

**THE PERFORMANCE OF BUSINESS GROUP FIRMS DURING
INSTITUTIONAL TRANSITION: A LONGTITUDINAL STUDY
OF INDIAN FIRMS**

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ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: Institutional and transaction costs theories highlight the idea that group affiliated firms outperform unaffiliated firms in emerging economies. The persistence of superior performance for group affiliated firms is, however, questioned by the fast and recent development of markets and institutions in these countries. In this article, we explore this link between firm performance and the evolution of institutional environment.

Research Findings/Insights: The setting of the empirical investigation is India in the post-reform era (post 1990). We test for effects of business group affiliation on firm performance over a 17 year time period from 1990 to 2006. Our findings show that (i) the performance benefits of group affiliation erode with the evolution of the institutional environment; (ii) older affiliated firms are better able to cope with institutional transition than younger affiliated firms; (iii) service-sector affiliated firms are better able to cope with institutional transition than manufacturing-sector affiliated firms.

Theoretical/Academic Implications: Our findings both support the institution- and transaction costs-based theory of business groups, and extends it by incorporating a dynamic and longitudinal component. They also demonstrate – in line with recent works - that the benefits of group membership differ for different types of member firms.

Practitioner/Policy Implications: The article has implications for both managers and policy makers. Managers of business groups should timely adapt their strategy to the evolution of the institutional environment. Policy makers should, instead, devote attention to the consequences of their policies because they may undermine the efficiency of large national companies.

The performance of business group firms during institutional transition: A longitudinal study of Indian firms

INTRODUCTION

Business groups are the dominant organizational form in emerging economies. They consist of individual firms that are associated by multiple links through which they are coordinated in order to achieve common goals (Granovetter, 1994; Leff, 1978; Strachan, 1976). Although business group characteristics differ across countries, they have two peculiar traits distinguishing them from other organizational forms. They are the existence of multiple ties among individual companies, and the presence of an administrative center aimed at coordinating group affiliated companies (Khanna and Rivkin, 2001).

Studies on business groups were fragmented until few years ago. Recently, however, there has been a growing interest of management and organizational scholars in investigating this subject, especially with regard to emerging economies (e.g. Chang and Hong, 2002; Guillen, 2000; Keister, 1998; Khanna and Palepu, 2000; Khanna and Rivkin, 2001). In these countries capital, labor and product markets are characterized by high imperfections, and business groups are seen as organizational solutions to problems arising from inadequate institutional environment (Khanna and Palepu, 1997; Kim, Hoskisson, Tihanyi, and Hong, 2004). According to the institution- and transaction-costs theories, business groups substitute for missing external institutions and create an efficient business environment to their affiliated companies. With some exceptions – mostly related to Japanese groups – empirical evidence supports the view that business groups are efficient mechanisms to solve market imperfections (e.g. Chang and Choi, 1988; Keister, 1998; Khanna and Palepu, 1999 and 2000; Khanna and Rivkin, 2001).

Previous studies on groups analyze the relationship between business group affiliation and firm performance, but mainly at single points in time. The more advanced cross-sectional studies (i) compare the performance effects of business group affiliation across a number of emerging countries (e.g. Khanna and Rivkin, 2001), or (ii) contrast the performance effects of business group affiliation in emerging and developed economies (e.g. Chachar and Vissa, 2005). With few exceptions (e.g. Kedia et al., 2006; Khanna and Palepu, 2000), previous studies have not investigated if institutional transition may have changed the positive effect of business group affiliation on companies' performance (Khanna and Yafeh, 2007).

That being said, the aim of this article is to investigate the impact of the evolution of the institutional environment on the performance of group affiliated companies. Using institutional and transaction costs theories, we hypothesize that group affiliated firms are a superior form of governance in an underdeveloped institutional environment, while they lose their advantage to unaffiliated firms when there is an institutional transition and the environment becomes more efficient-(hypotheses 1 and 2). In line with some recent studies, we also hypothesize that the impact of the institutional evolution will differ for different types of group affiliated firms. More specifically, we hypothesize that older and service-sector affiliated firms are better able to cope with institutional transition than younger and manufacturing-sector affiliated firms (hypotheses 3 and 4).

To test the longitudinal model of institutional transition (Peng, 2003), we collected data on Indian companies over a 17 year period. The Indian institutional context is appropriate for the purposes of our study. First, Indian groups are particularly diffused, and it is easy to identify companies belonging to groups. Second, India is undergoing institutional transition since the early '90s, which provides for a sufficiently large time-period to analyze the hypothesized relationships. Since our data are panel data that combine time series and cross sectional data, we used time series cross section regression analyses.

Our findings show that as the institutional environment evolves (i) the performance benefits of group affiliation slowly erode; (ii) older affiliated firms outperform younger affiliated firms; and (iii) service-sector affiliated firms outperform manufacturing-sector affiliated firms. Our study provides significant theoretical implications. First, our findings both support the institutional- and transaction costs-based theory of business groups, and extend it by incorporating a dynamic and longitudinal component. Second, in line with recent works, our findings suggest that the benefits of group membership differ for different types of member firms.

The article has four sections. In the next section we introduce the main characteristics of business groups and develop our theoretical hypotheses. Following that, we present the methods: the sample, the data collection, the variables and the data analysis. The penultimate section summarizes the results of our statistical analyses. Finally, the discussion section with implications and limitations has been provided.

