THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

Economic Transition, Strategy and the Evolution of Management Accounting Practices: The Case of India

by Shannon W. Anderson and William N. Lanen

Working Paper Number 61
April 1997

Comments Welcome

ECONOMIC TRANSITION, STRATEGY AND THE EVOLUTION OF MANAGEMENT ACCOUNTING PRACTICES: THE CASE OF INDIA*

SHANNON W. ANDERSON
Assistant Professor of Accounting
University of Michigan Business School

and

WILLIAM N. LANEN
Associate Professor of Accounting
University of Michigan Business School

April 1997

* The William Davidson Institute at the University of Michigan Business School and the Academy of Management Excellence in Madras, India provided financial support for this research. We are indebted to managers of the participating firms and to our colleagues, E. Snyder and C. K. Prahalad at the University of Michigan and to S. Ramachander, V. Narayanan, and R. Stevenage of the Academy of Management Excellence for helping us gain access to research sites. Comments from Trevor Hopper, Anthony Hopwood, Peter Miller, Neale O'Connor, and other participants in the 1996 AOS Conference on Comparative Management Accounting were especially helpful.

ECONOMIC TRANSITION, STRATEGY AND THE EVOLUTION OF MANAGEMENT ACCOUNTING PRACTICES: THE CASE OF INDIA

Abstract

Liberalization of the Indian economy in 1991 increased the intensity of international competition and changed the internal information needs of Indian managers. This paper explores the evolution of a broad range of management accounting practices in 14 firms using a contingency theory framework. Differences in management accounting practices in 1996 are examined in relation to firms' experience in and exposure to world markets prior to liberalization and as a function of contemporaneous differences in competitive strategy. We find evidence of changes associated with shifts in the external environment.

Key words: International management accounting, contingency research, trade liberalization, transitional economies

Privatization, liberalization and deregulation are just a few words that have been used to describe reactions to the worldwide failure of planners to control state, industry or enterprise production of goods and services while simultaneously meeting competitive standards of performance. Common themes of these economic and political reforms are increased product and price competition, made possible by unconstrained input markets and unfettered sales opportunities, and necessitated by exposure to world class competitors. In the management accounting literature, contingency theorists posit that the external competitive environment is a determinant in the form that management accounting practices of a firm take and the intensity with which they are used. If true, the dramatic economic and political upheavals witnessed in the past decade will be associated with equally significant changes in management accounting practices in the firms most affected.

This study extends the empirical literature on the contingent relationship between the level of external competition and management accounting practices and explores the potentially mediating effects of firms' competitive strategies on this relation. We examine the impact of the 1991 liberalization of the Indian economy on the management accounting practices of 14 firms using a contingency theory framework. The firms studied were in the private sector both before and after enactment of economic reforms. We select this population for study because national economic data suggests that this sector has been influenced most by trade liberalization and because, unlike many previously state owned enterprises (Firth, 1996), prior to liberalization these firms had management control practices that were intended to support profitability and efficiency. We identify sub-sets of firms with differing levels of experience in, and exposure to, world markets prior to liberalization and examine the role of initial conditions on subsequent changes in management accounting practices. We also consider contemporaneous differences in competitive strategy as an explanation for differences in management accounting practices. A broad set of management accounting practices that are commonly covered by introductory texts are considered, including cost management, planning and control, and performance measurement and evaluation. The paper describes the range of management accounting practices used as well as qualitative differences in the way that they are applied and the administrative processes that surround their use.

In that the firms of this study have survived the early stages of liberalization, it may be argued that their transition strategies have been successful. However, the firms are far from equilibrium in enacting comprehensive competitive strategies or establishing management accounting practices to support these strategies. Consequently, it is premature to test the relationship between firm performance and the congruence of strategy and structure, what organizational theorists refer to as configurational theory and the hypothesis of 'equifinality' (Doty, Huber and Glick 1993). Rather, this paper has the more modest objective of providing preliminary evidence on the extent to which management accounting practices change in response to a particular environmental shift and on the extent to which persistent differences in management accounting practices are related to differences in firms' product market and globalization strategies.

The paper makes three contributions to the existing management accounting literature. First, in response to criticism leveled in comprehensive reviews of the contingency theory literature (e.g., Young & Selto, 1991; Fisher, 1995; Firth, 1996), we jointly consider a broad range of management accounting practices. Second, we contribute to a small but growing body of literature that employs comparisons of management accounting practices within a firm over time (e.g., Hoque & Hopper, 1994; Firth, 1996). By selecting time periods immediately before and five years after a major shift in the external environment, we provide evidence on possible causal relationships between contingencies and management accounting practices. Finally, within the context of a changing external environment, we extend the larger body of literature that examines cross-sectional differences in management accounting practices of firms that have different endogenous, organizational contingencies. Specifically, we consider differences in competitive strategy and international outlook as explanations for differences in management accounting practices that persist in 1996.

Although we examine an idiosyncratic environmental event, liberalization of the Indian economy, it shares many features of changes that have influenced firms in Central European economies and in the newly independent nations of the former Soviet Union, as well as with privatization efforts that have become common in many long-standing market economies. At the same time, there are many uniquely

Indian features of our study that differentiate the firms we study from those in the post-Communist states. Firms, both in India and the post-Communist states are now facing extensive competition from multinational firms as the economies have opened up. Firms in both areas have enjoyed many years of protection from such competition and have found themselves ill-prepared to offer competitive products. The differences result mainly from political differences. The economic changes in India took place as part of a well established political process with no abrupt changes in political systems. Managers in pre-liberalization India had the freedom to travel and Western and Japanese management materials were freely available. Many Indian managers studied in Western business schools. As a result, looking at the impact of liberalization in the Indian context is not confounded by education or experience with market systems.

The paper is organized as follows. The next section frames the research questions of this paper in relation to previous studies that have examined management accounting practices as contingencies of environmental context and firm strategy. The third section is a brief overview of the 1991 liberalization of Indian markets and a description of the research sites and data collection methods. Following this, the research design is discussed. The fifth section presents our findings on changes to management accounting practices from three perspectives: changes that appear to be motivated by the 1991 economic liberalization; practices that appear to be related to firms' experience in and exposure to global markets at the time of liberalization; and, practices that appear to be related to firms' competitive strategy in product markets. We conclude with a discussion of opportunities for future research on international differences in management accounting practices.

LITERATURE REVIEW AND RESEARCH QUESTION

Overview of Relevant Literature

Contingency theory hypothesizes that organizational structure is a function of context, a context that is simultaneously determined by the external environment, history, and other organizationally-determined factors. When combined with configuration theories, which posit that performance is determined by the extent to which firms adopt 'ideal' organizational configurations (e.g., Miles & Snow, 1978; Mintzberg, 1979; Porter, 1980), a related hypothesis emerges: organizational context determines the 'ideal' organizational configuration, which in turn determines organizational performance. Tests of this theory examine the extent to which performance is a function of the congruence or 'fit' between the organizational structure that is adopted and contextual factors (Doty, Glick & Huber, 1993).

Researchers have interpreted 'organizational structure' to include management accounting practices, the formal and informal information and decision-making methods that govern the allocation of organizational assets (e.g., Lawrence & Lorsch, 1967; Bruns & Waterhouse, 1975; Hayes, 1977; Ginzberg, 1980). The basic contingency model is depicted in Figure 1. The model reflects the traditional theory of organizational structure, commonly referred to as the strategy-structure-performance paradigm in which firm strategy and structure are viewed as profit maximizing responses to exogenous factors (Chandler, 1962; Woodward, 1965; Perrow, 1967; Lawrence & Lorsch, 1967). In this traditional formulation, firms arise as a result of dynamic adjustments to changing external circumstances in the presence of transactions costs and long-lived investments (Williamson, 1975). We add to this the modern, resource-based view of the firm as a collection of firm-specific capabilities, capabilities that are acquired *in vivo* and can not easily be acquired or replicated by competitors (Prahalad & Hamel, 1990). As in Simons (1990) and Fisher (1995), we explicitly model the strategies and management accounting practices of the firm within a dynamic framework. Thus, management accounting practices are developed in conjunction with and evolve to fit the information needs of management, needs which are tempered by the relative costs and benefits of information and which are in response to both recurring and unexpected decisions. Management accounting practices are part of the cybernetic control system; the firm is capable of receiving and incorporating feedback from the market and is motivated to do so as a means of survival.

Empirical tests of contingency theory in management accounting research have included different, endogenous and exogenous contextual factors and different management accounting practices. Fisher (1995) characterizes extant contingency research on the basis of model complexity, defined by the number of contingent factors and management control mechanisms considered and by whether the impact of 'fit' on organizational outcomes is examined. Although previous research has been conducted at different levels (e.g., industry, firm, division or other sub-groups of a firm), we limit our discussion to research conducted at the level of the firm or major business unit, the level of analysis of this study.

Two exogenous contextual factors that have been examined in relation to firm-level management accounting and control practices are the nature of competition and environmental uncertainty (Khandwalla, 1972; Govindarajan, 1984) and national culture (Gray, 1988; Skousen & Yang, 1988; Perera, 1989; Frucot and Shearon 1991; O'Connor, 1995).[1] Consistent with the strategy-structure-performance paradigm, the most common endogenous factor that has been considered in relation to management accounting practices is firm strategy (Simons, 1987; Govindarajan, 1985, 1988; Govindarajan & Fisher,

[1] See Gernon and Wallace (1995) for a review of international accounting research.

1990; Dent, 1990). Other endogenous factors that have been considered are technology (Waterhouse & Tiessen, 1978; Ginzberg, 1980) and organizational culture (Thomas, 1989; O'Connor, 1995).

As Fisher (1995) notes, most studies consider a single contextual factor in relation to a limited set of management accounting and control practices. Among the three broad areas of management accounting that are typically included in introductory texts (planning and control, cost management, and performance measurement and evaluation), two have been the subject of most contingency research: budget development and use; and, performance appraisal and compensation. We found no studies that jointly considered the impact of one or more contextual factors on more than one of the three management accounting areas.

Tests of contingency theory have typically focused on cross-sectional comparisons of management accounting practices in firms that differ in the contextual variable of interest. More recently, researchers have exploited dramatic shifts in contextual factors to examine changes in management accounting practices using panel data. As examples, Lanen and Larcker (1992) examine the performance impact of changes in management compensation practices that emerged following changes that affected firms' competitive environment differently, specifically, state-level changes in the way U.S. electric utilities are regulated. Pourjalali and Meek (1995) examine changes in accounting practices following the 1979 Iranian Revolution, arguing that the revolution reflected a shift in cultural values that subsequently caused changes in accounting practices. Similarly, Jaruga (1996) and Garrod and McLeay (1996) provide rich descriptions of changes in accounting practices following the fall of communism in Central Europe, and Skousen and Yang (1988), Zhou (1988), Chow et. al (1995) and Firth (1996) discuss accounting system reforms introduced in conjunction with economic reforms in China. Groves et. al (1994) provide evidence on improved organizational performance in Chinese state owned enterprises after the introduction of performance-based compensation for managers and workers and with increased organizational autonomy.

Not coincidentally, a common theme of these studies is the focus on changes in the external economic environment, specifically, deregulation and liberalization of the competitive environment. This reflects a classic application of quasi-experimental design in testing contingency theory; a 'treatment,' economic liberalization, is hypothesized to result in changes to management accounting practices and organizational outcomes. A common criticism that holds for most of these studies is that only rarely is a proper control group available to calibrate changes caused by the passage of time in the absence of the treatment.[2] This criticism highlights the need for complementary cross-sectional and time series studies.

---

[2] Firth (1996) examines the joint influence of economic reform and the use of joint ventures by Chinese state owned enterprises using a control group of SOEs that did not pursue joint ventures to assess the unique effects of joint ventures on change in management accounting practices. However, in spite of this well-designed research program, it remains impossible to distinguish the confounding effects of economic reform and the passage of time.

Research Question

Within the contingency framework illustrated in Figure 1, we explore three research questions using the research design depicted in Figure 2. We first consider the impact of a shift in the exogenous environment - the enactment of major economic reforms - on management accounting practices, assuming that the sample firms have similar initial circumstances (e.g., similar strategies and firm-specific capabilities). Pooling the sample of firms we examine patterns of change in the three broad areas of management accounting practice highlighted in Figure 1.

We then introduce differences among the firms' endogenous capabilities. In particular, since the exogenous shift that we consider is that of international trade liberalization, we focus on the influence of the firm's 'international orientation' at the time of liberalization on current management accounting practices. In 1991, half of the firms in our study had significant experience in or exposure to international markets as evidenced by relationships with international business partners, suppliers and customers. We partition the sample on this basis to examine differences in management accounting practices that persist among firms in 1996. We cannot perform a statistical analysis of variance to distinguish between variance in management accounting practices caused by liberalization and that caused by the 'international orientation' of the firm at the time of liberalization. We selected this endogenous capability for consideration precisely because it is inexorably linked to the exogenous environmental shift. Nonetheless, our field interviews confirm the impression that experience in and exposure to international markets prior to liberalization are relevant to the trajectory of change for management accounting practices following liberalization.

Finally, we introduce differences in the firm's competitive strategies as a factor explaining differences in management accounting practices that persist in 1996. For this portion of the analysis we employ the typology developed by Miles and Snow (1978) and used by Simons (1987) to explore the role of strategy in management accounting practices. As in Simons, we categorize firms as 'defenders' or 'prospectors' based on data from 1996. Evidence used to perform this classification includes qualitative assessments of competitive priorities, product differentiation strategies, and improvement opportunities, as well as quantitative evidence on product and process innovation and cost structure. Again, our small sample does not permit statistical partitioning of the observed variance in management accounting practices between that caused by liberalization and that caused by the firm's strategy. Nonetheless, our descriptive results are consistent with prior studies that find strategy to be a distinguishing factor in explaining differences in management accounting practices.

In his review of the contingency literature, Fisher (1995) found few studies that simultaneously considered multiple contingencies and multiple management control mechanisms and that examined their relation to performance. Moreover, almost all of the studies used cross-sectional analysis rather than time series analysis. He concluded that "As [contingency research] moves away from the study of correlations to the examination of causal relationships, a time-series approach will be essential (p. 47)" and that "...management control systems cannot be studied in isolation ...Future research should examine the conditions under which control systems are complementary or substitutable (pp. 44-45)."

