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Ownership Types and Strategic Groups in an Emerging Economy*

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ABSTRACT Existing strategic group studies have rarely examined ownership type as a variable to classify firms in an industry. Using Chinese firms of different ownership types, we suggest that ownership type can be a parsimonious and important variable that managers use to cognitively classify firms into different strategic groups. While ownership itself is an objective variable, we contend that different ownership types lead to different managerial outlook and mentality due to a number of macro and micro foundations giving rise to various managerial cognitions. Employing the Miles and Snow typology, we find that state-owned enterprises (SOEs) and privately-owned enterprises (POEs) tend to adopt defender and prospector strategies, respectively, while collectively-owned enterprises (COEs) and foreign-invested enterprises (FIEs) exhibit an analyser orientation that falls between defenders and prospectors on the strategy continuum. Three statistical tests suggest that ownership types can be used to successfully predict strategic group memberships in China's emerging economy.

INTRODUCTION

Strategic group has become an attractive middle ground between firm- and industry-level analyses in strategic management research (see reviews by Bogner and Thomas, 1993; McGee and Thomas, 1986; Thomas and Venkatraman, 1988). However, the concept of strategic group, loosely defined as a group of firms within the same industry making similar decisions in key areas (Porter, 1980, p. 129), has attracted considerable criticisms. Barney and Hoskisson (1990, p. 187), in a perhaps most strongly worded critique, challenged researchers to empirically demonstrate: (1) that 'strategic groups exist'; and (2) that 'firm performance depends, at least partly, on which group a firm is in'. Failure to satisfy these two conditions, accordingly, may lead to a conclusion that strategic groups do not exist,

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and that their empirical 'discoveries' may be an artifact of analytical methods such as cluster analysis.

To combat these two criticisms, strategic group research has evolved into two branches (Bogner and Thomas, 1993). Earlier studies in search of 'objective' strategic groups have been labelled as an industrial organization (IO) branch, employing measures deemed important by researchers, such as product differentiation, R&D intensity, and firm size, as classification criteria. Recognizing the importance of managerial perception, a more recent, cognitive approach has emerged. Its rationale is that 'strategists' grouping schemes may prove to be more significant than researcher-defined groupings for understanding competition and performance' (Reger and Huff, 1993, p. 104). Compared with the mixed findings from IO studies, cognitive studies seemed to have produced the 'most compelling' evidence for the existence of strategic groups (Peteraf and Shanley, 1997, p. 165; Porac et al., 1995). Drawing on managers' perceptions on quality, location, and management, the cognitive dimensions employed in these studies range from 11 (Reger and Huff, 1993) to 16 (Nath and Gruca, 1997). While insightful, these dimensions are still numerous and complex. Since 'a hallmark of good theory is parsimony' (Eisenhardt, 1989, p. 547) and the very purpose behind cognitive-based strategic group studies is to understand the *simplifying* schemes that managers employ when confronting information overload problems in strategic decision making, we believe that there is a need to further simplify the criteria used in classifying strategic groups.

In addition, we identify a major gap in the literature, that is, the lack of theoretical and empirical knowledge on strategic groups in emerging economies. Although researchers have started to study non-US industries, such as Scottish knitwear (Porac et al., 1995), UK retail grocery (Athanassopoulos, 2003; Lewis and Thomas, 1990), and Japanese steel (Nair and Kotha, 2001), there is hardly any study on strategic groups in emerging economies, perhaps with the exception of Arens and Brouthers (2001), who compared and contrasted state-owned versus privatized firms as two groups in Romania. As competition intensifies throughout emerging economies, whether strategic groups in a meaningful sense exist under these conditions and, if they exist, how they help predict competitive actions become increasingly important (Peng, 2000). In light of the rising corporate interests in emerging economies and expanding scholarly endeavours in these markets of tomorrow (Child and Tse, 2001; Hoskisson et al., 2000), it is important to attempt to at least partially fill this gap, if strategic group research aspires to remain *globally* relevant.

Motivated by both the theoretical concern to further simplify the cognitive and competitive dimensions and the empirical interest to shed light on the dynamics of strategic groups in emerging economies, this article builds on previous work by Peng (2000) and Tan (2002) to help fill the gap identified. Conceptually, Peng (2000, p. 261) speculated that strategic groups based on ownership differences may exist in emerging economies. Empirically, Tan (2002, p. 349), who differentiated

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the impact of different ownership types on the environment-strategy configuration, argued that in future research, ownership, which is easily accessible, can be potentially valuable in predicting less transparent variables such as strategic group memberships (see also Tan, 1993). Consequently, this article extends this line of research by arguing and demonstrating that ownership type may indeed be such a parsimonious yet powerful variable to predict strategic group memberships. Specifically, we explore how firms of four different ownership types in a Chinese industry can be classified into four strategic groups, whose postures resemble three particular strategy types according to the Miles and Snow (1978) typology, namely, defender, analyser, and prospector. We suggest that China's dynamic, turbulent, and uncertain transitions necessitate an *institutional* approach by paying attention to the organizational diversity reflected in ownership differences (see Peng, 2003, p. 283; White and Liu, 2001, p. 121 for similar arguments). The information overload problems during the transition may force managers to search for simplifying schemes to classify competitors as benchmark groups, and as a result, they may use ownership types to group different firms. Moreover, we are able to establish such a link without resorting to clustering analysis cautioned by Barney and Hoskisson (1990).

For four compelling reasons, using China as our research setting is deemed appropriate. First, *theoretically*, since China is often seen from a Western perspective perhaps 'as the most foreign of all foreign places' (Chen, 2001, p. 17), confirming the existence of strategic groups in China speaks volumes about the validity of the strategic group concept originated in the West. Second, *empirically*, a study on ownership differences has to be grounded in a context whereby firms of different ownership types coexist and compete (Peng, 2003; Tan, 2002). China's transition economy presents such an ideal environment (Jefferson et al., 2000). Third, *globally*, because China is the largest emerging economy whose growth rates have led the world in the past two decades, the Chinese experience may help shed light on the evolution of competitive dynamics in other emerging economies (Peng, 2000). Finally, because of China's growing importance in the world economy, improved knowledge about the competitive dynamics in China has enormous *practical* implications for Western firms that have to compete and/or collaborate with firms there (Child and Tse, 2001; Shenkar and von Glinow, 1994).