THEORETICAL DEVELOPMENT

The definition and characteristics of business groups

Business groups are the dominant organizational form in emerging economies. A business group is a collection of legally independent firms that are linked together by multiple ties, including cross ownership, strict market exchanges and/or social relationships (i.e. among influent subjects such as owners or managers) through which group affiliated companies are coordinated in order to achieve common goals (Granovetter, 1994; Leff, 1978; Strachan, 1976). This definition captures two peculiar features of business groups: (i) the presence of multiple ties holding group firms together, and (ii) the existence of coordinated actions enabled by those ties (Khanna and Rivkin, 2001).

These two features separate business groups from other organizational forms, such as independent firms or strategic networks (Khanna and Rivkin, 2001; Yiu, Lu, Bruton and Hoskisson, 2007). First, group affiliated companies are bound together by various and overlapping ties such as cross ownership, interlocking directorates, market transactions, inter-company loans, and social relationships (Goto, 1982). These social and organizational relationships among subjects (e.g. shareholders, managers, etc.) tying together member companies do not exist in most independent firms. Second, inside groups there is usually a core entity (e.g. the founding owner, a financial institution, or a state-owned enterprise) offering administrative control or managerial coordination to affiliated companies (Leff, 1978; Strachan, 1976). For example, the largest business group in India, the Tata group of companies, has Tata Sons as the core entity responsible for control and coordination among member companies. Strategic networks, instead, do not have the presence of this core entity coordinating the operations of member companies.

Business groups are far from being uniform across countries. First, the labels used to define business groups differ across nations. For example, Japanese groups are called 'keiretsu', Latin American groups 'grupos economicos', South Korea groups 'chaebols', and so on (Granovetter, 1994). Second, even the characteristics of business groups differ across countries (Khanna and Yafeh, 2007). In particular, business groups differ among them along many dimensions, such as the types of ties (i.e. cross shareholdings, personal relationships, market exchanges) among affiliated companies, and the intensity of coordination inside the group. Due to these differences, definitions and characteristics of business groups are highly contingent on the institutional contexts in which they operate. For this reason, it is somewhat difficult to compare research work on business groups across different settings because the phenomenon under investigation may be substantially different (Khanna and Yafeh, 2007; Yiu et al., 2007).

The theoretical framework to investigate business groups in emerging economies

The most popular theoretical explanations of the large diffusion of business groups in emerging economies are the complementary institutional and transaction cost theories. Institutional theory underlines that emerging economies are characterized by ineffective institutions and high imperfections in the market for capital, labor, and products. Transaction costs theory indicates that the internalization of transactions inside business groups may solve problems arising from these market failures.

Institutional theory. Institutional theory emphasizes the influence of socio-cultural norms and values, and of law and judicial system on organizational structure and behavior (North, 1990). Institutions are formal (e.g. political rules, economic rules and contracts) and informal (e.g. codes of conduct, norms of behavior and convention) constraints regulating economic activities and human behavior. Informal constraints are embedded in the culture and come to play a role when formal constraints fail (North, 1990). Institutions limit the set of choices of individuals and organizations, providing a stable structure to economic exchanges and reducing uncertainty (North, 1990).

Institutions and the effectiveness of enforcement determine the cost of transacting. Effective institutions raise the benefits of cooperative solutions, while ineffective institutions increase the benefits of defection (North, 1991). Institutions evolve incrementally, and the story of performance of economies can be seen as a story of institutional evolution (North, 1991). In sum, according to this theory (i) the national institutional context has a significant impact on rules of competition, firm strategy, and performance; (ii) a more efficient institutional context favors market exchanges and the growth of the national economy (e.g. North, 1990; Wan and Hoskisson, 2003).

Transaction costs theory. Transaction costs theory considers markets and organizations as two alternative governance mechanisms for managing the exchange of goods, services and financial resources (Coase, 1937; Williamson, 1975 and 1985). Markets and hierarchies are polar modes. Markets have higher incentive intensity and favor rapid and independent adaptation to external changes. Hierarchies have stronger administrative controls and manage properly adaptation in case of bilateral dependency (Williamson, 1991). Managers must adopt transaction costs economizing strategies, i.e. they must choose the organizational form that minimizes the costs implicit in the transaction (Williamson, 1975). When institutions are developed and efficient the market is a superior form of governance, when institutions are underdeveloped and inefficient hierarchy produces better results (Williamson, 1985).

Beyond the pure forms, transaction costs literature acknowledges the existence and the growing diffusion of organizational forms that may not be considered either as markets or hierarchies (Williamson, 1991). Intermediate forms include long term contracts, franchising, joint ventures, and business groups. These governance forms, defined also hybrids, display intermediate characteristics respect to the pure forms. Hybrids are, in fact, characterized by both semi strong incentive and administrative control, and semi-strong adaptation to the two types of changes (Williamson, 1991). Intermediate forms are particularly diffused when both (i) institutions are not developed and efficient, and some control may avoid abuses from the counterpart, and (ii) there is the need of some incentives to foster an efficient behavior of subjects involved in the transaction (Williamson, 1991).

