

**Perceived Environment, Strategic Orientation, Ownership Effect
and Performance Implications in a Transition Economy:
An Empirical Study in the People's Republic of China**

by

J. Justin Tan

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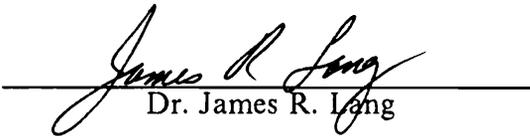
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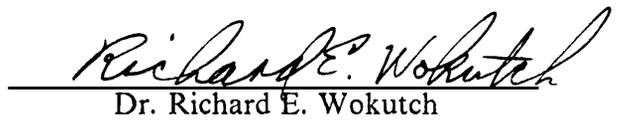
Dr. T. W. Bonham



Dr. Vittorio A. Bonomo



Dr. James R. Lang



Dr. Richard E. Wokutch

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Blacksburg, Virginia

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(ABSTRACT)

A key element that enables a firm to achieve better performance is a fit between environment and firm strategy. A review of the literature on strategic management reveals that this relationship is moderated by other contextual variables, and that these contextual variables have not been systematically studied. The major focus of this study was to examine the impact of an important contextual variable, property ownership type, on the environment-strategy relationship and its performance implications.

To guide this study theoretically, the literature on organizational environment, strategy, the environment-strategy relationship, and property ownership was reviewed, and theoretical implications discussed. It was hypothesized that (1) firms exhibiting same ownership type were likely to respond to perceived environment with similar strategy, and such responses varied across ownership types, (2) such strategic decisions would lead to better firm performance, and (3) in addition to the indirect impact of ownership on performance through the environment-strategy relationship, ownership type also had direct impact on performance.

In order to test these hypotheses, constructs were operationalized in multidimensional manner. Perceived environment was operationalized in terms of three dimensions (resource scarcity, dynamism, and complexity), and strategy was operationalized in terms of five dimensions (futurity, proactiveness, analysis, defensiveness, and riskiness). Each of these dimensions were found to be theoretically significant in previous research.

The research was set in the People's Republic of China. Two hundred and two firms were surveyed, and these firms represented four ownership types (state enterprises, collective enterprises, joint venture enterprises, and private enterprises).

Analysis of results suggest that ownership type is a theoretically important variable that has significant impact on variables that subject to managerial control. Firm ownership type moderated the magnitude (in two ownership types) and configuration (in another two ownership types) of environment-strategy relationship. This moderating effect of ownership led to significant performance implications. Moreover, firm ownership also had significant direct impact on firm performance. Findings from this study contribute insight into the environment-strategy relationship and hold promise for studying strategic management issues in former centrally planned economies undergoing transition toward market economies.

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Chapter 1

Introduction

This research effort examines the impact of two contextual variables, economic system and property ownership types, on the environment-strategy linkage. Building on previous studies conducted in Western market economies, the research will explore the linkage between perceived environmental dimensions and strategic orientations among managers in a centrally planned economy in transition toward a market economy. This relationship will be compared across organizations exhibiting different ownership types. In this chapter, the discussion outlines the research questions and the theoretical underpinnings this study employs to examine these issues. This introduction also highlights both the purpose of the study and the importance of the work in this area.

Introduction

Scholars of strategic management have tried to identify relationships between the environment, corporate strategy, and performance, based on the assumption of the importance of a match

between environmental characteristics and firm strategy (e.g., Rumelt, 1974; Hofer, 1975; Paine & Anderson, 1977; Porter, 1980; Miller & Friesen, 1983). It is postulated that such a match is related to firm performance (Venkatraman & Prescott, 1990). Results of previous studies conducted in the United States suggest that strategy is significantly related to its environment, and certain configurations emerge. These results have also been validated in other national economies and similar results have been found in the relationship between the environment and strategy. For example, based on samples from the U.S. and Canada, Miller and Friesen (1983) and Miller (1988) found that environmental uncertainty was positively associated with proactive, innovative and risk-taking oriented strategies, and negatively associated with conservative and defensive oriented strategies. Others extended their study of organizational strategy to include samples representing different cultures such as South Korea (Kim & Lim, 1988). The results were consistent with the findings in Western economies. Yet empirical evidence is limited to results that reflect market economies. A more recent study by Tan and Litschert (1993), set in the People's Republic of China (PRC), however, indicated that the environment-strategy linkage in a centrally planned economy in transition toward a controlled market economy is strikingly different from the pattern found in previous studies. Still, definitive conclusions are limited by the scope of the study and lack of further validation. In general, current strategic management theory has been developed in an environment in which private property is protected and competitive forces associated with relatively free market mechanisms dictate resource allocation. This theory is not sufficient to predict and understand the strategic behavior in other institutional environmental settings without establishing external validity.

Given the limited empirical support for the relationship between the environment and strategy in other environmental settings and lack of study of the impact of contextual variables, there has been surprisingly little hesitation to make general prescriptions. The Aston team (Pugh, Hickson, Hinings, MacDonald, Turner, & Lupton, 1963) pointed out that ". . . there has been almost no systematic exploration of the causal connection between contextual factors and certain administrative systems rather than others" (pp.291). While progress has been made to resolve this

issue over the years, and strategic management researchers have attempted to explain variation in the environment-strategy relationship by considering contextual factors such as size, technology, industry, and culture, the problem observed by the Aston team still exists. For example, the managerial behavior of the ethnic Chinese has been the subject of cross-cultural studies, and researchers have found similarities among managers and entrepreneurs of Chinese origin around the world associated with some dimensions of strategic orientation, such as attitude toward uncertainty (e.g., Hofstede, 1980, 1991). These similarities have led to generalizations across national borders. The People's Republic of China belongs to a group of predominantly Chinese nations (and regions) whose workers, according to previous research (Redding, 1976), frequently display work values and managerial behavior different from those of Western workers. Investigators have presumed that these values are rooted in traditional Chinese philosophies, primarily Confucianism, which may explain why Taiwan, Hong Kong, and Singapore are frequently used as proxies in studies referring to China (e.g., Hofstede, 1980). Yet few could confidently generalize the same conclusion to the PRC (Shenkar and Ronen, 1987), a fact that suggests that other contextual factors in the environment have a part to play in shaping organizational behavior (Redding & Wong, 1986). Organizations in countries sharing the same culture are not homogeneous (Earley, 1993). An extension of this reasoning is that cultural context alone is not the only cause of certain strategic orientation; it is necessary, perhaps, but not of itself sufficient. The Tan and Litschert study (1993) reveals that among Chinese managers surveyed, perceived environmental uncertainty was negatively related to proactive, innovative and risk-taking oriented strategies, and positively related to defensive oriented strategies, contrary to the pattern found in market economies. This deviation seems to suggest that the linkage between environmental characteristics and business strategy may be influenced by other contextual variables, such as the economic system. Przeworski and Teune (1969) indicated that "The criteria of generality . . . imply that the same theories must be evaluated in different systemic settings and that social science theories can gain confirmation only if theories formulated in terms of the common factors constitute the point of departure for comparative research (pp.22)". An important question at this point is how transportable is strategic management theory to different forms of economies around the world. To establish the

generalizability, or the external validity, of strategic management theory, an important task is to test the relationships in different institutional environments, including economies in transition.¹ The unique combination - traditions shared with other predominantly Chinese countries and regions, an unique ideological and economic system (Shenkar and Ronen, 1987), and the transition from a centrally planned economy toward a controlled market economy - makes the present study an important contribution to the debate on convergence versus divergence.

Despite the political and economic importance of those emerging transition economies, such as the former Soviet Union, the People's Republic of China (PRC), and other Eastern European countries, Western strategic management theorists have rarely considered the issues that arise from these economies, leaving most of the discussion to political and economic analysts and area specialists. As defined by Mintzberg (1973), a strategy is a patterned stream of decisions which focus on a set of resource allocations that are employed in an attempt to reach a position consistent with a firm's environment. It would seem intuitively appealing to presume that centrally planned economies severely limit strategic choice at the firm level, because the government allocates factors of production, decides what, where and how much to produce, and distributes outputs through central planning, leaving little room for managerial discretion. However, with the shift away from central planning in most of the socialist countries to more market driven economies, one may speculate whether strategic management theory becomes relevant to the performance of individual firms in these economies undergoing the transformation. For instance, in some Eastern European countries as well as in China, increasing amounts of economic activity are no longer included in state planning. Regulation in most sectors of the economy are being relaxed, subjecting them increasingly to the impact of market mechanisms. An investigation of this issue will undoubtedly enhance the external validity of existing theory (Cook & Campbell, 1979).

In this effort, one aspect merits attention. Economic reform in those transition economies has turned economies that were previously dominated by state-owned enterprises into ones in which

¹ Characteristics of a transition economy will be discussed in detail in the following chapter.

different organizational forms, including state-owned, collectively owned, private, foreign joint ventures, and completely foreign-owned enterprises, co-exist and compete. For instance, in the PRC, the percentage of tax revenue contributed by the state-enterprises dropped from more than ninety percent in late 1970's to less than forty percent in early 1990's, and even the state controlled sectors are increasingly influenced by market forces. As indicated by the Aston study (Pugh et al., 1963), contextual factors such as firm ownership may have differential effects on variables that are subject to managerial control. The Tan and Litschert study (1993) indicates that distinctive strategies exist in a transition economy such as the PRC, and these strategies are significantly related to perceived environmental characteristics. In addition, certain patterns of choice are associated with firm performance. It is not clear, however, if the environment-strategy relationship varies among firms of different ownership types. Previous efforts to empirically examine the environment-strategy relationship (e.g., Tan & Litschert, 1993) in a transition economy (PRC) have revealed contradictory results, which call for further investigation into the issue in this particular environment.

Further examination of the theoretical importance of ownership types in strategic management research should provide added justification to this proposed research. The impact of ownership types on variables subject to managerial choice has been well documented (e.g., Pugh et al., 1963; Pugh, Hickson, and Turner, 1969). As found by the Aston group in a series of studies, ownership types had significant impact on variables subject to managerial control and choice. For instance, ". . . the differential effects of ownership and control might be expected to manifest themselves throughout a whole organization . . ." (Pugh et al., 1963:309), because differences in the accountability of chief executives and centralization of authority among organizations of different ownership types may contribute to systematic differences in strategic orientation. The impact of ownership types on variables subject to managerial choice has been well documented (e.g., Pugh et al., 1963; Pugh et al., 1969). More recent studies that considered the impact of this contextual factor also found that ownership was important and would result in specific differences on selected strategic orientation dimensions (Mascarenhas, 1989). Studies set in the United States have found

that ownership is significantly related to various strategies (Hill & Snell, 1989; Baysinger & Hoskisson, 1990; Blackburn, Lang, & Johnson, 1990; Hoskisson & Turk, 1990; Baysinger, Kosnik, & Turk, 1991). However, researchers have often studied organizations reflecting one or two ownership types, and their findings may have been implicitly overgeneralized to all organizations (Meyer, 1982). A first step in assessing the generalizability of diverse findings and integrating these findings is to identify how these broad classes of organizations may have differed. Since ownership is a relatively available and transparent organizational property (Perry & Rainey, 1988), it could be potentially valuable in predicting related, less-observable organization features such as strategic orientations. This study links the work in organizational environment and strategic responses to provide the framework for examining environment-strategy linkages across four fundamentally different ownership types. In substantive terms, this study provides a close look at some major multivariate relationships between environmental attributes and strategic responses in contexts that have not been empirically investigated before. By identifying the environment-strategy linkage in different contexts, this proposed study should offer added valid evidence to current strategic management theory, and thus generalizability will be significantly enhanced.

Purpose of The Study

This study will explore the relationship between the perceived environment and managerial strategic responses. More specifically, this study will examine the interaction between environmental attributes, such as complexity, dynamism, resource scarcity, and strategic orientations. Previous studies using these variables and set in Western market economies have found patterns of configuration, and provide a cornerstone for this research (e.g., Miller and Friesen, 1983). In this proposed research the environment-strategy linkage will be tested in a country undergoing transition from a centrally planned economy toward a market economy. Thus it is a major effort to provide added external validity for strategic management theory.

Previous effort to empirically examine the environment-strategy relationship in a transition economy (e.g., Tan & Litschert, 1993) has suggested a need for further investigation into the issue in this particular environment. For instance, the Tan and Litschert (1993) study is based on a sample of state and collective enterprises. However, it did not account for the possibility of systematic difference in environment-strategy configuration across different types of enterprises. Since the theoretical importance of ownership type as a contextual factor is that ownership has differential effect on variables subject to managerial choice, it is intuitively appealing to speculate that the environment-strategy relationship will vary systematically across ownership types. This proposed study will divide organizations into broad typologies in order to investigate the differential effect of property ownership types. It will examine the perceived characteristics of organizational environments faced by business organizations exhibiting four different types of property ownership (state, collective, private, and joint-venture enterprises) in a transition economy, as well as their strategic orientations. In this study, empirical tests, guided by current strategic management literature and theoretical reasoning, will hopefully lead to a classificatory framework of environment-strategy profiles across different property ownership. In addition, the study will examine performance implications of environment-strategy configurations. The study will be conducted in the People's Republic of China, an economy undergoing transition from a centrally planned to a controlled market economy.

Definitions of Major Terms

This section lists a set of definitions for those often-used terms in this research effort. These definitions have been obtained from the major theoretical writings on the relevant topics.

Environment: As Duncan (1972: 314) states, the environment is “. . . the totality of physical and social factors that are directly taken into consideration in the decision making behavior of individuals in the organization.”

Perceived uncertainty: It is the general lack of information, or the perceived difference between the information possessed and information needed in the decision making (Anderson & Paine, 1975; Duncan, 1972; Lawrence & Lorsch, 1967; Milliken, 1987; Tung, 1979).

Strategy: The strategy of an organization is the pattern in, or outcome of, a stream of decisions that defines organization-environment relationship, and provides internal integration (Fredrickson, 1980, 1983; Miles & Snow, 1978; Mintzberg, 1978; Shirley, 1982).

Co-alignment: An appropriate combination of two aspects, one usually as a contextual aspect, and the other, an internal arrangement of an organization (Thompson, 1967). Also known as fit, or match.

Congruent hypothesis: A hypothesis that asserts a relation between two variables without suggesting any possible impact of this relation on a third variable (Drazin & Van de Ven, 1985; Fry & Smith, 1987). See also contingent hypothesis.

Contingent hypothesis: Besides a suggested association between two or more independent variables, this hypothesis further asserts a relationship between a dependent outcome and the relationship between those independent variables (Drazin & Van de Ven, 1985; Fry & Smith, 1987). For example, a congruent hypothesis suggests the relationship between environmental dynamism and autonomy in organizations. Whereas a contingent hypothesis would *further* suggest how the association between environmental dynamism and autonomy would influence organizational performance (the dependent outcome here). See also congruent hypothesis.

Scarcity: The level of resources available to firms from the environment and competition for resources (Aldrich, 1979; Child, 1972; Dess & Beard, 1984; Miller & Friesen, 1983; March & Simon, 1958; Mintzberg, 1979). Also known as capacity and munificence.

Dynamism: The change in environmental factors. This construct includes both the rate of unpredictable environmental change and the stability of environment (Aldrich, 1979; Child, 1972; Dess & Beard, 1984; Duncan, 1972; Lawrence & Lorsch, 1967; Miller & Friesen, 1983; Mintzberg, 1979; Thompson, 1967; Tung, 1979). Also known as stability, turbulence, and variability.

Complexity: The number and the heterogeneity of environmental factors considered in the decision-making process (Aldrich, 1979; Emery & Trist, 1965; Child, 1972; Dess & Beard, 1984; Duncan, 1972; Lawrence & Lorsch, 1967; Miller & Friesen, 1983; Mintzberg, 1979; Thompson, 1967; Tung, 1979). Also known as heterogeneity.

Outline of the Study

Chapter I. Introduction

This chapter provides an introduction of the basic issues this study investigated. The discussion outlines the research questions and identifies the purposes and the significance of the study. Furthermore, this chapter furnishes a list of definitions for those key terms used throughout this research effort.

Chapter II. Literature Review and Hypotheses

This chapter discusses the theoretical work in the areas of the organizational environment, strategic orientation, and typological approach to studying environment-strategy relationship. A synthesis linking these aspects helps identify the basic conceptual framework to be used in this research. Guided by the framework established, the discussion then covers the issues related to this research topic in the PRC. Organizations of four ownerships types are studied and strategic profiles of respective organizations as response to environmental characteristics are categorized into four strategy types. This chapter ends with hypotheses developed based on previous discussion for empirical test.

Chapter III. Research Design

This chapter gives an explanation of both the research design and the methodology adopted in this study, as well as defensible reasons for the methodological decisions made at each stage. The chapter also gives a detailed description of the research setting, data collection procedures, and sample characteristics. Finally, this chapter discusses related validity issues.

Chapter IV. Data Analysis and Results

This chapter presents data analysis procedures and the results of the hypothesis tests.

Chapter V. Conclusions

This chapter discusses the major results presented in Chapter IV and outlines the theoretical and practical implications of the research findings. Following the discussion of the potential significance of this study is an account of limitations of the current effort. The chapter also provides suggestions for further research in this area.

Chapter 2

Literature Review and Hypotheses

A substantial amount of literature has been accumulated on organizational environment and strategy. In this study, the literature is limited to those studies that focus on the environment-strategy linkage, especially in a regulated setting.

In searching the literature, the following methods were employed:

Personal literature database for relevant works

Browse of current major periodicals

Track from the available literature to other works

Suggestions from the researchers in the same field

The conceptual work covered in this review includes the work on the conception of strategy, the conception of the environment, and the environment-strategy linkage, especially in regulated environments. The discussion of organizational environment and strategy will lead to the introduction of operational measures. Further, previous studies on ownership and its impact will

be reviewed. Related methodological issues will also be addressed. A synthesis of the works in these areas will provide a basic framework on which research hypotheses will be formulated.

Conceptual Development

The Conception of Environment

The concept of the environment has been the focus of attention by scholars as well as practitioners for some time (Child, 1972; Emery & Trist, 1965; Lawrence & Lorsch, 1967; Thompson, 1967). The environment is generally understood as the totality of physical and social factors considered in decision making (Duncan, 1972; Aldrich, 1979).

The literature on the organizational environment has two general perspectives. The first perspective is that of information uncertainty. Based on the information uncertainty perspective, environment is the source of information. The information provided is used by organization decision makers as one basis for maintaining or modifying the organizational structure and process (Duncan, 1972; Lawrence & Lorsch, 1967; Tung, 1979; Weick, 1979). Thus, the perception of information is assumed to be an intervening link between the organization's environment and any resulting organizational activities. The empirical efforts reviewed here (Duncan, 1972; Tung, 1979) are consistent with this general perspective. Key features of the research following this perspective are their emphasis on perception, perceived uncertainty, and subjective data collected from informants rather than the collection of "objective data".

Another equally important perspective, the resource dependency perspective, contends that the environment is a source of scarce resources which are sought after by competing organizations.

Thus, the organization's ability to reduce dependence or increase control will determine organizational effectiveness. The nature of resource dependency will impact organizational structure and process (Aldrich, 1979; Blau, 1964; Emerson, 1962; Pfeffer & Salancik, 1978).

It is commonly recognized that the environment is a multidimensional concept (Child, 1972; Dill, 1958; Duncan, 1972; Lawrence & Lorsch, 1967; Thompson, 1967). Conceptual works and empirical studies have devoted close attention to the specific dimensions of the environment, and several major dimensions of the environment are identified, including dynamism, complexity, and scarcity². It appears that the complexity and dynamism dimensions are closely linked to the information uncertainty perspective (Lawrence and Lorsch, 1967; Thompson, 1967), and scarcity to the resource dependency perspective (Pfeffer and Salancik, 1978; Aldrich, 1979). Based on the information uncertainty perspective, complexity and dynamism provide a bridge to a better understanding of the impact of the environment on the formulation of strategy. On the other hand, the resource dependence perspective predicts that if the resources controlled by certain environmental segments have a significant impact on organizations, strategic adaptation will be substantially influenced by the environment. It is argued that environmental attributes characterized by these dimensions affect top management's perception of uncertainties, which in turn influence such strategic decision characteristics as propensity for risk-taking, futurity, proactiveness and defensiveness (Miles and Snow, 1978; Miller and Friesen, 1982; Venkatraman, 1989a). It is further posited that the fit between environment and strategy will lead to better organizational performance (Venkatraman and Prescott, 1990). In this study, three environment dimensions --resource scarcity, dynamism, and complexity-- will be investigated.

² For a definition of environmental dynamism, complexity and scarcity, see Chapter I

The Conception of Strategy

Chandler (1962) is among the first to explicitly study strategy as a tool of business managers. To him, strategy is the combination of the long run objectives of an enterprise, the action plans, and resource allocations. One result of this notion, as Fredrickson and Mitchell (1984) point out, is that strategy has since then been considered as an integrated “plan.” Another perspective suggests that strategy is the pattern in, or outcome of, a consistent stream of decisions that would provide external co-alignment and guide internal operations (Miles & Snow, 1978; Mintzberg, 1978). According to Mintzberg, strategy may be viewed as a mediating force between the organization and its environment. Strategy management therefore involves interpreting the environment and developing consistent patterns in a stream of organizational decisions (Mintzberg, 1983).

There is reasonable consensus on a three-level categorization of strategy, i.e., corporate, business, and functional (Schendel & Hofer, 1979). Corporate-level strategy focuses primarily on the management of a portfolio of different businesses and reflects the pattern of linkages among the different businesses constituting the corporate profile (Rumelt, 1974). Strategy formulation at this level is concerned with choosing the set of product/market sectors in which the organization wishes to compete, and is not constrained by the present operating domains (Andrews, 1971).

Strategy at the business level (or business unit, or strategic business unit, SBU) is formulated to respond to the immediate task of the organization (Andrews, 1971). The theoretical issues at this level relate to the requirement of matching environmental opportunities and competitive threats with the efficient deployment of organizational resources (Bourgeois, 1980; Schendel & Hofer, 1979). In addition, the general theme of a competitive strategy and the attainment of a particular competitive advantage is an important issue at the business-level strategy (Porter, 1980). Strategy at the functional level focuses on the maximization of resource productivity within each of the specified functions and is generally derived from the business-level strategy (Schendel & Hofer, 1978).

This study is set at the business level, and effort will be devoted to the investigation of strategic responses of a business unit to environmental characteristics that are relevant to that business unit. As proposed by previous researchers, the effective strategies can be determined only if there exists a fit between environmental characteristics and strategy-making behavior (Miller and Friesen, 1983). Thus a study of the linkage between the environment and strategy making behavior will benefit from a close examination of underlying interaction among perceived environment uncertainty and the business strategy. The present research will operationalize business strategy using the dimensional approach of strategic orientation developed by Venkatraman (1989a). In reviewing literature on strategy, five strategic orientation dimensions, *Analysis*, *Defensiveness*, *Futurity*, *Proactiveness*, and *Riskiness*, emerge as particularly important and will be adopted. These dimensions will be discussed in detail in the following chapter.

Environment-Strategic Linkage

A firm's strategy reflects a focus on a set of strategic variables as it attempts to reach a position consistent with its environment. This internal pattern of resource allocation should coalign appropriately with its external environment (Astley & Van de Ven, 1983). Two major perspectives on the organizational environment relationship merit attention. According to the population ecology perspective, populations of organizations are largely stable (McKelvey, 1982), and organizations are generally inert because of constraints associated with their founding technologies (Astley, 1984). This perspective focuses on the structural and demographic characteristics of populations of organizations. Environmental (or economic) competition and carrying capacity (or resource scarcity) are the external forces that select specific forms of organizations. The manager's role is inactive or symbolic in this sense. The orientation is probabilistic, and focuses not on individuals but on the structural properties of the content within which action unfolds. Individual behavior is seen as determined by and reacting to structural constraints that provide organizational

life with overall stability and control. From this perspective, environmental changes are thought to select particular organizations rather than promote adaptation.

In contrast, the strategic choice perspective (Child, 1972) suggests that organizations are not tightly coupled with the environment, even though internal organizational change is increasingly externally induced, and are therefore able to adjust to environmental changes. This study adopts the strategic choice perspective. The notion of strategic choice suggests that there are choices of goals and purposes, choices of different organizing modes, choices of processes for integrating individuals into organizations, and finally a choice as to whether goals, organizations, individuals, or some combination of them should change in order to adapt to the environment (Galbraith, 1977). This perspective essentially argues that the effectiveness of organizational adaptation hinges on the dominant coalition's perceptions of environmental conditions and the decisions made concerning how the organization will cope with these conditions. Thus this perspective places heavy emphasis on the role of top managers who serve as the primary link between the organization and its environment. These managers are viewed as being in a position not only to adjust organization structure and process when necessary but also to attempt to manipulate the environment itself in order to bring it into conformity with what the organization is already doing. The management may be viewed as proactive, and their behaviors can be described as being purposeful and rational. This perspective proposes that there are particular forms of "ideal" coalignment or congruence present among certain environmental attributes and the firms' strategic profile (Miller and Friesen, 1983), and deviation from this coalignment will reduce firm performance (Venkatraman & Prescott, 1990).

With regard to the environment-structure relationship, the strategic choice perspective argues that environmental conditions cannot be regarded as a direct source of variation in organizational structure, as open system theorists imply. The critical link lies in the decision-maker's evaluation of the organization's position in the environmental areas they regard as important, and in the action they may consequently take about its internal structure (Child, 1972).

Strategic Adaptation in Regulated Environments

A consistent characteristic of the strategy paradigm, regardless of perspective (Astley & Van de Ven, 1983), is the assumption of a link between a firm's strategic profile and its external context (Venkatraman & Prescott, 1990). The strategic choice perspective asserts that this linkage has significant implications for performance (Hofer, 1975; Miller & Friesen, 1983), yet empirical evidence is inconsistent and limited to results that reflect market driven economies. For instance, Miller and Friesen (1983) use correlation analysis to identify links between specific characteristics of the strategy-making activity and dimensions of the environment among successful firms in two distinct settings. However, both are market driven. In a more recent study, Venkatraman and Prescott (1990), using PIMS data and the "profile deviation" approach to test for coalignment, also found a positive performance impact for environment-strategy coalignment among firms in a market economy.

As discussed previously, the literature on the relationship between environmental variation and strategic change suggests that the fit between environmental characteristics and strategy does lead to better organizational performance (Venkatraman & Prescott, 1990). Consequently, as the environment changes, so should an organization's strategy (Smith & Grimm, 1987). Logically, the study on organizational dynamics of strategic decision characteristics should be set in a changing rather than static environment (Smith & Grimm, 1987). A regulated environment that is undergoing deregulation provides a good setting for studying the dynamics of environmental variation and strategic change in that deregulation may be considered a major environmental change (Mahon & Murray, 1981).

The strategic management literature argues that in a competitive environment firms need to have a distinct strategic orientation in order to exploit critical environmental resources and achieve competitive advantage (Thompson, 1967; Andrews, 1971; Porter, 1980, 1985). A series of studies in the U.S. brewing industry reveal that when discretion is relatively unconstrained, strategy is an

important determinant of performance (Hatten & Schendel, 1977; Hatten, Schendel & Cooper, 1978; Schendel & Patton, 1978). A focused strategy is required to align the organization with critical environmental resources, to capitalize on the organization's distinct competences, and to achieve a competitive advantage (Porter, 1980).

On the other hand, firms operating in regulated environments confront simultaneously two factors that impact the characters of strategy. The first involves dealing with the operational or technical aspects of regulation. The second involves managing the firm's interactions and political relationships with external entities, such as the regulating agencies (Post & Mahon, 1980). In a regulated environment, the organization's task environment is much more clearly defined and the number of external actors involved are more limited. This makes the organization more accountable to any one external entity. The dependencies among actors are also more explicit (Mahon & Murray, 1981).