OWNERSHIP TYPE AND ORGANIZATIONAL DIVERSITY

Ownership Type as a Strategy Variable

Primarily conducted in developed economies, strategic management research traditionally has not paid much attention to ownership issues (i.e., state versus private). This is not surprising because private ownership tends to be the norm in these economies. However, as the strategy 'radar screen' expands to cover more and

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more emerging economies (Hoskisson et al., 2000; Peng, 2000), ownership has become an increasingly important issue there, generating a growing literature which examines the effects of ownership changes from strategic and organizational perspectives (Uhlenbruck and De Castro, 1998; Zahra et al., 2000).

As a result, there are compelling reasons why ownership can be used as a variable in strategic management research in emerging economies (Peng, 2000; Tan, 2002; Uhlenbruck et al., 2003). Ownership type has been suggested to moderate environment-strategy configurations, especially in contexts where ownership type figures prominently in the institutional environment (Tan and Li, 1996). Previous research also showed the effects of different ownership on managers' evaluation of environmental forces and on firm's strategic orientation as well as their ability to adapt to environmental changes and uncertainties (Gedajlovic, 1993; Mascarenhas, 1989). It seems reasonable to suggest ownership is a key variable underlying different corporate governance regimes (Frydman et al., 1999).

While some studies in emerging economies such as Belarus (Filatotchev et al., 1999), Estonia (Jones and Mygind, 1999), India (Sarkar et al., 1998), and Russia (Buck et al., 1998; Wright et al., 1998) found that changes from public to private ownership do not necessarily lead to firms' behavioural changes and performance improvement, other scholars documented marked changes in strategic behaviours and organizational performance after ownership changes in a number of countries (Djankov and Murrell, 2002; Megginson and Netter, 2001; Wright et al., 2002), such as Romania (Arens and Brouthers, 2001). In addition, the impact of privatization on performance may also differ across regions. For instance, while positive effects of privatization were identified in a number of studies focusing on Central Europe (e.g. Claessens and Djankov, 1999; Frydman et al., 1999), few such effects have been found yet in the former Soviet republics (e.g. Djankov and Murrell, 2002; Estrin, 2002; Estrin and Wright, 1999; Filatotchev et al., 1999; Wright et al., 2002). All these suggest that substantial research opportunities exist on furthering our understanding of the effects of ownership type in general, as well as their effects in emerging economies such as China (Megginson and Netter, 2001, p. 326).[1]

Most studies that investigate ownership effects have focused on public (state) versus private ownership (Shleifer, 1998; Vickers and Yarrow, 1991). Under the general rubric of private ownership, research has also examined different categories of owners along various dimensions, such as insiders versus outsiders, workers versus managers, and blockholders versus diffuse owners (see Djankov and Murrell, 2002, for a survey). However, the economic landscape in emerging economies features substantially more organizational diversity compared to the dichotomy of public versus private ownership (Peng, 2000, 2003; Tan, 2002). In China, while privately-owned (*de novo*) entrepreneurial ventures may represent the classic private firm, foreign-invested joint ventures, which are often formed

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between a private foreign firm and a domestic state-owned firm, can be characterized as a hybrid which is neither state- nor private-owned. Also emerging are another type of hybrid firms, namely, collectively-owned enterprises nominally 'owned' by local governments but often run like private companies. It is possible that some of these hybrid firms may have a strategic orientation that is neither that adopted by SOEs nor that employed by private (*de novo*) or privatized competitors. Therefore, research covering a variety of ownership types, despite its probable limited generalizability in developed economies, may actually be illuminating and promising in emerging economies such as China, whereby substantial ownership diversity exists (White and Liu, 2001, p. 121).

IN SEARCH OF A STRATEGY TYPOLOGY

A fundamental interest in strategic groups is to explore differences in competitive strategies across different groups. Strategy typologies are useful tools to describe various strategies. The literature contains a number of typologies, such as Porter (1980), Mintzberg (1978), and Miles and Snow (1978). According to Smith and colleagues (1989, p. 63), the Porter typology 'is described in relatively general terms, and seems to be limited to explaining the competitive market behavior of larger firms'. The Mintzberg typology does not hold up as well as the Miles and Snow typology, according to an empirical test by Doty and associates (1993). In comparison, the Miles and Snow typology is one of the most popular and most widely empirically supported types (Doty et al., 1993; Smith et al., 1989). Therefore, we build on this research to employ the Miles and Snow typology.

The Miles and Snow (1978) typology consists of four intuitively appealing and empirically validated strategy types: defender, prospector, analyser, and reactor. *Defenders* are firms with a narrow market domain, a stable customer group, and an established structure managed by older executives. In contrast, *prospectors* have a broad market domain, a focus on innovation and change, and a flexible organizational structure headed by younger managers. While defenders and prospectors reside at opposite ends of a continuum of strategic proactiveness, *analysers* fall between them, sometimes resembling defenders and other times following prospectors. Finally, *reactors* have no consistent strategy and do not belong to the continuum. In terms of the effectiveness of each strategy type, previous research has shown that depending on the nature of the industry and the environment, both defenders, prospectors, and analysers may perform well (e.g. Hambrick, 1983).

Taken together, firms with different strategic postures may be conceptualized as different strategic groups, because each strategy type represents a particular managerial outlook, a way of thinking about how to compete (Miles and Snow, 1978). The next section develops this perspective further, within the context of China's transitions.

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Table I. Classifying strategic groups based on ownership differences: an application of the Miles and Snow (1978) typology

Strategic group	*State-owned enterprises (SOEs)*	*Collective-owned enterprises (COEs) and foreign-invested enterprises (FIEs)*	*Privately-owned enterprises (POEs)*
Strategy	Defender	Analyser	Prospector
Customer base	Stable	Mixed	Unstable
Product mix	Stable	Mixed	Changing
Attitude toward growth	Cautious	Mixed	Aggressive
Organizational structure	Complex	Mixed	Simple
Managers	Older, more conservative	Mixed	Younger, more aggressive

Source: Peng, M. W. (2000). *Business Strategies in Transition Economies* (p. 261). Thousand Oaks, CA: Sage.