The performance effect of group affiliation in emerging economies prior to major institutional transition

Emerging economies are traditionally characterized by high imperfections in the market for capital, final and intermediate products, and managerial and entrepreneurial talent (e.g. Caves,

1989; Khanna, Palepu and Sinha, 2005; Leff, 1976; Peng and Heath, 1996). In this context, transactions may be particularly costly because institutions for trade and contract enforcement are weak, and partners in a trade are exposed to opportunistic behavior (Khanna and Rivkin, 2001). The presence of information and contracting problems associated with weak market institutions allows the internal market and the group structure to create value. In the absence of specialized intermediaries providing trade, enforcement and communication services, there is, in fact, the opportunity for groups with the appropriate resources and capabilities to fill the 'institutional voids' (Khanna and Palepu, 2000).

According to the complementary institutional and transaction costs theories, business groups may be seen as an organizational solution to problems arising from market failures and inadequate institutional environment (e.g. Encaoua and Jacquemin, 1982; Khanna and Palepu, 1997; Kim et al., 2004). Business groups are created in emerging economies to reduce the high transaction costs in markets for capital (Berglof and Perotti, 1994; Caves and Uekusa, 1976; Daems, 1978; Leff, 1978; Strachan, 1976), entrepreneurial skills (Leff, 1978), intermediate products (Goto, 1982; Kester, 1992), labor (Khanna and Palepu, 1997), and political lobbies (Khanna and Rivkin, 2001). In sum, business groups may be considered as organizational and administrative devices aimed at reducing high transactions costs due to market imperfections (Khanna and Palepu, 2000).

In line with an institutional and transaction cost explanation, some scholars argue that members of business groups can create value through the sharing of the group's valuable resources (Khanna and Palepu, 2000). Empirical evidence shows that firms affiliated with business groups freely share intangible resources, such as R&D, advertising or reputation (Chang and Hong, 2002). Moreover, business groups may share key personnel and talented managers, and provide extensive managerial and technical training to their workers (Chang and Hong, 2000). Especially in the early stage of economic development, when market

institutions are poorly developed, business groups may produce better economic performance also by mobilizing intangible and human resources across companies. They are, in fact, in a better strategic position to control key resources of product and factor markets necessary for smooth functioning of day-to-day business operations. Moreover, group affiliated firms have broader and relatively easy access to capital, both internal and foreign, and can access labor and product markets less expensively than firms that are not part of any business group (Khanna and Rivkin, 2001).

Group affiliation does involve not only benefits, but also costs. Khanna and Palepu (2000) mention at least three sources of costs. First, there could be a conflict of interest between the controlling family shareholders and minority shareholders, which may result in misallocation of capital and cross-subsidization of unprofitable ventures by the profitable ones. Second, there could be inefficient compensation schemes across group companies for internal equity reasons. Lastly, the decisions made at the head office may be suboptimal as it is difficult to acquire expertise in multiple domains at the same time. Chu (2004) mentions other costs of group affiliation may arise out of the information processing limits of organizations and top management.

Despite the presence of some costs for group affiliation, the general view assumes that in emerging economies the benefits of group membership are higher than the costs. Coherent with theory, empirical evidence supports the hypothesis that companies belonging to a group located in an emerging economy have higher financial performance than independent companies. Affiliated companies outperform unaffiliated companies in Korea (Chang and Choi, 1988), Chile and India (Khanna and Palepu, 2000). A recent study investigating the within-country performance effects of business groups in 14 emerging economies shows that affiliated companies outperform unaffiliated companies in several countries (Khanna and Rivkin, 2001). Only in Japan, members of bank-centered groups have underperformed to

comparable unaffiliated firms for many years (Caves and Uekusa, 1976; Khanna and Yafeh, 2007).

In sum, both theory and empirical evidence agree that business groups have a beneficial effect in emerging economies. The institutional and transaction costs theories highlight that business groups may improve the profitability of member firms by filling the voids left by the missing institutions that sustain the efficient functioning of (products, capital, and labor) markets (e.g. Khanna and Palepu, 1997; Kim et al., 2004). Coherent with theory, empirical evidence provide ample support to the idea that business groups serve as organizational responses to the particular institutional context of emerging economies (e.g. Chang and Choi, 1988; Khanna and Palepu, 2000; Khanna and Rivkin, 2001).

The performance effect of group affiliation in emerging economies in the early phase of institutional transition

The institutional environment evolves with time through marginal adjustments (North, 1990: 83). Although institutions evolve through relatively long periods of equilibrium, their development is sometimes punctuated by institutional transitions (Peng, 2003). Institutional transitions are ‘fundamental and comprehensive changes introduced to the formal and informal rules of the game that affect organizations as players’ (Peng, 2003: 275). Large-scale institutional transitions imply a deinstitutionalization, i.e. the erosion or the discontinuity of an institutionalized organizational practice (Oliver, 1992). The deinstitutionalization may erode and challenge existing organization routines and competencies, and so undermine the beneficial effects of business group affiliation.