Research studies in highly regulated settings in a market economy indicate that when managerial discretion is constrained, environmental conditions rather than variables subject to managerial control play a larger role in determining organizational performance (Fruhan, 1972; Verbrugge, Shick & Thygeson, 1975; Verbrugge & Shick, 1976; Verbrugge & Goldstein, 1978). Smith and Grimm (1987) suggest that regulated environments are by definition deterministic. Under regulation, environmental constraints limit alternative routes to achieving a competitive advantage, and the linkage between strategy and performance is moderated by the regulatory agency. Every strategic move is either duplicated by the competition or rendered less effective due to legal constraints. Thus strategic orientation toward a focused strategy is not rewarded (Smith & Grimm, 1987). For example, in a regulated environment, the firm's domain and task environment are clearly defined and its relationships with external actors are mandated. These constraints render any effort to search for alternative plans of action ineffective (Mahon & Murray, 1980; 1981). For instance, firms that might have pursued a Cost Leadership strategy (Porter, 1980) or an Innovation strategy (Miller & Friesen, 1983) would not be rewarded because the price firms are allowed to charge may be lowered correspondingly, leaving profits unchanged (Smith & Grimm, 1987).

Nevertheless, even in regulated situations, negotiated strategies may still exist (Murray, 1978; Murray & Isenman, 1978; Snow & Hrebiniak, 1980). Hrebiniak and Joyce (1985) contend that even in the most debilitating case of determinism there are alternative modes of competition. Arguing on the basis of equifinality these authors observe that various alternative strategies are possible within the constraints imposed by a regulatory body. While the number of alternatives may be lower, choice does exist. Empirical studies show that in regulated environments such as the airline industry (Snow & Hrebiniak, 1980), banking industry (Lenz, 1980), public utilities industry (Yokell, 1990), electronic industry and universities (Birnbaum, 1984, 1985), and health care industry (Ginn & McDaniel, 1987; Zajac & Shortell, 1989), alternative strategies do exist. These competing arguments have not been resolved for deregulated environments located in a market economy, and with the exception of recent study by Tan and Litschert (1993), have not been looked at in a transition economy. Therefore, it is important to investigate the environment-strategy linkage under other economic contexts.

Movement from a regulated to a deregulated environment represents a genuine transformation of the business. It is a time when an organization can significantly change its competitive position if it is prepared. This requires a keen awareness and reassessment of the organization's strengths and weaknesses. With regard to previously regulated environments that undergo deregulation, strategic management literature indicates that in the chaotic times surrounding deregulation, firms will have to change from an unfocused follower strategy to a focused or contingent strategy to be successful (Mahon & Murray, 1980). Empirical studies demonstrate that these patterns of strategic change are associated with differences in performance (Smith & Grimm, 1987). One of the requirements for survival appears to be an ability to learn about the environment quickly enough to permit organizational adjustments in time. As firms move in and out of regulated environments they will have to adjust their structures and planning processes. For example, as airlines were deregulated, they had to learn how to plan, act, and respond in a much more competitive environment. Thus the implications are that environmental change should be followed by strategic change, and in an

environment in which regulation is being eliminated, strategy will become a more important determinant of firm performance.

In addition, as an environment becomes less regulated, it will become more complex and dynamic, thus there will be (1) a shorter planning horizon and less reliance on programmed strategies (Mahon & Murray, 1981); (2) more focus on the consumer or customer and less emphasis on regulatory agencies; and (3) a higher level of differentiation and a higher level of integration (Lawrence & Lorsch, 1967).

To summarize, previous studies in regulated industries in a market economy provide contradictory results. With regard to regulated environments in which deregulation takes place, there seems to be an agreement that strategy is important. It is not clear, however, how generally applicable the strategy paradigm may be in other economic systems. In particular, the relationship between environment and strategy is not clear in centrally planned economies that are undergoing transition toward more market driven economies. Since most aspects of the strategy paradigm are based on mid-range experiences, these economies in transition provide unique research opportunities to test not only cross-cultural robustness of management theory, but also the ranges of applicability of the paradigm. A pivotal assumption of this study is that social science research should and can lead to general statements about social phenomena. This assumption implies that human or social behavior can be explained in terms of general laws established by observation. As criteria for evaluation of theory, generality and parsimony imply that the same theories must be evaluated in different systemic settings (Przeworski & Teune, 1969). A critical research question that needs to be addressed is: Does environment-strategy paradigm hold in a formally centrally planned economy that is undergoing transition toward a controlled market economy?

Property Ownership Types and Theoretical Implication

Studies involved in cross-cultural and cross-national settings have suggested that contextual factors play important roles in understanding managerial behavior across countries (Boyacigiller and Adler, 1991). These authors also suggest that the impact of contextual factors on managerial behavior is more significant in countries with "high-context orientation," such as Japan and China, than in countries with "low-context orientation," such as the United States and England (pp.276). Thus, any attempt to study management practices in a cross-cultural and cross-national setting must take into account the effect of contextual variables on managerial behavior and performance (Torre and Toyne, 1978).

A study of an organization's ownership and its strategic orientations is important for several reasons. First, understanding relationships among ownership and strategic orientations can help reveal the underlying logic for organizations' activities (Mascarenhas, 1989). Such understanding can also help organization members evaluate the consistency of their firm's proposed strategies with resources, interests, and the constraints underlying ownership. Studies set in the United States have found that ownership is significantly related to diversification strategy (Hill & Snell, 1989; Blackburn, Lang, & Johnson, 1990; Hoskisson & Turk, 1990), control strategies (Baysinger & Hoskisson, 1990), R&D strategy (Hill & Snell, 1989; Baysinger, Kosnik, & Turk, 1991), and capital intensity (Hill & Snell, 1989). As discussed in Chapter 1, these relationships may suggest patterns in strategic choice within and between organizations of different ownership types. At the industry-level studies, these relationships may suggest patterns in strategic choice within and between organizations of different ownership. Understanding the relationship between ownership, a relatively clear organizational property (Perry and Rainey, 1988:192), and firm strategic choice, often less transparent, can also help organization members understand and monitor competitors' activities.

Second, a fundamental decision confronting all societies concerns the type of institutions to encourage or adopt for the conduct of activity, ranging from those that are state-owned and subject to more political authority to those that are owned by individuals and controlled more by market incentives (Perry and Rainey, 1988). The Aston group found in a series of studies that ownership types had differential and significant impact on variables subject to managerial control and choice (e.g., Pugh et al., 1963; Pugh et al., 1969). For example, differences in accountability of chief executives and centralization of authority among organizations of different ownership types may contribute to systematic differences in strategic orientation. Knowledge of the strategic choice consequences of different ownership types can serve as input to that decision.

Third, as Meyer (1982) pointed out, researchers who have examined ownership have often studied organizations reflecting one or two ownership types, yet their findings may have been implicitly overgeneralized to all organizations. To assess the generalizability of diverse findings and integrate them, it is critical for researchers to identify how broad classes of organizations studied differ.

Ownership is a summative context condition that includes the following factors: (1) the interests and constraints of respective owners (such as societies, politicians, or private individuals) and of respective managers (such as civil servants, professional managers, or entrepreneurs), as well as conflicts among owners and managers; and (2) the abilities of these parties to obtain resources from product markets and factors, such as capital, management, and technical talent (Mascarenhas, 1989). Firm ownership has been examined as a way to investigate the structural patterns of strategic choice because of its potential to be theoretically based and parsimonious (Mascarenhas, 1989). Further, as Perry and Rainey (1988) pointed out, since ownership is an organizational property that is relatively more accessible and apparent, it could potentially be valuable in predicting related, less-observable organization features such as strategic orientations or activities of organizations that disclose limited information, especially organizations in transition economies. It is argued here that ownership is important and will result in specific differences on selected strategic orientation dimensions when confounding is reduced. For ownership to be important, differences need not

emerge among all four ownership types on all dimensions. Organizations may exhibit the same characteristics on a strategy dimension but for different reasons.

Beginning with the early work on contingency theory by Burns and Stalker (1961), Woodward (1965), and Lawrence and Lorsch (1967), a new perspective on management structure and the functioning and reactive behavior of organizations has evolved. An extension of the basic tenet of this management school is that most critical tasks required of a firm under a certain environment are common to most, if not all, firms active under that environment. Thus, similar managerial practices will evolve independently among all competing firms as they react to their common "contextual environment" (Torre and Toyne, 1978). To the extent that performance is affected, major differences in strategic orientation among firms under the same environment cannot be sustained in the long term. If firms exhibiting the same ownership type show similarities in strategic orientations when faced with certain environmental characteristics, and if this pattern of strategic responses differs significantly from firms of other ownership types, we can then use ownership types to predict firm strategic behavior. That is, property ownership type as a particular socio-economic unit may be treated as a *predictor*, in the same manner as variables are used as predictors in general theories (Przeworski & Teune, 1969).

As discussed earlier, strategy is a pattern of decisions which adapt the business unit to the environment in which it operates (Miles & Snow, 1978; Mintzberg, 1978). According to the strategic choice perspective (Child, 1972), organizations enact their own environments, and it is theoretically possible that no two organizational strategies will be the same. That is, every organization will choose its own target market and develop its own set of products or services, and these domain decisions will then be supported by appropriate decisions concerning the organization's technology, structure, and process. However, when competing organizations within a single industry are observed, patterns of behavior begin to emerge, which suggests that these various organizational forms can be reduced to several archetypes. Each of these types represents a strategy for responding to the environment, and each has a particular configuration of technology, structure, and process that is consistent with its strategy (Miles & Snow, 1978). In other words, the

assumption underlying the generation of taxonomies or typologies is that there are a limited number of identifiable and recurring configurations of strategies, each of which involves a different pattern of competitive position objectives, investment strategies, and competitive advantages (Hofer & Schendel, 1978). Further, this assumption can be tested through objective empirical analysis of strategic behavior (Galbraith & Schendel, 1983). It is not clear, however, whether ownership types have any impact on the emergence of different strategy types, especially in economic context other than market economies. In order to provide guidelines on when should one organizational form be formally recognized as different from another, it is important to examine property ownership types as a contextual variable.

Given the similarities in the inherent characteristics of the economic system that China and other socialist economies of Eastern Europe transplanted from the former Soviet Union, there are striking similarities in structural composition among these economies (Boisot & Child, 1988, 1990; Child, 1990a). As central bureaucracies relaxed formerly rigid planning and control, these economies have become more open to world markets, and can be increasingly characterized by the co-existence of multi-ownerships. Collective, private, and foreign joint ventures in transition economies have challenged the dominance of state enterprises. A research effort that examines the structural difference between different ownership types, as proposed here, therefore, should improve our understanding of strategic management issues in other transition economies. The specific research question that need to be answered is: Do firms exhibiting different ownership types show different environment- strategy configurations, and are these patterns of strategic choice related to firm performance?

In the section that follows, strategic responses to environmental characteristics of four types of organizations in the People's Republic of China will be discussed based on the pattern of environment-strategy profile of each ownership type.

An Examination of Four Ownership Types

This section begins with an overall introduction of the current situation in the Chinese economy, then analyzes the background of four types of Chinese enterprises, i.e., joint ventures, state enterprises, collective enterprises, and private enterprises. It further presents the characteristics of each ownership type's respective environment and management practices. Comparative studies have typically examined only two ownership types at a time, such as state-owned versus nonstate-owned or publicly traded versus privately held firms (Mascarenhas, 1989). Elaborating the ownership categories to include state-owned, collectively-owned, privately held and joint venture firms reduces confounding and expands the variation in organizations studied. An examination of the environment in which they each operate and the distinctive strategic orientations will indicate configurations of environment-strategy relationship and lead to research hypotheses that will be tested.

An Explanation of the Chinese Economy

The changes that have taken place in the People's Republic of China since it opened its doors to the West have been dramatic, exceeding the expectations of the most optimistic China watchers. Prior to the economic reform, the Chinese economy was basically self-sufficient, with state enterprises contributing to more than ninety percent of tax revenue. During the first ten years of the 1978 open-door policy, China's foreign trade rose by an impressive three hundred percent, an unparalleled increase for any centrally planned economy and for most emerging economies of the world. During the same period, foreign investment reached more than \$20 billion U.S. dollars, increasing at an average annual rate of about thirty percent. Although expectations were shattered by the "June Fourth Incident" in 1989, both trade and investment continued to grow rapidly since 1989, with investment reaching more than \$6 billion in 1989 and 1990. Meanwhile,

collectively-owned and privately-owned enterprises have also grown with astounding speed. In 1991, joint ventures and foreign subsidiaries, collective-enterprises, and private-enterprises together contributed sixty-three percent of tax revenue, compared to the state-owned enterprises' thirty-seven percent, down from over ninety percent ten years ago. In the booming coastal provinces, such as Guangdong, collective and private enterprises produced forty-three percent of the total industrial output in 1986 (Vogel, 1989:456). As a result, over fifty percent of the Chinese state budget is now in the hands of officials in the provinces, despite the efforts of the central government to recentralize fiscal control (Nee, 1992).

Structural changes have also been undertaken within the Chinese economy itself. As observed by previous researchers (e.g., Grub & Lin, 1991), significant occurrences since 1979 include the following:

- Development of special economic zones (SEZ) and opened cities;
- Decentralization of decision making at the province and city levels;
- Privatization, including the breakup of communes and the return of private homes to their owners;
- Authorization of private ownership of property, which brought about the development of a flourishing private small business sector;
- Strong improvement in foreign investment laws;
- Implementation of bankruptcy laws;
- Passage of improved, but still inadequate, laws concerning intellectual property rights protection;
- Enhanced role for managers in state-owned enterprises, with greater authority for decision making and bottom-line profitability;
- Improved labor laws, especially for foreign-owned enterprises;
- Initial development of a stock and bond market; and
- Greater emphasis on infrastructure enhancement to meet modernization goals.

During the seventh Five-year plan (1986-1990), China attempted to modernize its massive economy through an infusion of technology transfers, management skills, and foreign capital despite the events that took place in the June 1989. In most government ministries and banks, younger and more technically trained leaders, many of whom received their education abroad, are replacing an older generation of leaders, whose accession to leadership positions was based heavily upon seniority and party loyalty. In the economy, a transition has also taken place, with Chinese managers being held more responsible for bottom-line profitability, management innovations, quality control, product development, and in some firms, foreign exchange earnings.

The transition economy has given birth to a new diversity in organizational forms and a plurality of property ownership types. The spectrum spans the continuum from the formal and hierarchical state-owned enterprises to small family-owned firms run by private entrepreneurs (Nee, 1992). Changes in the ownership and control of the enterprises is a critical part of economic reform. This has involved a number of interrelated changes relevant to the ownership system (Zhao, 1990).

1. *Changes in the nature of state ownership.* Rather than being owned by "the whole people," significant elements of new forms of ownership are being introduced in practice. The growth of enterprise profit retention, followed by the tax-based systems, means that workers share in effective ownership of the enterprises. Managers have substantial control through greater power over enterprise assets and other resources, although in theory the state owns the enterprise on behalf of "the whole people." Thus the previous dominant state form of ownership is becoming fragmented.
2. *Revitalization of collective ownership forms.* Rather than being controlled by local government, there is a shift toward more genuine cooperative forms in China. This is by no means a total shift, but an increasing number of collective enterprises are controlled by their workforce who share control and profits.
3. *Conversion from state to collective or private ownership.* The use of leasing and other mechanisms for collective or private control of state assets has increased dramatically. Sales

of stocks in the domestic and international markets since 1991 also literally transferred part of ownership in state enterprises, regardless of volume, into the hands of private stockholders.

4. *The rebirth of a private sector of small business, mostly on a family scale.* This has been marked in the countryside with China's shift from collective to household agricultural organizations, as well as a major growth in urban private businesses.
5. *The continued development of rural enterprises.*

In the following sections, the four types of firms in the People's Republic of China will be examined. The discussions then lead to the establishment of a typology of environment-strategy configurations and hypothesized relationship between environmental attributes and strategic orientation within each ownership type.

Private-entrepreneurs: Opportunistic Risk Taker?

Entrepreneurship is an interdisciplinary concept. As such it contains various approaches that can be used to increase one's understanding of the field. Thus there is a need to recognize the diversity of theories as an emergence of entrepreneurial understanding. One way to examine these theories is with a "schools of thought" approach that divides entrepreneurship into specific activities. These activities may be within a "macro" view or a "micro" view, yet all address the conceptual nature of entrepreneurship.

The micro view of entrepreneurship examines the factors that are specific to entrepreneurship and are part of the "internal" locus of control. Many researchers have been interested in identifying traits that are common to successful entrepreneurs. Economic history that dates back to eighteenth-century France and the Industrial Revolution era in England clearly indicates that a chief characteristic of entrepreneurs is high propensity to take risk (McClelland, 1961; Kirzner, 1979; Hornaday, 1982; Gartner, 1985). Other common characteristics include aggressiveness and

proactiveness, innovation, and opportunistic behavior (Schumpeter, 1934; Hornaday, 1982; Begley & Boyd, 1987).

On the other hand, the macro view of entrepreneurship presents a broad array of factors that relate to success or failure in contemporary ventures. This array includes external processes that are sometimes beyond the control of the individual entrepreneur, for they exhibit a strong "external" locus of control point of view. One stream of research deals with the external factors that affect a potential entrepreneur's lifestyle. These can be either a positive or a negative force in the molding of entrepreneurial desires. The focus is on institutions, values, and mores that, grouped together, form a sociopolitical environmental framework that strongly influences the development of entrepreneurs (Kuratko and Hodgetts, 1989).

Another school of thought, the displacement theory, focuses on group phenomena. It holds that the group affects or eliminates certain factors that project the individual into an entrepreneurial venture. As Ronstadt (1984) has noted, individuals will not pursue a venture unless they are prevented or displaced from doing other things. As Kuratko and Hodgetts (1989) indicate, three major types of displacement illustrate this school of thought. First, it is the political displacement. This type of displacement is caused by factors ranging from an entire political regime that rejects private property and free enterprises to government regulations and policies that limit or redirect certain economic sectors. Second, cultural displacement deals with social groups precluded from professional fields. Ethnic background, religion, race, and sex are all examples of factors that figure in the minority experience. Increasingly, this experience will turn various individuals from standard business professions toward entrepreneurial ventures. According to the U.S. government, from 1972 to 1982 the number of minority businesses increased 43 percent ³ Finally, economic displacement is concerned with the economic variations of recession and depression. Job loss, capital shrinkage, or simply "bad times" can create the foundation for entrepreneurial pursuits, just as it can affect venture development and reduction.

³ U.S. Small Business Administration, 1987. *The State of Small Business: 1987: A Report to the President*. Washington, D. C.: Government Printing Office.

A major consequence of the economic reform program is the resurgence of private entrepreneurship in the Chinese economy (Vogel, 1989). Although the term "entrepreneurship" is capitalistic in nature, it may make more sense for the purpose of this study to conceive of the entrepreneur as an individual who is opportunistic, proactive, action oriented, value-driven, risk- accepting, whose creative ideas take the form of organizational birth, growth, or transformation (Bird, 1989).

In economic theories, innovation is a key, defining aspect of entrepreneurship. Schumpeter (1934) was first to point out the importance of the new value created by entrepreneurs. In Schumpeter's view, the entrepreneur is a glamorous adventurer. His innovative spirit is sustained by three main incentives. First of all, there is the dream and the will to found a private kingdom, usually, though not necessarily, also a dynasty. The modern world really does not know any such positions, but what may be attained by industrial or commercial success is still the nearest approach to medieval lordship possible to modern man. Then there is the will to conquer; the impulse to fight, to prove oneself superior to others, to succeed for the sake, not of the fruits of success, but of success itself. Finally, there is the joy of creating, of getting things done, or simply of exercising one's energy and ingenuity (Schumpeter, 1934). At the risk of oversimplification, Schumpeter's portrayal may be elaborated to include the following behavioral tendencies of the entrepreneur:

1. The entrepreneur's more single-minded concentration on the maximization of one type of value: profit.
2. The more experimental and speculative, less institutionalized character of the activity of the entrepreneur, who must act in terms of a deductive prognosis of results, rather than - as may the incumbents of institutionalized statuses - accumulated experience which gives empirically founded expectations of results.
3. The entrepreneur's greater willingness to take risks, exemplified by his (1) committing a greater fraction of his total assets in a single venture, (2) putting his trust in his own deductive reasoning as against common opinion, and perhaps even (3) delighting in the gambler's odds, leading to possible risk favoring departures from the mini-maxi principle, where others might entertain a conservative, exaggerated fear of the risk of loss.

The entrepreneur's orientation toward risk-taking, as well as his or her attitudes, perceptions, and preferences about risk, security, certainty, ambiguity, and opportunity determine his or her behavior. Evidence suggests that entrepreneurs are less risk-averse than their managerial cousins, and the entrepreneur's tolerance of ambiguity increases the risk-taking propensity under environment complexity (Begley and Boyd, 1987; Bird, 1989). Atkinson's study of motivational effect of risk-taking behavior (1957) seems to indicate that the entrepreneur's willingness to accept risk inherent in the opportunities he or she seizes generates achievement motivation.

If desire for achievement is the essence of entrepreneurship, then the Chinese have a reasonable claim to be entrepreneurs, according to McClelland, who has included the Chinese in his cross-national comparative study of entrepreneurial orientation (McClelland, 1961; 1963). Various studies on Chinese economic values and conduct point to a common feature: self-employment is at a premium. As Wong (1988) reported in his cross-national comparative study of Chinese entrepreneurs, someone not being able to make himself a business owner is considered a failure, a good-for-nothing. Indeed the motivation for achievement and independence has prompted overseas Chinese to set up their own business. For example, approximately forty percent of Chinese-Americans are in business for themselves. Elsewhere, the descendants of 10,000 Chinese brought into Peru to build the railroads have produced one of the two mainstreams of restaurant cuisine in Lima (Shapero & Sokol, 1982). Overseas Chinese are heavily engaged in business wherever they are found; their success in business is considered a political problem in some developing countries when the local economy is highly dependent on Chinese entrepreneurs. Similar to their counterparts elsewhere, private entrepreneurs in China have established private businesses and combined capital, labor, and entrepreneurial spirit in ways which, previously, had not been effectively done in China since the current regime assumed power in 1949.

The entrepreneurial context is characterized by turbulence and change, and entrepreneurial organizations tend to fare better than more stable firms in rapidly changing environment (Bird, 1989). Through searching and even creating disequilibrium, and the "birth" and "death" of organizations in larger social and economic system, entrepreneurs create chaos. Schumpeter (1934)

indicated that entrepreneurs create disturbance and disequilibrium that are likely to produce fear in politicians. Yet the very instability of the small business sector aggregates to assure the security and stability of the larger economy (Bird, 1989). As reported by Vogel (1989), Chinese private enterprises, like the rural household responsibility system, first expanded in an area hardline Communists found it difficult to oppose - among "youth awaiting employment" (the term "unemployed" was still politically sensitive). By 1974, many of the 994,000 young people sent to the countryside during the Cultural Revolution (1966-1976) in the late 1960s had begun to return, but state enterprises and government offices, already overstaffed, had few openings. Leaders, fearing social unrest, knew change was urgently required in order to place thousands of youth, some of whom had been awaiting employment for several years. Allowing them to set up individual and collective enterprises to sell daily necessities, repair goods, and serve drinks and fast foods seemed, even to many who opposed liberalization, a solution to the problem, and political opposition was not significant. Distasteful terms like "capitalist" were replaced by more attractive labels like "individual enterprise household," and more recently "entrepreneurs." More independent stalls and shops, almost always staffed by young people, had begun to reappear almost immediately after the end of the Cultural Revolution in 1976. By 1980, it was official policy that the monopoly of state enterprises had ended. To encourage larger enterprises in the private sector, a new attractive category, "private enterprise," was created in April 1988 for businesses with more than seven employees (Vogel, 1989). The number of privately owned enterprises in communist China has reached 139,000, and some 2.32 million Chinese were employed in the private sector last year, an increase of 26 percent over 1991⁴.

For these young people who were socially, politically, culturally, and economically "displaced," entrepreneurial venture seemed to be a desirable alternative. Shapero and Sokol (1982) theorize that displacements contribute to individual perceptions of the desirability and feasibility of starting a new business, and such displacements free up the entrepreneurial spirit. In the early stage of economic reform, few skills, technology, or capital were required. Economic reform brought about

⁴ Xinhua News Agency, 2/19/93

turbulence and transaction failure of the centrally planned mechanism. As Venkatraman, Van de Ven, Buckeye and Hudson (1990) suggest, the probability of transaction failures is a product of the failure rate at the level of organizational population, as well as the kinds of transactions in which individual firms engage. Such an environment brought about many niches unfulfilled by the state planning mechanism. Private entrepreneurs simply identified a market niche for which demand could be met easily and filled the niche. Those in commerce noticed which goods were in demand, arranged to acquire them cheaply, located themselves in a busy spot, priced their merchandise to make a profit, and decided how much to bargain. Almost anyone old enough and determined enough could perform the work, and few who began after 1978 had training or experience. Many arranged to obtain goods on consignment and even then the amount of goods was insignificant. Nevertheless, the existence of many unfulfilled niches and aggressive strategies increased an entrepreneur's chances for early survival, similar to what has been found in their Western counterpart (Romanelli, 1989). Many such private entrepreneurs earned substantially more income than the highest paid government officials or professionals in the nation.

Privately held firms are not owned by governments, and ownership is typically concentrated in a few residual risk bearers, which reduces the financial resources available. Privately held firms usually are run by owner-managers and thus have fewer principal-agent conflicts (Jensen and Meckling, 1976; Fama and Jensen, 1983), facilitating managerial initiatives to the extent that the concurrence of many owners is not necessary. Owner-managers are often unwilling to dilute their personal and family control over their business (Pondy, 1969), which often limits management depth and specialization.

Despite their high income, private entrepreneurs who run these private businesses lack security and prestige, and when opportunity to get a regular job arises, especially in the government or a state enterprise, most prefer that option. They consider entrepreneurs subject to the risks of unpredictable government policy, arbitrary officials, and markets (Vogel, 1989). They know that state enterprises are almost never allowed to fail and that even if that occurs they would be assigned employment elsewhere. However, the more ambitious and better-educated youth who are

unsatisfied with the communist bureaucracy and low efficiency often prefer to become private entrepreneurs at the cost of giving up security in government or state enterprises. Overall, the lack of security and confidence in government policies toward private business discourages long-term and future oriented strategic planning, and many successful private entrepreneurs spend a sizable part of their profit for personal consumption rather than reinvestment (Long, 1982).

For a business to grow beyond a small individual household and take on other employees, as some did, further skills and a long-term perspective are required. Private enterprises operate under hard budget constraints, as their survival depends on market performance and profitability. This has the effect of imposing the constraint of market action on investment decisions and operations (Nee, 1992). The restraints on growth are more political than economic. The reach of the local government and the Party in both the cities and the countryside remain profound. The parts of government concerned with the economy still have great leverage over firms that grow beyond a certain size. Loans from government banks and cooperatives, land and buildings, control over key resources and foreign currency, permission to engage directly in foreign trade, and access to information and new imported technology are all dominated by state and party officials. Although local businesses are rarely subjected to criticism and punishment as they had been before 1978, local officials have leeway to ask successful enterprises to contribute to various local projects from which they might benefit, sometimes personally. Entry and exit are not entirely regulated by markets, as the private firm's capacity for survival and growth is also constrained by limited access to capital and raw materials controlled by the government redistributive sector. In a socialist redistributive economy, state banks and official sources of credit generally offer loans more on the basis of political rather than economic considerations. Private businesses lack the legitimacy and necessary political backing to enjoy reliable access to capital and thus must depend on private - and often informal - sources of credit, which are limited and are available only at substantially higher interest rates. Similarly, in a shortage economy, private enterprises may be forced out of businesses for lack of raw materials, despite strong market demand for their products (Nee, 1992).

