary: the district managers of the districts that were geographically located close to the headquarter were perceiving more to have the same information as the divisional manager at the beginning of the negotiation; those of the districts that were geographically located far from the headquarter were perceiving more not to have the same information as the divisional manager at the beginning of the negotiation.

After the presentation of the budget proposals, the parties begin to negotiate. The objects of negotiation were the parties proposed values for all the items of the income statement, beginning from the components of the sales revenues (volumes and prices of the products). The items were discussed using a per package approach, meaning that the parties negotiate small packages of items.

This left open more alternatives of compensation among the different targets included in each package (e.g. logrolling).

Considering the direction of the information exchanges that took place during the negotiations, managers recognized both in the questionnaires and in the interviews that negotiating there has been a reciprocal information exchange which has fostered the dialogue. Concerning the amount and the type of information exchanged between the parties, some managers highlighted that it has been more the district manager, who communicated information on the local reality of its district stimulating the negotiation. For example, a district manager said: *"They were information on the local reality in terms of clients and competitors, for example about the terms of payment or the delay with which clients were paying, as well as information about the emergence of competitors' strategies"*. But also the divisional manager revealed information as he said: *"Especially I know better than them the situation of the production and of the instalment of the elevators and escalators, as I am in continuous contact with the other divisional managers"*. As regards the effects of the information exchanged, district managers recognized to have changed some points of their proposal to meet divisional manager requests. Nobody told that they had to radically change their proposal and only some of them affirmed to have renegotiated some items to reach a satisfactory agreement.

But what has induced the district manager to use the leverage of information asymmetry? Some managers answered in the questionnaire to have been induced to reveal specific information on their district to maintain the main points of their initial proposal and also that, but these are only two, they have reviewed it facing the emergence of new information during the negotiation. In fact the revelation of new information triggered some psychological processes, as the counterpart had to re-evaluate more objectively his ideas to verify if they were still valid, even in the presence of the additional information. For example, in the interview a district manager explained in this way the nature of the information he exchanged: *"They were explanations of prior results or*

information on the local reality, especially in terms of clients and competitors, which affect the objectives. For example with reference to the number of lost maintenance contracts it is useful to know also which competitor has taken them” and he added that “this is an indication of the competitive pressure that I face in my district and that affect the results of any strategic action”.

Therefore, the principal reason driving district managers to reveal information is to present their own point of view to maintain their initial budget proposal.

During the negotiation the divisional manager is also revealing information, even if with minor strength, to convince the counterpart of his initial decision, because he said *“If the targets are shared with the managers, giving them the motivations and the explanations supporting them, it is more probable they will be internalized and after achieved. If the targets defined are perceived as unachievable, this de-motivates the managers, and their de-motivation will also affect their collaborators. This is why it is important to discuss them”*. He also added: *“Yes, the district managers use to reveal information as I also do. When I am going to discuss I am ready to play all cards, I listen what they say and I try to reach my objective using all the information that I have”*.

What were the concrete effects of the revealed information on manager's bargaining behaviour? The questionnaire answers show that, on average, when the perceived level of initial information asymmetry between the parties was higher (and the districts were located far from the headquarter), the new information stimulated the discussion, creating more bargaining spaces, and made emerge the need to imprint the discussion on the cooperation and on information sharing, rather than on the conflicts between the parties. In those situations the new information neither interrupted the sharing, emphasizing the diversity of the parties positions, neither it increases the district managers confidence in the goodness of their initial proposals, and hence their resistance to changing them. As the management accountant told in those cases the aim of the revealed information was to favour the achievement of a consensual agreement: *“The information revealed had the aim to favour the achievement of*

the agreement. They had been exchanged with the purpose of comparison between the parties, thus to see if the district manager idea on the topic was correct and also if from the top management and the divisional manager he would had the necessary support to operate in that way".

One district manager added: *"The information revealed created and stimulated the discussion, even if it is difficult that they affect substantially the targets. Surely they create negotiable spaces and opportunities for comparison. They facilitate the agreement, as stimulating the dialogue they let emerge the necessity to cooperate".* The revealed information therefore favours the reduction of managers' resistance to changing their initial budget.

In the districts where the parties perceived more to have the same information at the beginning of the negotiation (and they were characterized by more geographical proximity with the Italian headquarter), the answers to the questionnaire showed that, on average, the information sharing has increased district managers' confidence in the goodness of their initial proposal and, hence their resistance to changing it. As a district manager explained: *"In my case, there have been points on which the divisional manager insisted more, because when he wants to obtain a result he can get it. I can change the situation on some points that we discuss together".* In these cases the information sharing has driven the parties to negotiate to show their ideas, but, only partially, it favoured the reciprocal understanding and dialogue toward the agreement. As the management accountant explained: *"Being able to see immediately the accounting implications of the economic result deriving from one choice or another, it has been possible for the district manager not to pay for the divisional manager decision without replicate to it".* During the negotiations, the resistance to changing the proposal by the district managers has been manifested in trying to oppose and in trying to provide counterarguments, to persuade and convince the divisional manager of the impossibility to achieve his proposed targets, opening discussions, and in a less fruitful strategy based on the use of bargaining inertia. The agreement has been

reached through renegotiation of the targets and with the search of an alternative solution, which allowed the parties to overcome the obstacle. As the management accountant said: *“During the negotiations, thanks to the possibility to see immediately, changing two or three budget items, what was the impact on the economic result, it has been possible to chose among an alternative more than another one”*.

Only in one case of major conflict between the parties on a specific objective, the divisional manager kindly used his authority to impose the target. This possibility should not be underestimated, as the divisional manager clarified me in the interview, both for its effectiveness and for its behavioural consequences for the manager who faces it, because this imposition is going to affect their personal relationship.

Therefore, supporting proposition 3, a negative relationship seems to exist between the perceived level of initial information asymmetry between the divisional manager and the district manager (that is triggered by the initial distance between the parties' positions), and the managers' bargaining behaviour. In particular, the district managers perceiving not to have the same information as the divisional manager at the beginning of the negotiation (high level of information asymmetry, no geographical proximity), were more open-minded in interpreting the revealed information that stimulates the discussion, the dialogue and the achievement of the agreement between the parties, such that they were less resistant to changing their districts budget proposal. Instead, the district managers perceiving to have the same information as the divisional manager at the beginning of the negotiation (low level of information asymmetry, close geographical proximity), were more confident in the goodness of their initial budget proposal and less open-minded in interpreting the revealed information, such that they more resistant to changing their districts budget proposal.

Manager's participation in the budget process

This study argues that negotiated budgetary studies provide a useful perspective for exploring how managers are involved and have influence in the budget process, because they specify that managers are allowed a certain level of involvement and influence, by taking part in a process where they prepare and negotiate the budget for their organizational unit. In this paragraph I provide some empirical elements supporting this claim.

In Automatic Plc the budget process has been designed such that manager's participation is made concrete fostering the vertical information sharing among the different organizational levels (division, districts and cities) more than the horizontal one (between districts), that instead has been managed through the creation and use of the district managers' committee.

The first and main reason that the managers' recognized as being behind top management decision to allow them a high level of involvement and influence is the information sharing between the different organizational levels (50%). Therefore, the value of participative budgeting as information sharing (Hopwood 1976; Kirby et al. 1991; Shields and Shields 1998) is present and recognized in this company. The second motivation they identified was, partly attributed to participation as a way for increasing coordination among the organizational units (30%), and partly, to participation as a way for fostering managers' motivation toward targets (20%). Therefore, district managers have recognized as third reason the one top management declared to be the main one for the actual design of the budget process: motivation and internalization of the targets.

The way the budget process has been structured has been perceived as having positive effects, in terms of managers' participation, according to all the managers involved. Considering the evaluation of the negotiation phase of the process (phase four), district managers answered in the questionnaire that their judgment on its usefulness was positive, as they saw it as a necessary moment

of discussion which gives them the opportunity to express their opinions (voice) (Bies and Shapiro 1988) and to actively be involved in the process (Pasewark and Welker 1990). Therefore, they did not perceive it as a situation of pseudo-participation that gives involvement without influence (Libby 1999). In particular, when asked about the role of the management accountants in the budget negotiations they answered that they were always present supporting the translation of business actions in financial terms, such that they were seen as providers of an important guarantee of independence and neutrality of the procedure.

As regards the extent of their participation in the process, they highlighted both in the questionnaire and in the interviews that it was favouring the achievement of the targets and that let them feel fully motivated to achieve them. They answered in the questionnaire that, on average, they perceive to give an important and influential contribution to the target definition and to receive a satisfactory amount of explanations by the divisional manager, in the case of budget revision and/ or correction of the targets (Libby 1999). For example, a district manager said: *"From when we negotiate the targets with the divisional manager, I feel to contribute more actively to the process"*. Therefore, managers perceived their involvement in the budget negotiations to be important, motivating and useful for reaching the targets. It provides them with a way to give an influential contribution to the budget process, both for the possibility they have to prepare and present their initial budget proposal and to discuss it with the divisional manager.

While negotiating, top management attention toward manager's contribution and toward the communication of company vision and values has also strengthened the strategic importance of managers' involvement and influence in the budget process. As an example, divisional manager's negotiating style was based on the creation and the development of collaborative and trustworthy relationships with each district manager, using continuous interaction, frequent meetings and encouragement of feedback seeking behaviours. During the

negotiations having a good and constructive relationship with other party showed to be important to be more optimistic toward the discussion, such that the attitudes were more cooperative.

The creation of constructive relationships between the parties was cherished by the presence of a high organizational commitment: from the questionnaire, it emerges that district managers had a high level of involvement in terms of values and being proud of working for Automatic Plc. They all answered to be satisfied of their job choice such that they could advice friends and others to join the company. They also feel the need to increase their level of effort to contribute to company success. Both in the questionnaire and in the interviews, they explained me that the goal is clear: what matters more is the maximization of the result of the whole company, despite their individual results. This is coherent with the recognition of the importance to be a team and to be able to work together. For example, a district manager said that Automatic Plc winning vision is employees' awareness to being part of a group that support, motivate and help them in difficult moments. The recognition of employees' active contribution with esteem and trust, together with the use of financial incentives, enhances the creation of a team spirit that fosters managers and all employees to work together for the company success.

VII. Conclusion

This study investigates the drivers of managers' behaviour in budget negotiations. In particular, it focuses on the preparation of the managers' initial budget proposal, on the nature of the information exchanges taking place between the parties during budget negotiations and on the psychological processes that those exchanges activate in the managers' minds, such that the managers are more or less resistant to changing the initial budget proposals.

More specifically, this study investigates three research questions: what are the effects of manager's perceived freedom of choice of the initial budget proposal on manager's bargaining behaviour? What happens to manager's bargaining

behaviour when a (middle) manager negotiates a proposed budget with each low level manager he supervises, before of negotiating his budget proposal with the superior? What are the effects of the manager's perceived level of the initial information asymmetry on manager's bargaining behaviour?

Managers perceived freedom of choice of the initial budget proposal is their perception of the extent to which they are able to select their own course of action without any constraints. With respect to the effects that this perception generates on their bargaining behaviour, managers were more emotionally attached and committed to their proposal. This commitment positively affected their resistance to changing the budget proposal during the negotiation with the divisional manager: bargaining they acted following psychological processes which made them able to consider only part of their knowledge to support their ideas and to also distort their decisional criteria to justify their initial decisions. Thus, they increased the desirability of their proposal denigrating the other party's alternatives. In addition, this study identifies one aspect related to the budget proposal preparation phase that influences district managers' perception of having freely selected the budget proposal: the presence of top management guidelines including some parameters to be respected at divisional level. The strength with which the parameters constrain managers' perception of free choice of the budget proposal differs among managers: some were seeing them as a useful reference in the budget proposal preparation phase; others were seeing them as a limitation of their contribution to the process.

With respect to the second research question, the findings indicate that district managers who have negotiated their district budget with the superior, after having negotiated a proposed budget with the city managers they supervise, have perceived a higher feeling of responsibility towards those city managers for the result of the negotiation with the superior, compared to the district managers who only negotiated their district budget with the superior. This difference in the budget proposal preparation phase had strong behavioural implications on the district managers' attitude during the negotiation of their

district budget with the superior: they adapted their negotiation strategy being steadier on their positions and more resistant to changing their initial budget proposal. When they could not resist the requests by the superior to increase their proposed targets, they tried to logrolling, allocating the increase between the city budgets and their own budgets.

As regards the third research question, the findings support the existence of a negative relationship between the perceived level of initial information asymmetry and managers' resistance to changing their initial budget proposals. In the situations characterized by a high perceived level of initial information asymmetry between the parties (when the parties did not perceive to have the same information at the beginning of the negotiation and the districts were not geographically close to the Italian headquarter), the new information stimulated the discussion, creating more bargaining spaces, and made emerge the need to imprint the discussion on the cooperation and on the information sharing, rather than on the conflicts between the parties. The new information neither interrupted the sharing, emphasizing the diversity of the parties' positions, neither they increased the managers' confidence in the goodness of their initial proposal, and hence their resistance to changing it. Instead, in those districts characterized by a low perceived level of initial information asymmetry (when the parties perceived to have the same information at the beginning of the negotiation and when the districts were having more geographical proximity with the Italian headquarter), the information sharing has increased the managers' confidence in the goodness of their initial budget proposal, and hence their resistance to changing it. They negotiate to show their ideas, persuading and convincing the divisional manager of the impossibility to achieve his proposed targets.

This study provides both relevant theoretical and practical contributions.

With respect to the first ones, this study extends the empirical studies on negotiated budgetary processes (Fisher et al. 2000, 2002a, 2002b 2006). Prior studies assume that the subordinate is choosing the budget proposal

immediately at the beginning of the negotiation with the superior. Doing so, they overlook that there is a phase of the budget process prior to the negotiation in which managers are involved in preparing and selecting their initial budget proposal. Hence, nothing is known about what managers concretely do in the budget proposal preparation phase and how this can affect their behaviour in the following phases of the process (budget negotiation and budget approval).

By focusing on the budget proposal, this study investigates the drivers of manager's bargaining behaviour, measuring it as the manager's resistance to changing the initial budget proposal. In particular, this study addresses the psychological factors influencing individual's behaviour facing budget negotiations: it considers manager's perception of being able to freely choose the budget proposal in the budget proposal preparation phase, and the resulting psychological commitment to it; and it clarifies the psychological processes that influence the information exchange and interpretation during the negotiation phase. It also investigates the effects on manager's bargaining behaviour of different ways of structuring the budget proposal preparation phase. In fact it compares middle manager who negotiates his budget proposal with his superior, after that he has negotiated a proposed budget with each low level manager he supervises, with middle manager who only negotiates his budget proposal with his superior. Finally, differently from prior experimental studies conducted with students, this study is methodologically based on a case study design of a firm's negotiated budgetary process.

First, this study highlights that, when structuring the budget proposal preparation phase of the process, top management should pay attention on deciding if to have the manager participating, by allowing him to freely prepare and select a budget proposal to be presented in the negotiation phase, or by allowing him to first negotiate a proposed budget with the low level managers he supervises (and then negotiate his own budget), because these decisions are directly influencing his bargaining behaviour: by perceiving to have freely prepared and selected the budget proposal, the manager has higher emotional

attachment and commitment to that proposal, and by negotiating a proposed budget with the low level managers he supervises, he has a higher feeling of responsibility for the result of the negotiation. As consequence, in the negotiation phase, the information exchanges and interpretation are distorted and undermined, such that the manager is more resistant to changing the initial budget proposal. Always with reference to the budget proposal preparation phase, this study highlights the relevance of giving to the managers top management guidelines including some parameters of reference. Top management needs to evaluate the opportunity of providing these indications, because they can be perceived as constraining the managers' free contribution to the process.

Second, this study recognizes that the level of information asymmetry has a positive role in the negotiated budgetary process. Prior research pointed out that the existence of information asymmetry between superior and subordinates is something top management should try to reduce structuring and managing the process, because it is a source of slack creation (Fisher et al. 2002a). This study suggests instead that the objective should not be to reduce it as much as possible, because the initial discrepancy in information is a lever that stimulates the information sharing between the parties, contributing to reducing managers' resistance to changing the budget proposal, and consequently to facilitating the achievement of the agreement. Moreover, this study can help to understand what Fisher et al. (2002a) was not able to explain. Fisher et al. (2002a) states that when the difference between the initial positions taken by the superior and the subordinate are due to the presence of information asymmetry, it is not true that having a small difference leads to a higher easiness of achieving an agreement between the parties. This study suggests that this happens because there are psychological processes influencing manager's resistance to changing the initial budget proposal, such that the perception of low informational difference between the parties at the beginning of the negotiation (low initial information asymmetry) is related to a high level of manager's intransigence

about concession making; while the perception of a high informational difference between the parties at the beginning of the negotiation (high initial information asymmetry) is related to a low level of manager's intransigence about concession making.

Third, Fisher et al. (2000) studied the effects of the negotiated budgetary process considering which subject is presenting at first his budget proposal in the negotiation phase and which subject has the authority to take the final decision on the budget in the approval phase. The following studies (Fisher et al. 2002a; 2006) structured the negotiation process such that it is the subordinate who is beginning the negotiation with the presentation of his budget proposal. In line with Fisher et al. (2000) and with the negotiation literature (Curhan et al. 2004), this study suggests that the decision on who begins the negotiation by presenting at first his budget proposal is relevant because it gives the manager a psychological advantage in the negotiation: the revelation of his budget preference is done without any influence by the initial budget proposal of the counterpart. In this study this possibility, which has been allowed to the district managers, has emerged as an important aspect of their perceived contribution to the process.

Moreover, this study proposes a new perspective for studying budget participation, because it shifts the attention of management accounting researchers from the identification of the intervening variables in the budget participation - performance relationship to the ways in which this participation is implemented and managed inside the companies. This study shows that it is important to investigate what it means for the managers to participate in the budget process and how this participation concretely takes place, because this allows to understand how the manager's involvement and influence can be improved. Specifically, this study focuses on the budget proposal preparation phase as the first phase of the budget process, that precedes the budget negotiation. In particular, the possibility for the manager to prepare and select the proposal and then to negotiate it with the superior has been found to foster

the vertical information sharing among the different organizational levels and it has been judged by the managers to be important, motivating and useful for reaching the targets.

As regards the managerial implications, this study illustrates some of the critical aspects top management should take into account when deciding to increase the managers' contribution in the budget process. With reference to how the different managerial levels can be involved in the negotiations, this study suggests to top management to evaluate the contribution that these managers can provide, considering that it depends on the extent of their budget responsibility. In the case of Automatic Plc, for example, the city managers were excluded from being involved in the negotiations of the district budget with the divisional manager, after that in the previous year they were found not to contribute enough to the negotiation, because they were too focused on their responsibility on the city budgets. Another managerial implication of this study consists in showing the relevance of deciding how to design the budget proposal preparation phase: e.g. if to give (or not) the managers the possibility to choose their budget proposal; if to ask them (or not) to negotiate a proposed budget with their low level managers; and if to give them (or not) some guidelines including some parameters of reference. Concerning how the managers can be assisted in the budget proposal preparation and negotiation phases of the process, this study presents the key role of management accountants: they support and enable the effectiveness of the budget process, thanks to their being super-partes, independent and neutral.

This study has three main limitations.

First, the company analyzed has introduced the third and fourth phases of the process only two years before the beginning of the study period and the process is under continuous improvement. This could have affected the participants' perceptions I collected during the process. I addressed this issue with a multi-method approach and triangulation of evidences.

Second, entering the company from the management accounting department allowed me to get a complete vision of the budget process. I was able to take part to all activities carried out by management accountants and to observe the negotiations in the fourth phase of the process, but I was not able to observe the negotiation done between the subsidiary managing director and the divisional managers (phase two of the process). Only the Chief Financial Officer was present in the meetings, due to their high strategic importance. I overcame this limit interviewing him.

Third, the study has been focused on the service division of the Italian subsidiary of a multinational company that was the pilot division for the design of the budget process. This division had a high degree of geographical dispersion. Consequently, the results provided could extend more easily to geographical dispersed companies than others.

Despite of these limitations, this study contributes to management accounting literature generating empirical evidence on the design of a (negotiated) budget process in a real organizational context and providing a deep analysis of the behavioural effects (manager's resistance to changing the initial budget proposal) generated by its actual implementation.

In terms of directions for future research this study provides three suggestions.

First, it suggests increasing the researchers' attention toward how companies design their budget process for allowing their managers to have a certain level of involvement and influence on their budget. This is particularly relevant, because it would allow investigating what are the different design elements and procedures that companies can use for differently designing their budget process.

Second, this study shows the key role of top management in deciding how to structure the process across the three sequential phases of the budget proposal preparation, negotiation and approval, and it lets some organizational and managerial drivers of top management decisions to emerge (e.g. managers' geographical proximity, managers' budget responsibility, top management

leadership style). This suggests that for studying the budget process design, it is necessary to focus on the higher organizational levels within the company and that, to better understand the motives behind the design decisions, it is relevant to explore under what circumstances companies adopt a certain budget process procedure.

Third, this study calls for expanding the empirical research on the implications of different budget process designs. In particular, it proposes to complement the experimental evidence using field studies for identifying their multi-facets dimensions, paying attention to the psychological processes they activate and to their behavioural consequences.

Figure 1 – Description of the company budget process

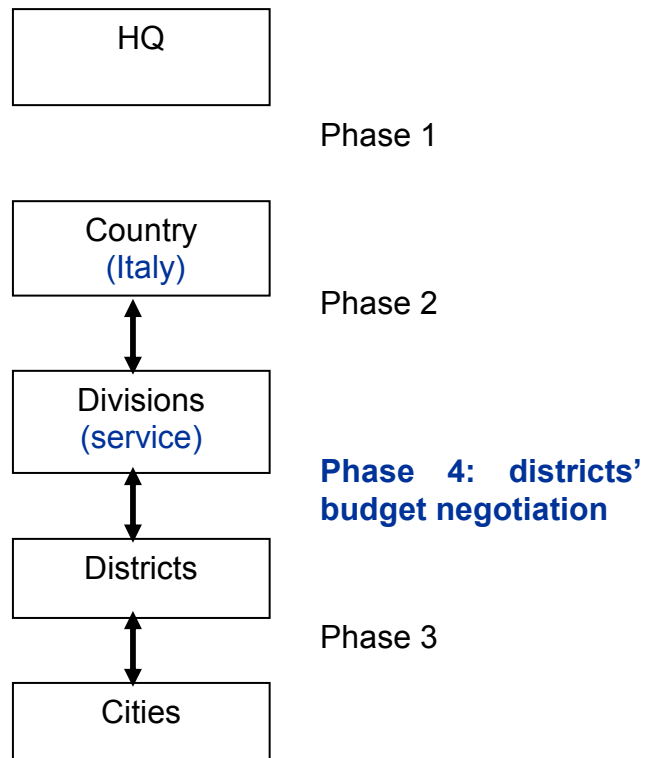


Table 1 - Overview of the data collection strategy

Periods	Budgeting process phase	Data collection
July	Company identification and selection.	Exploratory interviews with CFO and management accounting director
August	Entering the company from the management accounting department.	Observation, field notes; archival data
September – October	Phase 1 (HQ and subsidiaries); Phase 2 (subsidiary and divisions); investment approval; data collection and HQ reporting; monthly budget allocation process.	Observation, field notes, archival data (e.g. investment forms), participation and interaction with divisional managers, interviews with management accounting director and CFO
November	Phase 3 (city managers, district managers, management accountants' visits); Bottom-up proposals definition using the software.	Management accounting activities; field notes; observation and collaboration to software preparation; archival data (e.g. collection of district proposals through the software); management accountants interviews
December	Phase 4: divisional and district managers' negotiations; collection of final proposals at district level and of a first proposal at lower level. Final adjustments of district and cities budget proposals.	Questionnaire development Observation of the negotiations; field notes; archival data (e.g. collection of proposals through the software)
January	Yearly budget presentation in the monthly coordination committee and first variance analysis.	Questionnaire administration (by email) to divisional and district managers and questionnaire collection
February	Coordination committee End month: variance analysis	Semi-structured interviews with district managers, divisional manager, management accountants and CFO.
March – April	Coordination committee End month: variance analysis	Interviews checks, data analysis and research report writing
May	Coordination committee End month: variance analysis	Presentation of the research report to management accounting director and CFO; company visit and report delivery

Table 2 - Questions asked in the questionnaire

<p>Degree of budget participation (Likert scale 1 very little - 7 very much) <i>Milani (1975)</i></p>	<p>The portion of the budgeting process I am involved in setting. The amount of reasoning provided to me by the superior when the budget is revised. The frequency of budget-related discussions with the superior initiated by me. The amount of influence I feel to have on the final budget. The importance of my contribution to the budget. The frequency of budget-related discussions initiated by my superior when budgets are being set.</p>
<p>Main reason to have the managers participating (Please, indicate 1 among these alternatives) <i>Adapted by Shields and Shields (1998)</i></p>	<p>To increase the motivation of the district managers. To increase the satisfaction of the district managers. To share information with the divisional manager. To increase the degree of coordination inside the organization. To reduce the job related tension for the district managers. To reduce the risk of opportunistic behaviours by the district managers.</p>
<p>Degree of organizational commitment (Likert scale 1 Strongly disagree – 7 Strongly agree) <i>Adapted by Mowday et al. (1979)</i></p>	<p>I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful. I talk up this organization to my friends as a great organization to work for. I would accept almost any type of job assignment in order to keep working for this organization. I found that my values and the organization's values are very similar. I am proud to tell others that I am a part of this organization. This organization really inspires the very best in me in the way of job performance. I am extremely glad that I choose this organization to work for over others I was considering at the time I joined. For me this is the best of all possible organizations for which to work. I really care about the fate of this organization.</p>
<p>Type of results' orientation (Likert scale 1 Strongly disagree – 7 Strongly agree)</p>	<p>I think that what is more important is not each employee result, but the success of the all organization. I think that only maximizing each employee result, it is possible to have a successful organization.</p>
<p>Utility of budget negotiation (Likert scale 1 Totally disagree – 5 Totally agree)</p>	<p>The moment of discussion is an indispensable moment for comparison. The moment of discussion gives me the possibility to tell my opinion and actively participate to the process. The moment of discussion is just a formality as I do not feel free to negotiate.</p>
<p>Information asymmetry – overall perception</p>	<p>In your opinion at the beginning of the negotiation the parties had the same information (YES/NO).</p>

Information exchanges during negotiation (Likert scale 1 Totally disagree – 5 Totally agree)	It has been mainly the supervisor who has told you unknown information that have influenced the discussion. It has been mainly you that have revealed information on the local reality which stimulated the discussion. There as been a reciprocal information exchange that increased the dialogue between the parties.
Evaluation of the initial proposal (Likert scale 1 Totally disagree – 5 Totally agree)	In your opinion: Your proposal has been the best as possible given the information that you had. Your proposal was reasonable, given the situation of your district. Your proposal was prudentially defined to begin the negotiation in the best way.
Resistance to changing the budget proposal (Likert scale 1 Totally disagree – 5 Totally agree) <i>Adapted by Jermias (2001)</i>	You were able to maintain the principal points of your initial proposal with few difficulties. You changed some points of your proposal making concessions to the superior manager. You re-negotiate more times the targets with the superior manager to find an agreement that your were satisfied with. You have to radically change your proposal. You have been induced to reveal information specific on your district to maintain the principal points of your proposal. You have been induced to revise your proposal during the negotiation because of the new information you obtained negotiating.
Effects of new information (if they emerged) (Likert scale 1 Totally disagree – 5 Totally agree)	The revealed information: They stimulated the discussion creating new bargaining spaces. They made emerge the necessity to keep the discussion based on cooperation and sharing, more than focusing it on conflicts among the parties. They did not stimulate the sharing, highlighting the diversity of the parties' positions. They increased your confidence in the validity of the initial proposal you presented, and therefore your resistance to change it.
Effects of having the same information during the negotiation (if you answered YES previously to the perceived information asymmetry question) (Likert scale 1 Totally disagree – 5 Totally agree)	It has increased your confidence in the validity of the initial proposal you presented. It pushed you to negotiate more actively to explain your ideas. It favours the reciprocal understanding and dialogue. It allows you to reach more easily the agreement.
How many city centers are in your district?	1 – 2 – 3 – 4

<p>If the district has more than one city center: effects of negotiating for the city managers</p> <p>(Likert scale 1 Totally disagree – 5 Totally agree)</p>	<p>Negotiating the budget on behalf of the city managers:</p> <p>It increases your bargaining power facing the superior manager.</p> <p>It increases your feeling of responsibility of the important role you have in the process.</p> <p>It stimulates you to be more “fixed” discussing your budget proposal that you have previously discussed and shared with them.</p> <p>It stimulates you to be more “flexible” and open to the dialogue during the negotiation.</p>
<p>Evaluation of the software</p> <p>(Likert scale 1 Totally disagree – 5 Totally agree)</p>	<p>It is a precious and useful support to improve the process.</p> <p>It is a tool that allows in few time to have a global picture, a starting point for the negotiation.</p> <p>It is a way to be able to better evaluate the economic impact of your decisions and management choices.</p> <p>It is a tool that facilitate the information exchanges and the achievement of an agreement between the different organizational levels, thanks to the possibility to reason iteratively.</p> <p>It is a new tool I do not trust.</p> <p>It is a tool to limit and constrain my decisions and management choices to a limited number of alternatives.</p> <p>If I could choose I would go back to the process as it was before of the introduction of this software.</p>
<p>Controller’s role</p> <p>(Likert scale 1 Totally disagree – 5 Totally agree)</p>	<p>It guarantees independence and neutrality.</p> <p>It covers an essential role of supporting the translation of business actions in financial targets.</p> <p>It is always actively present in the different phases of the process.</p> <p>It assists to the negotiations which happen between the parties.</p>

Table 3 - Descriptive statistics of the variables measured in the questionnaire

Variables	Mean	S.D.	Theoretical Range		Observational Range		Cronbach alpha
			Min	Max	Min	Max	
effects of participation	2.30	0.69	1	5	1	4	0.935
budget participation	4.40	1.22	1	7	1	7	0.792
organizational commitment	3.67	1.13	1	5	1	5	0.876
type of results' orientation	3.70	0.98	1	5	1	5	0.837
evaluation negotiation	4.22	0.67	1	5	2	5	0.921
perceived information asymmetry	0.80	0.41	0	1	0	1	n.a.
degree information exchange	2.50	0.84	1	5	1	5	0.755
judgment on the proposal	4.28	0.63	1	5	1	5	0.922
resistance to change	3.48	0.99	1	5	1	5	0.873
effects revealed information	4.31	0.87	1	5	3	5	0.988
effects same information	3.30	1.01	1	5	1	5	0.715
n. city managers	2.20	1.01	1	4	1	4	n.a.
effects negotiation with city managers	2.08	1.02	1	5	1	5	0.899
utility information tool	4.47	0.68	1	5	2	5	0.958
role of controller	3.96	0.88	1	5	1	5	0.927
N. observations = 20							

Reasons for participating (choose 1 option)	
Motivation	20%
Satisfaction	0%
Share information	50%
Coordination	30%
Job Related Tension	0%
Opportunistic behaviour	0%
100%	

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CHAPTER 3

Determinants of company adoption of a top down - bottom up budget process procedure

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January 2010

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Abstract

This study tests a theory on the determinants of company adoption of different budget process procedures in a sample of middle-large companies operating in Italy. Using questionnaires collected by 141 management accountants, it finds that companies adopt five different budget process procedures. It shows that the complexity of business units budget responsibility and business units strategic diversification significantly increase the likelihood of adopting a bottom up budget process procedure (vs. the extreme top down one), while company geographical dispersion and business units geographical distance significantly reduce that likelihood. This study controls for Ceo leadership style, Ceo age, the fact that the company is listed and that it is an headquarter, company financial risk and financial crisis uncontrollability. It also finds external determinants (environmental uncertainty and competition intensity) to be not significant predictors of the likelihood of adopting any bottom up budget process procedures (vs. the extreme top down one).

