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Robert E. WHITE

Robert E. HOSKISSON

Daphne W. YIU
Singapore Management University, daphneyiu@smu.edu.sg

Garry D. BRUTON

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Employment and Market Innovation in Chinese Business Group Affiliated Firms: The Role of Group Control Systems

Robert E. White[1], Robert E. Hoskisson[1], Daphne W. Yiu[2] and Garry D. Bruton[3]

[1]*Arizona State University, USA,* [2]*Chinese University of Hong Kong, China, and* [3]*Texas Christian University, USA*

ABSTRACT Prior research has suggested a number of potential benefits to firm membership in business groups. These benefits include availability of capital and other resources not readily accessible in an open market, the facilitation of entrepreneurship, plus information and risk sharing advantages. We suggest that another important benefit is the assistance of group control systems in helping the firm to manage conflicting pressures in the institutional environment and facilitate coevolution of these conflicting pressures. To empirically demonstrate the relevance of this viewpoint, we examine the case of China where business groups facilitate institutional transition, actively balancing market pressures to increase levels of innovativeness in firms with institutional pressures emanating from the government to maintain high employment levels. Using data from a broad sample of more than 1,000 Chinese affiliate firms in more than 200 business groups, we find that government policy, ownership and managerial mindset influence the political goal of maintaining high employment levels, while interdependence among group affiliate firms is related to lower employment levels. However, while government ownership and the government managerial mindset were negatively related to market innovation activities, group financial and cultural control systems positively affected the tendency of affiliate firms to focus on market innovation.

KEYWORDS business groups, China, control systems, innovation, institutional theory

INTRODUCTION

Business groups are collections of firms[1] bound by formal and informal ties (Granovetter, 1994) that are often the dominant form of business organization in emerging economies (Ghemawat & Khanna, 1998; Khanna & Palepu, 2000a). As the importance of these economies and their firms has increased in the global

economy, so has the scholarly interest in business groups (Hoskisson, Eden, Lau, & Wright, 2000). In spite of increased research on business groups, there are still many unresolved questions about the role of business groups in these institutional settings. One of the most salient of these questions is 'the role business groups play in economic development' (Keister, 2000, p. 44). In one of the earliest studies, Leff (1978) suggested that business groups allow firms to access resources such as capital and skilled labour that would otherwise be difficult to obtain on the open market due to conditions of market failure. Other scholars have focused on the group as a transmitter of critical information, a facilitator of entrepreneurial activity, or a risk manager for affiliate firms (Guillén, 2000; Keister, 2000; Khanna & Palepu, 2000b; Khanna & Rivkin, 2001; Leff, 1978, 1979). Because of the active role of governments in emerging economies, researchers have also suggested that the interplay between government, the business group, institutional pressures and the response to such pressures is critical for understanding the business group phenomenon (Fisman, 2001; Ghemawat & Khanna, 1998).

In this study, we propose that one of the most important roles of business groups in such contexts may be to provide a micro-institutional setting where the affiliate firms are partially protected from the undesirable effects of government sponsored institutional changes. We further propose that groups help affiliate firms adapt to the pressure through facilitating change in the cognitive maps of the key executives on the one hand and, at times, resist such change on the other. We argue that this cognitive change occurs primarily through group controls systems. Our conception is both distinct from and complementary to existing institutional explanations which couch the business group as an organizational mechanism useful in overcoming institutional voids (Khanna & Palepu, 1997, 2000a; Leff, 1978, 1979). As we explain below, we see business group control systems as being important in assisting group affiliated firms to coevolve relative to the institutional pressures they experience in their environment.

China presents a prime setting to gain a better understanding of these issues since the emergence of the Chinese business groups is a direct result of China's Economic Reform, which has included a dedicated effort to transfer control of state-owned enterprises (SOEs) from the government to newly emerging business groups known as *qiye jituan* (Keister, 1998). Chinese business groups face the difficult task of balancing market demands with government policy demands as the economy transitions from a planned economy to a more market based system. As Child (2000, p. 56–57) states:

> The macro question is whether the logics of efficiency and economic rationality will guide Chinese enterprise reform, rather than embedded political and institutional norms. This conflict essentially comes down to how the concept of a socialist market economy with Chinese characteristics is to be interpreted. At the micro level, the question is whether the future direction of enterprise reform will

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reflect strategic and operational needs rather than a desire to retain political control and placements.

In the marketplace, Chinese business groups must compete with increasing numbers of technologically advanced foreign and domestic competitors, while in the political arena they face pressure from the government to maintain high employment levels so as to avoid substantial unemployment and possible social unrest (Scott, 2002). Given this position, group affiliates face the challenge of determining the extent to which they will adopt strategies focused on innovativeness or oriented toward maintaining employment level. Accordingly, in this study, we examined how differences in factors of government influence affect these potential pressures. Similarly, we examine how different organizational influences – specifically, business group internal control mechanisms – induce group affiliates to emphasize employment and market innovation[2] investments.

This study makes several contributions to the literature. First, it contributes to institutional theory by suggesting that business group control systems – including strategic, financial and cultural controls – can play an important role in helping affiliated firms to manage institutional pressures. Most of the literature suggests that institutions influence the development of organizations in a somewhat deterministic way (North, 1990). We suggest that organizations can be active agents in the change process, helping shape institutional pressures in a coevolutionary fashion (Krug & Hendrischke, 2008; Lewin & Volberda, 1999). Second, it builds on the work of Keister (2002) and Mahmood and colleagues (Chang, Chung, & Mahmood, 2006; Mahmood & Mitchell, 2004) in exploring factors affecting innovation in business group affiliated firms. Using our institutional perspective, we claim that the business group's control systems foster incentives that facilitate either market innovation or employment objectives. Additionally, the study contributes to the literature empirically. While there are a number of explanations for the role of the business group in assisting affiliate firms (Carney & Gedajlovic, 2002), as Keister notes, 'very few studies have provided adequate empirical evidence that such relationships exist'. Much of the scholarly work on the economic effect of business groups is 'speculative' (Keister, 2000, p. 47). We tested our ideas using a broad sample of more than 1,000 Chinese affiliate firms in more than 200 business groups.

We begin by defining the business group and providing a brief overview of the development of business groups in China. Then, we theorize that government influence factors and organizational influence factors such as the intensity of group control systems will have significant bearing on the tendency of group affiliated firms to pursue strategies focused on increasing market innovation or maintaining employment. This theoretical approach has strong relevance for Chinese public policy-makers since the strategic outcomes of the large business groups we examine, when taken in the aggregate, have the potential to influence the direction of economic development in China.

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THEORETICAL BACKGROUND AND HYPOTHESES

Leff (1978, p. 663) describes a business group as a collection of firms, 'which transacts in different markets but which does so under common entrepreneurial and financial control', and in which '[p]articipants are people linked by relations of interpersonal trust, on the basis of a similar personal, ethnic, or communal background.' In a similar vein, Khanna and Rivkin (2001, p. 47–48) speak of a business group as a collection of firms which 'are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action.' According to China's National Statistics Bureau, a business group is officially defined as a group of legally independent entities that are partly or wholly owned by a parent firm and are registered as affiliated firms of that parent firm (cf. Keister, 2000). The Chinese business group often involves cross-ownership among affiliate firms, is frequently involved in several industries and is often spread across multiple regions of the country.