This research does not fit the Fisher typology perfectly, nor does it address all of the weaknesses that Fisher identified. However, we do address some of the shortcomings in the contingency literature. We consider multiple contingencies and control mechanisms, including nonfinancial performance measures, the absence of which Fisher notes as a critical failing of existing research. In Fisher's typology, studies with multiple contingencies and control mechanisms are considered maximally complex (level 4). However, we do not link the relationship between contingencies and management accounting and control practices to firm performance, a characteristic of more simple 'level 1' studies. We address a major criticism that Fisher levels against previous studies; specifically, we compare management accounting practices in two time periods that span a period of dramatic change in the external environment. However, we do not conduct longitudinal research *per se*; that is, the data are not gathered at two points in time. Finally, like many studies that employ time series research designs, we lack a proper control sample (e.g., Indian firms that are completely uninfluenced by Indian economic reforms). Thus, although we contribute to the small body of research that has attempted to establish causal relationships between various contingencies and management accounting practices, much work remains.

RESEARCH SETTING, SAMPLE COMPOSITION AND DATA COLLECTION

The Indian Political and Economic Context

In 1991, the Indian government exhausted foreign currency reserves, provided in large part by loans from the International Monetary Fund (IMF), and was told that future loans would be contingent upon economic reforms.[3] The collapse of Soviet and Central European markets left few prospects for

[3] This section draws on material presented in Lodge and Bhasin's (1995) summary of political and economic changes that took place in India in the 1990's and the historical events that led to these changes (referred to hereafter as LB), as well as from a survey of India that appeared in the January 21, 1995 issue of *The Economist*.

funding a growing trade imbalance and a government debt that exceeded 50 percent of gross domestic product, so the government conceded to IMF demands.

Prior to 1991, government control of industry took several forms, including extensive licensing requirements for a wide range of local industries, prohibition of employee layoffs without government approval, which was not given for reasons of financial distress, severe import and export limitations, a corporate tax rate of 57.5 percent, limitations on foreign equity ownership, control of capital flows through a nationalized financial sector, and widespread nationalization of 'priority' industries that, by the 1980's, left 46 percent of gross investment assets in the public sector and 34 percent of manufacturing assets in the public sector (LB, Exhibit 4). These policies were consistent with the objectives established by Prime Minister Nehru in the 1950's: a self-sufficient India that was developed through judicious central planning and control. Although these policies prevented foreign domination of domestic markets, reduced inflationary pressures and mitigated foreign currency shortages, the predicable outcome of the suppression of entrepreneurial activity and competition was poor product quality and dismal industrial productivity.

In July, 1991, newly elected Prime Minister Rao responded to the IMF ultimatum with a "Statement of Industrial Policy." The proposed changes included: curtailment of industry licensing and agricultural subsidies; increases in permissible foreign direct investment (allowed to reach 49 percent in most industries); reductions in the maximum tax rates for individuals and corporations (40 and 46 percent, respectively); reductions in maximum tariffs from 400 percent to 65 percent; and the removal of import restriction on raw materials and capital. Privatization of the large public sector, including financial markets, was a key feature of the plan to encourage competition in all sectors. Although policies affecting employee layoffs were not changed, the government recognized a need to consider rehabilitation programs for displaced workers. Thus the groundwork for labor policy changes was laid.

Rao's policy changes produced dramatic results in some sectors of the economy. By 1994, foreign participation in the Indian Economy had increased dramatically, as evidenced by an increase in the frequency of financial collaborations and technical collaborations to 405 and 146 percent, respectively, of 1990 levels, and an increase in the value of foreign investment involving technology agreements to almost 70 times that of 1990 levels (LB, Exhibit 8). Foreign direct investment increased ten-fold and foreign portfolio investment increased 20 fold between 1992 and 1995 (LB, Table D). These benefits of foreign investment and access to world input markets were realized primarily in the private sector. Fear of large scale layoffs caused Prime Minister Rao to postpone repeal of labor protections and to retain government ownership of at least 51 percent of each state owned enterprise. As a result, in 1995 state owned enterprises remained grossly inefficient and plagued by corruption (*The Economist*, January 21, 1995, pp. 16-20).

Divestiture of a portion of the public sector was a means of financing the government deficit, not a serious effort to improve productivity. The result of dramatic policy changes in 1991 was that "...between 1991 and 1994, government deficits were reduced, companies restructured, trade liberalized, foreign investment welcomed, and the centrally planned economic strategy, a hallmark of India since independence in 1947, abandoned (LB p. 9)."

We anticipate changes in the Indian national economy to affect two aspects of management accounting for firms in the private sector. First, as noted above, these changes have led to major organizational restructuring. Management accounting and control practices are an integral aspect of organizational structure; thus we expect *changes* in the substance of management accounting practices to accompany other organizational changes. Second, we expect *existing* management accounting information to be used in qualitatively different ways. Hoque and Hopper (1994) document the debilitating effects of political volatility and acute economic problems in Bangladesh on the use of formal management control practices by firms in the jute textile industry. Interviews and observations from field visits to a sub-sample of firms suggest that, before the economic reform, Indian firms resembled those described by Hoque and Hopper. Specifically, many formal practices existed, but were in place to satisfy exogenous demands for information (e.g., state tax authorities) rather than endogenous management information needs. In his discussion of accounting issues precipitated by the transition from planned to market economies of Central European countries, Gray (1991) writes:

> ...the increased reliance likely to be placed upon profit as a measure of efficiency provides scope for investigating the nature and impact of changes in the accounting and control systems used. In a comparative international context, questions arise as to the changes considered necessary, the motivations and political processes involved, and the implementation problems, both behavioral and technical ...Accounting in a centrally planned context is perceived as having primarily a record-keeping function and is not decision-oriented or concerned with efficiency at the enterprise level (p. 46).

Claims of increased use of management accounting methods to support decision making in Central European countries are echoed by Jaruga (1996) and Garrod and McLeay (1996). Changing uses of accounting data that were introduced in conjunction with economic reforms in China are supported by descriptions in Skousen and Yang (1988), Zhou (1988) and Chow et. al (1995) and by statistical evidence presented by Firth (1996). We contribute to case study evidence that has emerged in other transitional economies, evidence from a sample of Indian firms for which we have information on accounting practices both before and after trade liberalization.

Research Sample

This paper uses field-based research and a standardized data collection instrument to characterize changes in management accounting practices that accompanied 14 Indian firms' adaptation to a more open, market economy.[4] The firms, all in the private sector both before and after economic reforms, have been subjected to roughly the same treatment, a radical shift of the external economic environment. We hypothesize that this change in the environment will motivate similar responses among the firms, namely, the adaptation of management accounting practices to support increased profitability. This research is exploratory (Yin, 1989). That is, we seek to verify changes in management accounting practices following economic reforms and to describe common patterns of change. While it would be desirable to test predictions of the direction and magnitude of change in management accounting practices that ensue in the wake of economic reforms, perhaps as a function of Indian national culture or the relationship of the firms to specific Western partners (e.g., Firth, 1996), we would require a larger sample of international finns to investigate these issues.

The firms are grouped according to an embedded case study research design (Figure 2) to permit two related levels of analysis of: 1) firms with different experience with and exposure to international markets at the onset of trade liberalization; and, 2) firms with different competitive strategies. Two data collection methods are employed: 1) an extensive, five part survey of competitive strategy and management accounting practices that includes qualitative and quantitative responses to 206 objective and subjective questions; and, 2) personal interviews of top managers and site visits to half of the firms. All research methods are subject to unique problems and limitations. Surveys are fraught with problems associated with measurement error and bias, problems which may be exacerbated when the survey is written in the respondents' second language.[5] We cannot be certain that each respondent exercised care in completing the survey, that each respondent was qualified to answer the questions assigned to them in their part of the survey, or that item non-response is not symptomatic of defensive behavior rather than carelessness or insufficient knowledge. Without access to a much larger set of survey responses (and 'non-responses') we are unable to provide statistical evidence on the extent to which the surveyed population reflects a larger

---

[4] A copy of the survey instrument is available from the authors upon request.

[5] The issue of language is, perhaps, less important in the Indian context where fluency in English is common, especially among managers. Indeed, as a result of myriad regional dialects and in an effort to mitigate regional conflict, English has been adopted as the official language of a large portion of the country (*The Economist*, January 21, 1995, p. 10).

population of firms that were privately held both before and after privatization. We use interview data to corroborate and extend the survey data for a portion of our sample. Although problems of non-truthful reporting and subjective assessments are also possible in interview data, by using two types of data that were collected from several individuals in the firm we mitigate some forms of measurement error. Time and travel expenses precluded visiting all 14 firms; consequently, we selected a subset of firms that represent both strategy types and international orientations.

The research was planned in cooperation with the Academy of Management Excellence (ACME), an Indian consortium of companies that gather regularly for management research briefings and symposia on topics of general management interest. The consortium, known as the 'Windsor Club' in the business press, is known for the degree to which it has embraced liberalization. An article in the *Indian Express* covering the group's first meeting summarized the strategic posture of members:

> The members of the 'Windsor Club' are seeking neither concessions nor level playing grounds... [ITC's chairman notes] "We should meet the challenge head-on, instead of being on the defensive. At the same time we should not forget that alleviation of poverty - *garibi hatao*, has to be part and parcel of our corporate philosophy. We need companies whose heart is Indian and mind global." (December 2, 1994, p. 1)

The same article notes the contrast between the philosophy of these firms and that of another well-known consortium, the 'Bombay Club':

> This is in sharp contrast to the agenda of the 'Bombay Club', the conclave of senior Bombay-based industrialists who petitioned the Centre two months ago for slowing down of the pace of economic and industrial reforms and called for a 'level playing ground' to compete with the dollar-rich MNCs.

In early 1995, we approached ACME administrators with a proposal to conduct an assessment of management accounting practices in Indian firms, the results of which would be developed into a management seminar (subsequently delivered in Bangalore, India in August 1996). Previously, ACME had sponsored research seminars with academics in the fields of marketing and corporate strategy; thus it was agreed from the outset that we would have complete freedom in designing the survey and in publishing the results of our research. ACME contributed a research associate who assisted us with cultural aspects of the survey design and administered the survey pre-test. An Indian academic who is affiliated with ACME accompanied our field visits and was present during all management interviews. Although the survey and all interviews were comfortably conducted in English, the inclusion of a native professional academic and research associate was invaluable in early stages of survey design.

The targeted research population was 30 manufacturing members of the ACME consortium. Although ACME members include firms in service industries, we limited the sample to manufacturing firms to permit us to develop a more detailed survey. ACME members share three features. First, none were state-owned enterprises prior to enactment of economic reforms. Thus, we do not consider firms for which privatization resulted from liberalization. Second, ACME firms tend to be professionally managed, often by a cadre of Indian managers who have studied at home or abroad in leading management programs. Finally, as noted previously, ACME members share a commitment to competing successfully in the new liberalized economy. As a result of these and other differences that cause firms to seek ACME membership, it is reasonable to surmise that, from the population of mid-sized to large firms in the private sector, ACME firms have a greater than average probability of surviving the heightened international competition brought about by liberalization. In excluding previously state-owned enterprises as well as smaller, typically family-owned firms, we have attempted to focus on firms with developed managerial practices and competitive strengths from which to negotiate the difficult transition to an open economy. This is an appropriate sample for our research objective of studying the evolution of management accounting practices. The excluded population would more appropriately be used to study the emergence of managerial practices (e.g., Firth, 1996) or the consequences of failure thereof.

A five-part survey was designed to collect standardized information on firms' competitive strategy and management accounting practices. In Fall 1995, the survey was pre-tested by three firms that were selected based on industry and size differences as well as their perceived receptivity to participating in the study. In light of the small target population and even smaller pre-test group, the intent of the pre-test was simply to identify ambiguous or poorly worded questions. A research assistant from ACME was on site to administer the pre-test and interview survey respondents. The survey was revised based on feedback from the pre-test. Following a preliminary telephone call to request involvement in the project, the survey was mailed to the 30 manufacturing firms in Spring 1996. Each survey was accompanied by a letter of introduction from ACME, a statement of research purpose from the authors, and instructions concerning the ideal respondent (job responsibilities) for each part of the survey. Approximately 2 weeks after mailing the survey the research associate contacted the person to whom the survey was mailed. At that time approximately half of the firms stated that they would not participate in the study; fourteen firms agreed to complete the survey and host a visit if requested. Reasons offered by those who declined included: the survey would require too much time to complete; they were not sufficiently interested in the topic to participate in the study and the subsequent management briefing; and they did not wish to divulge the information requested, offers of confidentiality notwithstanding.

Each of the five survey parts addressed a different aspect of the research and was to be completed by a survey respondent with job-related knowledge of the questions. (See Table 1 for a brief description of each survey part.) For example, the CEO or President was asked to complete the section of the survey dealing with competitive priorities, while the Chief Financial Officer was asked to complete the section related to cost management practices. In total, 206 questions with 1022 separately coded responses (for multi-part questions and responses for 1991 and 1996) were asked, with respondents reporting that they spent 90 minutes, on average, completing a section of approximately 40 questions. We recommended that respondents consult colleagues with greater expertise and refer to relevant archival records when they were unsure of responses. At the end of each survey we asked for the job titles of colleagues who participated significantly in the completion of the survey section. Typically one to three people, other than the designated respondent, contributed to each survey section. Multiple survey respondents reduce the potential influence of measurement error and individual bias on our results and attempts to address the concern that we may have 'assigned' certain survey questions to the wrong individual, depending upon the firms' organization structure and assignment of job responsibilities. There was no repetition of questions across survey sections; however, by design there was considerable overlap. Thus, for example, the operations manager was asked to rank order manufacturing improvement opportunities for the future and the response was used in conjunction with data from the competitive strategy survey to identify the firm as a Defender or Prospector. A limitation of our survey approach as it relates to some survey questions is that the respondents were all members of management. Some questions ask managers to assess the extent to which information use, actions and performance of workers and mid-level-managers has changed since economic reforms. Managers are likely to be less well-informed in these cases and the error in response may be systematically biased if they have a stake in subordinates' behaviors. In the results that follow, we highlight this issue as it arises. An alternative research design that would also survey line workers and mid-level managers would have required surveys in a multiplicity of Indian dialects and most probably would have reduced our sample size further as managers perceived the cost of participation in the study to be too great.