Keywords

budget process procedure, top down, bottom up, influence, participation.

I. Introduction

Opening any management accounting textbooks on the budgeting chapter you are going to read the words '*top down*' and '*bottom up*' with respect to the description of the budget process. This terminology is widely used for the easiness with which it matches in the reader mind the practical manifestation of the information flows exchanged across the company organizational levels during the budget process, with the simplicity of its words' meaning '*from top to down (the bottom)*' or '*from bottom to up (the top)*'. However, it is exactly because of this easiness that, while, on the one hand, it has been useful to describe the budget process in a simplified and immediately understandable way; on the other hand, it has limited the description of the budget process to a scratched external observation of questionable theoretical value. This because the use of this dichotomy did not stimulate management accounting researchers neither to improve and refine this initial categorical model, nor to build any alternative model with which to compare and evaluate this model validity. Therefore, there have not been further theoretical developments to enrich the understanding of what does it mean to have a top down or a bottom up budget process, which formal design elements can be used to design different types of budget processes, and under which circumstances companies adopt a certain budget process procedure.

This paper investigates exactly these three research questions.

First, it wants to be a first step for deepening our knowledge on companies' budget process design choices. It posits that companies can design different budget processes by adopting a top down - bottom up budget process procedure. It argues that there is a continuum of formal procedures among which companies can choose that goes from the extreme of a pure top-down procedure, where the business unit managers have low involvement and influence in all phases of the budget process; to a pure bottom-up one, where the business unit managers have high involvement and influence in all phases of the budget process. Company's choice of adopting a certain budget process

procedure consists in the Chief Executive Officer (Ceo) choice of adopting a configuration of design elements that allows her/him to differently position the company on the top down - bottom up continuum⁶. This study uses a configurational approach, based on a congruence notion of fit (Drazin and Van de Ven 1985; Gerdin and Greeve 2004)⁷, hence all empirically identified configurations are feasible and effective procedures.

Second, this paper proposes three formal design elements, one for each phase of the budget process (budget proposal preparation, budget proposal negotiation and budget proposal approval) that companies can use for giving business unit managers a desired level of involvement and influence on their budget: giving or not giving them targets as constraints for the budget proposal preparation; giving or not giving them the opportunity to begin the budget proposal negotiation presenting at first their budget proposal; and recognizing or not recognizing them final authority on the business unit budget approval.

Third, this study identifies the determinants of the choice of a top down vs. bottom up budget process procedure. On the basis of both economic and psychological theories of participative budgeting, it posits that these determinants are factors that can influence the level of information asymmetry between the Chief Executive Officer and the business unit managers, because the Ceo decides to adopt the budget process procedure to reduce the uncertainty she/he has on the business unit environmental and operating conditions and gather information to set a challenging budget for the business

⁶ This study does not directly investigate the process top management (in the person of the Ceo) uses for deciding the design of the budget process. Instead, in line with prior contingency theory studies on budgeting and management control systems design, it investigates its visible outcomes: the types of budget process procedures adopted at present by the companies.

⁷ The use of configurations implies that there are few states of fit between content and structure with companies making 'quantum jumps' from one state of fit to the other. Moreover, with a congruence approach of fit, it is assumed that only best-performing companies survive and therefore can be observed, because fit is the result of a natural selection process. Hence, the research task is to explore the nature of context-structure relationships without examining whether they affect performance.

unit managers. This study develops the hypotheses and it tests them with data collected by 141 questionnaires of management accountants of middle-large companies operating in Italy.

This study contributes to the management accounting literature on budgeting in multiple ways.

First, it highlights the centrality of top management choices in designing the budget process: only top management is in the position to observe the overall company and he has the authority to decide which budget procedure is better to adopt, and thus which level of involvement and influence is allowed to the business unit managers.

Second, this study is the first to argue and to show that top management decides to differently position the company on the top down - bottom up continuum by choosing to adopt a certain budget procedure (a configuration) made up of multiple formal design elements that refer to different phases of the budget process. It also argues that this choice allows top management to give a lower vs. higher level of involvement and influence to the business unit managers in each of the budget process phases.

Third, this study is the first one to develop and test a theory on the determinants of the adoption of different top down – bottom up budget process procedures. The findings highlight that the higher the complexity of the business units budget responsibility and the level of business units strategic diversification, the more the Ceo is likely to adopt a bottom up budget process procedure (vs. the extreme top down one), and that the higher the company geographical dispersion and the business units geographical dispersion, the less the Ceo is likely to adopt a bottom up budget process procedure (vs. the extreme top down one). These findings have been found controlling for Ceo leadership style, Ceo age, company being listed and controlling another company, company financial risk and financial crisis uncontrollability. Finally, this study shows that internal determinants are more helpful in explaining the choice of the budget process procedure than external determinants: environmental uncertainty and

competition intensity are not significant predictors of the likelihood of adopting any bottom up budget process procedures (vs. the extreme top down one).

Fourth, this study contributes to the contingency theory studies in management accounting on the debate on survival fit between contingency factors and management controls. Prior studies have called for using more holistic approaches when studying the relationships between contingencies and management accounting system (Gerdin and Greve 2004; Chenhall and Langfield-Smith 1998). This study uses cluster analysis to identify the ways in which different design elements combine in a discrete number of configurations (budget process procedures). Moreover, by adopting two types of empirical analysis, it provides evidence on the appropriateness of modeling budget process procedures as configurations, rather than as individual design choices. In this way, it shows the importance of considering management control system design choices at more aggregate level to identify not only which contingency factors are more likely to contribute to one design element choice, but also which ones (positively or negatively) are more likely to contribute to the adoption of a certain configuration of design elements representing an effective fit state.

The remainder of this paper is structured as follows. The following two sections define the construct of top down – bottom up budget process procedure, they present the conceptual model and they conclude developing testable hypotheses. The research method is detailed in the fourth section, including the measurement of variables and the procedure for the data analysis. The findings of the study are presented and discussed in the fifth section, together with sensitivity analyses and robustness tests. The last section contains concluding comments, limitations and some suggestions regarding future research.

II. Top down – bottom up budget process procedure

In this paragraph I present the construct of top down – bottom up budget process procedure. First I critically evaluate the previous definitions of top down – bottom up

budgetary approaches and I propose a new conceptualization as a continuum of budget process procedures. Then I present the formal design elements that constitute a budget process procedure, providing their theoretical justification, and I explain their meaning, as individual design choices and as configuration of design choices.

Management accounting textbooks describe the budget processes categorizing them according to the use of a top down or a bottom up budgetary approach (Werner and Jones 2004; Anthony and Govindarajan 2003; Garrison and Noreen 2004). A *top down approach* is defined as a situation in which top management starts the budget process sending down budgets and targets, based on the organizational goals and strategies. A *bottom up approach* is defined instead as a situation in which the budget process starts by asking those who will ultimately implement the budget to make proposals and to have an involvement in the process itself. Some textbooks present also a third approach, a negotiated approach, defining it as a mix of the previous two approaches (Anthony and Govindarajan, 2003; Garrison and Noreen, 2004). Nevertheless textbooks clearly distinguish among two (sometime three) approaches; empirical evidence shows that companies are commonly using more than one approach during their budget process and that budgets are usually negotiated between superior and subordinate managers (Umapathy 1987; Howell and Sakurai 1992), such that this categorization is too broad and vague. In this respect, Shields (2005) states that, instead of two, there exists a continuum of budgetary approaches that goes from the extremes of a pure top down budget approach, where strategic directions and goals are assigned by top management without any involvement of low level managers, to a pure bottom up budget approach, where strategic directions and goals are self-set by low level managers.

Notwithstanding the easiness of understanding, the previous definitions of top down and bottom up budgetary approaches are confounding two important issues that should be separately considered: the direction of the information flow (the organizational level from which the budget process starts); and how

managers are involved in the process. Both these issues are relevant. For example, both in the case of a top down and of a bottom up approach, the initial input to the budget process can be given by top management with a budget letter (or with budget guidelines) indicating the macro level strategic goals and overall company targets that the different organizational levels have to meet (Anthony and Govindarajan 2003; Garrison and Noreen 2004). However, the presence of this initial input from up does not necessarily imply that the whole process is a top down process as previously defined, because this input from top management is followed by other phases of the budget process in which business unit managers can be involved and have influence on their budget. The previous definitions are therefore confusing in their conceptualization of top down and bottom up approaches such that it is not clear what these approaches actually are, what their design characteristics are and under which circumstances companies are choosing to adopt them.

First of all it is important to recognize the freedom that companies have in deciding which budget process procedure to adopt. Prior participative budgeting studies emphasize the role of the superior manager in allowing subordinates to participate in the budget process. They implicitly assume that the design of the budget process is a decision made by the individual superior. Therefore they focused on the lowest levels of the organization to measure the variation in the level of participation among the lower level managers, because at the bottom of the organization there is a higher number of subordinates, thus a higher difference in subordinates' participation can be observed. However, like other organizational design decisions also those related to the budget process can only be made at company level: only top management (and more specifically the Chief Executive Officer (Ceo)) is in the position to observe the whole company, he has company budgetary responsibility and he has the authority to decide which budget process procedure the company is going to adopt.

By choosing the budget procedure, the Ceo consequently determines which level of participation is going to be allowed to the business unit managers along

the different phases of the process. This argument is in line with prior studies that recognize the presence of a desired level of budget participation that companies strive to implement by designing the budget process (Clinton and Hunton 2001; Frucot and White 2006); and it is coherent with those studies that defines participative budgeting as the (decision making) process that gives subordinates the opportunity to be involved and have influence in setting their budgets (Cherrington and Cherrington 1973; Milani 1975; Tiller 1983; Lindquist 1995; Magner et al. 1995).

The top down and bottom up budgetary approaches previously defined are thus different budget procedures that companies can choose to adopt for structuring their budget process.

Each management accounting textbooks describes the budget process identifying different sequential phases. For example, Drury (2008) illustrates the budget process using the following phases: communication of the details of the budget policy; determination of the factor that restricts performance; preparation of the sales budget; initial preparation of the other budgets; budgets negotiation; budgets coordination and review; budgets final acceptance; and budgets reviews during the year. Anthony and Govindarajan (2007) describe it instead with the following phases: development of an initial budget proposal on the basis of top management guidelines; negotiation of the budgets; review and approval of the budgets; and update and revision of the budgets. Even if there are differences, each textbooks description of the budget process include at least three sequential stages: a first phase of budget proposal preparation, in which business unit managers are required to prepare a proposal for their business unit budget; a second phase of budget proposal negotiation, in which they negotiate their budget proposal with the top management; and a third phase of budget proposal approval, in which the final budget is finalized and approved. In each of these phases business unit managers can be given the opportunity to be involved and have influence in the budget setting process, depending on top management choice to adopt a certain budget process

procedure. More specifically, companies (in the person of their Ceo and/or general director) can choose among a continuum of budget process procedures that goes from the extreme of a pure top down procedure, where the business unit managers have low involvement and influence in all the three phases of the budget process; to the extreme of a pure bottom up procedure, where the business unit managers have high involvement and influence in all the three phases of the budget process. They can choose to differently position the company on this procedural continuum, by deciding if and to what extent they want to give business unit managers the opportunity to be involved and have influence in setting their budget.

When the Ceo chooses to adopt a certain procedure she/he selects a configuration, that is formed by a combination of design elements that characterizes the budget process as being more top down or bottom up oriented.

Based on extant literature, empirical evidence and textbooks content analysis, this study proposes three formal design elements that companies can use to give business unit managers the opportunity to be involved and have influence on the business unit budget in each phase of the budget process.

The first design element, related to the budget proposal preparation phase, is top management choice of providing business unit managers with budget proposal constraints. These constraints, when provided, are formalized into targets that business unit managers have to respect for developing their budget proposal. They can be communicated using a budget letter and/or budget guidelines, together with next year company strategic objectives. Management accounting textbooks have emphasized the importance of beginning the budget process communicating the budget policy and guidelines: they state that top management can decide to use the budget guidelines to make the whole organization aware of the company strategic directions (Drury 2008; Weetman 2006) and to communicate some revenues and costs constraints that need to be satisfied for the incoming year (Drury 2008).

When the Ceo chooses to communicate budget proposal constraints, she/he is reducing the level of involvement and influence of the business unit managers, compared to when she/he does not provide constraints, because those managers have necessarily to take into account the constraints in preparing their budget proposals.

Management accounting research (Cherrington and Cherrington 1973; Tiller 1983; Kren 1990; Lindquist 1995; Libby 1999) based on control-mediated theories of procedural justice (Brett and Goldberg 1983; Thibaut and Walker 1978) shows that manager initiative, and specifically choice, is an important element of perceived participation. They define choice as a decision making condition where individuals are given the opportunity to select a specific course of action, but they cannot make the final decision. These studies show that when subordinates are provided with the opportunity to select a budget proposal (they call this condition vote or choice), they feel a higher level of influence and a higher level of process control over their budget, as long as they perceive to have experienced decision freedom in the setting of their own budget (Tiller 1983). This study has considered as outcomes both dimensions of participation: manager's level of involvement in the process, driven by manager's perception of decision freedom in the budget proposal preparation phase (his initiative); and manager's level of influence, generated by the effect that the freedom in selecting the initial proposal (choice) has on the final budget. Some experimental studies consider the presence of budget proposal constraints in their setting. For example, Cherrington and Cherrington (1973) operationalize the budgetary control conditions including a minimum level required for budget proposals acceptance by the superior; Tiller (1983) allows his participants to choose their proposal between two alternative budget levels; and Lindquist (1995) requires his participants in the vote condition to keep in mind some previously communicated production requirements when developing their budget proposal. Also goal setting studies often use the communication of induced proposal constraints by the experimenter: for example, they add the

communication of normative information to aid participants to set their own goals (Roberson et al. 1999); and they provide a reference for their participants in the participative condition, such that when their proposal is below that reference the experimenter persuades them to increase it, at least to a minimum predefined level (Li and Butler 2004). These studies use budget proposal constraints for manipulating or controlling the level of goal difficulty across the conditions, implicitly recognizing the importance of the subordinates' perceived level of decision freedom in the goal setting process. Therefore, by increasing (decreasing) business unit managers' decision freedom in selecting their budget proposal, the choice of not giving (or giving) budget proposal constraints is a design element that renders the budget process procedure more bottom up (top down).

The second design element, related to the budget proposal negotiation phase, is the choice of giving (or not giving) business unit managers the possibility to communicate at first their budget proposal in their budget negotiation with top management.

Management accounting textbooks have recognized the key role of negotiations in the budget process. Merchant and Van der Stede (2007) identify negotiated targets as a third way of target setting, alternative to model based and historical targets. Others state that there is a precise phase of any budget process where budgets are negotiated which is '*a stage of vital importance*' of the budget process (Drury 2008), '*the hearth of the process*' (Anthony and Govindarajan 2007). Prior negotiated budgetary studies defined negotiated budget as "*any iterative budget-setting process with the budget formally defined through a negotiation process between superiors and subordinates*" (Fisher et al. 2000).

When the Ceo chooses to give business unit managers the possibility to begin the negotiation by communicating at first their budget proposal, she/he is increasing their level of involvement and their level of influence compared to when she/he chooses to communicate themselves at first the proposal for the business unit budget, because business unit managers can have a free

revelation of their budget preference (involvement) and a first mover advantage in the budget negotiation (influence).

Management accounting research (Cherrington and Cherrington 1973; Tiller 1983; Kren 1990; Lindquist 1995; Libby 1999) based on control-mediated theories of procedural justice (Brett and Goldberg 1983; Thibaut and Walker 1978) shows that individuals in a voice condition are given the opportunity to express their preferences or views about decision alternatives, but they do not make the final decision. Being the first to communicate the budget proposal the subordinate can freely reveal her/his budget preference, because she/he does not have to listen and evaluate the superior offer before presenting her/his own, thus the expression of preference is not influenced and/or constrained in any way by the one of the opponent (Jermias 2001). This gives her/him a higher perception of decision freedom and process control (Tiller 1983), than if the Ceo would revealed at first his budget proposal for the business unit, increasing his level of involvement in the process.

Negotiation literature in economics (Raiffa 1982) and social psychology (Pruitt and Carnevale 1993), and behavioral decision theory studies (Bazerman 1983), have recognized the importance of which party is beginning the negotiation. The first research stream, aiming to identify the optimal behavior of the negotiator given the best predictive description of the behavior of the opponent (game theory), has taken into account the sequence of moves among the actors and showed that the first mover has a bargaining advantage. The second one has also focused the attention on the actual tactical behaviors of the parties, by describing the tension facing the negotiator in choosing between bargaining behaviors that increase the size of the pie, versus those that increase the percentage of the pie that the focal party will receive. The third one considered the ways in which negotiator decisions systematically deviate from rationality due to framing, overconfidence, not rational escalation of commitment and ignorance of other party's information in the tactical negotiation process. In particular, Galinski and Mussweiler (2001) demonstrate that making the first

offer in a buyer and seller negotiation can afford a bargaining advantage, because whoever makes the first offer would make a demand that anchors the negotiation to her/his favor, such that she/he obtains a better outcome. It also finds that first offers are strong predictors of final settlement prices. Hence, allowing the manager to make the first offer in the negotiation can be expected to give him an higher level on influence on the final budget.

Studying the economic consequences of setting budgets through a negotiation process (vs. setting them unilaterally), management accounting research (Fisher et al. 2000) shows that the parties initial negotiation positions affect the likelihood of reaching an agreement. They find that the subordinate sees the possibility to begin the negotiation, communicating his budget proposal, as an opportunity for adopting a strategic bargaining behavior: he reduces his initial budget proposal to a lower level than the one he would unilaterally choose. However they also find that there is not strong evidence of an anchoring effect on his initial position.

Later studies (Fisher et al. 2002; 2006) use a setting where only the subordinate is the first to make the initial budget proposal. Their justification for this design choice is that "*it is consistent with bottom up processes*". They do not articulate or explain the reason behind this statement, which can be interpreted considering their assumed direction of the information flow during the negotiation: from the subordinate to the superior. They do not see this design choice as a way to give the subordinate manager more involvement in the process and higher influence on his final budget, as instead it is argued in this paper.

It should be noted that this is a design choice, thus the Ceo can decide to present at first his budget proposal for the business unit budget. There are studies that have given to the superior the possibility to begin the negotiation (e.g. Licata et al. 1986; Chow et al. 1988; Waller 1988). In addition, many studies including superior imposition of budgets have implicitly attributed him

the right to begin (and terminate) the negotiation (e.g. Chalos and Daka 1989; Kren 1990; Lau et al. 1995).

By allowing a free revelation of business unit managers' budget preference and giving them a first mover advantage, the possibility for the business unit managers (for the Ceo and/or the general director) to communicate at first their budget proposal in the budget negotiation phase is a design element that renders the budget process procedure more bottom up (top down).

The third design element, related to the budget proposal approval phase, is the choice of giving (not giving) final authority on the business unit budget approval to the business unit managers.

Negotiated budgetary studies clarify that budgetary negotiations cannot be interrupted, due to the presence of a working relationship between the parties, and they cannot be solved with independent third party intervention (Fisher et al. 2000). They can end with the achievement of an agreement between the parties on a certain budget level or with a situation of impasse that requires the use of an imposition rule (Fisher et al. 2000). In the case of impasse, the possibility of re-negotiation can be given, so that business unit managers can present a different budget proposal. Prior studies (Fisher et al. 2000; 2002a; 2002b; 2006) ignore the possibility of presenting a different proposal by the subordinate, in the case in which the first proposal was not accepted by superior manager after the fourth round. They assume that the subordinate has only one choice: his first proposal is the only occasion he has to exercise his choice and, in the following exchanges, he can only make concessions to the superior manager. Reasons for instead allowing subordinates presenting another budget proposal, lie in the consideration that all changes to the budget proposal should be made by the person responsible for meeting the final budget, such that budgetees' ownership and process control are maintained (Drury 2008; Mia 1989; Milani 1975). However, multiple negotiations are costly (Develin and Partners 2005) and their effect is temporary, because a final budget should be set in any case between the same parties (Fisher et al. 2000).

Thus, in the case of impasse, the attribution and use of final authority by one of the parties is only delayed.

When the CEO chooses to give final authority on the budget to the business unit managers, she/he is increasing business unit managers' level of involvement and influence, compared to when she/he chooses to retain that final authority, because she/he delegates them the decision rights on the approval of the final budget (influence) and she/he attributes them budget ownership and process control (involvement).

Field studies on participative budgeting, using Milani (1975) measure, consider the degree of subordinate acceptance of the final budget as one important aspect of budgetary participation: one of the six items in the scale asks respondents to indicate to what extent the budget is not finalized until the subordinate manager is satisfied with it. Thus with this item they state that there is a phase of the budget process in which the budget is finalized and they assume that it is the subordinate who being more (or less) satisfied with the budget can definitely decide on it (subordinate final authority).

Fisher et al. (2000) have compared superior and subordinate final authority conditions, showing that superior imposition of a budget after a situation of negotiation impasse between the parties triggers a detrimental performance effect by subordinate, because, when the superior imposes a budget, this takes away subordinate perceived influence and control. A later study adds that this effect is due to subordinate lower perceived procedural justice (Fisher et al. 2002a).

More recently, Ranking et al. (2008) find that subordinate tends to frame the superior authority situation more as a self-interest condition than as an ethical dilemma: only when the subordinate has final authority, he has less strategic concerns, and therefore it can be observed an incremental positive effect of subordinate honesty.

The relevance of this third design choice has been highlighted also by goal setting and participative decision making studies. The first ones (e.g. Robertson

et al. 1999; Latham and Saari 1979) often compare self-set, assigned goal and participative goals. They define self-set goals as those determined individually by the subordinate (subordinate final authority); assigned goals as those defined individually by the superior (superior final authority); and participative goals as those determined individually by the subordinate, after a discussion with the superior and/or the experimenter (subordinate final authority). The second ones have instead specified that there is necessarily a managerial control and power relinquishment process behind the concession of final authority (Leana 1987; 1986). They state that the delegation of decision authority requires individual decision making autonomy and they conceptualize delegation as a more complete form of subordinate influence in decision making (Vroom and Yetton 1973).

By delegating part of the decision rights to the business unit managers, attributing them budget ownership and process control, the choice of giving (not giving) them final authority on setting the business unit budget, is a design choice that renders the budget process procedure more bottom up (top down).

To summarize, top management (in the person of the Ceo and/or general director) designs the budget process deciding which procedure to adopt on the top down – bottom up continuum. She/he decides, at the beginning of the budget process, on the adoption of a configuration made up of three design elements that characterized the entire process. Her/his decision consists in choosing, for each phase of the process, to what extent she/he wants to give business unit managers lower /higher involvement (contribution to the process) and influence (contribution to the final budget). Therefore, these design elements represent three design choices that she/he makes, each one corresponding to a phase of the process. They are not exclusive choices, because her/his decision for the first phase does not constrain her/him to make the same type of decision in the following ones. For example, if she/he chooses to give the business unit managers low involvement and influence in the budget

proposal preparation phase, she/he can decide to give high involvement and influence in the second or in the third following phases.

If the Ceo choose to a) (give) not give business unit managers any budget proposal constraints, b) (not) allow them to begin the negotiation by presenting at first their budget proposal, and c) (not) give them final authority on the business unit budget approval; she/he is choosing to adopt an extreme form of (top down) bottom up procedure, because the chosen procedure is made up of (top down) bottom up design elements in all phases of the budget process.

The existence of a continuum of budget process procedures implies that between the extreme procedures, there are intermediate configurations made up combining the three design elements. They represent budget process procedures characterized by levels of involvement and influence allowed to the business unit managers that differ across the three phases of the budget process. The reasons behind the existence of these intermediate configurations lie in the sequential nature of the budget process and in the different types of involvement and influence that the these design elements allow to recognize: business unit managers' decision freedom (initiative) and choice of the budget proposal in the budget proposal preparation phase; business unit managers' free expression of budget preferences (voice) and a first mover advantage in the budget proposal negotiation phase; and business unit managers' decision rights and budget ownership (acceptance) in the budget proposal approval phase.