Peng (2003) developed a two-phase model of market-oriented institutional transitions. He observes that market-oriented institutional transitions imply a movement from one primary mode of exchange – known as relationship-based contracting – to another mode – known as

rule-based contracting – in order to reduce uncertainty (North, 1990; Peng, 2003). In the first phase, the transition introduces uncertainty as new institutions emerge to replace old ones (Oliver, 1992). In the short run the transactions are still dominated by the relationship-based structure, and gradually move to a rule-based structure only in the long run. The long period of incremental evolution may be explained considering both the lack of credible enforcement of the new rules, and the inertia and resistance emanating from existing organizations (North, 1990; Oliver, 1992; Peng, 2003).

The evolution of market institutions leads to an improvement of business competition (Luo and Chung, 2005). Deregulation and privatization remove obstacles to resource mobility and market competition, creating a number of business opportunities. The value of internal market capabilities of business groups decline over time as market institutions develop in the national economic system (Khanna and Palepu, 2000; Peng, 2003). However, in the early phase of transition the market infrastructures continue to be relatively underdeveloped. The void in market institutions (for labor, capital, and products) still creates uncertainty and ambiguity for organizations (Peng, 2003).

There is a time lag between the removal of restrictive policies and the establishment of effective market institutions. The development of market institutions usually take longer because of the presence of strict interrelationships among them (Aoki and Kim, 1995). So, in the early phase of institutional transition, there is both an intensification of competition, as well as a presence of underdeveloped market infrastructures (Gemawhat and Khanna, 1998). During this phase, uncertainties in formal institutional constraints lead managers to often rely on informal and interpersonal relationships (Peng and Heath, 1996). As the economy develops and asks for more specialized transactions – formal institutions being still absent – informal relationships-based dealings are likely to be the most efficient way of exchange (Peng, 2003).

Some empirical studies on emerging economies support the view that in the early phase of transition group affiliated companies still outperform unaffiliated companies. They show that business groups react to the evolution of the institutional environment by increasing their efficiency and improving their performance in the short term. This is possible thanks to the implementation of some strategic actions such as (i) exiting from some peripheral businesses, (ii) making significant investments in new lines of business opened by liberalization, and (iii) strengthening their internal structures and processes to increase their role as intermediaries (Chang and Hong, 2000; Guillen, 2000; Khanna and Palepu, 1999 and 2000). In sum, we hypothesize that:

Hypothesis 1: In the early phase of institutional transition, the performance of group affiliated firms is higher than the performance of unaffiliated firms.

The performance effect of group affiliation in the late phase of institutional transition

In the early-phase new players – such as entrepreneurial start-ups and foreign entrants – introduce new norms of competition centered on capability development. Until new formal rules are introduced and reinforced, the rule-based structure of dealings developed by new firms is not particularly efficient and has little influence on incumbents (Peng, 2003). However, as the transitions unfold, new firms become central players thus making market-based competition the new institutionalized way of managing transactions (Leblebici, Salancik, Copay and King, 1991).

Later on institutional transition results in a more open international trade and investment, and the competitive pressures from foreign multinational companies increase (Lee, Peng and Lee, 2008). Capital markets become better regulated and more open and transparent. At the same time labor and product markets become more competitive. Finally, the development of

market intermediaries in the capital, labor, and product markets favors rule-based and undermines relationships-based dealings (Khanna and Palepu, 1999).

With institutional transition, information flows progressively more freely in the economy, contracts' enforcement is more efficient, and market imperfections and transaction costs are drastically reduced. In these circumstances, group's benefits of overcoming imperfections in capital, product, and labor markets decrease substantially (Guillen, 2000; Kim, Hoskisson and Wan, 2004). The evolution of institutional environments diminishes inexorably the value creating potential of business groups through running internal – capital, labor, and products – markets across their affiliated companies (Khanna and Palepu, 2000). However, despite the pressure to change strategy exerted by formal market-supporting institutions, business groups – because of their deeper embeddedness with the old institutions – are slower than unaffiliated companies to move from relationship-based to rule-based competition (Oliver, 1992; Peng, 2003). In sum, we hypothesize that:

Hypothesis 2: The superior performance of group affiliated firms vis-à-vis unaffiliated firms levels out as the institutional transition unfolds.

The impact of firms' characteristics on the performance effect of group affiliation in emerging economies

The “time-period of existence” can affect the firm distinctive bundle of critical resources and organizational skills, and so may influence its financial performance. In general, the higher is the age of the company, the greater is the firm's embeddedness and the legitimacy in the institutional environment (Yiu, Bruton and Lu, 2005).

The institutional transition implies that legitimacy is no longer valid as the institutional context moves from a relationship-based to a market-based rule of competition (Peng, 2003).

The transition phase requires the development of 'strategic flexibility' helping firms to take advantage of new opportunities (Uhlenbruck, Meyer and Hitt 2003). Firms formed during a certain period are imprinted with the social, cultural, and technical features prevailing in the external environment of that period (Stinchcombe, 1965). Such imprinting may be highly resistant to change and is likely to affect the firms during their entire life cycle. Old firms are more prone than young firms to strategic inertia and are less flexible in terms of adapting to changing external conditions (Hannan and Freeman, 1984). The extent of a firm's embeddedness in the old institutions may become a barrier to sustain its long term performance, and even its survival (Newman, 2000). In other words, older companies formed as a response to policy distortions would perform worse once such opportunities vanish and institutions evolve.