ORGANIZATIONAL DIVERSITY AND STRATEGIC GROUPS

The Emergence of Organizational Diversity

Accompanying China's transitions since the late 1970s has been the rise of firms with diverse ownership types (Jefferson et al., 2000; Peng, 2003; Tan, 2002). The pre-reform China had little organizational diversity. There were only two types of firms: state-owned enterprises (SOEs) and collectively-owned enterprises (COEs), which were outside the central economic plan and controlled by local governments. During the transitions, two new ownership categories have emerged. The first is privately-owned enterprises (POEs), which are typically *de novo* entrepreneurial start-ups. The second category pertains to foreign-invested enterprises (FIEs).

Organizational diversity creates problems for managers, as they try to make sense out of this complexity and craft strategies in response (Peng, 2003, p. 283). They are also likely to face different environmental constraints, as SOEs have to continue to deal with the state, POEs have to ensure their survival in the marketplace, and COEs and FIEs need to take care of both government regulations and market competition.[2] Therefore, we suggest that these firms may adopt different competitive strategies in order to confront such challenges (e.g. Venkatraman and Prescott, 1990), and that, as speculated by Peng (2000, p. 261), firms of the four different ownership groups may resemble three of the four strategy types identified by Miles and Snow (1978) – see an overview in Table I. Each of these groups is detailed below.

State-Owned Enterprises (SOEs)

SOEs as a distinct group tend to have relatively similar organizational structures and processes. Many SOEs are large and complex, and usually laden with various

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slack resources (Child, 1994; Lu, 1996; Tan and Peng, 2003). Their managers have historically paid little attention to competitive issues since there is little need to 'strategize' under the old system (Peng and Heath, 1996). Most SOEs continue to rely on the state as their primary banker, supplier, and distributor, although vigorous measures are now being undertaken to push at least some of them to the market domain (Steinfeld, 1998). Overall, we suggest that SOEs' strategic orientations may resemble those of a *defender* according to the Miles and Snow (1978) typology, which is characterized by a stable customer base, a narrow product focus, and a stable administrative structure managed by older, conservative managers (e.g. Arens and Brouthers, 2001; Tan, 2001a).

Privately-Owned Enterprises (POEs)

Relative to SOEs, POEs represent the opposite, being usually small but nimble, poor in R&D but good at market orientation. Most POEs are family owned, which is clearly distinctive in its social makeup from SOEs (Chen, 2001). Economic reforms brought about turbulence and uncertainty, but also created opportunities for entrepreneurs (Peng, 2001; Tan, 1996, 1999). Start-up firms in China usually adopt a simple, flexible structure, and choose aggressive strategies (Tan, 1996, 2001b; Tan and Li, 1996). Their simple structure may allow them to react quickly to opportunities or proactively outmanoeuvre more established firms such as SOEs. In other words, they seem to fit well with the *prospector* type of the Miles and Snow (1978) typology, characterized by a focus on innovation and change and a flexible structure managed by younger and more entrepreneurial managers.

Collectively-Owned Enterprises (COEs)

Operating outside the central economic plan, COEs contribute substantially to local government revenues, and local officials have a strong incentive to protect COEs (Walder, 1995). Although China lacks a large population of privatized firms against which one can compare SOEs, COEs probably represent the closest organizational form to privatized firms. While outright privatization of these firms has not occurred, hidden or informal privatization has been widespread. Specifically, entrepreneurs can bid for long-term leases to control these firms.[3] Although such lease agreements do not entitle leaseholders to formal property rights, these agreements are widely viewed as de facto property rights (Peng, 2001). Yet, being owned at least nominally by local governments, COEs are different from POEs. Labelled by Nee (1992) as 'collective hybrids', COEs display organizational attributes that fall somewhere between those of SOEs and POEs. Specifically, close relationships with local governments result in more institutional support for COEs compared to POEs; yet COEs also need to be more responsive to the market than SOEs, since resources at the local level are usually less abundant than at the central level

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(Tan, 2001b). As a result, COEs may be viewed as adopting an *analyser* orientation according to Miles and Snow (1978), which falls between defenders and prospectors on the strategy continuum.

Foreign-Invested Enterprises (FIEs)

FIEs in China, including both joint ventures and wholly foreign-owned subsidiaries,[4] have attracted significant research attention (Beamish, 1993; Luo and Peng, 1999; Yan and Gray, 2001). While FIEs as a group are distinguished from the other three types of firms, some FIEs may be more aggressive, whereas others may be more conservative, thus making it difficult to generalize about their strategic posture (Meyer, 2001; Pan, 1997). On average, however, Miles and Snow (1978, p. 134) conceptually suggested that multinational firms often follow an analyser strategy, and Luo and Park (2001) empirically supported this perspective in China. Following this reasoning, we suggest that FIEs in China may follow the middle ground *analyser* strategy, which is neither as conservative as a defender strategy typically found in SOEs, nor as aggressive as a prospector strategy usually found in POEs.

Overall, it seems plausible to consider the above four types of firms with different ownership characteristics as distinct strategic groups. Three points are worth noting in this connection, however. First, although COEs and FIEs can be broadly classified as analysers, substantive differences between them exist. For example, while FIEs are by definition profit-maximizing economic entities, COEs may not be profit-maximizing given their social and political lineages with the local government. Second, none of these four types of firms is classified as following a *reactor* strategy, one of the four strategy types in Miles and Snow (1978). Reactors do not have a consistent strategy because they are either in transition between strategies or are deadlocked in a weak and ineffective strategy, and thus are not considered belonging to the strategy continuum. Third, since ownership itself is an objective variable, how firms of different ownership types form different strategic groups is *not* because of ownership *per se*, but because of the particular managerial outlook and cognition generated by various macro and micro foundations underlying the ownership structure, a perspective we develop further next.