The formation of business groups in China is a direct result of the Economic Reform that began in 1979. The Chinese government's objective has been to develop a socialist market economy – a market based economy with capitalist features and Chinese socialist characteristics simultaneously. In other words, the country's leadership has sought to make fundamental changes to China's economic structure without disturbing the country's socialist political system (Scott, 2002). Seeing that large firms are central to the fast growth of late industrializing economies, the Chinese government implemented a plan to reform large state-owned enterprises into modern giant industrial corporations that could compete in the global market. Beginning in the 1980s, China started to decentralize control of many government businesses from government bureaus to nascent business groups and began allowing firms to acquire ownership stakes in other ventures (Keister, 1998). This trend came into full bloom in the mid-1990s and continues today, with Chinese officials making a conscious effort to emulate aspects of the *chaebol* of Korea and the *keiretsu* of Japan (Keister, 2000; Kim, Hoskisson, Tihanyi, & Hong, 2004; Nolan & Wang, 1999). The state's active role in forming business groups is partly due to a reform in China's fiscal policy under which local governments became the residual claimants in the flow of tax revenues and were similarly responsible for local economic development (Oi, 1992; Walder, 1995a). As such, business groups are a major source of local government revenue to support local economic development and social welfare (Wong, 1992).

While changes in the Chinese economy contemporaneous with the birth of Chinese business groups have provided greater leeway for group affiliated firms to act in an entrepreneurial, market oriented manner, many of them still face pressure from the government to maintain employment levels. As parts of the Chinese bureaucracy have been pushing for growth, flexibility and better incentives for producers (Zhang & Zhang, 1987), other (and sometimes the same) government

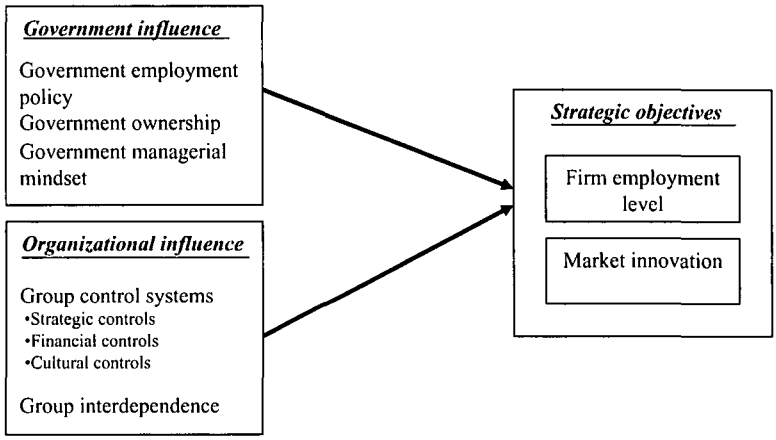

Figure 1. Conceptual model

elements have had difficulty fully relaxing their control over business enterprises. As Scott (2002, p. 75) reports:

> The Chinese state is attempting to carve out a more autonomous arena to support economic development. This is a daunting undertaking, given its size and scope of influence, which penetrates every arena of social life. Making the process more difficult is the desire of Chinese leaders to retain unchallenged political control at the same time that they encourage economic autonomy and the development of a free market. Whether these two goals are compatible remains to be determined.

The crux of the issue for decision-makers in business groups is how to achieve economic growth while maintaining employment levels that are viewed as necessary for social stability. As illustrated in Figure 1, our theoretical model hypothesizes that government influences and business group characteristics (i.e., group control systems and group interdependence) affect the degree to which business group affiliates pursue each of the two strategic objectives of market innovation and maintaining employment.

We note that we envision the relationship between employment and market innovation as a partial, rather than a complete, trade-off. In the long run, firm innovation may drive higher firm employment levels. In the short term, however, we expect that a scarcity of firm resources can lead to a trade-off between spending on innovation and employment.

Conflicting Pressures during Institutional Transition: Employment vs. Market Innovation

One of the fundamental goals of national governing coalitions is the maintenance of political support (Shleifer, 1998). In democratic societies, this tendency often mani-

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fests itself through policies that are aimed to gain electoral support through pleasing the populace. In China, while there is no electorate, per se, the government recognizes the importance of maintaining a level of contentedness in the population.

A critical element of both political stability and social welfare during an economic transition is the maintenance of employment levels (Eden & Lenway, 2001). In China, under socialist rule, state-owned firms have provided not just income to employees, but other important ancillary services including housing, health care, children's schooling, retirement income and unemployment insurance (Keister, 2000; Steinfeld, 1998). Because state-owned enterprises have played such a significant social welfare role, the Chinese government has built up political capital among SOE employees over time. The loss of political goodwill and legitimacy that would be caused by widespread layoffs makes the government hesitant to shut down even very poorly performing enterprises (Brandt & Zhu, 2000). As noted earlier, government desire for high employment also impacts private Chinese firms, with those not complying risking the withholding of necessary government controlled resources or permits. Thus, employment demands from political institutions have the potential to strongly influence firm strategy (Groves, Hong, McMillan, & Naughton, 1994; Lenway & Murtha, 1994).

For example, D'Long International Strategic Investment, one of the largest business groups in China, was recently referred to China Hurarong Asset Management Corporation, a state-run company set up to dispose of bad loans at banks. China Huarong will oversee the reorganization of D'Long, which includes many state-run enterprises and affiliate firms. The government's decision to get involved 'highlights [the central government's] concern over the case's potential impact on financial – and possibly social – stability' (Chen, Murphy, & Dolven, 2004).

Although there is concern about social stability, Chinese authorities are also concerned about innovation and advancements stemming from market innovation activity, which fuel future economic growth (Franko, 1989). Indeed, the difficulty of innovating at a sufficient pace to fuel adequate economic growth has been blamed as one of the key reasons for the breakdown of central planning in the Soviet Union and other socialist economies (Kornai, Maskin, & Roland, 2003; Qian & Xu, 1998). In China, economic reform has focused on improving innovation efforts as a significant dimension of the transition from planned to market economy (Jefferson, Rawski, & Zheng, 1997). In part, this is due to a central objective of developing large industrial corporations as competitive as those in the developed economies. To accomplish this policy objective, innovativeness is crucial and, as a result, is highly valued in business groups. Blanchard and Shleifer (2001) argued that in transition economies, where weak institutions fail to support economic growth, a strong central government can play a role in fostering growth. They further argued that the Chinese central government was more fully in control of the reforms and thus was able to create a better policy focus among central and local government entities than was Russia, which had a more decentralized approach. Thus, while high

employment has been one major concern of Chinese government officials, another important matter has been the need for innovativeness among Chinese firms.

In China, SOEs are widely recognized as at the technical frontier and as the most innovative in their product lines (Jefferson, Rawski, & Zheng, 1994). Thus, larger government owned firms are more likely to devote a significant portion of their cash flow to innovation activities because of the slack available through looser budgetary constraints. However, these firms are also likely to have lower productivity ratios due to higher employment levels. This view of innovativeness and employment is consistent with a recent finding that small enterprises have better labour productivity than large state-owned firms, but spend less on long-term firm development such as innovation because they are subject to tighter budgetary constraints (Mahmood & Rufin, 2005).

The above discussion suggests that there should be a positive relationship between increases in market innovation investments and firm size as indicated by employment levels. But the relationship in large Chinese enterprises may be more complex than indicated above. The impact of the government on the business group does not stop once the business group is formed but can continue to be quite strong depending on government employment policy, who owns the business group and who leads the business group. For example, one study of partially privatized firms (those that have been through an IPO) reported that almost 28 percent of the affiliate companies' CEOs were 'politically connected', meaning they were currently politically affiliated with a government agency or were ex-government bureaucrats (Fan, Wong, & Zhang, 2007).