It is thus not difficult to explain why some small private entrepreneurial ventures do not grow. Many are cautious in their approach and are unwilling to make long-term commitments. Some have trouble finding niches that are large enough to permit growth. In addition, private businesses are often too small to confront the complex issues of large operations, and they lack the sophistication of large businesses. Yet the very nature of entrepreneurship determines that these private entrepreneurs must often make quick decisions without comprehensive information and market research (Bird, 1989; Day, 1992). Consistent with the traditional profile of strategic behavior of entrepreneurs, the skills of Chinese private entrepreneurs, in the face of increased environmental complexity and resource scarcity, rely on finding and quickly responding to a niche, taking high risk, moving proactively, and capitalizing on immediate return (Long, 1992). As Nee (1992) suggested, the environment in which Chinese private entrepreneurs operate simply encourages short-term investment decisions aimed at fast returns, liquidity, and a low rate of reinvestment in the firm's growth.

In sum, facing a dynamic, complex, and hostile environment, strategic orientations of Chinese entrepreneurs are characterized by aggressiveness, proactiveness, risk-taking, and an emphasis on short-term return rather than future growth. They pursue opportunity without concern for current resources or capabilities (Stevenson, Roberts, and Grousbeck, 1989), take great risks and make decisions quickly even when information is not available (Bird, 1989). As one entrepreneur said, "if something is not explicitly prohibited, then move ahead."⁵ And these people are moving quickly. Based on the characteristics examined so far, the environment-strategic configuration of private entrepreneurs can be hypothesized, following the environmental dimensions discussed in the previous section and the strategic orientations similar to those developed by Miles and Snow (1978), Miller and Friesen (1983), and Venkatraman (1989a).⁶

⁵ *New Zealand Herald*, 1/25/1993

⁶ These strategic orientations are: *Analysis, Defensiveness, Futurity, Proactiveness, and Riskiness*. Details will be discussed in next chapter.

Among private enterprises in a transition economy, perceived environmental dynamism is positively related to proactive (H1a) and more risk-taking strategies (H1b), and negatively related to future-oriented (H1c) and defensive-oriented strategy (H1d).

Among private enterprises in a transition economy, perceived complexity is positively related to proactive (H2a) and more risk-taking strategies (H2b), and negatively related to future-oriented (H2c) and defensive-oriented strategy (H2d).

Among private enterprises in a transition economy, perceived resource scarcity is positively related to proactive (H3a) and more risk-taking strategies (H3b), and negatively related to future-oriented (H3c) and defensive-oriented strategy (H3d).

Researchers have suggested that an important character of entrepreneurship is the motivation to grow, as well as to make a profit (Katz & Gartner, 1988). The lack of long-term perspective and motivation to grow, partly resulted from lack of security. This seriously handicaps the Chinese private entrepreneurs, and it is for this reason that these private entrepreneurs are classified as "opportunistic risk takers."

State-enterprises: Conservative Defender?

State-owned firms are owned by the government. State-owned Chinese industrial enterprises, as described by Henley and Nyaw (1986), are structured quite differently from state-owned firms in the West. Many of their characteristics are byproducts of China's socialist environment, and they are quite enduring. Even as the reforms continue to evolve, the presence of parallel authority structures lends an unique "Chinese" character to any firm. Although the reforms have sought broader roles for factory directors and administrators, enterprise party secretaries remain formally vested in the organization structure. Through its presence in a parallel authority structure, the party reserves a potentially active and influential role in most enterprise decisions (Schermerhorn & Nyaw, 1991).

Common research findings (Rainey, Backoff, and Levine, 1976; Fottler, 1981; Meyer, 1982) have suggested that state-owned firms are less sensitive to market incentives and influenced more by external political interests and public accountability. State-owned-enterprise managers also have

less autonomy than managers of other ownership types due to external rules, such as civil service policies and rigid, hierarchical reporting requirements to government controllers. Their objectives are more numerous, diverse, and intangible, such as preserving declining industries and employment, subsidizing domestic consumption, maintaining national security, and increasing the invisible resources of politicians (Aharoni, 1986). As a result, state enterprises exhibit lower operating efficiency.

Despite the policy of decentralization of decision-making power to enterprises, state enterprises depend on vertical ties to redistributive agencies from which they receive resource transfers. Likewise, their output is directed to state and municipal agencies that redistribute it under the central plan. For these reasons, managers in these firms are less likely to share the strategic orientation of entrepreneurs of either private or collective enterprises (Nee, 1992). For instance, as state-owned enterprises, firms enjoy priority to raw material and capital allocated under the central plan, even though they face increasing competition from the market sector. Only after they meet the production target and performance level stipulated by the plan can they produce goods for sale in the market. Thus their market access and motivation for proactive moves are limited and restricted by the planning mechanism.

China has tried to increase enterprise and individual initiative in state enterprises by introducing economic responsibility systems. Its efforts have been rather limited, because few opportunities can be provided for individuals to earn extra income by becoming more productive. Consistent with socialist doctrine, workers are the "owners" of all state-owned enterprises, but in reality workers do not identify the enterprise's goals as their own. Rather, they consider themselves as "workers" with an enterprise affiliation. Similarly, few factory directors would think they are "owners" of the enterprises under their administration. They see themselves as "representatives" of the state or of the workers in the enterprises (Mun, 1990). As a result of this "nonowner" feeling, workers and managers often attempt to achieve short-term objectives to benefit themselves, even at the expense of the long-term best interest of their enterprises.

Previous studies regarding regulated environments undergoing deregulation have found that deregulation is associated with increased complexity and dynamism (Mahon and Murray, 1981), which result in selection of shorter-term and less risky strategies (Mahon and Murray, 1981; Birnbaum, 1984). Studies of managers in Chinese state enterprises have indicated that they share a common concern for security and are likely to avoid proactive and risk-taking decisions when faced with uncertain environments (Chong, Cragin, and Scherling, 1983; Birnbaum and Wong, 1985; Lai and Lam, 1986; Adler, Brahm, and Graham, 1992). Because managers of state-owned enterprises are usually political appointees, they tend to be "extraconservative" (De Mente, 1989). Nee (1992) has also documented weaker orientation toward risk-taking and proactive incentives among state enterprise managers than entrepreneurs in private and collective enterprises. He has also found that the evaluative process encourages short-term orientation emphasizing meeting performance targets sent down from higher authorities, and that managers are cautious in their interpretation of policy guidelines issued by the party and state ministries. Since the information uncertainty perspective posits that environmental complexity and dynamism are key dimensions affecting uncertainty (Lawrence and Lorsch, 1967; Thompson, 1967), it is hypothesized that:

Among state enterprises in a transition economy, perceived environmental dynamism is positively related to defensive-oriented strategy (H4a), and negatively related to proactive (H4b), future-oriented (H4c) and more risk-taking strategies (H4d).

Among state enterprises in a transition economy, perceived environmental complexity is positively related to defensive-oriented strategy (H5a), and negatively related to proactive (H5b), future-oriented (H5c) and more risk-taking strategies (H5d).

Hypotheses H4a through H5d are also consistent with findings of the impact of environmental complexity in the PRC (Boisot & Child, 1988, 1990; Child & Lu, 1990), except that managers in state enterprises are far more sensitive to this impact because their career is closely tied to the state bureaucracy.

Deregulation also increases the intensity of competition for limited resources. According to the resource dependence perspective, when the environment becomes more hostile, organizations are forced to buffer uncertainty in order to protect the technical core (Thompson, 1967; Pfeffer and

Salancik, 1978). Buffering in state enterprises may be achieved in part by placing more emphasis on short term goals and less emphasis on expensive and risky activities. Thus, it is predicted that *Among state enterprises in a transition economy, perceived resource scarcity is positively related to defensive-oriented strategy (H6a), and negatively related to proactive (H6b), future-oriented (H6c), and more risk-taking strategies (H6d).*

Foreign Joint Ventures: Adaptive Analyzer?

To study strategic decision characteristics within joint ventures, it is important to understand the premise under which joint ventures are formed. In a sense, the strategic orientation of joint ventures may be a function of the organizational dynamics and interaction between joint venture partners. Thus, it is logical to start the investigation by examining the motivation of joint venture partners that brought them together.

Grub and Lin (1991) suggest that the promotion of foreign investment by the Chinese government is motivated by a variety of factors that include the following:

1. To obtain foreign technology;
2. To acquire foreign capital;
3. To obtain foreign management expertise;
4. To obtain foreign marketing experience and marketing network;
5. To increase foreign exchange generation capacity;
6. To develop and promote joint research activities; and
7. To create employment opportunities and raise the standard of living for local communities.

On the other hand, foreign investors' motivation for investing in China may vary. Yet, the above authors point out that foreign investors certainly share some of the following motivations:

1. To receive assurance of a share of China's potential market and the rapid growth of its economy: It is not surprising that China's market potential is considered a prime factor by foreign investors. With over one billion people and a relatively rapid rate of economic growth during the past ten years, the potential for future market growth appears attractive.
2. To reduce operating costs (labor, raw materials, and other production inputs). The relatively low operating costs have attracted investors not only from industrial countries, but also from Hong Kong and other nearby economies, including South Korea, Taiwan, and other Pacific region countries. A primary reason is the high labor cost in these countries and regions. Although the actual labor cost in China appears to be much higher than many had originally expected, it remains, nonetheless, well below that of the major industrial countries and most neighboring Asian countries. For example, at the end of 1990, in the manufacturing sector, Japanese workers' average monthly wage was \$2,438, Taiwan's \$756, South Korea's \$726 and Hong Kong's \$685. In lower-wage areas, Malaysia's monthly wage was \$260, Thailand \$115, Indonesia \$60 and China \$45.⁷
3. To obtain raw materials available in the Chinese market that can be either used to meet production needs or be sold in third markets. China's rich deposits of oil, gas, coal, and other raw materials are another attraction to foreign investors.
4. To take advantage of China's preferential treatments aimed at encouraging foreign investment. In order to promote foreign investment, the Chinese government has made a considerable effort to provide various investment incentives. Relatively low tax rates are a good example. China's current corporate tax rate for joint ventures is fifteen percent in most areas, compared with an average tax rate of thirty percent or more in most neighboring developing countries.
5. Meet their competitors' move to China and/or forestall or reduce competition from other firms' markets in the same geographical area. Some firms have invested in China without a specific reason or objective. Their investment may have been motivated by a similar move by their competitors or by a desire to initiate an investment project in China on trial basis.

⁷ All wage numbers have been converted into U.S. dollars.

These firms test the Chinese market as a potential for large scale investments at a later stage. For this reason, a majority of joint ventures to date have been quite small. This feature also determines that these joint ventures in general are not likely to make proactive move and risky and long-term commitment.

Before going on to look at the benefits which the Chinese may obtain from foreign investment, it is necessary to consider the very wide range of contractual arrangements which are available in China to prospective investors. These are:

1. One hundred percent foreign owned ventures, which were rare until 1988: These type of firms have been restricted to "advanced technology" and "export oriented" projects, and until 1986 they were to be found only in the Special Economic Zones (SEZ). These firms enjoy the greatest freedom and are least likely to be interfered with by the local government. They are excluded from this study.
2. Equity joint ventures (where some contributions are allowed from the Chinese side in kind): Equity joint ventures have increased greatly in importance since the earlier years, and are the only form of foreign investment in China for which a (relatively) clear and detailed legal framework exists. This is based on the Joint Venture Law of 1979 and elaborated on in various pieces of enabling legislation, particularly the 1983 Implementation Act, which did much to encourage joint venture investment after a slow start. Foreign partners must contribute a minimum of twenty-five percent of the equity, and most contracts are for ten to twenty years.
3. Cooperative (or contractual) joint ventures (where the Chinese contribution is mainly in kind, normally land and buildings): Cooperative joint ventures can be very short term. For example, over a five year contract period the foreign partner can receive repayment of his initial investment as a prior claim before the distribution of profits, an arrangement not far removed from compensation trade. Unlike the equity joint venture, the profit shares between the partners need not be in the same proportions, and can vary over the contract's life. For the Chinese partner, no financial contribution or foreign exchange is required, which is an attractive feature for a local authority investment vehicle in the early stages of cooperation with

foreigners. On the other hand, compared to equity joint ventures, they have less freedom of action in practice, particularly with regard to the freedom to import inputs and to retain foreign exchange.

Individual Chinese firms may be looking for access to improved technology through importing equipment and management, or access to export markets through the prospective partners' contacts with customers and through improved product quality. The greater freedom of action accorded to joint ventures to import and export, the access to foreign exchange generally, and tax privileges compared to state companies, are also strong incentives for companies and local authorities to seek foreign partners. In some cases, the "foreign" partners may be a Chinese-owned company in Hong Kong. In such cases the joint venture becomes little more than a device to secure greater freedom of action for a Chinese company (Thoburn, Leung, Chau, & Tang, 1990). The establishment of this kind of joint venture also allows Chinese enterprises to take advantage of various forms of preferential treatment and incentives only available to joint venture partners. Indeed many Chinese state enterprises set up businesses in Hong Kong or other foreign countries and then invest in China. The strategic implication of such manipulation is apparent. These types of joint ventures are, however, excluded from the present study.

Management systems for foreign joint ventures differ vastly from those of domestic Chinese enterprises. In most domestic enterprises, there is a lack of adequate autonomy. The management system in a joint venture, however, is more Western oriented because joint ventures have the right to manage themselves, provided that they observe the investment laws and related regulations. Joint ventures are managed by their own boards of directors. In general, the government does not interfere in the administration of these ventures. Wholly owned foreign businesses, of course, have complete autonomy for internal operations, and for this reason, as stated earlier, are not included in this study.

At the start of the "open" policy, a major goal of the reformers was to guard against foreign domination within joint ventures, while simultaneously fostering an environment where the foreign

partners would provide training for Chinese managers. In order to meet its concerns at the enterprise level, the government regulatory agencies established controls to ensure that foreign firms did not dominate decision-making within joint ventures, and that investors did not turn joint ventures against the goals of the state. Some controls were also designed to create a favorable environment for the transfer of foreign managerial skills. The government's strategy to achieve these goals during the early years combined three elements: (1) establishment of a management and decision-making structure within joint ventures that was formally equal, but that also retained some elements of Chinese domination; (2) reliance upon existing state authority structures, such as the state economic bureaucracy and labor organization, as channels for outside influence over joint ventures; and (3) encouragement of a consultative decision-making style so that Chinese management and workers could learn from foreign investors (Pearson, 1991).

The board of directors is typically the highest decision-making body in a joint venture. Under its supervision, the general manager is responsible for carrying out the day-to-day business activities. In most joint ventures outside of China, control over decision-making is directly tied to the division of ownership between partners; the partner with majority ownership has the majority of votes on the board of directors. China's Joint Venture Law does not specify a maximum limit on foreign ownership, thereby offering the possibility of ninety-nine percent foreign ownership of a joint venture. The law does require foreigners to hold a minimum of twenty-five percent equity. Precise division of equity is to be left to negotiation. Yet the potential link between majority equity ownership and control remains a salient issue to the Chinese government in the early years. It is common that the Chinese partners hold the majority or equal ownership in most joint ventures formed in early years (Pearson, 1991).

Most foreign investors do not oppose having minority or fifty percent ownership, and in some cases even prefer it. As indicated by Pearson (1991), the lack of opposition from Western partners is due, in part, to the fact that the major incentive for investment is the chance to explore Chinese markets and maintain defensive positions against international competition. Minority ownership keeps a firm's financial expenditure and managerial commitment to the joint venture to a minimum, while

establishing a presence in China. The lack of conflict on this issue also results from the fact that equity control does not always translate into management control. Throughout the decade, the Chinese have preferred structures and styles of decision-making that de-link equity holdings from effective (rather than symbolic) control of the venture. By weighting the composition of the board of directors in the Chinese side's favor, and by fostering unanimous, rather than majority, decision rules, the significance of equity divisions for effective control diminish. The disparate managerial systems, however, always increase the risk of failure by adding hazardous situations (Davidson, 1987).

Miles and Snow (1978) have suggested that multinational corporations often follow the Analyzer pattern "to the extent that they avoid the complexities involved in joint ventures and/or host-country production facilities" (pp.134). The very nature of decision characteristics and process suggest that for joint ventures operating in a fast changing and highly complex environment such as China, a critical task is to gather and analyze information. This is especially crucial when the relationship between joint venture enterprises and their various environmental elements is highly complex and particularistic, information is not codified, and regulations are not made explicit (Boisot & Child, 1988, 1990; Child & Lu, 1990). An environment characterized by uncoded information can promote noneconomic forms of opportunism, increase transaction costs, and prompt decision makers to be more cautious when making resource commitments (Boisot & Child, 1988). Thus environmental scanning and coordination mechanisms are important to survival and growth. Consequently, this type of organization strikes a fine balance between the joint needs of adapting to environmental dictates and maintaining interdependent management. Whenever either of these tasks moves out of the limits for which established routines are available, the dominant coalition may become "overloaded" (Miles & Snow, 1978).

Indeed, joint ventures in China allocate most of their resources to a set of reasonably stable environments while at the same time conducting somewhat routinized scanning activities in a limited product-market area. They monitor market situations in the host country, and carefully apply product and market innovations developed by headquarters. In most cases, R&D activities

are conducted at the headquarters level and only those mature products and well-known technologies are transferred to the host country. Much of the joint venture's success occurs through market penetration since the organization's basic strength comes from its traditional product-market base. This market development strategy allows the foreign investors to extend the product life cycle and to maximize returns on their R&D expenditure. From the standpoint of the foreign partners, this pattern of strategic posture is also grounded in the natural fear of creating potential competitors in the near future. They clearly follow the guiding principles delineated by Hisrich (1992): follow the instructions given; do not take any initiative and make proactive move; do not be creative; do not make any mistakes; stay within your assigned position; and protect your turf (pp.525). This is especially true when facing a dynamic and complex environment.

In sum, based on the above discussion, foreign joint ventures in China share the same corporate culture and reward system with their counterparts elsewhere, one that favors conservative decision making (Hisrich, 1992). They clearly exhibit a pattern of strategic orientation consistent with the strategy type categorized by Miles and Snow as Analyzer (1978). Their major strategic thrust appears to be to adapt to foreign environments through cautious incremental changes. Therefore, it is expected that there exists a configuration of relationships between environmental characteristics and strategic orientations among joint ventures. However, lack of documented studies justify only hypotheses based on limited dimensions. With this in mind, the following hypotheses are proposed.

Among foreign joint venture enterprises in a transition economy, perceived environmental dynamism is positively related to analysis strategy (H7).

Among foreign joint venture enterprises in a transition economy, perceived environmental complexity is positively related to analysis strategy (H8).

Among foreign joint venture enterprises in a transition economy, resource scarcity is positively related to analysis strategy (H9).

It appears that managers in joint ventures in China share strategic orientation profiles similar to the Analyzer strategy found among organizations in the U.S. Here they are classified as "Adaptive Analyzer."

Collective-enterprises: Conservative Entrepreneur?

Most Chinese collective enterprises are in fact run by local governments. "Collective" enterprises are established by local governments rather than by groups of private individuals. In some cases state enterprises that have been run by higher levels of government are passed down to local governments and converted to collectives. Local governments are encouraged to establish new collectives either by themselves or in cooperation with other local governments. There is a continuum from large collectives, run by cities and counties, to small ones, run by urban districts and rural townships and villages.

Unlike state enterprises, these collective enterprises are more independent of the bureaucracy and less subject to rigid rules about position, status, salary, and welfare payments. State factory managers and higher-level cadres consider collective enterprises prone to loose business ethics, profiteering, and bribery. Local officials sponsoring collectives regard them as an important source of income and more efficient than state enterprises (Vogel, 1989). In 1978 there were 1.5 million non-state industrial firms in the countryside, employing 28 million people. By 1991 there were 19 million rural industrial firms employing 96 million people. The output of these collective enterprises has been growing by an average of nearly 30% a year for more than a decade. Their exports grew by 65% a year in the last half of the 1980s at rates up to 15% a year. By the early 1990s, rural industries accounted for nearly 40% of China's industrial employment, more than a quarter of the industrial output and nearly a quarter of exports.⁸

Township and village enterprises are officially classified as "collective ownership," as opposed to state ownership, but in fact they are run and financed by the township and village governments. They grow out of the old commune and brigade enterprises, and there is considerable continuity in personnel. However, they have changed their orientation gradually from aiding agriculture to

⁸ *The Economist*, 11/28/92

responding to market demand. These enterprises contribute a sizeable proportion of local government revenue, and this fact has given local officials strong incentives to ensure their success (Vogel, 1989). These firms have great flexibility in managing their business and are free of bureaucratic constraints. Collective ownership increases the financial resources available to the firm through greater risk sharing among many owners (Fama and Jensen, 1983). Firms have relative autonomy in tapping the equity market. When firms are permitted to issue stocks to the public, collective enterprises quickly experiment with this new source of capital. A stock listing can also enhance a firm's reputation and visibility.

The structure of collective ownership is in transformation. For example, when local governments lease collective enterprises to private operators, these firms become a mixed property form, with local government and private contractors claiming property rights over them (Nee, 1992). Thus, like hybrids in advanced capitalist economies, the hybrids of the transition economy are organizational forms that "use resources and/or governance structures from more than one existing organization" (Borys & Jemison, 1989:235). Similarly, as in capitalist economies the advantage of hybrids in a transitional economy is their capacity to reduce uncertainty in interorganizational relationships involving interdependency (Pfeffer & Nowak, 1976; Pfeffer & Salancik, 1978). For example, the close interorganizational relationship between collective enterprises and local government not only is based on the structure of property rights but also is reinforced by bilateral dependency. First, in a shortage economy, collective enterprises must rely on connections provided by local government to secure needed resources and credit. Similarly, local governments become increasingly dependent on revenues from collective enterprises. Second, local corporatism economizes on transaction costs when the institutional arrangements underpinning markets are weak. In the absence of contractual law hardened by routine compliance and enforcement, and of codified information storage and transmission mechanism (Boisot & Child, 1988, 1990), market-oriented enterprises need political allies to go to bat for them in negotiating and enforcing contracts, especially with dominant state agencies and enterprises (Nee, 1992). This use of strategic

alliance and joint negotiations involving local authorities certainly enhances the negotiating position of collective enterprises, an advantage not readily available to private entrepreneurs.

Employees in collective enterprises are linked to the local community, and their security and wellbeing are determined by the performance of their own enterprises, not the nation. At present, they cannot be transferred to another area and have no security if the enterprise fails. And yet the local community has accepted responsibility for their welfare and will open new enterprises to provide employment if one fails. A collective enterprise manager trying to improve performance of workers has several advantages over a manager in a state company (Vogel, 1989). Because collective enterprises fall outside of the central plan, which encompasses state-owned enterprises, they have less restrictive regulations, and less supervision by state bureaus. Managers also have fewer reports to file and greater flexibility in hiring, promoting, and organizing work. Their growth has become increasingly dependent on markets. They are more likely to be proactive and make quick and bold decisions without consulting state officials. Because employee salary and perquisites are linked so directly to performance, employees are readier to cooperate to make it successful. The managers are freer to use financial incentives, and the employees are more responsive to them. They can also offer higher wages than the state enterprises to attract highly qualified personnel. Management's compensation is closely tied to performance. When the reforms make it possible for collective enterprises to find their own suppliers and market their own products, they respond more quickly and more effectively than state enterprises, although sometimes they use questionable practices such as making private payments to state officials to get supplies. These firms have nothing to defend, and the only way to improve their position in the economy and society is to grow. It is thus appealing to speculate that they are more likely to take a long-term perspective and willing to take greater risk than state enterprises. With some of the generic advantages, successful collective enterprises have moved proactively to capitalize these opportunities and have grown more rapidly. Also workers and managers are more optimistic about their future. Because collective enterprises tend to be more dynamic, some young people, including workers, intellectuals

and government officials prefer to work in collectives, thus upsetting the traditional hierarchy (Vogel, 1989).

Previous studies of collective enterprise managers have reported that these managers have real management power in hiring or firing workers, determining salary levels, and, most importantly, reinvesting profit for future expansion (Wang, Wang, & Gong, 1991). Collective enterprises are not under the state's regulatory system. Their enterprises have more centralized decision-making structure than the state-enterprises. One possible explanation is that collective enterprises are smaller and have no need to delegate decision power to lower levels since most enterprise directors can oversee the entire operation. These collective enterprises may be technologically inferior to state enterprises, but their rapid growth and greater adaptability are clear indications that efficiency cannot be attained unless enterprise leaders have authority to run their organizations.

A further comparison between collective and state enterprises indicates that collective enterprises are also quick in developing new products. As Wang, Wang, and Gong (1991) have found, unlike the state enterprises' product-oriented production, collective enterprises are increasingly more market and customer oriented. While state enterprises produce undifferentiated products without improving features for years, collective enterprises are often inquisitive about the latest design and development in the international market. They quickly orient their production to the marketplace. They also communicate and negotiate with foreign businesses directly, whereas the foreign trade ministry handles a large proportion of export and import for the state enterprises. Market structures of collective enterprises are less complex than those of state enterprises. Whether dealing with domestic buyers/suppliers or foreign companies, collective enterprises negotiate and set their own prices, while state enterprise prices are either determined or influenced by the state trade ministry or planning committee. Collective enterprises enjoy greater flexibility in management decisions and are more proactive in the marketplace. On the other hand, compared with private entrepreneurs, collective enterprises can afford and are more willing to make long-term commitments. Local governments assist collective enterprises to secure reliable access to factor resources they need, especially those in short supply. They also oversee local labor markets and appoint managers to

collective enterprises not leased to private contractors, serve as intermediaries in critical negotiations with banks for credit, fix local prices on select numbers of commodities, and approve and coordinate investment of extrabudgetary funds under their control for projects proposed by collective enterprises. This form of local corporatism can enhance the firm's competitiveness in domestic and world markets by offering subsidies, facilitating horizontal and vertical economic integration, providing access to credit capital, and investing in infrastructure. In short, local governments may buffer the enterprises from unfavorable environmental conditions, and provide the backing and resources needed by the collective entrepreneurs to compete effectively and to plan long-term strategy (Nee, 1992).

In sum, though the management of collective enterprises is often closely linked to local governments, workers and managers are far more responsive than those in state enterprises to the commodity economy and new ideas and practices that are traditionally associated with the capitalist system. As discussed previously, collective ownership shares many common features with their capitalistic counterparts, because every worker under this type of ownership in either economic system "appropriates the fruits of his own labors" (Williamson, 1985:pp228). Indeed, the strategic behavior of collective enterprises under a rapidly changing environment is similar to those firms studied by Miller and Friesen (1983), set in the market economies. In addition, managers in collective enterprises share some common features found among private entrepreneurs, as discussed earlier. Yet collective enterprise managers may be more optimistic about the future and are more willing to make long-term commitment than their counterparts in private businesses, even though they tend to be more conservative and cautious than the latter. On the other hand, they are more growth-oriented and are less defensive than the state-enterprises managers. However, given the geographic, economic, cultural and political differences and stages of economic reform in different regions, one would naturally expect enormous variation in managerial behavior across the nation. For instance, most of the observations of collective enterprises by Western academics are made in the Southern provinces such as Guangdong, where more liberal economic policy, proximity to Hong Kong and distance from the central government have allowed firms to be far more proactive

than their counterparts in other regions (e.g., Vogel, 1989). Earley (1993) also argues that organizations in the same culture are not necessarily homogeneous, and managers in cities in the South may not exhibit the same managerial behavior. The lack of sufficient theoretical and empirical support therefore does not justify testing hypotheses. Consequently, environment-strategy relationship among collective enterprises will be studied on exploratory bases. With this issue in mind, the following research question is proposed:

Among collective enterprises in a transition economy, how are environmental attributes and strategic orientation related (Q1)?

Based on existing accounts, it is apparent that managers in collective enterprises share some common characteristics with those prescribed in conventional entrepreneurship literature, except that they are more conservative and cautious due to the unique environment they face. Thus they are classified as "conservative entrepreneurs."