MACRO AND MICRO FOUNDATIONS FOR MANAGERIAL COGNITIONS

Macro Foundations

Key macro foundations are historical, institutional, and economic factors within which firms are embedded (Peteraf and Shanley, 1997). Historically, the four groups of firms in China emerged in different time periods, resulting in different

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path dependence. SOEs, for instance, were born with the state's various resource contributions, and are still able to secure more support than any other group (Child, 1994; Lu, 1996; Steinfeld, 1998). In contrast, POEs are usually disadvantaged in resource endowments; however, this deficiency can be partially compensated by their entrepreneurial and aggressive strategies (Peng, 2001). History is also reflected in different age 'cohorts': SOEs and COEs on average are older than POEs and FIEs. Age in turn shapes firms' perceptions of the competition and their preferred strategies. Further, time compression diseconomies (Dierickx and Cool, 1989) help maintain the distinctiveness of the groups, as resources and capabilities developed over time are difficult to trade and hard to imitate.

Institutional factors provide a complementary perspective (Peng, 2003; Peng and Heath, 1996). The four groups of firms are given different institutional support, governed by different administrative bodies. The role of the government in determining the boundaries of organizational legitimacy based on ownership is substantial (Child, 1994). Government statistics, in fact, often differentiate firms based on their ownership types. SOEs and COEs have achieved their legitimacy through legislation, publicity, and years of tradition. In contrast, POEs are given less support (especially during their initial years). Given the lack of clear property rights, some POEs are still perceived to be insecure even today. FIEs are yet another distinct group, governed by distinctive regulations (Yan and Gray, 2001). The support from the government, in this case, is selective, depending on the significance of FIEs to the state's development goals. Through various isomorphic processes (DiMaggio and Powell, 1983), groups developed under different institutional frameworks tend to stabilize and homogenize. Coercive isomorphism results from both formal (government) and informal (social) pressures for conformity to a group norm. Thus, firms of different ownership types have developed and adopted practices that are usually common within a group. Mimetic activity takes effect mainly through benchmarking and learning. SOEs, for instance, are usually encouraged by various supervisory agencies to benchmark against peer SOEs (Tan and Litschert, 1994). Frequent job switches across SOEs arranged by government agencies enhance the likelihood of institutional isomorphism by the mimetic process. Normative pressure is also at play in this context. This applies particularly to POEs, which are in an urgent need to seek legitimacy (Nee, 1992; Peng, 2001, 2003). In sum, while coercive isomorphism and mimetic activity serve as internal mechanisms to homogenize a group which is distinct from other groups, normative pressures help a group recognize its own distinctiveness. Such increased recognition thus facilitates within-group identification.

Finally, economic factors are manifested in the different resource profiles of the four groups. While SOEs almost always take the biggest chunk of the state's premium resources, those given to COEs and POEs tend to be smaller in quantity and lower in quality. In contrast, FIEs usually capitalize on the high-quality resources of foreign investors. Given the differences in their resource endowment,

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it is reasonable to expect the four different types of firms to compete differently, by formulating and implementing different strategies. Another economic force stems from the fact that SOEs, COEs, and POEs (FIEs are less comparable in this respect though) usually differ greatly in size and product ranges, and thus differ in the associated economies of scale and scope. This is also likely to form an important basis for categorization of competitors by top managers. Lastly, the difficult processes associated with ownership changes serve as mobility barriers to prevent inter-group cross-overs in ownership. This condition is especially relevant in China, where rapid mass privatization has not occurred. Such mobility barriers thus focus firms' attention on their peers within an ownership group, facilitate interaction with them, and promote a stronger group identity among members.

These macro-level factors condition managers' perceptions of firm characteristics and the nature of competition. Although they are *indirect* forces, they are important because they provide the context within which firms operate. In contrast, micro-level factors, as shown next, may *directly* influence managers' cognitive structures, leading to distinct strategic groups.

Micro Foundations

Key micro foundations are the simplification, elaboration, and interaction processes, which allow managers to interpret the competition and craft strategies (Reger and Huff, 1993). First, to combat information overload problems, simplification is a cognitive necessity. China's turbulent transitions create a great deal of information overload problems for managers, who in turn search for simplifying schemes to classify competitors as benchmark groups. Such simplification helps managers reduce environmental uncertainty and cope with bounded rationality (Peteraf and Shanley, 1997).

Contrary to cognitive simplification, cognitive elaboration aims to amplify and imitate competitors' behaviours. The need for cognitive elaboration arises when managers do not possess enough information that permits meaningful interpretation of the complex environment. For example, FIEs of an industry in China have typically been in close contact with one another. Once an FIE undertakes certain market actions, it will soon be closely studied and possibly followed by fellow FIEs. To the extent that a tactic or a cue will be closely studied, explained as a signal for future strategic behaviours, and acted upon consequently (e.g. through imitation), such actions are likely to orient these firms to similar, if not the same, strategies (Reger and Huff, 1993).

Finally, interaction within the group and between groups leads to strong group identity, through enhanced socialization (Peteraf and Shanley, 1997). Such interaction can take numerous forms, ranging from formal trade associations and training seminars to informal gatherings. In China, most major cities typically have separate ownership-based associations for COEs, POEs, and FIEs which foster

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within-group interaction, whereas SOEs typically interact at meetings sponsored by state supervisory agencies. These interactions provide useful channels through which socialization among group members take place, thus likely contributing to a strong group identity (Peng, 2000).

Overall, both macro and micro foundations reinforce each other in their effect on group identification. As a result, during China's transitions, ownership type appears to be a parsimonious and viable grouping schema for group categorization and identification. Thus, perceptions of environment and strategic orientations would differ across firms of different ownership types. Conversely, ownership types may be used to *predict* strategic group memberships. In short:

Hypothesis 1: Firms in an industry differ significantly in perceptions of the environment across ownership types.

Hypothesis 2: Firms in an industry differ significantly in strategic orientations across ownership types.

To the extent that strategic groups exist, there must be some performance differences across groups (Barney and Hoskisson, 1990). This assertion, however, is not always substantiated in empirical research. For example, in a study widely cited as evidence for performance differences, Cool and Schendel (1987) actually only found evidence of differences across groups in one of the three performance measures they studied (market share); there is no performance difference in the other two measures (profitability and risk). Cool and Dierickx (1993) later attributed the previous findings on the convergence of performance levels across groups to 'a concomitant shift from within group rivalry to between group rivalry' (p. 47). More recent work suggested that as strategic group research moves away from the IO tradition toward a more cognitive approach, performance differences across groups may not be very important (Bogner et al., 1998). Recently, McNamara et al. (2003, p. 161) documented that 'performance differences within groups are significantly larger than across groups'. In light of this controversy, it seems imperative that we explore whether performance differences indeed exist across groups. Therefore:

Hypothesis 3: Firms in an industry differ significantly in performance across ownership types.