The relationship between firm age and firm performance may be different for group affiliated companies. Young affiliated companies may, in fact, perform worse than old affiliated companies in the new institutional environment. Old firms are more experienced, command greater reliability and legitimacy, receive the benefits of learning, and are associated with first mover advantages (Douma, George and Kabir, 2006). Moreover, old firms have traditionally higher centrality inside the group and stricter relationships with other group companies. They may strongly benefit from the strategy of the group to react to new environmental conditions intensifying the existing relationships and exploiting available group capabilities and resources (Khanna and Palepu, 1999).

On the other hand, young affiliated firms have typically a very high failure rate due to liabilities of newness (Carroll, 1983; Freeman, Carroll and Hannan, 1983; Stinchcombe, 1965). Moreover, young companies do not own stable relationships and amount of sufficient resources (Baum, Calabrese and Silverman, 2000). Finally, they do not have a central position in the group and established relationships with other group companies, and this may, in a

period of institutional change and group difficulties, affect negatively their performance. In sum we hypothesize that:

Hypothesis 3: Older affiliated firms are better able to cope with institutional transition than younger affiliated firms.

Manufacturing and service sectors differ along many dimensions. The services sector has, in fact, unique characteristics such as inseparability, heterogeneity, intangibility and perishability (Boddewyn, Halbrich and Perry, 1986). Due to intangibility as well as simultaneity of production and consumption, for many services storing and managing inventory is impossible (Habib and Victor, 1991). The service industry has high knowledge-intensity, also because, unlike manufactures, services are less capital intensive (Contractor, Kundu and Hsu, 2003). Service sectors also have a higher potential to benefit more quickly from social and relational capital (Hitt, Bierman, Uhlenbruck and Shimizu, 2006). The threshold costs, or investment required for the initial expansion would be far lower than for manufacturing (Hughes and Wood, 2000).

India is revealing surprising strength in skill-intensive tradable services, while Indian manufacturing is not showing similar dynamism (Kapur and Ramamurti, 2001). The development of Indian software and services companies rests on their intensive use of resources (human capital and physical infrastructure) in which the country enjoys international competitive advantage (Porter, 1990). The rivalry has been strong in the Indian software industry because it was not subject to industrial licensing from the central government and the Indian policies have been facilitating easy access to foreign markets for these software firms. Finally, new ventures formation has been fueled by local and overseas Indians who start new companies or supply venture capital (Kapur and Ramamurti, 2001).

In emerging nations like India, knowledge-intensive services such as software, IT, engineering, and healthcare also predominate in international expansion. Emerging nations are beginning to not only develop a significant share in service exports and FDI, but at far higher growth rates than in manufacturing (Braga, 1996; Svetlicic and Rojec, 2003). These sectors are less prone to severe adaptation or assimilation costs owing to the standard nature of these service offerings. Also, the social and relational capital has been very effective in providing know-how, market access, capital, and overall guidance also abroad (Kapur and Ramamurti, 2001). In the majority of service sub-sectors, such as information technology, advertising, engineering services or any involving knowledge-based activities, the comparative capital costs are lower, and operations can be scaled up or replicated at home or in foreign locations fairly easily. In sum, we hypothesize that:

Hypothesis 4: Service affiliated firms are better able to cope with institutional transition than manufacturing affiliated firms.

METHOD

Institutional context in India

Discontinuous and fundamental changes are peculiar characteristics of emerging economies. These countries offer a natural experiment condition where to explore the impact of the emergence of new formal and informal rules on the strategy and performance of group and independent companies (Peng, 2003; Scott, 1995).

India is a classic example of an emerging economy undergoing institutional transition, with steady introduction of liberal trade and FDI policies since the early 1990s. Before the start of the liberalization process in 1991, there were many market imperfections (Douma, George and Kabir, 2006). First, the market for corporate control was almost absent. There were legal

restrictions on the acquisition of shares, and the domestic financial institutions were passive. Second, many Indian corporations were still managed by members of the family controlling the firm. This meant that the market for corporate managers was far from being effective. Third, the product market was shielded from foreign competition by tariffs and other regulations. In sum, the characteristics of capital, managerial, and product market were typical of an emerging economy (e.g. Khanna and Palepu, 1999; Kedia et al., 2006).

After the kick-off of the liberalization process in 1991, there was a dramatic evolution of the Indian institutional context. A takeover codes was issued in 1994, giving birth to the first market for corporate control. Furthermore other steps were taken to improve corporate governance practices and shareholder rights. As a result, foreign capital started to flow into the country, even if there were still limitations on the amount of the shareholding own by foreign investors. India's financial sector reforms started around the same time (early 1990s) with the aim of increasing productivity of the financial institutions by limiting state intervention and enhancing the role of market forces (Howcroft and Ataulloh, 2006). Policies were introduced to liberalize the highly regulated financial system through enhanced competition and efficiency in the banking sector, liberalization of interest rates, reduction of credit controls, development of the government securities market, and introduction of financial innovations.