Another set of issues that make the relationship more complex is the fact that the formation of business groups is also a corporatization programme that aims to separate corporate management from government administration (i.e., government officials who ran the bureaus and factories in the past). Thus, a second set of factors that impact the relationships are those organizational influences that are associated with corporations, including the group's control systems and interdependence among affiliate firms. North (1990, p. 5) suggests that organizations can be 'a major agent of institutional change', although there is limited empirical evidence regarding the impact of business groups' organizational characteristics on affiliate firms' strategic behaviours in emerging economies (Keister, 2000). We intend to shed more light on business groups' organizational influences in this coevolutionary process. The next section develops hypotheses on the effects of government and organizational influences on employment and market innovation in group affiliated firms.

Government Influence

Three ways in which the government affects group affiliated firms in the Chinese context are through government employment policy, government ownership and the managerial mindset of the group leadership.

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Government policy. To uphold the socialist objectives of employment protection, the government has instituted policies that are designed to promote higher employment levels in firms. Therefore, to win local government support for business proposals, firms often establish a 'no layoff' policy (Clifford, 2003). Such government policies encourage many firms to retain unneeded human assets and firms may be subject to sanctions if they fail to maintain employment at a given level. The expenditures on unnecessary or redundant human resources make it more difficult for these firms to invest resources in market innovation activities. Firms in transition economies already are characterized by low levels of slack resources (Bruton & Rubanik, 2002). If available resources are expended on redundant human resources, expenditures in other domains necessarily have to be curtailed. Thus, as firms come under more pressure to conform to employment policies, it is expected that, all other things being equal, employment levels will increase and market innovation activity will decrease due to a lack of slack resources (Nohria & Gulati, 1996).

Hypothesis 1a: Government influence via employment policies will be positively related to affiliate firms' employment levels.

Hypothesis 1b: Government influence via employment policies will be negatively related to affiliate firms' market innovation activity.

Government ownership. In large businesses owned and controlled by the state, the government has the authority to hire and fire key managers and to grant or retain key resources necessary for firm performance. Such government power would encourage managers to conform to the wishes of governmental officials to maintain high employment levels. Additionally, Shleifer (1998) notes that governments throughout the world routinely transfer benefits to political supporters by mandating excess employment at state-controlled organizations. Thus, we expect that as government ownership in Chinese firms increases, there will be a higher likelihood that the firm will house economically unnecessary employees (Shleifer & Vishny, 1994). To illustrate the extent of such redundancy, the core firm of the Northeast Electricity Group had 100,000 employees in the mid-1990s, of which, it was estimated, only 25 percent were necessary for efficient operation (*China Economic Yearbook*, 1996).

As firms employ larger numbers of redundant employees, they will be left with lower discretionary fund levels to use on new product development. This shift of funds can also be affected by soft budget constraints associated with government ownership. Kornai (1979) defines a soft budget constraint as occurring when a firm with chronic losses does not fail and go out of business due to intervention by a supporting party (known as the 'S-organization'). Such support can come directly from the government or indirectly through loans from government controlled

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lending institutions. Soft budget constraints, while less pronounced in recent years (Child & Tse, 2001), continue to exist in China (Balfour, 2004).

Without soft budget constraints, the firm must ultimately please the market, or it will not receive the resources needed to continue operations. However, when soft budget constraints are present, the focus of management turns from the market toward the government. Thus, the profit motive is attenuated, market price signals are dulled and 'rather than wooing customers, sellers concentrate more on winning the favor of potential S-organizations' (Kornai et al., 2003, p. 1,105). In such a condition, the innovativeness of organizations understandably is decreased (Cuervo & Villalonga, 2000).

Consistent with the expectations of Tsui and Lau (2002) that government owned firms are less innovative than privately owned firms, we expect that firms with significant government ownership will focus more on maintaining employment than on increasing innovation. Even when larger firms have more resources for innovation (Mahmood & Rufin, 2005), we argue that increasing government ownership will slant those resources toward employment at the affiliate firm level. Accordingly, we hypothesize.

Hypothesis 2a: Government influence via group ownership will be positively related to affiliate firms' employment levels.

Hypothesis 2b: Government influence via group ownership will be negatively related to affiliate firms' market innovation activity.

Government managerial mindset. Government affects business groups through the attitudes and mindsets of former government employees. Prahalad and Bettis (1986, p. 490) argued that firms exhibit a dominant general management logic which consists of 'the way in which managers conceptualize the business and make critical resource allocation decisions – be it in technologies, product development, distribution, advertising, or in human resources management.' Through employment and training in socialist bureaucratic organizations, managers, to some extent, become imprinted with the dominant logic of the organization (i.e., the state). However, the management practices that dominate in the government context may be highly inappropriate for the increasingly marketized and competitive Chinese economy. As Prahalad and Bettis (1986) point out, mental maps developed through experience in one business can be applied inappropriately in other businesses. In this case, it is expected that business group managers who have been imprinted with the government 'logic' may not push affiliate firms to meet the demands of an economy that is moving toward a free market system. As Weick (1998, p. 551) points out, the temptation for managers in such situations can be 'to fall back on well-rehearsed fragments to cope with current problems even though these problems don't exactly match those present at the time of the earlier rehearsal.'

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In addition to the issue of dominant logic, Fan et al. (2007) pointed out that there may be more direct incentives to maintain and increase employment levels for more politically connected managers of Chinese SOEs. It is important for the politically oriented manager to improve the employment rate because it helps build the fiscal and social welfare of the region and builds political capital with other politicians. Achieving these objectives may increase the politically connected manager's income and promotion opportunities, even if it dissipates the efficiency of the enterprise in the long run.

Whether due to direct incentives, because of a tendency to fall back to the old ways of doing things, or perhaps simply due to a lack of understanding of the importance of market innovation related activities to provide a solid basis for future firm growth, such managers may have a higher acceptance of the firm as welfare mechanism and, thus, be more likely to keep redundant employees on the payroll. At the same time, they are less likely to appreciate the importance of focusing on innovation, favouring instead the legacy method of firm survival – reliance on the government, rather than on the market (Kornai et al., 2003).

Hypothesis 3a: Government influence via government managerial mindset will be positively related to affiliate firms' employment levels.

Hypothesis 3b: Government influence via government managerial mindset will be negatively related to affiliate firms' market innovation activity.

We examine next two organizational characteristics of business groups that may influence both employment and market innovation. These characteristics are group control systems and interdependence as perceived by group affiliated firm managers.

Organizational Influence

We focus on two means by which the business group can influence an affiliate firm's orientation and emphasis: its control system and the affiliate firms' interdependence with each other.

Business Groups' Control Systems

Control systems are the means by which management controls and directs the organization's efforts. As such, control systems have an important influence on a firm's orientation toward different business outcomes (Hoskisson, Hill, & Kim, 1993). There are several important functions specifically impacted by an organization's control system including the determination of strategic direction, coordination of effort, motivation of employees and monitoring of performance

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(Baysinger & Hoskisson, 1990; Goold & Quinn, 1990; Hambrick & Snow, 1989). The orientation of the firms implementing those control systems (Cardinal, Sitkin, & Long, 2004) will determine the particular impact obtained. In China, the various control system aspects are important because of the policy objective of corporatization to help Chinese firms to be more competitive in world markets. In this institutional environment, management must choose the extent to which the firm will adopt a reactive or a proactive approach to the development of the market economy. As a result, management will establish not only performance expectations, but also patterns of internal conduct, processes of gathering relevant external information and other measures designed to increase the likelihood that the business acts according to their expectations. Major categories of controls that may be implemented include strategic, financial and cultural (Hill, Hitt, & Hoskisson, 1992; Ouchi, 1980). Thus, control systems become a major means by which business groups manage the institutional pressures toward employment and market innovation. These three types of control are examined below.