In terms of performance differences, the *theoretical* literature on privatization suggests that POEs are likely to outperform SOEs (e.g. Shleifer, 1998). However, the *empirical* literature on privatization, whose weight of evidence is in favour of privatized or private firms, is not able to fully support this view (e.g. Djankov and Murrell, 2002; Estrin, 2002; Estrin and Wright, 1999; Megginson and Netter,

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2001; Wright et al., 2002). There is also limited evidence, especially from China, that suggests non-privatizing reform measures, such as price deregulation, market liberalization, and increased use of incentives, can improve SOE performance (Megginson and Netter, 2001). Moreover, strategic management research by Miles and Snow (1978) and Smith and colleagues (1989) argued that defenders, prospectors, and analysers, as long as they maintain their distinctive strategic orientations, may perform equally well. Therefore, we are unable to theoretically predict *a priori* whether POEs will outperform SOEs (or vice versa), and this question thus remains an empirical one.

METHODOLOGY

The Chinese Electronics Industry

Since a single industry provides 'natural controls' (Peteraf and Shanley, 1997, p. 183), we follow previous research by focusing on one particular industry in China, the home-appliance electronics industry, which manufactures products such as TVs, VCRs, DVDs, and microwaves. This industry has been studied extensively in the West (Smith et al., 1989) and China (Liu et al., 2001; Naughton, 1997; Tan, 2002; Tan and Litschert, 1994). It also represents an appropriate industry context for our analysis, since it has become one of the most competitive industries in China populated by a substantial number of FIEs and POEs which compete with SOEs and COEs.

Although this article reports a large-sample survey, it had substantial qualitative antecedents. We initiated the research with extensive field-based case studies of firms of *each* of the four different ownership types: SOEs (Peng, 1997; Tan and Peng, 2003), POEs (Peng, 2001; Tan, 1996), COEs (Peng and Luo, 2000; Tan, 1999, 2001b), and FIEs (Luo and Peng, 1999; Peng, 2000). What struck us throughout such fieldwork was that managers and entrepreneurs we interviewed tend to benchmark their operations against their competitors within the same ownership group. When asked 'How about other firms *not* in your ownership group?' the answer is typically, 'Well, we know they are out there. But we really don't see us as their competitors, and probably they don't either'. As a result, we became interested in whether such thinking would be empirically verified through a large-sample empirical effort, thus resulting in the present study.

For this study, four subsamples representing different ownership types were drawn from four major cities in northern China (Beijing, Shijiazhuan, Tangshan, and Tianjin) during 1993. Because nationwide market development is far from accomplished, most Chinese firms, including many FIEs, compete on a local and regional basis. Since such geographic proximity is likely to facilitate a strong group identity (Peteraf and Shanley, 1997, p. 175), we decided to focus on firms in one region only, northern China, whereby firms can be reasonably assumed to compete

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with each other in the home appliance market. Obtaining random samples of firms from provincial directories, we first contacted 60 SOEs and obtained 56 usable returns (93%). We then contacted 120 COEs and collected 41 returns (34%). For the 60 FIEs selected, 51 of them (85%) responded. For POEs, among the 55 owners invited by a professional association to attend a business development seminar given by the second author, 53 (96%) of them completed the questionnaire. Overall, 295 firms were contacted with a variety of methods (face-to-face, phone, fax, and mail), and 201 of them (56 SOEs, 41 COEs, 51 JVEs, and 53 POEs) responded, representing a response rate of 68%.

Because the response rate of COEs was relatively lower compared to that of the other three groups, we sought to check potential non-response bias. We split responses into two samples of the first 20 responses received and the second 21 responses received. We compared the two samples based on the assumption that subjects who responded late were more similar to those who did not respond at all than those who responded early (Armstrong and Overton, 1977). *t*-tests comparing the means of the two samples along surveyed dimensions such as the three indicators of performance revealed no significant differences, thus ruling out the possibility of non-response bias.

Measurement

Environment. Peng (2000) argued that the current strategic management research, largely based on samples of Western firms, has not adequately examined the social, political, and regulatory environment as constraints of firm strategies. In a previous study, Tan and Litschert (1994, p. 13) reported that Chinese managers find the political/regulatory environment to 'be the most influential, least predictable, and most complex'. Consequently, we focused on managers' perceptions of *hostility*, *dynamism*, and *complexity* of the political/regulatory environment. Using a seven-point scale, respondents were asked to report: (1) whether they perceived the political/regulatory environment to have become more favourable or hostile (1 being the most favourable and 7 being the most hostile); (2) whether these sectors have changed dramatically in the last three years (1 being the least amount of change); and (3) whether these sectors have become more complex (1 being the least complex).

Strategic Orientations. Influenced by Miles and Snow (1978), we adopted a set of strategic orientation variables developed by Venkatraman and Prescott (1990) and validated by Tan (1993), such as *risk-taking*, *proactiveness*, and *aggressiveness*. On a seven-point scale (1 being the least willing), the respondents were asked whether they were willing: (1) to take great risk in making decisions; (2) to move quickly to seize opportunities; and (3) to take initiative when there was ambiguity in government regulation.

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Performance. Instead of directly asking for sensitive financial performance information, we asked respondents to report their firms' relative performance compared to their close competitors in the following areas: (1) *after-tax return on sales*; (2) *sales growth*; and (3) *competitive position* within the industry. These questions followed a five-point scale, ranging from top 20% to bottom 20% (1 being the worst performance). This method was chosen not only because accounting and financial data were not publicly available, but also due to some managers' (especially POE owners') reluctance to report their real performance. Since competitive performance is a relative construct (Porter, 1980) and the focus of this research was on managers' cognitive identification of strategic groups, this method of obtaining relative performance information based on the managers' judgment was deemed appropriate. After all, 'it is the managers' perception which is brought into the strategy formulation process' (Bogner and Thomas, 1993, p. 60). The same method was also employed to capture performance in previous studies on the electronics industry in the United States (Smith et al., 1989) and China (Tan, 1993, 2002; Tan and Litschert, 1994).

