JOURNAL OF MANAGEMENT ACCOUNTING RESEARCH
Volume Fifteen
2003
pp. 95–116

Practice Developments in Budgeting: An Overview and Research Perspective

Stephen C. Hansen
The George Washington University

David T. Otley
Lancaster University

Wim A. Van der Stede
University of Southern California

Abstract: Practitioners in Europe and the U.S. recently have proposed two distinct approaches to address what they believe are shortcomings of traditional budgeting practices. One approach advocates *improving* the budgeting process and primarily focuses on the planning problems with budgeting. The other advocates *abandoning* the budget and primarily focuses on the performance evaluation problems with budgeting. This paper provides an overview and research perspective on these two recent developments. We discuss why practitioners have become dissatisfied with budgets, describe the two distinct approaches, place them in a research context, suggest insights that may aid the practitioners, and use the practitioner perspectives to identify fruitful areas for research.

INTRODUCTION

Budgeting is the cornerstone of the management control process in nearly all organizations, but despite its widespread use, it is far from perfect.[1] Practitioners express concerns about using budgets for planning and performance evaluation. The practitioners argue that budgets impede the allocation of organizational resources to their best uses and encourage myopic decision making and other dysfunctional budget *games*. They attribute these problems, in part, to traditional budgeting's financial, top-down, command-and-control orientation as embedded in annual budget planning and performance evaluation processes (e.g., Schmidt 1992; Bunce et al. 1995; Hope and Fraser 1997, 2000, 2003; Wallander 1999; Ekholm and Wallin 2000; Marcino 2000; Jensen 2001).

We demonstrate practitioners' concerns with budgets by describing two practice-led developments: one advocating *improving* the budgeting process, the other *abandoning* it. These developments illustrate two points. First, they show practitioners' concerns with budgeting problems that the scholarly literature has largely ignored while focusing instead

[1] For example, Comshare (2000) surveyed financial executives about their current experience with their organizations' budgeting processes. One hundred thirty of the 154 participants (84 percent) identified 332 frustrations with their organizations' budgeting processes, an average of 2.6 frustrations per person.

We acknowledge the many helpful suggestions by the reviewers, Bjorn Jorgensen, Murray Lindsay, Ken Merchant, and Mark Young.

on more traditional issues like participative budgeting.[2] Second, the two conflicting developments illustrate that firms face a critical decision regarding budgeting: maintain it, improve it, or abandon it?

Our discussion has two objectives. First, we demonstrate the level of concern with budgeting in practice, suggesting its potential for continued scholarly research. Second, we wish to raise academics' awareness of apparent *disconnects* between budgeting practice and research. We identify areas where prior research may aid the practitioners and, conversely, use the practitioners' insights to suggest areas for research.

In the second section, we review some of the most common criticisms of budgets in practice. The third section describes and analyzes the main thrust of two recent practice-led developments in budgeting. In the fourth section, we place these two practice developments in a research context and suggest research that may be relevant to the practitioners. The fifth section turns the tables by using the practitioner insights to offer new perspectives for research. In the sixth section, we conclude.

PROBLEMS WITH BUDGETING IN PRACTICE

The ubiquitous use of budgetary control is largely due to its ability to weave together all the disparate threads of an organization into a comprehensive plan that serves many different purposes, particularly performance planning and *ex post* evaluation of actual performance *vis-à-vis* the plan. Despite performing this integrative function and laying the basis for performance evaluation, budgetary control has many limitations, such as its long-established and oft-researched susceptibility to induce budget *games* or dysfunctional behaviors (Hofstede 1967; Onsi 1973; Merchant 1985b; Lukka 1988).

A recent report by Neely et al. (2001), drawn primarily from the practitioner literature, lists the 12 most cited weaknesses of budgetary control as:

1. Budgets are time-consuming to put together;
2. Budgets constrain responsiveness and are often a barrier to change;
3. Budgets are rarely strategically focused and often contradictory;
4. Budgets add little value, especially given the time required to prepare them;
5. Budgets concentrate on cost reduction and not value creation;
6. Budgets strengthen vertical command-and-control;
7. Budgets do not reflect the emerging network structures that organizations are adopting;
8. Budgets encourage gaming and perverse behaviors;
9. Budgets are developed and updated too infrequently, usually annually;
10. Budgets are based on unsupported assumptions and guesswork;
11. Budgets reinforce departmental barriers rather than encourage knowledge sharing; and
12. Budgets make people feel undervalued.

[2] For example, in their review of nearly 2,000 research and professional articles in management accounting in the 1996–2000 period, Selto and Widener (2001) document several areas of "fit" and "misfit" between practice and research. They document that more research than practice exists in the area of participative budgeting and state that "[this] topic appears to be of little current, practical interest, but continues to attract research efforts, perhaps because of the interesting theoretical issues it presents." Selto and Widener (2001) also document virtually no research on activity-based budgeting (one of the practice-led developments we discuss in this paper) and planning and forecasting, although these areas have grown in practice coverage each year during the 1996–2000 period.

While not all would agree with these criticisms, other recent critiques (e.g., Schmidt 1992; Hope and Fraser 1997, 2000, 2003; Ekholm and Wallin 2000; Marcino 2000; Jensen 2001) also support the perception of widespread dissatisfaction with budgeting in practice. We synthesize the sources of dissatisfaction as follows.

Claims 1, 4, 9, and 10 relate to the recurring criticism that by the time budgets are used, their assumptions are typically outdated, reducing the value of the budgeting process. A more radical version of this criticism is that conventional budgets can never be valid because they cannot capture the uncertainty involved in rapidly changing environments (Wallender 1999). In more conceptual terms, the operation of a useful budgetary control system requires two related elements. First, there must be a high degree of operational stability so that the budget provides a valid plan for a reasonable period of time (typically the next year). Second, managers must have good predictive models so that the budget provides a reasonable performance standard against which to hold managers accountable (Berry and Otley 1980). Where these criteria hold, budgetary control is a useful control mechanism, but for organizations that operate in more turbulent environments, it becomes less useful (Samuelson 2000).

Claims 2, 3, 5, 6, and 8 relate to another common criticism that budgetary controls impose a vertical command-and-control structure, centralize decision making, stifle initiative, and focus on cost reductions rather than value creation. As such, budgetary controls often impede the pursuit of strategic goals by supporting such mechanical practices as *last-year-plus* budget setting and *across-the-board* cuts. Moreover, the budget's exclusive focus on annual financial performance causes a mismatch with operational and strategic decisions that emphasize nonfinancial goals and cut across the annual planning cycle, leading to budget games involving skillful timing of revenues, expenditures, and investments (Merchant 1985a).

Finally, claims 7, 11, and 12 reflect organizational and people-related budgeting issues. The critics argue that vertical, command-and-control, responsibility center-focused budgetary controls are incompatible with flat, network, or value chain-based organizational designs and impede empowered employees from making the best decisions (Hope and Fraser 2003).

Given such a long list of problems and many calls for improvement, it seems odd that the vast majority of U.S. firms retain a formal budgeting process (97 percent of the respondents in Umapathy [1987]).[3] One reason that budgets may be retained in most firms is because they are so deeply ingrained in an organization's fabric (Scapens and Roberts 1993). "They remain a centrally coordinated activity (often the only one) within the business" (Neely et al. 2001, 9) and constitute "the only process that covers all areas of organizational activity" (Otley 1999). However, a more recent survey of Finnish firms found that although 25 percent are retaining their traditional budgeting system, 61 percent are actively upgrading their system, and 14 percent are either abandoning budgets or at least considering it (Ekholm and Wallin 2000). We discuss two practice-led developments that illustrate proposals to *improve* budgeting or to *abandon* it.

Although the two developments reach different conclusions, both originated in the same organization, the Consortium for Advanced Manufacturing-International (CAM-I); one in

[3] We note that there are several factors that inevitably contribute to the seemingly negative evaluation of budgetary controls. First, given information asymmetries, budgets operate under *second-best* conditions in most organizations. Second, information *is* costly. Finally, unlike the costs, the benefits of budgeting are *indirect*, and thus, less salient.

the U.S. and the other in Europe. The U.S.-based CAM-I Activity-Based Budgeting (ABB) group advocates improving the budgeting system by marrying a more complete, activity-based operational model with a detailed financial model.[4] Its focus is on improving budgeting's support of *operational planning*. The European-based CAM-I Beyond Budgeting (BB) group takes a more radical view and recommends a two-stage approach.[5] The first stage addresses the problems with budgeting when they are used for *performance evaluation*. It suggests that traditional budgetary controls that combine planning and performance evaluation lead to both poor planning and dysfunctional behavior. Therefore, the BB-group recommends either radically changing traditional budget-based performance evaluations or completely eliminating the budget process. The second stage of the BB-approach is to *radically decentralize* the organization and empower lower-level managers and employees. Although the ABB-group has more of a planning focus and the BB-group more of a performance evaluation focus, they share a common belief that traditional budgeting is fundamentally mismatched to today's rapidly changing and uncertain environments.