Strategic control. This involves the development of an understanding and agreement by group and affiliate firm executives on each party's respective strategic positioning. Such control can have an influence on affiliate firm managers in Chinese business groups' efforts to pursue market innovation. The pursuit of market innovation, whether it is the development of new products or the opening of new markets, involves a relatively high level of risk to the manager. This is particularly true in the Chinese context where, during the era of Mao Zedong (the pre-reform era), there was virtually no entrepreneurial activity taking place. The result is that, today, there is no widespread model of entrepreneurial behaviour in the society to encourage risk taking and, similarly, to help managers understand the role of failure (Peng, 2000).

As Hoskisson and Hitt (1988) suggest, affiliate firm managers can be protected from failure when there is an understanding and agreement between group and affiliate firm managers on the firm's strategic direction. Thus, an emphasis on strategic control can encourage affiliate firm managers to undertake more risky strategies such as market innovation because the risk is shared with group headquarters executives. As a result, it is expected that an emphasis on strategic control would be associated with higher levels of affiliate firm market innovation. Strategic control focused on firm performance would likewise reorient the mindsets of managers, leading the firm to rationally reduce redundant employee levels to meet market competitive success levels. Thus, we offer the following hypotheses.

Hypothesis 4a: Group level strategic control will be negatively related to affiliate firms' employment levels.

Hypothesis 4b: Group level strategic control will be positively related to affiliate firms' market innovation activity.

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Financial control involves the use of objective, financial oriented performance criteria, such as return on assets or sales growth, to evaluate the performance of affiliate firm managers (Hitt, Hoskisson, Johnson, & Moesel, 1996). In the literature, an overreliance on financial control has been criticized for a tendency to create undue focus in the short term and to decrease the willingness of managers to take calculated risks that would be in the best interests of the firm (e.g., Hoskisson & Hitt, 1988). Generally, however, financial control is recognized as an important aspect of any organization's control structure without which the firm's effectiveness could be jeopardized (Williamson, 1975, 1985).

In the Chinese context, given the general lack of focus on operating results, particularly in SOEs (Buckley, Clegg, & Wang, 2002), it is unlikely that an emphasis on financial control would unduly bias managers toward short-term results. Additionally, financial control is a direct way to overcome problems associated with soft budget constraints by forcing a higher degree of fiscal discipline, encouraging a more effective capital allocation process and creating incentives for Chinese managers to decrease the number of redundant employees, freeing up resources which will enable the firm to pursue needed development projects. Thus, financial control is expected to be negatively related to employment levels, thus freeing resources for market innovation. Through financial control, the government may be able to indirectly overcome the weaknesses in the existing institutional infrastructure and establish more market-oriented incentives, thereby creating an incentive for a reduction of redundant employees.

Hypothesis 5a: Group-level financial control will be negatively related to affiliate firms' employment levels.

Hypothesis 5b: Group-level financial control will be positively related to affiliate firms' market innovation activity.

Cultural control involves establishing trust and shared values among group affiliate firms in order to reduce uncertainty regarding internal transactions (Chu, 2001). Ghoshal and Moran (1996) argue that the impact of cultural control comes in part from the fact that such control can help create a positive feeling for the organization and motivate employees to work harder to maximize firm value. Such control also helps to reduce monitoring costs since there is common understanding among employees on what they are attempting to accomplish (Cardinal et al., 2004).

There are several aspects of cultural control that have been employed in China (Shaw, 1996). Biggart and Hamilton (1992, p. 472) argue that 'Asian economies espouse different institutional logics from Western economies, ones rooted in connectedness and relationships'. Part of this connectedness is seen in *guanxi* (connections between individuals and organizations). In China, *guanxi* affects all types of businesses, including business groups. Such connectedness is built on personal and

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organizational relations (Boisot & Child, 1999; Park & Luo, 2001) and becomes a strong guide to behaviour that is acceptable since there are significant ramifications for not maintaining one's obligations related to *guanxi*. As a result these ties, or *guanxi*, are essentially a form of cultural control (Ouchi, 1980).

Another aspect of cultural control is demonstrated through a stronger commitment to shared responsibility by individuals within an organization (Boisot & Child, 1988). This emphasis is apparent in decision-making within Asian, not only Chinese, firms where there is a greater reliance on decision-making by the collective group rather than on individual decision-making (Biggart & Hamilton, 1992). Findings show the result of this strong orientation toward collectivism in Asia and China in particular is that, if organizations seek to force individuals to work alone rather than in groups, their performance drops (Earley, 1993).

Guanxi and the emphasis on the collective group can put pressure on the group to repay support that is received from others in the group (Park & Luo, 2001). As a result, making significant changes to firm level employment can be more difficult because affiliate firm managers will be hesitant to make decisions that negatively impact other affiliate firms in the group where they have relationships and which may have supported them in past decisions. Thus, higher levels of cultural control may lead to an increased sense that obligations of providing continuous employment and, concomitantly, a wide range of employee services must be continued. We expect that the stronger the emphasis on cultural control, the higher firm employment levels will be.

Alternatively, the government's decision to build internationally competitive business groups by emphasizing innovativeness results in strong pressures within the business group to support those efforts. The relationships created from cultural control among individual managers and affiliate firms may act to encourage those views. The isolation that affiliate firms may suffer from being an outlier due to the emphasis on shared responsibility may act to further encourage the support of innovation. Therefore, an emphasis on cultural control could also be expected to increase market innovation activity. Accordingly, we position the following hypotheses as competing hypotheses.

Hypothesis 6a: Group level cultural control will be positively related to affiliate firms' employment levels.

Hypothesis 6b: Group level cultural control will be positively related to affiliate firms' market innovation activity.

Interdependence among Affiliate Firms

Interdependence refers to the inherent attribute of relationships among organizational units and the extent of cooperation among member firms to perform a task

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(Thompson, 1967). Interdependencies between business units can foster economic efficiencies and reduce transaction costs among multiple unit businesses (Jones & Hill, 1988). One of the aims of China's economic reform has been to achieve better allocation of resources in the economy. Flows of resources and products have long been obstructed by the boundaries separating different administrative and bureaucratic jurisdictions (Jefferson & Rawski, 1995). The business group structure serves the political purpose of allowing firms to more easily transact across what can be essentially different economic fiefs, providing a means for member firms to exchange and share resources that are more costly when acquired from the market, due to underdeveloped market institutions. Thus, central government initiated business groups act as a means of assuaging market inefficiencies and overcoming some of the country's shortcomings in institutional structure (Meyer & Lu, 2005).

Through the integration of related assets, firms achieve synergies, enhance competitiveness and receive financial benefits through reduced transaction costs (Chatterjee, 1986, 1992). Such benefits often come from economies of scope (where engaging in multiple activities is more efficient than engaging in fewer activities) and from economies of scale (where larger production size or volume provides increased efficiencies) (Brush, 1996). Often, both economies of scope and scale are partially realized through reduced head counts. O'Shaughnessy and Flanagan (1998), for example, found that layoffs occur more often in related vs. unrelated acquisitions, probably due to redundancies following horizontal acquisitions that have overlapping businesses. As such, we expect that firms in groups with higher levels of interdependence between firms will have lower employment levels in affiliate firms.

Interdependence is also predicted to be positively related to affiliate firms' pursuit of market innovation activity. The major barriers to conducting market innovation activities are high development costs and risks due to market uncertainty in the transition economy context. Business groups with higher levels of interdependence will generate more scope economies that result from the sharing of common distribution channels, advertising, market intelligence and technology (Chatterjee, 1992). As a result, group interdependence from scope economies provide significant cost savings (Jones & Hill, 1988) and risk sharing for affiliate firms to conduct market innovation activities. Also, related diversified firms that have high levels of interdependence have been discovered to have higher levels of R&D expenditures than more broadly diversified firms (Hoskisson & Johnson, 1992). Thus, we expect group interdependence to be positively related to market innovation activity.

