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***Insider Lending and Economic Transition: The
Structure, Function, and Performance Impact of Finance
Companies in Chinese Business Groups***

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**INSIDER LENDING AND ECONOMIC TRANSITION:
THE STRUCTURE, FUNCTION, AND PERFORMANCE IMPACT OF
FINANCE COMPANIES IN CHINESE BUSINESS GROUPS**

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ABSTRACT

During the 1980s, China experienced dramatic real growth without the benefit of a well-developed financial system. China's experience during that decade provides an interesting contrast to evidence that real growth is strongly correlated with the development of an economy's formal financial system. Also during the 1980s, business groups were developing among Chinese firms. Many business groups, almost immediately after their formation, established finance companies, specialized firms that collected and redistributed funds within the group and also obtained funds through state banks on behalf of member firms. As such, the finance companies engaged in a type of "insider lending" that economic historians argue has aided firms in overcoming the challenges associated with poorly-developed formal financial markets in other developing economies. I examine the emergence, structure, and performance impact of insider lending arrangements in Chinese business groups using data on China's 40 largest business groups and their 535 member firms in 1988 and 1990. The analyses reveal that the presence and predominance of insider lending arrangements in the business groups positively affect the financial performance (profitability) and productivity (output per worker) of firms, particularly where markets have been slow to develop.

INSIDER LENDING AND ECONOMIC TRANSITION: THE STRUCTURE, FUNCTION, AND PERFORMANCE IMPACT OF FINANCE COMPANIES IN CHINESE BUSINESS GROUPS

I. INTRODUCTION

During the 1980s, China experienced dramatic real growth without the benefit of a well-developed formal financial system. Equity markets were rudimentary, with most of the nation's large domestic banks operating under the aegis of the Central Bank and engaging primarily in government-directed credit extension (Karmel 1994). State funds were limited and were distributed based on social and political, rather than performance, criteria (Li 1995; Spiegel 1994). Private and foreign banks were only permitted to operate under highly constrained conditions, and while Chinese stock markets had begun to develop, trading on these markets remained restricted and provided little capital to firms (Gong 1995). Yet real growth – at both the firm and aggregate levels – was dramatic. Between 1981 and 1990, the annual increase in industrial value added averaged 11.7%, and GDP grew at an average annual rate of 10.4%, or 8.7% per capita (Asian Development Bank 1996).

China's experience during that decade presents an interesting contrast to evidence that real growth is strongly correlated with the development of an economy's formal financial system. Levine and Renelt (1992), Demirguc-Kunt and Levine (1996), Levine and Zervos (1996), and Demirguc-Kunt and Maksimovic (1996) all document a strong, positive first-order relationship between an economy's real growth (both aggregate growth and growth at the firm level) and the development of the economy's formal financial system. While both a banking system and markets for trading securities seem to be important contributors to long-run growth (Levine 1997), Chinese firms were able to engineer rapid and sustained growth without access to either.

During the 1980s, Chinese firms were also involved in an experiment with the formation of business groups. As part of industrial reform, central authorities transferred the control of many state-owned firms from government ministries to newly-emerging business groups (*qiye jituan*). Business groups are coalitions of firms, bound together by varying degrees of legal and social connection, that transact in several markets under the control of a dominant, or core, firm (Granovetter 1995). In the mid-1980s, the Chinese state began to encourage the formation of such groups by permitting firms to acquire ownership rights in each other and by reducing its own role to that of a shareholder with limited liability and authority (Dong and Hu 1995; Li 1995).¹ By the early 1990s, there were more than 7,000 known business groups in China, (Reform 1993) and the assets of state-owned *qiye jituan* was 1.12 trillion *yuan* (\$135.70 billion), one-quarter of the country's total state-owned assets (Kan April 29, 1996).²

¹While China's two securities markets did not officially open until 1991, many firms issued "stocks" as early as the late 1980s. By the mid-1990s, interactions with foreign firms and the increasing tendency of Chinese firms to list on foreign securities exchanges began to render the meaning of stock ownership in China consistent with its meaning in the West, particularly in the U.S. (Dong and Hu 1995; Xie 1996). State-owned enterprises (SOEs) related to national security, defense, advanced proprietary technologies, and scarce mineral mining cannot be sold to private or foreign investors. An SOE in a central industry (energy, transportation, or communications) may be sold, but the state maintains a majority share (Bureau of State Assets Management January 1, 1995; Dong and Hu 1995).