Validity and Reliability

Informed by our extensive fieldwork, our questionnaire was first subjected to back-translation procedures to ensure accuracy and was then pre-tested for face and construct validity. Previous research suggested that in the absence of archival data, self-reported measures are acceptable and are often equally reliable, provided that data reliability is examined (Nath and Gruca, 1997). For triangulation purposes, ten respondents who voluntarily revealed their identity were interviewed. The information exhibited a high level of consistency with questionnaire responses (Pearson correlation coefficients ranging from 0.73 to 0.92). To avoid distorted yet socially desirable responses, we left the survey informants unidentified. Previous research found that under anonymity, Chinese managers were more willing to provide accurate information (Luo and Peng, 1999; Peng and Luo, 2000; Tan, 1993; Tan and Litschert, 1994).

Moreover, we tested data reliability by using Cronbach's alpha (see Table II). Generally a value above 0.7 is considered adequate for internal consistency. This benchmark was met. The validity of the assumption of normality was tested using two basic approaches: (1) the Shapiro-Wilk W test; and (2) the Kendall and Stuart's rule of thumb using skewness and kurtosis. Results indicated that the normality assumption appears to be valid when applied to the data at hand. Multicollinearity was diagnosed by examining the variance inflation factors (VIFs) for the predictors. The VIF values for the predictors, all substantially lower than the rule-of-thumb cut-off of 10 (Neter et al., 1991), revealed that multicollinearity is not a problem in this study.

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Table II. MANOVA tests of response differences across four strategic groups

Variables (alpha)	*SOEs (N = 56)*	*COEs (N = 41)*	*FIEs (N = 51)*	*POEs (N = 53)*	*Total (N = 201)*	*MANOVA F*	*p*
H1: Environment							
1. Hostility (0.82)	5.56	4.95	4.98	5.18	5.19	6.29	0.000***
2. Dynamism (0.87)	6.33	6.02	5.64	5.68	5.92	5.67	0.001***
3. Complexity (0.91)	5.68	5.32	5.22	5.13	5.34	4.35	0.005**
H2: Strategic orientation							
4. Risk taking (0.89)	3.61	4.31	4.29	4.96	4.28	15.76	0.000***
5. Proactiveness (0.90)	3.00	4.51	4.43	4.74	4.13	20.65	0.000***
6. Aggressiveness (0.92)	3.94	4.65	4.45	4.88	4.46	8.55	0.000***
H3: Performance							
7. Profitability	3.93	2.56	2.94	2.70	3.07	18.11	0.000***
8. Sales growth	3.51	2.39	2.80	2.60	2.86	9.84	0.000***
9. Market position	3.96	2.83	3.17	2.53	3.15	19.68	0.000***

† $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

FINDINGS

Three tests are employed to test the hypotheses: (1) multivariate analysis of variance (MANOVA); (2) pair-wise MANOVA; and (3) multiple discriminant analysis (MDA). First, we undertake a MANOVA analysis. Data comprising measurements of the three important constructs are first tested for assumptions required for MANOVA. Inspection of residual plots rules out non-normality and heteroscedasticity concerns. The MANOVA test has been shown to be particularly robust when the sample size is large (Keppel, 1991), which is the case in this study.

As shown in Table II, significant differences are found across the four ownership subsamples for *all* nine variables, including environmental perception (Hypothesis 1), strategic orientation (Hypothesis 2), and firm performance (Hypothesis 3). Specifically, SOEs perceive their environment to be more hostile, dynamic, and complex, and appear to be less willing to take risk, less proactive, and less aggressive than the other three groups, thus indicating a strong defender profile. POEs appear to be more willing to take risk, more proactive, and more aggressive than the other three groups, fitting the hypothesized prospector profile very well. COEs and FIEs tend to fall between on the continuum, suggesting their middle ground, analyser strategy. What is interesting is that SOEs seem to be the best performing group using the three self-reported performance measures, whereas POEs appear to have the worst performance in market position and COEs have the worst performance in profitability and sales growth. Overall, all three hypotheses have received strong support from the first test.

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Next, we employ pair-wise MANOVA tests to investigate the six combinations among the four groups. Reported in Table III, SOEs appear to be a distinctive group relative to three others. All nine responses of SOEs are found to be significantly different from those of the POEs (Test III), and eight out of nine dimensions are significantly different between SOEs and COEs (Test 1) and between SOEs and FIEs (Test 2). The most dramatic differences can be found between SOEs and POEs in terms of their depiction of the environmental complexity, risk-taking propensity, proactiveness, and market position, all significant at the $p < 0.001$ level, indicating that these two kinds of firms are indeed the strategic opposite to each other. Another set of interesting results indicate that the differences among COEs, FIEs, and POEs are more modest (Tests 4, 5, and 6). Overall, these results again support the three hypotheses.

Although the two analyses above are informative, we decide to go beyond them. In other words, while the above two tests suggest that firms of the four ownership groups indeed demonstrate different response patterns, we undertake a more challenging, third test by investigating whether we can *predict* firm's ownership by classifying them into the four groups according to their responses on the three strategic dimensions captured by our survey data. For these purposes, multiple discriminant analysis (MDA) is employed. MDA has been shown to be an effective and robust statistical tool to classify observations into distinct groups, with *a priori* knowledge of the groups and a number of variables quantifying these groups of observations (Klecka, 1980; Lachenbruch, 1975). Before applying the technique, we first check the normality assumption of the data. Within-group distributions are approximately multivariate normal, thus giving us confidence in using a parametric classification method to develop the discriminant criterion.

As shown in Table IV, 94.6% of the SOEs, 64.3% of the COEs, 68.6% of the FIEs, and 86.8% of the POEs are correctly classified into their respective strategic groups based on their ownership types. A cross-tabulation of success rates reveals that the predictions for SOEs and POEs have a much higher success rate than those for COEs and FIEs. These differences may stem from the distinctive strategies of defenders and prospectors adopted by SOEs and POEs, respectively. In terms of error rates, MDA misplaces a significant portion of COEs (23.8%) as FIEs, and a relatively large number of FIEs (13.7%) as COEs. This is because COEs and FIEs, being hybrids, may have a less clear-cut strategic posture, sometimes resembling a defender strategy and other times following a prospector strategy (see Table III). As a result, misclassifications mainly occur in these two groups, and the attempt to predict the two groups of firms' membership is not as successful as that for SOEs and POEs.