PRACTICE DEVELOPMENTS IN BUDGETING

Although the ABB and BB practice-led budgeting developments are significant efforts supported by prominent firms,[6] we make no claim that the CAM-I efforts represent the complete picture of all new budgeting practice developments. Instead, their conflicting positions provide valuable illustrations of how current practice views budgeting at an important decision point: Should organizations retain, improve, or abandon their budgeting processes? We also make no claims about the practitioner-stated benefits of their proposals. Instead, we review and analyze the proposals and their purported benefits from a research perspective in the later sections of the paper. We first discuss the ABB's more moderate approach to *improve* the budget and then describe the BB's more drastic approach to *abandon* the budget.

The Activity-Based Budgeting Approach

As its name implies, the ABB-approach[7] focuses on generating a budget from an activity-based model of the organization, as opposed to the traditional product-market, responsibility center, or departmental focus. The ABB-group's fundamental thrust is to expand activity-based and capacity management concepts into budgeting. The ABB-group contends that budgeting serves primarily a planning role and that budgeting suffers because the financial-oriented, higher-level budgeting process is not adequately connected to the underlying operational model of the organization. We next summarize the conceptual model underlying the ABB-approach and then discuss its implications *vis-à-vis* the budgeting issues discussed in the previous section.

---

[4] The full name of the ABB-group is the *Consortium for Advanced Manufacturing–International, Cost Management Systems, Activity-Based Planning and Budgeting Group*.

[5] The full name of the BB-group is the *Consortium for Advanced Manufacturing–International, Beyond Budgeting Round Table*.

[6] The ABB-group includes Boeing, Emerson Electric, IBM Business Consulting Services, SAS Institute, and the U.S. Marine Corps, whereas Borealis, Ericsson, Volvo, and SKF are among the BB-group participants.

[7] This section summarizes material in *The Closed Loop: Implementing Activity-Based Planning and Budgeting* (Hansen and Torok 2003).

The essence of the ABB-approach to budgeting is the Closed Loop Model shown in Figure 1.[8] Unlike the classic budgeting approach, the ABB-approach (Closed Loop Model) creates an operationally feasible budget *before* generating a financial budget. Stage 1, the *operational loop*, uses activity-based concepts to convert the estimated demand for products and services into activity requirements using *activity consumption rates*, and then translates activity requirements into resource requirements using *resource consumption rates*.[9]

Once the activity and resource consumption requirements are known, the ABB-approach works to achieve an operational balance between the resources required to fulfill demand and the resources available (capacity). If the initial plan leads to an imbalance, the organization can adjust the quantity of demand, resource capacity, resource consumption rates, or activity consumption rates. In contrast, organizations using traditional budgeting can balance the budget only by changing the quantity of demand or resources available (capacity).

Stage 2, the *financial loop*, develops a financial plan based on the operational plan. Financial balance is achieved when the financial plan meets a predetermined financial target.[10] Once the organization knows the demands, activities, and resources, it determines the cost of resources, traces them to activities, and then to products/services. The projected financial results can be viewed in the aggregate, or can be broken down into information by resources, activities, processes, products, or other cost objects.

If the initial financial plan is not balanced, the ABB-approach allows the organization to adjust five possible elements to achieve the budget target: (1) activity and resource consumption rates, (2) resource capacity, (3) resource cost, (4) product/service demand quantity, and (5) product/service price. Because traditional budgeting processes do not collect information on activity and resource consumption rates, they offer fewer possibilities to adjust the budget.

The ABB-group lists several potential benefits of their approach (Hansen and Torok 2003). First, by first balancing operational requirements, the ABB-approach avoids unnecessary calculations of the financial effect of operationally infeasible plans. More importantly, the ABB-approach focuses on generating a budget explicitly from activities and resources. Because it incorporates batch, facility, and other types of cost drivers not found in traditional budgeting systems, it highlights the sources of imbalances, inefficiencies, and bottlenecks. These insights allow better product, process, or activity costing and decision making, and better resource allocation to support organizational priorities.

Second, the more sophisticated operational model in the budgeting system provides a richer set of tools for balancing capacity. In addition to adjusting demand or changing the amount of resources supplied, the organization can also adjust either the activity or resource consumption rates. Moreover, the explicit analysis of resource capacity and the increased visibility of resource consumption allows organizations to identify capacity issues and make

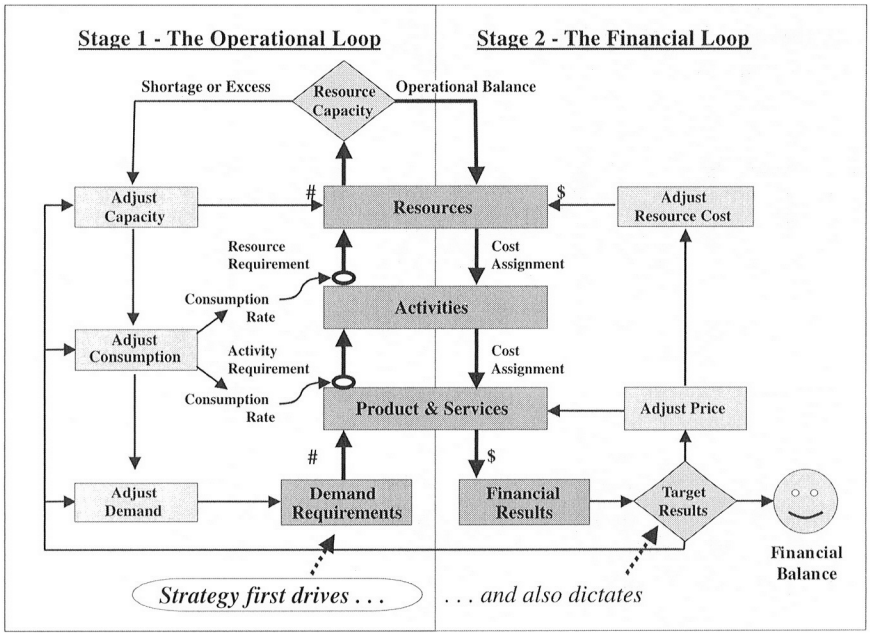
---

[8] The ABB-group created what came to be called the Closed Loop Model. The term *closed loop* reflects the essential nature of feedback in the process and provides a connection to closed loop materials requirements planning (Silver et al. 1998, 538–545). An activity-based budget can be constructed using many different algorithms (e.g., Klammer et al. 1997; Antos and Brimson 1998), and the Closed Loop Model is the specific algorithm developed by the CAM-I. In this paper, we refer to this model more generically as the "ABB-approach." Hansen and Torok (2003) provide a detailed description.

[9] An *activity consumption rate* is the quantity of each activity that is required to produce one unit of demand, and a *resource consumption rate* is the quantity of each resource that is required to perform one instance of each activity.

[10] The ABB-group chose the term *financial balance* to parallel that of *operational balance*. An *operational balance* equates the required quantities with the demanded quantities, while a *financial balance* equates the required rate of return with the demanded rate of return.

FIGURE 1
Overview of the ABB-Approach



Source: Consortium for Advanced Manufacturing–International, Cost Management Systems, Activity-Based Planning and Budgeting Group.

adjustments earlier in the budgeting process than under traditional budgeting processes, which do not track resource consumption patterns.

Third, lower-level managers and employees can more easily understand and communicate budgeting information in operational rather than financial terms. Similarly, by providing an understanding of how resources and activities are related, activity-based budgets help managers understand how to perform their jobs. An improved model of resource and activity flows also can lead to improved performance evaluations by specifying in more detail who is accountable for specific activities that cross departmental borders. In addition, the expanded set of options for adjusting outcomes enriches managers' ability to respond to contingencies and also improves performance measurement, evaluation, and decision making.

Finally, activity-based approaches reinforce a horizontal, process view of the organization cutting across departmental borders, in contrast to traditional budgeting's vertical orientation. The process model facilitates the integration of budgets with other management initiatives, such as performance measurement systems focused on cause-effect or lead-lag relationships (e.g., balanced scorecards).