Hypothesis 7a: Group interdependence will be negatively related to affiliate firms' employment levels.

Hypothesis 7b: Group interdependence will be positively related to affiliate firms' market innovation activity.

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METHOD

Sample

This study involved the collection of data from the largest five member firms of each of the 250 largest business groups in China. We concentrate on the largest groups because, as Tsui and Lau (2002) indicate, government political influence is not applied uniformly among Chinese firms of different sizes, with the central government, in particular, focusing most closely on the largest business groups. Given our interest in political influence, we feel this sample is most appropriate in testing our hypotheses. Furthermore, large business groups have the most significant impact on the future growth and development of an increasingly market oriented economy. Despite our focus on the largest business groups, the size of the affiliate firms in the groups ranged from quite small (six employees) to quite large (more than 80,000 employees).

With the assistance of China's National Statistics Bureau (NSB), the research team administered a total of four different surveys. The two archival surveys (one at the group level and one at the affiliate firm level) focused on collecting firm accounting and financial information, which is reported by the surveyed firms annually to the Statistics Bureau. The two perceptual surveys (one at the group level and one at the affiliate firm level) focused on collecting strategy and control information. This information was provided by the CEO or delegated top manager of the surveyed firm. To reduce the possibility of misunderstanding of survey items, the questionnaire was translated and back-translated to ensure clarity and appropriate translation. Data were collected between December, 1998, and February, 1999. Of the questionnaires which were sent out by the NSB, 1,172 were returned for a 91 percent response rate. Due to the importance of groups' control systems in our analysis and the fact that organizational controls typically require some period of time before fully taking effect, we dropped from the sample: (i) business groups formed after 1998; (ii) affiliate firms formed after 1998; and (iii) affiliate firms that joined their business group after 1998. After deleting cases with missing information, the final sample size was 1,038 group affiliated member firms from 246 groups. The average number of firms per group was 4.22.

Dependent Variables

As mentioned above, the data of the study comes from four different surveys – archival surveys at both the business group and affiliate firm level and perceptual surveys at both the business group and affiliate firm levels. In Table 1, we have indicated the survey from which each of our variables was taken. The unit of analysis is at the affiliate firm level and so almost all of the study measures are at the affiliate firm level, although government ownership and managerial mindset are measured at the group level, as are some of the control variables. For the

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dependent variables, market innovation was measured by a perceptual scale while employment level is taken from the archival survey. For the independent variables, two of the government influence variables were taken from the archival survey and one was from the perceptual survey. All four business groups' control system variables are perceptual measured at the affiliate firm level. Details of each of the variable are provided next.

Market innovation was constructed from three indicators, each measured perceptually on a seven-point response scale, with one indicating the biggest decrease and seven the biggest increase: (i) increase (decrease) in firm R&D expenditures in the last three years; (ii) increase (decrease) in the number of new products brought to market in the last three years; and (iii) increase (decrease) in market development expenditures in the past three years. Because our study is cross-sectional, we decided to use perceptions of change over a three-year period in order to capture variance in the innovation activities of affiliate firms. The reliability of this scale is alpha = 0.77.

Employment level was computed by taking the natural logarithm of the reported number of employees. However, this variable is designed to capture not absolute levels of employment, but redundant employment. To do this, the models with firm employment level as the dependent variable also include the natural logarithm of sales as a control variable. Controlling for firm sales renders our employment variable a reasonable proxy for the idea of overemployment.

Independent Variables

Two items from the perceptual survey were used to measure the influence of *government employment policy* on the firm, namely the extent to which the affiliate's diversification strategy was impacted by: (i) central government policies encouraging employment of the largest number of workers possible; and (ii) local government policies encouraging employment of the largest number of workers possible. The two items were measured along a seven-point scale, where one indicates a small extent and seven indicates a large extent). The inter-item correlation is 0.81.

Getting accurate data on Chinese firm ownership can often be difficult (Delios, Wu, & Zhou, 2006). Since ownership information at the firm level was not available, we used the percentage of direct government ownership of the firm's group as a suitable proxy for *government ownership*. Government ownership of the group will allow the government a level of control over group level actions and policies, which will then impact individual affiliate firms.

Government managerial mindset was operationalized as the number of department heads at the group level who were previously employed in government agencies.

Strategic control was a measure obtained through a perceptual scale adapted from Hill et al. (1992). Indicator variables include the extent to which the group headquarters: (i) understands the industry in which the member firm competes; (ii)

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understands the strategy of the member firm; (iii) understands the strategy of the principal competitors of the member firm; and (iv) jointly develops strategic initiatives with the member firm. The items were measured on a seven-point scale, with one indicating a low level and seven representing a high level of strategic control. The alpha coefficient is 0.87.

Financial control was also obtained from a perceptual scale adapted from Hill et al. (1992). The measure is a composite of the extent to which affiliate firms are judged on: (i) sales; (ii) profit growth; (iii) return on assets; and (iv) profit. It should be noted that the four items are not measures of affiliate firm performance. Rather, they represent the extent to which affiliate firms perceive their respective group parents use these four financial indicators for evaluation purposes. These items were measured on a seven-point scale, with one indicating a low level and seven representing a high level of financial control. Cronbach's alpha for the scale is 0.74.

Indicator variables of our *cultural control* construct included the extent to which affiliate firms are judged on: (i) maintaining the affiliate's reputation within the group; (ii) complying with a strong group culture; (iii) maintaining trusting relationships within the group; (iv) maintaining cordial relationships with other managers in the group; and (v) participating in social activities with other managers from the group's affiliated businesses. As with the other two control scales, measurement was along a seven-point scale, with one and seven representing, respectively, low and high levels of the variable. The alpha coefficient is 0.82.

In previous studies, the entropy measure of diversification (Jacquemin & Berry, 1979; Palepu, 1985) or a simple count of SIC codes has often been used as a proxy for the level of relatedness within a multi-unit business. However, the *group interdependence* construct takes stock of the level to which synergies are actually being realized across businesses. A four-item scale of group interdependence was developed, which measures the degree to which member firms across the business group: (i) shared R&D resources; (ii) shared marketing information resources; (iii) jointly conducted marketing sales or shared advertising resources; and (iv) jointly used market distribution channels. Items were measured on a seven-point scale, with one indicating high levels of independence and seven representing high levels of interdependence. The alpha coefficient is 0.89

Control Variables at the Affiliate Firm Level

Larger firms sometimes have more slack resources, which allows for higher spending on market innovation or maintaining employee head counts. Thus, as noted above, the natural logarithm of the affiliate firm sales was included as a control variable for *firm size* where employment level was the dependent variable.

Use of *debt* can have a dramatic effect on the ability of the firm to increase market innovation activity and to maintain high employment levels. To overcome the potentially confounding effects of this, the natural logarithm of debt was included

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in the models. All other things being equal, it should be expected that a firm with high return on assets would have more organizational resources to expend on market innovation and/or employment. *Return on assets (ROA)* was calculated as profit divided by total assets and included as a control. One potential reason that some firms may have lower levels of firm employment is that they possess more efficient operations. *Asset turnover* (sales/total assets) measures the efficiency of the firm's assets in generating sales. It may also systematically affect market innovation since distribution intense firms (those that tend to have higher turnover) may also be firms that are less involved in innovation oriented activities. As firms become a part of business groups, there may be a systematic impact on market innovativeness and employment levels over time. Thus, the *years in group* that each member firm had been with its present group is included as a control variable.