After the survey instrument was distributed, site visits were made to nine companies over a period of six days. The companies visited are located in Bombay and Madras, India, and represent a cross section of industries. The meetings had two purposes: 1) to collect surveys from firms that had verbally agreed to participate in the study and to encourage completion of the survey if needed; and 2) to gain a richer understanding of the impact of the 1991 economic liberalization on the firms. Of the nine companies visited, seven returned substantially complete surveys and are included in our analysis. Typically, meetings with companies lasted one to three hours and involved from one to six managers. In all, 32 managers of nine companies were interviewed. Where there were multiple managers, the meetings were as a group. In general, the managers were heads of corporate functional areas (e.g., Executive Director of Sales) or of major operating groups. The meetings were open-ended, broad-based based discussions of two questions: 1) how did economic liberalization affect the organization; and, 2) what changes in management accounting and control practices had taken place or were planned. In addition to the companies, we met with reporters and editors at a major business newspaper based in Madras and with two directors at the Bombay offices of a 'Big 6' accounting firm. These meetings were intended to further enrich our understanding of the Indian business environment.

RESEARCH DESIGN

Figure 2 illustrates the basic research design of the multiple, embedded case studies of this study. As we discuss above, the analysis proceeds in three stages. We first examine changes in management accounting practices following the 1991 liberalization. In a preliminary question posed to the firms' chief executive officers, we asked for an assessment of the competitiveness of their domestic market in 1991 and in 1996. With the exception of one firm, which reported facing a very competitive market in both periods, all of the respondents claimed that competition increased between 1991 and 1996 (average increase of 1.5 points on a 5 point scale). This provides additional validation of our claim that all of the firms in the research sample were faced with changes in the external environment that are likely to have direct implications for the design and use of management accounting practices.

After considering the aggregate effects of a changing environmental context, we explore differences in initial firm capabilities, in particular, differences in experience with and exposure to international markets prior to economic liberalization, and differences in firm strategies as explanations for significant variations in management accounting practices that persist in 1996. The classification of firms by international outlook and competitive strategy is based on responses of different managers to questions posed throughout the five part survey. Forming classifications of strategy and international orientation based on multiple characteristics of the firm and based on information provided by several respondents for each firm, strengthens the validity of our classifications and mitigates the threat of common methods variance inflating the strength of observed relationships.[6]

---

[6] "Common methods variance creates a problem whenever the same informants provide data for both the independent and the dependent variables in a study *and* a pattern of responses on the independent variables obviously and logically implies a pattern of responses on the dependent variable (Doty et al. 1993, p. 1240)."

Because logistics demanded that we visit sites before conducting our analysis of the survey data (e.g., surveys were collected during the site visit), our knowledge of the visited companies undoubtedly influenced our assessment of their competitive strategy. However, we view this as a strength of combining field research with standardized survey data. We made every effort *ex ante* to include firms that had a high likelihood of falling in each of the four quadrants of Figure 2 in our site visits. Subsequent classification of the firms yielded several surprises, including the realization that, although we visited approximately equal numbers of defenders, prospectors, international and domestic firms, we did not visit a firm in the upper right quadrant, a defender with an international orientation at the time of economic reform. Table 2, Panel A provides the classification scheme of the 14 firms and identifies firms that received site visits. The following sections describe how firms were classified.

Firm-specific Capabilities: International Orientation

We hypothesize that differences in management accounting practices that persist in 1996 may reflect firm differences in the initial experience with and exposure to international markets. Support for this hypothesis is found in contingency theories that relate organizational boundaries, core competencies and management practices to the historical sequence of decisions that firms take in response to changing opportunity sets and resource endowments (Prahalad and Hamel 1990; Leonard-Barton 1992).

Responses to seven survey questions are used to assess firms' experience with and exposure to international markets at the time of international liberalization (Table 2, Panel B). The first two questions ask for the percentage of purchased parts and raw materials, each as a fraction of total direct material costs, provided by domestic suppliers. The third and fourth questions ask for the percentage of total sales that domestic sales comprise and the percent of total unit volume sold in domestic markets. The fifth question asks firms to assess the domestic and international market share of the product that they produce which contributes the greatest share of firm profits. As part of the same question, firms are asked for the domestic and international market share of their nearest domestically-based and internationally-based competitors.[7] The sixth and seventh questions ask whether the firm is engaged in strategic alliances with Western or with Japanese partners, respectively. If a strategic alliance is reported, the respondent is also asked to characterize the nature of the relationship as one of six types: shared distribution agreements;

---

[7] Responses on firms' international market shares are excluded from Table 2, Panel B, because only six firms (respondents) reported estimates of their and their competitors' international market shares. Several respondents wrote that they did not have international market share information or that they did not have reliable sources of data for competitors' market share.

cross-branding agreements; shared manufacturing; technology exchange agreements; licensing agreements; or joint ventures. We create a measure of 'intensity of international outreach' as the sum of these binary variables. Table 2, Panel B provides evidence on the extent to which, on average, these measures discriminate, in the manner predicted, between firms classified as International or Domestic.

Only one firm received a single rating ('International') on each of the measures described above. Nonetheless, the preponderance of evidence for one or the other classification made the task reasonably straightforward in all but two cases. In two cases respondents failed to respond to questions related to market share and sales. As a result, we were forced to categorize the firms on the basis of responses to a more limited set of questions, interactions with managers from the two firms and publicly available financial data about the firms. The outcome was that one firm was assigned to each classification.

Competitive Strategies: Defenders and Prospectors

We use the typology developed by Miles and Snow (1978) to distinguish firms' competitive strategies. Miles and Snow identified three ideal organizational types (defenders, analyzers, and prospectors), the effectiveness of which is determined by the "...configuration of contextual, structural, and strategic factors (Doty et al. 1993, p. 1197)." Although Miles and Snow alternately describe analyzers as a unique hybrid form and as a blend of defender and prospector attributes, Doty et al. (1993) provide convincing evidence that defenders and prospectors define a continuum with analyzers as the mid-point. Consequently, like Simons (1987) we divide the firms in our sample into two groups: Defenders and Prospectors. Following is a description of the Miles and Snow typology:

> The prospector ...operates in an environment characterized by rapid and unpredictable changes. Prospectors adapt to this turbulent environment by using high levels of environmental scanning (Daft and Weick, 1984) to identify opportunities for developing new products or markets that are critical to their success. Because of the rapid rate of product development, flexible, nonroutine technologies are characteristically used. These technologies are typically associated with low levels of specialization and moderate to high levels of interdependence. Structurally, prospectors are very organic, with low levels of formalization and specialization and high levels of decentralization. Prospectors also possess relatively few hierarchical levels.
>
> The defender is a less dynamic form of organization operating in an environment that is more stable and predictable than that of the prospector. This more stable environment allows defenders to engage in less environmental scanning... The key to the defender's success is a focus on efficiency. Defenders compete by producing low-cost goods or services and obtain efficiency by relying on routine technologies and economies of scale gained from largeness [sic]. Defenders have much more mechanistic structures than prospectors and achieve coordination through formalization, centralization, specialization, and vertical differentiation. This bureaucratization tends to reduce the level of interdependence in defenders (Doty et al. 1993:1225-6).

In empirical tests of the Miles and Snow framework, Doty et al. (1993) find that the degree of congruence between actual practices and firms' 'ideal' type explains 24 percent of variance in organizational outcomes. Using the same typology, Simons found significant differences in the development and use of management accounting data between high performing firms with different competitive strategies. We select this typology for assessing strategy as a contingency in the adaptation of management accounting practices because its validity has been demonstrated in several research settings.

We classify firms' 'ideal' competitive strategy based a subjective assessment that weighs managers' responses to twelve questions (Table 2, Panel C). Four questions ask for a relative ranking of a list of factors, each of which is constructed to be more closely related to one of the two strategies. The remaining questions are designed to assess strength of alignment with one of the two competitive strategies, for example, the importance of cost reduction (Defender) and the frequency of new product introductions (Prospector).

In the first question, respondents are asked to allocate 100 points over a list of 11 competitive priorities (we also allow the respondent to identify additional competitive priorities). We use responses to this question in two ways. First, we form a composite measure of defender and prospector priorities for each firm by linking each competitive priority to a single competitive profile and summing the elements of each profile. Second, we perform a principle components analysis on the responses and use firms' factor scores on two significant components that emerge and are consistent with the defender-prospector definitions.[8]

The second question used to assess competitive strategy, asks the manager to respond using a five point agree-disagree scale to the statement, "The following features of our product are considered very important for our strategy." Nine product characteristics that were believed to be related to the defender (e.g., price, conformance to specifications) or prospector (e.g., style and aesthetic qualities) strategies were included. Again, a summated scale of characteristics associated with each strategy profile was created and a principle components analysis of responses was performed, yielding two related perspectives on firms' product market strategies.

The third question asks respondents to identify the top three improvement priorities for manufacturing from a list of 13 possibilities (with the opportunity to include other opportunities). Again, the list of opportunities was constructed based on what one would expect to be priorities of a Defender

[8] Results of the principle components analysis of the first three questions are available from the authors upon request.

(e.g., increased throughput) and a Prospector (e.g., shortened product introduction cycle times). Responses were converted into the percentage of points (out of 6) assigned to 'defender' versus 'prospector' opportunities. We also perform a principle components analysis on the responses.

The final question which seeks relative assessments of degree to which firms have aligned their strategies with either the defender or prospector strategy asks managers to identify the relative frequency of use of ten factors in supplier selection. Responses are based on a five point scale that ranges from 'Never' to 'Almost Always.' We found no significant differences between 'defenders' and 'prospectors' in the criteria for selecting suppliers; however, there does appear to be a difference in the overall importance that firms in each group place on supplier selection. Table 2, Panel C reports differences in a summated scale of all supplier selection factors.

The remaining questions are uniquely identified with either the Defender or Prospector strategy and, with one exception, the questions are intended to elicit objectively verifiable data. Question five is aligned with the defender strategy, and seeks agreement or disagreement to the proposition that "cost reduction is the most important objective of the firm." Questions six through eight seek information about the firms cost structure: the percent of costs considered 'fixed', research and development costs as a percent of total revenues, and marketing and distribution expenses as a percent of total revenues. Question nine assesses the change in employment levels between 1991 and 1996 as a percentage of total employment. For classification purposes, we assume that defenders are more likely to pursue cost reduction through employee layoffs or sharply constraining employment growth than are prospectors. Questions ten through twelve focus on likely operational differences between defenders and prospectors: the increase in new product introductions over 1991 levels, change in the average product lifecycle, and inventory management practices, as evidenced by the measure, inventory turns. In using these data for classification purposes, we assume that prospectors have increased their product line through new product introductions and shortened product lifecycles, and that defenders are more likely to focus on efficiencies and economies of scale indicated by high inventory turnover.

No firm received a defender or prospector rating on each of the measures that arises from analysis of the twelve questions (Table 2, Panel C). Nonetheless, the preponderance of evidence for one or the other classification made the task reasonably straightforward in all but two cases. In two cases the measures were split in such a way as to suggest that the firms are probably best described as 'Analyzers.' Nonetheless, to retain parsimony with an already small sample size, we assigned the firms based on what appeared to be the relative frequency with which the firm's strategy was aligned with the defender or prospector strategy. The outcome was that one firm was assigned to each classification.

The Impact of Indian Liberalization on Research Sites

Implicit in our selection of firms associated with the ACME consortium and with our decision to study changes in management accounting practices that have emerged over a five year period (1991 and 1996) is the objective of studying successful adaptations to the new economic environment. With the partitioning of the sample on the basis of exposure to international markets and competitive strategy, the question arises: are these configurations jointly consistent with our objective of studying firms that are positioned for long-term survival and success? Specifically, in the Indian context do each of the quadrants depicted in Figure 2 represent a configuration that is likely to yield sustainable competitive advantage? Firms in quadrants that represent unsustainable configurations are unlikely to engage in costly efforts to adapt management accounting practices to the new environment. Rather, managers are more likely to play out an end-game strategy of 'harvesting' short lived profit opportunities. From the standpoint of research design, including these firms in our analysis would reduce our ability to detect adaptation of management accounting practices to the new economic setting.

In the sections that follow, we develop a composite profile of the firms that occupy these quadrants drawing upon our field research and management interviews. We describe the types of firms represented by our research sites in each of the four quadrants, the impact of reforms, and the strategy and focus that results. We argue that, while individual firms may have adopted inappropriate strategies or may not have completed the transition to a new strategy, each quadrant of Figure 2 represents a viable strategy for long-term survival and profitability in the context of India.

Domestic/Defender

The Domestic/Defender firms in our sample are typically well established firms selling traditional, industrial products. These firms, whether by choice or circumstance, have few prospects for competing in the international market. They tend to have relatively large market shares in the domestic market. Many of these firms recognize the potential challenges to their position from liberalization and the competition from multinational firms in the domestic product market. As a result of entry by foreign firms, customers are becoming more demanding. This has led to changes in the type of information needed to manage the business. To meet this new competition, the firms in our sample have been aggressive in maintaining competitive strengths and making operational changes.

As an example, one of the respondents in this classification sells equipment in agricultural markets. As a result of competition, its customers have become more demanding about quality and fuel efficiency.

The number of competitors has fallen by about 50%, but the level of price competition has increased. The organization's suppliers are all domestic and it sells less than 2% of its output abroad. The company is the leader (in sales) in all states in India and feels that its knowledge of the customer and the market is its competitive advantage. Therefore, the company is focusing its efforts on maintaining its customer base in its traditional products. Managers of the organization stated that the key challenge is to reduce prices while improving quality. They are responding to the new economic environment by using reengineering efforts to improve quality and lower costs. They cited their efforts to increase standardization of component parts and to require common components for similar products as one example of these efforts.

Domestic/Prospector

Like the firms in the Domestic/Defender quadrant, firms in this category tended to have strong positions in their markets prior to liberalization. In discussions with the managers, one difference is that firms in this group viewed the changes in 1991 as opening up the customer base domestically and, using traditional strengths, these firms decided to pursue this opportunity. Thus, these firms intend to use their traditionally strong domestic base to build new business and have been planning to do so for some time.