In sum, the ABB-approach marries a more complete operational model with a detailed financial model. The resulting Closed Loop Model yields operationally feasible budgets with activity and resource consumption highly visible and sources of imbalance or inefficiencies identified. The resulting transparency of the activity-based budget potentially promotes the allocation of resources to their best uses in line with organizational priorities,

decreases the scope for political gaming, enhances decision making and performance evaluation, and improves operational flexibility. The ABB-group currently has only anecdotal evidence to support the conceptual logic for the preceding claims (Hansen and Torok 2003). One potential limitation of this approach is information availability about activities, processes, and resources, and the cost of creating and maintaining the information. We offer a more detailed research perspective on the activity-based budgeting approach in the fourth section.

The Beyond Budgeting Approach

CAM-I Europe's BB-approach[11] seeks to avoid what they label the *annual performance trap*. This trap involves dysfunctional behaviors that stem from evaluating line managers *vis-à-vis* budget targets that are set without reference to a credible (outside) source and remain fixed for the next budget year. Indeed, the literature is replete with examples of how managers adopt inappropriate methods of attaining their annual budget.[12] These range from manipulating budget estimates before the budget year has begun (generally to obtain an easier target), through the manipulation of reported numbers throughout the budget year (to adjust the timing of revenues or expenses), to the adoption of inappropriate management decisions (e.g., to postpone maintenance expenditures) to produce apparently good numbers *vis-à-vis* budget targets while destroying value. To avoid these dysfunctional behaviors, the BB-group proposes replacing rigid annual budget-based performance evaluations with *performance evaluations based on relative performance contracts with hindsight.*

The relative performance component sets budget targets using *benchmarked performance*, where the benchmarks are either internal (e.g., different units in the same organization) or external (e.g., performance in comparison with leading competitors). Benchmarked performance targets are difficult to argue against (e.g., "if others can do it, why can't we?") and allow adjusting for uncontrollable factors. These features are likely to increase the accuracy and perceived fairness of performance evaluations, thereby reducing gaming behaviors and motivational problems. Relative performance standards also potentially increase motivation because the performance bar adjusts naturally to be challenging, yet achievable when there is an appropriate benchmark group. In contrast, budget targets derived in traditional budgeting processes often create tension between what upper managers identify as desirable and what lower-level managers claim is feasible.

The hindsight component of the BB-proposal is to evaluate performance against targets *with hindsight*. That is, rather than fixed targets set at the beginning of the period, targets are adjusted by looking back and incorporating the actual operating and economic circumstances during the period.[13] To implement the hindsight component, the BB-group

---

[11] This section is based on *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap* (Hope and Fraser 2003).

[12] With the publication of *The Impact of Budgets on People* in 1952, Argyris was one of the first to document dysfunctional behavioral effects of using budgets to measure and evaluate performance. His book motivated a stream of work referred to as the *reliance on accounting performance measures* (RAPM) literature. Representative papers in this area are Hopwood (1972), Otley (1978), Hirst (1983), and Merchant (1985a, 1990). For an overview, see Hartmann (2000).

[13] The BB's *hindsight* component is different from *flexible budgeting* (or even *variance analysis*) as a process of adjusting the budget for realized volume. The BB emphasizes exploiting *all* relevant information, not just realized volume, that becomes available by the end of the period, including subjective assessments. For example, flexible budgeting does not lead to an adjustment when realized volume equals budgeted volume, but given the actual circumstances faced, realized volume may not represent desired performance (especially given competitors' achievements). However, the BB's *hindsight* idea is conceptually similar to what Demski (1967) called *ex post*

(*continued on next page*)

recommends that rewards be based on subjective performance evaluations with an emphasis on group rather than individual performance. The objective is to engender a philosophy of doing what is best for the firm in light of current circumstances and to promote teamwork. Subjective performance evaluations also encourage employees to engage in strategic initiatives by rewarding efforts (rather than simply outputs) that identify and exploit unforeseen opportunities with potentially long-term payoffs that are not fully captured by externally benchmarked performance targets.

In addition, the BB-proposal also recommends evaluating performance using various nonfinancial measures that are aligned with strategic objectives. The assumption is that by attaining appropriate levels of performance on the measures included, the desired financial performance and strategic objectives of the organization will be achieved. This is similar to the notion underlying balanced scorecard-type performance measurement systems (Kaplan and Norton 1992). However, Hope and Fraser (2003) cite the fate of the balanced scorecard in many organizations as having consequences similar to those of budgetary control in that they are often associated with fixed performance contracts. Thus, the BB-proposal not only recommends using a wider range of financial and nonfinancial measures, but also emphasizes that such measures be used in a relative performance-based manner with hindsight, that is, with goals either internally or externally benchmarked and performance evaluated subjectively.

It is important to emphasize that in the BB-proposal, financial managers will continue to construct budgets to serve the organization's financial planning needs, but they will not be issued to managers to act as targets for performance evaluation. The BB-group's claim is that by freeing planning from budget-based performance evaluations, planning will become more accurate and useful because it can be adapted to changing circumstances instead of continuing to direct organizational effort and decision making toward preset targets even though they have become obsolete.

Although abandoning budget-based performance evaluations provides a first stage of improvement, the BB-group views it only as a starting point toward more *radical decentralization*, which offers an even greater potential (see also Wallander 2003). This stage of the BB-approach speaks more pertinently to the failure of traditional budgetary controls to *empower* people to make decisions that are congruent with strategic goals. The essence of the argument is that effective devolution and empowerment is virtually incompatible with the use of traditional budgetary controls. First, traditional budgetary controls fail to create a high performance climate based on competitive success because a fixed target is the definitive measure of success. Second, they fail to make people accountable for satisfied customers because financial performance measures predominate. Third, they fail to empower people to act by providing them with resource capabilities because resources have been committed for the budgeting period. The BB-approach's version of decentralization does not fully budget resources in advance, but rather resources are made available at short

Footnote 13, continued

budgeting. The essence of an *ex post budget* is to revise the original budget on the basis of additional information acquired during the budget period. An *ex post* budget allows comparing three sets of results: budgeted (*ex ante*), realized (observed), and revised (*ex post*) (Demski 1967, 702). Traditional variance analysis captures the difference between the *ex ante* and observed results. *Hindsight* pertains to the difference between the *ex post* and observed result, i.e., the difference between what the firm should have accomplished in light of actual events and what it did accomplish. The difference between the *ex ante* and *ex post* result, i.e., the difference between what the firm planned to do and what it should have planned to do, is an indicator of the firm's forecasting ability. Although *ex post* budgets require certain subjective assessments (e.g., to determine the extent to which deviations during the budget period were avoidable/controllable), they can potentially contribute to improved *hindsight* performance evaluations and better forecasting and budgeting in future periods.

notice to those areas that have the greatest current need. But how then can the organization be assured that resources will be employed effectively (instead of, for example, for local *empire building*)? The BB-group claims that empowerment will be effective when it is accompanied by a shift from results control, the cornerstone of traditional budgetary controls, to controls based on employee selection, corporate visions and values, codes of conduct, training, etc. This relates to the control mechanisms that Simons (1995) and Ouchi (1979, 1980) defined as the *visioning* lever-of-control or *clan* controls. Thus, rather than using a plethora of performance measures, as might be implied by the first BB-stage, the focus of the control system is moved toward the more diffuse areas of mission, vision, and organizational culture. We evaluate this position in more detail in the fourth section.

The common thread across both the ABB and BB approaches is that the inability to do adequate planning in uncertain environments makes the budget less useful. Based on this observation, the ABB-group proposes a more sophisticated, activity-based model to improve planning, but it does not take a position on how the performance evaluation system should be designed. In contrast, the BB-group postulates that planning will improve only when it is disconnected from the performance evaluation function embedded in traditional budgetary control systems. Therefore, the biggest focus of the BB-group is to change the performance evaluation system and, potentially, to radically decentralize the organization. As such, the ABB-approach could be used inside the BB-approach, for example, to generate the financial and operational plans for the BB-approach. Conversely, the BB-approach could be used in conjunction with the ABB-approach, for instance, by changing incentives to follow relative performance evaluation principles.

RESEARCH PERSPECTIVE

This section presents the research most closely related to the two practitioner-based approaches. The ABB-group's dissatisfaction with budgets in practice stems from their lack of connection with operations, while the BB-group stresses inadequate connections between budgeting and strategy. We first discuss research on the relation between budgeting and operations and strategy. We then describe research that is relevant to the proposals advocated by the ABB-group, followed by research pertinent to the BB-approach.