Performance Implications

The evidence supporting a relationship between the environment-strategy coalignment and performance is compelling (Venkatraman & Prescott, 1990), and empirical studies demonstrate that the pattern of strategic change following deregulation is associated with differences in performance (Smith and Grimm, 1987). Miller and Friesen (1983) summarized their findings by arguing that successful archetypes adopted differing strategies to cope with differing environments. In his field study of savings and loan associations, Lenz (1980) found that the combination of environment, strategy, and organizational structure in high-performance firms differed significantly from that of low-performance firms. Similarly, Hambrick (1983) found that alternative strategies did not lead to equal success within an industry. Thus the current literature suggests that different strategies may have different performance implications. Following the assumption that a fit between a firm's strategic profile and its external context will improve performance (Venkatraman and Prescott, 1990), it is hypothesized that

In a transition economy, the predominant strategic orientation among enterprises exhibiting the same property ownership type is positively related to performance (H10).

As discussed earlier, firms characterized by different ownership types gain additional privilege or face additional constraints depending on government policies. For example, state enterprises have traditionally received preferential treatment that has not been available to other firms. This policy effect might have led to higher performance that is mostly related to ownership type but not related to strategic choice because the government preferential treatment may result in a more munificent environment faced by some enterprises but not others. With this in mind, the following hypothesis will also be tested:

In a transition economy, ownership type not only has indirect effect on performance through environment-strategy linkage, but also has a direct effect on performance (H11).

In next chapter, discussion will move to methodological issues and research design.

Chapter 3

Research Design

The previous review has covered the general theoretical background of the environment-strategy relationship, as well as the impact of ownership type on the proposed relationship. The discussion suggests that research on the proposed topic shows promise. To probe further, the discussion now turns to issues in research design. This section discusses the issue of anonymity, research site selection, data collection strategy and process, and the statistical analyses employed in this study. In addition, this section presents a basic framework for validity assessment.

Study Setting

The data were collected from the People's Republic of China (PRC) during a time of dramatic change in the economy. As a result of economic reform and the introduction of market mechanisms, managers have acquired more decision-making prerogatives, and new profit-sharing incentives have encouraged the use of added discretion. These changes have affected the various economic sectors differently and to varying degrees. In the past ten years, firms in certain industries

have adopted modern production technologies and developed a new generation of products. At the same time, modern management theories and practices have also been introduced to Chinese managers and incorporated into their decision-making process (e.g. Burstein, 1983; Wang, 1986). Strategic management theory and techniques have become standard materials in executive training programs (Luo & Yu, 1991). These practices encourage managers to become more sensitive to the dictates of the external environment, and require managers to scan environmental conditions, evaluate strengths and weaknesses, and make informed strategic decisions. Even though economic activities remain subject to a substantial amount of state intervention, these changes have moved some sectors of the Chinese economy closer to a market system, and made it possible to utilize modern western management theories. Thus the PRC offers a unique setting for studying organizational dynamics in that the economy rather than a single industry is undergoing stages of deregulation.

In this changing economy, the electronics industry has been selected as the research setting. In the past ten years, the Chinese electronics industry has faced great environmental changes in the form of increased international competition. This competition has centered on both quality and comprehensiveness of product line. In addition, the reform has made the industry far more vulnerable to environmental change than during the period of self-reliance. For example, the Chinese electronics industry experienced continuous growth through mid 1989, as reflected in an increase in revenue of 9.3 percent for the first six months in 1989. As a result of the introduction of economic sanctions by Western countries because of the "June Fourth Incident," virtually all measures of economic performance deteriorated, and annual revenues decreased by 17.09 percent during 1989. At the provincial and city levels, some coastal provinces experienced declines of up to 47.1 percent. In one of our research sites, the city of Tianjin, export revenues for the electronics industry in 1989 dropped 24.3 percent, despite the city's efforts to develop an export-oriented industrial policy.⁹

⁹ *Electronics Industry*, June, 1990 (In Chinese).

Several issues must be taken into consideration when selecting a research site and determining data collection methods for this study. First, the infeasibility of collecting background and financial information makes it difficult to use objective data. Second, in order to preserve anonymity and ensure collaboration from respondents and government officials, compromises in data collection techniques have to be made.

The samples of firms exhibiting different ownership types were drawn from several industrial cities in North China. Samples of different enterprises were drawn from enterprise directories using simple random sampling techniques. Details will be discussed in later sections.

Anonymity

Since this study was conducted in the People's Republic of China, an economy that is under the control of a communist regime, the issue of anonymity warrants special consideration. This study will follow the usual academic convention of leaving unidentified the individual organizations in the sample. The observance of anonymity seems to be sound practice in general, in that it provides a degree of protection to managerial respondents. In the Chinese enterprises for which this author conducted surveys in the past, respondents seemed to respond to such an offer of anonymity in the fashion that is expected. Researchers who have used questionnaire surveys in the PRC have reported that under anonymity, the Chinese managers were more willing (and more likely) to provide accurate information (Adler and Campbell, 1989). Certainly the researcher has to make necessary, yet unfortunate, compromises because no individual demographic data may be collected. In some cases the author may be required to identify enterprises by sector, or to give other identifying enterprise characteristics that might permit the diligent researcher to identify the firms. Nevertheless, every effort was made to preserve anonymity. This position is based partly on the fact that the researcher will be presenting data for individual enterprises which they might conceivably regard as sensitive. A second factor is that only a very few readers will be familiar with the

enterprises concerned and thus protection of anonymity is still feasible. The third reason is that only in this way can the researcher preserve his credibility (and possibly that of other potential researchers) with future interviewees in China. Since the "June Fourth Incident" in 1989, Chinese authorities tightened control over academic contact with Western countries, which it considered as "hostile forces". As reported by Western news media, in 1990, the State Education Commission issued a decree that specifically prohibits survey research in the social sciences by foreign researchers. Survey results conducted by the University of Michigan and its Chinese counterpart, which obtained prior government clearance, were even withheld by the government. The Chinese government considered this social science research as attempts by Western "hostile forces" to obtain vital information about the Chinese economy and society. There have been numerous cases in which Chinese partners of joint research were charged with "leaking state secret", a serious crime in China. Thus while many contacts of the author in China were willing to collaborate with this research, it is not only for the sake of academic ethics, but also the future security of survey contacts that the strictest confidentiality was observed.

Data Collection Method

One methodological issue that has attracted increasing attention is construct validity, which is the ability of a measurement instrument to measure a concept or construct. Generally construct validity is demonstrated by showing both convergent and discriminant validity. Researchers have argued that there needs to be a greater concern for the task of construct validation using a multi-trait multi-method (MTMM) approach for establishing both convergent and discriminant validity (Campbell and Fiske, 1959). This is required so that common method variance can be separated out by using more than one measure of a construct.

To deal with the above measurement problems the methodological goal is to assemble a combination of methods that would capture managerial perceptions of environmental

characteristics, strategic orientation, and performance relative to the competition, in order to provide a holistic picture of the multivariate relationship, and to offset and balance the relative strengths and weaknesses of each method.

In view of these objectives, a self-administered questionnaire, content analysis and personal interviews were used to collect pertinent information. By using multiple methods convergence can be gained through the compensation of one particular method's weakness for another. Such an assessment is in line with Fiski and Campbell's MTMM framework (1959). First, content analysis and personal interviews were included to provide qualitative information from group members. With this method overly simplistic and inadequate inferences from questionnaire data were prevented.

On the other hand, self-administered questionnaires should provide quantitative data and contribute to the holistic picture because it provides perceptual data and offers a means of checking interpretative and observational data. In addition, given the basic orientation of the research (information uncertainty perspective), the most feasible way to collect data was to use a survey research instrument, since the information needed came directly from managers involved in the activities in which we are interested. Specific attention was devoted to the meaningfulness of the questions, the language, concreteness, and brevity during questionnaire development. In addition, secondary sources were consulted in order to collect data on firm background and other historical data. Current publications were also analyzed to obtain information about the context of the research problem.

Measurement

Environment. Some theorists and research have treated the environment as objective facts independent of firms (Aldrich, 1979), and others have treated the environment as perceptually

determined and enacted (Weick, 1969). This unsolved issue has been a source of equivocal empirical results. Bourgeois (1980), however, concluded that the issue was not whether measures should be objective or perceptual; rather, he suggested that both the objective and perceived environments are real and relevant from a strategic management standpoint. The objective environment is relevant to primary strategy making (domain selection), while the perceived environment is a prime input to secondary strategy making (domain navigation). It has also been argued that perceptual measures make sense since only factors that participants perceive can enter into their strategy formulation behavior (Duncan, 1972; Lawrence and Lorsch, 1967; Pfeffer and Salancik, 1978). In this study, the environment was viewed as a perceptual construct as the study deals with strategy that involves navigating within a chosen domain. As some researchers have argued (e.g., Anderson and Paine, 1975; Hambrick and Snow, 1977; Miller, 1988), how managers perceive their environment is more critical and relevant to variables subject to managerial control than archival measures of the environment. Perceptual measures thus enable the researcher to depict a firm's environment from the perspective of organizational members or key informants (Buyd, Dess, and Rasheed, 1993).

As pointed out by Fahey and Narayanan (1986), analyzing the environment as a whole is impossible, since it is too complex and interconnected. Therefore, the environment should be decomposed into segments in order to provide a clear frame of reference for the respondents. Current literature suggests that there are two conceptions of the organizational environment. The first is the task environment, which is broadly defined as all aspects of the environment "potentially relevant to goal setting and goal attainment" (Dill, 1958:410). While these aspects have been considered as stocks of resources or sources of information, they often narrowly refer to sources of inputs, markets for outputs, competitors, and regulators (Scott, 1987). Another conception of the environment that emphasizes the importance of large corporate systems is the institutional environment, which includes elements such as societal, demographic, economic, political, and international (Scott, 1987). Thus, eight environmental segments similar to these elements and also identified by Khandwalla (1977) and Jauch, Osborn, and Glueck (1980) were examined, including

competitors, customers, suppliers, technological, regulatory, economic, social-culture, and international. Respondents were asked their perception of the level of resource scarcity, dynamism and complexity in each of the eight environmental segments rather than for the environment as a whole. Forty-eight questions were devised using a seven-point scale to measure environmental *resource scarcity*, *dynamism* and *complexity* in each environmental segment. The *resource scarcity* dimension was measured by the importance and availability of resources controlled by different environmental elements. The *dynamism* dimension was measured by variability and predictability of these elements. Finally the *complexity* dimension was measured by heterogeneity and diversity within those segments in the environment. In this instrument, the key respondents (top managers), after having been given an explanation of the sectors the firm must deal with, were asked to judge the resource scarcity, complexity, and dynamism in each sector. The scores were then averaged to form the measures of three environment dimensions. The following is an illustration of a portion of the instrument which deals with resource scarcity. After the respondents received a set of definitions of the environmental sectors in pictorial form, they were asked to judge the relative resource scarcity. A copy of the English version of the questionnaire is attached as an appendix¹⁰

The question reads:

1. To what extent do you think these factors have impact on your firm?

	<i>Very little</i>		<i>About middle</i>			<i>Very much</i>	
	↓		↓		↓		
• Competitors	1	2	3	4	5	6	7
• Customers	1	2	3	4	5	6	7
• Suppliers	1	2	3	4	5	6	7
• Technological	1	2	3	4	5	6	7
• Regulatory	1	2	3	4	5	6	7
• Economic	1	2	3	4	5	6	7
• Social-Cultural	1	2	3	4	5	6	7
• International	1	2	3	4	5	6	7

¹⁰ The format of this portion of the instrument was in part adopted from Li (1990). Responses for questions #2 (To what extent do you think these factors have become more favorable to your firm?) and #3 (To what extent do you think these factors have become more predictable to your firm?) in this section were reverse coded.

Strategic Orientation. As discussed earlier, the present research used a dimensional approach of strategic orientation developed by Venkatraman (1989a), who suggested that “given the complexity of the strategy concept, it is logical to assume that Strategic Orientation of Business Enterprises (STROBE) is a multidimensional construct” (p.947). In his effort to develop operational measures for theoretical dimensions of strategy, Venkatraman identified six dimensions of strategic orientation:

- *Analysis* refers to the overall problem solving posture, including the extent of tendency to search relevant information, and of effort to comprehend the problem and generate best possible alternative solutions to the problem. In addition, this dimension measures managers’ willingness to make decisions in cases where the government neither prohibits nor explicitly permits certain activities. While this dimension exhibits similarity with Miles and Snow’s (1978) Analyzer strategy, it is not merely a mid-point between Prospector and Defender attributes.
- *Defensiveness* reflects defensive behavior, including Miles and Snow’s (1978) view of domain defensive strategy and Thompson’s (1967) concept of defending the core technology. It also emphasizes manager’s willingness to defend the current strategic position and performance level.
- *Futurity* measures managers’ view in key strategic decisions in terms of the relative emphasis of long-term growth consideration versus short-term profit consideration.
- *Proactiveness* measures the proactive behavior in relation to participation in emerging industries, continuous search for market opportunities and experimentation with potential response to environmental changes.
- *Riskiness* captures managers’ risk taking attitude in various resource allocation decisions.
- *Aggressiveness* refers to the posture adopted by organizations in their allocation of resources for improving market positions at a faster rate than the competitors in a given market.

These dimensions of strategic orientation are appropriately comprehensive, yet maintain a reasonable level of parsimony, thus were adopted and modified for this study, with the exception

that the *aggressiveness* and *proactiveness* were combined. Questions were modified to fit the Chinese context. Consequently, fifteen questions were used, with three questions each to approximate five strategic orientations.

The following is an illustration of one item in this part of the questionnaire.¹¹ After defining the nature of the strategic decisions and offering some specific examples, the questionnaire asks the informants to provide information related to situation analysis.

1. In making strategic decisions, we look into the future to anticipate conditions.

<i>strongly disagree</i>	<i>strongly disagree</i>					
1	2	3	4	5	6	7

Performance. For the purpose of this study, the performance measures were obtained from both secondary sources and subject responses. While it was desirable to keep the survey instrument as short as possible and avoid requesting sensitive information, top management assessment of the firm performance is of great value in providing further information about firm performance. Therefore, a set of five questions was put in the questionnaire to measure the subjective evaluation of the performance. These questions have been successfully used by (Khandwalla, 1976), Dess (1987), Robinson and Pearce (1988), and Venkatraman (1989a). As Dess (1987) suggests, in designing this instrument, primary consideration was given to brevity and an appreciation of the confidential nature of the information requested from top management. The first three items asked the respondents to rate their relative standing among their competitors in the same industry on three measures of performance: total sales growth, after tax return on total assets, and after tax return on total sales. Since the scale was designed as a percentage index, this measure was considered an interval Likert type scale (Robinson and Pearce, 1988). Finally, two items were used to assess overall firm performances and competitive position. The response format was a five-point scale (bottom twenty percent to top twenty percent).

¹¹ Response for question #15 in this section (We approve new projects on a "stage-by-stage basis rather than with "blanket" approval.) was reverse coded.

Categories of responses were better fitted in this question (sensitive information), for they do not specifically identify the responses and appear to be less sensitive. The following depicts the performance items used in the questionnaire¹².

This part is concerned with the performance of your firm. To the best of your knowledge, please: Circle the number best estimating how YOUR FIRM compares to close competitors in your industry on each item.

1. After-tax return on total assets:

1	2	3	4	5
Top 20%	Next 20%	Middle 20%	Lower 20%	Lowest 20%

2. After-tax return on total sales:

1	2	3	4	5
Top 20%	Next 20%	Middle 20%	Lower 20%	Lowest 20%

3. Firm total sales growth:

1	2	3	4	5
Top 20%	Next 20%	Middle 20%	Lower 20%	Lowest 20%

4. Overall firm performance and success:

1	2	3	4	5
Top 20%	Next 20%	Middle 20%	Lower 20%	Lowest 20%

4. Our competitive position:

1	2	3	4	5
Top 20%	Next 20%	Middle 20%	Lower 20%	Lowest 20%

This self-reporting approach is appropriate not only because accounting data were not available, but also due to information made available to firm managers. While no financial and accounting data are made available to the public, managers are able to compare their relative performance with close competitors. This is possible because the government evaluates firm performance by appraising key indicators on an annual basis, and these appraisals and performance rankings are publicized. As Tung (1982) has observed, in order to increase productivity, the Chinese government encourages "socialist style" competition, also described as socialist labor emulation drives, which are intended to develop friendly competition among firms. Outstanding performances of business enterprises are publicized nationally through the media so that other firms can emulate

¹² The format of this portion of the instrument was adopted in part from Li (1990)

and learn from these high performing companies. Most firms have emulation committees that meet periodically to appraise and compare their performance with competitors based on published government appraisals and evaluations. For instance, managers know their exact ranking in terms of total sales, sales growth, profit margin, tax revenue, export revenue, quality of products, and the number of new products among firms in the same industry, firms of similar size or products, and so forth. They can also compare their accounting and financial ratios, as well as measures such as labor productivity, most of them not available to the public in detail, with the industry average, which is also publicized.

Firm Size. For control purposes, respondents were also asked to identify the size of their firms as measured by the number of employees.

To justify the use of the self-reporting approach to performance measurement, pretesting was conducted.

Pretesting and Translation of Questionnaire

The pretest of the questionnaire instrument proceeded in the following manner. To test face validity of the instrument and construct validity, a pretest was conducted. In this one-page question sheet, top managers were asked

1. to identify decisions they considered "strategic",
2. to identify the nature of plans and time horizons,
3. their knowledge of major resources allocation,
4. their knowledge of the performance of their "comparable firms",¹³
5. their knowledge of the industry average of those criteria, and

¹³ This is a Chinese term which may be translated as "close competitors" in terms of geographical region, size of firms, similarity of products, ownership type, etc., according to the same criteria.

6. knowledge of their ranking relative to their comparable firms based on those criteria.

The pretest and survey were administered in a major industrial city in North China. Twelve top level managers were selected to answer the above questions. Results of the pretest clearly indicated that the Chinese managers were capable of distinguishing strategic decisions characterized by Pearce and Robinson (1991:3-4), and they had knowledge of comparable firms' performances. Consultations were sought on the instrument development to obtain feedback on the quality of the instrument and needed revisions. The questionnaire was first reviewed and revised by experts in strategic management theory, and then subjected to back-translation procedure to ensure validity in a cross cultural setting. Specifically, the revised copy of the English version was translated into Chinese separately by two doctoral candidates majoring in management science and sociology respectively, who are competent in both languages. Their Chinese versions were then translated back into English by a doctoral student in management in the U.S. and a middle-level manager in China who holds a MBA degree awarded by a Western university. Different Chinese and English translations were compared to detect significant misunderstanding or confusion due to translation. The revised Chinese translation was reviewed by Chinese scholars. The validity of this procedure has been established by previous strategic management studies using Chinese data (e.g., Shenkar and Ronen, 1987; Baird, Lyles, and Wharton, 1990; Adler and Campbell, 1989; Adler, Brahm, and Graham, 1992).

An important question that needs to be addressed before analyzing strategic decisions in China is whether Chinese managers are familiar with the theory and concepts of strategic management. Since 1979, China has engaged in various kinds of educational and management training exchange programs with more developed industrial countries, especially North American and European universities. Some of these projects have been funded by government agencies and international organizations, such as the Chinese government, the U.S. Department of Commerce, the Canadian International Development Agency, the United Nation, and European Community. Others are sponsored by various non-profit organizations. These training and educational programs have popularized the theory and concepts of strategic management in China and have become standard

materials in academic writing and business school texts (e.g., Luo & Yu, 1991). In addition, some prominent strategic management researchers such as John Child have taught strategic management and conducted intensive research on issues related to strategic decisions in China (e.g., Boisot & Child, 1988, 1990; Child, 1987, 1990a, 1990b; Child & Lu, 1990). These previous studies set precedents for studying issues in strategic management in centrally planned economies.

Pilot Testing the Questionnaire

Some researchers have questioned the ability of any single respondent to comprehend and articulate accurately overall organizational phenomena (Phillips, 1981). Concerning the stability of the responses, previous studies have used multiple respondents and conducted statistical procedures such as correlational analysis (Fredrickson & Mitchell, 1984), and analysis of variance (Duncan, 1972) to judge the stability, and justify the data aggregation. For instance, Fredrickson and Mitchell (1984) used intercorrelation matrix for each firm to check correlation between each pair of respondents on the questionnaire items to ascertain the level of agreement. Duncan, on the other hand, used one way analysis of variance computed across the respondents in a given organization to investigate the existence of differences. To the extent that there exists an acceptable level of consistency, the data from individuals from each firm can then be pooled to form higher level measures.

The stability discussion suggests that multiple respondents are needed from each firm. Thus, in data collection, multiple respondents needed to be identified and contacted. Given the perceptual measure characteristics of the research design, the pilot test of the survey questionnaire was administered to a group of top level managers in state-owned enterprises in the electronics industry in a major industrial city in North China. Two respondents were chosen from each firm. The key respondent was the president of the firm. Normally, another very influential person is the representative of the Communist Party in the firm, namely the party's secretary. However, since

the implementation of "Manager/Director Responsibility System" (Hunt & Yang, 1990), the influence of the party secretary has decreased, even though this position remains essential to the political power structure. In addition, the party secretary is designated by the party, while the president and directors in major functional areas are usually promoted from within the firm. Therefore, these individuals are normally much more directly involved in both the daily operation of the firm and its planning function. For these reasons, the planning director, who reports directly to the president, was selected as the second respondent. Because some survey questions are potentially sensitive, strict confidentiality was assured, and no identification information was requested. Only identification codes (odd vs. even) were used to distinguish the two respondents from each firm for reliability checks. In many collective enterprises, the party secretary no longer exists. This position also does not exist in either joint ventures or private enterprises.

Sixty state enterprises were randomly selected for pilot testing, and one hundred and twenty questionnaires were distributed to the president and planning director. The size of these firms ranges from around one hundred to over five thousand employees. Fifty-seven questionnaires were collected, including twelve double responses. In one questionnaire most items were not completed and was thus deemed unusable. This sample of fifty-six usable cases represented a return rate of about forty-seven percent. In this study the split-half model was based on double responses. All the Guttman Split-Half Reliability Indexes were between 0.7 and 0.9. The results clearly support the contention that Chinese managers were familiar with strategic management concepts and their relative standing of performance as compared to their close competitors, and the measures of perceived environmental attributes, strategic dimension variables, and performance evaluation exhibited stability across key respondents from the same firm. Furthermore, the key respondents in this analysis were grouped according to their relative position in their firm, that is, the presidents were put into group one and directors in charge of planning were put into group two, the results thus also suggest that both key respondents would provide equally reliable answers. This is understandable since they work closely with each other in making important decisions.

After the data based on the pilot test were analyzed, a multi-city survey was administered to gather the information from firms exhibiting different ownership types. A simple random sampling technique was followed to draw samples from enterprises using computer generated random numbers using Lotus software. The simple random sampling technique assures that each element in the population has an equal chance of being included in the sample. The main disadvantage of this technique is that respondents may be widely dispersed, hence cost is higher than some other sampling methods. One source of error is random sampling error, which occurs because of chance variation in the scientific selection of sampling units. This type of error can be reduced by increasing sample size. The second type of error is systematic (nonsampling) errors that often result from nonsampling factors, primarily the nature of a study's design and the correctness of execution. After checking reliability, subsequent questionnaires were sent to just the presidents in the other three cities. Appropriate procedures were followed in order to ensure a satisfactory response rate (format of questionnaire, cover letter, date of mailing, return postage, follow-up, etc.). In addition, sponsorship was sought to encourage respondents' participation. Administrators from several government agencies, as well as researchers from universities and professional associations, collaborated in data collection. These motivating measures, coupled with previously proposed procedures such as avoiding sensitive questions and heeding brevity of instruments, ensured respondents' participation in the survey. Since strictest confidentiality was promised and followed through, and no identification information was requested, it was impossible to verify whether there was non-response bias. However, since confidentiality assurance was provided, and the respondents were free to terminate their participation at any point, there was no evidence to suggest the existence of significant non-response bias since the respondents were not under the fear that any information provided by them might go to the government and jeopardize their interests. For the same reason, it is safe to assume that respondents have provided accurate assessment based on their capacity rather than intentionally mislead the researcher. The results of the split-half reliability test using double responses also supported this contention.

One hundred and twenty questionnaires were distributed to managers from collective enterprises, and forty-one were collected, representing a return rate of thirty-four percent. Sixty joint ventures were selected, and questionnaires were delivered to and collected from participants by student interns. Some managers were willing to answer further questions during the interview. Only nine managers declined to participate because they were too busy. For private enterprises, sixty business owners were randomly selected and were invited to a business seminar sponsored by a professional association. Fifty-four persons attended the seminar and were given the questionnaire, and only one person did not fill in the questionnaire. Thus a sub-sample of fifty-two private enterprises was generated. State owned enterprises were represented by a subsample of fifty-six responses collected earlier. In total, there were two hundred and two cases, representing firms exhibiting four different types of ownership. Table 1 on page 70 details the sample size and response patterns of firms that make up the data base for the study. The data will be analyzed in next chapter.

Other Reliability and Validity Issues

Reliability, which is the accuracy or dependability of measurement, was checked through inter-rater reliability. This was achieved by using Cronbach's Coefficient Alpha, which is based on item intercorrelations. In addition, the split-half reliability measure, extending from the inter-rater correlation, offers an indicator of inter-rater stability and was also calculated. This index measures the extent of agreement between two key respondents from the same firm on the same group of items.

Validity, on the other hand, refers to the relationship between a construct and its measures, or the degree to which the measures obtained indeed represent what they are supposed to reflect (Rosenthal & Rosnow, 1984). The work in construct validity suggests that it includes five aspects one must address in assessing the measurement quality of the constructs used in a study (Bagozzi,

Table 1. Sample Size and Response Patterns

	Full	SOEs	COEs	JVEs	POEs
Firms Targeted	300	60	120	60	60
Respondents contacted	360	120	120	60	60
Surveys collected	202	57	41	51	53
Response rate	56.1%	47.5%	34.2%	85%	88.3%

1980; Bagozzi & Phillips, 1982; Venkatraman & Grant 1986). One such issue is face or content validity, or the extent to which the items used in the instrument make sense theoretically and empirically. The face validity of a measurement is established with respect to the theoretical meaningfulness, or the extent to which the items used in measuring a construct are theoretically meaningful and acceptable. These issues were addressed following the procedures discussed in previous two sections.

Convergent validity, or the extent to which several items purporting to measure one construct indeed converge, and discriminant validity, or the extent to which different measures of one construct discriminate against each other, were checked by examining results of factor analysis and correlation analysis. Table 2 on page 71 is a critical checklist developed by incorporating the materials from Mitchell's (1985) work and the discussion by Cook and Campbell (1979). The checklist highlights the threats to validity found in correlational type of research, and the measures that can be taken to improve the quality of a correlational study. This list served as a guide in the research effort, and as a frame both in identifying limitations of the study and in providing directions for future research¹⁴.

¹⁴ Adopted in part from Li (1990).