An example in this group is a firm in the fastener industry that felt the need for change as early as 1987, prior to the liberalization. They began to focus on profitability, value-added and sales productivity. For this firm, the key competitive strength is technology. One of the primary impacts of the liberalization is that acquiring technology is now easier. Their strategy is to use this technology to move into new product markets and expand their customer base both domestically and internationally. The managers of this firm focused on performance measures dealing with customer satisfaction and market penetration, an interesting contrast to the measures mentioned by the domestic/defender firms of cost and productivity.

International/Defender

Firms with exposure to international markets in 1991 and a strategy of pursuing low cost in 1996 felt the impact of liberalization primarily in terms of reduction of the import duties on imported parts and equipment. Prior to liberalization, the government reserved heavy industry for the public sector and protected these industries with high tariffs and import quotas for their for international competitors (*The Economist*, January 21, 1995, p. 4). As our discussion of liberalization indicates, these enterprises remain largely inefficient by world standards. However, with dramatic reductions in tariffs, customers of these industries have opportunities to acquire technologically superior capital equipment and raw materials at lower costs.

Three of the four firms in our sample that fit this category are electronics firms and the fourth is producing small automotive components that are controlled by complex electronics. Electronics component manufacture is capital intensive while electronics assembly is typically labor intensive. Thus, these firms benefit from reductions on import tariffs on capital equipment while maintaining a cost advantage based on low labor wages. One response to liberalization that has been taken by three of the four firms in this group is to form partnerships with foreign firms. Two of the firms in the quadrant have partnerships with Western firms, one of these firms and a third firm have partnerships with Japanese firms. However, in no case has the business partner taken an ownership stake in the Indian firm. All of the partnerships reflect technology licensing agreements or agreements to cross-distribute products.

International/Prospector

Liberalization of the economy in 1991, rather than being viewed as increasing competition for these firms, instead offered the opportunity to compete in world markets. Although all these firms are international, the reaction to the international competition has been quite different. One firm in the sample is part of a Western, multinational firm. There was a complete turnover of managers in 1992. The impact of liberalization for this firm is that domestic (Indian) competition has become stronger. They also describe their customer base as changing since liberalization. As part of the multinational, they are competing in the region using policies (such as safety policies) dictated by the parent.

While the previous firm is international as part of a multinational firm, its market focus is India and the surrounding region. An interesting contrast is a second firm in this group that is a domestic Indian firm in automotive products seeking (and finding) product markets abroad. Exports currently account for about 25% of this firms sales and products are sold in 35 countries. The primary effect of liberalization on this firm was reduction in bureaucracy that made possible more rapid responses to changing world markets. Because imports are easier to obtain, it is now possible to plan more effectively for raw materials inventories.

This brief description of some of the firms in our sample indicates a variety of responses to liberalization brought about by both circumstance and choice. As we noted earlier, it is too early to determine whether these responses will be adequate to compete in a world market. However, all the managers we met believed that liberalization was necessary and, in the context of their organization, represented an opportunity to be more flexible meeting competition. In the next section, we develop more systematically how Indian firms with different strategies and operating in different markets have responded to liberalization.

EXPLORING CHANGES IN MANAGEMENT ACCOUNTING PRACTICES

The analysis and results are presented in four sections. The first three are organized around major areas of management accounting research: planning and control processes; evaluation and performance measurement practices; and, cost management methods. The fourth section examines the changing role of the accountant since enactment of economic reforms. The first three sections present three perspectives on the impact of environmental and organizational context on management accounting practices. We first focus on changes in management accounting practices following the 1991 liberalization of the Indian economy. For this portion of the analysis, we assume that economic liberalization created a different environmental context which required firms to modify their competitive strategies and management accounting practices. Evidence that the effects of liberalization were widespread is provided by top management's assessment of the 1991 and 1996 competitive environments. On a scale of 1 (very competitive) to 5 (no competition), the average response in 1996 was 1.3 with a standard deviation of .48. This response represented an average increase of 1.5 over 1991 levels. All but one firm reported an increase in the level of competition, and this firm reported a uniformly high level of competition (response = 1) for both periods. Thus, while subsequent analysis may distinguish differences in response to liberalization based on firm-specific factors that are omitted at this stage of analysis, we are confident that we are not pooling a sample of firms for whom liberalization had no effect with a sample for which liberalization was a significant environmental change. After considering changes in management accounting practices that occurred between 1991 and 1996, we investigate the role of firm-specific factors related to the international outlook of the firms in 1991 and differences in competitive strategies in explaining differences in management accounting practices that persist in 1996.

Planning and Control Processes

Before turning to specific planning and control processes typically considered in management accounting research, it is useful to place these processes in the larger context of strategic planning. Specifically, we consider how answers to the following questions have changed since 1991:

- Who is involved in developing corporate strategy?
- How widespread is understanding of corporate strategy?

- What information is used in strategic planning?
- What are the key criteria used to establish tactical plans for achieving strategic objectives?

We then turn to traditional planning and control practices of management accounting to examine what practices are used, the 'control philosophy' that guides their use, and who participates in shaping these practices.

Corporate Strategy Development

Recently, employee involvement and investor activism have been popular themes in the business community. With greater exposure to international competition, we expect similar patterns of involvement to emerge in Indian firms following economic reforms. However, we recognize that Indian cultural norms of large power-distance between managers and their subordinates and a tendency to value collectivism (as opposed to individualism) may temper these changes (Hofstede, 1980). Conversely, we expect that government intervention, a widespread feature of the pre-reform business environment, will be reduced. Table 3 presents evidence on the involvement of employees at different levels in the organizational hierarchy and across different functional areas in the development of corporate strategy. The influence of external constituencies is also considered.[9]

Considering first the pooled responses of all firms (columns labeled 'ALL'), we see the anticipated trend toward greater involvement of all employees. The trend of greater involvement appears to reflect decentralization of strategy development; mid-level managers and line workers enjoyed proportionately greater gains than top management. These results must be interpreted with caution, as Hofstede (1980, pp. 82, 90) notes, in cultures with large power distance there is often ideological support for employee involvement and formal mechanisms for involvement frequently exist despite little evidence of informal participation. However, cultural norms typically are viewed as immutable; consequently, the documented change in involvement is more likely to reflect substantive differences.

From a functional perspective, finance and marketing play the greatest roles in strategy development, as might be expected in emerging markets with scarce capital. However, since economic reforms, the planning and human resource management functions have had disproportionate increases in their involvement in strategy setting. The emergence of a strong planning function seems a natural outcome

---

[9] A caveat in interpreting the results related to different levels of the organizational hierarchy that we mentioned in our earlier discussion of data collection methods is that these data reflect the attitudes and opinions of top managers only. Results must be interpreted with caution because top managers may be ill-informed about actions of employees at lower levels of the organization or constituencies outside the firm or may be inclined to willfully misrepresent either group's actions.

of reforms aimed at giving firms greater control of their destiny. The gains of human resource management seem perplexing initially. However, when asked to discuss the major effects of economic reforms, one manager remarked on the labor shortages that his firm faced as a result of multi-national corporations (MNCs) entering the domestic labor market. Although, India has very high overall unemployment, it has record levels of illiteracy. Consequently MNCs, which can afford higher wages, easily attract the small pool of skilled workers. The increased importance of human resource managers in the strategy development process may reflect a new priority of training and retaining skilled labor. This interpretation is supported by survey evidence (untabulated) of substantial increases in employee training hours at all levels of the organization since 1991.

Decomposing these results, we see that prospectors are consistently more likely to involve employees at all levels of the hierarchy in strategy development than are defenders. Differences in domestic and international firms are only apparent among senior managers; senior managers of domestically-oriented firms are more involved than those of internationally-oriented firms. A possible explanation, which emerged from interviews with top managers at several firms, is that, internationally-oriented firms often have significant international business partnerships. Top managers of partner firms often play as great or greater roles in strategy development for the, typically smaller, Indian firm than do the local Indian managers.

From the functional perspective, we see that while marketing remains a major contributor to strategy for firms of all four profiles, it has a substantially greater role for prospectors and for domestically-oriented firms. In the first case, the results are consistent with the presumed focus on new products and niche markets of prospectors. In the latter case, we interpret the differences in light of what we have observed in firms in Central Europe, the Balkans, and Russia. In a planned economy there is little or no need for the marketing and sales function. With economic reforms, this function requires disproportionate attention to ensure the short-term survival of the firm. The fall of communism and the consequent reduction in exports were a key factor in Indian economic reforms. Thus it is not surprising that firms that had an orientation toward local markets in 1991 would make concerted efforts in the short run to introduce the perspective of marketing and sales to the strategy process. One might predict that the level of involvement of marketing in strategy for domestically-oriented firms may drop after the historical handicaps of the planned economy are remedied. A similar explanation and prediction may explain the greater level of involvement of the planning function for domestic firms than for internationally-oriented firms.

Not surprisingly, managers of the R&D function are much more involved in strategy development for prospectors, whose strategy depends on product and process innovation, than for defenders. Perhaps less intuitive are apparent differences between domestic and internationally-oriented firms. As in the case of senior management involvement, this may simply reflect the fact that the substance of the involvement of many internationally-oriented firms with international partners is often technology licensing or other technology-sharing arrangements. These partnerships may obviate the need for involving local R&D managers in strategy development.

Among external constituencies, customers and suppliers (including suppliers of intellectual capital: external consultants) are becoming more involved in the strategy development process. However, this involvement may be motivated by different factors. For example, it appears that international firms are more likely to involve key customers in strategy development. Perhaps this reflects an overt recognition by internationally-oriented firms to 'customize' their strategy to the Indian market. Firms with a defender strategy are more likely to involve parts and materials suppliers in strategy development. This is consistent with data on supplier selection criteria, used to form the strategic groups (Table 2, Panel C), which showed that defenders place more importance on the supplier selection process than do prospectors. In the Western business press, strategic sourcing has become a popular part of the 'lean manufacturing' paradigm. In India, we see supplier selection as much more closely allied with achieving low cost and high efficiency. This is consistent with the infrastructure shortcomings of emerging economies (e.g., no firms had adopted JIT and none claimed it as a near-term objective) and with the raw materials and parts shortages that typify centrally planned economies. External consultants are more likely to be used by defenders than by prospectors and by domestically-oriented rather than by internationally-oriented firms.

We find little evidence that investors and owners have increased their involvement in strategy development since the advent of reforms. However, it appears that defenders involve these constituencies more, on average, than do prospectors. Investor activism in developed economies has coincided with technological advances in information dissemination, with new mechanisms for trading that favor small investors, and with rules of trade that provide a market for corporate control. India's financial markets and information economy may not be sufficiently developed to support these changes. Perhaps more important however are significant barriers to corporate takeovers. For example, the Companies Act restricts firm acquisition through a provision that allows the government to block transactions that create "a change in the controlling interest of the company...[that] would be prejudicial to the interests of the company or to the public interest" (*The Economist*, January 21, 1995, p. 19). In this regulatory climate it is not surprising that investors have little role in firms' strategies.

We also find no significant reduction of government influence on strategy development. Against the backdrop of increased involvement for virtually every other constituency and all employees, the static level of government involvement stands out. Nonetheless, only one company indicated that government influences on strategy development had declined with economic reforms. A possible explanation is our earlier observation that a distinguishing factor in India's economic transition is the stability of political processes throughout the liberalization.

Of course, involvement in strategy development is one thing; widespread understanding of the strategic plan is often another thing altogether. In an interesting twist on earlier results, we find the greatest gains in understanding strategy occurred among senior and mid-level managers. Similarly, investors and owners, with little change in strategy involvement, nonetheless are credited with significant increases in understanding. A likely explanation of the latter result is intensified scrutiny that came with deregulation of financial markets as a part of the economic reforms. Another curious inversion of earlier results is the emergence of differences between international and domestic firms' employees in *understanding* strategy despite few differences in involvement in strategy development. Managers of domestically-oriented firms claim greater levels of understanding of strategy at all levels of the organizational hierarchy. Perhaps this is an artifact of the familiarity of all employees with the domestic market, and of India's historically insular economic policies.

We turn now from the people involved in strategy to the information used to formulate strategy and tactics (Table 4). In Panel A we consider the relative importance of various types of information on strategic planning. For the pooled sample, we see that information on customer expectations and satisfaction has become substantially more important since economic liberalization. This is consistent with economists' view that customers are the benefactors of increased competition.

The importance of various types of information differs between defenders and prospectors. Prospectors are more attuned to performance measures such as customer satisfaction and market share growth and pay more attention to competitors' performance than do defenders. In their pursuit of efficiency and low cost, defenders are more influenced by data on internal improvement opportunities. Domestic and internationally-oriented firms differ only in the importance placed on external agencies' quality assessments. This is consistent with the importance that all firms with significant export activities place on attaining ISO 9000 quality certification. We found this to be even more true in India, where managers believe they must overcome the stigma of 'cheap labor but poor quality' when they compete in world markets.

Turning from data used in planning processes to data used to evaluate business process improvements, the greatest change is reflected in increased priority of projects that reduce process variation. This is consistent with heightened attention to quality as a result of increased competition.

Interestingly, although internationally-oriented firms are more likely to use quality assessments of external agencies in strategic planning, domestic firms are more likely to select improvement projects that reduce process variation. Domestic firms are also more likely to chose improvement projects that reduce cycle time. Consistent with their classification, defenders are more likely than prospectors to select improvement projects that reduce costs.

To summarize, it appears that there have been significant changes in firms' strategic planning processes in the wake of increased competition brought about by economic reforms. Top managers assert that employees at all levels of the organizational hierarchy are more involved and have a greater understanding of the firm's strategy. Differences among defenders and prospectors in who is involved and what data are employed are remarkably consistent with the strategic objectives that we impute to these classifications. Differences between domestic and internationally-oriented firms seem to stem from the likely role of international partners and the unique demands of selling in export markets, in the case of the latter and the familiarity of employees with Indian markets in the case of the former. We turn now to planning and control processes within the management accounting framework, bearing in mind this changing context of strategic planning.