Linking Budgets with Operational and Strategic Planning

In his seminal management control framework, Anthony (1965) distinguished management control, of which budgeting is a critical element, from two complementary control processes: operational and strategic planning. Anthony characterized operational planning as taking very different forms in different organizations, reflecting technological and operating differences. Given this wide diversity of practice in operational planning, Anthony focused instead on the more general processes of management control. Similarly, Anthony viewed strategic planning as an irregular activity that takes place in the higher echelons of an organization, but which provides the guiding goals and objectives for the management control process. Although Anthony regarded strategic planning as an essential process, he viewed it as a separate field of study. Thus, the area of management control became defined by the wish to study the universal processes of management control that were common to all organizations, and which demonstrated a regular and routine pattern.

Anthony's (1965) approach produced an accounting-based view of control, because only accounting-based systems were common to all organizations. Given that control required standards against which performance could be assessed, the budget became the natural standard of comparison. This led to using the budget year as the fundamental building block of the control system, in part because of the desire to integrate the management

control system with the needs of the single most important stakeholder (certainly in the U.S.), the shareholder (Otley 1999). Thus, in practice, we observe many organizations using budgetary control with an annual planning period, broken down into quarters, or sometimes months.[14]

The success of Anthony's (1965) emphasis on management control necessarily reduced the focus on the two complementary processes of operational and strategic planning. Recent work, such as Kaplan and Norton's (1992) balanced scorecard approach, has attempted to fill the gap left by Anthony by linking performance measures with espoused strategy. This strategy link becomes even more explicit in their recent work on the *strategy-focused organization*, which maintains that the process of *strategy mapping* is necessary in the construction of effective performance measures within a balanced scorecard (Kaplan and Norton 2001). Simons' (1995) *levers-of-control* framework also combines a focus on strategy with a wider view of the control mechanisms that can be utilized to implement strategy. This recent work is based on observations of managerial practices and seeks to extend the accounting-based perspective on control to include the wider range of activities initially excluded by Anthony (1965), thereby integrating accounting-based and nonfinancial control mechanisms. However, research evidence on the balanced scorecard is only beginning to emerge (e.g., Lipe and Salterio 2000; Ittner et al. 2003a, 2003b; Campbell et al. 2003), and the Simons' (1995) framework has not yet received much following in the academic community (see Bisbe [2002] for a recent and rare example).

Prior to this relatively recent strategy-focused work in management control, an important stream of research has emphasized the role of various contingency factors for the design of management control systems (see Chenhall [2003] for a recent review). This work emphasizes the influence on control systems of the competitive (e.g., Khandwalla 1972, 1973) and strategic setting (e.g., Govindarajan and Gupta 1985; Govindarajan 1988, 1989; Govindarajan and Fisher 1990; Simons 1987b, 1990, 1991; Fisher and Govindarajan 1993; Chenhall and Langfield-Smith 1998). This contingency-type research maintains that effective organizations adjust their management control systems, including budgetary control, to fit their strategy. Although this literature has generated an extensive, but arguably inconclusive, body of evidence (see Langfield-Smith [1997] for an overview), it is not widely referenced by the budgeting critics, particularly the BB-exponents. We conjecture that this is due, at least in part, to the fact that this line of research—with the exception of the later work by Simons (1990, 1991) and that of Chenhall and Langfield-Smith (1998)—emphasized the effects of strategy on management control to the exclusion of the effect of management control on strategy (Mintzberg 1978; Mintzberg and Waters 1985; Goold and Quinn 1993).

Considerably less research in management control has focused on the link between budgeting and operational planning, which is the primary focus of the ABB-group. Some notable and representative citations here are Daniel and Reitsperger (1991), Wruck and Jensen (1994), Abernethy and Lillis (1995), Ittner and Larcker (1995), Chenhall (1997), Gosselin (1997), and Perera et al. (1997). The lack of research evidence here is probably due to the focus by management control researchers on upper management levels in the organization (primarily business unit, division, or profit center managers, and up), and much less on plants or other functional or operational management levels. Data availability and lack of access to lower organizational research participants might explain this trend, as well

[14] One survey of practice shows that 91 percent of the participating firms that use budgets report that their budget was for a one-year period; 3 percent for a six-month period; and 1 percent for a three-month period (Umapathy 1987).

as the prevalence of many different patterns of control type and use at lower organizational levels. Another reason is the focus by management control researchers on corporate and business unit strategy (i.e., corporate diversification strategy and business unit competitive strategy) as drivers of management control system design rather than, or in combination with, functional strategy (e.g., manufacturing strategy) (Ittner and Larcker 2001, 364). A final reason is the lack of attention paid by accounting researchers to the complementary use of other, nonaccounting controls, which have gained increased importance at lower organizational levels. Thus by concentrating on higher levels, important insights may have been lost (Kaplan 1983). Given the practitioners' interest and the lack of current work, more research in this area is warranted.

Activity-Based Budgeting Issues

This section discusses research related to the ABB-approach, which integrates activity-based and capacity management concepts with budgeting and planning ideas. Although the management accounting literature has just begun to produce research on activity-based budgeting (Selto and Widener 2001), there are several studies on the associated areas of activity-based cost management (ABCM) and capacity management.[15]

Research on ABCM systems includes evidence on the types of activities used in specific industries (Banker and Johnston 1993; Anderson 1995b; Fisher and Ittner 1999; Evans et al. 2001), inter-relationships among activities (Datar et al. 1993), the degree of aggregation (Datar and Gupta 1994), and the validity of the classic activity-based cost hierarchy (Ittner et al. 1997). However, few studies have moved beyond a product-costing focus, and little is known about how ABCM supports other organizational practices, such as planning and budgeting processes (Ittner and Larcker 2001).

The ABB-approach emphasizes managing capacity at the activity level. In the capacity management area, there are many different conceptual frameworks describing how to measure capacity (McNair and Vangermeersch 1998), and many theoretical studies linking capacity, pricing, and costing (Balakrishnan and Sivaramakrishnan 2002). As with ABCM-studies, capacity management studies tend to have a product-costing focus, leaving issues of capacity management integration with budgeting (and other organizational practices) unaddressed.[16]

Although the ABB-group argues that a completely new, activity-based budgeting system needs to be built, another possibility is that the traditional budgeting process could be adjusted in less radical ways by, for example, establishing a better link with capacity-planning systems. Balakrishnan and Sprinkle (2002) have taken a step in this direction by showing how to integrate capacity with classic variance analysis.

The literature on the diffusion of organizational innovations (e.g., Teece 1980; Damanpour and Evan 1984; Abrahamson 1991) concludes that administrative innovations (e.g., new budgeting approaches) require many years to spread. The ABB-approach is at the beginning of its potential diffusion and this is an opportune time to begin documenting its behavior. The diffusion literature also documents that a large proportion of all types of innovations fail at many different stages (Rogers 1995). The existence of a high failure rate

[15] There is also a large operations management literature on capacity, planning, and forecasting. (See Silver et al. 1998 for additional references.)

[16] One recent study that examines the behavioral effects of reporting unused capacity on the income statement takes a step in the direction of considering some organizational impacts of capacity management practices. Using an experiment, Buchheit (2003) finds that separately reporting unused capacity expense encourages managers to act aggressively to fill the factory. Although this result is suggestive, it is not clear that these effects generalize to practice settings, implying the need for more studies using a variety of methodologies.

offers opportunities to examine and understand the innovation's success factors. Looking at the successes and failures of ABCM-systems, about which there is some evidence (e.g., Anderson 1995a; Shields 1995; Player and Keys 1996; Gosselin 1997; Krumweide 1998) may be informative about the path ahead for ABB.

Beyond Budgeting Issues

There is substantial research pertaining to the main premises of the BB-approach, particularly related to relative and subjective performance evaluations, fixed budget-based performance contracts, and decentralization.

First, the BB-group calls for evaluating organizational entities and/or their managers by comparing their performances with those of competitors on key performance dimensions. While theory has laid out the benefits and limitations of relative performance evaluation (RPE) (e.g., Holmstrom 1979, 1982; Dye 1992), empirical research to date has cast doubt on its prevalence and feasibility in practice (e.g., Antle and Smith 1986; Janakiraman et al. 1992). We conjecture that this is so, at least in part, because most companies simply do not have good relative performance data,[17] perhaps because they are in highly competitive, rapidly changing industries. Unfortunately, such situations are precisely where RPE potentially could be the most useful. Thus, while empirical evidence is not yet conclusive, the implementation of RPE for many organizations appears to have been difficult.[18,19]

Second, theory has suggested various factors that encourage or discourage the use of subjective performance evaluations and why and when it is effective to use them compared to a formula approach (e.g., Baiman and Rajan 1995). Here again, empirical evidence remains sparse (e.g., Govindarajan 1984; Govindarajan and Gupta 1985; Bushman et al. 1996; Hayes and Schaefer 2000; Ittner et al. 2003a; Murphy and Oyer 2003; Gibbs et al. 2004). Subjectivity enables managers to exploit relevant information that arises during the measurement (budget) period (Baker et al. 1988, 1994). This benefit is especially important in rapidly changing environments where fixed budget targets can quickly become obsolete. To be effective, subjectivity requires that the evaluator makes fair, unbiased judgments, and that the evaluatee accepts the judgments without making undue efforts to influence them inappropriately (e.g., Milgrom 1988; Hawkins and Hastie 1990; Prendergast and Topel 1993; Bommer et al. 1995; Tan and Jamal 2001). However, we need more research to understand the conditions under which subjectivity works most effectively.[20]

---

[17] There is evidence that RPE-data is used in several public sector settings, exploiting mandated public disclosures (e.g., Banker et al. 1998; Dopuch and Gupta 1997; Evans et al. 1997; Northcott and Llewellyn 2003).