Table 2. Validity Issues and Preventive Measures

Validity Types & Threats	Preventive Measures	Reference
Internal Validity		
Spurious variables	Partial correlation & theory	Mitchell, 1985
Spurious events	Critical thinking & checking	Mitchell, 1985
Direction ambiguity		Cook & Campbell, 1979
Construct Validity		
Concept explication	Work in auxiliary theory	
Respondents' representativeness	Define sampling frame Random sampling	Mitchell, 1985
Method variance	Instrument design	Mitchell, 1985
Language ambiguity	Back-translation	Adler et al., 1992
External Validity		
Unclear population	Define the population	Mitchell, 1985
Mono methods	Multiple method comparison	
Mono measures	Multiple indicator	
Mono setting/observations	Multiple site	
Single trial	Cross validation	Mitchell, 1985
Statistical Conclusion Validity		
Reliability of measure	Multiple measures	Mitchell, 1985
Range of values	Variance sample selection	
Non-response bias	Confidentiality Design and checking	
Fishing & error rate	Use more focused test	Cook & Campbell, 1979
Random irrelevance	Setting selection	Cook & Campbell, 1979
Power of test	Sample size	Cook & Campbell, 1979
Stat. method assumptions	Pre-check & discussion	Cook & Campbell, 1979

Analytical Methods and Hypothesis Testing

First, in order to provide an overall assessment of the data, a split-half reliability test was conducted to check Inter-rater stability using SPSSX statistical package. Secondly, descriptive statistics will be performed in the initial analysis. Construct validity was examined using exploratory factor analysis (EFA). Convergent validity and discriminant validity were examined using correlation analysis. These procedures will be performed using SAS package.

The hypotheses in this study were examined using Pearson's product-moment correlation analysis, canonical correlation analysis, and multiple regression. Each of the statistical techniques are discussed below.

Pearson product-moment correlation analysis

The Pearson's product-moment correlation analysis is widely employed as an index of the relationship between variables (Rosenthal & Rosnow, 1984). This analysis provides useful information about the relationship between variables such as (1) the positive or negative direction of the relationship, (2) the degree of the strength of the relationship, and, (3) the percent of variation explained by the relationship between the two variables. In addition, correlation patterns also provide valuable information in examining discriminant and convergent validity.

Canonical correlation analysis

As Venkatraman and Prescott (1990) pointed out, previous research on the environment-strategy-performance paradigm can be categorized into either: (a) the 'reductionistic' perspective; or (b) the 'holistic' perspective. The former typically conceptualizes environment and/or strategy in terms of one or a few dimensions. It is based on the central assumption that interaction between two constructs can be understood in terms of pairwise correlation among the individual dimensions that represent the two constructs. The problem with this approach is that

complex systems cannot be understood by analytically decomposing the system into its individual parts in order to examine each part and in turn each relationship.

In contrast to the first approach, the holistic perspective retains the multidimensional nature of coalignment between environment and strategy. For this reason the present study employs the holistic perspective on the environment-strategy configuration. Since our primary research question is to investigate to what extent one set of two or more variables can be predicted or "explained" by another set of two or more variables, canonical correlation analysis was chosen as the statistical tool to analyze the multivariate relationships between environment and strategy. Additionally, Pearson correlation was used to supplement canonical correlation when testing the congruent hypotheses. In using canonical correlation analysis, it must be assumed that the data are reliable since low reliability tends to attenuate the entries in R (Thompson, 1984). As discussed previously, the results of reliability tests ruled out this source of error. Another practical issue that needs to be addressed is that correlation coefficients tend to be less reliable if they are estimated from small samples. However, a sample size of about 50 combined with reliable correlation and a few, distinct factors is usually considered adequate (Tabachnick and Fidell, 1987). In analyzing multivariate relationships, canonical analysis is the most general approach that subsumes MANOVA or multiple regression. Thus hypotheses *H1a* through *H9* and the research question (*Q1*) were tested using canonical correlation,

Multiple regression analysis

In analyzing multivariate relationships, canonical analysis is the most general approach that subsumes MANOVA or multiple regression. However, in order to predict performance implications of a specific strategic choice, it is necessary to examine how strategy variables impact a single dependent variable. The multiple regression technique may be considered as a special case of canonical correlation in which there is only one dependent variable. Regression allows testing of the model proposed and explains the variability accounted for by the independent variables. Using one of several methods to enter variables into the linear regression model, the hypothesized

relationship of the dependent variable to the independent variable(s) can be tested. Calculation of the coefficient of determination (r^2) explains the variation caused by each of the independent variables on the dependent variable. Thus, the fit-performance hypotheses, that is, *H10* and *H11*, were tested using multiple regression and analysis of variance (ANOVA).

Chapter 4

Data Analysis and Results

The previous chapter discussed the research design, measurement issues, and the data-collection process. This chapter details the statistical tests conducted and analyzes the results obtained.

Variables and Descriptive Statistics

Factor Analysis

Exploratory factor analysis procedures were employed during the early stages of the measurement. The analysis procedures used the Promax Rotation method. Kaiser's Measure of Sampling Adequacy (MSA) was examined and reported. Usually values greater than 0.8 can be considered

good, and 0.5 is acceptable, while values less than 0.5 require remedial action ¹⁵. This criterion was adopted in this study.

First, questions 1 and 2 ¹⁶ (reverse coded) in part 1 of the questionnaire, *Environment*, were designed to measure resource scarcity. The responses to these questions were combined in each environmental segment to create the first environment dimension, designated as hostility. Exploratory factor analysis was then performed and is reported in Table 3 on page 77. The results suggest a two-factor solution. For environmental hostility, which was measured in terms of criticality and hostility of different segments, supplier, competitor, technology and political/regulation loaded on the first factor. The remaining four segments loaded on the second factor, which included customer, economic, social-culture, and international segments. Western literature on organizational studies has considered environmental segments such as social/cultural, economic, technology, international, and political/regulation as part of the institutional environment, while customer, supplier, and competitor segments are more task-related (e.g., Scott, 1987). However, different environmental segments may have varying importance to task-related activities for firms operating in different contexts. For instance, the political/regulation factor may have crucial influence on firms operating in regulated contexts. Therefore, the two conceptions of environment, task and institutional, may be context specific. For instance, it can be argued that the four segments that loaded on the first factor were aspects of the environment that have significance on task-related activities of firms operating in the Chinese economy, whereas the remaining segments are more closely related to the institutional environment.

The findings with regard to environmental hostility merit attention. The customer segment, which has been considered as task-related in western organizational literature, did not load on the first factor. On the other hand, regulation was loaded on the first factor with other task-related segments. Based on studies in western market economies, this is a departure from the organization

¹⁵ *SAS/STAT User's Guide*, SAS Institute Inc. Release 6.03 Edition

¹⁶ See Questionnaire in Appendix.

Table 3. Factor Analysis of Environment Hostility

(N = 201)

	M.S.A. ^a	Factor 1 (2.523) ^b	Factor 2 (2.460)
Regulation	0.680	0.786*	0.195
Competitor	0.722	0.735*	0.346
International	0.770	0.373	0.636
Technology	0.671	0.704*	0.277
Supplier	0.757	0.718*	0.278
Customer	0.709	0.347	0.805
Economic	0.765	0.150	0.698
Socio-Cultural	0.789	0.265	0.781

^a Kaiser's Measure of Sampling Adequacy: Overall MSA = 0.730.

^b Numbers in parentheses are variance explained by each factor ignoring other factors.

literature. In a market economy, one may argue that the customer segment has an important influence on a firm's strategic decisions. In formerly centralized planning economies, however, the market is often characterized by shortages. Since consumers are limited to goods and services available, their decisions and behavior may not have as significant an impact on business decisions (Pfeffer and Salancik, 1978).

As discussed by previous researchers, where perceived environmental characteristics affect job requirements, they have an impact on managerial decisions (Leblebici and Salancik, 1981), and these highly task-related environmental segments are therefore more likely to be understood correctly by managers (Blau and Meyer, 1987). Following this line of reasoning, only the four segments that loaded on the first factor for the environmental hostility dimension were used to measure this dimensions and, therefore, for data aggregation. Based on these results, data aggregation was based on respondents' assessment of environmental hostility in regulation,

competition, technology and supplier segments to generate the environmental hostility variable, HOSTILE.

Environmental dynamism was created by adding responses to questions 3 (reverse coded) and 4 in each of the eight segments. Similarly environmental complexity was created by combining responses to questions 5 and 6 in each segment. Table 4 on page 79 and Table 5 on page 80 provide the results of exploratory factor analysis. Similar to what was found in environmental hostility, the eight segments loaded on two factors, except that for environmental dynamism and complexity, supplier was replaced on the first factor by the international segment. Perceived environmental dynamism in the supplier segment was the only one that did not reach the predetermined level (0.5) of sampling adequacy (MSA). Incidentally, this segment did not load on the first factor, thus it was not used for further data analysis. For the same reason discussed earlier regarding perceived environmental hostility, only the four segments that loaded on the first factor were used for data aggregation. They were competition, technology, regulation, and international. The two variables representing environmental dynamism and complexity were DYNAMIC and COMPLEX. Next, fifteen questions in part 2 of the questionnaire, *Strategic Decision Process*, were combined to create five strategic orientation variables, futurity (questions 1-3), proactiveness (questions 4-6), analysis (questions 7-9), defensiveness (questions 10-12), and riskiness (questions 13- 15)¹⁷. Exploratory factor analysis using the Promax Rotation method was performed on the fifteen measures of the five strategic dimensions. As shown in Table 6 on page 81, four distinctive factors were retained. The factor structure clearly indicates that questions that were designed to measure the same strategic orientation dimension loaded on the same factor. Thus there was strong evidence that the measures used in this study to operationalize strategy exhibited convergent and discriminant validity. The only exception was that proactiveness and riskiness loaded on the same factor. While this factor structure seemed to suggest the lack of discriminant validity, it may be premature to rule out the potential predictive power of each variable. Thus, these two variables

¹⁷ Question 15 in this part was reverse coded.

Table 4. Factor Analysis of Environment Dynamism

(N = 201)

	M.S.A. ^a	Factor 1 (3.649) ^b	Factor 2 (3.005)
Regulation	0.871	0.890*	0.382
Competitor	0.872	0.885*	0.528
International	0.875	0.903*	0.448
Technology	0.882	0.849*	0.332
Supplier	0.436	0.397	0.616
Customer	0.688	0.410	0.873
Economic	0.553	0.363	0.751
Socio-Cultural	0.514	0.288	0.751

^a Kaiser's Measure of Sampling Adequacy: Overall MSA = 0.847.

^b Numbers in parentheses are variance explained by each factor ignoring other factors.

were not combined for further hypothesis testing. The factor analysis also indicates satisfactory sampling adequacy.

Descriptive Statistics and Correlation

Arnold (1982) pointed out that moderating effects of contingency variables can be examined in two ways: either (1) by including interaction variables in an additive model, or (2) by analyzing subgroups of a total sample. Prescott hypothesized that examining an interaction term allows the researcher to study the effects of a contingency variable on the *form* of a proposed relationship, whereas testing subgroups would reveal the impact of the contingency variable on the *strength* of the proposed relationship. As Venkatraman (1989b) indicated, if the predictive ability of certain strategies differs across different environments, the hypothesis reflecting the *strength* of moderation

Table 5. Factor Analysis of Environment Complexity

(N = 201)

	M.S.A. ^a	Factor 1 (2.410) ^b	Factor 2 (1.587)
Regulation	0.741	0.790*	0.194
Competitor	0.779	0.681*	0.318
International	0.835	0.723*	0.176
Technology	0.709	0.815*	0.275
Supplier	0.645	0.186	0.593
Customer	0.580	0.176	0.588
Economic	0.643	0.187	0.542
Socio-Cultural	0.617	0.179	0.592

^a Kaiser's Measure of Sampling Adequacy: Overall MSA = 0.711.

^b Numbers in parentheses are variance explained by each factor ignoring other factors.

can be tested using subgroup analysis. If, however, the performance outcome is jointly determined by the interaction of the predictor and the moderator, then the hypothesis reflecting the *form* of moderation can be tested using moderated regression analysis. The potential risk of testing interaction effect, as pointed out by Venkatraman, is multicollinearity. In this study, environment and strategy were looked at as multidimensional constructs. Specifically, this study examines the impact of ownership types on the multivariate relationship between a set of three environmental dimensions and another set of five strategic dimensions. Four ownership types were included. The relationships are far more complex than what have been examined in previous studies. The number of interaction terms that need to be introduced relative to the number of main effects would make meaningful theoretical explanation of results difficult, if not impossible. In addition, the repeated use of a predictor set to create possible interaction terms will increase the risk of multicollinearity. For this reason, this study followed the subgroups analysis approach of testing

Table 6. Factor Analysis of Strategic Orientation

(N = 201)

	M.S.A. ^a	Factor 1 (6.609) ^b	Factor 2 (5.330)	Factor 3 (2.743)	Factor 4 (4.410)
Futurity 1	0.866	0.552	-0.510	-0.056	0.851*
Futurity 2	0.912	0.708	-0.574	-0.178	0.753*
Futurity 3	0.886	0.459	-0.443	0.017	0.758*
Proactive 1	0.925	0.779*	-0.605	-0.176	0.629
Proactive 2	0.890	0.912*	-0.696	-0.250	0.610
Proactive 3	0.940	0.795*	-0.480	-0.092	0.547
Analysis 1	0.765	-0.292	0.162	0.826*	-0.076
Analysis 2	0.753	-0.199	0.218	0.798*	-0.025
Analysis 3	0.736	-0.246	0.175	0.842*	0.073
Defensive 1	0.889	-0.629	0.881*	0.290	-0.510
Defensive 2	0.920	-0.614	0.823*	0.274	-0.525
Defensive 3	0.900	-0.665	0.839*	0.027	-0.522
Riskiness 1	0.926	0.814*	-0.692	-0.380	0.491
Riskiness 2	0.901	0.881*	-0.569	-0.468	0.447
Riskiness 3	0.916	0.828*	-0.632	-0.231	0.465

^a Kaiser’s Measure of Sampling Adequacy: Overall MSA = 0.891.

^b Numbers in parentheses are variance explained by each factor ignoring other factors.

moderating effects. The total sample was divided into four subgroups based on a firm’s ownership type.

Table 7 on page 83 presents descriptive statistics for four types of enterprises currently operating in China, namely private-owned enterprises (POEs), state-owned enterprises (SOEs), joint venture enterprises (JOEs), and collective-owned enterprises (COEs). In addition, the same statistics are provided for the full sample. These results will be examined and used later as supporting evidence for hypothesis testing. As the table shows, most of the missing values occurred in firm size. There

was a total of sixteen questionnaires returned with firm size missing. This is understandable because some managers might have been concerned that firm size could be used as a means of identification, even though the strictest confidentiality possible was guaranteed. The performance variable presented in the table was created by combining the after-tax returns on total assets and on total sales.

In order to gain more detailed information about differences in the main effect of variables across the four ownership types, subsample means were compared. When comparing more than two means, a traditional Analysis of Variance (ANOVA) F test tells if the means are significantly different from each other, but it does not tell which means differ from each other. Multiple comparison methods (also called *mean separation tests*¹⁸.) give more detailed information about the differences among the means.¹⁹

This study took a conservative approach and controlled overall type I error rate for all the comparisons, i.e., the experimentwise error rate was controlled when conducting the multiple comparison of means. The experimentwise error rate (α) was held to the 0.05 level, and the overall ANOVA F test was performed at this level. Scheffe's test was used to compare subsample means. Scheffe's test is compatible with the overall ANOVA F test in that Scheffe's method never declares a comparison significant if the overall F test is nonsignificant. Most other multiple comparison methods can find significant contrast when the overall F is nonsignificant and therefore suffer a loss of power when used with a preliminary F test. The results of Scheffe's test are presented in Table 8 on page 84. The overall F value is 2.65. It is apparent that significant differences exist among variables across ownership types. The results of Scheffe's test appears to justify testing subgroups. It should be noted that failure to reject the hypothesis that two or more means were equal should not lead to the conclusion that the means were in fact equal. As discussed earlier, Scheffe's test controls for the overall F test significance level. Thus, failure to reject the null

¹⁸ *SAS/STAT User's Guide*, SAS Institute Inc. Release 6.03 Edition

¹⁹ By *multiple comparisons*, it is meant more than one comparison among three or more means.

Table 7. Means and Standard Deviations

Variables	Full (N = 201)	SOEs (N = 56)	COEs (N = 41)	JOEs (N = 51)	POEs (N = 53)
Futurity	4.078 (0.953)	3.440 (0.883)	4.423 (1.059)	4.418 (0.906)	4.157 (0.605)
Proactive	4.277 (1.079)	3.577 (0.984)	4.472 (1.022)	4.399 (0.964)	4.748 (0.978)
Riskiness	4.249 (1.094)	3.744 (0.881)	4.236 (0.978)	4.209 (1.000)	4.830 (1.212)
Analysis	4.436 (0.684)	4.506 (0.516)	4.512 (0.712)	4.621 (0.778)	4.126 (0.635)
Defensive	4.239 (1.260)	5.232 (0.989)	4.146 (1.183)	3.993 (1.115)	3.497 (1.051)
Complex	5.039 (0.635)	5.317 (0.529)	5.000 (0.698)	4.931 (0.670)	4.880 (0.571)
Dynamic	5.586 (0.848)	5.987 (0.360)	5.628 (0.584)	5.326 (1.069)	5.380 (0.992)
Hostile	4.879 (0.585)	5.230 (0.538)	4.640 (0.411)	4.725 (0.566)	4.847 (0.610)
Firm Size	2.200 (1.466) (N = 185)	4.036 (1.144) (N = 56)	1.853 (0.744) (N = 34)	1.489 (0.655) (N = 47)	1.000 (0) (N = 48)
Performance	3.045 (1.174)	3.955 (0.986)	2.476 (0.987)	2.873 (1.088)	2.689 (1.089)

Note: Numbers in parentheses are standard deviations, except for N.

hypothesis implies only that the difference between means, if any, was not large enough to be detected with the given sample size. A related point is that nonsignificance is nontransitive: given four sample means, the largest and smallest may be significantly different from each other, while neither is significantly different from the middle ones.²⁰ This is evident in Table 8 on page 84.

²⁰ *SAS/STAT User's Guide*, SAS Institute Inc. Release 6.03 Edition

Table 8. Scheffe's multiple-comparison of subgroup means

($F = 2.65$)

Variables	S - C ^a	S - J	S - P	C - J	C - P	J - P
Futurity	***b	***	***			
Proactive	***	***	***			
Riskiness			***			***
Analysis			***			***
Defensive	***	***	***		***	
Complex		***	***			
Dynamic		***	***			
Hostile	***	***	***			
Size	***	***	***		***	***
Perform	***	***	***			

^a S = SOEs, C = COEs, J = JOEs, P = POEs.

^b Comparisons significant at the 0.05 level are indicated by '***'.

The trade-off for being conservative is that to control for the type I experimentwise error rate leads naturally to possible increases the type II error rate.

It is worth noting that SOEs had higher reported performance (3.955) than the mean of the total sample (3.045) as well as all other ownership types. This seems to be inconsistent with direct observation since many SOEs are losing money. However, readers should be reminded that this study drew its sample from the electronics industry, in which SOEs have benefited from economic reform and open policy far more and earlier than SOEs in other industries, and have been significantly contributing to China's export trade. It should also be noted that many SOEs were subsidized by the government, and traditionally SOEs were not allowed to fail. In addition, some SOEs had defense contracts. It was typical for SOEs to make superficially high profit on defense-

related products to cover losses elsewhere. It was also typical for the state to write off losses by SOEs.²¹

Next, correlation matrices were developed on the full sample as well as on the four subsamples of different ownership types. The results are presented in Table 9 on page 86 through Table 13 on page 90.

Hypotheses Tests

The principal purpose of this study was to investigate the moderating effect of property ownership types on the multivariate relationship between environmental characteristics and strategic orientations, and the performance implications of this relationship. To facilitate the flow of presentation, the hypotheses proposed in Chapter 2 are repeated when results are presented.

Congruent Hypotheses: Environment-strategy Linkages

Venkatraman (1989b) recommended to test the hypothesis of fit as reflected in the strength of moderation is supported when significant differences exist in the value of correlation coefficients between the predictor and the criterion, and such difference should be tested as a *t*-statistic. For multiple groups, however, a χ^2 significance level should be examined. χ^2 statistics for subgroup comparisons were computed based on four subgroup correlation matrices and are reported in Table 14 on page 91.²²

²¹ *The Economist*, 11/28/92.

²² Gordon Cheung provided valuable assistance in data computation in Table 14 on page 91.

Table 9. Pearson Correlation Coefficients - Full Sample

(N = 201)

No. Variable	1	2	3	4	5	6	7	8
1 Futurity	1.000							
2 Proactive	0.731***	1.000						
3 Riskiness	0.606***	0.892***	1.000					
4 Analysis	-0.090	-0.187	-0.384***	1.000				
5 Defensive	-0.619***	-0.720***	-0.720***	0.195**	1.000			
6 Complex	-0.374***	-0.221**	-0.173*	0.309***	0.181**	1.000		
7 Dynamic	-0.262***	-0.177*	-0.148*	0.151*	0.191**	0.425***	1.000	
8 Hostile	-0.329***	-0.137*	-0.148*	0.225***	0.266***	0.372***	0.217**	1.000

*: $p \leq 0.05$

** : $p \leq 0.01$

***: $p \leq 0.001$

According to Arnold (1982) and Venkatraman (1989b), the results from Table 14 on page 91 generally support the argument that ownership types moderate the environment-strategy relationship. From Table 14 on page 91, we can clearly see that there are significant differences among the four ownership types on pairwise environment-strategy relationships. However, it is not clear which specific strategy was selected under the joint effect of three environmental variables. In order to retain the multidimensional nature of coalignment between the environment and strategy when examining the moderating effect of ownership types, canonical correlation was performed.

A set of three environmental dimension variables, complexity, dynamism, and hostility, and a set of five strategic orientation variables, futurity, proactiveness, analysis, defensiveness, and riskiness,

Table 10. Pearson Correlation Coefficients - SOEs

(N = 56)

No. Variable	1	2	3	4	5	6	7	8
1 Futurity	1.000							
2 Proactive	0.834***	1.000						
3 Riskiness	0.867***	0.761***	1.000					
4 Analysis	0.264*	0.361**	0.143	1.000				
5 Defensive	-0.552***	-0.506***	-0.643***	0.274*	1.000			
6 Complex	-0.304**	-0.196	-0.226	0.043	0.214	1.000		
7 Dynamic	-0.370**	-0.243	-0.293*	0.017	0.350**	0.577***	1.000	
8 Hostile	-0.329**	-0.046	-0.272*	0.125	0.330**	0.440***	0.320*	1.000

*: $p \leq 0.05$

** : $p \leq 0.01$

***: $p \leq 0.001$

were used as covariates and dependent variables, respectively. Among the three canonical correlation functions pertaining to each ownership type retained during canonical correlation analysis, only the first function reached a significant level and provided interpretable results. As a result, the two remaining functions were dropped from analysis. Raw canonical coefficients, standardized canonical coefficients, and canonical loadings for dependent and covariate variable sets are presented. The interpretation of a reliable pair of canonical variables was based on the canonical loading coefficients. The SAS statistical package was used to perform canonical analysis. The program uses the F approximation that provides better small sample results than the usual χ^2 approximation. However, since χ^2 is more often reported in the literature, the χ^2 significance test was also conducted using Bartlett's (1938) approximation.

Table 11. Pearson Correlation Coefficients - COEs

(N = 41)

No. Variable	1	2	3	4	5	6	7	8
1 Futurity	1.000							
2 Proactive	0.804***	1.000						
3 Riskiness	0.735***	0.911***	1.000					
4 Analysis	-0.179	-0.103	-0.360*	1.000				
5 Defensive	-0.687***	-0.660***	-0.666***	0.123	1.000			
6 Complex	-0.370*	-0.346*	-0.390**	0.530***	0.144	1.000		
7 Dynamic	-0.042	-0.198	-0.297	0.248	0.017	0.188	1.000	
8 Hostile	-0.035	-0.045	-0.219	0.396**	0.213	0.322*	0.338*	1.000

*: $p \leq 0.05$ **: $p \leq 0.01$ ***: $p \leq 0.001$

As a rule of thumb when interpreting canonical loadings, variables with loadings of 0.30 and above are considered interpretable, while loadings of 0.63 (40% of variance) or greater provide a “very good” measure of the factor (Thompson, 1984). This criterion was adopted in this study. In addition to examining canonical loadings, other group characteristics, such as subgroup means, were also inspected to determine strategic orientations that were perceived as desirable. For example, for a strategic orientation to be considered predominantly preferred within an ownership, it should (1) have the highest canonical loading, and (2) have the highest mean among the five dimensions within a subgroup.

Table 12. Pearson Correlation Coefficients - JOEs

(N = 51)

No. Variable	1	2	3	4	5	6	7	8
1 Futurity	1.000							
2 Proactive	0.853***	1.000						
3 Riskiness	0.811***	0.938***	1.000					
4 Analysis	-0.344**	-0.310*	-0.479***	1.000				
5 Defensive	-0.657***	-0.676***	-0.669***	0.238	1.000			
6 Complex	-0.357**	-0.358**	-0.395**	0.573***	0.142	1.000		
7 Dynamic	-0.339*	-0.484***	-0.506**	0.300*	0.247	0.472***	1.000	
8 Hostile	-0.137	-0.061	-0.124	0.459***	0.141	0.327*	0.050	1.000

*: $p \leq 0.05$

** : $p \leq 0.01$

***: $p \leq 0.001$

The Full Sample

First, canonical analysis was performed on the full sample of 201 cases. As Table 15 on page 92 shows, environmental hostility (0.759) and complexity (0.873) had a significant impact on strategic orientation in the same direction. Dynamism (0.528) also showed considerable effect. The data indicate that as a result of the combined effect of the three environmental variables, firms as represented by this sample preferred the analysis strategy (0.572). The defensiveness strategy was also positively related to the predictor set (0.480). Futurity (-0.763) was negatively related to the predictor set, indicating that firms operating in China were represented by a reluctance to commit to future and long term oriented decisions. Proactiveness (-0.408) and riskiness (-0.357) were also not preferred strategic orientations.

Table 13. Pearson Correlation Coefficients - POEs

(N = 53)

No. Variable	1	2	3	4	5	6	7	8
1 Futurity	1.000							
2 Proactive	0.216	1.000						
3 Riskiness	0.066	0.951***	1.000					
4 Analysis	-0.064	-0.444	-0.512***	1.000				
5 Defensive	-0.313*	-0.759***	-0.744***	0.385**	1.000			
6 Complex	-0.144	0.434***	0.505***	-0.099	-0.335*	1.000		
7 Dynamic	-0.049	0.480***	0.457***	-0.057	-0.272*	0.353**	1.000	
8 Hostile	-0.281*	0.123	0.146	-0.078	-0.078	0.216	0.112	1.000

*: $p \leq 0.05$
 **: $p \leq 0.01$
 ***: $p \leq 0.001$

To more thoroughly examine the research questions, subgroup analysis (Arnold, 1982; Prescott, 1986; Venkatraman, 1989b) was used to test whether a firm's property ownership type had a moderating effect on the relationship between perceived environmental attributes and strategic orientations.

Private Enterprises (POEs)

In Chapter 2, the following relationships were hypothesized:

Among private enterprises in a transition economy, perceived environmental dynamism is positively related to proactive (H1a) and more risk-taking strategies (H1b), and negatively related to future-oriented (H1c) and defensive-oriented strategy (H1d).

Table 14. Chi-square Test of Subgroup Differences

(df = 4)

Variables	Futurity	Proactive	Riskiness	Analysis	Defensive
Complex	18.278**	23.435***	30.065***	28.025***	10.156*
Dynamic	13.682**	28.614***	32.062***	7.029	13.555**
Hostile	11.255*	1.175	7.978+	17.771**	8.964+

+: $p \leq 0.10$
 *: $p \leq 0.05$
 **: $p \leq 0.01$
 ***: $p \leq 0.001$

Among private enterprises in a transition economy, perceived complexity is positively related to proactive (H2a) and more risk-taking strategies (H2b), and negatively related to future-oriented (H2c) and defensive-oriented strategy (H2d).

Among private enterprises in a transition economy, perceived resource scarcity is positively related to proactive (H3a) and more risk-taking strategies (H3b), and negatively related to future-oriented (H3c) and defensive-oriented strategy (H3d).