As a further check for predictive accuracy, we also compute *tau*, a proportional reduction in error statistic suggested by Klecka (1980, p. 51). This test statistic gives a standardized measure of the improvement of predictive accuracy, as a result of

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Table III. Pair-wise MANOVA tests of differences across four strategic groups

Variables	*(1) F-test*		*(2) F-test*		*(3) F-test*		*(4) F-test*		*(5) F-test*		*(6) F-test*	
	SOEs vs.	*COEs*	*SOEs vs.*	*FIEs*	*SOEs vs.*	*POEs*	*COEs vs.*	*FIEs*	*COEs vs.*	*POEs*	*FIEs vs.*	*POEs*
H1: Environment	F	*p*	F	*p*	F	*p*	F	*p*	F	*p*	F	*p*
1. Hostility	2.25	0.08†	2.23	0.09†	1.95	0.10†	0.05	0.87	0.90	0.23	1.12	0.12
2. Dynamism	1.30	0.23	3.80	0.05*	3.63	0.05*	1.63	0.19	1.63	0.10†	0.13	0.78
3. Complexity	1.95	0.10†	1.98	0.09†	5.84	0.00***	0.55	0.45	0.59	0.19	0.55	0.33
H2: Strategic orientation												
4. Risk taking	3.90	0.05*	3.94	0.05*	6.26	0.00***	0.03	0.78	2.90	0.05*	20.08	0.08†
5. Proactiveness	4.03	0.02*	4.00	0.02*	7.03	0.00***	0.09	0.54	0.53	0.34	20.03	0.09†
6. Aggressiveness	2.21	0.07†	2.03	0.10†	4.00	0.01**	0.80	0.23	1.40	0.20	2.40	0.05*
H3: Performance												
7. Profitability	3.34	0.03*	3.05	0.05*	3.23	0.03*	1.34	0.13	0.99	0.29	1.34	0.19
8. Sales growth	4.43	0.02*	2.73	0.11	2.53	0.06†	1.93	0.09†	0.83	0.17	0.93	0.30
9. Market position	4.89	0.01**	3.89	0.04*	5.89	0.00***	1.79	0.10†	1.89	0.10†	30.00	0.02*
Diagnostic statistics												
Pillais	0.26		0.23		0.28		0.02		0.06		0.07	
Hotellings	0.34		0.36		0.37		0.02		0.08		0.07	
Wilks lambda	0.75		0.74		0.78		0.93		0.99		0.85	
Roys	0.25		0.28		0.20		0.02		0.03		0.23	
Boxes M	90.03		920.02		95.99		5.32		6.33		20.00	
Chi-square	67.90		70.32		77.69		1.23		2.10		22.29	

†$p \leq 0.10$; *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

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Table IV. Prediction results based on multiple discriminant analysis

Actual group	*N*	*Predicted group membership (percentage of actual group)*			
		1. SOEs	*2. COEs*	*3. FIEs*	*4. POEs*
1. SOEs	56	**53 (94.6%)***	3 (3.4%)	0 (0%)	0 (0%)
2. COEs	41	1 (2.4%)	**27 (64.3%)**	10 (23.8%)	4 (9.5%)
3. FIEs	51	0 (0%)	7 (13.7%)	**35 (68.6%)**	8 (17.6%)
4. COEs	53	0 (0%)	2 (3.8%)	5 (9.4%)	**46 (86.8%)**
Total	201	54	39	50	58

***Bold** typeface indicates correct classification.

our classification scheme, over the probability attainable by pure, random chances. It has the following properties:

$$\tau = \frac{n_c - \sum_{i=1}^{g} p_i n_i}{n - \sum_{i=1}^{g} p_i n_i} \tag{1}$$

where n_c is the number of cases correctly classified, n is the sample size, p_i is the prior probability of group membership, and n_i is the number of cases in each group. The value of *tau* is 0.7338, indicating that classification based on the three discriminating dimensions would make 73.38% *fewer* errors than would be expected by random assignment. Overall, our three tests are robust and lend strong support for the argument (1) that strategic groups do exist and can be predicted by ownership types, and (2) that the Miles and Snow typology provides a valid lens through which to understand competitive dynamics in an emerging economy such as China.

DISCUSSION

This study adds to the strategic group literature by focusing on a parsimonious and yet powerful variable, namely, firms' ownership types, in an emerging economy. Our findings are consistent with previous studies in the West, which suggest that 'strategic groups offer a promising way to summarize competitors' strategies in industries populated by so many competitors that individual consideration is impossible' (Reger and Huff, 1993, p. 119). Within China's home-appliance electronics industry, we find (1) that strategic groups indeed exist, and (2) that ownership as a single predictor variable matters a great deal.

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This study makes at least two contributions. First, theoretically, it contributes to the strategic group literature by identifying an often overlooked predictor variable. Although Reger and Huff (1993, p. 123) included ownership (public versus private) as one of their 11 cognitive dimensions, ownership was not a focus of their research. In an industry mostly populated by private firms in the West, there is certainly no need to consider ownership differences. However, in an institutional environment characterized by an organizational diversity such as China's emerging economy, ownership differences become more significant. Therefore, we have elaborated on Peng's (2000, p. 261) speculation on the existence of ownership-based strategic groups, and demonstrated an example of how research based on non-US and non-Western samples can contribute to the theoretical development of strategic group research by highlighting an important but previously overlooked predictor variable.

Empirically, this study adds to our knowledge about the competitive dynamics during economic transitions. Although there is widespread qualitative evidence indicating significant differences across firms with different ownership types in China, no reported research in the strategic group literature has confirmed or falsified these differences. We have extended Tan's (2002) work, which documented some differences among the four ownership groups but did not link them with the strategic group literature. Using the intuitively appealing Miles and Snow (1978) typology, this study, which does not resort to cluster analysis, has empirically answered the two questions raised by Barney and Hoskisson (1990) regarding (1) the existence of strategic groups and (2) their performance differences.