[18] Benchmarking is related to RPE and has witnessed some popularity in the management literature (e.g., Camp 1989), but considerably less in management accounting (Elnathan et al. 1996). To date, there have been no studies in management accounting on the impacts of benchmarking (Selto and Widener 2001).

[19] From a motivational perspective, a key feature of traditional budgeting is the reconciliation of the tension that exists between what is seen as desirable (often transmitted by upper management) and what is actually feasible (often best understood by lower-level management and employees). One of the virtues of RPE is that the standard against which performance is judged has an increased degree of legitimacy because it comes from a credible outside source in the form of performance that is already being achieved by competitors or other comparable units. Although there are parallels with the theories that have been used in the participative budgeting literature (e.g., Brownell 1982; Latham et al. 1994; Locke and Latham 2002), we are not aware of any research in accounting that focuses on the motivational effect of benchmarked performance.

[20] The BB-group also recommends emphasizing group performance (e.g., that of the organization as a whole) instead of individual performance. As with the literatures on relative and subjective performance evaluations, there is theory about the conditions under which group evaluations and rewards can be effective, as well as about the problems they entail, such as free riding (e.g., Holmstrom 1982; Arya et al. 1997; Fisher et al. 2003). But in this area too, empirical evidence to date is relatively sparse and has not yet produced a body of conclusive findings (e.g., Drake et al. 1999; Scott and Tiessen 1999; Rankin and Sayre 2000).

Third, the BB-group addresses incentive issues associated with the use of budgets as a fixed performance contract. That is, once the budget is achieved, there is no incentive to go beyond it; conversely, if the budget is not met, adverse consequences follow regardless of the reasons for the deviation, resulting in manipulation and short-termism, as well as potentially stifling innovation (Kohn 1993; Jensen 2001). Prior research has suggested that these issues can be mitigated through various incentive plan features (such as by including nonfinancial performance measures, long-term performance measures, or performance thresholds in incentive plans),[21] or by relying on alternative performance evaluation methods (such as subjective performance evaluations discussed above) without necessarily abandoning budgetary control completely. However, to the extent that incentives theory is informed primarily by economic agency theory, it may overlook numerous potentially relevant variables descriptive of the totality of the organization's incentives package (e.g., nonmonetary rewards) and the specifics of the situation in which the incentives packages are used. Moreover, the empirical incentives literature is heavily biased toward top executives who constitute only a small fraction of the labor market. Thus, a fruitful direction for research is to better understand incentives for lower-level managers and employees (Bushman and Smith 2001; Merchant et al. 2003).

Finally, the discussion of radical decentralization transcends the traditional boundaries of budgetary control research by emphasizing choices of organizational architecture, including how organizations delegate decision making to individuals, the methods of rewarding individuals, and the structure of systems used to evaluate performance. The economics literature argues that a firm's choice of an organizational architecture is *context-specific*, depending on the market structure, the organization's strategy, the production process, and the extent of information asymmetry. Moreover, this literature maintains that all these choices are *linked* and that concentrating on one element to the exclusion of all others leads to poorly designed organizations (Milgrom and Roberts 1992; Brickley et al. 2001.) (See also Nagar [2002] for a recent empirical test.) Factors identified as supporting decentralization include more local information, constrained upper management time, greater need for training of lower-level managers, low incentive costs, production processes that require little coordination across units, and low levels of centralized information needed for local units to function (Brickley et al. 2001, 288–292). This literature thus provides one perspective on when the BB's radical decentralization is likely to be effective. Alternatively, organizations that have radically decentralized, or attempt to, offer a potentially fertile sample to test and inform theory.

We now move from this section's focus on how research can inform the practitioners' budgeting concerns to examine how the practitioners' concerns and approaches may suggest potential new research.

SUGGESTIONS FOR RESEARCH

One common thread shared by the two approaches discussed in this paper is that forecasting or planning limitations in uncertain environments make the budget less useful (ABB-group), or even useless (BB-group). Contingency frameworks stress that the effective operation of budgetary controls depends on the organizational context (Waterhouse and Tiessen 1978; Otley 1980; Fisher 1995; Chenhall 2003). One important contingency factor

[21] See Fisher et al. (2003) in this forum for a discussion and empirical test of the effects of various budget-based incentives on performance, including incentive schemes that reward for performance above the budget target but not for falling short of the target.

is the degree of environmental uncertainty, and recent evidence from a survey of French companies suggests that environmental uncertainty is a primary driver of dissatisfaction with budgets (Bescos et al. 2003).

It is possible to view planning and control techniques as a spectrum. At one end is a focus on robust planning techniques where implementation is primarily a matter of ensuring that the preset plans are actually realized. At the other end is a focus on agility where planning becomes so unreliable that it is essentially eliminated and the control focus is moved toward rapid response once actual operating conditions are observed. Each organization occupies a different position on this continuum. In a more stable market where long-term trends can be forecast with some precision, a planning solution might still be the best. In a rapidly moving and unpredictable market, it may be that control solutions based on agility are appropriate (e.g., in the fashion industry, where fashion trends are fickle and difficult to predict). An extreme setting arises when market conditions preclude reliance on planning, but production and technological capability demand long-term resource allocation decisions involving assets of high specificity. For example, mobile telephone network providers in Europe purchased third-generation licenses at prices that do not appear to be sustainable by current consumer behavior. This analysis suggests a set of research questions related to whether budgetary control can be adapted to work effectively in unpredictable environments. If not, what control systems are deployed where planning-based solutions fail?

As part of their CAM-I sponsored study, Hansen and Van der Stede (2003) found that the initial adopters of activity-based budgeting are organizations that face relatively low levels of innovation (e.g., less frequent new product/service introductions). Although preliminary, this finding highlights the interesting paradox that planning is most valid, but possibly of least value, when there is low uncertainty (Hopwood 1973). There is little understanding or evidence of whether firms do, or should, plan more (less) when it is less (more) useful, that is, in stable (turbulent) environments. Neither do we have a good understanding of the cost-benefit trade-offs of planning and control in environments with varying degrees of uncertainty. For example, are the costs of planning and control (such as those related to maintaining the information systems) worth the benefits in stable (turbulent) environments? And, what are the costs and benefits?

A related question in turbulent environments is whether giving up budgeting is a necessary precondition for the performance improvements that the BB-group suggests. Can firms retain budgetary control but modify its application or reduce its importance in such environments? For example, could firms retain budgeting but incorporate relative performance targets? Could firms periodically revise budgets and use rolling forecasts to mitigate the problems of static budgets (Reiff 2001; Serwen 2002)?[22] There is evidence that some firms use budgeting successfully in unpredictable environments. Johnson & Johnson, perhaps the most widely cited example, uses budgets extensively in a dynamic environment, but in combination with subjective performance evaluations (Simons 1987a). This suggests that budgetary controls can be effective as part of a comprehensive management control

[22] One problem with rolling budgets is that the performance predicted by the original budget tends to evaporate in successive revisions causing the totals of the revised budgets to rarely add up to the original expectation. There is a fertile research area to examine why this happens and the circumstances where the feasibility of accurate budgets (e.g., for planning purposes) is more important than the desirability of fixed budget targets that managers commit to achieve despite changing conditions (e.g., as the basis for performance evaluation). More research is also needed to understand how both purposes can be reconciled or combined, as discussed in Merchant and Manzoni (1989) and Epstein and Manzoni (2001).

system with features, such as subjective performance evaluations, that *in combination* mutually reinforce their effectiveness. The literature does not have a good handle on what these combinations of management control features are and which combinations are most effective in which circumstances (Ittner and Larcker 2001, 389–390).[23]

Another set of research questions stems from the firms engaging in transforming their organizations and their budgeting processes. Participating managers and firms typically joined the BB-group out of frustration at their inability to implement various business process improvement initiatives effectively. They were convinced that their organizations required reorganization along process lines to more effectively meet customer needs. Many had attempted to put business-process-oriented improvements into practice, but were critical of how other organizational processes, most notably the budgetary control process, acted as a barrier to organizational change. Thus, perhaps the BB-approach is most appropriate for organizations where business process reorganization is most needed, which may or may not coincide with the turbulence they face in their environments. Moreover, the initial BB-adopters are primarily from Europe (e.g., SKF and Tetra Pak in Sweden, Borealis in Denmark, Air Liquide and Schlumberger in France, and Diageo in the U.K.). Would cross-country research suggest that the BB-approach might work worse or better in North America?