Few studies have investigated the combined effect of different types of involvement and influence on some budgetary outcomes (Tiller 1983; Lindquist 1995; Libby 1999), however they do not consider that these types are present in different phases of the budget process; they consider only two types at a time; they use different operationalizations of the design elements, depending on their experimental setting; and they ignore both the existence of Ceo's budget process procedure adoption decision and of its determinants. Therefore, there

are not a priori reasons to expect some configurations to be theoretically not coherent.

By focusing on the alternative procedures, this study provides a first exploratory analysis on the existence of these intermediate configurations and their determinants. As consequence, the hypotheses in the next section are developed specifying them with respect to the extreme configurations of design elements (bottom up budget process procedure vs. top down budget process procedure). *A bottom up (top down) budget process procedure is a procedure that allows business unit managers to have high (low) involvement and high (low) influence in the entire budget process.*

III. Hypotheses development

In this paragraph I develop the theory on the determinants of company choice to adopt a top down (bottom up) budget process procedure. First I explain the theoretical background and the foundations of my argument, then I present the conceptual model and I illustrate its theoretical justification by developing testable hypotheses.

Participative budgeting literature define budget participation as “*the extent to which subordinates are involved and have influence in the budget setting process*” (Brownell 1982), thus the studies on the antecedents of participative budgeting can be of help in identifying the drivers of the adoption of budget procedures that give higher or lower involvement and influence to the business unit managers.

These studies identify four variables that can determine the use of budget participation at departmental level: information asymmetry, interdependence, environmental uncertainty and task uncertainty; and they find that vertical information sharing is the main reason subordinates recognize for justifying their involvement and influence in the budget process (Shields and Shields 1998). However, they do not recognize that it is how the budget process is structured that determines to what extent subordinates are allowed to be involved in the process and to have influence on their budget.

Also negotiated budgetary studies illustrate the importance of information asymmetry in determining the concessions pattern between superior and subordinate (Fisher et al. 2002). Their findings show that it is the difference of the information owned by the parties that foster the exchange of budget offer and counteroffers, in their case it is information on subordinate performance ability unknown by the superior. However they assume that the budget process (the negotiation structure) is exogenously defined, and thus it is stable and unchanged independently of these information differences among the parties.

When the company (in the person of the Chief Executive Officer and/or general director) decides to adopt a budget process procedure that is more top down vs. bottom up oriented, it evaluates the level of information asymmetry between the Ceo and the business unit managers. In particular, information asymmetry occurs when business unit managers have specific knowledge about the functioning and the operating environment of their business unit, which is either not available to top management or is too costly for top management to obtain (Christie et al. 2003).

The reason for this evaluation is based on both economic and psychological theories of participative budgeting. According to the economic theories (Christensen 1982; Baiman and Evans 1983; Penno 1984; Kirby et al. 1991), the business unit manager is assumed to know more about the task environment than his superior, so the Ceo wants to use a 'participative' budget process procedure as a way to gain information on the task and the task environment to reduce this uncertainty, with the aim of offering a more efficient and goal congruent incentive contract to the business unit manager. According to the psychological theories (Hopwood 1976; Lawler and Rhode 1976; Locker and Schweiger 1979), when business unit manager possess better job-related information, the Ceo wants to use a 'participative' budget process procedure to learn those information, in order to develop a higher quality budgetary decision (e.g. he wants to set a more challenging and difficult budget level). For example, also goal setting studies, comparing self-set with participative and

imposed goals, clarify that goals need to be participatively set, because the superior does not have enough information to set a challenging budget and the subordinate, if let completely free to self-set it, would choose a budget that is too easy to achieve.

Both economic and psychological theories of participative budgeting assume that the subordinate has the incentive to obtain the definition of budget that is easy to be achieved, because he wants to minimize his level of effort (thus he introduces slack in his proposed budget), due to the link between budget and incentives. However, the subordinate can also have the incentive to increase his proposed budget in two cases: to signal his higher managerial quality to the superior, when internal promotions are used in the company (Baker et al. 1994; Merchant and Manzoni 1989); and to obtain a higher level of resources, when the budget is used both for resource allocation and performance evaluation purposes (Fisher et al. 2002b; Merchant and Manzoni 1989). Even in those two cases, top management is still having uncertainty about the reasons below the subordinate unexpected higher proposed budget (e.g. is he proposing it to obtain more financial resources than necessary? Is he proposing it because he can even achieve an higher budget than this one?), hence he still wants to reduce this uncertainty and learn more job related information to evaluate the quality of the subordinate budget proposal.

Ceo's decision is guided by the need of reducing the uncertainty she/he has on the business unit environmental and operating conditions, hence she/he chooses to allow business unit managers to be involved in the process and to have influence on their budget to the extent that she/he can get their information in the less costly way. She/he prefers to give them low involvement and influence to retain complete control over the process. However, when the uncertainty is high, she/he is better off in choosing a budget procedure that allows business unit managers more involvement and influence on their budgets, rather than risking to assign them an unachievable budget. The reason is that this can have strong demotivating effects (Fisher et al. 2002).

Therefore, based on prior literature, the factors that influence the level of information asymmetry between the Ceo and the business unit managers can be expected to contributing to the choice of adopting a certain budget process procedure: they can influence both each of the three design element choices and hence the adoption of the design elements configuration for the whole process. This because the design elements are three sequential not exclusive design choices, and thus each of them can depend on any of the determinants. Which determinant is more likely to contribute to which of the three design choices, and which determinant is more likely to contribute to the adoption of which configuration of the three design choices, are exploratory research questions that are addressed in this study.

The factors influencing the information asymmetry between the Ceo and the business unit managers can be classified in two categories: internal and external, depending on their origin. The first type originates in the organizational environment, the second one in the external environment.

According to sociological theories of participative budgeting, both categories of factors can influence the companies' decision to adopt a top down – bottom up budget process procedure, because both the external and the organizational environment can generate the need to use integrative mechanism to coordinate the actions of the business units. What is the exact role of these two types of determinants in influencing the company's adoption of certain budget procedures is unknown and subject to exploration in this study.

The next equation summarizes the conceptual model, while its theoretical justification follows:

TD_BU budget process procedure = f (internal determinants; external determinants; control variables).

The determinants of company adoption of a top down - bottom up budget process procedure

Internal determinants

The internal determinants are factors that originate in the organizational environment. The internal determinants identified are the following ones: Ceo span of control, company size, complexity of business units budget responsibility, business units geographical distance, company geographical dispersion, business units strategic diversification and interdependence.

Ceo span of control

Prior participative budgeting studies, considering a setting with one superior and one subordinate, assume that the decision on the level of budget participation is made independently of the number of subordinates controlled by the same superior. However, organizational design research has assumed that increasing the span of control, by increasing the number of business units, can *weaken* the control environment (Simon 1957; Williamson 1967; Leavitt 2005). The reason is that the superior cannot effectively monitor many subordinates concurrently, resulting in moral hazard (hidden action) problems.

A recent working paper by Hannan et al. (2008) presents a conflicting argument. They state that increasing the span of control can actually *strengthen* control, in a budget setting characterized by asymmetric information and resource allocation. They demonstrate that as the span of control increases, superiors are more likely to incur a cost by rejecting projects they believe include excessive slack (they become more tough in the negotiation), subordinates respond by reducing the slack in their budgets, thus on average the superior earns more per average number of subordinate it controls. In their study they assume that there is a situation of permanent asymmetric information between the superior and the subordinate and that subordinate's reporting behavior of the actual costs of the project (the revelation of private information) is unaffected by the span of control. However, the superior has

different expectations on the private information owned by the subordinates as the span of control increases, in fact he is more likely to reject the proposals that he believes contain excessive slack. Thus, it can be expected that the wider the span of control of the CEO, the more her/him expects the business unit managers to have more private job related information, such that she/he is more likely to adopt a bottom up budget procedure that allows the extraction of this private information for setting a more challenging budget.

H1a: Ceteris paribus, the wider (stricter) the CEO span of control, the more likely is the company adoption of a bottom up (top down) budget process procedure.

Prior performance measurement studies have shown the importance of considering the use of relative performance evaluations when evaluating the performance of many similar business units (Matsumura and Shin 2006; Frederickson 1992). The empirical evidence on the use of these evaluation mechanisms showed that their applicability is limited to companies where the business units are as similar as possible according to dimensional criteria and similarity of their operating activities. However it can be expected that CEOs of companies having more business units located at the first level of their organizational structure (wider CEO span of control), have more possibilities of comparing those business units among each other, obtaining a higher level of job related information (independently of the differences that are present among those business units). According to this argument, CEOs are more likely to adopt a top down budget procedure.

H1b: Ceteris paribus, the wider (stricter) the CEO span of control, the less likely is the company adoption of a bottom up (top down) budget process procedure.

Company size (vertical differentiation)

Prior studies on corporate participative budgeting find that big organizations are more likely to use an administrative control strategy vs. an interpersonal control

strategy: they are more likely to use greater participation in budgeting decisions, more importance in achieving the budget, formal patterns of communication and greater budgeting system sophistication (Merchant 1981). They state that they are more likely to adopt greater participation, because in large organizations lower level managers are more likely to be better informed about the capabilities of their specialized activities, and involving them in budgeting is more likely to yield to more realistic plans and to provide positive motivational effects. They assume that, as the companies grow, they extend their vertical chain of command, increasing the number of their managerial levels. Studies based on agency theory state that information asymmetry gives incentive to the agent (business unit manager) to behave opportunistically, and that company size increases the rent he can extract from this behavior (Milgrom and Roberts 1992). For example, organizational design studies show that when a managerial level is added, thus the business unit manager has one or more lower level managers, the principal benefits from a reduction in the information communication costs, while the middle manager (the business unit manager) benefits from a double rent extraction from the principal, because he can take advantage of the specificity of the information he directly exchanges with the lower level manager (Melumad et al. 1992; 1995; Laffont and Martimort 1998). Therefore, according to this argument, it can be expected that the more the company is big (it has a longer vertical chain of command), the more the Ceo is likely to adopt a bottom up (vs. a top down) budget process procedure.

H2: *Ceteris paribus, the bigger (smaller) the company, the more likely is the company adoption of a bottom up (top down) budget process procedure.*

Complexity of the business units budget responsibility

Prior studies on budget participation (Merchant 1984) show that functional differentiation is positively related with the formality of budgeting use, which includes greater importance placed on meeting the budget, more formal budget

communications patterns, and greater manager participation in budgeting activities. They consider functional differentiation as the difference in cognitive and emotional orientation among managers in different functional departments (Lawrence and Lorsch 1967). However companies can have a more complex organizational structure than the functional one, like divisional and matrix ones. In a functional organization business unit managers have limited budget responsibility because they can govern only one side of the income statement (costs or revenues), while in a divisional or matrix structure business unit managers have wider budget responsibility. They can govern both sides of the income statement (revenues and costs; profit), and they are often responsible also for the financial indicators of the balance sheet (e.g. inventory turnover, accounting receivable turnover). In some cases their responsibility is the widest, including their business unit return on investment (Merchant and Manzoni 1989). The more the business unit managers have wider budget responsibility the more they are autonomous in managing their business units. Compared to cost centers managers, profit center managers have additional flexibility, because they can make more trade-offs to achieve their budget targets and they are characterized by higher uncertainty in planning (Merchant and Manzoni 1989). This implies that the Ceo faces higher uncertainty on business unit job related information, where the business unit managers have wider budget responsibility. In those companies each business unit manager is a very specific information broker (Valley et al. 1992) that by controlling the information flow is selectively filtering which information is communicated to the top.

Therefore, the more the Ceo works in a company characterized by a complex organizational structure where business unit managers have wider budget responsibility, the more the business unit managers have specific knowledge about the operating functioning of their units that is not available to top management. As consequence, top management will be more likely to extract this specific information adopting a bottom up budget procedure.

H3: *Ceteris paribus, the more (less) complex is the business units budget responsibility, the more likely is the company adoption of a bottom up (top down) budget process procedure.*

Geographical distance of the business units

Prior studies on budget participation state that companies that are geographically dispersed are companies where top management knows relatively less about local conditions than do local managers (Merchant 1981; Shields and Young 1993). Agency theory studies argue that companies geographical dispersion increases both moral hazard and information asymmetry problems: when the top management is located at higher distance from the business unit, this reduces the possibility of using direct monitoring as a control mechanism (hidden action problem) and it increases the information communication costs.

Ceos' of companies that have business units located far from the headquarter, for example out of the country, have to consider the obstacle of space and the different environmental specificities, in deciding the extent to which they want their business unit managers to be involved and have influence in the budget process. The physical distance of the business unit from the headquarter is a factor that influences the environmental local knowledge accumulated by the business unit manager, who is operating in a different geographical context than the one of the top management. This distance reduces the familiarity of top management with the business unit local environmental conditions, rendering the CEO more likely to adopt a bottom up budget process procedure (vs. a top down one) to learn about those conditions.

H4: *Ceteris paribus, the higher (lower) is the geographical distance between the business unit and the company headquarter, the more likely is the company adoption of a bottom up (top down) budget process procedure.*

Company geographical dispersion

A similar argument could be valid for the company geographical dispersion, because prior studies do not distinguish between the previous factor and this one, when they talk about geographically dispersed companies (Merchant 1981; Shields and Young 1993). However, these are two different determinants of Ceo's decision for adopting a certain budget process procedure. The first one, as I clarified above, relates directly to the difference between the top management local environment and the business unit local environment; the second one relates instead to the difference between the local environments of the business units.

Prior studies (Merchant 1981; Shields and Young 1993) do not consider the effect that company geographical dispersion has on the diversity of business unit managers' specific knowledge. However, when a company has its subsidiaries that are geographically dispersed, for example they are located in many regions; the business unit managers have more diverse specific knowledge, because their business units are characterized by more diverse local conditions influencing their activities. The reason is that business unit managers are responsible for activities that are carried out in different geographical sites. As consequence, having a company with a higher number of geographically dispersed subsidiaries renders the Ceo more likely to adopt a bottom up (vs. a top down) budget process procedure, because she/he wants to extract the more diverse specific knowledge of the business unit managers.

H5: Ceteris paribus, the higher (lower) is the company geographical dispersion, the more likely is the company adoption of a bottom up (top down) budget process procedure.

Strategic diversification of the business units

Prior management accounting studies on budgetary participation focuses on business unit managers' involvement and influence in the budget process

considering business units as a homogenous category of organizational units. However, the type of activities done by the business units in their day to day operations depends on company's decision about the diversification of its strategic business portfolio. Therefore, the more the business unit managers operate in business units that are strategically different among each other (for example in terms of products produced, technologies used and markets), the more there would be peculiarities of those business units that would increase the specific knowledge of each business unit manager about the business unit operations. Some studies (Merchant 1981; 1984; Shields and Young 1993) maintains that companies that produce diverse products and use diverse technologies are those where the potential gain from participation are higher, both because participation can be used to better allocate resources to the operating units and offer better incentive contracts, and because it can be used to learn about the local environment and to provide motivation. In addition, prior studies show that when company products are characterized by low standardization there are not clear input – output relationships, thus they need to be learned being a matter of negotiation between the budgeted managers and their superior (Brownell and Merchant 1990). Therefore, it can be expected that the Ceo will consider business units strategic diversification when designing the budget process, such that in the case of a higher (lower) level of strategic diversification among the business units, she/he is more likely to adopt a bottom up (top down) budget process procedure.

H6: Ceteris paribus, the higher (lower) the strategic diversification of the business units, the more likely is the company adoption of a bottom up (top down) budget process procedure.

Interdependence

Interdependence occurs when demand functions of business units are dependent or when business units have joint supply and cost functions (Milgrom

and Roberts 1992). Prior studies have identified interdependence as one of the causal antecedents of participative budgeting (Shields and Shields 1998): based on theoretical economics models (Kanodia 1993), they affirm that participative budgeting exists because it is used for coordinating task interdependencies between subunits, under conditions of asymmetric information. Thus they recognize that only with asymmetric information budget participation, when allowed, contributes to coordinating interdependencies. However, they do not consider that task interdependence itself is a source of information asymmetry among top management and the business unit managers, because a budgetary control system is based on mapping and encoding of means-end relations (Merchant 1984). The presence of interdependence among the business units makes this mapping less clear from the top management point of view, such that it renders difficult the measuring of the output in financial terms and the projecting of cost relationships (Bruns and Waterhouse 1975). Therefore, when there is high interdependence, the CEO's is more likely to adopt a bottom up budget process procedure, because she/he does not have the knowledge to set a properly challenged budget for the business units.

H7: *Ceteris paribus, the higher (lower) the interdependence among the business units, the more likely is the company adoption of a bottom up (top down) budget process procedure.*

External determinants

The external determinants are factors that originate in the external environment. The external determinants identified are the following two: environmental uncertainty and competition intensity.

Environmental uncertainty

Participative budgeting studies address the role of environmental uncertainty in influencing the budget participation – performance relationship. For example,

they find that participation affects performance through job related information and this effect is stronger in high environmental volatility situations (Kren 1992). They also find that environmental uncertainty influences the relationship between interactive use of budgeting and performance (Chapman 1998). In addition, greater budgetary participation has been found in organizations facing greater volatility (Kren 1992; Govindarajan 1986; Hopwood 1976).

Some studies also argue that managers make inferences about the effects of probabilistic environmental factors on cause and effect relationships and that environmental volatility affects the information gathering activities of managers (Bourgeois 1985; Hopwood 1976). Leblebici and Salancik (1981), for example, find that bank loan officers sought more information when making loan decisions when the environment is volatile. Chalos and Daka (1989) show that budgetary negotiations have value for both the firm and the manager, when environmental uncertainty exists. They argue that companies should encourage negotiated budgetary standards when there is the possibility of skewed environmental outcomes compared to firm expectations.

More recently, Indjeijkian and Matejka (2006) use a measure of business unit environmental unpredictability as an indicator of information asymmetry, based on the intuition that a fast changing business unit environment is likely to be associated with greater local expertise and knowledge: they argue that in highly uncertain environments corporate headquarters have more difficulty keeping track of business unit internal developments, and consequently there is more information asymmetry (Baiman et al. 1995; Nagar 2002; Christie et al. 2003).

It follows that when companies are operating in highly uncertain environment, Ceos' are more likely to adopt a bottom up budget process procedure to extract this higher local expertise and knowledge.

H8: Ceteris paribus, the higher (lower) the environmental uncertainty, the more likely is the company adoption of a bottom up (top down) budget process procedure.

Competition intensity

Few studies address the role of competition in relation to control system design and only one, studied its relation with budgetary participation. Among the first ones, an exploratory study on the relationship between different types of competition and the use of management controls (Khandwalla 1972) shows that companies operating in a more competitive environment use more sophisticated control systems, among which flexible or activity level budgeting; and that products' competition has a larger positive effect on the use of controls compared with other types of competition (distribution and prices). Another paper by the same author (Khandwalla 1973) proposes that not only in a highly competitive environment companies use more sophisticated controls, but they use them more selectively, because they need to provide a more differentiated, creative, flexible response, while maintaining an higher degree of organizational integration and coordination. He finds that companies have different ways of structuring formal authority at the top, using a different degree of delegation of authority to allow a wider participation in decision making.

Chong et al. (2005) is the only study addressing the influence of the intensity of market competition on the budget participation – performance relationship. They find that the intensity of market competition moderates this relationship: the higher the intensity, the more positive is the effect of budget participation on performance and job satisfaction. The proposed reason behind this result is that *“in a highly competitive environment, managers require additional and different types of information before making crucial decisions (Libby and Waterhouse 1996); by allowing the subordinate to participate, they are provided with the opportunity to gather and use job relevant information to formulate effective strategic alternatives and to enhance the quality of their job related decision (Leblebici and Salancik 1981)”*. Following their argument, it can be expected that companies operating in an environment with high competitive intensity are more likely to adopt a bottom up budget process procedure, that give business

unit managers a higher level of involvement and influence in the budget setting process.

H9: *Ceteris paribus, the higher (lower) the environment competitive intensity, the more likely is the company adoption of a bottom up (top down) budget process procedure.*

Control variables

Prior participative budgeting studies recognize the value attainment role of budget participation (Chenhall 1986; Chenhall and Brownell 1988; Chong et al. 2006). They suggest that allowing subordinate to participate is going to increase the likelihood that he will feel satisfied with his values. According to the value expressive model of voice (Lind and Tyler 1988) people value the chance to express themselves, regardless of the final decision outcome. This is also sustained by the affect theory of social exchange (Lawler 2001) and by the theory of relational cohesion (Lawler and Yoon 1996). These social exchange theories state that people interaction naturally generate emotions and that frequent exchanges make relations to become salient social objects and end in themselves. They also consider negotiated exchanges as one type of exchange structure, characterized by both rational (uncertainty reduction) and affective outcomes (emotions; perceived cohesion and commitment behavior). Following these theories, the likelihood that company Ceo decides to adopt a certain type of budget process procedure, that permit different levels of social exchange, can be driven by his emotions and his own desire to give voice to the business unit managers, rather than by the need to reduce the uncertainty and to get more job related information. The reason behind this expectation is that by always conceding voice, she/he can satisfy business unit managers' values of equality, respect or dignity, and thus their job satisfaction.

Ceo leadership style is a good proxy of this personal desire for allowing higher subordinates' voice, because it describes the way the Ceo manages her/his job

relationships with the low level managers: for example, a transactional CEO is characterized by adopting more interventions when mistakes are made, by having higher attention on irregularities, exceptions or deviations by expectations, and by providing more reinforcements of the link between goals and rewards (Waldman et al. 2001). Thus, the more the CEO is a transactional leader, the more the allowance of subordinate's voice is constrained by the contractual type of relationships he establishes with the business unit managers. Therefore a measure of *CEO transactional leadership* has been included as control variable and it can be expected that the more (less) the CEO is a transactional leader, the more he is likely to adopt a top down (bottom up) budget process procedure.

Together with leadership style another individual factor has been included: *CEO age*. The reason is that it has often been used by prior management studies (Boeker 1997; Smith et al. 1994) as proxy for the level of experience. In fact older leaders are more likely to have more experience; thus they can be expected to know more the company activities than younger CEOs (Merchant and Van der Stede 2007). Therefore, they can be more likely to adopt a top down budget process procedure.

The conceptual model includes also some control variables related to companies' institutional setting characteristics to exclude that the CEO likelihood of adopting a certain type of budget process procedure, can depend on some external pressures. Specifically, I use as control variables measures that capture if the company is *listed* and if it is a *headquarter* company. Listed (vs. not listed) companies have to comply with more (less) financial reporting obligations. This can influence their way of structuring the budget process, such that CEOs in those companies are more likely to adopt a top down budget process procedure to retain higher control over the process. CEOs of companies that are *headquarter* can have their adoption decision influenced by the consideration that their company controls another company. In which direction this influence could affect their choice of the budget process procedure is not

clear, this could strengthen their need of power retention over the process as well as increase their need of uncertainty reduction, thus both signs predictions are offered for this variable.

This study has been conducted during spring 2009 when the effects of the international financial markets crisis were still present on the Italian economy. Two measures have been included to control for these effects: a company specific measure of *financial risk* (hard measure) and a measure of the degree of *perceived uncontrollability* of the financial crisis (soft measure). The expectation is that the higher (lower) the financial risk/ the perceived uncontrollability of the crisis, the more the Ceo is likely to adopt a top down (bottom up) budget process procedure. The reason is that when there are high financial tensions, companies need to rationalize the allocation of financial resources and a centralization of process control can be helpful to this aim.

IV. Research Method

In this paragraph I describe the research method used to test the hypotheses. First I discuss the design of the survey study and the selection of the target sample. Then I describe the steps taken in the composition of the survey questionnaire, the pre-testing phase and the exact procedure followed in gathering the data. Finally, I present and discuss the measurement of the variables of interest and the procedure used for data analysis.

Survey design

The survey has been carried out with the collaboration of the Accounting Knowledge Network (AKN) of SDA Bocconi School of Management; the accounting department of Università Bocconi and the accounting and control department of Erasmus University, Rotterdam School of Management.

The Accounting Knowledge Network of SDA Bocconi School of Management is a virtual observatory focused on accounting topics that see the participation of AFCnet, a community of 1200 professionals working in the accounting department of companies operating in Italy. It was established in 2005 with the aim to acts as a facilitator and organizer of networking and knowledge sharing

activities such as workshops; it hosts a website with information, such as research projects and research outputs on the topics of accounting, and links that are of interest to its members⁸.

The AKN contributes to this study making available to the researcher a database containing the name, employing organization, job titles and e-mails of its members. The choice of administering the survey in collaboration with a professional community such as the AFCnet has its precedents in management accounting research (e.g. Stone et al. 2000). Furthermore, it is in line with the recommendations of Dillman (2007) and of Van der Stede et al. (2005) that argue that, because individuals are more likely to comply with the requests of familiar and authoritative sources, sponsorship of survey studies can increase the response rate.

Sample selection

The first step in selecting the sample for this study consisted in defining the target population. The best respondent has been identified in the person that in the accounting department of middle-large companies is responsible for supporting the management during the budget setting process. This because the conceptual model applies to somebody, closed to top management, who has knowledge on the detailed procedure used for setting the business unit budget, for example on the structure of budget negotiations. To minimize socially desirable answers, none of the parties directly involved could be chosen, neither the Ceo nor the business unit managers. As consequence, I defined the target population as the person (CFO and/or the head of control and/or the controller) that supports top management and business unit managers during the budget process.

⁸ The website address is: http://lqr.unibocconi.it/LotusQuickr/afcnet/Main.nsf/h_Toc/278f059ca6ac2f8bc125745700335222.

This study uses a company level of analysis. AIDA⁹ database has been used to select companies operating in Italy with more than 100 employees (2007), with a turnover (2007) higher than 80 millions of Euro and with financial information available for the last three years (2005-2006-2007). The choice of the two dimensional criteria for sample selection is in line with prior research: the first criterion has been used to select companies with clearly defined areas of responsibility for their managers (Dunk 1993); the second one to select middle-large companies (Communication n.213, European Commission, 23/07/1996). The third criteria has been chosen to have updated financial information on all the selected companies available in AIDA. A total of 2076 companies was identified.

Next this list has been matched with AKN members' lists, finding 300 companies where an AKN member was present. This choice is justified by the consideration of using the AKN member as respondents and/or as key informants for respondent identification. In fact it is impossible a priori to know who in the accounting department in each company is supporting top management and business unit managers during the budget setting process. The use of AKN members facilitates correct respondents identification, minimizing data collection time and costs. When more than an AKN member was working in the selected companies, the one with the higher job title and control responsibility has been selected.

Holding companies have been excluded from the selected sample, if they had not operating business units with budget responsibility. This choice has been done to exclude companies where the budget is not an organizational process, but only a consolidation of financial results.

⁹ AIDA is the more extensive database available for Italian companies financial data, managed by Bureau Van Dijk.

Questionnaire design and administration

Questionnaire language

The language used in the questionnaire was Italian, because that is the native language of the respondents. This choice has been done to increase respondent's understandability and familiarity with the questions, reducing the risk of coverage error (Dillman 2007).

Pre-testing

An initial draft of the questionnaire was discussed with a group of seven accounting academics and three PhD students. This leads to some modifications in wording and sequence of questions and to the removal and addition of some questions. A second draft of the questionnaire was pre-tested with a group of seven controllers. They filled out the questionnaire and were invited to comment on the wording, understandability and perceived relevance of the questions as well as on the layout and the length of the questionnaire. This procedure led to further refinement of the questions and minor modifications in the wording.

Questionnaire design

The final questionnaire has 14 pages. The first page contained the title of the research and the brands of the three sponsoring institutions. The second and third page contain the following information: the instructions for filling out and returning the questionnaire; a description of the different types of questions included, together with two example questions; a statement that all data provided would be treated as strictly confidential; and a statement that a summary of preliminary findings is available for all participants. They also indicate the name, the address and the additional contact information of the researcher. Respondents were asked to contact the researcher, in case they would have any questions or comments about the questionnaire.

At the beginning of section 1 I wrote few lines to clarify the object of study: the process of negotiation of the budget that involves top management (Chief

Executive Officer (Ceo) and/or the general director) and the heads of the business units, excluding the service or staff unit managers. I also wrote two definitions of concepts that were used in the questionnaire: company and business unit. I made the decision to add these clarifications because the pre-testing of the questionnaire with academics revealed that it was important for the respondents to look at the budget process with the same level of analysis (the Italian company level).