As shown in Table 16 on page 93, perceived environmental complexity (0.828) and dynamism (0.768) resulted in managerial preference for proactiveness (0.809) and risk taking (0.862), while defensive strategic orientation (-0.540) was not preferred. Results provided in Table 7 on page 83 supported this conclusion as riskiness and proactiveness had two of the highest means within the ownership across all strategic orientation variables. In addition, futurity (-0.268) was also negatively related to environmental complexity and dynamism, consistent with results found in the full sample. Yet it did not reach the predetermined significance level, thus the relationship cannot be considered conclusive. The results thus support hypotheses *H1a, H1b, H1d, H2a, H2b, H2d, H3a, H3b, and H3d*. On the other hand, hypotheses *H1c, H2c, and H3c* were not supported. Among environmental dimensions, complexity had the greatest impact on strategy, and risk taking was the most predominant orientation preferred by private entrepreneurs. It seems that based on the results, Chinese entrepreneurs share with their western counterparts common characteristics prescribed in the literature (e.g., Bird, 1989). Given the lack of explicit, codified and consistent

Table 15. Environment-Strategy Linkage: Canonical Analysis - Full Sample

Variables	Raw Coeff.	Stand. Coeff.	Loading
<i>Predictor set</i>			
Complex	0.980	0.622	0.873
Dynamic	0.185	0.157	0.528
Hostile	0.842	0.493	0.759
<i>Criterion set</i>			
Futurity	-1.011	-0.964	-0.763
Proactive	0.024	0.026	-0.408
Riskiness	0.571	0.624	-0.357
Analysis	1.005	0.687	0.572
Defensive	0.173	0.217	0.480
χ^2	89.81		
<i>d.f.</i>	15		
$p \leq$	0.001		
Canonical Correlation	0.571		
N	201		

information, entrepreneurs tended to move proactively and accept risk. These strategic orientations, coupled with the reluctance to make long-term commitments, are consistent with what was described earlier as an opportunistic niche seeker.

It should be noted that the predominant strategic orientation among the total sample, i.e., analysis (-0.104), was not statistically significant at the POE subgroup level. The implication is, therefore, that the contingency variable, i.e., ownership type, moderated the hypothesized relationships between perceived environmental attributes and strategic orientations.

Table 16. Environment-Strategy Linkage: POEs

Variables	Raw Coeff.	Stand. Coeff.	Loading
<i>Predictor set</i>			
Complex	1.026	0.586	0.828
Dynamic	0.538	0.533	0.768
Hostile	0.401	0.245	0.431
<i>Criterion set</i>			
Futurity	-0.567	-0.343	-0.268
Proactive	0.285	0.279	0.809
Riskiness	0.723	0.876	0.862
Analysis	0.670	0.425	-0.104
Defensive	0.050	0.053	-0.540
χ^2	35.73		
d.f.	15		
$p \leq$	0.01		
Canonical Correlation	0.667		
N	53		

State Enterprises (SOEs)

Three sets of relationships between environment and strategy among SOEs were hypothesized in Chapter 2 and are repeated here:

Among state enterprises in a transition economy, perceived environmental dynamism is positively related to defensive-oriented strategy (H4a), and negatively related to proactive (H4b), future-oriented (H4c) and more risk-taking strategies (H4d).

Among state enterprises in a transition economy, perceived environmental complexity is positively related to defensive-oriented strategy (H5a), and negatively related to proactive (H5b), future-oriented (H5c) and more risk-taking strategies (H5d).

Among state enterprises in a transition economy, perceived resource scarcity is positively related to defensive-oriented strategy (H6a), and negatively related to proactive (H6b), future-oriented (H6c), and more risk-taking strategies (H6d).

The results of canonical analysis are presented in Table 17 on page 94. As predicted, perceived environmental complexity (0.515), dynamism (0.676), and hostility (0.909) were negatively related

Table 17. Environment-Strategy Linkage: SOEs

Variables	Raw Coeff.	Stand. Coeff.	Loading
<i>Predictor set</i>			
Complex	-0.228	-0.121	0.515
Dynamic	1.357	0.488	0.676
Hostile	1.498	0.806	0.909
<i>Criterion set</i>			
Futurity	-1.795	-1.586	-0.626
Proactive	0.936	0.921	-0.203
Riskiness	0.606	0.534	-0.513
Analysis	0.675	0.349	0.158
Defensive	0.665	0.658	0.628
χ^2	32.03		
<i>d.f.</i>	15		
<i>p</i> ≤	0.01		
Canonical Correlation	0.653		
N	56		

to futurity (-0.626) and riskiness (-0.513), and positively related to defensiveness (0.628). Hostility was the most significant factor among the three environment variables, contrary to what was found among private entrepreneurs. Defensiveness had the highest loading among all strategy variables. An inspection of means in Table 7 on page 83 indicated that the defensiveness orientation had the highest mean among the five strategic orientation variables. Thus it was decided that the defensiveness orientation was the preferred strategic orientation among SOEs, consistent with hypotheses *H4a*, *H5a*, *H6a*. Proactiveness (-0.203) was negatively related to the environment variables, yet the magnitude was not significant and thus did not yield interpretable result. Thus, *H4a*, *H4c*, *H4d*, *H5a*, *H5c*, *H5d*, *H6a*, *H6c*, and *H6d* were supported, while hypotheses *H4b*, *H5b*, and *H6b* were not supported. Analysis, the predominant strategy at the total sample level, was not significant (0.158). The pattern of canonical loadings among SOEs also demonstrated that ownership type moderated the proposed relationships.

Table 18. Environment-Strategy Linkage: JOEs

Variables	Raw Coeff.	Stand. Coeff.	Loading
<i>Predictor set</i>			
Complex	1.036	0.694	0.927
Dynamic	0.233	0.249	0.594
Hostile	0.622	0.352	0.592
<i>Criterion set</i>			
Futurity	-0.062	-0.056	-0.561
Proactive	-0.816	-0.787	-0.575
Riskiness	0.459	0.459	-0.654
Analysis	1.199	0.932	0.934
Defensive	-0.156	-0.174	0.309
χ^2	41.92		
<i>df.</i>	15		
<i>p</i> ≤	0.001		
Canonical Correlation	0.679		
N	51		

Joint Venture Enterprises (JOEs)

The hypotheses regarding JOEs were stated as the following in Chapter 2:

Among foreign joint venture enterprises in a transition economy, perceived environmental dynamism is positively related to analysis strategy (H7).

Among foreign joint venture enterprises in a transition economy, perceived environmental complexity is positively related to analysis strategy (H8).

Among foreign joint venture enterprises in a transition economy, resource scarcity is positively related to analysis strategy (H9).

These hypotheses were tested by performing canonical correlation analysis using the joint venture subgroup sample. As can be seen in Table 18 on page 95, the data indicate that firms exhibited distinctive strategic orientations in response to the combined environmental influences. Riskiness and defensiveness orientation exhibited signs in raw (0.459 and -0.156) and standardized coefficients

(0.459 and -0.174) that were opposite to their respective signs for canonical loadings (-0.654 and 0.309). This revealed their role as suppressor variables (Hotelling, 1936), which enhanced the multivariate correlation between the analysis strategy and environment variables. As in the case of private entrepreneurs, complexity (0.927) had the most significant impact on strategy variables. Yet JOEs responded to high perceived environmental complexity in a different way. Instead of being more proactive and risk-taking, joint venture enterprises employed the analysis strategy (0.934). As can be seen from Table 7 on page 83, analysis orientation had the highest mean among JOEs across all measures of strategic orientation. Thus it was identified as the predominant strategy selected by JOEs. As discussed by Miles and Snow (1978), joint ventures operating overseas encountered complex environments, and they tended to adopt this type of strategy. The configuration found among joint ventures operating in China, as represented by this data set, is consistent with Miles and Snow's prediction.

The results are also consistent with what has been observed by foreign investors in China. To these investors, the most important challenge has been the lack of explicit, consistent and reliable information. The relatively low levels of influence by the dynamism (0.594) and hostility (0.592) dimensions indicate that JOEs, with experience and knowledge acquired from foreign investors, were better able to adapt to fast changing environments. And the fact that they had more resources and support from headquarters overseas also might have helped buffer the enterprise from adverse environmental conditions. Results in Table 18 on page 95 also provide evidence that demonstrates a moderating effect of ownership type on the relationships proposed.

Collective Enterprises (COEs)

In Chapter 2, the lack of sufficient theoretical and empirical support for particular environment-strategy configurations led to a research question rather than hypotheses. The question reads:

Among collective enterprises in a transition economy, how are environmental attributes and strategic orientation related (Q1).

This research question was examined on an exploratory bases. The environment-strategy configuration, as found in Table 19 on page 98, shows striking similarity with joint ventures. Specifically, complexity (0.959) was the predominant environment variable, which along with dynamism (0.456) and hostility (0.354), led to a strong preference for the analysis strategy (0.816). Results from Table 19 on page 98 were also consistent with Prescott's (1986) assumption that the contingency variable moderates the proposed relationships.

The results found in this study regarding environment-strategy relationships among COEs were not consistent with strategic behavior found in the southern China. As discussed earlier, the discrepancy may be the result of differences in government control and intervention. In southern provinces, such as, for instance, Guangdong, more liberal economic policies, more influence from Hong Kong and foreign investment, as well as distance from the central government, have allowed COEs to be far more proactive and risk-oriented than their counterparts in other regions (e.g., Vogel, 1989). As one top executive of a collective enterprise in Guangdong put it, "if something is not explicitly prohibited, then move ahead."²³ According to Vogel's (1989) voluminous documentation of managerial behavior among COEs in Guangdong, managers indeed moved quickly. This is certainly not the case with what was found in this study, as evidenced by the high negative association between environmental complexity and riskiness and by the positive association between complexity and the analysis strategy. While most of the previous observations have focused on COEs in the Southern provinces, the present study collected data from several industrial cities nearby the central government. The results seem to support Earley's (1989; 1993) argument that organizations in the same culture are not necessarily homogeneous. In fact firms in the south may not exhibit the same managerial behavior found in this study. This speculation, however, needs to be tested by future study in other regions.

²³ *New Zealand Herald*, 1/25/1993.

Table 19. Environment-Strategy Linkage: COEs

Variables	Raw Coeff.	Stand. Coeff.	Loading
<i>Predictor set</i>			
Complex	1.313	0.917	0.959
Dynamic	0.510	0.298	0.456
Hostile	-0.100	-0.042	0.354
<i>Criterion set</i>			
Futurity	-0.022	-0.023	-0.489
Proactive	-1.043	-1.066	-0.562
Riskiness	0.420	0.411	-0.657
Analysis	1.250	0.894	0.816
Defensive	-0.307	-0.363	0.192
χ^2	37.56		
<i>d.f.</i>	15		
<i>p</i> ≤	0.01		
Canonical Correlation	0.666		
N	41		

Contingent Hypotheses - Performance Implications

As discussed earlier, in addition to the congruent hypotheses proposed, this study also investigated several contingent hypotheses that link the relationship between the environment-strategy configuration and performance. These hypotheses are repeated here:

In a transition economy, the predominant strategic orientation among enterprises exhibiting the same property ownership type is positively related to performance (H10).

In a transition economy, ownership type not only has indirect effect on performance through environment-strategy linkage, but also has a direct effect on performance (H11).

In the previous section, firms exhibiting four ownerships were studied, and three distinctive environment-strategy configurations emerged. POEs and SOEs each selected a unique strategic orientation. They were the proactiveness strategy for POEs, and the defensiveness strategy for

SOEs. On the other hand, JOEs and COEs shared the same strategic orientation, the analysis strategy. In order to test the unique effect of each ownership strategic orientation on firm performance, hypothesis *H10* was tested separately among firms sharing the same ownership type. This was accomplished by testing regression equations using the four subsamples. Based on the findings for the congruent hypotheses, *H10* was restated in the following forms:

Among POEs, riskiness strategy is positively related to performance (H10a).

Among SOEs, defensiveness strategy is positively related to performance (H10b).

Among JOEs, analysis strategy is positively related to performance (H10c).

Among COEs, analysis strategy is positively related to performance (H10d).

This research is to a large extent exploratory in nature. Thus it is important to design the study such that possible alternative explanations have a fair chance to be examined. Thus, while only one strategic orientation within each ownership type was hypothesized regarding its impact on performance, the remaining four orientations were also included in regression analysis.

Private Enterprises (POEs)

Table 20 on page 101 presents the results of the regression analysis that tested performance implications of strategic choice among POEs. All POEs in this sample were small and employed fewer than 99 workers, as can be seen in Table 7 on page 83.²⁴ When firm size, which was a constant (1), was introduced into the model, least-squares solutions for the parameters were not unique, because the model was not full rank, and size was a linear combination of other variables.

²⁵ With firm size in the model, some statistics may have been misleading. With this in mind, firm size was removed from the regression analysis.

²⁴ See questionnaire in Appendix

²⁵ In this case, $Size = 1 * Intercept$.

Table 16 on page 93 shows that the predominant strategy selected by POEs was riskiness. As can be seen in Table 20 on page 101, this strategy contributed significantly to firm performance. No other independent variables reached a significance level. The results thus support hypothesis *H10a*, and indicate that combining proactiveness and riskiness dimensions may result in loss of important information.

State Enterprises (SOEs)

Among the fifty-six managers from SOEs who completed and returned the questionnaire, one left firm size blank, thus reducing the sample size to fifty-five. Results of canonical correlation analysis detailed in Table 17 on page 94 indicate that defensiveness orientation was the most frequently used strategy by SOEs. Table 21 on page 102 indicates that defensiveness strategic orientation was positively related to performance, as hypothesized (*H10b*). Firm size had a negative impact on performance, but the relationship was not significant. In addition, analysis strategic orientation had significant negative effect on performance. It should be noted that proactiveness (0.461) and riskiness (-0.448) had different signs. This provides further support to the contention that adding proactiveness and riskiness dimensions prematurely may result in loss of information as each dimension has different predictive power.

Joint Venture Enterprises (JOEs)

Table 22 on page 103 presents the multiple regression estimates of the impact of strategic orientation on performance for JOEs. Recall that in Table 18 on page 95, it was found that the predominantly used strategy by JOEs was the analysis orientation. Hypothesis *H10c* predicted a positive association between the analysis strategy and performance. In Table 22 on page 103, the only strategy variable that reached a statistically significant level was analysis, which made a

Table 20. Regression Analysis - POEs

Multiple Regression					
Dependent Variable: Performance		<i>N</i> = 52			
<i>Model Statistics</i>					
		R Square	0.5627		
		Adjusted R Square	0.5161		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	5	34.668	6.934	12.094	0.0001
Residual	47	26.945	0.573		
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	-0.024	1.933	0.000	-0.012	0.9901
Futurity	-0.034	0.214	-0.019	-0.158	0.8749
Proactive	-0.632	0.410	-0.568	-1.542	0.1298
Riskiness	1.192	0.347	1.327	3.440	0.0012
Analysis	-0.103	0.197	-0.060	-0.521	0.6045
Defensive	0.148	0.163	0.143	0.908	0.3687

predominant contribution to predicting performance. Firm size was again not a significant factor. No other strategic orientation variables were found to have a significant impact on performance.

Table 21. Regression Analysis - SOEs

Multiple Regression					
Dependent Variable: Performance		<i>N</i> = 55			
<i>Model Statistics</i>					
		R Square	0.2835		
		Adjusted R Square	0.1958		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	6	15.207	2.535	3.232	0.0094
Residual	49	38.4310.784			
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	4.365	1.968	0.000	2.218	0.031
Futurity	0.253	0.327	0.227	0.774	0.4424
Proactive	0.463	0.239	0.461	1.933	0.0590
Riskiness	-0.502	0.315	-0.448	-1.594	0.1173
Analysis	-0.599	0.264	-0.313	-2.272	0.0275
Defensive	0.353	0.163	0.353	2.161	0.0356
Size	-0.050	0.111	-0.058	-0.451	0.6542

Collective Enterprises (COEs)

As demonstrated in Table 23 on page 105, forty-one managers from COEs completed and returned questionnaires, but eight did not include firm size. This reduced the subsample size of COEs to thirty-three cases.

Table 22. Regression Analysis - JOEs

Multiple Regression					
Dependent Variable: Performance		<i>N</i> = 46			
<i>Model Statistics</i>					
		R Square	0.6285		
		Adjusted R Square	0.5728		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	6	32.588	5.431	11.278	0.0001
Residual	40	19.263	0.482		
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	-2.103	1.621	0.000	-1.298	0.2018
Futurity	-0.462	0.253	-0.398	-1.823	0.0758
Proactive	-0.104	0.383	-0.097	-0.272	0.7873
Riskiness	0.471	0.370	0.451	1.274	0.2101
Analysis	0.892	0.168	0.667	5.305	0.0001
Defensive	0.275	0.153	0.275	1.799	0.0796
Size	0.182	0.165	0.112	1.101	0.2773

Hypothesis *H10d* predicted that the analysis strategy, preferred by COEs, was positively associated with performance. However, the results in Table 23 on page 105 reveal that the analysis strategy was negatively related to performance. On the other hand, defensiveness orientation was positively associated with performance. This result was not consistent with the environment-strategy-performance paradigm. It was not clear why a predominant number of

managers selected a strategic type that was linked to poorer performance than the defensive orientated strategy.

In addition, firm size had no significant impact on performance among COEs.

The Full Sample

To test hypothesis *H11*, which predicted a direct effect of ownership types on performance, a three step regression analysis was performed. First, the five strategy variables were regressed on performance, with firm size being introduced as a control variable. As shown in Table 24 on page 106, contradictory results emerged. Two contrasting orientations, riskiness and defensiveness, both contributed to higher performance at statistically significant levels. This would seem inconsistent, since defensiveness is a strategic orientation that is risk-averse and conservative. This inconsistency, however, may be indicative of the added importance of this study in that the inconsistency may also be explained by considering variations in ownerships types. Failure to decompose ownerships and to account for the ownership effect may create contradicting and uninterpretable statistical results.

It is worth noting from Table 24 on page 106 that firm size emerged as an important predictor of performance in this model, while in previous subgroup analyses, no size effect was found among individual subsamples. The significant effect of firm size leads to speculation of between group effect. An examination of mean values of firm size in Table 7 on page 83 helps to put the results found in Table 24 on page 106 perspective and indicates that SOEs may have an advantage over other ownership types in terms of performance, as SOEs had the highest mean value (4.036) across four ownership types.

Next, three dummy variables were created to represent ownership types. The first, DUMCOE, coded COEs as 1 and all other types as 0. Similarly, DUMJOE coded JOEs as 1 and other types as 0, and DUMPOE coded POEs as 1 and others 0. These three dummy variables and firm size

Table 23. Regression Analysis - COEs

Multiple Regression					
Dependent Variable: Performance		N = 33			
<i>Model Statistics</i>					
		R Square	0.6840		
		Adjusted R Square	0.6138		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	6	24.208	4.035	9.742	0.0001
Residual	27	11.182	0.414		
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	2.022	1.931	0.000	1.047	0.3044
Futurity	-0.419	0.205	-0.402	-2.049	0.0503
Proactive	0.255	0.382	0.260	0.668	0.5101
Riskiness	-0.107	0.409	-0.104	-0.261	0.7959
Analysis	-0.236	0.207	-0.171	-1.140	0.2645
Defensive	0.626	0.157	0.662	3.978	0.0005
Size	0.026	0.157	0.019	0.169	0.8673

were regressed on firm performance. As can be seen in Table 25 on page 107, all three dummy variables were negatively associated with performance. Recall Table 7 on page 83 demonstrated that SOEs were larger than the mean size of firms in the total sample as well as the subsample means of other ownership types. Table 8 on page 84 further indicated that the differences were significant. With these results in mind, the results presented in Table 25 on page 107 are certainly consistent with the size effect found in Table 24 on page 106, and indicate a performance advantage

Table 24. Regression Analysis - Full Sample (1)

Multiple Regression					
Dependent Variable: Performance		N = 184			
<i>Model Statistics</i>					
		R Square	0.3970		
		Adjusted R Square	0.3767		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	6	105.646	17.608	19.535	0.0001
Residual	178	266.086	0.901		
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	-0.128	1.075	0.000	-0.119	0.9051
Futurity	-0.656	0.111	-0.520	-5.907	0.0001
Proactive	0.207	0.175	0.189	1.183	0.2385
Riskiness	0.460	0.172	0.425	2.673	0.0082
Analysis	0.164	0.117	0.096	1.403	0.1623
Defensive	0.478	0.101	0.490	4.472	0.0001
Size	0.127	0.055	0.155	2.314	0.0218

for SOEs over the other ownership types. It is important to note that firm size is no longer an important factor in this equation.

Finally, strategic orientation variables and ownership dummy variables were combined and the results are presented in Table 26 on page 109. The increases in R-square (0.0465) from Table 24 on page 106 (0.3970) to Table 26 on page 109 (0.4435) is significant ($F = 106.02$). Thus, *H11*

Table 25. Regression Analysis - Full Sample (2)

Multiple Regression					
Dependent Variable: Performance		N = 184			
<i>—Model Statistics—</i>					
		R Square	0.2528		
		Adjusted R Square	0.2362		
<i>—Analysis of Variance—</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	4	67.268	16.817	15.225	0.0001
Residual	180	198.818	1.105		
<i>—Parameter Estimates—</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	4.001	0.428	0.000	9.344	0.0001
DUMCOE	-1.583	0.316	-0.511	-5.004	0.0001
DUMJOE	-1.122	0.316	-0.407	-3.410	0.0008
DUMPOE	-1.127	0.368	-0.465	-3.455	0.0007
Size	-0.011	0.104	-0.014	-0.113	0.9102

was supported. A comparison between Table 25 on page 107 and Table 26 on page 109 indicates that the previously negative relationship between joint venture ownership type and performance is no longer significant after strategic orientation variables are entered. It seems that by selecting an appropriate strategy, joint ventures were able to reverse the unfavorable environmental conditions and improve organizational performance. Two dummy variables representing ownership types, DUMCOE and DUMPOE, were found to be negatively associated with performance at significant levels. This is an indication that ownership type indeed had a direct impact on performance even

after firm strategies were controlled for. Thus, the study suggests that some ownership types had a generic advantage in terms of performance regardless of strategy. It should be pointed out that the data were collected in early 1990s during the aftermath of the "June Forth Incident" in 1989. During the austerity of 1989, losses of state-owned firms soared, yet none went bankrupt. In the same year, 3 million COEs went under or were taken over, even though proportionally four or five times as many SOEs as COEs experienced losses.²⁶ To conclude, ownership was shown to have a direct impact on firm performance that was independent of strategy.

It is also worth examining the role of firm size. As shown in Table 26 on page 109, when ownership types were controlled for, firm size was no longer a significant factor. Therefore, regression analyses based on subsamples of individual ownership types as well as the total sample provided consistent results, which indicate that when ownership is included in the analysis, firm size ceases to be a significant factor. It can be concluded based on this study that firm size was a surrogate for ownership type.

²⁶ *The Economist*, 11/28/92.

Table 26. Regression Analysis - Full Sample (3)

Multiple Regression					
Dependent Variable: Performance		<i>N</i> = 184			
<i>Model Statistics</i>					
		R Square	0.4435		
		Adjusted R Square	0.4149		
<i>Analysis of Variance</i>					
Source	DF	Sum of Squares	Mean Square	F Value	p Value
Regression	9	118.014	13.112	15.497	0.0001
Residual	175	148.074	0.846		
<i>Parameter Estimates</i>					
Variable	Est.	S.E.	β	T	p
(Intercept)	0.965	1.144	0.000	0.844	0.3999
Futurity	-0.668	0.115	-0.529	-5.799	0.0001
Proactive	0.338	0.174	0.310	1.945	0.0535
Riskiness	0.368	0.173	0.341	2.125	0.0350
Analysis	0.117	0.115	0.068	1.016	0.3108
Defensive	0.443	0.100	0.454	4.429	0.0001
DUMCOE	-0.939	0.309	-0.303	-3.041	0.0027
DUMJOE	-0.393	0.321	-0.143	-1.224	0.2227
DUMPOE	-0.876	0.355	-0.320	-2.465	0.0147
Size	-0.036	0.089	-0.044	-0.408	0.6840

Chapter 5

Conclusions

This chapter summarizes and discusses the major results presented in Chapter 4. It then outlines the contribution and limitations of the current study. The concluding section provides some directions for further research in this area.

Major Results

The most important conclusions from the previous empirical results of congruent hypotheses testing can be summarized as the following:

1. Ownership as a contextual variable had moderating effect on the environment-strategy relationship.

2. Among all firms sampled in this study, (1) environmental hostility, dynamism, and complexity were positively related to the analysis strategy, and negatively related to the futurity strategy; and (2) complexity had the greatest impact.
3. Firms of different ownership types exhibited distinctive environment-strategy configurations.
4. Among POEs, (1) environmental hostility, dynamism, and complexity were negatively related to the defensive strategy, and positively related to proactive and riskiness strategies; and (2) complexity had the greatest impact.
5. Among SOEs, (1) environmental hostility, dynamism, and complexity were positively related to the defensive strategy, and negatively related to futurity and riskiness strategies; and (2) hostility had the greatest impact.
6. Among JOEs, (1) environmental hostility, dynamism, and complexity were negatively related to futurity, proactive and riskiness strategies, and positively related to the analysis strategy; and (2) complexity had the greatest impact.
7. Among COEs, (1) environmental hostility, dynamism, and complexity were negatively related to futurity, proactive and riskiness strategies, and positively related to the analysis strategy; and (2) complexity had the greatest impact.

In general, the results tend to support the primary thesis of this research: i.e., property ownership type provides us with richer, more predictively valid insights about the relationship between perceived environmental attributes and strategic orientations.

The findings of fit-performance hypotheses testing are:

1. Among POEs, the predominant strategy, riskiness, was significantly associated with performance.

2. Among SOEs, the predominant strategy, defensiveness, was significantly associated with performance.
3. Among JOEs, the predominant strategy, analysis, was significantly associated with performance.
4. Among COEs, the predominant strategy, analysis, was NOT associated with performance. Instead, there was a significant association between the defensiveness strategy and performance.
5. Ownership type had a direct impact on performance regardless of the particular strategies used. Specifically, state-ownership type provided a generic advantage in terms of firm performance over the other ownership types without controlling for the effect of strategy. After the effect of strategy was controlled for, SOEs still had a performance advantage over COEs and POEs. It appears that the performance advantage was partially independent of firm strategy. However, the negative association between joint venture ownership type and performance was no longer significant after firm strategy was taken into consideration.

The above results provide significant evidence that ownership type had an indirect impact on performance through the environment-strategy relationship, as well as a direct impact on performance when the strategy effect was controlled for.

Discussion

While no relationship was hypothesized regarding the total sample, the results found in this study provide useful insight into the nature of the general environment-strategy linkage in China. As the results show, among the three environmental dimensions, perceived complexity had the highest loading. This result suggests that at the current level of regulation, as a consequence of economic

reform and open-door policy, managers surveyed in this study perceived complexity as more influential than other environmental variables. Dynamism had the highest mean value among the three environmental measures, as can be seen in Table 7 on page 83 but was not the most influential environmental variable. It appears that perceived environmental change, even when high in frequency and magnitude, poses less threat when managers have a good understanding of its impact. However, the relationship between Chinese firms and their various environmental segments is highly complex and particularistic, especially when information is not codified and regulations are not made explicit (Boisot and Child, 1988, 1990; Child and Lu, 1990). An environment characterized by uncoded information can promote noneconomic forms of opportunism and prompt decision makers to be more cautious when making resource commitments (Boisot and Child, 1988). This is made evident by the fact that futurity orientation was perceived as an unfavorable strategy (see Table 15 on page 92).