More interestingly, when viewed from the *theoretical* literature on privatization (Shleifer, 1998; Vickers and Yarrow, 1991), we find an 'anomaly,' namely, SOEs represent the best performing group. There are six possible explanations. First, some *empirical* studies on privatization pointed out that simple transfers from state to private ownership may not necessarily lead to better performance (Buck et al., 1998; Filatotchev et al., 1999; Sarkar et al., 1998; Wright et al., 1998, 2002). The key role is competition, since direct product market competition is likely to stimulate SOEs to compete more vigorously (Vickers and Yarrow, 1991; White and Liu, 2001). Some studies even suggested that state ownership can be associated with superb performance under conditions of global competition (Heracleous, 2001). Second, without a stable institutional framework, SOEs' defender strategy may create a better fit with the uncertain environment (Peng, 2003; Tan and Litschert, 1994). Specifically, their abundant slack resources may have helped them to better deal with environmental uncertainties (Lu, 1996). Third, Miles and Snow (1978) and Smith and others (1989) showed that defenders are not necessarily losers, and that defenders can perform equally well relative to prospectors and analysers, as long as a consistent strategic posture is maintained. Therefore, our results are not that surprising when viewed from the lens of Miles and Snow's (1978) strategy types (e.g. Hambrick, 1983).

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Fourth, our findings may be industry-specific, since the capital- and technology-intensive nature of the electronics industry may favour large firms with better economies of scale and SOEs tend to be larger. Fifth, the electronics industry is among the first industries in China opening up for international competition (Liu et al., 2001) and SOEs in this industry may have better competitive capabilities than their money-losing counterparts in other industries (Naughton, 1997). Finally, the results may have some perception-based bias, since SOEs, being the historically dominant players, may be more arrogant about their relative performance in the industry. It is important to note that during the time of our survey (1993), the Chinese government still maintained extensive support for SOEs, thus potentially leading to better SOE performance. On the other hand, POEs, the most vulnerable group in such an institutional environment, may be used to underreporting their performance in order to save on taxes and avoid state exploitation. Thus, despite our assurance of confidentiality, POE participants might still have underreported their performance. In addition, the relatively poor market position of POEs may be due to their shorter history compared to SOEs. With regard to COEs' intermediate levels of performance, one explanation is that COEs may not be profit-maximizing, given their need to generate local government revenues, increase local employment, and assume other social or political responsibilities, among others.

While the generalizability of our results may be limited in developed economies, we believe that our findings may be generalizable in other industries in China and other emerging economies, as long as there is a diversity of firms with different ownership types competing against each other. In the future, this assertion can benefit from more studies on strategic groups in other industries in China and other emerging economies. Since firms can change their ownership types (e.g. privatization), strategic groups may also change. In other words, the mobility barriers separating strategic groups based on ownership differences may be surmountable (Mascarenhas, 1989). However, given the path dependency, our results essentially suggest an investigation of *historical* (previous) ownership in addition to *current* ownership, especially in the case of privatized firms.

Given the organizational diversity in these countries, it may be interesting to explore strategic groups *within* each ownership group (Luo and Park, 2001; McNamara et al., 2003). It will also be interesting to explore the rivalry *across* strategic groups (Cool and Dierickx, 1993; Duysters and Hagedoorn, 1995; Porac et al., 1995; Smith et al., 1997). Finally, in relation to Miles and Snow's (1978) strategy types, this research did not examine performance implications of a reactor strategy. Although our analysis of firms of different ownership characteristics did not reveal a distinct group following a reactor strategy, future research may benefit from considering this strategy explicitly in other contexts and could explore implications of strategic group affiliation incorporating a reactor-based perspective. Clearly more research is needed on this important topic, which will generate inter-

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esting knowledge not only for researchers, but, more importantly, also for local and Western managers interested in knowing more about the competitive dynamics in emerging economies.

CONCLUSIONS

Emerging economies such as China raise issues for theory development, concerning the extent to which concepts such as strategic groups originated from the West can be applied, extended, and modified. This article has illustrated how ownership type, a variable often overlooked in existing research in the West, functions as an important variable commonly used by managers to cognitively group firms in a Chinese industry, thus enriching the theoretical discussion on strategic groups. At the same time, this article also adds to our empirical knowledge about competitive dynamics in an emerging economy, by uncovering the emergence of four ownership-based strategic groups employing distinctive strategies in an industry which 20 years ago had exhibited little discernible strategies.

A hallmark of provocative research is that it generates more questions for continued research than it answers. In our case, the discovery of an empirical 'anomaly', namely, SOEs' high performance, calls for more in-depth examination of the competitive dynamics during economic transitions. Historically, anomalies have been launch pads for scientific progress (Kuhn, 1970). Researchers may make larger contributions by focusing on these anomalies in emerging economies, since currently we know very little about the competitive dynamics there. As the field matures, the least we need now is parochial thinking solely focusing on the experience of Western firms. A complete theory of strategic groups has to take the experience of so many managers, firms, and industries in these emerging economies into consideration.

NOTES

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[1] In developed economies, the ownership debate is also unresolved (Shleifer, 1998; Vickers and Yarrow, 1991), with some studies suggesting that privatization leads to strategic changes and performance improvement (Andrews and Dowling, 1998), and others pointing out that privatization results in little change in strategy and performance (Parker and Hartley, 1991). Although recent reviews of the empirical literature by Djankov and Murrell (2002) and Megginson and Netter (2001) found that in general, privatization seems to 'work', there are important qualifications and exceptions, as noted by these authors and others such as Wright et al. (2002).

[2] This perspective is more extensively developed and supported with a series of case studies in Peng (2000), whose main thrust is the four chapters on strategies of firms in transition economies

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of different ownership types, SOEs (Ch. 4), privatized and reformed firms (Ch. 5), private start-ups (Ch. 6), and foreign-invested firms (Ch. 7).

[3] There is also some evidence from Poland and Russia concerning the impact of leasing (Warner, 2002).

[4] Among FIEs, constraints on foreign ownership exist. During the early 1990s when the study was undertaken, the majority were joint ventures (Beamish, 1993). More recently, more wholly foreign-owned subsidiaries (which the Chinese officially call wholly-foreign-owned enterprises [WFOEs]) were established (Peng, 2000).

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