The company was defined as the respondent employer, thus the organization with legal responsibility (e.g. S.p.a., S.r.l.) for which she/he has been working. If she/he has been working in the Italian subsidiary of a multinational company, whose worldwide headquarter was located abroad, she/he was clarified to answer all questions always with respect to the Italian subsidiary.

The business units were defined as the organizational units located immediately below the top management (Ceo and/or general director) in the organizational structure (Kren 1992), whose activities are typical of the company business.

The decisions for the budget process design are made by top management, typically in the person of the Chief Executive Officer. Exploratory interviews and the pre-test for this study revealed that sometime the Ceo was only covering an institutional role in the company and he was not involved in any managerial decision. In these cases managerial decisions were made instead by the general director. Therefore the questionnaire indicates always the two actors (Ceo and/or general director). Respondents have been instructed to answers the questions for the appropriate actor in their case: the member of top management who negotiates the budget with the business unit managers.

The questionnaire was divided into five sections. The division meant to focus the attention of the respondents and to prevent confusion with respect to the terminology used. These sections were titled: company budget process; company's characteristics; the external environment; managerial characteristics and respondent profile.

In the respondent profile section there were questions to confirm that the respondent was part of the target population. These questions related to: a) whether the respondent was working as a CFO, head of control or business unit controller; b) how many organizational levels were hierarchically separating the respondent from the Ceo.

On the last page, the respondents were given the opportunity to indicate if they were interested in receiving the summary of the preliminary findings of the study, and to provide comments on the questions and clarifications of their answers.

Questionnaire administration

All steps in the process of administrating the questionnaire were made in accordance with Dillman (2007) recommendations. To gain the interest of the population and to increase the response rate, the brands of the three sponsoring organizations were indicated on the cover page of the questionnaire; the importance of this international doctoral research for the accounting profession was emphasized in the accompanying letter; and the possibility to get a summary of preliminary findings for all participants was highlighted.

A four step administration procedure has been followed (Dillman 2007). A pre-notice letter has been sent by e-mail to the 300 selected AKN members, informing them that within few days they would have received the questionnaire of this research. The letter explained who the required respondent was. They were invited to participate or asked, once they would have received the questionnaire, to act as key informants, forwarding it to the colleague they thought he was the more appropriate person in the company for participating in the study and signaling by email name and job title of the potential respondent to the researcher.

Four days later, the questionnaire and the accompanying letter has been sent them by email, with a deadline of two weeks.

Two weeks after the sending, a first reminder has been sent by email to all participants. The reminder thanked them for filling out the questionnaire and urged those who had not yet returned it to do so. Two weeks after that, a new copy of the questionnaire has been sent by email to all subjects of whom no questionnaire or refusal to participate had been received back (second reminder). About three weeks after the second reminder, not-responding participants have been phoned to learn about the reasons for their non-response and to try to persuade them to still fill in the questionnaire. Some of the most often mentioned reasons for non-response were: no time to dedicate to it; the respondent is abroad and cannot fill it out before of the indicated deadline, and the respondent does not work in that company anymore. Some respondents indicated that they had not received it, lost it or thrown it away, so even if they were willing to answer they could not do it. These respondents were sent an email with a second copy of the questionnaire. In the cases (about 5%) where the respondents was not working in the company anymore (the email came back signaling mistakes in the address or the person could not be reached by the researcher by phone) the new CFO and/or head of control has been invited to participate for the selected company.

Once questionnaires have been received, they have been immediately scrutinized. Follow-up questions have been immediately asked, when necessary (Dillman 2007).

Variable measurement

Top down – bottom up budget process procedure

The dependent variable is defined as the top down - bottom up budget process procedure that companies use for preparing, negotiating and approving the business unit budgets, with the aim of giving business unit managers a low vs. high involvement and influence in setting their business unit budget. Based on extant literature the three design elements presented in section one, one for

each phase of the budget process, have been chosen for capturing the overall construct domain. They have been measured with three indicators coded giving them value 1 (0) if the design element choice that has been done renders the budget process procedure more bottom up (top down). More specifically, the first indicator, related to the phase of budget proposal preparation, is called *NoTargets* and it is equal to 1 if the business unit managers do not receive budget proposal targets as constraints for their budget proposal preparation and equal to 0 otherwise. The second one, related to the budget negotiation phase, is called *FirstToComm* and it is equal to 1 if the business unit managers are allowed to be the first to communicate their budget proposal during the budget negotiation and equal to 0 if instead the Ceo and/or the general director is the first to communicate his/her budget proposal for the business unit budget. The third one, related to the budget approval phase, is called *FinalAuthBUbdgt* and it is equal to 1 if business unit managers are allowed to have final authority on the approval of the business unit budget and equal to 0 otherwise.

The indicators measure three not exclusive design element choices that characterize the whole budget process procedure. Therefore the three indicators will be interpreted both separately, with respect to each budget process phase, to allow the differential effect of each aspect of the construct to be apparent; and together, by profiling their levels (Howell et al. 2007) and identifying the set of configurations (procedures) on the top down-bottom up continuum that the companies have chosen to adopt¹⁰. This is consistent with the adoption of a formative measurement model, according to which the indicators of the measured construct do not have to be correlated among each other, because they measure different theoretical dimensions of the construct; and they are all necessary, because the absence of one of them would change

¹⁰ Because this study uses a congruence notion of fit (survival fit), all budget process procedures (configurations of design elements) that are empirically found to be adopted by the companies are effective, given the companies internal and external contingency factors.

the meaning of the measured construct (Bisbe et al. 2007; MacKenzie et al. 2005). The correlations among the three indicators are presented in table three. *NoTargets* is significantly positively correlated with *FirstToComm* ($r=0.213$; $p<0.05$; 2-tailed), while *FinAuthBUbdgt* has small negative not significant correlations with the other two indicators.

The validity of the measurement of the dependent variable has been assessed according to the guidelines of Diamantopoulos and Winklhofer (2001), who posit that a formative measurement model is based on a multiple regression, and excessive collinearity among indicators makes it difficult to separate the distinct influence of the individual indicator on the latent variable. The maximum variance inflation factor obtained when regressing the three indicators on each other is equal to 1, which is far below the common cut-off threshold of 10 (e.g. Kleinbaum et al. 1988). Therefore all the three indicators are retained.

To evaluate the external validity of the individual indicators, a nomological net validation has been done fitting a two constructs model with formative and reflective indicators using Amos 6.0. The validation consists in linking the construct measured with the indicators to another construct, measured with reflective indicators, with which it would be expected to be linked (antecedents or consequences). The top down – bottom up budget process procedure has been linked to the level of participation of business unit managers, because the adoption of a bottom up procedure is supposed to give higher involvement and influence, and budget participation has been defined as the level of involvement and influence of the business unit managers in setting their budget (Brownell 1982). The detailed of the model are illustrated in *figure A*. In this study budget participation is measured as Shields and Young (1993), asking respondents four questions¹¹ adapted from previous research (Brownell 1982, 1985; Merchant, 1981; Milani 1975). The first three were: (1) “How important is the

¹¹ Shields and Young (1993) used a fifth question on the frequency of budget meetings. This question has been excluded because of overlapping in meaning with another question.

business unit manager's contribution to the setting of the budgets?"; (2) "How important is it that budgets include changes that were suggested by the business unit managers?"; and (3) "How important is it that the budget is not finalized until a business unit manager is satisfied with it?". These questions were anchored: (1) "Extremely unimportant" and (7) "Extremely important". The fourth question, "How influential do you feel that the business unit managers are in setting the budgets?", was anchored by (1) "Not at all influential" and (7) "Extremely influential". This measure has been chosen as the more appropriate for this survey because the respondents are Chief financial officers and controllers, as in Shields and Young (1993). The four items are all positively significantly correlated at 1%. The reliability of the measure has been assessed using Cronbach Alpha ($\alpha=0.753$) and factor analysis using Principal Component Analysis without rotation. A one factor solution has been found. The factor explains the 58.43% of the total variance of the data. All the items have a factor loadings higher than 0.7. Therefore the measure has been obtained averaging the scores of the four items. The convergent validity of this measure has been assessed correlating it with one item measure of the overall degree of participation (Hofstede 1968). The measure is significantly positively correlated with Hofstede one item measure ($r=0.249^{12}$, $p<0.001$, 2-tailed).

Following Diamantopoulus and Winklhofer (2001) the variance on the top down - bottom up budget process procedure has been constrained to be equal 0 and a regression weight from one of the indicators (*FirstToComm*) has been constrained to be equal 1, because the two constructs model has only one path emanating from the construct of budget process procedure.

The two constructs model is identified and has good goodness of fit: minimum discrepancy C over degree of freedom (CMIN/df) = 1.234¹³ with $X^2=13.572$ d.f.

¹² In this paper correlations are all computed listwise. Pearson correlations are indicated when assessing the measures' convergent validity.

¹³ To have good fit the model should have the following values of the indicators: CMIN/df lower than 2 (Byrne 1989); RMSEA maximum equal to 0.08 (Browne and

11 $p=0.258$; root mean square error of approximation (RMSEA)=.041; normed fit index (NFI)=0.966; incremental fit index (IFI)=0.982; comparative fit index (CFI)=0.980 and minimum discrepancy F (FMIN)=0.097.

The path of interest is the one between the constructs of top down – bottom up budget process procedure and budget participation, where it is expected $B>0$. The coefficient is positive and significant $B=0.433$ (s.e. 0.173, c.r. 2.507, $p=0.012$). Therefore, evidence in support of the external validity of the three indicators has been obtained¹⁴.

Independent variables

Internal determinants

Ceo span of control

Ceo span of control has been measured with the number of business units located at the first level of the organizational structure (Simons 1957). Respondents have been asked to indicate the number of business units that in the organizational structure are located immediately below the Ceo and/or the general director. They have also been asked to indicate which type of business units they are among the provided options, to clarify them that both business functions (sales, production, R&D) and divisions (by geography, by product or service, by segment of clients, by distribution channels) should be included in this definition.

This measure is not significantly correlated with the average size of the business unit ($r=-0.017$, $p>0.10$, 2-tailed), computed averaging the number of

Cudeck 1983); NFI close to 1 (Bentler and Bonett 1980); IFI close to 1 (Bollen 1989); CFI close to 1 (Bentler 1990); FMIN close to 1.

¹⁴ Discriminant validity of the two constructs has been confirmed by a factor analysis on the participation items and the three indicators. The items loaded on three factors: one factor on which the four participation items had highest loadings, one with the highest loadings of two indicators and one with the highest loading of the final authority indicator. Note that with a formative measurement model correlations among the three indicators are not necessary and not expected. This evidence supports the theoretical distinction between budget participation and (top down – bottom up) budget process procedure.

employees of the biggest and the smallest business units as indicated by the respondents.

Company size (vertical differentiation)

Company size has been measured with the number of company managerial levels. This measure has been preferred to other size proxies because it measures the length of the vertical chain of command, more than its horizontal extension, thus it captures the number of managers at different organizational levels that could be involved in the budget process (vertical differentiation).

Respondents have been asked to indicate how many managerial levels are present in the company, counting them from the CEO to the lowest managerial level. In the case where the number of managerial levels was different across the business unit considered, respondents have been asked to indicate the highest number of managerial levels present in the company. They were provided with an example showing the levels with respect to the sales function.

The convergent validity of this measure has been assessed correlating it with other proxies of company size: total assets and number of employees 2007, downloaded from AIDA. Number of managerial levels is not significantly correlated with the logarithm of company total assets 2007 ($r=0.115$, $p>0.10$, 2-tailed), but it is significantly positively correlated with logarithm of company number of employees 2007 ($r=0.202$, $p<0.05$, 2-tailed). A logarithmic transformation of total assets has been applied to mitigate the skewed distribution of the data. Given that the number of employees 2007, together with the company turnover in 2007, has been used as sample selection criteria, these data are left censored, thus also for this variable a logarithmic transformation has been applied.

Complexity of the business units budget responsibility

The type of budget responsibility of the business units is measured with an instrument based on Merchant and Van der Stede (2007) that distinguishes, in order of increasing complexity, between costs centers, revenues centers, cost

and revenues centers, profit centers, profit centers having also balance sheet items budget responsibility (e.g. including the accounts receivable turnover and/or the inventory turnover), and investment responsibility centers. The complexity of the business units budget responsibility is thus an ordinal variable with range from 1 to 6, where 1 is given if the company business units are all cost centers, and 6 is given if at least one of the business unit is an investment center. The convergent validity of this measure has been assessed correlating it with the complexity of the organizational structure.

The type of company organizational structure has been measured as Hansen and Van der Stede (2004) by distinguishing it in three categories, with increasing order of complexity: functional, divisional and matrix. The complexity of the organizational structure is thus an ordinal variable with range 1 to 3, where 1 is attributed to a functional structure and 3 to a matrix structure. If the company has a matrix structure, the respondents were also asked to indicate the two dimensions that better described it, choosing among the following ones: by country, region and/or district, product and/or service, segment of clients, distribution channels, brand, function.

The complexity of the business units budget responsibility significantly positively correlates at 10% with the complexity of the organizational structure ($r=0.166$, $p<0.10$, 2-tailed).

Geographical distance of the business units

This variable is measured considering the spatial distance between the company Italian legal headquarter and the more distant business unit (the more distant organizational unit among those located immediately below the Ceo and/or the general director in the organizational structure). A dummy variable is used, such that 1 is given to those companies where the more distant business unit is located in another country and 0 is given to those companies where the more distant business unit is located in Italy.

Company geographical dispersion

This variable is measured with the number of Italian regions in which the company's subsidiaries are located, where the subsidiaries are defined as the productive or distributive organizational units with budget responsibility, that are owned by the company. According to this definition for example franchising units are excluded, because their budget is not consolidated in the company budget process. This variable is significantly positively correlated at 1% ($r=0.333$, $p<0.01$, 2-tailed) with the total number of subsidiaries that the company has in Italy. This evidence supports the convergent validity of the measure.

Strategic diversification of the business units

This variable is measured with a three items Likert scale asking respondents to indicate how much the activities of the business units is similar (=1) versus different (=7) in terms of product and/or service attributes, markets and technology (transformation of input in output). It is a strategic diversification measure (Pehrsson 2006a) and it has been chosen among all other measures of diversification, because it better captures the strategic differences among the business units.

The correlations among the three items are significant and positive. Reliability is assessed by factor analysis, using Principal Component Analysis without rotation, and by Cronbach Alpha ($\alpha=0.703$).

A one factor solution has been found. It explains 63.28% of the total variance of the data. Factor loadings are all higher than the acceptable threshold level of 0.4. This indicates good reliability, thus all three items are retained. The measure has been obtained averaging the scores of the three items.

According to the strategy literature (Chatterjee and Blocher 1992; Nayyar 1992; Lubatkin et al. 1993; Pehrsson 2006b), there are other two types of measures that could have been used to measure company diversification.

The first type are count measures based on SIC codes attributed to the different segments in which the company operates (Lubatkin et al. 1993; Varadarajan and Ramanujam 1987). This type of measures is more appropriate to measure the operational diversification, rather than the strategic one, and it is not a good proxy for the degree of diversification of Italian companies: downloading each respondent company SIC codes from AIDA, the only database containing SIC codes information on private companies operating in Italy, results in the 56% of them having only one SIC code, implying that these companies are not diversified. The reason is that AIDA is based on a more detailed system of industry codes (called ATECO) than the SIC code one. According to this system, one 6 digits code that describes the activity of the company is assigned to it, then this code is translated into the less detailed 4 digits SIC code, for international comparability reasons.

The second type of measures is based on Rumelt (1974) classification. Rumelt (1974) developed a classification system based on seven categories to classify manufacturing companies using four ratios: the specialization ratio; the related core ratio; the related ratio and the vertical ratio. Nayyar (1992), applying Rumelt classification scheme to service companies, simplified it to four categories, obtained using only the specialization ratio and the related ratio. With the aim to support the convergent validity of the chosen measure of strategic diversification, Nayyar (1992) measure has also been computed. Nayyar (1992) has been preferred to Rumelt (1974) classification, because the sample is composed of both manufacturing and service firms. Respondents have been asked to indicate the related ratio, using Rumelt (1982) definition, and to indicate the revenues generated by the biggest business unit. The specialization ratio has been computed dividing the revenues generated by the biggest business unit over the company revenues. Then each company has been classified into Nayyar (1992) four categories using the ratios.

Nayyar (1992) measure and the adopted measure of strategic diversification are positively, but not significantly, correlated ($r=0.043$, $p>0.10$, 2-tailed). The

weak correlation between the measures could be explained by respondents' difficulty in providing a precise estimate of the related ratio¹⁵.

Interdependence

This variable has been measured adapting the instrument used by Keating (1997), as it has been applied by Abernethy et al. (2004) and Bowens and Van Lent (2007). Respondents have been asked to indicate the percentage of total sales 2008 done among the business units located immediately below the Ceo and/or general director in the organizational structure and the percentage of total production transferred among the same business units.

The correlation between the two indicators is positive and significant ($r=0.538$, $p<0.01$, 2-tailed).

Always for supporting convergent validity of the measure, other two measures have been computed. The respondent has been required to indicate if the company has a transfer pricing system to regulate the exchanges among the business units.

The presence of a transfer pricing system among the business units is significantly positively correlated with the percentage of sales among the business units ($r=0.295$, $p<0.01$, 2-tailed). This supports the measure convergent validity.

External determinants

Environmental uncertainty

Prior studies clarify that it is the perceptions of uncertainty rather than the actual uncertainty that is present in the environment, that influence the decisions that

¹⁵ This is the item used for measuring the related ratio: "Please indicate the group of business units that use and share the same resources (e.g. the same productive technology and/or the same human resources competences and ability) and that generate the higher amount of company revenues (2008). What is the percentage of the total company revenues (2008) generated by this group of business units? _____% of company total revenues (2008)".

managers make in response to their respective companies' operating environments (Lawrence and Lorsch 1967; Duncan 1972; Downey et al. 1975). As this study investigates manager's (Ceo) decision, it considers a measure of perceived environmental uncertainty instead of proxies of actual uncertainty.

This variable has been operationalized with the perceived degree of unpredictability of the external environment and it has been measured according to Gul and Chia (1994), as adapted by Indjejikian and Matejka (2006). Respondents have been asked to rate from 1= highly predictable to 7=highly unpredictable the following seven items: competitor's actions, market demands, production technology, product attributes/ design, purchasing of supplies, government regulations and labor union actions.

The reliability of the measure has been assessed with Cronbach Alpha ($\alpha=0.622$) and factor analysis, using Principal Component Analysis without rotation. A two factor solution has been extracted. The two factors explained 49.26% of the total variance of the data. The presence of two factors instead of one is understandable given the high instability of the economic conditions at the time of the survey. Competitors actions and market demand loaded heavily on the second factor, thus they have been deleted from the scale.

The scale with the remaining five items loaded on a single factor that explains 40.74% of the total variance of the data and it has all factor loadings higher than the minimum threshold of 0.4. Cronbach Alpha is equal to 0.608¹⁶. Therefore, the measure has been obtained averaging the scores of the five retained items.

The degree of unpredictability has been preferred to the degree of volatility, as measure of perceived environmental uncertainty, due to the very unstable economic conditions in the year in which the survey has been carried out. There

¹⁶ The price of raw materials has still a small loading (0.492), even if higher than the threshold 0.4. If it is deleted from the scale, the one factor solution explains 47.43% of the variance in the data; all four items load higher than 0.5 on the factor; but the Cronbach Alpha is slightly reduced (0.606). Therefore this item has not been deleted from the scale.

was a risk of getting a measurement only driven by the perceived effects of the financial markets crisis. To take this into account one item measuring the perceived degree of uncontrollability of the financial crisis has also been introduced. The item is based on the definition of acts' of nature provided by Merchant and Van der Stede (2007). Respondents have been asked how much they disagree (1) vs. agree (7) that "*the actual financial crisis is a big, one time, unexpected and totally uncontrollable event*".

This measure is not significantly correlated with unpredictability ($r=-0.020$, $p>0.10$, 2-tailed), supporting the discriminant validity of the measure.

Competition intensity

This variable has been operationalized as the perceived degree of competition intensity and it has been measured according to Khandwalla (1973), as adapted by Chong et al. (2005). Respondents have been asked to rate, from 1= little intensity to 7= extreme intensity, the intensity of three different types of competition relating to product and/or service price, product and/or service marketing or distribution, and product and/or service differentiation.

The reliability of the measure has been assessed using Cronbach Alpha ($\alpha=0.655$) and factor analysis, using Principal Component Analysis without rotation. A one factor solution has been found. It explains 59.27% of the total variance of the data. The factor loadings are all higher than 0.7. Therefore the three items are retained and the measure has been obtained averaging their scores.

Supporting the convergent validity of the measure, competition intensity is significantly positively correlated with the degree of unpredictability of competitors' actions ($r=0.182$, $p<0.10$, 2-tailed).

Supporting the discriminant validity of the measure, competition intensity is not significantly correlated with the degree of uncontrollability of the financial crisis ($r= -0.055$, $p>0.10$, 2-tailed).

Control variables

Ceo transactional leadership

This variable has been measured with a five items scale as Waldman et al. (2001). Respondents have been asked to think about the Ceo and/or the general director and to rate how much each of the statements characterizes him, from 1= not at all to 7= consistently. An example of a statement is “*he takes actions if mistakes are made*”. The reliability of the measure has been assessed using Cronbach Alpha ($\alpha=0.8$) and factor analysis, using Principal Component Analysis without rotation, and substituting the missing data with the mean value¹⁷. A one factor solution has been found. The factor explains the 55.66% of the total variance of the data. All the items have a factor loadings higher than 0.5. Therefore, the measure has been obtained averaging the scores of the five items.

Together with Ceo transactional leadership also Ceo charisma has been measured, because there is evidence in the organizational behavior literature that these two dimensions of leadership can substitute each other (Posdakoff et al. 1990) and can complement each other, and they can be both present in the same leader (Bass 1985).

This variable has been measured with a seven items scale as Waldman et al. (2001). Respondents have been asked to think about the Ceo and/or the general director and to rate how much each of the statements characterize him, from 1= not at all to 7= consistently. An example of the statement is “*he provides a vision of what lies ahead*”. The reliability of the measure has been assessed using Cronbach Alpha ($\alpha=0.843$) and factor analysis, using Principal Component Analysis without rotation, and substituting the missing data with the mean value. A two factors solution has been found. The two factors explained 69% of the total variance of the data. The item “*he makes people feel good to*

¹⁷ Ceo leadership style is the only variable of the questionnaire with 6.4% missing item responses.

be around him/her" (well others) has the lowest loading on the first factor and a high negative loading on the second factor, thus it has been deleted from the scale.

The six remaining items when subject again to Principal Component Analysis loaded on one factor that explains the 58.83% of the variance in the data. The factor loadings are all higher than 0.6 ($\alpha=0.857$). Therefore, the measure of charisma has been obtained averaging the scores on the retained six items.

As Waldman et al. (2001), transactional and charismatic leadership were measured using items from the Multifactor Leadership Questionnaire (MLQ) developed by Bass and colleagues (Bass 1985; Bass and Avolio 1990). The MLQ is the only instrument in widespread use that attempts to assess both transactional leadership and charisma (Lowe et al. 1996). As Waldman et al. (2001), all items of CEO charisma and CEO transactional leadership were interspersed, i.e., provided in mixed order. In the respondents sample, the two measures of CEO Charisma and CEO transactional leadership style are strongly significantly positively correlated ($r=0.601$, $p<0.001$ 2-tailed).

CEO age

This variable has been measured asking respondents to indicate the age of the CEO. This measure has been cross validated with the indication of the CEO age downloaded from AIDA, when available. The discrepancy between respondents' replies and AIDA data goes from a minimum of 0 to a maximum of 4 years. This variable is significantly negatively correlated with CEO educational level ($r=-0.324$, $p<0.01$, 2-tailed). This supports the measure convergent validity, because in Italy there has been a progressive extension of the years of compulsory education. CEO educational level is measured by asking respondents to indicate the highest educational title of the CEO and using an ordinal variable with four levels (1=high school; 2=professional education; 3=graduate; 4=master MBA or PhD).

Also CEO tenure has been measured, asking respondents from how long (years) has the CEO been appointed. This variable is significantly positively correlated with CEO age ($r=0.481$, $p<0.01$, 2-tailed) and significantly negatively correlated with CEO educational level ($r=-0.303$, $p<0.01$, 2-tailed), supporting the measure convergent validity.

Listed

This variable has been measured with a dummy equal to 1 if the company is listed on the Italian Stock Exchanges and 0 if it is not. These data have been obtained from AIDA.

Headquarter

This variable has been measured with a dummy equal to 1 if the company owns the majority of the shares of another company and 0 if it does not.

Company financial risk

This variable has been measured with the companies' Beta, downloaded from Datastream: for the listed companies the company own Beta (one year) has been used, for the private companies instead the Beta of their comparable has been used. Comparable groups have been identified using the Datastream industry group code. Both the simple average and the weighted (by total assets 2007) average of the Betas (one year) have been computed for each Datastream industry group. The private companies have been assigned to a Datastream industry group using as reference their main SIC code. A direct comparable listed company has also been assigned to each private company by the researcher, using as similarity criteria the main SIC code and total assets 2007.

The measure that uses the weighted (by total assets 2007) average of the Beta for the not listed companies, is significantly positively correlated with the one that uses the simple average of the Beta ($r=0.802$, $p<0.001$, 2-tailed) and the one that uses the Beta of the direct comparable ($r=0.488$, $p<0.01$, 2-tailed).

Perceived uncontrollability of the financial crisis

This is a one item measure based on the definition of acts' of nature provided by Merchant and Van der Stede (2007). Respondents have been asked how much they disagree (1) vs. agree (7) that the actual financial crisis is a big, one time, unexpected and totally uncontrollable event. This variable is not significantly correlated with the company financial risk ($r=-0.057$, $p>0.10$, 2-tailed), supporting the discriminant validity of these two indicators.

Data analysis procedure

Two types of statistical analysis are used for hypotheses testing.

The first type of analysis treats each design element choice as an individual decision for one budget process phase. Therefore first three separate logistic regression models of this form are specified:

$$P = E(Y|XB) = \exp(XB) / [1 + \exp(XB)]$$

where X denotes the vector of the determinants previously presented and Y represents the company choice of adopting a bottom up (vs. a top down) budget process procedure, for a specific phase of the budget process.

Each of the three models can conveniently be written as:

$$\ln(P_{BU}/P_{TD}) = XB.$$

For each phase of the budget process, the coefficients in B measure the impact of the determinants X on the natural logarithm of the relative probability of adopting a bottom up budget process procedure compared with the probability of adopting a top down budget process procedure.

The second type of analysis considers the three design elements as necessary parts of any adopted budget process procedure. Therefore, as second step, the configurations of design element choices characterizing the top down – bottom up continuum of budget process procedures are identified, using cluster analysis techniques. This approach is preferred to the theoretical identification of the configurations of design elements by the researcher, both because there are not a priori reasons to expect some configurations to be theoretically not

coherent, and because this study provides a first exploratory analysis on the identification of the intermediate configurations.

After the clusters identification, a categorical variable is used to indicate the group membership of an observation (a company) to one of the identified configurations (the clusters correspondent to the adopted budget process procedures) and the hypotheses are tested by specifying the following multinomial logistic regression model:

$$P(Y = j | X) = \exp(g_j(X)) / \sum_{k=1, \dots, n} [\exp(g_k(X))]$$

for $j=1, 2, 3, \dots, n$ categories, with $j=1$ as the baseline category. The fixed baseline category is the configuration characterized by three top down design element choices, thus the more extreme top down budget process procedure on the continuum. X denotes the vector of the k determinants, previously presented, including a constant term. It has length equal to $k+1$ with $g_1(x) = 0$.