Management Accounting Practices

Within management accounting research, planning and control has typically been equated with budgeting processes. In this section we consider three aspects of budgeting: the use of standard budgeting procedures, the firms' budgeting philosophy, and involvement of managers at different levels of the organizational hierarchy in budgeting processes (Table 5).

Panel A examines the extent to which firms employ standard procedures in developing budgets and long-range plans. Hofstede (1980, p. 142) finds that as a group, Indian's tolerate uncertainty well and do not invest heavily in uncertainty avoidance mechanisms. To the extent that budgeting and long-range planning are meant to reduce uncertainty, we might expect to find lower use or formalization of these practices among Indian firms. This study can not provide evidence on the level of use of these mechanisms relative to other cultures. Nonetheless, we do find that the greater degree of self-determination brought about by economic reforms has increased the use of standard budgeting and planning procedures since 1991. Predictably, defenders place greater importance on cost data when preparing their budgets than do prospectors. In contrast prospectors place greater importance on long-range plans--- consistent with their strategic objectives of developing new markets and products. The only marked difference between budgeting practices of domestic versus internationally-oriented firms is the emphasis placed on cost data. A possible explanation, in light of the earlier discussion of the role of international partners in strategy development, is that these partners provide 'deep pockets' and loosen budget constraints.

In Panel B of Table 5 we consider the organizational, and indirectly, the national budgeting philosophy of Indian managers. Since 1991, there has been almost no change in management attitudes regarding the 'ideal' degree of budget difficulty or in budget attainment. This result is consistent with Hofstede's assertion that cultural values are largely immutable. Nonetheless, approximately half of the respondents believe that their firms set more realistic budgets today than they did in 1991. This result resembles Hoque and Hopper's (1994) finding that it was the use rather than the existence of accounting practices that changed with changes to firms' economic circumstances. Increased budget accuracy may be a result of increased involvement in and understanding of corporate strategy. Another plausible explanation follows from reduced government intervention. In the absence of government intervention, firms have fewer incentives to manipulate budgets, misrepresent input requirements, or overspend as a means of altering allocations of government-controlled resources.

Differences among the four firm profiles emerge for two of the propositions. Prospectors claim greater success in meeting budgets than do defenders; a surprising result in light of defenders' attention to cost control. Similarly, domestic firms claim greater success than do internationally-oriented firms. As observed above, this may simply reflect more binding capital constraints on domestic firms, who lack ties to wealthy international partners. A second difference is found between domestic firms, who agree more strongly with the proposition that budgets should be difficult than do their internationally-oriented counterparts. We have no economic explanation for why this difference in attitudes exists. Certainly contingencies related to national culture may be a factor. As we discuss in the concluding section, we believe that this result may hint at a major opportunity for future research on the joint effects of strategy and national culture on management accounting practices.

Researchers typically introduce the moderating variable, 'budget participation,' in analyses of the relation between budget difficulty and budget attainment. In Table 5, Panel C we examine the extent to which managers at the divisional and the plant level participate in setting, revising and reviewing the budget. In the pooled results, we see a high level of participation at both organizational levels, with moderate increases in participation since 1991. If we equate Division Managers with Senior Management and Plant Managers with Middle Management, we can compare involvement in strategy development (Table 3) with involvement in budgeting. In this comparison, divisional managers are slightly less involved in budgeting than in strategy formation, while plant managers are considerably more involved in budgeting than in strategy formation. With one exception, defenders and prospectors involve the same people with the same intensity of involvement in all aspects of the budget cycle. Defenders involve plant managers at the budget setting stage more than do prospectors. Presumably, this reflects defenders' priority of cost management in conjunction with the realization that plant managers are the first line of cost control. Domestic firms also demonstrate greater involvement of plant managers in budget setting and budget reviews, although we offer no explanation, other than possible capital constraints, for this difference.

To summarize, budgeting processes appear to have changed in ways that are consistent with changes in the broader strategy development processes. Firms report greater use of standard procedures for developing budgets and long-range plans and greater employee involvement throughout the cycle of budget setting and revision. We find differences in budget attainment and the budgeting philosophy that appear to be related to firm-specific contingencies. Consistent with differences in strategic objectives, we find differences between defenders and prospectors in the relative importance of cost information to the budgeting process. We also find differences in the importance placed on long-range planning.

Evaluation and Performance Measurement Practices

We designed our survey instrument to collect data on two aspects of performance measurement and evaluation: organizational performance measurement practices and individual performance measurement, evaluation and compensation practices. Unfortunately, many firms were reluctant to provide information about evaluation of individuals. We provide limited evidence on individual performance evaluation using responses from the six firms who replied to our questions and focus the remaining discussion on organizational performance measures.

Organizational Performance Measurement and Evaluation

The design of organizational performance measures has gained increased popularity among U.S. management accounting researchers and practitioners in recent years, often under the label 'The Balanced Scorecard' (Kaplan and Norton 1992). We purposely avoided Western business jargon in the wording of survey questions; however, we sought answers to questions, the substance of which parallels concepts in the popular business press. In particular, we are interested in the extent to which a broad set of organizational performance measures are used, and whether these measures represent internal and external perspectives as well as financial and nonfinancial perspectives on organizational performance.

The upper portion of Table 6 assesses the extent to which firms collect a variety of organizational performance measures. In a related question, we asked the extent to which firms use the same data. We do not tabulate the results of the second question, because the relationships over time and between different firm profiles were identical, with one exception which is discussed below.

All of the measures enjoy a high level of use in 1996; however two stand out as gaining in importance since economic reforms: customer satisfaction and on-time delivery to customers. This is consistent with evidence on increased customer influence on strategy development and suggests a pattern of re-orienting managerial systems to supply managers with information relevant to the new competitive environment.

Defenders appear to take greater pains to measure both their own and their suppliers' quality, and to assess their on-time delivery performance than do prospectors. Again, as in the strategy development process, sourcing decisions appear to be driven more by efficiency and cost considerations than by strategic considerations. Notably missing is a distinction between defenders and prospectors on the collection of product costing data. This is the sole exception, mentioned earlier, to common patterns of variation noted between the survey question about data *use* as opposed to data *collection*. In this case, defenders and prospectors were observed to be similar in their data collection practices but different in their use of cost data. Predictably, defenders make more intense use of cost data (score = 4.1) than do prospectors (score = 3.6).

Domestic and internationally-oriented firms differ in their collection and use of competitor benchmarking data and product cost data. Domestic firms place greater emphasis on both performance measures than do internationally-oriented firms. The former result is very consistent with anecdotal evidence from our interactions with approximately 45 senior managers of these firms in a two-day seminar on performance measurement practices. Managers of firms that we characterize as domestic were especially curious about business practices in Western and Japanese firms. We attribute this curiosity, in part, to the commonly voiced expectation that international competition will increase when remaining pockets of political turbulence dissipate and as international firms begin to trust the Indian government to resist the temptation to nationalize their assets in times of economic hardship. A second plausible explanation for differences between domestic and internationally-oriented firms returns to a component of the definition of international firms as those with more international partners. It is possible that internationally-oriented firms use benchmarking data with the same intensity as domestic firms; however, by virtue of their relationships with partners, they may rely on internally acquired data on partners' performance rather than on competitors' performance. Unfortunately we did not anticipate this explanation in our survey design and consequently are unable to examine this possibility explicitly.

The lower portion of Table 6 provides evidence on the extent to which firms construct quantitative measures of customer satisfaction and on-time delivery, the two measures that appeared to gain most in popularity between 1991 and 1996 (upper portion of table). We benchmark these responses against what, in our experience, is the single most common nonfinancial measure of manufacturing firms: productivity. As expected, manufacturing productivity is, and has always been, widely used. Consistent with earlier results, customer satisfaction and on-time delivery have gained in popularity. A surprise was the extent to which firms capture customer satisfaction in quantitative measures.

In summary, it appears that changes in Indian firms' organizational performance measures mirror changes that have emerged in Western firms. Firms are incorporating more external perspectives in evaluating firm performance and these measures appear to have attained parity with the traditional measure of manufacturing productivity. Many nonfinancial measures are considered as important as cost information in evaluating organizational performance; although predictably, when data use rather than data collection is assessed, defenders report that cost and quality performance measures are most used by managers.

Individual Performance Evaluation and Compensation

Only six firms completed the portion of the survey related to individual performance evaluation and compensation. Non-response may be explained by two aspects of Indian culture and societal norms. First, as Hofstede (1980) documents, the Indians value collectivism over individualism. Secondly, Gandhi's message of asceticism as a means of throwing off economic domination has created a national perspective on materialism. More recently, Indians' tendency to portray themselves as being of humble financial means has been reinforced by high tax rates and a desire to avoid scrutiny by tax authorities (*The Economist*, January 21, 1995, p. 4) Together these contextual factors suggest that questions related to individual managers are likely to be viewed as threatening or inappropriate.[10]

The response of firms that completed this section of the survey is suggestive of changes one would expect to accompany deregulation and heightened competition. Because of the reduced sample we do not consider differences as a function of firms' strategic profiles. In Table 7 we present evidence on the use of explicit quantitative measures to evaluate and compensate individuals or groups. The interesting contrast

[10] Although many firms were not willing to complete this portion of the survey, we found this to be an area of intense interest during our field visits and a two-day seminar given to approximately 45 managers in India. We attribute this interest, in part, to the labor market competition described earlier. Indian firms fear that failure to match international competitors' compensation packages will result in a 'brain drain' within India, not unlike the selective exodus from India that was common during the pre-reform era.

that emerges from this table is the extent to which quantitative measures have emerged as an appropriate basis for evaluation of managers. Although it appears that quantitative measures are possibly more common among managers than among plant-level workers and staff, each firm that claimed to use such measures introduced them since 1991. In contrast, no firm has changed its methods of evaluating plant workers and staff. Certainly, these results are suggestive at best, so we do not attempt to draw conclusions from the meager evidence.

Cost Management Methods

As might be expected in light of the legacy of inefficiency of the pre-reform era, cost management, in particular cost reduction, is an important objective of all firms. On a five point scale, where 5 represents strong agreement with the proposition that "cost reductions in manufacturing are important to the future of the company", the average response is 4.79 with a standard deviation of only .43. When responses to the same assertion for 1996 and 1991 are compared, the average change is 1.07. When the assertion is modified to solicit opinions on whether cost reduction is the most important goal, the average response drops to 4.14 with a standard deviation of 1.03. (The latter question was used as a basis for grouping the firms into defender and prospector strategies.) For now, suffice it to say that cost reduction has become substantially more important to all firms in the wake of international trade liberalization.

Most surveys of cost management practices in the academic literature focus on technical aspects of cost systems. For example, questions that are commonly considered are:

- is process or product costing used?
- are product costs based on historical or actual costs
- if transfer pricing is employed, what is the basis of the transfer price?
- does the firm use the cost classifications: fixed, variable, controllable, uncontrollable?

Although we included these questions in the survey for completeness, the results are, in our opinion, uninteresting. We found no significant changes in these aspects of cost management between 1991 and 1996. Moreover, we found few differences among firms with different profiles, and those that did emerge had no obvious interpretation based on distinctions between the profiles. Consequently, we focus in this section on what we believe to be interesting questions related to the use of cost data rather than on the set of cost techniques employed. Specifically, we consider the questions:

- Who receives information on manufacturing costs?
- At what level of aggregation is cost information typically presented?
- What are the primary uses of cost information?

• Where do cost reduction ideas typically originate?

Table 8, Panel A presents evidence about which managers receive cost information.[11] As in our discussion of budgeting practices, it is useful to consider these responses against the backdrop of a more decentralized context for strategic planning processes. We see a similar pattern of increased involvement of middle managers and a particular emphasis on increasing marketing managers' awareness of product costs. As before, we interpret the latter result as a distinguishing feature of emerging economies faced with a legacy of central planning.

In Panel B, we consider the level of aggregation of cost data. A popular trend in cost management in the U.S. is aggregating costs for business processes (or, in common parlance 'activities'). Although we purposely avoided the language of activity-based costing in the survey, we sought information about the extent to which accountants are recasting cost data to provide costs of different 'cost objects'. The evidence of Panel B suggests that few Indian firms have adopted the 'activity' approach to costing. Nonetheless, it appears that costs are being presented in a more disaggregate form, as evidenced by the increased use of departmental and detailed product-level costing.

We turn now to the question of how cost information is used by the firm (Table 9). Consistent with the previous table in which 'departments' increased in relevance as costing objects, the single biggest change since 1991 is the use of cost data to evaluate the performance of production areas. The uses are presented in order of frequency of use to highlight the overall message of this table; namely that cost data are used primarily to affect new business (e.g., quoting and pricing, planning and forecasting) and new ways of doing business (e.g., identifying improvement opportunities). They are used much less frequently as performance evaluation mechanisms, and when they are used in this manner it is to evaluate large production groups rather than support groups or individuals.

Table 10 presents information about where ideas for cost reduction originate, in order of intensity of use. This ordering highlights the relative importance of external sources: customers and competitors; as compared with internal sources: employees. Customer visits and competitor benchmarking have increased most dramatically since 1991. Not surprising, in light of poor telecommunications in India, although customer visits are considered most useful, toll free customer service lines are rarely used.

An unusual result of Tables 8 and 9, which is conspicuous only by omission, is our failure to uncover any meaningful differences between defenders and prospectors in the provision and use of cost

---

[11] We delay until later the issue of whether production workers have access to cost data, and if so, whether this is associated with employee suggestions for cost reduction.

data. In light of the prominent role that cost reduction plays in defenders' strategies (borne out in Table 4, Panel B), we expected to find qualitative differences in the way that cost information is used. Our expectations of differences are fulfilled, but in an unexpected way when we examine sources of ideas for cost reduction (Table 10). We expected defenders to make more intensive use of sources of cost reduction ideas and are surprised by results to the contrary. Prospectors make more intensive use of methods to generate customer ideas for cost reduction, including visits, surveys, and the use of warranties. They are also more likely to get ideas from external consultants. We might have interpreted these results as reflecting a penchant for prospectors to 'prospect' for new ideas outside the firm (others have termed this 'environmental scanning'); however, we find that prospectors are also more likely to survey employees for ideas. In a paradoxical result, it appears that prospectors are pursuing cost reduction with greater intensity than defenders despite their claims that cost reduction is *not* the most important goal of the firm.