Finally, the context of an emerging economy is characterized by gradual market liberation. Some industries are still fully protected by government while others are gradually opened for market competition. As a result, we control for the level of *industry competitiveness*. Following the *China Industry Development Report* (1999), we measured the extent of market competitiveness of the industry in which each member firm is located. A value of one indicates that the industry is a state monopoly, a value of two refers to an industry that is semi-open to competition and three means that the industry is fully open.

Control Variables at the Group Level

Due to the possibility that *group age* may have some systematic effect on firm market innovation and employment levels, the number of years since the group was formed was included as a control variable.

In addition to the group interdependence variable, which measures the degree to which synergies are identified and exploited across the affiliate firms of the group, the entropy measure of *product diversification* was included to provide information on the raw breadth of the product markets across which the group spanned. This group-level measure gauges the level of product diversification within the group at the four-digit SIC code level. It is calculated as follows, where P_i is the share of the ith segment in the total sales of the group and $ln(1/P_i)$ is the weight given to each segment (Palepu, 1985):

$$DT = \sum_{i=1}^{n} P_i \cdot \ln(1/P_i).$$

When member firms of a single group are located in close proximity to one another, there is greater opportunity to share resources. This, in turn, may affect overall employment levels or market innovation activity. As such, *geographic dispersion* is measured by a count of the number of geographic regions that are located within a business group.

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Because of the influence that *foreign ownership* could potentially have on the pressures to pursue market innovation and employment, we included the percentage of group foreign ownership as a control variable (Henisz & Zelner, 2005). This variable may also serve as a proxy for independent firms in China, which would be not associated with a business group.

Construct Validity

To assess construct validity of our dependent and independent variable, we performed a confirmatory factor analysis on the six perceptual measures of market innovation, strategic control, financial control, cultural control, interdependence and government employment policy. All items loaded cleanly (factor loadings <0.5) on the intended construct. Overall fit for the confirmatory factor model was good, with CFI of 0.95, TLI of 0.95 and RMSEA of 0.05.

Inter-rater Reliability

Although groups vary widely in the extent to which they use control systems, there can also be differences within groups, with controls being applied differentially to a group's affiliates based on factors such as affiliate age, size, or importance. Thus, we must use firm level measures (i.e., perceptions) of group control systems in testing our hypotheses. However, to establish that groups do vary in overall patterns of control system usage, we tested for between group differences on each of these perceptual measures of group control systems. We found all ICC(1) scores statistically significant at the 0.001 level. We also computed eta^2, which measures the proportion of a measure's variance that is at the between group level (Klein & Kozlowski, 2000). The eta^2 values for our measures were 0.31 for strategic control ($F = 1.48$, $p < 0.001$), 0.33 for financial control ($F = 1.60$, $p < 0.001$), 0.34 for cultural control ($F = 1.64$, $p < 0.001$) and 0.36 for interdependence ($F = 1.84$, $p < 0.001$). Taken together, these tests show that affiliates of the same group perceived the group's control systems similarly, with some variations between firms likely due to both perceptual differences and to substantive differences in the amount of control applied to each firm within the group.

Analysis

Hypothesis tests were conducted using a structural equation model in Mplus. Because we have the same set of variables predicting two different outcomes (i.e., firm employment level and market innovation) and the two dependent variables are conceptually related, we allowed the error terms to be correlated across equations, similar to a seemingly unrelated regression (SUR) model.

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RESULTS

The means, standard deviations and correlations of the variables included in our analysis are presented in Table 1. It may be helpful to provide a brief interpretation of some of the major variables in Table 1. For example, group age is 5.46. Although this may seem young, it is important to remember that many of the groups were recently created due to the government reform program. Geographic dispersion is 1.66 which means that the business groups covered more than one and a half provincial regions in China. Government ownership is 0.712, indicating that, on average, a government entity owns more than 72 percent of each group. Overall, the groups used a higher level of financial control (mean of 5.88 on a seven-point scale) with their affiliates, relative to the other two forms of controls.

The structural equation model results showed an acceptable level of overall fit, with CFI of 0.946, TLI of 0.930 and RMSEA of 0.038. The χ^2 for the model was 935.9 with 370 degrees of freedom. All indicators in our analysis loaded on their constructs at acceptable levels (>0.50). Full results are shown in Table 2.

Results of Hypothesis Tests

Hypotheses 1a, 2a and 3a predicted that government influence on the group (via government policy, government ownership and government mindset) would be positively related to group- member firm-employment levels. We found that all three of these variables were positive and statistically significant. Accordingly, Hypotheses 1a, 2a and 3a were supported.

Hypotheses 1b, 2b and 3b predicted that the same three government influence variables would be negatively related to firm market innovation activity. Our model indicates that, while government employment policy was not significantly related to market innovation, government ownership and government mindset were negatively and statistically significant. Thus, while Hypothesis 1b was not supported, Hypotheses 2b and 3b show support for the government influence hypotheses.

Hypothesis 4a predicted that group strategic control would be negatively related to firm employment level, while Hypothesis 4b suggested a positive relationship between strategic control and firm market innovation. However, strategic control was not significant for either employment level or market innovation. Therefore, Hypotheses 4a and 4b were not supported.

Hypotheses 5a and 5b predicted that financial control would be negatively related to firm employment levels but positively related to market innovation. Our analysis did not find a significant relationship between financial control and firm employment level. Thus, Hypothesis 5a was not supported. However, financial control was found to be statistically significant and positively related to market innovation, thus providing strong support for Hypothesis 5b.

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Table 1. Descriptive statistics and correlations

Variable	*Data source*	*Mean*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*
Employment level	Affiliate archival	6.42	1.83	1.00																		
Market innovation	Affiliate perceptual	5.07	1.33	0.15	1.00																	
Sales	Affiliate archival	9.21	2.08	0.64	0.19	1.00																
Debt	Affiliate archival	9.30	2.04	0.61	0.07	0.80	1.00															
Return on assets	Affiliate archival	0.02	0.14	−0.07	0.12	0.10	−0.05	1.00														
Years in group	Affiliate archival	4.63	4.10	0.05	−0.04	0.12	0.13	0.05	1.00													
Industry competitiveness	Industry Report	1.96	0.79	0.18	0.10	0.00	−0.06	−0.04	0.01	1.00												
Asset turnover	Affiliate archival	0.87	1.24	−0.14	0.02	0.13	−0.18	0.08	0.00	−0.02	1.00											
Group age	Group archival	5.46	3.69	−0.02	0.01	0.05	0.06	0.05	0.35	−0.01	−0.03	1.00										
Product diversification	Group archival	0.83	0.50	0.06	0.05	0.10	0.12	0.00	0.09	0.07	−0.06	0.20	1.00									
Geographic dispersion	Affiliate archival	1.66	1.11	0.10	−0.06	0.05	0.09	−0.04	0.12	−0.07	−0.03	0.08	−0.08	1.00								
Foreign ownership	Group archival	0.06	0.12	−0.08	0.09	−0.02	−0.07	−0.02	−0.01	0.02	0.03	0.09	0.10	−0.15	1.00							
Govt. employment policy	Affiliate perceptual	2.58	1.92	0.10	0.06	0.06	0.08	0.00	0.00	−0.04	−0.05	−0.07	−0.06	−0.06	−0.02	1.00						
Govt. ownership	Group archival	71.19	34.09	0.10	−0.16	−0.04	0.03	−0.10	−0.07	0.03	−0.07	−0.22	−0.11	0.14	−0.46	0.04	1.00					
Govt. managerial mindset	Group archival	2.72	7.33	0.13	−0.10	0.08	0.11	−0.02	0.07	−0.05	−0.03	0.02	0.15	0.08	−0.03	0.09	0.03	1.00				
Strategic control	Affiliate perceptual	5.30	1.45	0.06	0.13	0.09	0.05	0.03	−0.12	0.03	0.06	−0.11	−0.02	−0.02	0.03	0.05	−0.01	−0.07	1.00			
Financial control	Affiliate perceptual	5.88	1.18	0.05	0.23	0.03	0.01	0.03	−0.05	0.07	−0.03	−0.09	0.04	−0.05	0.02	0.13	−0.01	−0.02	0.39	1.00		
Cultural control	Affiliate perceptual	5.12	1.39	−0.02	0.20	0.00	−0.06	0.05	−0.10	0.08	0.07	−0.14	−0.02	−0.06	0.08	0.11	−0.02	−0.03	0.46	0.45	1.00	
Group interdependence	Affiliate perceptual	2.98	1.89	−0.06	0.12	0.06	−0.02	0.02	−0.06	−0.07	0.11	0.00	−0.04	0.01	0.06	−0.01	−0.11	−0.07	0.24	0.11	0.26	1.00

Notes:
Correlations with an absolute value of 0.080 or above are significant at the 0.01 level (two-tailed).
Correlations with an absolute value of 0.061 or above are significant at the 0.05 level (two-tailed).
N = 1,038.