The logit function can be written as:

$$g_j(x) = \ln [P(Y=j|X) / P(Y=1|X)] = B_{j0} + B_{j1}X_1 + B_{j2}X_2 + \dots + B_{jp}X_p = X'B_j.$$

The coefficients in B measure the impact of the determinants X on the natural logarithm of the relative probability of adopting a certain bottom up budget process configuration compared with the probability of adopting the baseline extreme top down budget process configuration.

The multinomial logistic regression model allows to compare multiple procedures (bottom up) with a baseline one (top down), not requiring any order among the multiple procedures. Given the exploratory stage of analysis of the intermediate configurations of design elements, the use of this logistic model is preferred to the use of an ordered model to carry out a more conservative analysis.

V. Findings

This paragraph describes the results of the survey study. First I discuss survey response and response bias, respondents' demographics, descriptive statistics and univariate correlations. Then I turn to hypotheses testing. I test the hypotheses using

three binary logistic regression models (one for each phase of the budget process). I apply a cluster analysis to identify the configurations of design elements and I conclude testing the hypotheses with a multinomial logistic regression model. I apply the statistical models and interpret the findings following the guidelines of Hosmer and Lemeshow (2000). The last section provides some additional analysis and robustness checks.

Response rate

The procedure outlined above resulted in the return of 141 questionnaires (47%), of these 13 had at least one missing item response. The hypotheses have been tested excluding the questionnaires with missing items. The final sample thus contains 128 respondents (42.7%). The response rate is quite high compared with the median response rate of recently published management accounting survey studies (Van der Stede et al. 2005).

Non – response bias

In line with general practice of management accounting surveys (Van der Stede et al. 2005) non - response bias was assessed by comparing early and late respondents. This method is based on the assumption that late respondents are similar to non-respondents (Tomaksovic-Devey et al. 1994; Groves et al. 2002). Based on the reception date of the questionnaires two types of analysis have been conducted. Two groups of early and late respondents have been made, both by taking the first and the last 10% of respondents and by splitting the sample at the median reception date of the questionnaires. This procedure was performed for the sample of returned questionnaires. For both ways of creating the groups, the mean scores for all variables have been compared (demographics, company characteristics and item scores). Independent sample t-test and non parametric Mann-Whitney U-test revealed no significant difference between the mean scores for early and late respondents in any question. The results therefore do not show evidence of systematic bias from non-response that could pose a threat to the validity of the findings of this study.

Demographics

Table 1 contains the descriptive statistics about the sample respondents.

Respondents are between the ages of 29 and 58, with an average of 40 years. Most of them (68.8%) have a university degree and on average they have done 17 years of schooling.

Respondents have different organizational positions: the 25.5% of respondents is Chief Financial Officer (Cfo); the 62.4% is head of control department; and the 12.1% is business unit controller. Most of them (61.7%) are located at one organizational level from the Chief Executive Officer in the organizational structure. The 14.8% of respondents are women: the 19% of them is Cfo; the 62% is head of control; and the 19% is business unit controller.

Respondents' average experience is increasing with their organizational position. The average respondent has more than 5 years of experience in his organizational position; he has more than 8 years of working experience in the company; he has more than 8 years of experience in the industry in which the company operates; he has more than 12 years of working experience in the accounting and control department, and he has more than 10 years of experience with managing and controlling the budget process (independently of the number of companies in which he has worked).

Respondents' age is significantly negatively correlated with their organizational position (reverse coded) ($r=-0.568$, $p<0.05$ 2-tailed) and significantly positively correlated with their years of experience in that position ($r=0.441$, $p<0.05$ 2-tailed) and with the number of employees in their functional area ($r=0.244$, $p<0.05$ 2-tailed).

Descriptive statistics

Table 2 Panel A contains the descriptive statistics, distinguishing the variables in three categories: test variables, control variables and other measured variables.

The respondent companies operate in Italy. They have on average a turnover of 1.190.160 Euro; 4.628 employees and 2.609.800 total assets in 2007. The

28.4% of them operates in the service industry, and of them the 3.5% operates in the financial industry. The 22.7% of them is listed on the Italian Stock Exchanges and the 66% of them owns the majority of the shares of another company (headquarter). The sample includes also national subsidiaries of multinational companies respecting the selection criteria. However more than the majority of the respondent companies (65.1%) has its worldwide headquarter in Italy.

In Italy there is a big difference across the territory in terms of economic activities and infrastructures (e.g. motorways and railways connections). These tend to concentrate in the northern regions and near to big central cities, like Rome and Naples. Reflecting such difference, most of the respondent companies (83%) has their Italian legal headquarter located in the northern regions; 20 companies (14.2%) have it located in the central regions and only 4 companies (2.8%) have it located in the southern regions.

On average the respondent companies have their subsidiaries dispersed into five regions on the Italian territory. In addition, the 5.7% of companies has no subsidiaries (no geographical dispersion) and the 9.9% of companies has at least one subsidiary into each of the twenty Italian regions (high geographical dispersion).

Concerning their business units geographical distance, the 30.5% (43) of them has its more distant business unit located exactly in the same place as the Italian legal headquarter, and the 20.6% (29) has its more distant business unit located in another country.

Respondent companies have on average 6 business units located immediately below the Ceo and/or general director in the organizational structure and 4 managerial levels that characterize the maximum extent of their vertical chain of command. As regard their organizational structure, the 37.6% of them has a functional organizational structure; the 29.8% has a divisionalised organizational structure and the 32.6% has a matrix organizational structure. Considering the complexity of their budget responsibility, the 7.1% (8.5%) of

companies has business units with only costs (revenues) responsibility; the 17.7% has both costs and revenues responsibility; the 44% has profit responsibility; the 12.8% has profit and balance sheet responsibility; and the 9.9% has investment responsibility.

In terms of interdependence among the business units, on average respondent companies have the 13.46% of sales (2007) and the 18.05% of production (2007) transferred among the business units.

On average, their Chief Executive Officers have 53 years and they have been appointed from 7 years.

Considering the three design element choices, the 29.1% of companies (41) decided to give no targets to their business unit managers in the budget proposal preparation phase; the 60.3% of companies (85) decided to allow the business unit managers to present at first their budget proposal in the budget negotiation phase; and the 7.8% of companies (11) decided to give business unit managers final authority on the business unit budget approval.

Panel B of Table 2 contains the mean and standard deviation of the independent variables partitioned by each of the three design element, together with the independent sample T statistic and the Kruskal Wallis chi-square.

These two tests indicate that there are significant differences between the means of the independent variables partitioned by the three dummies. For *NoTargets* they show that there is a significant mean difference for company geographical dispersion and the sign of this difference is positive as expected; they also show that there is a significant mean difference for the perceived uncontrollability of the financial crisis but the sign is positive, the opposite to what was expected. The Kruskal Wallis test also indicates that there is a significant mean difference for the company financial risk; however this is not confirmed by the T test. For *FirstToComm* they indicate that there are significant mean differences for the company geographical dispersion, competition intensity, and for the uncontrollability of the financial crisis (the signs are as expected), and for the complexity of the business units budget responsibility

and the strategic diversification of the business units (the sign is opposite to what is expected). Moreover, the Kruskal Wallis test signals that there are also significant mean differences for company size and transactional leadership, both in the predicted directions. For *FinAuthBUbdgt* these tests indicate that there are significant mean differences for the strategic diversification of the business units, for the uncontrollability of the financial crisis and for Ceo age. In all three cases the sign of the difference is not as expected.

Table 3 contains the Pearson and Spearman univariate correlations.

The Pearson univariate correlations show that none of the independent variables is significantly correlated with *NoTargets*. The complexity of the budget responsibility of the business unit is significantly positively correlated with *FirstToComm* ($r=0.200$; $p<0.05$; 2-tailed), coherently with hypothesis three. The company geographical dispersion is significantly negatively correlated with *FirstToComm* ($r=-0.220$; $p<0.05$; 2-tailed), contrary to hypothesis five¹⁸. Strategic diversification is significantly positively correlated with *FinAuthBUbdgt* ($r=0.252$, $p<0.001$; 2-tailed), coherently with hypothesis six. As expected, the uncontrollability of the financial crisis is significantly negatively correlated with *FinAuthBUbdgt* ($r=-0.243$, $p<0.01$, 2-tailed). Contrary to expectations, Ceo age is significantly positively correlated with *FinAuthBUbdgt* ($r=0.218$, $p<0.05$, 2-tailed).

Among the independent variables, there are not significant or large correlations: the highest significant correlation is 0.25 which is well below the common threshold of 0.4. Among the control variables, as anticipated, Ceo transactional leadership and Ceo charisma are strongly positively correlated ($r=0.601$, $p<0.01$, 2-tailed) and Ceo age and Ceo tenure are strongly positively significantly correlated ($r=0.481$, $p<0.01$, 2-tailed). Ceo charisma and Ceo tenure will be used for evaluating results' sensitivity.

¹⁸ Note that this correlation is not significant when Spearman rho is used ($r=-0.098$, $p>0.10$, 2-tailed).

Hypotheses tests

Table 4 shows the results of three binary logistic regression models, one for each phase of the budget process. Panel A presents the estimates of the coefficients and their p-values. Panel B contains the estimated odds ratios with their confidence intervals, because, to interpret the coefficients in terms of increase in probability, when fitting a logistic regression model, estimated odds ratios should be considered¹⁹ (Wenxia and Withmore 2009; Hosmer and Lemeshow 2000). The presentation of the three models results follow. Note that the evaluation of the significance of the individual coefficient of a binary logistic regression is done assuming that all other variables in the model are kept constant.

Budget proposal preparation phase

The first model uses *NoTargets* as the dependent variable. The explanatory power of the independent and control variables in this model is not strong enough (the model chi square is not significant $p=0.259$), the pseudo R^2 is low (19%), the Hosmer and Lemeshow test²⁰ p-value is not significant, but it is low (0.452). This means that the model including all variables is not significantly more powerful than an only constant model. However the model has a satisfactory ability to correctly predict the observations (76.7%) and it presents some predictors that are significantly influencing the company decision to allow business unit managers to not having targets for their budget proposal

¹⁹ For hypothesis testing, the estimated odds ratio will be interpreted depending on its value: if >1 it means a 1 unit change in the predictor increases the odd of the dependent variable; if <1 the one unit change decreases the odd of the dependent variable; if $=1$ the one unit change does not influence the odd of the dependent variable. To interpret the magnitude of the effects the odds ratio confidence interval should also be considered.

²⁰ This test assesses the significance of the difference between the observed and the predicted data, applying the deciles of risk grouping strategy to the estimated probability computed from the model (Hosmer and Lemeshow 2000). Therefore when this test is not significant, it means that the model is a good fitting model for the observed data.

preparation. In particular, company geographical dispersion and business units geographical distance have significant negative effects ($B=-0.10$, $p<0.05$ 1-tailed and $B=-0.966$, $p<0.10$, 1-tailed), contrary to the expectations. Both coefficients have an odds ratio that is less than 1, meaning that for a 1 unit increase in the predictor there is a decrease in the estimated odds of not giving targets (vs. giving targets), thus the estimated proportion of companies not giving targets (vs. giving targets) is lower. More geographically dispersed companies and companies where at least one of the business units is located abroad are less likely to give no targets, contrary to hypotheses four and five. Company size and competition intensity are also significant predictors, they are positively related to the decision to not giving targets ($B=0.199$, $p<0.10$ 1-tailed and $B=0.337$, $p<0.10$ 1-tailed), as expected. Both coefficients have an odds ratio that is higher than 1, meaning that for a 1 unit increase in the predictor there is an increase in the estimated odds of not giving targets (vs. giving targets), thus the estimated proportion of companies not giving targets (vs. giving targets) is higher. Bigger companies (in terms of vertical managerial levels) and companies that operate in a highly competitive environment are more likely to give no targets, supporting hypotheses two and nine. Among the control variables, listed and perceived uncontrollability of the financial crisis are significant. The first is positively related to the decision of giving no targets ($B=0.725$, $p<0.10$ 1-tailed). The second one is instead negatively related ($B=-0.303$, $p<0.05$, 1-tailed). Listed has an estimated odds ratio higher than 1, thus listed companies are more likely to decide to give no targets (vs. give targets), contrary to the expectation. The degree of perceived uncontrollability of the financial crisis instead has an estimated odds ratio that is less than 1. Companies that perceive the crisis as highly uncontrollable result to be less likely to give no targets (vs. give targets), supporting the expectation. The other predictors' coefficients are not significant, hence the decision to giving or not giving targets is made independently from the individual effect of those factors.

Given the reduced explanatory power of this model, also a stepwise procedure using the likelihood ratio as entry criteria, has been applied to the data, with the aim to identify the significant predictors reducing the complexity of the model. The more parsimonious model has a significant chi square (14.934, 6 d.f., $p=0.021$), it correctly predicts 72.9% of observations and it includes six significant covariates (in order of entry): company geographical dispersion ($B=-0.099$, $p<0.01$ 1-tailed); company size ($B=0.191$, $p<0.10$ 1-tailed); uncontrollability of the financial crisis ($B=-0.331$, $p<0.05$ 1-tailed); listed ($B=0.87$, $p<0.05$ 1-tailed); business unit geographical distance ($B=-0.862$, $p<0.10$ 1-tailed) and competition intensity ($B=0.266$, $p<0.10$ 1-tailed). It is observable that the significant predictors are the same and have the same sign they had in the previous 'all entry' model.

Budget proposal negotiation phase

The second model uses *FirstToComm* as the dependent variable. The model has a significant chi square ($p=0.062$); the pseudo R^2 is 23.3% and the Hosmer and Lemeshow test p-value is 0.637. It correctly predicts 66.4% of the observations and it presents some predictors that significantly influence the company decision to allow business unit managers to begin the budget negotiation by presenting at first their budget proposal. In particular, the complexity of business units budget responsibility has a significant positive effect on this decision ($B=0.406$, $p<0.001$ 1-tailed; *odds ratio* >1). So the company Ceo is more likely to give business unit managers the possibility to present at first their budget proposal in the budget negotiation phase (vs. present himself at first his proposal) when the business units have more complex budget responsibility, supporting hypotheses three. Company geographical dispersion is significantly negatively related to *FirstToComm* ($B=-0.072$, $p<0.05$ 1-tailed; *odds ratio* <1). When the company has its subsidiaries dispersed in more regions, it is less likely to allow the business unit managers to present at first their budget proposal. This does not support

hypothesis five. Ceo transactional leadership is significantly and negatively related to *FirstToComm* ($B=-0.383$, $p<0.05$ 1-tailed; *odds ratio* <1). In line with the expectation, companies having a more transactional Ceo are less likely to have him allowing business unit managers to begin the budget negotiation presenting at first their budget proposal (vs. present himself at first his proposal). The perceived degree of uncontrollability of the financial crisis is significantly positively related to *FirstToComm* ($B=0.296$; $p<0.05$ 1-tailed; *odds ratio* >1). Contrary to the expectation, the more the financial crisis is perceived as uncontrollable, the more the Ceo is likely to allow business unit managers to begin the budget negotiation presenting at first their budget proposal (vs. present himself at first his proposal). The other predictors' coefficients are not significant. This means that the decision to allow business unit managers to present at first their budget proposal in the negotiation is made independently from the individual effect of those factors.

Using a stepwise procedure, with the likelihood ratio as entry criteria, allows to obtain a more parsimonious model that has a significant chi square (18.860, 5 *d.f.*, $p=0.02$), it correctly predicts 68.8% of observations, and it includes five significant covariates (in order of entry): company geographical dispersion ($B=-0.070$, $p<0.05$ 1-tailed); complexity of business units budget responsibility ($B=0.422$, $p<0.01$, 1-tailed); perceived uncontrollability of the financial crisis ($B=0.264$, $p<0.05$ 1-tailed); Ceo transactional leadership ($B=-0.351$, $p<0.05$, 1-tailed) and business unit geographical distance ($B=-0.645$, $p<0.10$ 1-tailed). The significant predictors are the same and have the same sign they had in the previous 'all entry' model.

Budget proposal approval phase

The third model uses *FinAuthBUbdgt* as the dependent variable. The model has a significant chi square ($p=0.004$); the pseudo R^2 is 57.9% and the Hosmer and Lemeshow test p-value is 0.655. It correctly predicts 96.9% of the observations and it presents some predictors that significantly influence the company

decision to allow business unit managers to have final authority on the business unit budget approval. Business units strategic diversification is strongly significantly positively related with final authority on business units budget approval ($B=1.196$, $p<0.01$, 1-tailed; *odds ratio* >1). This evidence supports hypothesis six: the higher the business units strategic diversification, the more the company CEO is likely to allow the business unit managers to have final authority on the business units budget approval (vs. to retain the final authority for himself). CEO age is significantly positively related to *FinAuthBUbdgt* ($B=0.197$, $p<0.01$, 1-tailed; *odds ratio* >1). The older the CEO, the more he is likely to give final authority to the business unit managers (vs. to retain the final authority for himself), contrary to the expectations. CEO transactional leadership is significantly negatively related to *FinAuthBUbdgt* ($B=-1.007$, $p<0.10$, 1-tailed; *odds ratio* <1), as expected the more the CEO is a transactional leader the less he is likely to give final authority to the business unit managers (vs. to retain the final authority for himself). The degree of perceived uncontrollability of the financial crisis is also significantly negatively related to *FinAuthBUbdgt* ($B=-1.121$, $p<0.05$, 1-tailed; *odds ratio* <1). The more the financial crisis has been perceived as uncontrollable, the less the CEO is likely to give final authority to the business unit managers (vs. to retain the final authority for himself). The other predictors' coefficients are not significant. This means that the decision to give business unit managers the final authority on the business units budget approval is made independently from the individual effect of those factors. The model constant is negative and significant at 10%, implying that other predictors if added could increase the explanatory power of the model.

Using a stepwise procedure, with the likelihood ratio as entry criteria, allows to identify a more parsimonious model that has a significant chi square (29.402, 5 d.f., $p=0.000$), it correctly predicts 95.3% of observations, and it includes five significant covariates (in order of entry): business unit strategic diversification ($B=1.050$, $p<0.01$ 1-tailed); perceived uncontrollability of the financial crisis ($B=-0.947$, $p<0.01$ 1-tailed); CEO age ($B=0.154$, $p<0.01$ 1-tailed); CEO transactional

leadership ($B=-0.696$, $p<0.05$ 1-tailed) and Headquarter ($B=1.288$, $p<0.10$ 1-tailed). The predictors are the same and have the same sign they had in the 'all entry' model, except *Headquarter*, which is having a significant and positive effect on the Ceo decision to give business unit managers final authority on the business unit budget approval.

From this first type of analysis it can be observed that the best predictive model is the third one, the one that uses final authority on the business unit budget approval as dependent variable. Considering the variables, there is only one (control) variable that is significant in all the three models, even though its effect is in different direction, and that is the degree of uncontrollability of the financial crisis. It decreases the likelihood of adopting a bottom up design choice, in model one and three, and it increases the likelihood of adopting bottom up design choice, in model two. Company geographical dispersion is significant in both the first and the second models reducing the likelihood of adopting a bottom up design choice in those phases. The other significant predictors differ among the models, thus among the budget process phases design choices. In addition, there are some predictors that contribute to the overall significance of each model, but that are never individually significant: Ceo span of control²¹, interdependence and environmental uncertainty. Therefore companies are making their design choices independently of the individual effect of these predictors: the wideness of Ceo span of control, the level of interdependence among the business units and the level of perceived environmental uncertainty. Hence, no conclusions can be drawn for hypotheses one, seven and eight in the three models.

²¹ Adding an interaction between Ceo span of control and business unit strategic diversification in each model, this term is negative and significant for *FirstToComm* ($B=-.045$, $p<0.10$ 1-tailed); Ceo span of control is positive and significant ($B=.211$, $p<0.10$, 1-tailed) supporting hypothesis 1a; business unit strategic diversification is positive and significant ($B=.357$, $p<0.10$, 1-tailed) supporting hypothesis 6; and business unit geographical distance is negative and significant ($B=-.774$, $p<0.10$, 1-tailed) not supporting hypothesis 4. All other findings are the same.

Top down – bottom up budget process procedures

Until this point of this study, each of the design choices has been considered as an individual choice for a specific phase of the budget process. However, the company Ceo is designing a procedure for the whole budget process, thus by making a choice for each phase (budget proposal preparation, budget proposal negotiation and budget proposal approval), he is deciding on the adoption of a configuration of design elements that cover the entire budget process.

Two step cluster analysis with auto-clustering has been applied to the binary data of the three indicators (*NoTargets*, *FirstToComm* and *FinAuthBUbdgt*) to identify the possible top down - bottom up configurations of design elements the companies can decide to adopt. Two step cluster analysis is the recommended cluster analysis method when the independent variables used as input to obtain the clusters are all categorical.

Auto-clustering is a procedure that uses the Schwarz's Bayesian Criterion as the agglomerative criteria. The log-likelihood has been used as distance measure for cases' combinations. The auto-clustering procedure stops when there are not significant changes in the log-likelihood among the defined clusters (the distance at the current number of clusters is zero).

Five clusters have been automatically created. They represent the configurations of design elements that have been adopted by the companies in the respondent sample. All these configurations are feasible but also effective procedures, because of the assumed survival fit between contingency factors and management control configurations. Table 5 Panel A illustrates the clusters' distribution and Panel B the clusters' profiles (frequencies) with respect to each of the three indicators.

To evaluate the importance of the different indicators within each cluster a t-test was graphically conducted (Table 5 Panel C). From this test, it emerges that *NoTargets* and *FirstToComm* are important (significant t-test at 5%) in all

clusters, except in cluster 2; while *FinAuthBUbdgt* is important (significant t-test at 5%) only in cluster 2.

Once formed, the clusters need to be interpreted in light of the configuration of design elements that they represent. Table 5 Panel D shows the clusters' interpretation with respect to the 141 respondent companies. This table shows that companies' choices are diverse and that the adopted configurations of budget procedures are widely distributed on the top down - bottom up continuum.

Cluster 1 is formed by 43 companies (30.5%) and it represents the more extreme top - down budget process procedure (configuration of design elements), because companies decided of not having elements of bottom - up in their entire budget process: they decided to give targets in the budget proposal preparation phase, to have the Ceo and/or general director to present at first his budget proposal for the business unit in the negotiation phase, and to give the final authority on the business unit budget to the Ceo and/or general director in the budget approval phase. This configuration has been named '*Imposition*'.

Cluster 2 is formed by 11 companies (7.8%) that, independently of the first two indicators, give final authority on the business unit budget approval to the business unit managers (budget approval phase). Thus, it represents the extreme bottom - up configuration, as it is the only one giving business unit managers decision rights and budget ownership. This interpretation provides evidence on the crucial importance of the third design element, compared to the other two²². This configuration has been named '*Veto*', because business unit managers final authority acts like a veto power on the final budget decision.

²² Independent sample t-tests and Mann-Whitney U-test comparing the means of involvement and influence (measured with budget participation) shows that the strongest significant difference is the one between cluster 1 and cluster 2: ($t=-2.377$, $p=0.020$, 2-tailed; $Z=-1.859$, $p=0.063$ 2-tailed).

The other three clusters are intermediate configurations on the top down - bottom up continuum of budget process procedures; they represent the clusters where the majority of the companies are.

Cluster 3 is formed by 8 companies (5.7%) adopting a procedure that gives no targets in the budget proposal preparation phase, but that is more top down on the other two phases, because it does not allow business unit managers to present at first their budget proposal in the budget negotiation, reserving this possibility to the Ceo and/or general director, and it does not give business unit managers final authority on the business unit budget approval, giving it to the Ceo and/or general director. This configuration has been named '*Hierarchy*', because it only allows business unit managers initiative and choice in the budget proposal preparation phase.

Cluster 4 is formed by 30 companies (21.3%) adopting a procedure that gives no targets in the budget proposal preparation phase, it allows business unit managers to present at first their budget proposal in the negotiation, but it does not give them final authority in the approval phase. This configuration has been named '*Decentralized*', because it allows both business unit managers initiative and choice in the budget proposal preparation phase, and free budget preference revelation and a first mover advantage in the negotiation phase.

Cluster 5 is formed by 48 companies (34%) adopting a procedure that gives targets in the budget proposal preparation phase, it allows business unit managers to present at first their budget proposal in the negotiation, and it does not give them final authority in the approval phase. This configuration has been named '*Negotiated Hierarchy*', because it only allows business unit managers free budget preference revelation and a first mover advantage in the negotiation phase.

There are not enough theoretical elements to be able to order these intermediate clusters on the top down - bottom up continuum²³. Given the exploratory nature of this analysis, the intermediate clusters are not ordered and a multinomial logit model is applied to analyze the determinants of the company configuration choice. This model allows comparing multiple discrete alternatives with respect to a reference one, without requiring any order among the considered alternatives. For applying this model, a categorical variable has been created having values from 1 to 5, equal to the number of the cluster to which the company belongs.

The more extreme top down budget process procedure, thus the configuration of design elements chosen by companies in cluster 1, has been taken as reference for the comparison with the other configurations. The reason behind this choice is that all other configurations are composed by at least one design element that has been chosen to give business unit managers higher involvement and higher influence in one of the budget process phases, so they have at least one design element that renders the whole budget process procedure more bottom up, compared to that adopted by companies in cluster 1. Therefore, this analysis allows to identify the significant factors driving the choice to adopt one of the more flexible bottom up budget procedures rather than the extreme top down one.

The multinomial logit model is significant (*Likelihood ratio chi-square*=87.028; *d.f.* 60; *p*=0.013), it has a high pseudo R^2 (52.5%), and very good goodness of fit (*Person chi square* *p*=0.962; *Deviance chi-square* *p*=1.000). Table 6 in Panel A shows the results of the model indicating the estimated coefficients and their p-values. Table 6 Panel B shows the estimated odds ratios and their confidence intervals. The model results are presented here below by comparing each

²³ Mean rank of the level of involvement and influence (measured with budget participation) on the clusters, reveals the following order: cluster 1 (61.99), cluster 5 (64.86); cluster 3 (66.44); cluster 4 (74.40) and cluster 2 (77.66). However this order should be first theoretically justified, before being empirically tested, thus here a more conservative analysis is carried out.

configuration of bottom up design choices adopted by companies in clusters 2 to 5 with the extreme top down configuration of design choices adopted by companies in cluster 1. The presentation focuses on the significant predictors of the adoption of each bottom up budget process procedure vs. the extreme top down one.

Veto vs. Imposition

The companies in the Veto cluster have decided to adopt a configuration of design elements that, independently of the decisions for the first two phases, gives business unit managers final authority on the business unit budget approval. This choice compared with the extreme top down configuration (cluster 1) can be explained by some predictors. The following ones are significantly positively related to the adoption of the Veto configuration (vs. the Imposition one): business units strategic diversification ($B=1.165$, $p<0.01$, 1-tailed; *odds ratio* >1); the complexity of the business units budget responsibility ($B=0.725$; $p<0.10$, 1-tailed; *odds ratio* >1); and Ceo age ($B=0.237$, $p<0.01$, 1-tailed; *odds ratio* >1). This means that (keeping each time all other variables constant) the more the company has strategically diversified business units, the more the business units have complex budget responsibility, and the more the company has an older Ceo, the more it is likely to choose the Veto configuration (vs. the Imposition one). The following factors are significantly negatively related to the adoption of the Veto configuration (vs. the Imposition one): Ceo transactional leadership ($B=-1.195$; $p<0.05$, 1-tailed, *odds ratio* <1), headquarter ($B=-1.919$; $p<0.10$, 1-tailed, *odds ratio* <1) and perceived uncontrollability of the financial crisis ($B=-0.971$, $p<0.10$, 1-tailed; *odds ratio* <1). Keeping each time the other variables constant, the more the company has a Ceo with higher transactional leadership, the more the company owns the majority of the shares of another company, and the more the financial crisis has being perceived as uncontrollable, the less it is likely to choose the Veto configuration (vs. the Imposition one). These results support hypotheses three and six, they support

the expectation for Ceo transactional leadership and the uncontrollability of the financial crisis, but they do not support the expectation for Ceo age. This configuration comparison has a significant constant ($B=-10.784$, $p<0.10$, 2-tailed), meaning that other factors could be added to contribute to explaining the company choice of Veto vs. Imposition.