In general, the objectives of the institutional reforms were to attract foreign institutional investors and encourage entrepreneurship among Indian companies that were typically small to mid-sized. Some of the specific measures included the abolition of licensing for setting up new firms and increasing capacity, gradual abolition of restricted industries for private sector participation, reduction in excise and import duties and corporate tax rates, liberalization of credit policies, creation of statutory bodies for monitoring sector specific market activities, and a gradual withdrawal of the government from the micro-managing the economy. These

measures were intended to support the growth of private sector activities. The evolution in the institutional environment as a result of the above mentioned measures can be gauged from the deposit and lending rates, growth in the foreign investment inflows, increase in Bombay Stock Exchange Index, reduction of transaction costs for transactions in national stock exchanges during the institutional transitions, increase in the number of institutions of higher education operating in India.

In sum, the deregulation of primary markets, after a certain time lag due to some restrictions on the operation of markets for intermediaries, led to a reduction of transaction costs and fostered the development of the national economy (Khanna and Palepu, 1999). India's economy has posted an average growth rate of more than 7% since the mid '90s, and is predicted to continue at this high pace of growth for the foreseeable future.

Sample and variables

The data used in this study covers 547 Indian firms over a 17 year period, from 1990 till 2006. We derived our list of firms from the 2006 edition of the annual database, Prowess, compiled by the Center for Monitoring the Indian Economy (CMIE). The database covers majority of public Indian companies, and is compiled by CMIE using audited annual reports that are provided by the companies. The Prowess database provides information on the identity of owner from which one can identify whether a firm is affiliated to a business-group, foreign-owned or privately-held. In addition, it also provides a range of financial information for the firm. Other international business and strategy scholars have used this database to study Indian firms (e.g. Chacar and Vissa, 2005; Bertrand, Mehta and Mullainathan, 2002; Elango and Pattanaik 2007) with a positive rating of the overall quality and accuracy of this source.

Much effort was expended on creating a consistent sample of firms for which we had 17 years of data series with complete data and for which group affiliation was stable over time.

We concentrated on this sample; though we did robustness checks with broader samples. After data cleaning and accounting for missing information, the final sample had 9,299 useable observations (547 firm x 17 year observations), which is a large and unique database. A total of 403 firms were affiliated to business groups, while 144 privately held and unaffiliated firms.

Measures and analysis

In the following, we describe the operationalization of the variables included in the tested models and the strategy for analyzing the models.

Dependent variable. Financial Performance is measured by the return (profit after tax) on sales (ROS), a commonly used financial performance measure for firms in India. Robustness tests were conducted on other performance measures as return on assets and return on equity and the results were very similar, but the data for ROS were more complete.

Independent variables. Affiliation to a business group is a dummy variable indicating whether the focal firm is majority owned by another firm and thereby belong to a business group or not. Business groups are particularly diffused in India (Douma, George and Kabir, 2006). Groups are usually controlled by a family that sets the strategic direction and manages financial transfers among companies. Thanks to the high disclosure of the information pertaining to group affiliation, it is particularly easy to identify the companies belonging to the same group. Furthermore, firms are usually member of only one group and tend to not change their affiliation. In addition to the main effect of belonging to a business group, we have also created an interaction effect – business group * time – by multiplying the business group variable and the number of years since our window starts i.e. 1990=1, 1991=2 etc (maximum value is 17 for 2006). The purpose of this variable is to detect changes in the effect of belonging to a business group over time.

Young is a dummy variable indicating whether the firm was established before or after 1976. If the firm is established later than 1976 (i.e. less than 14 years old in 1990) then the dummy variable takes the value 1 (273 firms are categorized as young firms) and otherwise 0. In addition, we have created an interaction effect – young * time – by multiplying the two variables.

Service industry is a dummy variable that specify whether the firm belongs to the service industry (value 1) or the manufacturing industry (value 0). 77 firms belong to the service industry, while 470 firms are mainly manufacturing. In order to test hypothesis 4 we have created the interaction effect – service * time – by multiplying the two variables.

Control variables. Total assets and total costs are measured in Indian rupees and have been used as control variables for size of firms and their cost base.

Data analysis. Since our data are panel data that combine time series and cross sectional data we used the appropriate statistical tools for analyzing the data. More specifically, we applied the SAS Procedure TSCSREG (Time Series Cross Section Regression) with a variance component model that uses the Fuller-Battese method in the estimation (SAS, 1999). For this model the performance of the model parameters depends on the statistical characteristics of the error components in the model, which is specified as a model with random firm effects. The random effects (that one can think of as random intercepts) correct for correlation between observations for a given firm (over the observed 17 years) while the random time effects correct for correlation between observations at the same point in time. The random effects reflect the influence of unobserved variables characteristic of the individual firms (e.g. changes in strategy like mergers or sell-offs) and points in time (e.g., yearly fluctuations of the market).

Hypotheses 1 and 2 on the performance effects of business group membership in the case of institutional changes are tested on a sample that includes all firms, while hypotheses 3 and

4 are tested on a sample that only includes those firms that belongs to a business group as these two hypotheses focus on the variation among business group firms.

RESULTS

The results of the panel estimation of the model with random time and firm effects that test hypotheses 1 and 2 are shown in Table 1. The table includes four models and for all four models a Hausman test is conducted in order to test whether adding the fixed effects improves the models, and for all four models the Hausman test turns out to be insignificant (the test value range from 0.06-0.35). This result provide support for the chosen model with random firm and time effects as the alternative model with fixed effects (that take up much more degrees of freedom) is not better than this model.