We had no similar expectations of differences between domestic versus internationally-oriented firms; however, it appears that the domestic firms make more intensive use of virtually every source of cost reduction ideas. They are considerably more likely than internationally-oriented firms to engage in employee surveys and interviews, and to seek customers' thoughts through visits, mail surveys, and even toll-free service lines. The domestic firms are also more likely to engage and use the suggestions of external consultants.

In summary, it appears that changes in the dissemination of cost data mirror broad trends toward increased involvement of managers at all levels of the organization. Cost data are presented in more disaggregate forms that are more amenable to analysis and action. Firms are also scanning the internal and external environment more aggressively for ideas for cost reduction. Consistent with earlier results, customers are gaining power and voice with the advent of economic reforms.

The Changing Role of Accountants in Organizations

The previous sections have examined how management accounting practices have changed in Indian firms since the enactment of economic reforms. In this section we consider how attitudes about accounting data have changed and how the work of accountants has changed. A basic assumption of the previous sections is that management accounting provides useful information. We did not want to preclude the possibility that managers of these firms do not share our assumption. Consequently, in Table 11 we present evidence on the quality of firms' accounting and information systems (seemingly a prerequisite to usefulness), employees' and managers' access to data from the accounting system (a prerequisite to use), and the influence of accounting data on decisions, their actual use.

Respondents agree that the firm's information systems, including product costing systems, are reasonably accurate and believe that this is more true in 1996 than in 1991. However there are marked differences for firms of different profiles. Prospectors and domestically-oriented firms are consistently more likely to view their information systems as accurate and presumably as useful. Turning to the issue of access, there is considerably greater dissemination of cost data to managers than to production workers for all firms. Dramatic differences in access to data emerge between domestic firms, which provide a high level of access, and internationally-oriented firms. We find these differences mirrored in the ultimate use of cost data. Internationally-oriented firms are considerable less likely than domestic firms to report that cost data are used in decision-making. Echoing earlier results, respondents typically attribute the greatest use of cost data to the head of marketing. This is consistent with evidence of Table 9 that costs are used primarily in the context of new business rather than in performance evaluation and control.

In earlier sections we have presented evidence that suggests that firms have altered their management accounting practices in response to a changing economic environment. Table 12, which examines how the work of accountants has changed since 1991, is a fitting summary of this research. The chief financial officer of each firm was asked to assign 100 points to six major types of work typically performed by corporate accounting departments based on the demands that these tasks placed on accounting resources in 1991 and in 1996. Although changes in resources devoted to each task are small, on average 7 percent more resources are being devoted to internal, management accounting practices in 1996 than in 1991. These resources have been diverted from what have typically been classified as financial accounting tasks: external reporting, auditing, and tax accounting. Although our data suggest a realignment of priorities of the accounting department toward management accounting issues, quotes from top managers at three firms suggest that these changes are a small start toward a profound re-conceptualization of the role of accountants.

> "Today the responsibility of accounting is to provide timely information support to operating management for decision support. To meet these needs, accounting experts with backgrounds in engineering and economics will have to be considered."

> "We don't need bookkeepers, we need management accountants with business acumen... who communicate well and can influence line managers."

> "The Accounting Department should take a proactive role in pricing, managing inventory levels, make/buy decisions and capital investment analysis."

When we heard these words, we were struck by the incongruity of what we were hearing and our surroundings. We have heard similar words spoken by managers in the U.S. and Japan. Since 1990, we have also heard them spoken by managers in Poland and Romania. In short, with increased global competition, it appears that management accounting practices are gaining importance and changing in substance. A major challenge for firms and accounting educators is ensuring that accountants with the requisite skills are available to meet the demands of the new environment.

DIRECTIONS FOR FUTURE RESEARCH

Although examples of empirical tests of contingency theory abound in the management accounting literature, many issues remain. Based on our review of the extant literature and limitations of this study, we consider three avenues to be most promising for future inquiry: integration of strategy-based and culture-based tests of contingency theory; use of panel data as a means of distinguishing contextual and cultural determinants of management accounting practices; and consideration of a broad set of management accounting practices as well as practices from other disciplines as a means of developing a contingent systems perspective. The following section briefly discusses these proposed research opportunities.

We have identified two contingencies that have been considered in relation to management accounting practices: competitive strategies and national culture. Notably absent from the accounting literature are efforts to bring these research streams together.[12] An intriguing issue that emerged when we discovered the extent to which Indian firms have entered into strategic alliances with international partners is the role these partnerships play in the evolution of management accounting practices.[13] Although sample size limitations restricted our ability to investigate these issues, we hypothesize that differences between the national culture of the international partner and the Indian firm and the role that the partnership plays in the international partner's global network provides testable hypotheses about the direction of change following the formation of such a relationship. Firth (1996) provides preliminary evidence of a relation between changes in management accounting techniques used by Chinese state-owned enterprises (SOEs) before and after entering into a joint venture and the practices used by the foreign partner. He further documents a relation between the degree of change and the similarity between the national culture of the foreign and the Chinese firm. Anand and Delios (1996) document differences in the degree of transfer of management skills

[12] Child and Markoczy (1993) combine contextual variables related to strategic alliances and national culture of joint venture partners to examine contingencies in managerial behavior.

[13] Gray (1991) raised a related question in the context of international joint ventures. He asked whether differences in accounting practices gave advantage to one or the other partner in an East-West joint venture and to what extent accounting differences were a source of disagreement between partners.

between Japanese joint ventures in China and India and attribute these differences to the strategic intent of the Japanese firm in entering the partnership. Combining the results of our research with those of Firth and Anand and Delios, we hypothesize that the nature of the partnership, specifically, the extent to which partners form long-lived attachments (e.g., joint ventures) versus brief, market-based transactions (e.g., technology licensing), the degree of control exercised by the state prior to liberalization (e.g., SOE versus privately held firms in a controlled economy), the strategy of the local firm following economic reform, and the integration of the firm with world markets beyond those reflected in international business partnerships will affect the degree to which management accounting practices change to accommodate international differences between the partners' management accounting practices.

An enduring debate in fields as diverse as genetics, education, and organizational studies is the extent to which individual and organizational responses to stimuli are determined by 'culture' versus 'context.' In the management accounting literature, previous studies that examine management accounting implications of national culture employ cross-sectional comparisons of similar firms or international divisions of a single firm. The choice of similar research sites is intended to control for context, so that differences may be attributed solely to culture. Conversely, studies that aim to focus on contextual factors, such as competitive strategy, use cross-sectional comparisons of firms with similar cultures. To our knowledge, these two factors have not been considered simultaneously, probably because of the challenging research design that simultaneous consideration of culture and context require. We suggested in our introductory remarks that the results of this study are pertinent in many economies that have undergone dramatic economic transition; for example, the countries of Central Europe and the former Soviet Union. Parallels between the shifting contexts encountered by firms in these countries suggests a cross-sectional, longitudinal research design in which management accounting practices in firms from countries with very different cultures (e.g., India and Poland) are compared before and after shifts in environmental context. Such a study would provide the first comparative evidence on the influence of context and culture on management accounting practices.

Finally, and most ambitious of all, we consider opportunities to develop a broader, conceptualization of the determinants of management practices, of which management accounting practices are only a small piece. Empirical tests of contingency theory have typically focused on determinants of a narrow set of management accounting practices; for example, preparation of and performance to budgets. This study has attempted to take a broader view of management accounting practices as a means of detecting patterns of change. Clearly greater understanding of both individual practices and macroscopic relationships among practices is needed. However we found very little of the latter in the extant management accounting literature. We were more successful when we broadened our search to include other management disciplines. For example, in the field of operations management we found several studies that attempt to characterize international differences in manufacturing practices, broadly defined (e.g. Vastag & Whybark, 1994; DeMeyer et. al, 1989; Womack et. Al, 1990). Ironically, it was Mueller's (1967) examination of similarities and differences in broad characterizations of accounting practices that opened the sub-discipline of international accounting. However, Mueller and those who subsequently contributed to this research stream focused on differences in financial accounting practices. This suggests a parallel study of international management accounting practices, and, perhaps more radically, a multi-disciplinary study that considers management accounting practices jointly with practices in the fields of operations management, marketing, or, less radically, financial accounting.

We have described three avenues for research in international management accounting that most intrigue us after our all-to-brief interaction with a select group of Indian firms. What is clear to us, after together spending more than 25 weeks between 1993 and 1996 in firms in emerging and transitional economies is that firms in these countries represent an unparalleled opportunity to study the evolution of management accounting practices in a relatively short time period. Moreover, the changes required of firms faced, often for the first time, with profit objectives, the need to attract and retain skilled employees and the opportunity to choose investments and suppliers have direct implications for all aspects of management accounting: planning and control, performance measurement and evaluation, and cost management.

BIBLIOGRAPHY

Anand, J. & Delios, A. (1996). Competing globally: How Japanese MNCs have matched goals and strategies in India and China. *Columbia Journal of World Business*. Fall. 50-62.

Bruns, W. & Waterhouse, J. (1975). Budgetary control and organizational structure. *Journal of Accounting Research*. 19. 177-203.

Child, J. & Markoczy, L. (1993). Host-Country managerial behavior and learning in Chinese and Hungarian joint ventures. *Journal of Management Studies*. 30 (4). 611-631.

Chow, L. M., Chau, C. K. & Gray, S. J. (1995). Accounting reforms in China: Cultural constraints on implementation and development. *Accounting and Business Research*. 26 (1). 29-49.

Daft, R. L. & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*. 9. 284-295.

DeMeyer, A., Nakane, J., Miller, J. & Ferdows, K. (1989). Flexibility: The next competitive battle, The Manufacturing Futures Survey. *Strategic Management Journal*. 10. 135-144.

Dent, J. (1990). Strategy, organization and control: Some possibilities for accounting research. *Accounting, Organizations and Society*. 15 (1). 3-25.

Doty D. H., Glick, W. H. & Huber, G. P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*. 36 (6). 1196-1250.

The Economist, Survey of India (21 January 1995). 3-30.

Firth, M. (1996). The diffusion of managerial accounting procedures in the People's Republic of China and the influence of foreign partnered joint ventures. *Accounting, Organizations and Society*. 21 (7/8). 629-654.

Fisher, J. (1995). Contingency-based research on management control systems: Categorization by level of complexity. *Journal of Accounting Literature*. 14. 24-53.

Frucot, V. & Shearon, W. T. (1991). Budgetary participation, locus of control, and Mexican managerial performance and job satisfaction. *The Accounting Review*. 66 (1). 80-99.

Garrod, N. & McLeay, S. (1996). The Accounting implications of political and economic reform in Central Europe. In Garrod, N. & McLeay, S. (Eds.) *Accounting in transition* (pp. 1-11). New York, NY: Routledge.

Gernon, H. & Wallace, R. S. O. (1995). International accounting research: A review of its ecology, contending theories and methodologies. *Journal of Accounting Literature*. 14. 54-106.

Ginzberg, M. (1980). An organizational contingencies view of accounting and information systems implementation. *Accounting, Organizations and Society*. 5 (6). 369-382.

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). 125-136.

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

Govindarajan, V. (1988). A contingency approach to strategy implementation at the business-unit level: Integrating administrative mechanisms with strategy. *Academy of Management Journal*. 31 (12). 28-53.

Govindarajan V. & Fisher, J. (1990). Impact of output versus behavior control and resource sharing on performance: Strategy as a mediating variable. *Academy of Management Journal*. 33 (6). 259-285.

Gray, S. J. (1988). Towards a theory of cultural influence on the development of accounting systems internationally. *ABACUS*. 24(1). 1-15.

Gray, S. J. & Roberts, C. B. (1991). East-West accounting issues: A new agenda. *Accounting Horizons*. 2. 42-50.

Groves, T., Hong, Y., McMillan, J. & Naughton, B. (1994). Autonomy and incentives in Chinese state enterprises. *The Quarterly Journal of Economics*. 109 (1). 183-209.

Hayes, D. (1977). The contingency theory of management accounting. *The Accounting Review*. 52 (1). 22-39.

Hofstede, G. (1980) *Culture's consequences*. London: Sage Publications.

Hoque, Z. & Hopper, T. (1994) Rationality, accounting and politics: A case study of management control in a Bangladeshi jute mill. *Management Accounting Research*. 5. 5-30.

Jaruga, A. (1996). Accounting in socialist countries: The beginnings of reform. In Garrod, N. & McLeay, S. (Eds.) *Accounting in transition* (pp. 12-27). New York, NY: Routledge.

Kaplan, R. S. & Norton, D. (1992). The balanced scorecard--- measures that drive performance. *Harvard Business Review*. 70 (1). 71-79.

Lanen, W. N. & Larcker, D. (1992). Executive compensation contract adoption in the electric utility industry. *Journal of Accounting Research*. 30(1). 70-93.

Lawrence, P. R. & Lorsch, J. W. (1967). *Organization and environment*. Boston, MA: Harvard Business School Press.

Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*. (13). 111-125.

Lodge, G. C. & Bhasin, A. (1995). India in the 1990's. Harvard Business School Case Study #9-795-119.

Miles, R. & Snow, C. (1978). *Organizational strategy, structure and process.* New York, NY: McGraw Hill.

Mintzberg, H. T. (1979). *The structuring of organizations.* Englewood Cliffs, NJ: Prentice-Hall.

Mueller, G. G. (1967). *International accounting.* New York, NY: Macmillan.

O'Connor, N. (1995). The influence of organizational culture on the usefulness of budget participation by Singaporean-Chinese managers. *Accounting, Organizations and Society.* 20 (5). 383-403.

Perera, M. H. B. (1989). Towards a framework to analyze the impact of culture on accounting. *International Journal of Accounting.* 24(1). 42-56.

Perrow, C. (1967). A framework for the comparative analysis of organizations. *American Sociological Review.* 56(1). 194-208.

Porter, M. (1980). *Competitive strategy.* New York, NY: The Free Press.

Pourjalali. H. & Meek, G. (1995). Accounting and culture: The case of Iran. *Research in Accounting in Emerging Economies.* 3. 3-17.

Prahalad, C. K. & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review.* 3. 79-91.