Hierarchy vs. Imposition

Companies in the Hierarchy cluster have decided to adopt a configuration of design elements that gives no targets in the budget proposal preparation phase, while being more top down in the following process phases. This choice compared with the extreme top down configuration can be explained by some predictors. The following ones are significantly positively related to the adoption of the Hierarchy configuration (vs. the Imposition one): the complexity of the business units budget responsibility ($B=0.627$, $p<0.10$, 1-tailed; odds ratio >1) and Ceo age ($B=0.107$, $p<0.05$, 1-tailed; odds ratio >1). This means that (keeping each time the other variables constant), the more the company has business units with complex budget responsibility, and it has an older Ceo, the more it is likely to choose the Hierarchy configuration (vs. the Imposition one). Only the company geographical dispersion is significantly negatively related to the adoption of the Hierarchy configuration (vs. the Imposition one) ($B=-0.138$, $p<0.10$, 1-tailed; odds ratio <1). The more the company is geographically dispersed having its subsidiaries in more Italian regions, the less it is likely to prefer the Hierarchy configuration to the Imposition one. These results support hypotheses three, they do not support hypothesis five, and they do not support the expectation for Ceo age.

Decentralized vs. Imposition

Companies in the Decentralized cluster have decided to adopt a configuration of design elements that gives no targets in the budget proposal preparation phase and that allows business unit managers to present at first their budget proposal in the negotiation, while being more top down in the budget approval

phase. This choice compared with the extreme top down configuration can be explained by some predictors. Only the complexity of business units budget responsibility is significantly positively related to the adoption of the Decentralized configuration (vs. the Imposition one) ($B=0.486$, $p<0.05$, 1-tailed; *odds ratio* >1). This means that the more the company has business units with complex budget responsibility, the more it is likely to choose the Decentralized configuration (vs. the Imposition one). The following predictors are significantly negatively related to the adoption of the Decentralized configuration (vs. the Imposition one): business unit geographical distance ($B=-1.253$, $p<0.10$, 1-tailed; *odds ratio* <1); company geographical dispersion ($B=-0.111$, $p<0.05$, 1-tailed; *odds ratio* <1) and Ceo transactional leadership ($B=-0.391$, $p<0.10$, 1-tailed; *odds ratio* <1). Keeping each time the other variables constant, the more the company has its more distant business unit located abroad; the more it is geographically dispersed, having its subsidiaries in many Italian regions; and the more its Ceo is a transactional leader; the less it is likely to prefer the Decentralized configuration to the Imposition one. These results support hypotheses three, they do not support hypothesis four and five, and they support the expectation for Ceo transactional leadership.

Negotiated Hierarchy vs. Imposition

The companies in the Negotiated Hierarchy cluster have decided to adopt a configuration of design elements that gives business unit managers targets for the budget proposal preparation, it allows business unit managers to present at first their budget proposal in the negotiation phase, being more top down in the budget approval phase. This choice compared with the extreme top down configuration can be explained by some predictors. The following ones are significantly positively related to the adoption of the Negotiated Hierarchy configuration (vs. the Imposition one): the complexity of the business units budget responsibility ($B=0.569$, $p<0.01$, 1-tailed; *odds ratio* >1), Ceo age ($B=0.082$, $p<0.01$, 1-tailed; *odds ratio* >1), and the uncontrollability of the

financial crisis ($B=0.454$, $p<0.05$, 1-tailed; odds ratio >1). This means that keeping each time the other variables constant, the more the company has business units with complex budget responsibility, the more it has an older Ceo, and the more the financial crisis has being perceived as uncontrollable; the more it is likely to choose the Negotiated Hierarchy configuration (vs. the Imposition one). Company geographical dispersion is significantly negatively related to the adoption of the Negotiated Hierarchy configuration (vs. the Imposition one) ($B=-0.065$, $p<0.10$, 1-tailed; odds ratio <1), thus the more the company is geographically dispersed, the less it is likely to choose the Negotiated Hierarchy configuration (vs. the Imposition one). These results support hypothesis three, they do not support hypothesis five, and they do not support the expectations for Ceo age and the uncontrollability of the financial crisis. This configurations comparison has a significant constant ($B=-4.930$, $p<0.10$, 2-tailed), meaning that other factors could be added to contribute to explaining the company choice of Negotiated Hierarchy vs. Imposition.

Discussion of results

Table 7 summarizes the results of hypotheses testing for each bottom up budget process procedure (vs. the extreme top down one). From this table it is apparent that the more the company has business units with more complex budget responsibility, the more it is likely to adopt a bottom up budget process procedure, thus a configuration that has one (or more) design elements giving higher involvement and influence to the business unit managers. This evidence strongly supports hypothesis three.

Keeping all other variables constant, business units geographical distance is significant only in comparing Decentralized and Imposition configurations, reducing the likelihood of adopting a bottom up budget procedure that gives higher involvement and influence to the business unit managers both in the first and the second phase of the process. This evidence do not support hypothesis four. Companies having their more distant business unit located abroad are

companies where the Ceo is more likely to give targets in the budget proposal preparation phase and to begin the negotiation. The unexpected result of these companies providing targets in the first phase of the process (of the 29 companies having the more distant business unit located abroad, 22 gives targets in the budget proposal preparation phase) could be explained by two factors: a difference in the national culture of the country where the subsidiary is located vs. the Italian culture (Chow et al. 1999) or a subsidiary resource argument (Nohria and Ghoshal 1994). The data does not support both explanations. For the first one, both the 22 companies having their more distant business unit located abroad and the 7 companies having it in Italy, have it widely distributed in terms of continents and countries, thus there is no evidence of a national culture effect. The second explanation is related to the level of resources possessed by the business unit located abroad. Nohria and Ghoshal (1994) argued that when the business unit is located in a more complex local environment the importance of the business unit manager local knowledge increases (the Ceo is less familiar with that environment), coherently with the hypothesis four, and they also add that as the level of resources (assets and employees) of the business unit increases, there are higher agency costs and risks associated with the business unit acting in its own partisan interests rather than in the company interest, such that the efficacy of using the formalization of rules and procedures increases. They explain that the reasons are that 1) the business unit is less reliant on the company, 2) it is more important to the local economy, and 3) it is more important for the overall company performance. Independent samples T-tests on the difference between the average number of business unit employees (2008) and the average business unit revenues (2008) for companies having the more distant business unit located abroad vs. companies having the more distant business unit located in Italy, show not significant results (both for equal variance assumed and not assumed: $p=0.349$ and $p=0.314$ for the employees >0.10 ; $p=0.291$ and $p=0.445$ for the revenues >0.10). This evidence does not support the local resource argument. Further

research could shed more light on the reasons behind the negative result of this factor.

Always from table 7, it is also evident that, keeping all other variables constant, company geographical dispersion is a factor that reduces the likelihood of adopting three of the four bottom up budget process procedures (vs. the extreme top down one). This evidence do not support hypothesis five.

This finding conflict with the studies stating that geographically dispersed companies can be expected to have business unit managers with more involvement and influence in the budget process (e.g. Merchant 1981). In particular, companies having their subsidiaries more dispersed on the Italian territory are companies where the business units have the activities of their subunits carried out at different geographical sites. Hence business unit managers have on average a wider span of control, implying that they have higher difficulties in directly monitoring their dispersed subunits. If, on the one hand, as hypothesized, this can increase business unit managers local knowledge, thus it can increase the need for the Ceo to reduce the higher uncertainty he has on the business unit activities; on the other hand, it can also increase the complexity and the risks associated with those operating activities. Organizational design studies have recently addressed the role of middle managers as being at the same time agents of top management and principals of the low level managers (Melumad et al. 1992; 1995; Laffont and Martimort 1998) and they have shown that business unit managers benefit from a double rent extraction from their principal. In this study this negative effect is obtained keeping constant the number of managerial levels and all the other independent variables. However the higher dispersion of the subsidiaries could increase Ceo perceived risk of double rent extraction from the business unit managers (e.g. higher risk of collusive behavior of business unit and subsidiary managers based on inside contracting system, Laffont and Martimort 1998). This could explain why the Ceo is more likely to reduce this risk, by adopting a procedure that limits the business unit managers' involvement and influence in the first and

second phase of the process: giving targets for the business unit budget proposal, and/or not having business unit managers beginning the negotiation, the Ceo constrains the business unit budgets without changing the business unit managers decision rights. Independent sample T-tests shows that 63 companies where business unit managers negotiate their business unit budget with the Ceo, before discussing the subsidiary budget with their subsidiary managers, on average, are significantly more geographically dispersed in the Italian regions compared to other companies in the sample (equal variance assumed and not assumed $p = 0.055$ and $p = 0.063 < 0.10$). This provides some support to the above argument, because Ceo's could react in advance to a higher risk of double rent extraction (e.g. with inside contracting) by the business unit managers constraining more the business unit budgets. Only comparing the adoption of the Veto configuration with the Imposition one, company geographical dispersion is not significant, meaning that the delegation of decision rights (final authority) and the related budget ownership by the business unit managers provide some assurance for the Ceo against the risk of double rent extraction.

In this last comparison (Veto vs. Imposition), it is business units' strategic diversification that better explains this configuration comparison, supporting hypothesis six. Considering that the Veto configuration is the only one giving business unit managers decision rights in the budget approval phase (thus it can be seen as the more extreme bottom up procedure), business units strategic diversification is a key determinant in choosing to adopt a procedure that gives high involvement and high influence. Moreover, this variable is significant in explaining the recognition of decision rights to the business unit managers independently of seeing this design choice for the budget approval phase in isolation with respect to the other phases (table 4), or as part of the procedure for the whole budget process (Veto vs. Imposition table 6).

Among the control variables, table 7 shows that Ceo age is a significant predictor comparing three of the four bottom up budget process procedures with

the Imposition one and that its effect is contrary to expectations. An alternative explanation for its unexpected positive sign could be that, while being a proxy for CEO experience, age is also an indication of the active role of the CEO in the company. While older CEOs know more about the business activities, so they do not necessarily need to give involvement and influence to the business unit managers to set more challenging targets (Merchant and Van der Stede 2007); they can be more tired of engaging in those activities, or they can be more worried about their dismissal, such that they have a short term orientation and they prefer to disengage themselves, giving business unit managers more involvement and influence (for example by recognizing them final authority in the approval phase). Kruskal Wallis tests comparing the means of CEO tenure in clusters 2 to 5 with clusters 1 (not tabulated) show all not significant differences. This evidence does not support the argument that CEOs are worried about their risk of dismissal. The other explanation remains possible: older CEOs can be tired of engaging in business activities, so they disengage themselves preferring to adopt a bottom up procedure.

Table 7 also shows that CEO leadership style is significant in explaining the adoption of two bottom up configurations (vs. the Imposition one); in particular if the CEO is a highly transactional leader he is less likely to adopt a Veto or a Decentralized budget process procedure (vs. the Imposition one). It can be observed that those bottom up procedures are the ones formed by more than one design element choice in favor of giving business unit managers high involvement and influence. Thus its effect seems to matter more (reducing the likelihood) in choosing to adopt a 'stronger' bottom up procedure than a lighter one (always vs. the Imposition one).

The uncontrollability of the financial crisis is found to have conflicting significant effects. On the one hand, it reduces the likelihood of adopting a Veto configuration (vs. the Imposition one), but on the other hand it increases the likelihood of adopting a Negotiated Hierarchy configuration (vs. the Imposition one). Considering the magnitude of the odds ratio the second effect is higher

(odds ratio 1.575 vs. 0.379) and more significant (the odds ratio confidence interval in the Negotiated Hierarchy configuration exclude 1) than the first one, thus the expectation is only partly supported.

Nothing can be said about five of the other predictors: *Ceo span of control*,²⁴ *company size interdependence*, *environmental uncertainty* and *competition intensity*. Their individual effects are not significant in any configurations comparison.

Considering separately the three phases of the budget process, *company size*, *competition intensity* and *listed* have been found to have a significant positive effect on the likelihood of giving no targets to the business unit managers in the budget proposal preparation phase (table 4). However, when considering the three phases as a configuration of design elements for the whole budget process, these three predictors do not allow discriminating among any bottom up configurations and the imposition one, so their individual effects were conditional on the total separation of the design decisions. This illustrates the importance of seeing the design choices as configurations of elements used to design a process, rather than separate design decisions.

Other examples of this importance are given by the degree of complexity of business units budget responsibility and Ceo age. In the first analysis they were significant predictors of only one design choice: respectively, the second phase of the process (*FirstToComm=1*) and the third phase of the process (*FinAuthBUbdgt=1*). However, considering the configurations of design elements they emerge as strong predictors of many bottom up process

²⁴ Adding an interaction between Ceo span of control and business unit strategic diversification to the model, this term is negative and significant for *Veto vs. Imposition* ($B=-.226, p<0.10$ 1-tailed), where all significant coefficients remain the same, and for *Negotiated Hierarchy vs. Imposition* ($B=-.087, p<0.05, 1-tailed$). Here, Ceo span of control is positive and significant ($B=.370, p<0.05, 1-tailed$) supporting hypothesis 1a; business unit strategic diversification is positive and significant ($B=.457, p<0.10, 1-tailed$) supporting hypothesis 6; and company size is negative and significant ($B=-.269, p<0.10, 1-tailed$) not supporting hypothesis 2. All other findings are the same.

procedures (vs. the extreme top down one). In particular, the complexity of business units budget responsibility is a significant predictor explaining not only the adoption of those bottom up configurations that allow business unit managers to present at first their budget proposal in the budget negotiation (*FirstToComm=1*), but also the adoption of the Hierarchy configuration (vs. the Imposition), where this is the configuration that gives no targets in the budget proposal preparation phase (*NoTargets=1*) and it has top down choices for the other two phases (*FirstToComm=0; FinAuthBUbdgt=0*).

Ceo age is a significant predictor explaining not only the adoption of those bottom up configurations that give business unit managers final authority on the business unit budget approval (*FinAuthBUbdgt=1*), but also the adoption of the Hierarchy and the Negotiated Hierarchy configurations (vs. the Imposition), where they can be respectively described as having *NoTargets=1; FirstToComm=0; FinAuthBUbdgt=0* and as having *NoTargets=0; FirstToComm=1; FinAuthBUbdgt=0*. These effects would have not been identified using only the first type of analysis. Therefore, the conceptualization of the budget process procedures as configurations of design element choices is more appropriate than the consideration of three individual design choices, because it allows to better understanding the companies decision to structure the entire budget process.

Sensitivity analyses and robustness tests

The multinomial logistic regression model has been subject to two sensitivity analyses. Ceo charisma has replaced Ceo transactional leadership. The multinomial model remains significant, but its explanatory power is slightly reduced (*Pearson chi-square 410.114 (448) p=0.90; pseudo R²=51.6%*). The results remain the same, except for the complexity of business units budget responsibility that become not significant in cluster 2 (*B=0.454, p=0.310, 1-tailed; odds ratio>1*). As a second sensitivity check, Ceo tenure has been included replacing Ceo age. The model remains significant, but its explanatory

power is reduced (*Pearson chi-square* 434.781 (448) $p=0.664$; *pseudo* $R^2=47.8\%$). The results remain the same, except for Ceo transactional leadership that become not significant in cluster 4 ($B=-0.339$, $p>0.10$, 1-tailed; *odds ratio* <1) and for company geographical dispersion that becomes not significant in cluster 5 ($B=-0.048$, $p>0.10$, 1-tailed; *odds ratio* <1). Ceo tenure is significant at 5% and positive in two of the clusters where Ceo age was significant: cluster 2 and cluster 5. In cluster 3 it is not significant ($B=0.069$, $p>0.10$, 1-tailed; *odds ratio* >1).

As robustness test a dummy controlling for industry (1=service; 0=manufacturing) has been included in the model. Recent surveys from practice (Develin and Partners 2005; KPMG CFO Advisory Services Practice 2004) found that industry is a significant factor in explaining which type of budget approach companies declare to use. The 28.4% of the respondent companies operate in the service industry, of them the 3.5% is operating in the financial industry. Including the dummy for industry, the model remains significant, but its explanatory power is reduced (*Pearson chi-square* 435.788 (444) $p=0.601$; *pseudo* $R^2=54.3\%$). All results remain the same and this variable is not significant in any configurations comparison (2-tailed tests²⁵).

A robustness tests has also been done for the measure of company financial risk. *BetaWgtAve* has been replaced with the measure computed using the simple average of the Datastream industry group Betas for not listed companies. The model remains significant and the results do not change. As additional test, the *BetaWgtAve* has been replaced with the measure computed using the Beta of the direct comparable attributed by the researcher for not listed companies. The model remains significant and the results do not change.

²⁵ There are not strong theoretical reasons for having a directional prediction for this variable. As curiosity, considering 1-tailed tests, industry would be significant in cluster 3 ($B=1.832$, $p<0.10$, 1-tailed; *odds ratio* >1) and 4 ($B=1.356$, $p=0.05$, 1-tailed; *odds ratio* >1), meaning that Ceo of service companies are more likely to adopt a Hierarchy or a Decentralized configuration (vs. the Imposition one).

Finally, the last robustness test has been done including a dummy variable controlling for having a family managed company. This variable has value 1 if the company has one person of the funding family in one of the key managerial roles (president, vice-president, Ceo) and 0 otherwise (Astrachan and Shaker 2003). The 43.3% of the respondents companies is family managed. Introducing this variable the model fit is reduced (*Pearson chi-square* 421.040 (444) $p=0.777$; *pseudo* $R^2=53.4\%$), the results do not change and the variable is never significant.

VI. Conclusion

This paper develops a theory on the determinants of company adoption of a bottom up budget process procedure vs. a top down one. The adoptable procedures are configurations of three top management design element choices, one for each phase of the budget process: the choice of giving (not giving) targets to the business unit managers for their budget proposal preparation; the choice of allowing (not allowing) business unit managers to present at first their budget proposal in the budget negotiation; and the choice of giving (not giving) business unit managers final authority on the business unit budget approval. By adopting a configuration of these design choices for designing their budget process, companies (in the person of the Ceo and/or general director) are deciding which level of involvement and which level of influence give to the business unit managers. Based on the economic and psychological theories of participative budgeting, this study theorizes that the company decides which procedure to adopt depending on the level of information asymmetry that exists between the Ceo (and/or general director) and the business unit managers, such that the factors that influence the level of information asymmetry are the possible determinants of the company's choice of adopting a certain budget process procedure. This theory has been tested with data collected by 128 questionnaires of management accountants of middle-large companies operating in Italy.

The findings show that respondent companies adopted five different configurations of design elements, four of them give business unit managers high involvement and high influence in at least one of the three budget process phases, thus they can be considered as alternative bottom up budget process procedures. These four have been compared with the extreme top down procedure, where companies decide to allow business unit managers low level of involvement and influence in all the three budget process phases. This comparison shows that the higher the complexity of the business units budget responsibility and the level of business units strategic diversification, the more the CEO is likely to adopt a bottom up budget process procedure (vs. the extreme top down one). It also shows that the higher the company geographical dispersion and the business units geographical distance, the less the CEO is likely to adopt a bottom up budget process procedure (vs. the extreme top down one). Social exchange theories state that the CEO can give higher involvement and influence also only because of his emotions and desire to give voice to the business unit managers, independently of the level of information asymmetry. This study controls for CEO leadership style and it finds that, the more the CEO is a transactional leader who builds a contractual type of working relationship with the business unit managers, the lower is the likelihood of adopting a bottom up budget process procedure (vs. the extreme top down one). In addition, this study finds that CEO age is significant in predicting CEO's decision: the older the CEO, the more the company is likely to adopt a bottom up budget process procedure (vs. the extreme top down one). Controlling for the perceived uncontrollability of the financial crisis, this study shows that this factor has conflicting effects: on the one hand, the uncontrollability of the financial crisis is reducing the likelihood of adopting a bottom up procedure (Veto), in which business unit managers are given (or not) targets for their budget proposal preparation, they are allowed (or not) to present at first their budget proposal in the budget negotiation, and they have final authority in the approval phase; and, on the other hand, it increases the likelihood of adopting a bottom up procedure

(Negotiated Hierarchy), in which business unit managers are given targets for their budget proposal preparation, they are allowed to present at first their budget proposal in the budget negotiation, but they have not final authority in the approval phase. This interpretation is confirmed by the results of the separate analysis of each budget process phase. Moreover, this study empirically demonstrates that it is more appropriate to consider the design choices as configurations representing different procedures for the entire budget process, rather than modeling them as three separate design choices not part of a process. This because it shows both how the effects of some significant predictors depend on the total separation between the budget process phases, and how the effects of other significant predictors become more evident considering the sequential nature of the process. Finally, this study has found that the internal determinants are more helpful in explaining the adoption of a certain budget process procedure than the external determinants: environmental uncertainty and competition intensity are not significant in predicting the likelihood of adopting any bottom up budget process procedures versus the extreme top down one (Imposition). These findings do not support prior budgeting studies, and the conventional wisdom, that in a more flexible and unpredictable environment companies are more likely to adopt a more flexible (bottom up) budget process procedure (vs. the extreme top down one). This study contributes in many ways to our knowledge on budget process design and it is the first study in many respects.

First, it is the first study to investigate company adoption of a top down - bottom up budget process procedure. There have been studies on the adoption of cost accounting techniques (e.g. ABC, TQM), but none on the adoption of different budget process procedures.

Second, it is the first to provide a new conceptualization of budget process procedure as configuration of design elements that companies can decide to use to design their budget process. In particular, the existence of effective intermediate configurations on the top down – bottom up continuum of

procedures provides empirical evidence on the excessive simplification of the traditional dichotomy between top down and bottom up approaches. Findings confirm the appropriateness of this configurational approach, because they identify configurations of design elements whose adoption would have not been recognized and would have not been explained, if the design elements would have been conceptualized as separate design choices, not part of the whole budget process procedure. In this respect, this study follows Merchant (1981) suggestion that it might be useful to explain budgeting tendencies in terms of more aggregate multidimensional clusters of variables.

Third, this is the first study that clarifies who is the actor behind the companies budget process design choices, emphasizing that the attention should be paid to the higher organizational level (Ceo and/or general director), rather than to the lower ones, that have been instead the main focus of participative budgeting studies.

Fourth, this is the first study to propose and test a theory on the determinants of company adoption of a budget process procedure. It does so showing the significant determinants of the adoption of different bottom up procedures vs. the extreme top down one. In this way, this study contributes to the contingency theory debate on survival fit between contingency factors and management control configurations, by identifying the effective budget process procedures that companies have adopted, given their internal and external environment.

This study also contributes to the participative budgeting literature, because it specifies that the level of involvement and influence business unit managers are allowed is the result of a procedural design choice for the entire budget process. Thus, to better understand why in some companies there is a low (vs. high) level of participation, it is necessary to investigate how the companies have structured their budget process by adopting a certain budget process procedure. Moreover, this study indicates that it is relevant to distinguish between the level of involvement and the level of influence that can be given in three phases of the budget process (budget proposal preparation, budget

proposal negotiation and budget proposal approval) because when the companies adopt a certain procedure, they are deciding how much involvement and influence they want to allow to the business unit managers in each of these phases. Finally, it also highlights the importance to consider leadership style and other individual factors (e.g. age) to understand the motives of the budget process procedure decision maker (the Ceo and/or general director).

This study has some limitations common to all surveys studies.

First, the data have been collected by a single respondent in each company. This methodological issue has been taken into account with a careful selection of the respondent, using a key informant in the management accounting department to identify the best knowledgeable respondent in that department. Not addressing the questionnaire to one of the opposite parties directly involved in the budget setting process minimizes both the risk of getting responses by somebody who does not have an overall view of the budget process, and also the risk of socially desirable answers. However, sometime respondents asked more time to fill in the questionnaire, because they needed to obtain an approval by top management for participating in the study, therefore socially desirable answers cannot be excluded. No evidence of response bias has been found between early and late respondents.

Second, data have been collected in late spring – early summer 2009, when the effects of the financial crisis were still present in the Italian economy. This context related issue has been addressed with a careful questionnaire design, by reminding respondents of the importance of thinking to the budget process procedure independently of the financial crisis effects; and by measuring and including two control variables in all regression models, one soft measure and one hard measure (Iltner and Larcker 2001). The hard measure has been collected from archival data to minimize common method bias. Notwithstanding these interventions, the effect of the financial crisis on the respondents' answers cannot be excluded. Therefore, convergent validity of the survey measures has been assessed by correlating them both with different measures of the same

construct, and, when possible, with measures computed using data obtained from different sources (archival data).

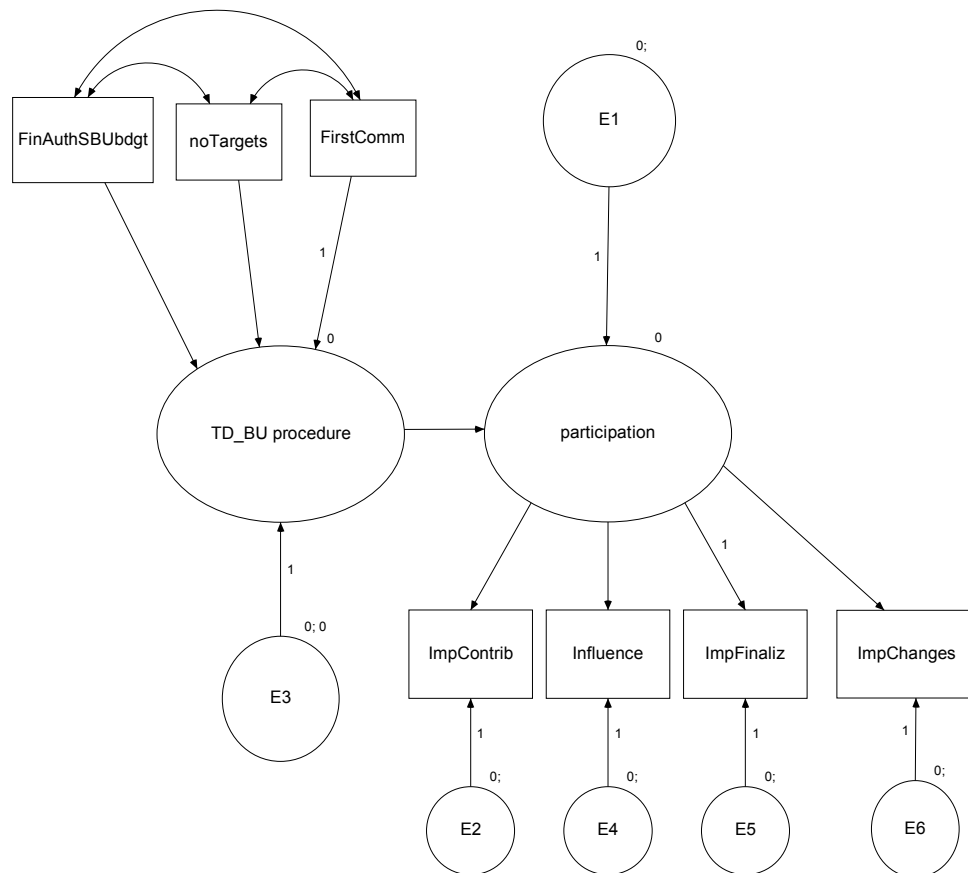
Third, the questionnaire includes a measure of Ceo leadership style to control for an alternative explanation. The pre-test indicated that this question was considered sensible by some respondents, however it was retained necessary for controlling for the effects of the other explanation, so it has been left inside the questionnaire. This respondents' sensitivity issue has been addressed by guaranteeing anonymity and confidentiality, emphasizing it both in the accompanying letters and in the questionnaire introduction; and by positioning the question at the end of the questionnaire, after Ceo demographics and before the respondents' profile. Nevertheless Ceo leadership style had 6.4% of missing responses. No response bias has been found comparing those companies with the others. The nine questionnaires with missing responses have been excluded from the regression models.

Notwithstanding these limitations, this study provides a valuable contribution to the management accounting literature on budgeting and it provides many suggestions for further research on companies budget process design choices. First, it shows the need of understanding more about how company budget process design depends on different external and internal conditions, not only by identifying the alternative budget process procedures among which companies can choose, but also by theoretically positioning them on the top down – bottom up continuum, such that more sophisticated analysis could be carried out.