Having established validity for our model we can turn to the results of the estimation in Table 1. In the two first columns the estimation is conducted over all the 17 years, while the estimation in the third and fourth column is for the years 1990-1995 and 1996-2006, respectively. The years 1990-1995 reflects the early phase of institutional transition, while the years 1996-2006 mirror the late phase of institutional transition. Hypothesis 1 on the performance effect of business group membership in the early phase of institutional transition is most directly tested in the third column, where the business group variable comes out significant (5% level) and positive as expected. In fact, in all the three other models (in Table 1) the business group dummy is insignificant. In particularly, the insignificant parameter for business group in the fourth column on the late phase of institutional transition provides evidence for hypothesis 2 that the positive performance effect of belonging to a business group levels out as the institutional transition progresses. The highly significant (1% level) and negative interaction effect in column 2 tells the same story, namely, that in this context of

Indian firms from 1990-2006 the advantage of being member of a business group compared to an unaffiliated firm diminish over time as the institutional transition are emerging.

(Insert here Table 1)

Table 2 includes estimates only for firms belonging to a business group in order to test hypotheses 3 and 4. The first column provides a model with the main effect of young as well as the interaction effect between young and time. The main effect is positive, but insignificant, while the interaction effect is negative and significant, which indicate that younger firms belonging to a business group are slower to adapt to the new institutional environment in case of transition as proposed in hypothesis 3. Along the same line, column 2 in Table 2 entails both the main effect of being a service firm and the interaction between service firm and time. Both the main effect and the interaction effect turn out to be highly significant (1% level and 5% level, respectively) and positive. This result signifies that among business group firms those conducting service activities are performing better than manufacturing firms and the gap between these firms is increased as the institutional transition in India is unfolded (as also put forward in hypothesis 4).

In five of the six models, the control variable “total assets” turns out to be significant, which imply that size matters. Size has consistently a positive effect on the level of performance. However, the other control variable “total costs” is not significant in any of the six models indicating that this variable has no impact on the performance level of Indian firms.

(Insert here Table 2)

DISCUSSION

Our findings contribute to the understanding of the link between firm performance and institutional evolution. They show that (i) business group affiliated firms outperform unaffiliated firms in early phase of transition, while they lose their advantage in the latter phases of transition, (ii) benefits of group membership differ for different types of member firms; (iii) a time series cross-sectional approach may improve the reliability of findings on the effects of group membership during institutional transitions.

The group affiliated firms' performance during institutional evolution. Theoretical contributions and empirical evidence suggest that group affiliated companies may have a superior performance in emerging companies (e.g. Chang and Choi, 1988; Keister, 1998; Khanna and Palepu, 1999 and 2000; Khanna and Rivkin, 2001). The rationale is that in emerging economies capital, labor and product market are characterized by larger imperfections and in this situation the internalization of market transactions may lead to a superior performance (Peng et al., 2005).

Some recent works underline that the group effect may decrease over time since markets became more efficient (Chang and Hong, 2002). Our study both supports this view, and extends it by adding a dynamic and longitudinal component (Peng, 2003). Our results show, in fact, that in early periods of institutional transition characterized by market imperfections and weak institutions group-affiliated firms perform better than unaffiliated companies, while in a subsequent period characterized by greater market efficiency and stronger institutions group affiliated firms lose their superior performance. In sum, our findings support and extend the institution- and transaction costs-based theory of business groups through the analysis of the group effect during institutional transitions.

The homogeneity or heterogeneity of group membership benefits across different member firms. Traditional literature and studies on business groups rest upon the premise that benefits

and costs of group affiliation are shared equally among member firms (Khanna and Rivkin, 2001). Consistently, prior research did not address if the heterogeneity among member firms may influence the appropriation of benefits of group affiliation (Kim et al., 2004). The conceptualization and the empirical analysis of this interesting question are still relatively underdeveloped.

However, recently, some works indicated that the benefits of membership may differ for different member firms (Kim et al., 2004; Jameson, Sullivan and Constand, 2000). In particular, their findings indicate that, depending on power-dependence positions in the keiretsu (Kim et al., 2004; Jameson et al., 2000), some members enjoy more and different benefits than others. Our findings, in line with recent works, suggest that the benefits of membership differ for different member firms. In fact they indicate that the influence of the institutional transition on the performance of group affiliated companies differ for age (young versus old) and sector (manufacturing versus service). In particular, older and service firms are more able to cope with institutional transition than younger and manufacturing companies.

Longitudinal versus cross-sectional studies. Previous works have been criticized because they adopted a static approach and were based on cross-sectional data (Newman, 2000). Due to these characteristics, they failed to provide temporal benchmarks for organizational transformations (Newman, 2000). Furthermore, previous studies tend to use publicly traded firms, because of the difficulty of getting data on unlisted companies (Khanna, 2000). In this way they undermine the extension of the phenomenon of business groups that are diffused among both listed and unlisted companies.

Mixed findings of previous studies (Khanna and Yafeh, 2007; Yiu et al., 2005) may be also due to the choice of the period of investigation that may include both pre and post transition years. Our study goes beyond the main critic about cross-sectional studies, i.e. that they are heavily influenced by their sample period (Peng et al., 2005). We have chosen a long sample

period that allowed us to track the dynamics between institution and market forces on the one hand, and group affiliated and unaffiliated companies' performance on the other hand.