It was observed that among the eight environmental segments surveyed, the political/regulatory segment was reported by managers to be the most influential, least predictable, and most complex. After reviewing media reports on business practices in the PRC, it was found that regulatory information was difficult to obtain, and even when available, the information appeared to be too general and vague to help managers plan business activities. In many cases, collection and interpretation of regulatory information became a primary focus of top managers, and these managers often found from subsequent inspection or evaluation that their interpretations of regulations and rules were incorrect. In general, the environment was characterized as discouraging future-oriented and risk-related decisions (Boisot and Child, 1988). Priority was placed on only survival rather than growth.

Since no relationship was hypothesized regarding the total sample, no definitive conclusions can be made regarding the relationship between strategic orientations and performance for all firms. Nevertheless, the role of futurity orientation merits attention. The results of subgroup and full sample regression analyses point to the role of futurity, which had an adverse impact on performance. This strategic orientation emerged as one that should be avoided because it was

negatively related to firm performance within and across ownership types. The study provided consistent and strong evidence that in the current Chinese economy in which the government constantly intervenes, and political instability is a primary concern, firms are reluctant to take future-oriented perspectives and make long-term commitments. This can be detrimental to sustainable economic growth. This result also provides policy implications for foreign investors currently or planning to do business in China.

Based on the results of this study, it is clear that even in a former centrally planned economy undergoing transition, distinctive strategies do exist and are significantly related to perceived environmental attributes. Furthermore, property ownership type moderates this relationship, as demonstrated in subgroup analyses. It is important to note that the moderating effect of ownership types on proposed relationships took two forms. First, ownership type moderated the magnitude of environment-strategy relationship. This is evident in two ownership types, i.e., COEs and JOEs. These two ownership types adopted the same predominant strategic orientation shared by the total sample. Yet when the association between perceived environmental attributes and strategic orientations was tested at the subsample level, the association between the predictor set and the criterion set was stronger within the same ownership type than across different ownership types. This result was consistent with Prescott's (1986) prediction that subgroup analysis would reveal the contingency variable affects the strength of the proposed relationship. Moreover, this study found that the contingency variable investigated in the study, i.e., ownership type, affected the environment-strategy relationship in two ways. On the one hand, ownership moderated the *magnitude* of the hypothesized relationship. This is demonstrated by JOEs and COEs (Table 18 on page 95 and Table 19 on page 98). On the other hand, ownership also moderated the *configuration* of the relationship. This was demonstrated by the environment-strategy configurations of SOEs and POEs, which were strikingly different than that of the total sample.

The POEs: Opportunistic Risk Taker

The results of POEs subgroup analysis seem to suggest that private entrepreneurial niche seekers (POEs) not only have a stronger propensity for risk taking and innovation, but their profit-maximizing orientation and hard-budget constraints encourage more exacting cost-benefit calculations in their investment decisions. Because profits accrue directly to them, entrepreneurial incentives are far greater than for managers of COEs and SOEs. This study is consistent with the hypothesis by Nee (1992) that these private entrepreneurs are growth-oriented. On the other hand, these private entrepreneurs face greater uncertainties due to the continuing instability of fundamental rules of the game involving the market economy. They therefore are reluctant to make long-term investments in the growth of their enterprises because, in the absence of adequate legal protection of private property rights and possible hostility directed against them in a future political campaign, they worry about possible appropriation of their assets. Instead, they invest to gain rapid returns on their capital, emphasize liquidity, and spend their returns on their personal consumption rather than investing in fixed capital. In this sense, their strategic orientation more resembles opportunistic middlemen (Bonacich, 1973) than modern capitalists (Schumpeter, 1942).

In sum, Chinese private entrepreneurs share many predominant strategic orientations with their counterparts in western market economies (e.g., Bird, 1989), such as action-oriented, proactive, and risk-taking. However, the lack of long-term perspective as well as strong risk propensity among Chinese POEs are not highly consistent with ethnic Chinese entrepreneurs operating in market economies, such as Hong Kong (Wong, 1988). The major constraints on the competitiveness of private enterprises is thus the lack of clearly defined and routinely enforced private property rights and explicit and codified information.

The SOEs: Conservative Defender

Managers in state enterprises (SOEs) act more like bureau chiefs accountable to a central bureaucracy. Their goal is to fulfill the planned production targets on schedule with the factor resources allocated to them. They strive to cultivate a good relationship with the party secretary in their firms and are cautious in their interpretation of policy guidelines issued by the party and state ministries, lest they jeopardize their political reputation, which remains a crucial form of capital within the nonmarket redistributive sector of the economy. Moreover, they are careful to maintain a good relationship with workers and staff, lest they provoke the opposition of the party apparatus within the enterprise, which champions the interests of workers. As professional bureaucrats in a nonmarket environment, managers are extremely risk-averse in their strategic orientation. There is little premium placed on innovation and risk taking when the evaluative process emphasizes meeting production targets sent down from higher authorities and when access to increased allocations of capital, raw material, and labor depend on political rather than economic considerations.

The JOEs: Adaptive Analyzer

The strategic orientation among joint ventures (JOEs) currently operating in China are consistent with their counterparts in the western market economies. This was also found to be the case for previous strategic management research and is characteristic of that described as the Analyzer (Miles and Snow, 1978). This choice was also significantly related to performance. More recent studies of successful foreign/Chinese joint ventures (e.g., Newman, 1992) revealed some key characteristics that are consistent with those associated with an Analyzer. These successful JOEs, described by Newman (1992) as "focused joint ventures," define and then stick closely to prescribed ways of performing activities. Newman (1992) suggests that "focused joint ventures" are only the first stage

in an evolution toward more complex roles for joint ventures, yet this stage cannot be skipped in countries such as China and Eastern European countries. Attempts to leapfrog into highly sophisticated uses of joint ventures may invite disaster. This is understandable because most of the current joint ventures in China make products that are designed in their headquarters at home, and little R&D is performed in China. Further, this practice makes strategic sense in that a natural fear of foreign investors is to create their own competitors in the target market.

The results of performance implications of joint venture strategy reveals that JOEs were able to employ appropriate strategy to overcome the performance disadvantage associated with ownership type. As shown in Table 25 on page 107 and Table 26 on page 109, after strategy effect was controlled for, the previously significant negative association between joint venture ownership type and performance (Table 25 on page 107) was no longer significant (Table 26 on page 109).

The COEs: Conservative Entrepreneur

The interesting twist in this study's findings is that collective enterprises (COEs) and joint venture enterprises (JOEs) exhibited nearly identical environment-strategy configurations, and the predominant strategy is analysis orientation. Yet this strategy did not contribute to higher performance among the COEs subsample. This is not consistent with the environment-strategy-performance paradigm, which suggests that a match between environment and strategy is related to firm performance (Venkatraman and Prescott, 1990). It is clear that firms may choose the same strategy for different reasons. Yet it is not clear why COEs selected a strategy that did not contribute to performance. The strategic paradigm assumes that a positive relationship between strategy and performance is a function of an appropriate match between strategic orientation and environmental characteristics (e.g., Miller & Friesen, 1983; Venkatraman & Prescott, 1990). Apparently there was a lack of match between the environment and strategy among COEs in China, as represented by this study.

Some Comparisons

A further comparison of all three domestic ownership types (SOEs, COEs, and POEs) raises further issues that need to be addressed. COEs, which represent a “hybrid” ownership structure of POEs and SOEs, selected the analysis strategic orientation that is also a “hybrid” of proactive and defensive strategies (Miles and Snow, 1978; Shortell and Zajac, 1990). Yet it was the defensive oriented strategic orientation, predominantly chosen by the SOEs, that was associated with COEs’ performance. As discussed earlier, the analysis strategy was chosen as the predominant strategic orientation by the JOEs, while the POEs and SOEs each selected strategies that represented the two extreme orientations. This raises a question: why do Chinese enterprises representing three ownership types exhibited such behavior?

In the last decade, COEs and JOEs have undoubtedly become loosely interwoven and interact in a mutually beneficial manner. Sustained interactions between these organizational forms can be expected to induce institutional isomorphism (DiMaggio and Powell, 1983). As COEs mimic the organizational rituals and practices of JOEs, they gain greater legitimacy (Meyer and Rowan, 1977). By contrast, SOEs view the collective sector (COEs) as rivals that compete for scarce resources and, especially, for markets. Thus, whereas “blending” is increasingly evident in interactions between the COEs and JOEs, “segregating” tendencies appear to be stronger between the state and the more market oriented ownership types (Hannan & Freeman, 1989). Nonetheless, the rivalry between SOEs and COEs is muted somewhat by the fact that the latter, through subcontracting arrangements, now provide parts and assembly for most industrial products made by SOEs. This may be analogous to the American corporation that complains about foreign competition while importing critical components and products.

The striking differences between POEs and SOEs also merit attention. While POEs showed high risk propensity, SOEs were highly risk-averse. McClelland (1961) demonstrated that people with high need for achievement (nAch) are more likely to engage in entrepreneurial and innovative

activities and are more willing to take risks. Also in his 1963 follow-up study when he specifically focused on the PRC, McClelland examined the nAch of children between the ages of eight and ten, who would now be in their 40s. Based on his and other studies of Chinese managers (e.g., Tung, 1982), one would expect that managers defined as high achievers should be willing to engage in innovative activities. Moreover, Hofstede (1980; 1991) compared the difference in uncertainty avoidance between individuals from Western countries and those of Chinese origin, including Hong Kong, Taiwan, Singapore, Malaysia. He found those of Chinese origin exhibit consistently lower Uncertainty Avoidance Index (UAI), indicating that people from these countries or regions are less likely to avoid uncertainty. Apparently there is a difference between existing management literature, the strong evidence of entrepreneurial values and behavior of ethnic Chinese elsewhere, as well as private entrepreneurs examined in this study, and risk propensity of Chinese SOEs found in this study. One likely reason for the inconsistency is that McClelland's measures focused on economic achievement, which is more closely associated with risk-taking and entrepreneurial behavior. The need for achievement is a highly complex motive saturated with strong social significance. In order to understand better the differences between Chinese SOEs and POEs, it is necessary to go deeper into the content of this need construct. McClelland and his associates (e.g., McClelland & Friedman, 1953) originally defined achievement motivation as a propensity to strive for success in any or all situations in which a personal standard of excellence is thought to apply. However, there may be several varieties of achievement motivation. McClelland's conceptualization of the achievement motive as a well-internalized predisposition in the self-reliant individual, which is a result of independence training, is only one variety. This individual-oriented achievement motivation is a kind of functionally autonomized desire, in which the course of achievement-related behavior, the standards of achievement, and the evaluation of the performance or outcome are defined or determined by the actor himself or herself. On the other hand, there is another kind of social-oriented achievement motivation, which is functionally unautonomized (hence still extrinsic and instrumental) desire in which the course of the achievement-related behavior, the standards of excellence, and the evaluation of the performance are defined or determined by significant others, such as the government or the society as a whole (Yang, 1986).

In the Chinese state sector, innovation is encouraged but not properly rewarded (Tung, 1982; Child, 1990b), particularly regarding top managers whose careers may be threatened by losses associated with proactive, innovative and risk-taking activities. This may also explain why managers often defend their existing performance levels instead of seeking new alternatives when faced with increased environmental uncertainty and hostility. With regard to Hofstede studies (1980; 1991), this study has shown that differences in uncertainty avoidance behavior also is related to ownership type, rather than cultural factors alone. This is consistent with Earley's (1993) study which argued that organizations in the same culture are not necessarily homogeneous. It also shows that ownership type is a contingency variable that confounds theoretically important relationships.

Historically, China's centralized bureaucracy was intent on controlling all activities, including innovation (Tung, 1982). Among SOEs, new innovations are often generated in special research and development institutes and transmitted to enterprises in the form of plans for technical progress. Moreover, since governmental bureaucracy sets gross output performance criteria as the primary criterion for managerial success and is itself evaluated and rewarded or punished primarily on the basis of short-term output and other annual or shorter performance indicators, execution of day-to-day tasks takes top priority. On the other hand risk-taking and innovation initiatives often require stopping the production line for retooling, which in turn may cause a loss of current output, and hence a loss of bonuses and positive appraisal. This short term reward explanation is supported by McClelland's (1963) study of the Chinese sample, which found a high nPower (need for power) score that was also *negatively* related to entrepreneurial spirit and economic growth. However this relationship was not emphasized in that study. This study indicates that while a decade of economic reform has revolutionized the Chinese economy, the state sector as represented by this sample is still characterized by a lack of entrepreneurial orientation.

Another explanation for the lack of proactive and risk taking orientations among SOEs may be attributed to the way the performance is evaluated by the government. The contractual management and responsibility system within state enterprises have unavoidable problems. The performance level under contract is subjected to negotiation between the management and

government, and the current system in fact discourages high performing enterprises. For instance, poorly performing enterprises will generate a lower expected standard of performance, thus it is relatively easy for these enterprises to achieve the contracted performance level. By doing so, more strategic flexibility may be gained. On the other hand, previously high performing enterprises may in fact be penalized, and they consequently will have to strive to merely reach their contracted performance level. Managers in these enterprises may lose the motivation or strategic flexibility required to engage in proactive, future-oriented, and risky activities (Peng, 1992).

Granick (1990) discussed a phenomenon frequently observed in China and other centrally planned economies in Eastern Europe, described as the "ratchet effect." It is argued that planners, lacking reliable information as to the performance possibilities of an individual enterprise in year (t), lean heavily upon the actual performance of the same enterprise in (t-1) in their estimation of these possibilities. Thus, the more an enterprise overfulfills its plan in (t-1), the greater will be its increase in performance target for (t).

The significance attributed to this effect is the reaction of the enterprise (agent) to the perceived behavior by the planner (principal). Since management of the enterprise is concerned with multiperiod rather than with single period maximization, these managers tend to restrain performance in (t) when for whatever reason the enterprise finds itself with the potential for substantially exceeding the plan set in (t). It is widely known that Chinese managers believe that planners operate on the ratchet principle. Note that this reaction depends upon the agent's perception of the principle's principal; it does not matter whether or not this perception is correct.

Contributions

This study attempted to empirically test the strategic management theory in a former centrally planned economy that is undergoing transition toward a market driven economy. The study was conducted in a context that has rarely been studied before, and found that despite long tradition of central planning and frequent government intervention, distinctive strategies existed, and these strategies were significantly related to firm performance. Research findings thus represented significant validation and extension of western strategic management and organizational theory, including those exploratory studies that have investigated managerial behavior in former centrally planned economies, such as China (e.g., Nee, 1992; Earley, 1993; Tan and Litschert, 1993).

More importantly, this study identified a contextual variable, i.e., property ownership type, and examined its impact on environment-strategy relationship. The study investigated the ownership effects on other variables that were subjected to managerial control, such as perceived environment, strategy, and performance. It was found that ownership type moderated the relationship between perceived environmental attributes and strategic orientations. The study found that firms among the same ownership type shared a predominant strategy, while those representing different ownership types exhibited distinctive environment-strategy configurations. Further, these distinctive patterns were also significantly related to performance in most of the ownership types studied. It was demonstrated that ownership is a theoretically important variable that may have significant confounding effects. It provides guidance for future studies that examine variables that are subjected to managerial control across different ownership types. As the results of this study have demonstrated, failure to account for ownership effect may generate research findings that are theoretically false, inconsistent, and uninterpretable. Previous studies set in China have found that firms responded to the environment in a way that was different than their counterparts in market economies (e.g., Tan and Litschert, 1993), yet it was not clear based the earlier studies whether or not firms exhibiting different ownerships might respond differently. Thus, this research represents

a major extension of previous studies that examined strategic management issues in a former centrally planned economy undergoing transition.

From a practitioner's standpoint, this study has demonstrated that ownership type may be considered as a *predictor* of firm strategic behavior. This result may prove valuable for foreign investors currently or planning doing business in China. Given the similarities between China and other newly reformed socialist economies (Boisot & Child, 1988, 1990; Child, 1990a), including similarity in ownership structure and joint venture management (e.g., Newman, 1992), this study may help contribute to an understanding of strategic management issues in other economies.

Based on the findings from this study, it can be concluded that it is important for a firm's strategic orientation to adapt to the nature of its environment, as the match between environment and strategy has significant performance implications. As the study shows, a mismatch may result in lower firm performance, such as found among COEs.

Limitations and Suggestions for Future Research

In light of results presented in this paper, there are issues that should be investigated in future studies. First, different sources of perceived environmental characteristics have varying degrees of impact on a firm's strategic orientation. For example, the results of factor analysis indicate that the Chinese managers taking part in the study perceived environments that differed from their western counterparts. Specifically, some segments that were considered as part of the general or institutional environment, such as political/regulation, technology, and international, were loaded with task-related segments such as the competitor segment. The importance of the international segment was consistent with discussion of the Chinese economy in previous chapters, in that since economic reform, Chinese enterprises have been increasingly influenced by the international economic

environment. On the other hand, the customer segment was consistently loaded with segments associated with the general or institutional environment. It is not clear what roles the different environmental segments play in causing the pattern of strategic choice. Research has not empirically verified the relative importance of the different segments. This issue may become more critical when a study is confounded by differences in economic and/or cultural context. For instance, in a market economy, customers have an important influence on a firm's strategic decisions. In a regulated economy, on the other hand, the market is usually characterized by shortage, and consumers are limited to goods and services available. Consequently, as discussed earlier, their decisions and behavior may not have as significant an impact on business decisions (Pfeffer and Salancik, 1978). Therefore, comparative studies may enable closer examination of those segments and improve our understanding of the environment and its impact on adaptive responses.

Second, a few notes of caution in generalizing findings is in order. In this study, inconsistent results were found among one type of Chinese enterprises, i.e., COEs. These firms selected a strategic orientation that was negatively related to firm performance. This inconsistency may indicate the importance of fit, or lack of fit, between environment and strategy. As discussed above, the COE subsample was collected from Northern China, which includes firms located either in the capital city or close by. Proximity to the central government subjects firms to greater control and intervention. These cities lag behind the southern coastal regions in reform. As discussed earlier, studies based on more dynamic regions suggest that COEs are more likely to be proactive, future-oriented, and willing to take greater risk (Vogel, 1989). To provide generalizable conclusions, future studies should examine COEs in other parts of the country, for example, in the more dynamic Southern provinces.

Third, this study relied primarily on perceptual measures of the environment, strategy, and performance. Theoretical implications justify the use of perceptual data, and practical difficulty in data collection in the specific setting further makes it desirable to adopt this approach. Nevertheless, it is certainly desirable to validate the results found in this study with objective data.

This may become possible as China advances its economic reform, accepts international business practices, and makes more reliable, consistent, and codified information available.

Fourth, for the purpose of comparability across ownership types, this study used the same performance measure for all ownership types. However, different ownership types may rank measures of performance differently based on proximity to dictates of the market. Therefore further studies should take this into account. For example, private entrepreneurs may assign high priority on profitability measure, while state and collective enterprises may emphasize employment opportunities and national security, still foreign partners in the joint venture may be more interested in maintaining a presence in China and gradually increasing market share. These differences, if exist, may result in differences in reported performance which did not reflect a firm's priority.

Finally, future research should examine the dynamics of the environment-strategy interaction among Chinese firms. In this study, the multivariate nature of the data was limited by its cross-sectional nature. While the results were generally supportive of the hypothesized relationships, they only gave a static picture. Given the dramatic changes brought about by economic reform, it should not be surprising to see changes in the environment and managerial strategic orientation. Despite these limitations, the static analysis must be conducted before the more difficult dynamic conditions can be addressed. Adopting a causal analysis approach may be uniquely promising in addressing these types of future research.

References

- Adler, N. J., and N. Campbell, 1989. In search of appropriate methodology: From outside the People's Republic of China looking in. *Journal of International Business Studies*. 20:61-74.
- Adler, N. J., R. Brahm, and J. L. Graham, 1992. Strategy Implementation: a comparison of face-to-face negotiations in the People's Republic of China and the United States. *Strategic Management Journal*. 13:449-466.
- Aharoni, Y., 1986. *The Evolution and Management of State Owned enterprises*. Melrose, MA: Ballinger Pub.
- Aldrich, H.E., 1979. *Organizations and Environments*. Englewood Cliffs, NJ: Prentice Hall.
- Anderson, C. R., & Paine, F. T. 1975. Managerial perceptions and strategic behavior. *Academy of Management Journal*, 18: 811-823.
- Andrews, K. R. 1971. *The concept of corporate strategy*. Homewood, IL: Richard D. Irwin.
- Arnold, H. J., 1982. Moderator variables: A classification of conceptual, analytic, and psychometric issues. *Organizational Behavior and Human Performance*, 29 (April), pp.143-174.
- Asley, W. G. & A. H. Van de Ven, 1983. Central perspectives and debates in organization theory. *Administrative Science Quarterly*. Vol.28:245-273.
- Atkinson, J. W., 1957. Motivational determinants of risk taking behavior. *Psychological Review*, 64:359-372.
- Bagozzi, R. P., 1980. *Causal models in marketing*. New York: John Wiley & Sons.
- Bagozzi, R. P., & L. W. Phillips, 1982. Representing and testing organizational theories: A holistic construal. *Administrative Science Quarterly*, 27:459-489.
- Baird, I. S., M. A. Lyles, S. Ji, & R. Wharton, 1991. Joint Venture Success: A Sino-U.S. Perspective. In *Organization and Management in China: 1979-1990*. (125-134), ed. O. Shenkar. Armonk, NY: M. E. Sharpe, Inc.

- Bartlett, M.S., 1938. Further aspects of the theory of multiple regression. *Proceedings of the Cambridge Philosophical Society*, 34:33-40.
- Baysinger, Barry, & Robert E. Hoskisson, 1990. The composition of boards of directors and strategic control: effects on corporate strategy. *Academy of Management Review*. 15:72-97.
- Baysinger, B. D., R. D. Kosnik & T. A. Turk, 1991. Effects of board and ownership structure on corporate R&D strategy. *Academy of Management Journal*. 34:205-214.
- Begley, T. M., & D. P. Boyd, 1987. Psychological characteristics associated with performance in entrepreneurial firms and small businesses. *Journal of Business Venturing*, Winter: 79-91.
- Bird, B. J., 1989. *Entrepreneurial Behavior*. Glenview, IL: Scott, Foresman.
- Birnbaum, P.H., 1984. The Choice of strategic alternatives under increasing regulation in high technology companies. *Academy of Management Journal*. 27:489-510.
- Birnbaum, P.H., 1985. Political strategies of regulated organizations as functions of context and fear. *Strategic Management Journal*. 6:135-150.
- Birnbaum, P.H., & G. Y. Y. Wong, 1985. *Cultural Values of managers in the People's Republic of China and Hong Kong*. Unpublished paper presented at the American Academy of Management Meetings, San Diego.
- Blackburn, V. L., J. R. Lang, & K. H. Johnson, 1990. Mergers and shareholder returns: the roles of acquiring firm's ownership and diversification strategy. *Journal of Management*. 16:769-782.
- Blalock, H. M., 1964. *Causal Inferences in Nonexperimental Research*. Chapel Hill: University of North Carolina Press.
- Blau, P. M., 1964. *Exchange and social life*. New York: John Wiley & Sons.
- Blau, P. M., & M. W. Meyer, 1987. *Bureaucracy in Modern Society*, 3rd Ed. New York: Random House.
- Boisot, M., & J. Child, 1988. The iron law of fiefs: Bureaucratic failure and the problem of governance in the Chinese Economic reforms. *Administrative Science Quarterly*. 33:507-527.
- Boisot, M., & J. Child, 1990. Efficiency, Ideology and Tradition in the Choice of Transactions Governance Structure: The Case of China as a Modernizing Society. In *Capitalism in Contrasting Cultures* (281-313), eds. Clegg, S. R. & S. G. Redding. Berlin: Walter de Gruyter.
- Bonacich, E., 1973. A theory of middleman minorities. *American Sociological Review*. 38:583-594.
- Borys, B., & D. B. Jemison, 1989. Hybrid arrangements as strategic alliances: theoretical issues in organizational combinations. *Academy of Management Review*. 14:234-250.
- Bourgeois, L. J., 1980. Strategy and Environment: A Conceptual Integration. *Academy of Management Review*. Vol.5:25-39.
- Boyacigiller, N., and N. J. Adler, 1991. The parochial dinosaur: Organizational science in a global context. *Academy of Management Review*. 16:262-290.
- Burns, Tom, and G. M. Stalker, 1961. *The Management of Innovation*. London: Tavistock Publications.

- Burstein, D., 1983. China gropes for perfect blend of management techniques. *International Management*. April, 38:57-64.
- Buyd, B. K., G. G. Dess, and A. M. A. Rasheed, 1993. Divergence between archival and perceptual measures of the environment: Causes and consequences. *Academy of Management Review*. Vol.18:204-226.
- Campbell, D. T., and D. W. Fiske, 1959. Convergent and discriminant validity by the multitrait-multimethod matrix. *Psychological Bulletin*, 56:81-105.
- Chandler, A. D., 1962. *Strategy and Structure: Chapters in the History of American Industrial Enterprise*. Cambridge, Mass.: M.I.T. Press.
- Child, J., 1972. Organizational Structure, Environment and Performance: The Role of Strategic Choice. *Sociology*. Vol.6:1-22.
- Child, J., 1990a. The character of Chinese enterprise management. In *Advances in Chinese Industrial Studies. Vol. 1 (part A). Reform Policy and the Chinese Enterprise* (137-152), ed. J. Child & M. Lockett. Greenwich, CT: JAI Press.
- Child, J., 1990b. The structure of earnings in Chinese enterprises and some correlates of their variation. In *Advances in Chinese Industrial Studies. Vol. 1 (part A). Reform Policy and the Chinese Enterprise* (227-245), ed. J. Child & M. Lockett. Greenwich, CT: JAI Press.
- Child, J., & Y. Lu, 1990. Industrial decision-making under China's reform, 1985-1988. *Organization Studies*. 11:321-351.
- Chong, L. E., J. P. Cragin, & S. A. Scherling, 1983. *Manager work-related values in a Chinese corporation*. Unpublished paper presented at the American Academy of International Business, 1983 Annual Meetings, San Francisco.
- Cook, T. D., and D. T. Campbell, 1979. *Quasi-Experimentation: Design & Analysis Issues for Field Settings*, Boston: Houghton & Mifflin.
- Davidson, W. H., 1987. Creating and managing joint venture in China. *California Management Review*, 29(4):77-94.
- Day, D. L., 1992. Research linkages between entrepreneurship and strategic management or general management. In *The State of the Art of Entrepreneurship* (pp.117-163), ed. Donald L. Sexton and John D. Kasarda. Boston: PWS-Kent.
- De Mente, B. L., 1989. *Chinese Etiquette & Ethics in Business*. Lincolnwood, IL: NTC Business Books.
- Dess, G. G., 1987. Consensus on strategy formulation and organizational performance: Competitors in a fragmented industry. *Strategic Management Journal*, 8:259-277.
- Dess, G., & D. Beard, 1984. Dimensions of organizational task environments. *Administrative Science Quarterly*, 29: 52-73.
- Dess, G., & R. Robinson, 1984. Measuring organizational performance in the absence of objective measures: The case of the privately held firm and conglomerate business units. *Strategic Management Journal*, 5:265-273.
- Dill, W. R. 1958. Environment as an influence on managerial autonomy. *Administrative Science Quarterly*, 2:409-443.