Both approaches also noted that the spread of new management techniques (e.g., activity-based costing in case of the ABB-group, and balanced scorecards in case of the BB-group) was leading to, or could contribute to, more effective budgeting practices or budget replacements. However, most management accounting research is still taking place in isolation of such new developments, such as activity-based costing systems, balanced scorecards, economic resource planning systems, and other developments with potentially broad organizational impacts, including impacts on budgeting (Ittner and Larcker 2001, 350).

At the operational level, the foundation of the ABB-approach is that the link between budgeting and operational planning needs strengthening. Although prior research has explored the links between budgeting and strategic planning (see above), the link with operational planning remains largely unaddressed in the management accounting literature. For example, is budgeting for a job shop different from that for a continuous flow manufacturing process? Are certain types of production processes more prevalent in stable or turbulent environments, and if so, how do they (jointly) affect budgeting? This research will involve the study of budget use by middle and lower management, a level of analysis that has traditionally been underresearched in the budgetary control literature.

Finally, there is an issue of research methods. The study of budgetary control systems inevitably involves observing a variety of types and uses of controls. Field studies can help ground research in practice and help study budgeting in connection with other management

[23] There is a parallel with Hopwood's (1972) distinction between *budget-constrained* and *profit-conscious* evaluation styles, where the latter caused far less dysfunctional behavior than the former. In particular, the relative emphasis on meeting fixed, short-term performance targets in a rigidly enforced manner, compared with a more flexible style of evaluation, where some subjective judgment is exercised and long-term effectiveness sought (strategic concerns), is an important distinction that could contribute to understanding the claims made by the budget critics. Prior work in this area (see Hartmann [2000] for an overview) has not concentrated on exploring the rich variety of ways in which managers make use of budgeting (and other, accounting and nonaccounting) information in performance evaluation, motivation, and control. Rather, it has tended to use the instrument developed by Hopwood (1972), which reflected the situation he observed in his research site, in a mechanistic manner and imposed it through a questionnaire on managers who may have been working in very different situations.

(control) practices that surround it in the organization. Accounting researchers, especially in Europe, have deployed such methods, but they are still not seen as mainstream in the U.S. (Otley 2001). Such studies are often more time-consuming than conventional deductive hypothesis-testing studies, and their results are often more difficult to interpret. Nevertheless, they can enrich our understanding of budgeting practices in context and provide the groundwork for subsequent deductive methods, such as experiments, archival studies, or surveys. Hence, inductive research methods have their place alongside deductive hypothesis-testing methods, especially in new, relatively underresearched, complex organizational areas, such as the ones discussed in this paper.[24]

CONCLUSION

In the last few years, critics have charged that planning and budgeting systems are rife with politics and gameplaying; generate only incremental changes *vis-à-vis* prior period plans and budgets; are not responsive to rapidly changing environments; impose a vertical command-and-control structure, centralize decision making, and stifle initiative; focus on cost reductions rather than value creation; and are too costly for the few benefits they produce. Among the proposals for improvement, smaller changes tweak the process slightly, such as updating plans more frequently by using *rolling budgets*. A somewhat larger change involves using *relative performance standards* rather than fixed budget standards to evaluate performance and provide incentives, as in the first stage of the BB-approach. The next step involves a complete rebuilding of the budgeting process on a more sophisticated basis, possibly using an *activity-based budgeting* methodology as proposed by the ABB-group. The most radical change is to abandon traditional budgetary controls and radically decentralize the organization, as recommended in the second stage of the BB-approach.

The practice-led literature, and the two proposals for change reviewed here, suggest that there is a considerable level of concern with budgeting in practice, indicating its potential for continued scholarly research. Although the two practice approaches that we described suggest their own unique research opportunities, their common themes perhaps represent the most compelling areas for research. For example, both stress the importance of environmental turbulence as a dominant factor in budget design and use; both suggest that budgeting does not operate in isolation of many other organizational practices, and thus, should be studied as part of an organizational *package*; and both emphasize the importance of expanding budgeting research to incorporate the behavior of middle and lower-level managers. These are underresearched areas and deserving of more attention.

Our paper has attempted to bridge the gap between practice and research by providing practitioners with research that may aid the development of their techniques, and by suggesting to researchers areas that are of practical importance. We believe that the synergy between practice and research will create management accounting approaches that are superior to those developed by each group independently.

REFERENCES

Abernethy, M. A., and A. M. Lillis. 1995. The impact of manufacturing flexibility on management control system design. *Accounting, Organizations and Society* 20 (4): 241–258.

[24] See Covaleski et al. (2003) in this forum for a discussion of how theories from economics, psychology, and sociology, not just research methods, can be integrated to provide important bases to enrich budgeting theory and research.

Abrahamson, E. 1991. Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review* 16 (3): 586–612.

Anderson, S. W. 1995a. A framework for assessing cost management system changes: The case of activity-based costing implementation at General Motors 1986–1993. *Journal of Management Accounting Research* 7: 1–51.

———. 1995b. Measuring the impact of product mix heterogeneity on manufacturing overhead cost. *The Accounting Review* 70 (3): 363–387.

Anthony, R. 1965. *Planning and Control Systems: A Framework for Analysis*. Boston, MA: Harvard Business School.

Antle, R., and A. Smith. 1986. An empirical investigation of the relative performance of corporate executives. *Journal of Accounting Research* 24 (1): 1–39.

Antos, J., and J. Brimson. 1998. *Driving Value Using Activity-Based Budgeting*. New York, NY: John Wiley & Sons.

Argyris, C. 1952. *The Impact of Budgets on People*. Ithaca, NY: The Controllership Foundation.

Arya, A., J. Fellingham, and J. Glover. 1997. Teams, repeated tasks, and implicit incentives. *Journal of Accounting and Economics* 23 (1): 7–30.

Baiman, S., and M. V. Rajan. 1995. The informational advantages of discretionary bonus schemes. *The Accounting Review* 70 (January): 557–579.

Baker, G. P., M. C. Jensen, and K. J. Murphy. 1988. Compensation and incentives: Practice vs. theory. *Journal of Finance* 43 (July): 593–615.

———, R. Gibbons, and K. J. Murphy. 1994. Subjective performance measures in optimal incentive contracts. *Quarterly Journal of Economics* 109 (November): 1125–1156.

Balakrishnan, R., and K. Sivaramakrishnan. 2002. A critical overview of the use of full-cost data for planning and pricing. *Journal of Management Accounting Research* 14: 3–32.

———, and G. Sprinkle. 2002. Integrating profit variance and capacity costing to provide better managerial information. *Issues in Accounting Education* 17 (2): 149–162.

Banker, R., and H. Johnston. 1993. An empirical study of cost drivers in the U.S. airline industry. *The Accounting Review* 68 (3): 576–601.

———, H. Chang, and S. Das. 1998. Standard estimation, standard tightness, and benchmarking: A method with an application to nursing services. *Journal of Management Accounting Research* 10: 133–152.

Berry, A. J., and D. T. Otley. 1980. Control, organization and accounting. *Accounting, Organizations and Society* 5 (2): 231–244.

Bescos, P. L., E. Cauvin, P. Langevin, and C. Mendoza. 2003. Criticisms of budgeting: A contingent approach. *Proceedings of the 26th European Accounting Association Conference*, Seville, Spain, April 2–4, 2003.

Bisbe, J. 2002. The interactive use of management control systems in product-innovating organizations. Ph.D. thesis, ESADE, Barcelona.

Bommer, W. H., J. L. Johnson, G. A. Rich, P. M. Podsakoff, and S. C. MacKenzie. 1995. On the interchangeability of objective and subjective measures of employee performance: A meta-analysis. *Personnel Psychology* 48 (Autumn): 587–605.

Brickley, J., C. Smith, and J. Zimmerman. 2001. *Managerial Economics and Organizational Architecture*. Boston, MA: McGraw-Hill Irwin.