Simons, R. (1987). Accounting control systems and business strategy: An empirical analysis. *Accounting, Organizations and Society.* 12 (4). 357-374.

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

Skousen, C. R. & Yang, J. (1988). Western management accounting and the economic reforms of China. *Accounting, Organizations and Society.* 13 (2). 201-206.

Thomas, A. (1989). The effects of organisational culture on choices of accounting methods. *Accounting and Business Review.* 19 (76). 363-378.

Vastag, G. & Whybark, D. C. (1995). American and European manufacturing practices: An analytical framework and comparisons. *Journal of Operations Management.* 12 (1). 1-11.

Waterhouse, J. & Tiessen, P. (1978). A contingency framework for management accounting systems research. *Accounting, Organization and Society.* 3 (3). 65-76.

Williamson, O. (1975). *Markets and hierarchies: Analysis and antitrust implications.* New York, NY: The Free Press.

Womack, J. P, Jones, D. T. & Roos, D. (1990). *The machine that changed the world.* New York, NY: Harper Collins Publishers.

Woodward, J. (1965). *Industrial organization: Theory and practice.* Oxford: Oxford University Press.

Yin, R. K. (1989). *Case study research: Design and methods*. London: Sage Publications.

Young, S. M. & Selto, F. H. (1991). New manufacturing practices and cost management: A review of the literature and directions for research. *Journal of Accounting Literature*. 10. 265-298

Zhou, Z. H., (1988). Chinese accounting systems and practices. *Accounting, Organizations and Society*. 13 (2). 207-224.

Figure 1
Basic Contingency Framework

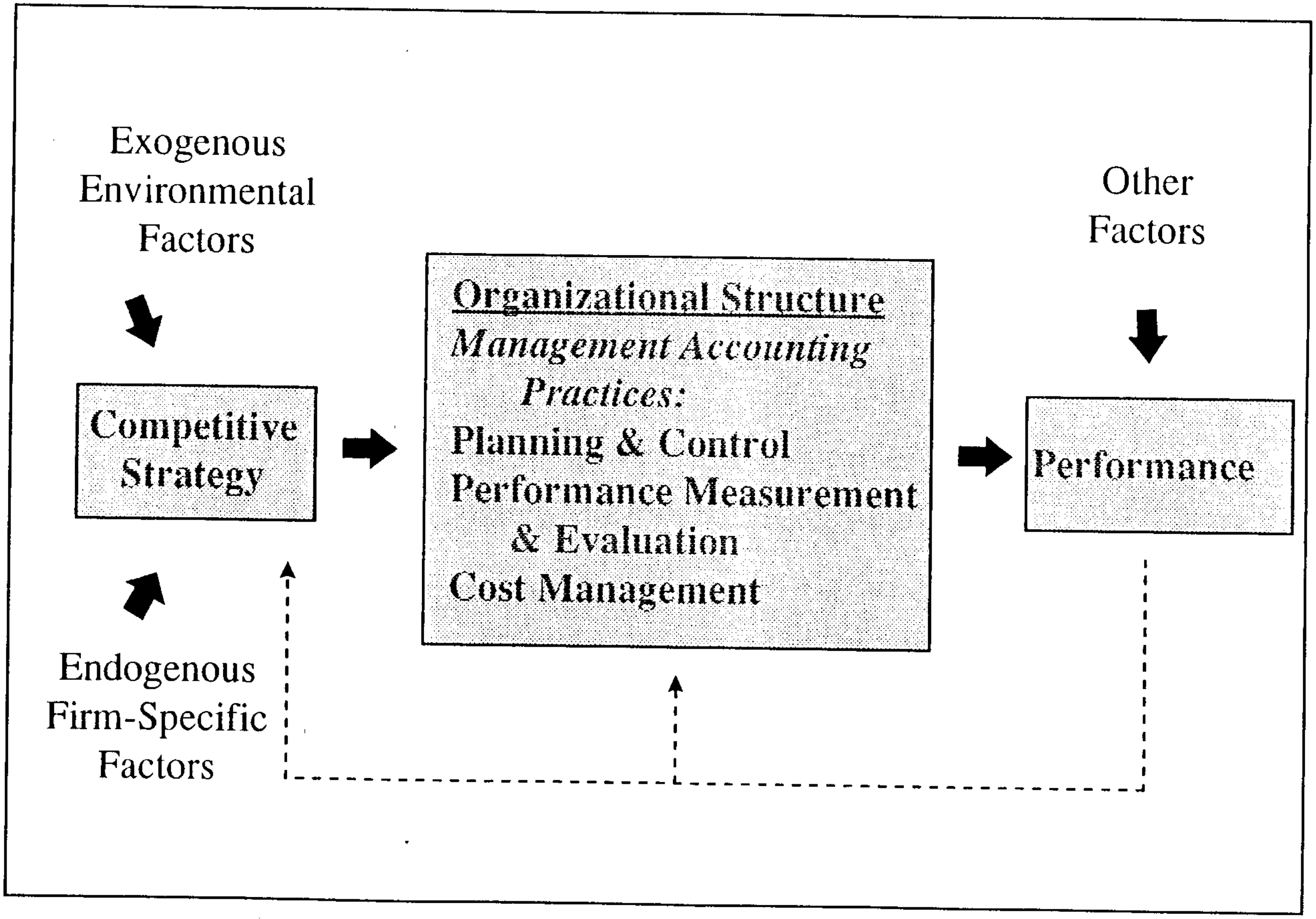

Figure 2
Research Design: Number of Cases by Type

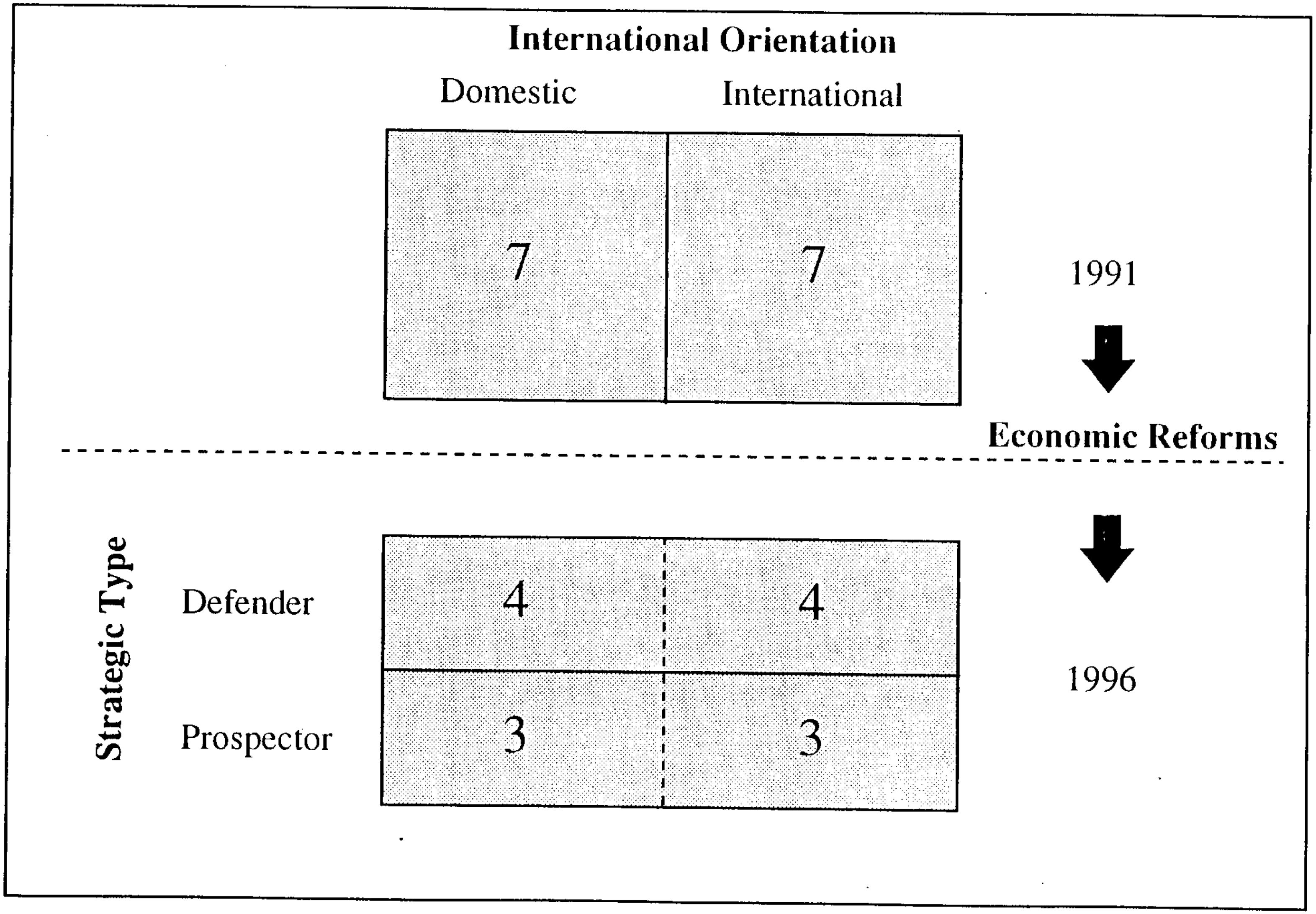

Table 1
Survey Respondent Job Titles

Survey Part	*Survey Focus*	*Designated Respondent*	*Number of survey questions*	*Number of questions (including multiple part questions)*
Part I:	Company Descriptive Statistics	General Manager or Vice-president of Production Operations	74	255
Part II:	Survey of Competitive Strategy	Chief Executive Officer	30	209
Part III	Survey of Cost Management Practices	General Manager or Vice-president of Finance	29	164
Part IV	Survey of Planning and Control Practices	General Manager or Vice-president of Finance	40	196
Part V	Survey of Financial and Nonfinancial Performance Measures and Evaluation Practices	General Manager or Vice-president of Quality Assurance	33	198
TOTAL			206	1022

Table 2
Sample Stratification

PANEL A: Firm Classifications and Industry

Firm ID Number	Industry	Site Visit and Management Interviews	International (I) or Domestic (D) outlook in 1991	Defender (D) or Prospector (P)
1	electronics		I	D
2	transportation equipment: machined parts	V	I	P
3	chemicals and fragrances	V	I	P
4	automotive parts: machining and assembly		D.	D
5	automotive parts: machining and assembly		I	D
6	automotive parts: machining and assembly	V	I	P
7	foundry operations and part fabrication		D	D
8	electronics		I	D
9	transportation: automotive		D	P
10	transportation: farm equipment	V	D	D
11	fasteners	V	D	P
12	textiles	V	D	D
13	electronics		I	D
14	electronics	V	D	P

Table 2 (continued)
Sample Stratification

PANEL B:

Profile of "International" and "Domestic" sub-samples along dimensions used to classify firms

1991 Data	International (N=7)	Domestic (N=7)
Average percent of total direct materials costs represented by parts purchased from domestic suppliers	69%	98 %
Average percent of total direct materials costs represented by raw materials purchased from domestic suppliers	55 %	83 %
Average percent sales in domestic markets	83 %	97 %
Average percent domestic unit volume	80 %	97 %
Average share of domestic market for product that generates most profit	45 %	48 %
Average share of domestic market of primary international competitor for product that generates most profit	13 %	0 %
Average share of domestic market of primary domestic competitor for product that generates most profit	33 %	21 %
Number of firms with alliances with Western partners, (For these firms, intensity of 'international outreach', max=6)	4 (3.75)	3 (1.0)
Number of firms with alliances with Japanese partners, (For these firms, intensity of 'international outreach', max=6)	3 (2.50)	1 (1.0)

PANEL C:

Profile of "Defender" and "Prospector" sub-samples along dimensions used to classify firms

1996 Data	Prospectors (N=6)	Defenders (N=8)
Average summated score on competitive priorities related to Defender Strategy (Max =100)	35	41
Average summated score on competitive priorities related to Prospector Strategy (Max =100)	65	60
Average agreement of importance of 'Defender' product characteristics (1-5 scale)	3.6	4.5
Average agreement of importance of 'Prospector' product characteristics (1-5 scale)	3.4	3.6
Average priority (0-100%) assigned to 'Defender' improvement opportunities	50 %	60 %
Average priority (0-100%) assigned to 'Prospector' improvement opportunities	50 %	40 %
Average importance of supplier selection (1-5 scale, avg. for response to 10 criteria for supplier selection)	4.3	3.7
Average response to: "Cost reduction is the most important goal in this firm's manufacturing operations" (1-5 scale)	3.50	4.63
Average percent 'fixed' costs	47 %	54 %
Average R&D expense as a percent of revenues	2.4 %	.7 %
Average Marketing & Distribution expense as a percent of revenues	6.0 %	3.1 %
Average percent increase in employment over 1991 level	43 %	4%
Average percent increase in new product introductions over 1991 level	66 %	46 %
Average change in product life cycles 1991-6 (years)	- 1.7	- 1.0
Average annual inventory turns (Average Annual Sales/ Average Finished Goods Inventory)	48.0	72.7

Table 3

Strategic Planning: Who is involved and what is their level of understanding ?a

	Average extent to which respondents agree that these groups are *involved in developing* the strategic plan in 1996 (1=Strongly Disagree, 5=Strongly Agree)					Average change since 1991, No. firms (+/ 0 /-)		Average extent to which respondents agree that these groups *fully understand* the strategic plan in 1996 (1=Strongly Disagree, 5=Strongly Agree)					Average change since 1991, No. firms (+/ 0 /-)	
	ALL	Def.	Pros.	Dom.	Int.	ALL FIRMS		ALL	Def.	Pros.	Dom.	Int.	ALL FIRMS	
HIERARCHY														
Senior Management	4.5	4.0	5.0	4.8	4.3	.30	(3-6-1)	4.6	4.2	5.0	4.8	4.5	.90	(7-3-0)
Middle Management	3.7	3.4	4.0	3.8	3.7	.90	(7-3-0)	3.7	3.6	3.8	4.0	3.5	1.10	(8-2-0)
First-line Supervisors	2.2	2.0	2.4	2.3	2.2	.50	(5-5-0)	2.7	2.6	2.8	3.0	2.5	.70	(5-5-0)
Production Employees	1.8	1.6	2.0	1.8	1.8	.50	(5-5-0)	2.0	2.0	2.0	2.3	1.8	.30	(2-8-0)
FUNCTION														
Finance	4.2	4.2	4.2	4.0	4.3	.30	(3-6-1)							
Human Resources	3.8	3.6	4.0	4.3	3.5	1.20	(7-3-0)							
Marketing and Sales	4.5	4.2	4.8	4.8	4.3	.50	(4-6-0)							
Operations	3.7	3.4	4.0	3.8	3.7	.40	(4-6-0)							
Planning	4.0	4.0	4.0	4.5	3.7	1.00	(7-3-0)							
Research & Development	4.0	3.6	4.4	4.5	3.7	.70	(6-4-0)							
EXTERNAL VIEWS														
Customers	3.6	3.6	3.6	3.3	3.8	.40	(6-4-0)	2.9	3.3	2.6	2.8	3.0	.80	(5-5-0)
Suppliers	2.7	3.0	2.4	2.5	2.8	.36	(4-6-0)	3.1	3.3	3.0	3.3	3.0	1.00	(6-4-0)
Investors/ Owners	3.8	4.2	3.4	3.8	3.8	.10	(1-8-1)	3.7	3.8	3.6	3.8	3.7	.90	(6-4-0)
External Consultants	3.2	3.0	3.4	3.8	2.8	.60	(5-4-1)							
Government Agencies	2.3	2.4	2.2	2.5	2.2	-.30	(0-9-1)							

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.