Second, future studies could investigate the effects of using different types of budget process procedures. In line with previous experimental studies design, they could compare the procedures identified in this study as if they are exogenous predetermined choices or, more interestingly, they could also introduce an endogenous design choice in their experimental setting, allowing the Ceo to choose among them.

Third, the configurational approach could be applied every time that the object of study is defined as being a set of discrete choices. In that case, the demonstration of the appropriateness of that approach can be done following the procedure used in this study: future studies can benefit from explaining not only the individual elements of the set, but also the configuration of the chosen set. This study is an example of how this second type of analysis could offer even more interesting insights.

FIGURE A - Nomological net validation of the indicators of the dependent variable



Notes for Model (Default model) - Computation of degrees of freedom

Number of distinct sample moments:	35
Number of distinct parameters to be estimated:	24
Degrees of freedom (35 - 24):	11

Result (Default model)

Minimum was achieved
Chi-square = 13.572
Degrees of freedom = 11
Probability level = .258

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
TD_BU procedure	<--- NoTargets	-.231	.397	-.582	.561	par_1
TD_BU procedure	<--- FirstComm	1.000				
TD_BU procedure	<--- FinAuthBUbdgt	-.262	.677	-.387	.699	par_6
participation	<--- TD_BU procedure	.433	.173	2.507	.012	par_8
ImpFinaliz	<--- participation	1.000				
Influence	<--- participation	.812	.143	5.674	***	par_3
ImpContrib	<--- participation	.959	.165	5.827	***	par_4
ImpChanges	<--- participation	.801	.142	5.645	***	par_9

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
TD_BU procedure	<--- NoTargets	-.219
TD_BU procedure	<--- FirstComm	1.019
TD_BU procedure	<--- FinAuthSBUbdgt	-.147
participation	<--- TD_BU procedure	.251
ImpFinaliz	<--- Participation	.612
Influence	<--- Participation	.675
ImpContrib	<--- Participation	.715
ImpChanges	<--- Participation	.668

Means: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
NoTargets	.291	.038	7.576	***	par_10
FirstComm	.607	.041	14.672	***	par_11
FinAuthBUbdgt	.078	.023	3.442	***	par_15

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
ImpFinaliz	4.605	.156	29.584	***	par_12
Influence	5.059	.120	42.315	***	par_13
ImpContrib	5.593	.137	40.821	***	par_14
ImpChanges	5.501	.119	46.407	***	par_16

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
NoTargets <--> FirstComm	.050	.019	2.612	.009	par_2
noTargets <--> FinAuthBUbdgt	-.001	.010	-.137	.891	par_5
FirstComm <--> FinAuthBUbdgt	.002	.011	.204	.838	par_7

Correlations: (Group number 1 - Default model)

	Estimate
NoTargets <--> FirstComm	.227
NoTargets <--> FinAuthBUbdgt	-.012
FirstComm <--> FinAuthBUbdgt	.017

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C. R.	P	Label
NoTargets	.206	.025	8.367	***	par_17
FirstComm	.238	.029	8.337	***	par_18
FinAuthBUbdgt	.072	.009	8.367	***	par_19
E3	.000				
E1	.642	.185	3.472	***	par_20
E5	1.144	.168	6.819	***	par_21
E4	.540	.087	6.180	***	par_22
E2	.602	.107	5.623	***	par_23
E6	.544	.087	6.257	***	par_24

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
TD_BU procedure	1.000
participation	.063
ImpChanges	.447
ImpContrib	.511
Influence	.455
ImpFinaliz	.374

Matrices (Group number 1 - Default model)

Factor Score Weights (Group number 1 - Default model)

	FinAuth BUbdgt	First Comm	No Targets	Imp Changes	Imp Contrib	Influence	Imp Finaliz
TD_BU procedure	-.262	1.000	-.231	.000	.000	.000	.000
participation	-.028	.106	-.024	.231	.251	.236	.137

Total Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	-.262	1.000	-.231	.000
participation	-.113	.433	-.100	.000
ImpChanges	-.091	.346	-.080	.801
ImpContrib	-.109	.415	-.096	.959
Influence	-.092	.351	-.081	.812
ImpFinaliz	-.113	.433	-.100	1.000

Standardized Total Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	-.147	1.019	-.219	.000
participation	-.037	.255	-.055	.000
ImpChanges	-.025	.171	-.037	.668
ImpContrib	-.026	.183	-.039	.715
Influence	-.025	.172	-.037	.675
ImpFinaliz	-.022	.156	-.034	.612

Direct Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	-.262	1.000	-.231	.000
participation	.000	.000	.000	.000
ImpChanges	.000	.000	.000	.801
ImpContrib	.000	.000	.000	.959
Influence	.000	.000	.000	.812
ImpFinaliz	.000	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	-.147	1.019	-.219	.000
participation	.000	.000	.000	.000
ImpChanges	.000	.000	.000	.668
ImpContrib	.000	.000	.000	.715
Influence	.000	.000	.000	.675
ImpFinaliz	.000	.000	.000	.612

Indirect Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	.000	.000	.000	.000
participation	-.113	.433	-.100	.000
ImpChanges	-.091	.346	-.080	.000
ImpContrib	-.109	.415	-.096	.000
Influence	-.092	.351	-.081	.000
ImpFinaliz	-.113	.433	-.100	.000

Standardized Indirect Effects (Group number 1 - Default model)

	FinAuthBUbdgt	FirstComm	NoTargets	participation
TD_BU procedure	.000	.000	.000	.000
participation	-.037	.255	-.055	.000
ImpChanges	-.025	.171	-.037	.000
ImpContrib	-.026	.183	-.039	.000
Influence	-.025	.172	-.037	.000
ImpFinaliz	-.022	.156	-.034	.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/ DF
Default model	24	13.572	11	.258	1.234
Saturated model	35	.000	0		
Independence model	7	157.930	28	.000	5.640

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.914	.781	.982	.950	.980
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.097	.018	.000	.115
Saturated model	.000	.000	.000	.000
Independence model	1.128	.928	.673	1.237

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.041	.000	.102	.532
Independence model	.182	.155	.210	.000

TABLE 1 – Individual respondents descriptive statistics

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
Age	141	29	58	40.33	6.22
Gender	141	0	1	.15	.357
Educational level	141	1	4	-	-
- <i>High school</i>	141	0	1	.11	.318
- <i>Professional</i>	141	0	0	.00	.000
- <i>Graduate</i>	141	0	1	.69	.465
- <i>MBA</i>	141	0	1	.20	.400
- <i>PhD</i>	141	0	0	.00	.000
Years of schooling	141	12	27	17.59	2.36
Organizational position	141	1	3	-	-
- <i>CFO</i>	141	0	1	.26	.438
- <i>Head of control</i>	141	0	1	.62	.486
- <i>SBU controller</i>	141	0	1	.12	.327
Number of levels from the Ceo	141	0	4	1.40	.926
Years in the position	141	.16	23	5.60	3.98
Years in the company	141	.25	36	8.78	6.58
Years experience with the budget	141	1	35	10.51	5.77
Years experience in the functional area	141	0	35	12.61	6.40
Years experience in industry	141	0	36	8.84	6.52
Number employees in the functional area	139	2	700	54	98
Valid N (listwise)	139				

TABLE 2 – Descriptive statistics - Panel A

Variables	N	Theoretical range	Sample Range		Mean	Std. Deviation	Cronbach α
			Minimum	Maximum			
NoTargets	141	(0-1)	0	1 (29.1%) ^a	.29	.456	n.a.
FirstToComm	140	(0-1)	0	1(60.3%)	.61	.490	n.a.
FinAuthBUbdgt	141	(0-1)	0	1(7.8%)	.08	.269	n.a.
Test variables							
CeoSpan	141		2	32	6	4	n.a.
CompanySize	141		1	16	4	1.85	n.a.
ComplexityBUbdgResp	141	(1-6)	1	6	-	-	n.a.
BUAbroad	141	(0-1)	0	1 (20.6%)	0.2057	0.4056	n.a.
CompanyGeogrDisp	140	(0-20)	0	20	5.79	6.325	n.a.
Diversification	141	(1-7)	1	7	3.728	1.6132	n.a.
Interdependence	140	(0-100%)	0	100	13.46	22.029	n.a.
EnvirUncertainty	140	(1-7)	1	6	3.33	0.9138	0.608
CompetIntensity	140	(1-7)	1	7	4.8667	1.1853	0.655
Control variables							
CeoTransLeader	132	(1-7)	1.4	7	4.8666	1.12043	0.8
CeoAge	141		37	79	53	8.45	n.a.
Listed	141	(0-1)	0	1 (22.7%)	.23	.420	n.a.
Headquarter		(0-1)	0	1(66%)	.66	.476	n.a.
BetaWgtAve	141		.1500	1.6080	.9672	.26516	n.a.
UncontrolCrisis	140	(1-7)	1	7	4.09	1.349	n.a.
Other variables							
MeanNEmploBU	129		0	27518	1002	2966	n.a.
NEmployees 2007	141		121	96198	4628	14485	n.a.
TotAssets 2007	141		44085	89029856	2609797.58	11165030.91	n.a.
Turnover 2007	141		29588	34637000	1190160.70	3358972.21	n.a.
ComplexityOrgStructure	141	(1-3)	1	3	-	-	n.a.
NSubsidiaries	140		0	3500	79	396	n.a.
N4 digit SIC codes	141		1	9	1.84	1.322	n.a.
Nayyar (1992) classific.	138	(1-4)	1	4	2.79	.947	n.a.
% ProductionBU	127	(0-100%)	0	100	18.05	30.802	n.a.
TransferPrices	141	(0-1)	0	1(66%)	.66	.476	n.a.
% TimeCoord	140	(0-100%)	0	100	22.26	20.94	n.a.
CeoCharisma	132	(1-7)	2.333	7	5.7942	0.9888	0.857
CeoTenure	141		.16	40	7	7.27	n.a.
CeoEducLevel	141	(1-4)	1	4	-	-	n.a.
BetaDirComparable	141		.102	1.911	.9359	.3648	n.a.
BetaSimpleAve	141		.1500	1.6080	.9218	.2223	n.a.
Participation	141	(1-7)	2.75	7	5.3900	0.8532	0.753
Hofstede	141	(1-7)	1	7	5.30	1.189	n.a.
Family	141	(0-1)	0	1(43.3%)	.43	.497	n.a.
Industry	141	(0-1)	0	1 (28.4%)	.28	.452	n.a.

^a For dummy variables the percentage of answers =1 is indicated into brackets.

TABLE 2 – Descriptive statistics

Panel B.1

Mean and (Standard Deviation) of Independent Variables Partitioned by NoTargets

		NoTargets =0 (n=100)	NoTargets =1 (n=41)			
	Predicted sign of difference	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean difference	Indep. sample T statistic	Kruskal Wallis Chi - Square
CeoSpan	+/-	5.84 (3.49)	6.51 (5.15)	-0.67	-0.77	0.20
CompanySize	+	4.08 (1.40)	4.32 (.66)	-0.24	-0.54	0.09
ComplexityBUBdgResp	+	3.73 (1.35)	3.85 (1.11)	-0.12	-0.56	0.04
BUabroad	+	.22 (.42)	.17 (.39)	0.05	-0.68	0.43
CompanyGeogrDisp	+	6.36 (6.67)	4.39 (5.20)	1.97	1.87**	2.44*
Diversification	+	3.78 (1.63)	3.60 (1.60)	0.18	0.60	0.55
Interdependence	+	13.20 (22.57)	14.10 (20.88)	-0.90	-0.22	1.09
EnvirUncertainty	+	3.33 (.88)	3.32 (.98)	0.01	0.06	0.12
CompetIntensity	+	4.83 (.17)	4.95 (1.22)	-0.12	-0.53	0.53
CEOAge	+	52.65 (7.93)	53.95 (9.56)	-1.3	-0.77	0.50
CeoTransLeader	-	4.93 (1.16)	4.70 (1.01)	0.23	1.11	1.16
Listed	-	.22 (.42)	.24 (.43)	-0.02	-0.30	0.09
HQ	+/-	.66 (.47)	.66 (.48)	0.00	0.02	0.00
BetaWgtAve	-	.98 (.27)	.92 (.26)	0.06	1.24	1.67*
UncontrolCrisis	-	4.19 (1.38)	3.83 (1.24)	0.36	1.51*	2.26*

***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, for one-tailed tests. Mean differences are computed not assuming equal variance.

TABLE 2 – Descriptive statistics

Panel B.2

Mean and (Standard Deviation) of Independent Variables Partitioned by FirstToComm

		FirstToComm =0 (n=55)	FirstToComm =1 (n=85)			
	Predicted sign of difference	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean difference	Indep. sample T statistic	Kruskal Wallis Chi - Square
CeoSpan	+/-	6.16(3.44)	5.95 (4.42)	0.21	0.32	1.39
CompanySize	+	4.33 (1.50)	3.99 (2.00)	0.34	1.14	3.66**
ComplexityBUBdgResp	+	3.51 (1.27)	3.93 (1.27)	-0.42	-1.91**	-2.84**
BUabroad	+	.25 (0.44)	.18 (0.38)	0.08	1.08	1.23
CompanyGeogrDisp	+	7.76 (7.64)	4.54 (4.97)	3.23	2.77***	2.50*
Diversification	+	3.45 (1.50)	3.88 (1.65)	-0.43	-1.59*	-2.13*
Interdependence	+	15.58 (25.47)	12.20 (19.71)	3.38	0.83	0.00
EnvirUncertainty	+	3.26 (0.88)	3.36 (0.93)	-0.09	-0.58	0.31
CompetIntensity	+	5.04 (1.14)	4.76 (1.21)	0.28	1.38*	1.60
CEOAge	+	52.35 (8.38)	53.41 (8.50)	-1.06	-0.73	0.86
CeoTransLeader	-	5.00 (1.15)	4.76 (1.083)	0.24	1.21	-1.88*
Listed	-	0.25 (0.44)	0.21 (0.41)	0.04	0.57	0.34
HQ	+/-	0.67 (0.47)	0.65 (0.48)	0.03	0.31	0.10
BetaWgtAve	-	0.96 (0.29)	0.97 (0.25)	-0.00	-0.12	0.04
UncontrolCrisis	-	3.84 (1.34)	4.23 (1.33)	-0.39	-1.68**	-2.80**

***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, for one-tailed tests. Mean differences are computed not assuming equal variance.

TABLE 2 – Descriptive statistics

Panel B.3

Mean and (Standard Deviation) of Independent Variables Partitioned by FinAuthBUdgt

		FinAuthBU bdgt =0 (n=55)	FinAuthBU bdgt =1 (n=85)			
	Predicted sign of difference	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean difference	Indep. sample T statistic	Kruskal Wallis Chi - Square
CeoSpan	+/-	6.10 (4.17)	5.27 (1.7)	0.83	1.29	0.00
CompanySize	+	4.15 (1.88)	4.18 (1.47)	-0.04	-0.07	0.36
ComplexityBUBdgResp	+	3.75 (1.30)	3.91 (1.04)	-0.15	-0.46	0.16
BUabroad	+	.20 (.40)	.27 (.47)	-0.07	-0.50	0.32
CompanyGeogrDisp	+	5.75 (6.27)	6.20 (7.42)	-0.45	-0.18	0.07
Diversification	+	3.63 (1.57)	4.9 (1.74)	-1.28	-2.36**	-5.68***
Interdependence	+	13.67 (22.56)	11.00 (14.97)	2.67	0.54	0.16
EnvirUncertainty	+	3.34 (.90)	3.22 (1.05)	0.12	0.37	0.10
CompetIntensity	+	4.86 (1.12)	4.94 (1.07)	-0.08	-0.23	0.02
CEOAge	+	52.61 (8.10)	58.00 (10.90)	-5.39	-1.60*	-3.20**
CeoTransLeader	-	4.89 (1.11)	4.54 (1.25)	0.35	0.86	0.61
Listed	-	.23 (.42)	.18 (.40)	0.05	0.38	0.14
HQ	+/-	0.67 (.47)	0.55 (.52)	0.12	0.76	0.69
BetaWgtAve	-	0.96 (.27)	1.04 (.22)	-0.08	-1.16	2.09*
UncontrolCrisis	-	4.17 (1.33)	3.09 (1.22)	1.08	2.80***	6.06***

***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, for one-tailed tests. Mean differences are computed not assuming equal variance.

TABLE 3 – Correlations (listwise) n=128

	NoTargets	FirstToCom	FinAuthBU	CeoSpan	Comp lexity	BU	Comp anyGeo	Diversi	Interde	EnvirU	Comp	CeoCh	CeoTr	CEOT	CEOA	Listed	HQ	BetaW	Uncon
NoTargets	1	.200*	-.043	.074	.031	.015	-.044	-.049	.066	.004	.133	.011	-.094	.012	.042	.055	-.009	-.102	-.138
FirstToCom	.200*	1	-.001	-.044	-.105	.188*	-.020	.103	.005	.043	-.079	-.080	-.127	.058	.088	-.017	-.038	.044	.137
FinAuthBU	-.043	-.001	1	-.002	.109	.057	-.044	.070	-.067	.011	-.037	.009	-.064	.092	.181*	-.018	-.063	.125	-.236**
CeoSpan	.114	.049	-.049	1	.140	.045	.119	.024	.153	.077	-.063	.049	.010	-.064	.113	-.070	-.040	-.011	-.111
CompanySi	.122	-.037	.043	.093	1	.025	.053	.218*	.021	-.052	.078	.055	-.018	-.146	.033	.122	.073	.024	.138
Complexity	.039	.200*	.047	.044	-.040	1	.136	.016	.151	.120	-.051	.110	.201*	-.083	.014	.135	.199*	.019	.054
BUbdrRes	-.034	-.054	.024	.267**	.018	.161	1	-.092	.249**	.015	.018	.048	-.037	-.039	.099	.266**	.236**	-.049	-.150
BUabroad	-.166	-.220*	.047	-.063	.106	-.024	-.093	1	-.067	-.094	.118	.092	.064	-.153	.208*	.187*	.095	-.051	.068
CompanyGeo	-.038	.110	.280**	.070	.043	.250**	.013	-.041	1	-.004	.002	.215*	.250**	-.156	-.025	.005	.058	.035	.073
Diversification	.020	-.069	-.049	-.027	-.098	-.062	.095	-.160	1	.066	.100	-.072	-.088	.026	-.071	-.005	-.013	.041	.025
Interdependence	.041	.053	.001	.150	.000	.119	.037	-.105	.193*	1	-.011	-.070	-.024	-.046	-.146	.025	.067	.013	-.025
EnvirUncertainty	.119	-.089	-.034	-.088	.065	.012	.016	.071	.043	-.005	1	.067	.117	-.058	-.041	.110	-.068	-.015	.006
CompetIntensivity	.019	-.004	-.030	.077	.018	.084	-.076	.116	-.097	-.083	.085	1	.616**	-.077	.132	.029	.026	-.071	.141
CeoCharisma	-.091	-.112	-.079	.052	-.043	.192*	-.123	.171	-.084	-.059	.075	.601**	1	-.177*	-.035	.023	.116	-.058	.220*
CeoTransleader																			

	NoTargets	FirstToComm	FinAuthBUbdgt	CeoSpan	Comp anySize	ComplexityBUbdg resp	BU abroad	Comp anyGeogrDisp	Diversification	Interdependence	EnvirUncertainty	ComplexityIntensity	CeoCharisma	CeoTransLeader	CEOAge	Listed	HQ	BetaWgtAve	UncontrollCrisis
CEO Tenure	.080	.094	.066	-.038	-.116	-.079	-.089	-.176*	-.143	.053	-.010	.014	.050	-.120	1	.357**	-.050	.011	-.007
CEO Age	.056	.070	.200*	.144	.012	.022	.013	.083	-.024	-.077	-.127	-.073	.169	-.030	.480**	1	.220*	.029	-.039
Listed	.055	-.017	-.018	.053	.104	.138	.117	.185*	.005	-.061	.027	.117	-.003	.011	.028	.168	.276**	-.061	.120
HQ	-.009	-.038	-.063	.022	-.012	.218*	.236**	.084	.055	-.160	.083	-.072	.014	.119	-.027	.211*	1	.025	.031
BetaWgtAve	-.100	.038	.093	-.040	.059	.012	.094	.000	.029	.032	.026	.012	-.029	-.021	-.007	.000	.056	1	.099
UncontrollCrisis	-.132	.138	.243**	-.072	.086	.038	-.148	.028	.085	.002	-.056	.011	.143	.245**	.002	-.060	.025	.062	1

** * Correlations are significant at the 0.01 and 0.05 levels, respectively (2-tailed). Pearson (Spearman's Rho) correlations are presented below (above) the diagonal.

NoTargets = 1(0) if the business unit managers do not (do) receive budget proposal targets for their budget proposal preparation.

FirstToComm = 1(0) if business unit managers (CEO and/or general director) are allowed to present at first their budget proposal in the negotiation.

FinAuthBUbdgt = 1(0) if final authority on business unit budget approval is given to business unit managers (to CEO and/or general director).

CeoSpan = number of business units located immediately below the CEO and/or general director in the organizational structure.

CompanySize = highest number of managerial levels present in the company, counting them from the CEO to the lowest managerial level.

ComplexityBUbdgResp = 1 if the more complex responsibility of the business units is based on costs; 2 if it is based on revenues; 3 if it is based on cost and revenues;

4 if it is based on profit; 5 if it is based on profit and financial items of the balance sheet; 6 if it is based on return of investment.

BUabroad = 1(0) if the more distant (*in terms of travel distance*) business unit from Italian legal headquarters is located abroad (in Italy).

CompanyGeogrDisp = number of Italian regions in which the company productive and distributive subsidiaries are located.

Diversification = average of 3 items measuring business units strategic diversification.

Interdependence = percentage of company sales 2007 among the business units.

EnvirUncertainty = average of 5 items measuring perceived environmental unpredictability.

CompetitIntensity = average of 3 items measuring perceived competition intensity.

CeoCharisma = average of 6 items measuring CEO degree of charisma.

CeoTransLeader = average of 5 items measuring CEO degree of transactional leadership.

CeoAge = years of the CEO.

CeoTenure = years since when the actual CEO of the company has been appointed.

Listed = 1(0) if the company is (not) listed in Italian Stock Exchanges.

HQ = 1(0) if the company owns (does not own) the majority of the shares of another company.

BetaWgtAve = Own Beta, for listed companies, and Beta (weighted average of total assets 2007) computed using Datastream industry group, for not listed companies.

UncontrollCrisis = 1 item measure of the perceived uncontrollability of the financial crisis.

TABLE 4 - Binary logistic regression models

Panel A – Coefficients and p-values

Binary logistic regression models		Process phase 1 – NoTargets	Process phase 2 – FirstToComm	Process phase 3 - FinAuthBUBdgt
	Predicted sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
CeoSpan	+/-	.055 (.312)	.023 (.687)	-.278 (.250)
CompanySize	+	.199 (.114*)	-.049 (.660)	.099 (.704)
ComplexityBUBdgResp	+	.147 (.417)	.406 (.016***)	.375 (.432)
BUabroad	+	-.966 (.123*)	-.658 (.242)	-.150 (.929)
CompanyGeogrDisp	+	-.100 (.028**)	-.072 (.031**)	.050 (.578)
Diversification	+	-.014 (.924)	.095 (.493)	1.196 (.004***)
Interdependence	+	.002 (.864)	-.010 (.289)	.021 (.518)
EnvirUncertainty	+	.042 (.872)	.134 (.580)	.003 (.996)
CompetIntensity	+	.337 (.113*)	-.122 (.495)	-.178 (.739)
CEOage	-	.014 (.593)	.028 (.248)	.197 (.009***)
CeoTransLeader	-	-.091 (.660)	-.383 (.058**)	-1.007 (.101*)
Listed	-	.725 (.188*)	.114 (.829)	.852 (.602)
HQ	+/-	.007 (.989)	-.429 (.375)	-1.659 (.224)
BetaWgtAve	-	-.661 (.432)	.474 (.532)	-.612 (.774)
UncontrolCrisis	-	-.303 (.078**)	.296 (.064**)	-1.121 (.061**)
Constant		-2.476 (.318)	-1.571 (.489)	-9.251 (.108*)
Model X^2 (d.f.)		18.068 (15)	24.160 (15)	33.703 (15)
Model <i>p</i> -value		.259	.062*	.004***
Nagelkerke R^2		19%	23.3%	57.9%
HosmerLemeshow X^2 (d.f.) <i>P</i> -value		8.082 (8) .425	6.087 (8) .637	5.930 (8) .655
Obs. correctly predicted		76.7%	66.4%	96.9%
<i>Sensitivity</i> (1-1)		72.72%	69.32%	100%
<i>Specificity</i> (0-0)		77.12%	60%	96.77%
Number obs.		129	128	129

***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively, for one- or two-tailed tests as appropriate.

TABLE 4 - Binary logistic regression models

Panel B – Odds ratios and confidence intervals

Binary logistic regression models	Process phase 1 – NoTargets	Process phase 2 - FirstToComm	Process phase 3 - FinAuthBUbdgt
	Odds ratio (C.I.)	Odds ratio (C.I.)	Odds ratio (C.I.)
CeoSpan	1.057 (.949 ; 1.177)	1.023 (.915; 1.145)	.757 (.471; 1.216)
CompanySize	1.221 (.953; 1.563)	.952 (.764; 1.186)	1.104 (.662; 1.840)
ComplexityBUBdgResp	1.159 (.812; 1.654)	1.501* (1.079; 2.087)	1.456 (.571; 3.713)
BUabroad	.381 (.112; 1.297)	.518 (.172; 1.560)	.861 (.032; 22.877)
CompanyGeogrDisp	.905 (.828; .989)	.930 (.871; .993)	1.051 (.882; 1.253)
Diversification	.986 (.735; 1.322)	1.100 (.838; 1.442)	3.307* (1.461; 7.484)
Interdependence	1.002 (.982; 1.022)	.990 (.972; 1.008)	1.022 (.957; 1.090)
EnvirUncertainty	1.043 (.627; 1.735)	1.144 (.711; 1.840)	1.003 (.302; 3.333)
CompetIntensity	1.401 (.924; 2.125)	.885 (.624; 1.256)	.837 (.293; 2.386)
CEOage	1.014 (.964; 1.066)	1.029 (.980; 1.080)	1.218* (1.051; 1.411)
CeoTransLeader	.913 (.608; 1.371)	.682 (.459; 1.013)	.365 (.110; 1.217)
Listed	2.064 (.701; 6.078)	1.121 (.397; 3.165)	.542 (.095; 57.789)
HQ	1.007 (.370; 2.742)	.651 (.252; 1.680)	2.344 (.013; 2.755)
BetaWgtAve	.516 (.099; 2.690)	1.606 (.364; 7.079)	.326 (.008; 35.383)
UncontrolCrisis	.739 (.528; 1.034)	1.344 (.983; 1.838)	.190 (.101; 1.053)
Constant	.084	.208	.000

Bolds odds ratios correspond to significant coefficients.

* indicates odds ratios that do not include 1 in their confidence intervals.

TABLE 5 – Cluster analysis: auto-clustering on the three indicators

Panel A: clusters' formation and distribution

Number of Clusters	Schwarz's Bayesian Criterion (BIC)	BIC Change(a)	Ratio of BIC Changes(b)	Ratio of Distance Measures(c)
1	448.815			
2	302.989	-145.826	1.000	1.290
3	193.320	-109.670	.752	1.510
4	125.725	-67.595	.464	2.107
5	101.436	-24.289	.167	3.030
6	103.354	1.917	-.013	1.219
7	107.594	4.240	-.029	2.772
8	118.599	11.006	-.075	.(d)

a The changes are from the previous number of clusters in the table.

b The ratios of changes are relative to the change for the two cluster solution.

c The ratios of distance measures are based on the current number of clusters against the previous number of clusters.

d Since the distance at the current number of clusters is zero, auto-clustering will not continue.