Brownell, P. 1982. Participation in the budgeting process: When it works and when it doesn't. *Journal of Accounting Literature* 1: 125–153.

Buchheit, S. 2003. Reporting the cost of capacity. *Accounting, Organizations and Society* 28 (6): 549–565.

Bunce, P., R. Fraser, and L. Woodcock. 1995. Advanced budgeting: A journey to advanced management systems. *Management Accounting Research* 6 (3): 253–265.

Bushman, R. M., R. J. Indjejikian, and A. J. Smith. 1996. CEO compensation: The role of individual performance evaluation. *Journal of Accounting and Economics* 21 (April): 161–193.

———, and A. J. Smith. 2001. Financial accounting information and corporate governance. *Journal of Accounting and Economics* 32 (1-3): 237–333.

Camp, R. C. 1989. *Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance*. Milwaukee, WI: American Society for Quality Control.

Campbell, D., S. Datar, S. Kulp, and V. G. Narayanan. 2003. Using the balanced scorecard as a control system for monitoring and revising corporate strategy. Working paper, Harvard Business School.

Chenhall, R. H. 1997. Reliance on manufacturing performance measures, total quality management and organizational performance. *Management Accounting Research* 8 (2): 187–206.

———, and K. Langfield-Smith. 1998. The relationship between strategic priorities, management techniques and management accounting: An empirical investigation using a systems approach. *Accounting, Organizations and Society* 23 (3): 243–264.

———. 2003. Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society* 28 (2-3): 127–168.

Comshare Survey of Top Financial Executives. 2000. *Planning and Budgeting Today*. Available at http://www.comshare.com.

Covaleski, M. A., J. H. Evans, J. Luft, and M. D. Shields. 2003. An integrative perspective on budgets and budgeting. *Journal of Management Accounting Research* 15: 3–49.

Damanpour, F., and W. Evan. 1984. Organizational innovation and performance: The problem of "organizational lag." *Administrative Science Quarterly* 29: 392–409.

Daniel, S., and W. Reitsperger. 1991. Linking quality strategy with management control systems: Empirical evidence from Japanese industry. *Accounting, Organizations and Society* 16 (7): 601–618.

Datar, S., S. Kekre, T. Mukhopadhyay, and K. Srinivasan. 1993. Simultaneous estimation of cost drivers. *The Accounting Review* 68 (3): 603–614.

———, and M. Gupta. 1994. Aggregation, specification, and measurement errors in product costing. *The Accounting Review* 69 (4): 567–591.

Demski, J. S. 1967. An accounting system structured on a linear programming model. *The Accounting Review* 42 (4): 701–712.

Dopuch, N., and M. Gupta. 1997. Estimation of benchmark performance standards: An application to public school expenditures. *Journal of Accounting & Economics* 23 (2): 141–161.

Drake, A. R., S. F. Haka, and S. P. Ravenscroft. 1999. Cost system and incentive structure effects on innovation, efficiency, and profitability in teams. *The Accounting Review* 74 (3): 323–345.

Dye, R. A. 1992. Relative performance evaluation and project selection. *Journal of Accounting Research* 30 (1): 27–52.

Ekholm, B., and J. Wallin. 2000. Is the annual budget really dead? *The European Accounting Review* 9: 519–539.

Elnathan, D., T. W. Lin, and S. M. Young. 1996. Benchmarking and management accounting: A framework for research. *Journal of Management Accounting Research* 8: 37–54.

Epstein, M. J., and J. F. Manzoni. 2002. Reconciling conflicting roles of budgets: Review and survey of corporate practices. Working paper, Rice University and INSEAD.

Evans, J. H., Y. Hwang, N. Nagarajan, and K. Shastri. 1997. Involuntary benchmarking and quality improvement: The effect of mandated public disclosure on hospitals. *Journal of Accounting, Auditing & Finance* 12 (3): 315–352.

———, ———, and ———. 2001. Management control and hospital cost reduction: Additional evidence. *Journal of Accounting and Public Policy* 20 (1): 73–88.

Fisher, J., and V. Govindarajan. 1993. Incentive compensation design, strategic business unit mission, and competitive strategy. *Journal of Management Accounting Research* 8: 129–144.

———. 1995. Contingency-based research on management control systems: Categorization by level of complexity. *Journal of Accounting Literature* 14: 24–53.

———, S. A. Peffer, and G. B. Sprinkle. 2003. Budget-based contracts, budget levels, and group productivity. *Journal of Management Accounting Research* 15: 51–74.

Fisher, M., and C. Ittner. 1999. The impact of product variety on automobile assembly operations: Empirical evidence and simulation analysis. *Management Science* 45 (6): 771–786.

Gibbs, M., K. A. Merchant, W. A. Van der Stede, and M. E. Vargus. 2004. Determinants and effects of subjectivity in incentives. *The Accounting Review* (forthcoming).

Goold, M., and J. Quinn. 1993. *Strategic Control: Milestones for Long-term Performance*. London, U.K.: Pitman.

Gosselin, M. 1997. The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society* 22 (2): 105–122.

Govindarajan, V. 1984. Appropriateness of accounting data in performance evaluation: An empirical examination of environmental uncertainty as an intervening variable. *Accounting, Organizations and Society* 9 (2): 125–135.

———, and A. Gupta. 1985. Linking control systems to business unit strategy: Impact on performance. *Accounting, Organizations and Society* 10 (1): 51–66.

———. 1988. A contingency approach to strategy implementation at the business unit level: Integrating administrative mechanisms with strategy. *Academy of Management Journal* 31 (4): 828–853.

———. 1989. Implementing competitive strategies at the business unit level: Implications of matching managers to strategies. *Strategic Management Journal* 10: 251–269.

———, and J. Fisher. 1990. Strategy, control systems, and resource sharing: Effects on business unit performance. *Academy of Management Journal* 33 (2): 259–285.

Hansen, S. C., and R. Torok. 2003. *The Closed Loop: Implementing Activity-Based Planning and Budgeting*. Bedford, TX: CAM-I.

———, and W. A. Van der Stede. 2003. Six facets of budgeting: Antecedents and performance. Working paper, The George Washington University and University of Southern California.

Hartmann, F. G. 2000. The appropriateness of RAPM: Toward the further development of theory. *Accounting, Organizations and Society* 25: 451–482.

Hawkins, S., and R. Hastie. 1990. Hindsight biased judgments of past events after the outcomes are known. *Psychological Bulletin* 107 (May): 311–327.

Hayes, R. M., and S. Schaefer. 2000. Implicit contracts and the explanatory power of top executive compensation. *Rand Journal of Economics* 31 (Summer): 273–293.

Hirst, M. K. 1983. Reliance on accounting performance measures, task uncertainty, and dysfunctional behavior: Some extensions. *Journal of Accounting Research* 21 (2): 596–605.

Hofstede, G. 1967. *The Game of Budget Control*. Assen, The Netherlands: Van Gorcum.

Holmstrom, B. 1979. Moral hazard and observability. *Bell Journal of Economics* 10 (Spring): 74–91.

———. 1982. Moral hazard in teams. *Bell Journal of Economics* 13 (Autumn): 324–340.

Hope, J., and R. Fraser. 1997. Beyond budgeting: Breaking through the barrier to "The Third Wave." *Management Accounting* (December): 20–26.

———, and ———. 2000. Beyond budgeting. *Strategic Finance* 82 (4): 30–35.

———, and ———. 2003. *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap*. Boston, MA: Harvard Business School Press.

Hopwood, A. G. 1972. An empirical study of the role of accounting data in performance evaluation. *Journal of Accounting Research* 10: 156–182.

———. 1973. *An Accounting System and Managerial Behavior*. Hampshire, U.K.: Saxon House, Lexington Books.

Ittner, C. D., and D. F. Larcker. 1995. Total quality management and the choice of information and reward systems. *Journal of Accounting Research* 33 (Supplement): 1–34.

———, ———, and T. Randall. 1997. The activity-based cost hierarchy, production policies and firm profitability. *Journal of Management Accounting Research* 9: 143–162.

———, and ———. 2001. Assessing empirical research in managerial accounting: A value-based management perspective. *Journal of Accounting and Economics* 32 (1-3): 349–410.

———, ———, and M. W. Meyer. 2003a. Subjectivity and the weighting of performance measures: Evidence from a balanced scorecard. *The Accounting Review* 78 (3): 725–758.

———, ———, and T. Randall. 2003b. Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society* 28 (7-8): 715–741.

Janakiraman, S. N., R. A. Lambert, and D. F. Larcker. 1992. An empirical investigation of the relative performance hypothesis. *Journal of Accounting Research* 30 (1): 53–69.