Table 4

Data used in Developing Competitive Strategy and Tactical Plans [a]

PANEL A: Information used in strategic planning

Types of Data	Average extent to which respondents agree that these data are used in the planning process 1996 (1=Strongly Disagree, 5=Strongly Agree)					Average change since 1991	No. of firms reporting (increase, no change, decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Market Share Growth	4.6	4.4	4.8	4.7	4.5	.67	(6-5-0)
Measures of Competitor Performance	4.1	3.9	4.3	4.0	4.2	.83	(8-4-0)
External agencies quality assessments	3.8	3.7	3.8	3.3	4.3	.75	(6-6-0)
Customer Satisfaction Ratings	4.8	4.6	5.0	4.7	4.8	1.33	(9-3-0)
Customer Expectations	3.8	3.8	3.7	3.8	3.7	1.25	(9-3-0)
Improvement Ideas	3.9	4.2	3.7	4.0	3.9	.58	(6-6-0)

PANEL B: Primary basis for selecting process improvement projects

	Average extent to which respondents agree that this is a basis for selecting process improvements in 1996					Average change since 1991	No. of firms reporting (increase, no change, decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Fewer Customer Complaints	4.7	4.6	4.8	4.6	4.8	.58	(6-6-0)
Reduced Process Variation	4.5	4.5	4.5	4.7	4.3	1.25	(9-3-0)
Reduced Costs	4.5	4.7	4.2	4.4	4.5	.58	(6-5-1)
Fewer Errors	4.4	4.3	4.5	4.3	4.5	.75	(7-5-0)
Reduced Cycle Time	4.1	4.0	4.2	4.4	3.7	.58	(6-5-1)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.

Table 5
Management Accounting Planning and Control Practices[a]

PANEL A: Use of formal planning and control practices

Planning & Control Practice	Average extent to which respondents agree that these practices are used in 1996 (5=Strongly Agree, 1= Strongly Disagree) ALL	Def.	Pros.	Dom.	Int.	Average change since 1991 ALL	No. of firms reporting (increase, no change, and decrease)
Standard procedures for developing annual budgets	4.2	4.0	4.3	4.3	4.0	.92	(7-5-0)
Standard procedures for developing long-term plans	3.2	3.1	3.2	3.1	3.2	.58	(6-6-0)
Use of cost data in developing budgets	4.4	4.7	4.0	4.6	4.2	.58	(5-7-0)
Preparation of long-range budgets	3.4	3.0	3.8	3.3	3.5	.73	(5-6-0)
Standard procedures for budget & capital appropriation requests	3.9	3.9	4.0	3.9	4.0	.42	(3-9-0)

PANEL B: Budget philosophy and attainment

PROPOSITION	Average extent to which respondents agree with proposition in 1996 (5=Strongly Agree, 1= Strongly Disagree) ALL	Def.	Pros.	Dom.	Int.	Average change since 1991 ALL	No. of firms reporting (increase, no change, and decrease)
Budgets are generally met	3.5	3.1	3.8	3.7	3.2	.08	(1-11-0)
Budgets are generally realistic	4.1	4.0	4.2	4.1	4.0	.50	(6-6-0)
Budget goals should be difficult to attain	3.1	3.0	3.2	3.3	2.8	.08	(1-11-0)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.

Table 5 (continued)
Management Accounting Planning and Control Practices

PANEL C: Participation in establishing, reviewing and revising the budget

	Average extent to which respondents agree that these individuals participate in 1996[a] (5=Strongly Agree, 1= Strongly Disagree)					Average change since 1991	No. of firms reporting (increase, no change, and decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Participation in Setting Budget							
Division or Group Managers	4.3	4.3	4.3	4.4	4.2	.92	(7-5-0)
Plant Managers	4.2	4.4	4.0	4.4	4.0	.58	(7-5-0)
Participation in Budget Reviews							
Division or Group Managers	4.2	4.3	4.2	4.3	4.2	.58	(7-5-0)
Plant Managers	4.2	4.3	4.0	4.4	3.8	.58	(7-5-0)

Job Titles	Number of firms reporting participation of these individuals in formal budget revisions in 1996[b]	No. of firms reporting (increase, no change, and decrease)
Chief Executive Officer	10	(1-10-0)
Senior Corporate Managers	10	(3-8-0)
Plant Managers	10	(2-9-0)
Plant Staff	6	(2-9-0)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.
[b] No differences between defenders and prospectors or between domestic and international firms were observed.

Table 6
Organizational Performance Measurement and Evaluation

Organizational Performance Measures	Average extent to which respondents agree that these measures are collected in 1996 [a] (5=Strongly Agree, 1= Strongly Disagree)					Average change since 1991	No. of firms reporting (increase, no change, decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Employee Attitudes & Morale	3.5	3.6	3.3	3.5	3.4	.83	(7-4-1)
Customer Satisfaction	3.8	3.8	3.7	3.8	3.7	1.25	(9-3-0)
Competitor's Performance	3.8	3.7	4.0	4.2	3.6	.58	(5-7-0)
Supplier Quality	4.0	4.2	3.8	4.2	3.9	.75	(9-2-1)
On Time Delivery to Customers	4.0	4.2	3.8	4.0	4.0	1.42	(9-3-0)
Unit Product Costs	4.1	4.1	4.0	4.3	3.9	.83	(7-4-1)
Product Quality Failures	4.1	4.3	3.8	4.0	4.1	.75	(7-5-0)

	Number of firms reporting use of quantitative performance measures in 1996 [b]	No. of firms reporting (increase, no change, decrease)
Customer Satisfaction	9	(5-6-0)
Manufacturing Productivity	9	(2-10-0)
On Time Delivery to Customers	10	(4-7-0)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.
[b] No differences between defenders and prospectors or between domestic and international firms were observed.

Table 7
Individual Performance Measurement and Evaluation

Job Title	Percent of firms reporting use of explicit quantitative performance measures to evaluate individual or group, 1996 [a]	No. of firms reporting (increase, no change, and decrease)
Production Workers	38%	(0-6-0)
Plant Staff	13%	(0-6-0)
Plant Management	50%	(3-3-0)
Corporate Staff Managers	33%	(2-4-0)
Senior Corporate Managers	50%	(3-3-0)
Chief Executive Officer	50%	(3-3-0)

[a] No differences between defenders and prospectors or between domestic and international firms were observed.

Table 8

Cost Information: Who receives it and in what form?

PANEL A: Dissemination of cost information

Job Title	Percent of firms reporting provision of manufacturing costs to this person in 1996 [a]	No. of firms reporting (increase, no change, decrease)
Plant Production Manager	82%	(4-7-0)
Plant Manager	91%	(5-6-0)
Division Manager	73%	(1-10-0)
Marketing Manager	82%	(5-6-0)
Product Manager	45%	(2-9-0)
Chief Financial Officer	70%	(1-10-0)
Chief Executive Officer	100%	(0-11-0)

PANEL B: Aggregation of costs for reporting purposes

Level of Aggregation	Percent of firms Reporting Costs at this Level in 1996	No. of firms reporting (increase, no change, decrease)
Product	73%	(5-6-0)
Process	45%	(3-8-0)
Department	91%	(6-5-0)
Plant	73%	(3-8-0)
Firm	73%	(2-8-1)

[a] No differences between defenders and prospectors or between domestic and international firms were observed.

Table 9
Uses of Cost Data

Use of Cost Information	Percent of firms reporting use of cost data for these purposes in 1996 [a]	No. of firms reporting (increase, no change, and decrease)
Quoting new business	100 %	(0-14-0)
Evaluating investment projects	100 %	(2-12-0)
Developing business plans and forecasts	100 %	(1-13-0)
Basis for product pricing	93 %	(0-14-0)
Identifying improvement opportunities	86 %	(2-12-0)
Influencing new product designs	86 %	(1-13-0)
Determining whether to outsource production processes	79 %	(2-12-0)
Evaluating the performance of production areas	71 %	(4-10-0)
Determining whether to make or buy components	71 %	(2-12-0)
Evaluating the performance of individual managers	43 %	(2-12-0)
Evaluating the performance of Support activities	29 %	(2-12-0)

[a] No differences between defenders and prospectors or between domestic and international firms were observed.

Table 10
Sources of cost reduction ideas

Sources of Cost Reduction Opportunities	Average extent to which respondents agree that this approach is used in 1996 [a] (5=Strongly Agree, 1= Strongly Disagree)					Average change in use since 1991	No. of firms reporting (increase, no change, decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Customer Visits	4.5	4.3	4.8	4.9	4.2	.75	(7-5-0)
Customer Phone Surveys	3.9	3.4	4.3	4.0	3.7	.50	(5-7-0)
Competitor Benchmarking	3.7	3.6	3.8	3.7	3.7	1.00	(9-5-0)
Employee Suggestion Program	3.6	3.6	3.5	3.7	3.4	.50	(6-7-1)
Problem Solving Teams	3.6	3.5	3.7	3.7	3.4	.57	(6-8-0)
Outside Consultants	3.2	3.0	3.5	3.7	2.7	.29	(4-9-1)
Customer Mail Surveys	3.0	3.0	3.0	3.4	2.5	.42	(5-7-0)
Customer Suggestions	3.0	2.9	3.2	3.1	2.9	.50	(3-11-0)
Product Warranties	2.8	2.5	3.2	3.0	2.7	.42	(3-8-0)
Employee Survey	2.8	2.6	3.0	3.1	2.4	.43	(3-11-0)
Employee Interviews	2.5	2.6	2.5	2.8	2.3	.23	(3-9-1)
Toll-free Customer Service	2.0	2.1	1.8	2.3	1.7	0	(0-11-0)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.

Table 11
Attitudes about the Use and Usefulness of Accounting Data [a]

PROPOSITION	Average agreement with proposition (5=Strongly Agree, 1= Strongly Disagree)					Average change since 1991	No. of firms reporting (increase, no change, decrease)
	ALL	Def.	Pros.	Dom.	Int.	ALL	
Information System Data Integrity							
The firm's information systems provide accurate data	3.7	3.4	4.2	4.0	3.4	.57	(8-5-1)
The firm's information systems contain many data errors (REVERSED)	3.4	3.0	4.0	3.9	3.0	.21	(4-9-1)
The firm's product costing systems provide accurate data	3.6	3.6	3.7	4.0	3.3	.64	(5-9-0)
Access to Cost Data							
Official communications in this company frequently contain information about cost reduction goals and achievements	3.6	3.5	3.8	3.7	3.6	.86	(7-7-0)
Accountants often meet with corporate managers to discuss cost issues	3.3	3.3	3.3	3.6	3.0	.27	(3-8-0)
Accountants often meet with manufacturing managers to discuss cost issues	3.4	3.3	3.5	3.9	2.8	.58	(5-7-0)
Generally all employees have access to cost data	2.6	2.9	2.2	3.0	2.1	.29	(3-10-1)
Production workers have access to cost data	1.9	1.8	2.0	2.1	1.6	.00	(0-14-0)
Production workers are aware of the cost of products they produce	2.1	2.0	2.3	2.4	1.9	.07	(1-13-0)
Influence of Cost Data on Decisions							
The firm collects data and creates reports that aren't used (REVERSED)	3.1	3.0	3.2	3.2	3.0	.07	(2-11-1)
Managers' decisions are influenced by accounting and cost information	3.5	3.5	3.5	4.0	3.0	.57	(7-6-1)
Corporate managers routinely ask for data on product costs	3.4	3.4	3.3	3.3	3.4	.07	(5-6-3)
The head of marketing routinely asks for data on product costs	3.8	3.6	4.0	4.1	3.4	.07	(3-10-1)
Plant managers use data on product costs to make operating decisions	3.3	3.0	3.7	3.7	2.9	.29	(4-10-0)
Production supervisors use data on product costs to make operating decisions	2.6	2.5	2.7	2.9	2.3	.07	(1-13-0)

[a] Results that suggest meaningful differences between practices of defenders and prospectors and between firms with domestic versus international orientation at the time of economic reforms are highlighted.

Table 12

The Changing Role of Accountants: Deployment of Accounting Resources to Common Accounting Tasks

Tasks	Average percent of accounting resources deployed, by task, in 1996 [a]	Average change since 1991	No. of firms reporting (increase, no change, and decrease)
External Reporting (financial accounting)	29 %	- 3 %	(3-1-7)
Internal Auditing	10 %	- 3%	(2-5-4)
Tax Accounting	12 %	- 1%	(1-4-6)
Cost Accounting	19 %	+ 1 %	(6-2-3)
Consulting Service to other departments	14 %	+ 2%	(6-1-4)
Information Systems Management	16 %	+ 4%	(8-3-0)

[a] No differences between defenders and prospectors or between domestic and international firms were observed.