Table 2. Model results of government and business group influences on firm employment level and market innovation activities

	Firm employment level	*Market innovation activities*
Affiliate level control variables		
Sales	0.55****	0.44****
Debt	0.14****	−0.26****
Return on assets	−0.02	0.04
Asset turnover	−0.16****	−0.11***
Years in group	−0.04	−0.06*
Industry competitiveness	0.18****	0.07**
Group-level control variables		
Group age	−0.03	0.03
Product diversification	−0.02	0.03
Geographic dispersion	0.06***	−0.01
Foreign ownership	−0.01	0.00
Independent variables		
Government employment policy (H1a†, H1b)	0.05**	0.05
Government ownership (H2a, H2b)	0.06**	−0.14****
Government managerial mindset (H3a, H3b)	0.07***	−0.10***
Strategic control (H4a, H4b)	0.01	−0.04
Financial control (H5a, H5b)	0.02	0.20****
Cultural control (H6a, H6b)	−0.01	0.11**
Group interdependence (H7a, H7b)	−0.05**	0.05
Model fit statistics		
χ^2	935.94 (370 d.f.)****	
CFI	0.95	
TLI	0.93	
RMSEA	0.04	

Notes:
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$; all two-tailed tests.
†H1a; Hypothesis 1a, etc.
CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation.

Hypotheses 6a and 6b were positioned as competing hypotheses such that cultural controls would be positively related to either firm employment levels or market innovation. Hypothesis 6a was not supported, as no statistically significant relationship was found between cultural control and firm employment. However, Hypothesis 6b received support, as cultural control was found to be positively related to market innovation.

Hypothesis 7a predicted that group interdependence would be negatively related to firm employment levels. Our model indicated that group interdependence was negatively related to firm employment. Therefore, Hypothesis 7a received support. We found no significant effect of interdependence on innovation. Thus, Hypothesis 7b was not supported.

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DISCUSSION

In this study, we found that all three government influence factors increased firm employment levels, while both government ownership and government managerial mindset among the group leadership produced lower market innovation. Thus, our study suggests that increased government influence leads to negative results for the firm with regard to market innovation, a finding mirrored in recent work by Nee, Opper, and Wong (2007).

We also found that group affiliated firms with stronger group financial and cultural controls reported higher levels of market innovation, while affiliate firms experiencing higher group interdependence reported lower employment levels relative to their firm size. These results are net of the influence of governmental level pressures for increasing employment level. Our perspective is distinct from institutional arguments centred on institutional voids (e.g., Khanna & Palepu, 2000a; Leff, 1978, 1979) in that we focus on the role of business group control systems in directing the activities of affiliates, rather than on the benefits brought by group internal markets. In other words, our perspective is concerned with how the business group can either buffer affiliate firms from institutional pressures, or foster change in affiliate firms relative to these pressures. As such, we suggest that these control systems add value by examining the organizational aspects of business groups which facilitate the coevolution of institutional forces and organizations. Additionally, focusing on group control systems also allows us to identify which structural elements of business groups affect affiliate firm activities or performance, an area that has been identified as ripe for further research (Keister, 2000).

In discussing our perspective, we highlighted the paradox faced by business groups operating in this context, namely the need to pursue a growth orientation through market innovation while facing government influence to maintain levels of employment. While we did not find evidence to support all of our hypotheses, we did find support for the overall contention that government influence and organizational influences through business group characteristics have a significant relationship with firm level outcomes of employment level and market innovation activities. Such evidence lends credence to our contention that business groups' control systems play an important role in managing institutional pressures and fostering coevolution between such institutional pressures and organizational evolution at the affiliate firm level. Business groups, as a hybrid organizational form that lies between markets and formal hierarchies (Haveman & Rao, 2006), foster coevolution of institutions and organizations (i.e., affiliated firms).

The results indicate that none of the three types of business group control systems have a significant effect on employment level. One explanation is that business group influences are more removed (compared with government influences) from the political conflict associated with employment decisions. However, another possible explanation of this finding is that the negative impact of control

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systems on employment may be masked by the benefits that some firms receive from the government to maintain employment levels. Alternatively, it may be that the effect of control systems on employment levels is contingent on the amount of government influence faced by the firm and the group. For example, it may be that, when government influence over the firm is high, these control systems push affiliate firms to maintain high employment levels, while, in the absence of strong government influence, stronger control systems are related to lower employment. We leave these issues to future research.

As hypothesized, higher levels of group interdependence are found to be related to lower employment levels in affiliate firms, although interdependence was not found to have a significant effect on market innovation. This pattern of results suggests that, while interdependence among affiliate firms results in significant cost savings by lowering levels of employment redundancy, this greater efficiency doesn't necessarily allow more resources to be devoted to market innovation activities. Overall, these results suggest that Chinese business groups do play an important role in managing the coevolutionary processes between old and new institutions, between market innovation and those institutional forces focused on higher levels of employment.

Of the seven independent variables we examined, only *strategic control* failed to show a significant relationship to either of our two dependent variables. This last result is somewhat surprising given the importance that *strategic control* has shown on a range of firm outcomes in more developed country contexts. While strategic control may indeed have no influence on employment and innovation outcomes, we speculate that the effect of *strategic control* on these outcomes may instead be contingent on government influence levels. In other words, whereas we assumed that higher *strategic control* would be directed toward the objectives of lowering *employment levels* and increasing *market innovation*, it may be that when government influence is high, the strategic objective becomes maintaining high *employment levels* and *market innovation* is of less importance. Thus, a more in-depth analysis of who controls the group's strategic objectives may be necessary before the effect of *strategic control* on innovation and employment can be ascertained. Future research should be directed at addressing this important issue.

Limitations and Future Research

Since the present study focuses solely on the Chinese context, our specific findings may not be generalizable to other emerging economies, especially as these other economies face somewhat different institutional pressures, perhaps not related to employment levels. However, to the extent that business groups in other developing nations face conflicting and changing institutional pressures, our results suggest that the control systems of the groups in these nations could play an important role in fostering coevolutionary processes among affiliate firms facing diverse institu-

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tional pressures. It would be beneficial to investigate the role of business group control systems in other developing economies as a coevolutionary agent.

A second limitation of our study concerns the cross-sectional nature of our data, which prevents us from drawing strong causal links between variables. Hopefully, this study provides a good foundation for more rigorous future studies. Our results and suggestions regarding conflicting institutional pressures and how group controls facilitate coevolution may provide substantive propositions for longitudinal research.