Managerial implications. The paper has also some implications for practitioners. First, our results advise managers of business groups to check the evolution of the institutional environment, and to adapt groups' characteristics to this evolution. As the institutional context evolves, the benefits of group affiliated companies may diminish, and new strategies should be developed. Firms failing to adapt to new institutions may find their previous fit with old institutions to be unable to guarantee their future performance, and even their survival (Wright, Filatotchev, Hoskisson, and Peng, 2005). Second, our study advises policy makers to devote attention to the consequences of their policies aimed at developing market efficiency. Policy makers are reshaping the business and institutional environment of emerging economies through waves of deregulation, and in some countries they have also advocated the shrinking of business groups to foster the efficiency and the welfare of the national economy (Khanna and Rivkin, 2001). Our results suggest that these policies have strong desired effects on the transparency and efficiency of the market, but may also strongly undermine the efficiency of large national groups. For this reasons, policymakers should both evaluate costs and benefits in the short and long term, and manage the transition of national companies and groups from old to new institutional contexts.

Limitations and future research. We acknowledge that our study has some limitations. First, group definition varies substantially across countries and it is problematic to develop a study covering a number of countries (Khanna, 2000). For this reason, we decided to investigate business groups in a single country, i.e. India. India represents an ideal search laboratory to develop our study. Indian economy is dominated by large business groups and group membership is clearly defined (Khanna and Palepu, 2000). India is the second largest emerging economy and its growth rate is second only to China (Kedia et al., 2006). Moreover,

in the '90s the Indian Government started a process of transition to more liberalized and competitive economy. We acknowledge that our choice may bias our results in some way, because some nation-specific conditions may influence the analyses. Future studies may extend our results covering other countries with such long sample period.

Second, as previous studies, also our research suffers of some econometric problems. In particular, it is problematic to understand the causality between variables because some unobserved factors might cause both group affiliation and firm performance. Moreover, reverse causality may be difficult to observe, i.e. more or less profitable companies may join the group for some unexplored reasons. More in depth, the actual mechanisms of how the changes in the market and institutional environment impact group performance remains – as in most previous studies – largely unexplored. Future studies should be aimed at investigating the direct impact of institutional transitions on group strategy and performance (Kedia et al., 2006; Khanna and Yafeh, 2007).

CONCLUSION

Our research investigated the link between firm performance and the evolution of institutional environment in emerging economies. Evidence from our study indicates that in the first phase of transition group affiliated companies continue to outperform unaffiliated companies, while in the second phase they lose their advantage. Furthermore, our findings show that benefits for group membership are not homogeneous, but differ by age and sector of affiliated companies. These findings expand traditional understandings of the relationship between firms' performance and institutional context in emerging economies, and provide further support to the idea that the relative performance of group affiliated companies is contingent upon both the characteristics of the institutional context, and their peculiar features.

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Table 1: Panel Estimation med random effects on all firms (547 firms)

Variable	Return on sales (ROS)		Return on sales (ROS)	
	All 17 years		Year 1990-1995	Year 1996-2006
Constant	-0.10 (0.16)	-0.10 (0.04)	0.06 (0.08)	-0.19 (0.24)
Business Group	-0.06 (0.11)	0.12 (0.12)	0.10** (0.05)	-0.14 (0.16)
Business Group*time		-0.02*** (0.01)		
Total assets	0.01** (0.005)	0.01** (0.005)	0.01 (0.01)	0.01* (0.007)
Total costs	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Young	-0.22** (0.09)	-0.22** (0.09)	-0.06 (0.04)	-0.31** (0.21)
Service	0.20 (0.13)	0.20 (0.13)	0.04 (0.06)	0.33* (0.19)
<i>N (firm-years)</i>	9,299	9,299	3,282	6,017
<i>R-square</i>	0.01	0.02	0.01	0.02
<i>Hausman test</i>	0.19 (2 df)	0.25 (3 df.)	0.35 (2 df)	0.06 (2 df.)
<i>Variance components:</i>				
<i>Firm</i>	0.54	0.54	0.35	1.38
<i>Time series</i>	0.02	0.02	0.01	0.01
<i>Error</i>	10.87	10.23	7.38	12.36

*,** and *** are 10%, 5% and 1% level of significance, respectively

Table 2: Panel Estimation med random effects with firms belonging to a business group (403 firms)

Variable	Return on sales (ROS)	
	All 17 years	
Constant	0.02 (0.08)	-0.36** (0.15)
Young	0.16 (0.14)	
Young*time	-0.05*** (0.01)	
Service		0.47*** (0.18)
Service * time		0.02** (0.01)
Total assets	0.01* (0.005)	0.01** (0.005)
Total costs	-0.01 (0.01)	-0.01 (0.01)
<i>N (firm-years)</i>	6,851	6,851
<i>R-square</i>	0.01	0.02
<i>Hausman test</i>	0.37 (3 df)	1.25 (3 df.)
<i>Variance components:</i>		
<i>Firm</i>	0.53	0.64
<i>Time series</i>	0.02	0.02
<i>Error</i>	12.30	9.23

*,** and *** are 10%, 5% and 1% level of significance, respectively

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