Cluster Distribution		N	% of Combined	% of Total
Cluster	1	43	30.7%	30,5%
	2	11	7.9%	7,8%
	3	8	5.7%	5,7%
	4	30	21.4%	21,3%
	5	48	34.3%	34,0%
	Combined	140	100.0%	99,3%
Excluded Cases		1		.7%
Total		141		100.0%

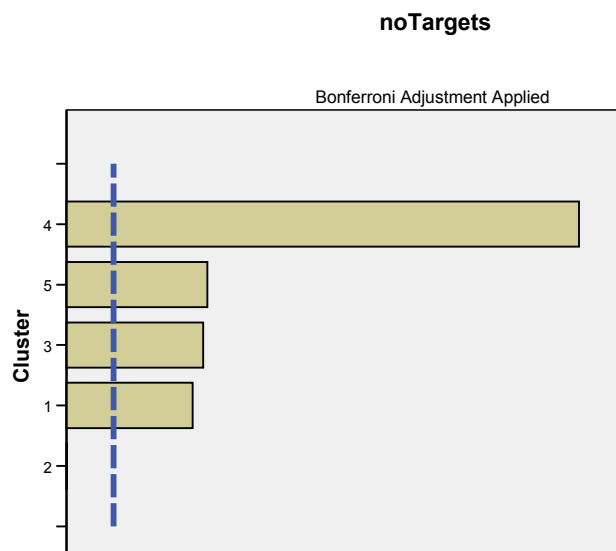
Panel B: clusters' profiles (frequencies)

NoTargets		0		1	
		Frequency	Percent	Frequency	Percent
Cluster	1	43	43.4%	0	.0%
	2	8	8.1%	3	7.3%
	3	0	.0%	8	19.5%
	4	0	.0%	30	73.2%
	5	48	48.5%	0	.0%
	Combined	99	100.0%	41	100.0%

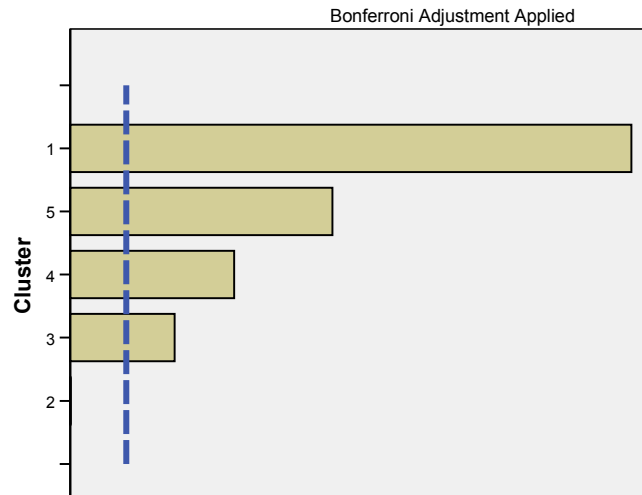
FirstToComm		0		1	
		Frequency	Percent	Frequency	Percent
Cluster	1	43	78.2%	0	.0%
	2	4	7.3%	7	8.2%
	3	8	14.5%	0	.0%
	4	0	.0%	30	35.3%
	5	0	.0%	48	56.5%
	Combined	55	100.0%	85	100.0%

FinAuthBUbdgt		0		1	
		Frequency	Percent	Frequency	Percent
Cluster	1	43	33.3%	0	.0%
	2	0	.0%	11	100.0%
	3	8	6.2%	0	.0%
	4	30	23.3%	0	.0%
	5	48	37.2%	0	.0%
	Combined	129	100.0%	11	100.0%

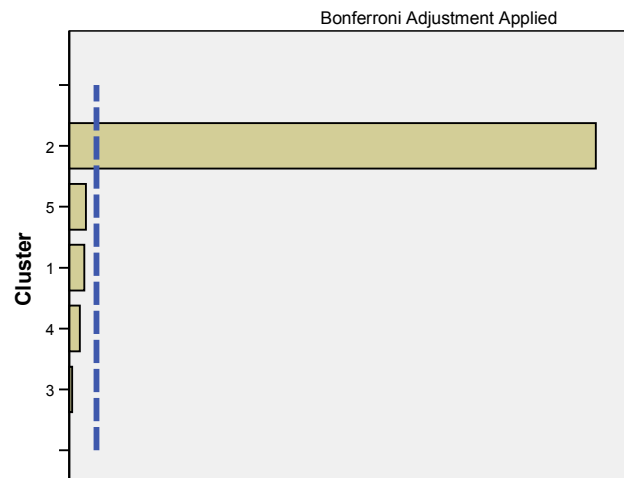
Panel C: Attribute Importance: clusterwise importance



FirstComm



FinAuthSBUbdgt



Panel D: clusters' interpretation

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Number	43	11	8	30	48
Combination of design elements	(0;0;0)	(0/1; 0/1; 1)	(1;0;0)	(1;1;0)	(0;1;0)
Interpretation of the configuration	Imposition	Veto	Hierarchy	Decentralized	Negotiated Hierarchy

TABLE 6 – Multinomial logistic regression model

Panel A - Coefficients and p-values

Multinomial logit model		Cluster 2 - Veto	Cluster 3 - Hierarchy	Cluster 4 – Decentralized	Cluster 5 - Negotiated Hierarchy
Reference: Cluster 1 - Imposition					
	Predicted sign	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept		-10.784 (.074**)	-6.775 (.222)	-3.455 (.280)	-4.930 (.088**)
CeoSpan	+/-	-.264 (.293)	.029 (.794)	.060 (.448)	.007 (.921)
CompanySize	+	.157 (.607)	-.084 (.792)	.142 (.363)	-.244 (.225)
ComplexityBUBdgResp	+	.725 (.153*)	.627 (.101*)	.486 (.047**)	.569 (.008***)
BUabroad	+	-.807 (.646)	-1.367 (.324)	-1.253 (.110*)	-.529 (.452)
CompanyGeogrDisp	+	-.006 (.946)	-.138 (.162*)	-.111 (.036**)	-.065 (.119*)
Diversification	+	1.165 (.008***)	-.296 (.420)	.082 (.693)	-.034 (.852)
Interdependence	+	.014 (.690)	-.020 (.441)	-.004 (.770)	-.015 (.214)
EnvirUncertainty	+	.110 (.866)	.225 (.696)	.220 (.513)	.109 (.714)
CompetIntensity	+	-.236 (.671)	.090 (.843)	.160 (.540)	-.216 (.311)
CEOage	-	.237 (.003***)	.107 (.064**)	.029 (.440)	.082 (.013***)
CeoTransLeader	-	-1.195 (.063**)	.081 (.848)	-.391 (.163*)	-.192 (.452)
Listed	-	1.044 (.544)	.484 (.692)	.872 (.223)	-.253 (.715)
HQ	+/-	-1.919 (.177*)	-.511 (.641)	-.309 (.652)	-.405 (.499)
BetaWgtAve	-	-.465 (.835)	-.687 (.704)	-.044 (.966)	.459 (.634)
UncontrolCrisis	-	-.971 (.121*)	-.346 (.363)	-.046 (.842)	.454 (.027**)
Model X^2 (d.f.)					87.028 (60)
Model p-value					0.013**
Nagelkerke R^2					52.5%
Pearson X^2 (d.f.)					396.392 (448)
P-value					.962
Deviance X^2 (d.f.)					271.533 (448)
P-value					1.000
Number obs.					128
Number of companies		40 (cluster 1)	9 (cluster 2)	7 (cluster 3)	26 (cluster 4)
					46 (cluster 5)

***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively, for one- or two-tailed tests as appropriate.

TABLE 6 – Multinomial logistic regression model

Panel B - Odds ratios and confidence intervals

Multinomial logit model Reference: Cluster 1 - Imposition	Cluster 2 - Veto	Cluster 3- Hierarchy	Cluster 4 – Decentralized	Cluster 5 - Negotiated Hierarchy
	Odds ratio (C.I.)	Odds ratio (C.I.)	Odds ratio (C.I.)	Odds ratio (C.I.)
Intercept	n.a.	n.a.	n.a.	n.a.
CeoSpan	.768 (.469; 1.257)	1.029 (.830; 1.276)	1.062 (.910; 1.239)	1.007 (.871; 1.165)
CompanySize	1.170 (.644; 2.125)	.920 (.493; 1.714)	1.153 (.848; 1.567)	.783 (.528; 1.162)
ComplexityBUBdgResp	2.065 (.764; 5.582)	1.871 (.884; 3.960)	1.625* (1.006; 2.626)	1.767* (1.163; 2.686)
BUabroad	.446 (.014; 13.935)	.255 (.017; 3.849)	.286 (.061; 1.328)	.589 (.148; 2.340)
CompanyGeogrDisp	.994 (.830; 1.190)	.871 (.717; 1.057)	.895 (.807; .993)	.937 (.863; 1.017)
Diversification	3.206* (1.359; 7.561)	.744 (.362; 1.527)	1.085 (.723; 1.627)	.967 (.681; 1.373)
Interdependence	1.014 (.948; 1.084)	.980 (.932; 1.031)	.996 (.973; 1.020)	.985 (.962; 1.009)
EnvirUncertainty	1.116 (.313; 3.976)	1.252 (.405; 3.873)	1.245 (.646; 2.402)	1.115 (.624; 1.993)
CompetIntensity	.790 (.267; 2.341)	1.094 (.451; 2.651)	1.174 (.703; 1.958)	.806 (.531; 1.223)
CEOage	1.267* (1.084; 1.481)	1.113 (.994; 1.246)	1.029 (.957; 1.107)	1.086* (1.018; 1.158)
CeoTransLeader	.303 (.086; 1.066)	1.084 (.473; 2.489)	.677 (.391; 1.172)	.826 (.501; 1.360)
Listed	2.842 (.097; 83.176)	1.622 (.148; 17.713)	2.391 (.588; 9.726)	.776 (.199; 3.025)
HQ	.147 (.009; 2.377)	.600 (.070; 5.126)	.734 (.191; 2.816)	.667 (.206; 2.161)
BetaWgtAve	.628 (.008; 49.655)	.503 (.015; 17.449)	.957 (.125; 7.338)	1.582 (.239; 10.473)
UncontrolCrisis	.379 (.111; 1.294)	.707 (.335; 1.492)	.955 (.608; 1.500)	1.575* (1.052; 2.357)

Bolds odds ratios correspond to significant coefficients.

*indicates odds ratios that do not include 1 in their confidence intervals.

TABLE 7 – Summary of hypotheses testing

Reference: Cluster 1 - Imposition		Cluster 2 - Veto	Cluster 3- Hierarchy	Cluster 4 – Decentralized	Cluster 5 - Negotiated Hierarchy
	Predicted sign	Y or N ^a	Y or N	Y or N	Y or N
CeoSpan	+/-				
CompanySize	+				
ComplexityBUBdgResp	+	Y	Y	Y	Y
BUabroad	+			N	
CompanyGeogrDisp	+		N	N	N
Diversification	+	Y			
Interdependence	+				
EnvirUncertainty	+				
CompetIntensity	+				
CEOage	-	N	N		N
CeoTransLeader	-	Y		Y	
Listed	-				
HQ	+/-	Y (-)			
BetaWgtAve	-				
UncontrolCrisis	-	Y			N

^a Y=hypothesis (or expectation) is supported;
N=hypothesis (or expectation) is not supported.

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CONCLUSION

Nowadays management accounting research has been focused on studying the managerial implications and the individual level outcomes of the budget process with conflicting results. If, on the one hand, this has stimulated researchers' interests producing years of research for trying to reconcile those contradictions; on the other hand, it has also opened the stage for critics and discussions among researchers on the effectiveness and the efficiency of the budget process. However, surprisingly, management accounting research has paid more attention to study the outcomes of the process than its design.

This dissertation provides a unique contribution to management accounting literature because it begins a research program on this topic by defining the nature of the budget process design decision and by empirically investigating how do companies structure their budget process.

In particular, the first chapter of this dissertation has critically evaluated the common textbooks definitions of top down and bottom up budget processes and, by reviewing ninety studies on budget participation and on negotiated budgets, it provided a new conceptualization of top down - bottom up budgeting as *"the continuum of alternative formal procedures top management can choose to adopt for setting business unit budgets through the budget proposal preparation, negotiation and approval with the business unit managers"*.

The second and the third chapters have presented two empirical studies on budget process design: a single case study on an Italian subsidiary of a multinational company and a survey on a sample of middle-large companies operating in Italy.

The first study has examined the case of a company where the managers participate in the budget process by negotiating their organizational unit budgets. This study has explored the actions of managers in the different phases of the process (the budget proposal preparation, negotiation and approval) providing evidence on how they were concretely involved and they

have influence on their budget in those phases. In this way it has contributed to prior participative budgeting studies, because they have mainly focused on studying the effects of budget participation, rather than providing evidence on how this budget participation is implemented and managed inside the companies.

The study begun considering the findings of prior negotiated budgetary studies (Fisher et al. 2000, 2002a, 2002b, 2006) on the budget negotiation and approval phases and it has extended them, focusing on the budget proposal preparation phase. More specifically, it has empirically investigated three propositions, derived from cognitive dissonance theory and negotiation theory, on the drivers of manager's behavior in budget negotiation, measuring it in terms of manager's resistance to changing the initial budget proposal.

The data have been collected at individual level of analysis with a multi-method approach using interviews, questionnaires, field notes, archival data and direct observation.

Findings have indicated that a higher level of manager's perceived decision freedom in selecting the initial budget proposal preparation phase increases manager's resistance to changing that proposal during the negotiation phase, because the manager feels a higher level of emotional attachment and commitment to it. They have also shown that manager's negotiation of a proposed budget with each of the low level manager he supervises in the budget proposal preparation phase, increases manager's resistance to changing the initial budget proposal during the negotiation phase, because let him feels a higher level of responsibility towards them for the result of the negotiation of the initial budget proposal with his superior. In addition, findings have also indicated that the level of information asymmetry perceived by the manager at the beginning of the negotiation phase, instead, reduces his resistance to changing the initial budget proposal while negotiating it. This happens because the discrepancy of information perceived by the parties at the beginning of the negotiation, due to the revealed difference between the parties'

initial positions, triggers psychological processes that influence manager's confidence in the goodness of his initial budget proposal. These processes facilitate (hamper) the information sharing and interpretation during the negotiation, such that when the size of the bargaining conflict is bigger (smaller) managers are less (more) intransigent in making concessions from their initial budget proposal.

This case study has provided evidence on the importance of investigating how managers' participation concretely take place within the companies, because this allows to understand the reasons behind top management decision to adopt a certain budget process procedure. I argued in this dissertation that, by choosing to adopt a procedure, top management is deciding to allow a certain desired level of involvement and influence to the managers on their budget.

In particular, in line with prior participative budgeting literature, I defined involvement as the manager's contribution to the budget process and influence as the manager's contribution to the final budget.

In this respect, the case study presented an example of a budget process design that makes managers to perceive their involvement in the budget process to be important, motivating and useful for reaching the targets. The possibility managers had to prepare and present their initial budget proposal and to discuss it with their superior allowed them to give a higher contribution to the budget process and to the definition of their final budget.

Moreover, this case study has specified that the efficiency and effectiveness of a budget process design should be judged examining the effects that the used budget process procedure directly has on manager's behaviour. In particular, it has highlighted the important role of the budget proposal: the analysis of how the initial budget proposal is determined, in the budget proposal preparation phase, allows better evaluating the choices of the parties' positions at the beginning of the negotiation phase, and the consideration of its changes during the negotiation, summarizes the parties' social interaction and their influence over the final budget.

Finally, this case study has provided empirical evidence on the sequential nature of the process, by showing that the actions done by the managers before negotiating their budget, affect not only their budget proposal preparation, but also their behavior during the negotiation. This is extremely relevant for studying budget process design, because it clarifies that when top management is deciding to adopt a certain budget process procedure, he is considering the entire budget process, through which the managers are allowed to be involved and they have influence on their budget. Therefore, he is deciding how to give a certain desired level of involvement and influence to the managers in each phase of the process.

Up to this dissertation, management accounting research has never investigated top management budget process design, hence it was unknown which type of budget process procedures companies could adopt, allowing a certain desired level of involvement and influence to the managers, and how this adoption depended on the circumstances in which the companies operate. The second study of this dissertation has empirically addressed those research questions investigating how top management can differently design the budget process by choosing which formal procedure to adopt on the top down – bottom up continuum of procedures, and which organizational and environmental factors determine this adoption.

I have argued in this dissertation that there is not a universally superior budget process design and that there are rather elements of variability in the budget processes observed in practice that differentiate them (Merchant and Van der Stede 2007). Given that nothing was known about which design elements differentiate the budget processes, in this second empirical study, I have reviewed the literature and I have identified three design elements, one for each phase of the budget process, that I believed were relevant to this purpose: the choice of giving (not giving) targets to the managers for their budget proposal preparation; the choice of allowing (not allowing) the managers to present at

first their budget proposal in the budget negotiation; and the choice of giving (not giving) managers final authority on their budget approval.

Then I have defined the top down – bottom up continuum of procedures as the continuum of different configurations of those three design elements that top management can choose to adopt, for giving managers a desired level of involvement and influence on their budget. More specifically, the continuum of procedures among which companies can choose goes from the extreme of a pure top-down procedure, where the managers are allowed a low level of involvement and influence in all phases of the process; to a pure bottom-up one, where the managers are allowed a high level of involvement and influence in all phases of the process.

This definition of the procedures, as configurations of design elements, is coherent with the empirical evidence of the case study on the sequential nature of the budget process, and it is in line with Merchant (1981) suggestion that it might be useful to explain budget tendencies in terms of more aggregate multidimensional clusters of variables.

Based on prior participative budgeting literature, that recognized that the value of managers' participation to the budget process lays in the information exchanges among the subjects (Hopwood 1976; Galbraith 1977), this second study has developed a theory on the determinants of companies adoption of different budget process procedures.

On the basis of both economic and psychological theories of participative budgeting, it has posited that these determinants are factors that can influence the level of information asymmetry between the top management (in the person of the Chief Executive Officer and/or of the general director) and the business unit managers. The argument behind this statement is that top management designs the budget process to reduce the uncertainty she/he has on the business unit environmental and operating conditions and gather information to set a challenging budget for the business unit managers.

This theory has been tested on a sample of middle-large companies operating in Italy. Data have been collected with a questionnaire answered from management accountants of 141 companies, using the procedure recommended by Dillman (2007).

The questionnaires have been statistically analyzed with a cluster analysis to identify the adopted top down – bottom up procedures. This approach has been preferred to the theoretical identification of the configurations (procedures), because there were not a priori reasons to expect some configurations of design elements to be theoretically not coherent. In addition, given the use of a configurational approach, based on a congruence notion of fit, all adopted configurations are effective procedures for the companies, given their internal and external contingency factors.

Findings indicated that companies have adopted five different configurations of the three design elements. Four of them gave business unit managers high involvement and high influence in at least one of the three budget process phases, thus they have been considered as alternative bottom up budget process procedures.

For theory testing, each of these four procedures has been compared with the extreme top down one, in which companies decided to allow business unit managers a low level of involvement and influence in all the three budget process phases. Given that the analysis of the adoption of the intermediate configurations is exploratory and that there are not theoretical arguments for ordering them on the top down – bottom up continuum, a more conservative type of analysis has been used. The analysis has been done applying a multinomial logit model, that allows to compare multiple discrete alternatives (bottom up procedures) with a baseline one (the extreme top down procedure), without requiring any order among the considered alternatives.

These comparisons have shown that, keeping each time all other variables constant, the higher the complexity of the business units budget responsibility, and the higher the level of business units strategic diversification, the more the

Ceo has been likely to adopt a bottom up budget process procedure (vs. the extreme top down one). They have also shown that, keeping each time all other variables constant, the higher the company geographical dispersion, and the higher the business units geographical distance, the less the Ceo has been likely to adopt a bottom up budget process procedure (vs. the extreme top down one).

Given that social exchange theories provided an alternative explanation for the adoption of bottom up budget process procedures, (the Ceo could give higher involvement and influence only because of his emotions and desire to give voice to the business unit managers), this study has controlled for Ceo leadership style and other Ceo individual factors. In particular, it has found that the more the Ceo was a transactional leader, the less the company has been likely to adopt a bottom up budget process procedure (vs. the extreme top down one). In addition, it has found that Ceo age has been significant in predicting Ceo's decision: the older the Ceo, the more the company has been likely to adopt a bottom up budget process procedure (vs. the extreme top down one).

This study has also controlled for the perceived uncontrollability of the financial crisis. This factor had conflicting effects on the Ceo's decision: on the one hand, the uncontrollability of the financial crisis has reduced the likelihood of adopting a bottom up procedure (Veto), in which business unit managers have been given (or not) targets for their budget proposal preparation, they have been allowed (or not) to present at first their budget proposal in the budget negotiation, and they had final authority in the approval phase; and, on the other hand, it has increased the likelihood of adopting a bottom up procedure (Negotiated Hierarchy), in which business unit managers have been given targets for their budget proposal preparation, they have been allowed to present at first their budget proposal in the budget negotiation, but they had not final authority in the approval phase.

Findings also indicated that internal determinants have been more helpful in explaining the adoption of a certain budget process procedure than external

determinants: environmental uncertainty and competition intensity were not significant in predicting the likelihood of adopting any bottom up budget process procedures versus the extreme top down one.

This dissertation provides a unique contribution to the management accounting literature, because it begins to generate knowledge on an overlooked research topic: the design of the budget process. Therefore it is cutting edge in many respects.

First, it integrates two research streams (participative budgeting and negotiated budgetary studies) that have been theoretically and methodologically separated, highlighting that management accounting research can benefit a lot from this integration.

Second, it clarifies the nature of the budget process design decision by stating a new theoretical definition of top down – bottom up budgeting, and explaining that the design of the process consists in top management choice of adopting a certain budget process procedure, for the budget proposal preparation, negotiation and approval with the business unit managers.

Third, it empirically shows the need to consider the sequential nature of the budget process phases, and top management intentions of giving a certain desired level of involvement and influence to the managers on their budget, when studying the adoption of a certain budget process procedure.

Fourth, it provides a new operationalization of the top down – bottom up budget process procedures, identifying three design elements (one for each phase of the budget process), that top management can choose to adopt for giving a higher or lower level of managers' involvement and influence on their budgets.

Fifth, it is the first research that develops a theory on the determinants of the adoption of a top down – bottom up budget process procedure, and it tests it in the field with a cross-sectional analysis.

Sixth, it investigates budget process design combining two methodologies (a case study and a survey design) and, in this way, it adds the advantages of a deep and detailed investigation of the micro-level mechanisms involved in the

exercise of one budget process procedure, with those of a more focused analysis of the determinants of the adoption of different budget process procedures, by a broad sample of companies.

This dissertation provides many suggestions for further research on budget process design. I present here the three that I believe would be the more valuable next steps to be made.

First, this dissertation has investigated the adoption of a top down – bottom up budget process procedure with a cross-sectional analysis. Future research could extend these findings exploring which factors predict the change of an adopted budget process procedure along the top down – bottom up continuum. This could contribute to the study of budget process design, adding, to the evidence about top management decision to adopt a certain budget process procedure, that about the decision to change it. In particular, it could be of interest to study under what circumstances top management could decide to modify the level of involvement and influence allowed to the managers, and how he could modify it changing the procedure. For example, he could decide to modify it in one or more specific phases of the budget process.

Second, this dissertation has focused on top down – bottom up budget process procedures and the determinants of their adoption. Future research could investigate the behavioural consequences of adopting a top down – bottom up budget process procedure. This could contribute to integrate the evidence provided by this dissertation with justice considerations, related both to the adopted procedure, and to the type of interpersonal relationship that is present between top management and the business unit managers.

Third, the survey has been carried out on a sample of middle-large companies operating in Italy. Future research could replicate it in other countries. This could contribute not only to increase the robustness of these findings, proving evidence on the type of budget process procedures adopted by the companies that operate in a different national environment, but also to test if, by changing that environment, the likelihood of adopting the different procedures also

changes. For example, interesting countries could be USA and Japan, because compared to Italy, they are characterized by extreme individualistic and collectivistic cultures.

ACKNOWLEDGEMENTS

- For the case study:

I am indebted to the managers and employees of Automatic Plc for their collaboration. I thank Prof. A. Ditillo and Prof. A. Dossi for their supervision on this study. I also thank the participants to the 4th Performance Measurement and Control systems Conference and to the 31st European Accounting Association Annual Congress for their comments on a draft version of this paper. Special thanks to Prof. D. Otley and to Prof. F. Hartmann for their comments and suggestions.

- For the survey study:

I am indebted to all companies and participants that contributed to this study, and especially to AFCnet, the professional community of the Accounting Knowledge Network of SDA Bocconi School of Management. I acknowledge Università Bocconi Accounting department for the financial support provided for this research. I am grateful to the Accounting and Control department of Rotterdam School of Management, Erasmus University, for their hospitality and their invaluable support during my stay as Visiting PhD student. Special thanks to Prof. F. Hartmann for his precious supervision.

- For my PhD journey:

My sincere acknowledgements go to the people that made this PhD experience possible: my mum Rosanna and my father Giuseppe. They are always my solid anchor, a stable reference, they are never tired of giving me new energy and confidence when I more need it.

I thank my brother Riccardo and my sister Laura, two important examples and two generous hearths on which I can always count on. It is difficult to find the words to thank my little sister, Gloria. She more than everybody else have shared the up and downs of this journey, the difficulties and the successes. I

thank her for her patience and her persistence in supporting and sustaining me, day by day.

My sincere acknowledgements go now to all people that have walked with me along the years of this PhD. In primis my three great supervisors: A. Ditillo, F. Hartmann and A. Dossi. Their guidance has been precious and enlightening for the direction of my research.

I thank my PhD classmates and friends at Università Bocconi: Aura, Hans, Elisa, Maria, Diana, Monica, Assel, Annie, Deniz, and May. They have really walked with me through the very intense years of PhD courses and exams.

I thank also the PhD secretary office (Dora, Jacqueline, Nicola, Dott. Valsecchi and Dott.ssa Contaldo), as well as the Accounting Department secretary office (Mariagrazia, Laura and Ivana) for their support.

Special thanks go to the colleagues and dear friends I met at Rotterdam School of Management, Erasmus University: Paolo, Marcel, Anna, Frank V., Arnick, Gerard, Miriam, Martine and Sandra ☺. They have really been an invaluable support and I sincerely thank them for having welcomed me as part of their school for one year and a half. I am sure these professional and personal relationships will continue and strengthen in the years to come.

I thank also the PhD students I met at RSM (in particular Andson, Olga, Jane, Xanthi, Stephan), they have been the special friends of my living abroad.

I also want to thank the other PhD students I met during my stay in Holland e.g. to the courses organized by the Limbperg Instituut (Stijn, Bart, Arie) or to Dutch courses; those I met to the EAA Doctoral Colloquium 2008 (in particular Patricia, Liliana, Maria, Radhika, Yannick, Erik), and to the EDEN seminar 2006 (in particular Julie, Katja and Alexandra). They are all gifts of my PhD international experience and I really hope our friendships will remain and consolidate in the future.

I also thank Anne-marie, Krysztof, Giulia and Marina, who have also enriched my stay in Rotterdam as I could have never expected.

I also thank Ariela Caglio and Prof. Bhagwan Khanna. They have always encouraged and supported me during these four years. I had always felt I could count on them, hence they deserve my sincere deep gratefulness.

Special thanks now to my dear friends of always: Arianna, Marika, Maria, Elsa e Luca, Elisa and Nicoletta. Thank for their always encouraging advices in the difficult moments and for their joy in the happy ones.

Special thanks to Angelo Alberto and Chiara Libera, they have been my guardian angels in this journey.

I also thank my penfriends: Tatjana, Kasia, Natalia, Manu, Emma, Sabita and Mery; for their deep sharing of feelings and experiences that made our friendships so long-lasting. They have been a safe harbor for my PhD journey.

Finally, my biggest thank you is for Him, who keeps me in His hands. Thank you because, among different paths, You guided me on the more challenging one, on which I have learned to work hard and to always trust You.

This PhD dissertation is only a short summary of the efforts I did over these four years, but for me it is a way not to forget them, and a sign of how much more you can gain if you freely give.