Additionally, this study does not directly ascertain the quality of the market innovations that are taking place in the affiliate firms. Qian and Xu (1998) argue that, in economies that are centrally planned, a great proportion of the innovation is driven not by the market but by central government officials. This, however, can often result in a lower overall level of innovation quality (Qian & Xu, 1998). Thus, while financial control and cultural control at the group level are promoting higher levels of innovation in their affiliate firms, future research should examine the types or quality of innovations being generated within the context of competing government pressures for both employment and innovation.

Another limitation relates to the perceptual nature of our market innovation variable. While other researchers have also used perceptual measures in assessing some aspects of firm innovation (e.g., Sarkar, Echambadi, & Harrison, 2001; Subramaniam & Youndt, 2005), we would have preferred to use an archival operationalization of this construct. Unfortunately, we did not have access to objective information on two of the three indicators of market innovation (i.e., new products brought to market and market development expenditures) and we found that many firms were unwilling or unable to provide objective information on research and development expenditures. However, we believe that our measure is a good first step toward stronger future operationalizations of this construct.

Finally, our *government ownership* variable is measured at the business group rather than affiliate firm level. While this is not ideal, since group affiliated firms are partly or wholly owned by the parent firm in a business group in China, we expect the influence of state control at the group level will be transmitted to the affiliate firms. Even with our imperfect proxy, the *government ownership* variable is consistently significant in the hypothesized direction. We expect that an affiliate level ownership measure would show even stronger effects.

We see many possible avenues for future extensions of the model we tested. For example, in this study we focused on two factors that can strongly impact business group performance in China: firm employment and market innovation. Future research might study the effect of government intervention on other business group behaviours such as firm growth or internationalization. Research more directly linking government influence to group control systems and characteristics would also be a useful addition to the literature. Despite the often well-meaning intentions of government intervention into the economic realm (e.g., seeking to increase

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general welfare through higher employment levels), there are often adverse consequences that may overwhelm any direct positive benefits. For example, too much concern for social stability may impede the momentum of the institutional transition toward a more market based economy. While we focused our study on a period of time (the late 1990s) when there was a high level of tension between market and state oriented institutional pressures, an updated examination may reveal a different picture. However, by focusing on a time period of conflicting institutional pressures, our study makes a meaningful contribution to a theoretical understanding of institutional change.

Contributions

This study contributes to theory and the empirical literature in several ways. First, a variety of theoretical explanations exist to explain how business group membership may benefit the affiliate firm. We suggest that one important role – thus far overlooked in the literature – is the business group's role in helping the affiliate firm to manage the conflicting institutional pressures that it faces. In making this observation, we contribute to institutional theory. For example, our research suggests that group control systems foster commitment to emphasize market innovation, while at the same time group interdependence enables firm affiliates to reduce employment levels in the face of pressure to retain redundant employees. While much work has been devoted to explaining institutional pressures on firms, less research has been devoted to how firms may effectively respond to that pressure and foster or hinder institutional change (Oliver, 1991). As Peng notes, 'how organizations strategize during *fundamental* institutional transitions still remains largely unknown' (Peng, 2003, p. 277: original emphasis). In China and other emerging economies, this process of responding to institutional change is complicated by the fact that the firm can face multiple conflicting institutional logics at the same time (Keister, 2002). Our study suggests that the control systems associated with business groups may play an important role in the institutional response for many emerging economy firms. As such, our study contributions to the nature of how institutional environments and organizations coevolve (Baum & Singh, 1994).

Second, we contribute to the business group literature by exploring factors affecting innovation activities in business group affiliated firms. Prior research in this area has generally relied on an institutional voids framework in explaining the ability of business groups to improve affiliate firm innovativeness. For example, Mahmood and Mitchell (2004) speak of the 'innovation infrastructure', including superior finances, talent and technology which business groups provide their affiliate firms. Similarly, Chang et al. (2006) rely on institutional holes arguments in their work linking the profitability and technology of sister firms to the ability of a focal affiliate firm to be innovative. Our research builds on this work but suggests that the strength of group control systems have a significantly positive influence on

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affiliate firms' innovation activities. Our work indicates the possibility that even after the institutional environment in a country has developed significantly, business groups could be beneficial for affiliate firm innovation, at least in business groups that have adopted stronger control systems.

Finally, our findings contribute to the political economy of innovation literature. Particularly in emerging economies, governmental policies can have a significant impact on firm strategies, including the adoption of innovation related strategies (Amsden, 1989). In our study, we find that both *government ownership* and a *government managerial mindset* among group administrators have consistently negative effects on firms' innovation activities. This finding corroborates Keister's (2002) finding that government influence (i.e., having a Communist Party secretary as firm general manager) significantly retarded the adoption of a piece-rate wage system, a type of organizational innovation. Our work builds on Keister's not only by examining a different type of innovation (*market innovation*, as opposed to organizational innovation), but also by examining a greater number of potential state influences on firm innovativeness. While China has gradually been reducing its ownership stakes in business groups (Keister, 2000), governmental units retain significant equity stakes in many groups. Additionally, the close relationships between business and government at many levels suggest that there will continue to be movement of former government employees into firm and group leadership roles (Walder, 1995b; Walder, Li, & Treiman, 2000). As a result, our findings suggest that many business group affiliates may continue to face challenges related to poor innovativeness for some time to come.

Policy Implications

Our work has important implications for Chinese government policy. One of the results of this study is that, while government influence can be beneficial from the standpoint of helping the government to meet its goal of maintaining high levels of employment, this same influence works against market innovation. This trade-off must be kept in mind by government officials as they seek to balance these policy objectives. Thus, government officials should be aware that the policy of encouraging the formation of business groups should be expected to have positive consequences in terms of higher market innovation, but potential negative societal consequences in terms of lower employment.

CONCLUSION

Our perspective of the role of business groups enriches other perspectives emphasized in current business group studies. Our examination of the control systems used by business groups in pursuing key organizational outcomes provides a richer, more complex understanding of how business groups can be used as a micro-

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institutional tool to manage the political and economic priorities which may be in conflict in transition economies. As such, business groups facilitate the coevolution of institutional pressures and organizational objectives during this time of change. Hopefully, our study has contributed to a greater understanding of how business groups function in this capacity and to comprehending more fully the effects of business groups both on their affiliate firms and on their respective economies.

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[1] Whenever we use the term 'firm' in this paper, we are referring specifically to the affiliate firm rather than the business group.

[2] Collectively, R&D and other market development activities are referred to in this paper as market innovation (Schumpeter, 1934). We are concerned with this variable at the affiliated firm level.

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Robert E. White (rew@asu.edu) is a doctoral candidate in strategic management at Arizona State University. His research interests include corporate governance, corporate political activity and entrepreneurship.

Robert E. Hoskisson (robert.hoskisson@asu.edu) currently holds the W. P. Carey Chair in Strategic Management at the W. P. Carey School of Business at Arizona State University. He received his Ph.D. from the University of California, Irvine. His research focuses on corporate and international diversification strategies; corporate governance; corporate entrepreneurship and innovation; acquisitions and divestitures; business groups and strategies of emerging economy firms; and cooperative strategy.

Daphne W. Yiu (dyiu@cuhk.edu.hk) is an assistant professor of management at the Chinese University of Hong Kong. She received her Ph.D. in management from the Price College of Business, University of Oklahoma. Her research interests include international diversification strategy, business groups, corporate entrepreneurship, corporate governance in transition and emerging economies.

Garry D. Bruton (g.bruton@tcu.edu) holds the Fehmi Zeko Faculty Fellowship at Texas Christian University. He has published or has forthcoming over 60 academic articles in leading journals including *SMJ, AMJ* and *JIBS.* Professor Bruton is the incoming editor for the *Academy of Management Perspectives* and current President of the Asia Academy of Management.

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