- DiMaggio, P. J., & W. W. Powell, 1983. The iron cage revisits: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48:147-160.
- Drazin, R., & Van de Ven, A. 1985. Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, Vol.30: 514-539.
- Duncan, R. B., 1972. Characteristics of Organizational Environments and Perceived Environment Uncertainty. *Administrative Science Quarterly*, 17:313-327.
- Earley, P. C., 1989. Social loafing and collectivism: A comparison of the United States and the People's Republic of China. *Administrative Science Quarterly*, 34:565-581.
- Earley, P. C., 1993. East meets west meets midwest: Further explanations of collectivistic and individualistic work groups. *Academy of Management Journal*, 36:319-348.
- Emerson, R., 1962. Power-dependence relations. *American Sociological Review*, 27:31-41.
- Emery, F., & E. Trist, 1965. The causal texture of organizational environments. *Human Relations*, 18:21-31.
- Fahey, L., & V. K. Narayanan, 1986. *Macroenvironmental Analysis for Strategic Management*. St. Paul, MN: West Pub.
- Fama, E., & M. Jensen, 1983. Separation of ownership and control. *Journal of Law and Economics*, 26:301-326.
- Fottler, M. D., 1981. Management: Is it really generic? *Academy of Management Review*, 6:1-12.
- Fredrickson, J. W., & T. W. Mitchell, 1984. Strategic decision process: Comprehensiveness and performance in an industry with an unstable environment. *Academy of Management Journal*, 27:399-423.
- Fruhan, W., 1972. The fight for competitive advantage: a study of the United States domestic trunk air carriers. Division of Research, Harvard University, Boston.
- Fry, L., & D. A. Smith, 1987. Congruency, contingency and theory building. *Academy of Management Review*, 12:117-132.
- Galbraith, J. R., 1977. *Organizational Design*. Reading, MA: Addison-Wesley.
- Galbraith, C., & P. Schendel, 1983. An Empirical Analysis of Strategy Types. *Strategic Management Journal*. Vol.4:153-173.
- Gartner, W. B., 1985. A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review*, October.
- Geeraerts, G., 1984. The effect of ownership on the organization structure in small firms. *Administrative Science Quarterly*, 29:232-237.
- Ginn, G. O., & R. R. McDaniel, Jr., 1987. Strategic adaptation in the hospital industry. *Academy of Management Best Paper Proceedings 1987*. pp.87-90.
- Goldman, M.I., 1986. China's dilemma: competing without capitalism. *Technology Review*. October, 89:18-19.

- Graf, L., M. Hemmasi, J. A. Lust, & Y. Liang, 1991. Perceptions of Desirable Organizational Reforms in Chinese State Enterprises. In *Organization and Management in China: 1979-1990* (47-56), ed. O. Shenkar. Armonk, NY: M. E. Sharpe, Inc.
- Granick, D., 1990. *Chinese State Enterprises: A regional property rights analysis*. Chicago: The University of Chicago Press.
- Grub, P. D., and J. H. Lin, 1991. *Foreign Direct Investment in China*. New York: Quorum Books.
- Hambrick, D. C., & C. C. Snow, 1977. A Contextual Model of Strategic Decision Making in Organization. *Academy of Management Proceedings* pp.109-250.
- Hannan, M. T. and J. Freeman, 1989. *Organizational Ecology*. Cambridge, MA: Harvard University Press.
- Hatten, K. J., & D. E. Schendel, 1977. Heterogeneity within an industry: Firm conduct in the U.S. brewing industry, 1952-1971. *Journal of Industrial Economics*, 26:97-113.
- Hatten, K. J., D. E. Schendel, & A. C. Cooper, 1978. A strategic model of the United States brewing industry, 1952-1977. *Academy of Management Journal*, 21:592-610.
- Henley, J. S., & M. K. Nyaw, 1986. Introducing Market Forces into Managerial Decision-making in Chinese Industrial Enterprises. *Journal of Management Studies* . 23:635-656.
- Hill, C. W., 1988. Differentiation Versus Low Cost or Differentiation and Low Cost: A Contingency Framework. *Academy of Management Review*. Vol.13:401-412.
- Hill, C. W. L., & S. A. Snell, 1989. Effects of ownership structure and control on corporate productivity. *Academy of Management Journal*. 32:25-46.
- Hisrich, R. D., 1992. Joint ventures: Research base and use in international markets. In *The State of the Art of Entrepreneurship* (pp.520-559), ed. Donald L. Sexton and John D. Kasarda. Boston: PWS-Kent.
- Hofer, C.W., 1975. Toward a Contingency Theory of Business Strategy. *Academy of Management Journal*. Vol.18:784-810.
- Hofstede, G. H., 1980. *Culture's Consequences: International Differences in Work-related Values*. Beverly Hills, CA: Sage Pub.
- Hofstede, G., 1991. *Cultures and Organizations*. New York, NY: McGraw Hill Books.
- Hornaday, J. A., 1982. Research about living entrepreneurs. In *Encyclopedia of Entrepreneurship*, ed. C. A. Kent, D. L. Sexton & K. H. Vesper. Englewood Cliffs, NJ: Prentice-Hall.
- Hoskisson, R. E., & T. A. Turk, 1990. Corporate structuring: governance, and control limits of the internal capital market. *Academy of Management Review*. 15:459-477.
- Hrebiniak, L. G. and W. F. Joyce, 1985. Organizational Adaptation: Strategic Choice and Environmental Determinism. *Administrative Science Quarterly*. Vol.30:336-349.
- Hunt, R. G., & G. Yang, 1990. Decision making and power relations in the Chinese enterprise: Managers and party secretaries. In *Advances in Chinese Industrial Studies. Vol. 1 (part A). Reform Policy and the Chinese Enterprise* (227-245), ed. J. Child & M. Lockett. Greenwich, CT: JAI Press.

- Jenson, M. C., & W. H. Meckling, 1976. Theory of the firm, managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3:305-360.
- Jouch, L.R., Osborn, R.N., & Glueck, W.F., 1980. Short term financial success in large business organizations: the environment-strategy connection. *Strategic Management Journal*. 1:49-63.
- Katz, J., & Gartner, W. B., 1988. Properties of emerging organizations. *Academy of Management Review*, 13:429-442.
- Khandwalla, P. N. 1976. The techno-economic ecology of corporate strategy. *The Journal of Management Studies*, Vol.13:62-75.
- Khandwalla, P. N. 1977. *The design of organizations*. New York: Horcourt Brace Jovanovich.
- Kim, L., & Y. Lim, 1988. Environment, generic strategies, and performance in a rapidly developing country: a taxonomic approach. *Academy of Management Journal*. 31:802-828.
- Kirzner, I. M., *Perception, Opportunity, and Profit: Studies in the Thoery of Entrepreneurship*. Chicago: University of Chicago Press.
- Kuratko, D. F., and R. M. Hodgetts, 1989. *Entrepreneurship: A comtemporary approach*. Chicago: The Dryden Press.
- Kuratko, D. F., and W. R. LaFollette, 1986. A small business management/entrepreneurship curriculum: A dual progression experience. *Journal of Business Education*, March: 267-271.
- Lai, T., and Y. Lam, 1986. A study on work-related values of managers in the People's Republic of China (parts I, II, and III). *The Hong Kong Manager* (Dec.-Jan. 1986), 51-91; (Apr.-May. 1986), 7-17.
- Lawrence, P., and J. W. Lorsch, 1967. Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*. Vol.12:1-47.
- Lenz, R.T., 1980. Environment, strategy, organization structure and performance: patterns in one industry. *Strategic Management Journal*. 1:209-226.
- Li, Mingfang, 1990. Environmental attribute, strategy-making comprehensiveness and firm performance: An empirical study of the electronics computing equipment industry. Unpublished Ph.D. dissertation. Virginia Tech, Blacksburg, VA.
- Long, N., 1992. There are more and more millionaire in China. *China Times Weekly*. 23:74-76.
- Luo, F., and Y. Yu (1991). *Strategic Management: Analytical Techniques*, China: Northeastern University of Technology Press.
- McClelland, D. C., & G. A. Friedman, 1953. A cross-cultural study of the relationship between child-training practices and achievement motivation appearing in folk tales. In Swanson, G. E., T. M. Newcomb, and E. L. Hartley (ed.), *Readings in Social Psychology*. New York: Holt.
- McClelland, D. C., 1961. *The Achieving Society*. Princeton, NJ: Van Nostrand.
- McClelland, D. C., 1963. Motivational patterns in Southeast Asia with special reference to the Chinese case. *Journal of Social Issues*, 19:6-19.
- Mahon, J.F., & Murray, E.A., 1980. Deregulation and strategic transformation. *Journal of Contemporary Business*. 9:123-138.

- Mahon, J.F., & Murray, E.A., 1981. Strategic Planning for regulated companies. *Strategic Management Journal*. 2:251-262.
- March, J. G., & Simon, H. A. 1958. *Organizations*. New York: John Wiley & Sons.
- Mascarenhas, Briance, 1989. Domains of state-owned, privately held, and publicly traded firms in international competition. *Administrative Science Quarterly*. 34:582-579.
- McKelvey, W., 1982. *Organizational Systematic, Taxonomy, Evolution, Classification*. Berkeley, CA: University of California Press.
- Meyer, A. D., 1982. Adapting to Environmental Jolts. *Administrative Science Quarterly* Vol.27:515-537.
- Meyer, J. W., and B. Rowan, 1977. Institutionalized Organizations: Formal Structures as Myth and Ceremony. *American Journal of Sociology*. Vol.83:340-363.
- Miles, R. E., & C. C. Snow, 1978. *Organizational Strategy, Structure and Process*. New York, NY: McGraw Hill Books.
- Miller, D., 1988. Relating Porter's business strategies to environment and structure: analysis and performance implications. *Academy of Management Journal*, 31:280-309.
- Miller, D., & P. Friesen, 1982. Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic Management Journal*, Vol.3(1): 1-25.
- Miller, D., and P. H. Friesen, 1983. Strategy-Making and Environment: The Third Link. *Strategic Management Journal*. Vol.4:221-235.
- Milliken, F. 1987. Three types of perceived uncertainty about the environment: State, effect and response uncertainty. *Academy of Management Review*, Vol.12:133-143.
- Mintzberg, H. 1973. Strategy-making in three modes. *California Management Review*, Vol.16:44-53.
- Mintzberg, H., 1978. Patterns of Strategy Formation. *Management Science*. Vol.24:934-948.
- Mintzberg, H., 1979. *The Structure of Organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Mintzberg, Henry, 1983. *Structure in Fives: Designing Effective Organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Mitchell, T. R., 1985. An evaluation of the validity of correlational research conducted in organizations. *Academy of Management Review*, 10:192-205.
- Mun, K. C., 1990. Stakeholder in the Chinese enterprises: An examination of Li Yingling's ownership reform model. In *Advances in Chinese Industrial Studies. Vol. 1 (part A). Reform Policy and the Chinese Enterprise* (109-124), ed. J. Child & M. Lockett. Greenwich, CT: JAI Press.
- Murray, E.A., 1978. Strategic choice as a negotiated outcome. *Management Science*. May , pp.960-972.
- Murray, E.A., & Isenman, A.W., 1978. The concept of strategy formulation as a negotiation process. Paper presented at the Academy of Management Meeting August, 1978, San Francisco.

- Nee, V., 1992. Organizational dynamics of market transition: Hybrid forms, property rights, and mixed economy in China. *Administrative Science Quarterly*. 37:1-27.
- Newman, W. H., 1992. "Focused joint ventures" in transforming economies. *Academy of Management Executive*. 6:67-76.
- Nunnally, J. C., 1978. *Psychometric Theory*. 2nd Edition. New York: McGraw-Hill.
- Paine, F. T., & Anderson, C. R. 1977. Contingencies affecting strategy formulation and effectiveness: An empirical study. *The Journal of Management Studies*, Vol.14:147-158.
- Pearce, J. A., II., & R. B. Robinson, Jr., 1991. *Strategic Management: Formulation, implementation, and control*, 4th ed. Homewood, IL: Irwin.
- Pearson, M. M., 1991. *Joint Ventures in the People's Republic of China*. Princeton, NJ: Princeton University Press.
- Pedhazur, E. J., 1982. *Multiple Regression in Behavioral Research: Explanation and Prediction*, 2nd ed., TX: Holt, Rinehart & Winston.
- Peng, X., 1992. State enterprises: Striving between chaos and control. *China Times Weekly*. 23:30-32.
- Pfeffer, J., & P. Nowak, 1976. Joint ventures and interorganizational dependence. *Administrative Science Quarterly*, 21:398-418.
- Perry, J. L., & H. G. Rainey, 1988. The public-private distinction in organization theory: A critique and research strategy. *Academy of Management Review*. 13:182-201.
- Pfeffer, J., 1981. *Power in organizations*. Marshfield, MA: Pitman.
- Pfeffer, J., 1982. *Organizations and Organization Theory* Boston, MA: Pitman
- Pfeffer, J., & Salancik, G. R. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
- Phillips, L. W., 1981. Assessing measurement error in key informant report: A methodological note on organizational analysis in marketing. *Journal of Marketing Research*. 18:395-415.
- Pondy, L. R., 1969. Effects of size, complexity, and ownership on administrative intensity. *Administrative Science Quarterly*, 14:47-60.
- Porter, M. E., 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- Porter, M. E., 1985. *Competitive Advantage*. New York: Free Press.
- Post, J.E., & Mahon, J.F., 1980. Articulated turbulence: the impact of regulatory agencies on corporate responses to social change. *Academy of Management Review*. 5:399-407.
- Prescott, J. E., 1986. Environments as moderators of the relationship between strategy and performance. *Academy of Management Journal*, 29:329-346.
- Przeworski, A., & H. Teune, 1969. *The Logic of Comparative Social Inquiry*. New York, NY: Wiley.

- Pugh, D. S., D. J. Hickson, C. R. Hinings, K. M. Macdonald, C. Turner, and T. Lupton, 1963. A conceptual scheme for organizational analysis. *Administrative Science Quarterly*, 8:289-315.
- Pugh, D. S., D. J. Hickson, and C. Turner, 1969. The context of organization structures. *Administrative Science Quarterly*, 14:91-114.
- Rainey, H. G., R. W. Backoff, & C. L. Levine, 1976. Comparing public and private organizations. *Public Administration Review*, 36:233-246.
- Redding, S. G., 1976. Some perceptions of psychological needs among managers in Southeast Asia. In *Basic problems in cross-cultural psychology* (pp.338-344), ed. Y. H. Poortinga. Amsterdam: Swets and Zeitlinger.
- Redding, S. G., 1988. The role of the entrepreneur in the New Asian Capitalism. In *In Search of an East Asian Development Model*, eds. P. L. Berger & H. M. Hsiao. New Brunswick, NJ: Transaction Books.
- Redding, G., & G. Y. Y. Wong, 1986. The psychology of Chinese organizational behavior. In *The Psychology of the Chinese People* (pp.267-295), eds. Micheal H. Bond. New York: Oxford University Press.
- Robinson, R. B., & J. A. Pearce, 1988. Planned patterns of strategic behavior and their relationship to business unit performance. *Strategic Management Journal*, 9:43-60.
- Romanelli, E., 1989. Environments and strategy of organization start-up: Effects on early survival. *Administrative Science Quarterly*, 34:369-387.
- Ronstadt, R. C., 1984. *Entrepreneurship*. Dover, MA: Lord.
- Rosenthal, R., & R. L. Rosnow, 1984. *Essentials of Behavioral Research*. New York: McGraw-Hill.
- Rumelt, R. P. 1974. *Strategy, structure, and economic performance*. Boston: Graduate School of Business Administration, Harvard University.
- Scott, W. R., 1987. *Organizations: Rational, natural, and open systems*, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall.
- Schendel, D. E., & Hofer, C. W. 1979. *Strategic management: A new view of business policy and planning*. Boston: Little, Brown.
- Schendel, D. E., & G. R. Patton, 1978. A simultaneous equation model of corporate strategy. *Management Science*, 24:1611-1621.
- Schermerhorn, J. R. Jr., & M. K. Nyaw, 1991. Managerial Leadership in Chinese Industrial Enterprises. In *Organization and Management in China: 1979-1990*. (9-21), ed. O. Shenkar. Armonk, NY: M. E. Sharpe, Inc.
- Schollhammer, H. (1982). Internal corporate entrepreneurship, In *Encyclopedia of Entrepreneurship* (pp.209-223), ed. C. A. Kent, D. L. Sexton and K. H. Vesper. Englewood Cliffs, NJ: Prentice-Hall.
- Schumpeter, J. A., 1934. *The Theory of Economic Development*, trans. R. Opie. Cambridge, MA: Harvard University Press.

- Schumpeter, J. A., 1942. *Capitalism, Socialism, and Democracy*. New York: Harper & Brothers.
- Shapero, Albert, & Lisa Sokol, 1982. The social dimensions of entrepreneurship. In *Encyclopedia of Entrepreneurship* (pp.72-90), ed. C. A. Kent, D. L. Sexton & K. H. Vesper. Englewood Cliffs, NJ: Prentice-Hall.
- Shenkar, O., and S. Ronen, 1987. Structure and importance of work goals among managers in the People's Republic of China. *Academy of Management Journal*. 30:564-576.
- Shortell, S. M., & E. J. Zajac, 1990. Perceptual and archival measures of Miles and Snow's strategic types: A comprehensive assessment of reliability and validity. *Academy of Management Journal*. 33:817-822.
- Shirley, R. C., 1982. Limiting the Scope of Strategy: A Decision Based Approach. *Academy of Management Review*. Vol.7:262-268.
- Smith, K.G., & Grimm, C.M., 1987. Environmental variation, strategic change and firm performance: a study of railroad deregulation. *Strategic Management Journal*. 8:363-376.
- Snow, C. C., and D. C. Hambrick, 1980. Measuring Organizational Strategies: Some Theoretical and Methodological Problems. *Academy of Management Review*. Vol.5:527-538.
- Snow, C. C., & L. G. Hrebiniak, 1980. Strategy, distinctive competence, and organizational performance. *Administrative Science Quarterly* . 25:317-336.
- Stevenson, H. H., & D. E. Gumpert, 1985. The heart of entrepreneurship. *Harvard Business Review*, March-April: 85-94.
- Stevenson, H. H., M. J. Roberts, & H. I. Grousbeck, 1989. *New Business Ventures and the Entrepreneur*. , 3rd. Ed. Homewood, IL: Irwin.
- Tabachnick, B. G., & L. S. Fidell, 1987. *Using Multivariate Statistics*. 2nd ed. New York: Harper & Row.
- Tan, J. & R. J. Litschert, 1993. Environment-Strategy Relationship and Its Performance Implications: An Empirical Study of Chinese Electronics Industry. *Strategic Management Journal* (Forthcoming)
- Thoburn, J. T., H. M. Leung, E. Chau, & S. H. Tang, 1990. *Foreign Investment in China Under the Open policy*. UK: Avebury.
- Thompson, B., 1984. *Canonical Correlation Analysis: Uses and Interpretation*. Sage University Paper series on Quantitative Applications in the Social Sciences, 07-047. Beverly Hills and London: Sage Pubns.
- Thompson, J. D., 1967. *Organizations in Action* New York: McGraw-Hill.
- Thompson, V. A., 1969. *Bureaucracy and Innovation*. University, Ala: University of Alabama Press.
- Torre, Jose De La, and Brian Toyne, 1978. Cross-national managerial interaction: A conceptual model. *Academy of Management Review*. 3:462-474.
- Tung, R. L., 1979. Dimensions of organizational environments: An exploratory study of their impact on organizational structure. *Academy of Management Journal*, 22:672-693.

- Tung, R. L., 1982. *Chinese Industrial Society After Mao*, Massachusetts: LexingtonBooks.
- Venkatraman, N., 1989a. Strategic Orientation of Business Enterprises: The Construct, Dimensionality, and Measurement. *Management Science*. Vol.35.8:942-962.
- Venkatraman, N. 1989b. The concept of fit in strategy research: toward verbal and statistical correspondence. *Academy of Management Review*. Vol.14, No.3:423-444.
- Venkatraman, N. and John H. Grant, 1986. Construct measurement in organizational strategy research: A Critique and Proposal. *Academy of Management Review*. Vol.11, No.1:71-87.
- Venkatraman, N., and John E. Prescott, 1990. Environment-Strategy Coalignment: An Empirical Test of its Performance Implications. *Strategic Management Journal* Vol.11:1-23.
- Venkatraman, S., A. H. Van de Ven, J. Buckeye, and R. Hudson, 1990. Starting up in a turbulent environment: A process model of failure among firms with high customer dependence. *Journal of Business Strategy*, 5:277-295.
- Verbrugge, J., & Goldstein, S., 1978. High performers versus low performers: what makes the difference? *Savings and Loan News*. November 1978, pp.64-69.
- Verbrugge, J., & Shick, R., 1976. Market structure and savings and loan profitability. *The Quarterly Review of Economics and Business*. 16:79-90.
- Verbrugge, J., Shick, R., & Thygeson, K., 1975. Profitability: management control or market coincidence? *Savings and Loan News*. July 1975, pp.70-75.
- Vogel, E. F., 1989. *One Step Ahead of China: Guangdong Under Reform*. Cambridge, Mass: Harvard University Press.
- Wang, R.L., 1986. Transferring American management know-how to the People's Republic of China. *Advanced Management Journal*. Summer, 51:4-8.
- Wang, R. L., C. Wang, & Y. Gong, 1991. Enterprise Autonomy and Market Structures in China. In *Organization and Management in China: 1979-1990*. (23-33), ed. O. Shenkar. Armonk, NY: M. E. Sharpe, Inc.
- Weick, K. E. 1969. *The social psychology of organizing*. (2nd ed., 1979). Reading, MA: Addison-Wesley.
- Weick, K. E. 1979. *The social psychology of organizing*. (2nd ed.). Reading, MA: Addison-Wesley.
- Williamson, O. E., 1985. *The Economic Institutions of Capitalism*. New York: Free Press.
- Wong, S., 1988. *Emigrant Entrepreneurs: Shanghai Industrialists in Hong Kong*. Hong Kong: Oxford University Press.
- Woodward, J., 1965. *Industrial Organization: Theory and Practice*. London: Oxford University Press.
- Yokell, M.D., 1990. The decline and fall of the regulated electric utility industry. *Public Utilities Fortnightly*. 11:38-39.
- Zajac, E., & S. M. Shortell, 1989. Changing generic strategies: likelihood, direction, and performance implications. *Strategic Management Journal*. 10:413-430.

Zhao, J., 1990. The external environment of China's enterprises. In *Advances in Chinese Industrial Studies. Vol. 1 (part A). Reform Policy and the Chinese Enterprise* (9-14), ed. J. Child & M. Lockett. Greenwich, CT: JAI Press.

APPENDIX: RESEARCH QUESTIONNAIRE

PART I. Environment

One aspect of this study is the environment, which consists of all the outside factors considered in your firm's key decision making process. These factors can be grouped into the following eight sectors:



Please circle the number best representing the following features of your firm's environment in the last five years.

1. To what extent do you think these factors have impact on your firm?

	Very little		About middle		Very much		
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

2. To what extent do you think these factors have become more favorable to your firm?

	Very little		About middle		Very much		
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

3. To what extent do you think these factors have become more predictable?

	Very little		About middle		Very much		
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

4. In each sector, how much change have you observed in last five years?

	Little change		About middle		Dramatic change		
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

5. In each sector, how many factors does your firm need to deal with (for example, types of customer groups)?

	Very few		About middle		Very many		
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

6 Following the previous question, are those factors different from or similar to each other?

	Similar		About middle			Different	
	↓		↓		↓		
• Competitors.....	1	2	3	4	5	6	7
• Customers.....	1	2	3	4	5	6	7
• Suppliers.....	1	2	3	4	5	6	7
• Technological.....	1	2	3	4	5	6	7
• Regulatory.....	1	2	3	4	5	6	7
• Economic.....	1	2	3	4	5	6	7
• Social-Culture.....	1	2	3	4	5	6	7
• International.....	1	2	3	4	5	6	7

PART II. Strategic Decision Process

Another aspect of this study is strategic decisions. Strategic decisions, when together, position a firm in the environment and guide internal operation. The following are examples of strategic decisions in your industry:

- Types of products and markets served
- Top management personnel decisions
- Major resource allocation
- Product development and innovation
- Technological development and R & D
- Market share and profitability objectives
- Joint venture with domestic and foreign companies

Please use such decisions your firm has made in the last five years as the frame of reference when answering the questions below. Please circle the number best describing the strategic decision process in your firm.

1. In making strategic decisions, we look into the future to anticipate conditions.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

2. We are willing to sacrifice short-term profitability for long-term goals.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

3. We emphasize investments that will provide us with a future competitive edge.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

4. In making strategic decisions, we constantly seek to introduce new brands or new products in the market.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

5. Whenever there is ambiguity in government regulation, we will move proactively to try to take a lead

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

6. In making strategic decisions, we respond to signals of opportunities quickly.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

7. In making strategic decisions, we emphasize planning techniques and information systems.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

8. In analyzing situations, we evaluate possible consequences thoroughly and obtain alternatives.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

9. We seek opportunities that have been shown to be promising.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

10. We emphasize the use of cost control systems for monitoring performance.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

11. We constantly modify manufacturing technology to achieve efficiency.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

12. We put emphasis on following government regulations and make important changes that are specifically allowed.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

13. In making strategic decisions, we tend to focus on investments that have

low risk and moderate return high risk and high return

1	2	3	4	5	6	7
---	---	---	---	---	---	---

14. We search for big opportunities, and favor large, bold decisions despite the uncertainty of their outcomes.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

15. We approve new projects on a "stage-by-stage" basis rather than with "blanket" approval.

strongly disagree strongly agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

PART III. Firm Performance

This part is concerned with the performance of your firm in the past five years. To the best of your knowledge, please: Circle the number best estimating how YOUR FIRM compares to close competitors in your industry on each item.

1. After-tax return on total assets:

1	2	3	4	5
Lowest 20%	Lower 20%	Middle 20%	Next 20%	Top 20%

2. After-tax return on total sales:

1	2	3	4	5
Lowest 20%	Lower 20%	Middle 20%	Next 20%	Top 20%

3. Firm total sales growth:

1	2	3	4	5
Lowest 20%	Lower 20%	Middle 20%	Next 20%	Top 20%

4. Overall firm performance and success:

1	2	3	4	5
Lowest 20%	Lower 20%	Middle 20%	Next 20%	Top 20%

5. Our competitive position:

1	2	3	4	5
Lowest 20%	Lower 20%	Middle 20%	Next 20%	Top 20%

6. The number of employees in our firm is

99-	100-399	400-799	800-1,199	1,200-1,999	2,000-4,999	5,000+
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J. Justin Tan (attended VPI Aug. 1989 - July 1993)

Current Position

Visiting Assistant Professor (Aug. 1992 - present)
Department of Management
University of Central Florida
Orlando, FL 32816
(407) 823-5684 / FAX: (407) 823-5741
E-mail: FDTON@UCF1VM

Publications and Presentations (since 1989)

1993. Tan, J. & R. J. Litschert. Environment-strategy relationship and its performance implications: An empirical study of Chinese electronics industry. *Strategic Management Journal*, (Forthcoming)
1993. Tan, J. & R. J. Litschert. Contextual factor and the environment-strategy-performance linkage: A comparative study of ownership types in a transition economy. Paper to be presented at the Academy of Management National Meetings (Business Policy & Strategy Division), Atlanta.
1992. Tan, J. & R. J. Litschert. An examination of environment-strategy relationship and its performance implications. Paper presented at the Academy of Management National Meetings (Business Policy & Strategy Division), Las Vegas.
1992. Tan, J., & R. J. Litschert. The Impact of organizational slack on strategy-performance linkage: An empirical study. *Proceedings of the International Conference of Pacific Region Management*, Washington, D.C.
1991. Tan, J. & R. J. Litschert. Environment-strategy-performance linkage in regulated economies: An empirical study in Chinese electronics industry. *Proceedings of the International Conference of Pacific Region Management*, Gatlinburg, Tennessee.
1990. Darling, David L. & J. Tan. Retail trade patterns of rural Kansans. *Choices*, Journal of American Agricultural Economics Association.
1989. Darling, David L. & J. Tan. Retail sales in rural Kansas communities. *Kansas Business Review* The Institute for Public Policy and Business Research, the University of Kansas.

Other Teaching Experience (since 1989)

Instructor

Department of Management, Virginia Tech; May 1991 – July 1992
Course: Senior Business Policy & Strategy
Full teaching responsibility