Jensen, M. 2001. Corporate budgeting is broken—Let's fix it. *Harvard Business Review* (November): 95–101.

Kaplan, R. 1983. Measuring manufacturing performance: A new challenge for managerial accounting research. *The Accounting Review* 58 (4): 686–705.

———, and D. Norton. 1992. The balanced scorecard: Measures that drive performance. *Harvard Business Review* 70 (1): 71–79.

———, and ———. 2001. *The Strategy Focused Organization*. Boston, MA: Harvard Business School Press.

Khandwalla, P. N. 1972. The effect of different types of competition on the use of management controls. *Journal of Accounting Research* 10 (2): 275–285.

———. 1973. Effect of competition on the structure of top management control. *Academy of Management Journal* 16 (2): 285–295.

Klammer, T., S. Ansari, and J. Bell. 1997. *Activity Based Budgeting*. Boston, MA: McGraw-Hill/Irwin.

Kohn, A. 1993. Why incentive plans cannot work. *Harvard Business Review* (September-October): 2–7.

Krumweide, K. 1998. The implementation stages of activity-based costing and the impact of contextual and organizational factors. *Journal of Management Accounting Research* 10: 239–278.

Langfield-Smith, K. 1997. Management control systems and strategy: A critical review. *Accounting, Organizations and Society* 22 (2): 207–232.

Latham, G. P., D. Winters, and E. A. Locke. 1994. Cognitive and motivational effects of participation: A mediator study. *Journal of Organizational Behavior* 15: 49–63.

Lipe, M. G., and S. E. Salterio. 2000. The balanced scorecard: Judgmental effects of common and unique performance measures. *The Accounting Review* 75 (3): 283–298.

Locke, E. A., and G. P. Latham. 2002. Building a practically useful theory of goal setting and task motivation. *American Psychologist* 57 (9): 705–717.

Lukka, K. 1988. Budgetary biasing in organizations: Theoretical framework and empirical evidence. *Accounting, Organizations and Society* 13 (3): 281–301.

Marcino, G. R. 2000. Obliterate traditional budgeting. *Financial Executive* (November-December): 29–31.

McNair, C. J., and R. Vangermeersch. 1998. *Total Capacity Management: Optimizing at the Operational, Tactical, and Strategic Levels*. New York, NY: St. Lucie Press.

Merchant, K. A. 1985a. Organizational controls and discretionary program decision making: A field study. *Accounting, Organizations and Society* 10 (1): 67–85.

———. 1985b. Budgeting and the propensity to create budgetary slack. *Accounting, Organizations and Society* 10 (2): 201–210.

———, and J. F. Manzoni. 1989. The achievability of budget targets in profit centers: A field study. *The Accounting Review* 64 (3): 539–558.

———. 1990. The effects of financial controls on data manipulation and management myopia. *Accounting, Organizations and Society* 15 (4): 297–313.

———, W. A. Van der Stede, and L. Zheng. 2003. Disciplinary constraints on the advancement of knowledge: The case of organizational incentive systems. *Accounting, Organizations and Society* 28 (2): 251–286.

Milgrom, P. 1988. Employment contracts, influence activities, and efficient organization design. *Journal of Political Economy* 96 (February): 42–60.

———, and J. Roberts. 1992. *Economics, Organization and Management*. Englewood Cliffs, NJ: Prentice Hall.

Mintzberg, H. 1978. Patterns in strategy formation. *Management Science* 24 (9): 934–948.

———, and J. A. Waters. 1985. Of strategies, deliberate and emergent. *Strategic Management Journal* 6: 257–272.

Murphy, K. J., and P. Oyer. 2003. Discretion in executive incentive contracts: Theory and evidence. Working paper, University of Southern California and Stanford University.

Nagar, V. 2002. Delegation and incentive compensation. *The Accounting Review* 77 (2): 379–395.

Neely, A., M. R. Sutcliff, and H. R. Heyns. 2001. *Driving Value Through Strategic Planning and Budgeting*. New York, NY: Accenture.

Northcott, D., and S. Llewellyn. 2003. The "ladder of success" in healthcare: The U.K. national reference costing index. *Management Accounting Research* 14 (1): 51–66.

Onsi, M. 1973. Factor analysis of behavioral variables affecting budgetary slack. *The Accounting Review* 48 (3): 535–548.

Otley, D. T. 1978. Budget use and managerial performance. *Journal of Accounting Research* 16: 122–149.

———. 1980. The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society* 5 (4): 413–428.

———. 1999. Performance management: A framework for management control systems research. *Management Accounting Research* 10: 363–382.

———. 2001. Extending the boundaries of management accounting research: Developing systems for performance management. *British Accounting Review* 33 (3): 243–261.

Ouchi, W. G. 1979. A conceptual framework for the design of organizational control mechanisms. *Management Science* 25 (9): 833–848.

———. 1980. Markets, bureaucracies and clans. *Administrative Science Quarterly* 25: 129–141.

Perera, S., G. Harrison, and M. Poole. 1997. Customer-focused manufacturing strategy and the use of operation-based non-financial performance measures: A research note. *Accounting, Organizations and Society* 22 (6): 557–572.

Player, S., and D. Keys. 1996. *Activity-Based Management: Arthur Andersen's Lessons from the ABM Battlefield.* New York, NY: MasterMedia, Ltd.

Prendergast, C., and R. Topel. 1993. Discretion and bias in performance evaluation. *European Economic Review* 37 (April): 355–365.

Rankin, F. W., and T. L. Sayre. 2000. The effects of performance separability and contract type on agent effort. *Accounting, Organizations and Society* 25 (7): 683–695.

Reiff, S. D. 2001. Speeding up planning and budgeting. *Financial Executive* 17 (6): 44–46.

Rogers, E. 1995. *Diffusion of Innovations*. New York, NY: The Free Press.

Samuelson, L. 2000. The effects of increasing turbulence on organizational control: Some reflections. In *The Current State of Business Disciplines, Management Volume 5*, edited by S. B. Dahiya, 2017–2090. Rohtak, India: Spellbound.

Scapens, R. W., and J. Roberts. 1993. Accounting and control: A case study of resistance to accounting change. *Management Accounting Research* 4 (1): 1–31.

Schmidt, J. A. 1992. Is it time to replace traditional budgeting? *Journal of Accountancy* (October): 103–107.

Scott, T. W., and P. Tiessen. 1999. Performance measurement and managerial teams. *Accounting, Organizations and Society* 24 (3): 263–286.

Selto, F. H., and S. K. Widener. 2001. Relevance of management accounting research. Working paper, University of Colorado at Boulder and Rice University.

Serwen, L. 2002. *Solutions for Better Planning: What a National Survey Reveals*. New York, NY: Financial Executives Institute Research Foundation.

Shields, M. D. 1995. An empirical analysis of firms' implementation experience with activity-based costing. *Journal of Management Accounting Research* 7: 148–166.

Silver, E., D. Pyke, and R. Peterson. 1998. *Inventory Management and Production Planning and Control.* New York, NY: John Wiley & Sons.

Simons, R. L. 1987a. *Codman & Shurtleff, Inc.: Planning and Control System.* Harvard Business School Case 9-187-081. Boston, MA: Harvard Business School Publishing.

———. 1987b. Accounting control systems and business strategy: An empirical analysis. *Accounting, Organizations and Society* 12 (4): 357–374.

———. 1990. The role of management control systems in creating competitive advantage: New perspectives. *Accounting, Organizations and Society* 15 (1-2): 127–143.

———. 1991. Strategic orientation and top management attention to control systems. *Strategic Management Journal* 12: 49–62.

———. 1995. *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*. Boston, MA: Harvard Business School Press.

Tan, H. T., and K. Jamal. 2001. Do auditors objectively evaluate their subordinates' work? *The Accounting Review* 76 (1): 99–110.

Teece, D. 1980. The diffusion of an administrative innovation. *Management Science* 26 (5): 464–470.

Umapathy, S. 1987. *Current Budgeting Practices in U.S. Industry: The State of the Art*. New York, NY: Quorum.

Wallander, J. 1999. Budgeting: An unnecessary evil. *Scandinavian Journal of Management* 15: 405–421.

———. 2003. *Decentralization—Why and How to Make it Work: The Handelsbanken Way*. Stockholm, Sweden: SNS Forlag.

Waterhouse, J. H., and P. Tiessen. 1978. A contingency framework for management accounting systems research. *Accounting, Organizations and Society* 3 (1): 65–76.

Wruck, K. H, and M. C. Jensen. 1994. Science, specific knowledge, and total quality management. *Journal of Accounting and Economics* 18: 247–285.