²There are two types of business groups in China: groups of small, often private firms that resemble the *guanxi qiye* of Taiwan (Fields 1995); and *qiye jituan*, groups of large, primarily state-owned firms that are more similar to Japan's *keiretsu*. Of course, it is difficult to make

Membership in a business group has important implications for the financing options a firm faces in China. Therefore, group membership may account for improvements in the financial performance some firms experienced during the 1980s, despite the absence of a well-developed financial market. In particular, many business groups, almost immediately after their formation, established specialized firms (*caiwu gongsi* or finance companies) that collected and redistributed funds within the group and that obtained funds through state banks on behalf of member firms (Shi 1995). As such, the finance companies engaged in a type of "insider lending" documented by economic historians in 19th century America (Lamoreaux 1991, 1994) and Europe (Munn 1981; Tilly 1966). Research on business groups in Latin American (Balmori, Voss, and Wortman 1984; Strachan 1976; Strachan 1979) and other Asian countries (Amsden 1989; Fields 1995; Lincoln, Gerlach, and Ahmadjian 1996) also suggests that informal lending arrangements (e.g., insider lending) are one advantages of this organizational form because it substitutes for the existence of a formal financial system and presumably allows funds to be

generalizations across business groups in any context. In Japan, for instance, horizontal and vertical groups vary from each other and within type in their patterns of financing, intragroup trading, resource mobilization, and allocation patterns. Saying that the Chinese groups resemble keiretsu is, therefore, an oversimplification. In comparing the Chinese groups to the small, private groups of Taiwan and the family-centered groups of Korea, however, we find more similarities with the *keiretsu*. This of course, is not coincidental. The Chinese government deliberately molded the *qiye jituan* in the image of the *keiretsu*. I focus on the second type of business group in China because they are vastly more prevalent than the first. Estimates of the proportion of state-owned firms that are members of *qiye jituan* range from 20 percent to more than 50 percent (Li 1995).

allocated to their highest return uses, at least within a particular group.³ In addition, allocating funds within a group has evident informational advantages over financial transactions that take place in more impersonal financial markets (Aoki 1982), suggesting that firms with access to informal financing arrangements will perform better than their counterparts that do not have access to these arrangements.

I investigate the emergence and performance impact of insider lending arrangements in Chinese business groups. The next section provides an overview of existing research on insider lending and explores the implications of informal lending arrangements for firms in developing economies. The third section details the process by which insider lending arrangements have emerged in China in the form of finance companies in business groups. The final section analyzes the impact of the Chinese finance companies on the financial performance (profitability) and productivity (output per worker) of the groups' member firms. This research relies on 1988-1990 panel data that I collected on the structure of the 40 largest Chinese business groups and the financial performance of their 535 member firms.⁴ I collected the majority of the data during 1995 and 1996 in interviews with the managers of the groups' core firms.⁵ The core

³I refer to these arrangements as "informal" to contrast them with a formal financial system.

⁴I use data from 1988-90 for two reasons. First, the groups did not begin to establish finance companies until the late 1980s, so these data allow examination of the insider lending relations in the early stages of their development. Second, by the mid-1990s nearly all large business groups had finance companies; thus the early data maximizes variation in the test variables for the analyses.

⁵I conducted all interviews in Chinese without the assistance of a translator. I began with 1990 data that Robert Feenstra and Gary Hamilton obtained from the Chinese Economic and Trade

firms are located in fifteen provinces and in Beijing, Tianjin, and Shanghai (municipalities that are directly under the jurisdiction of the central government). The member firms are located in all provinces, autonomous regions, and independent municipalities. The business groups in the data set accounted for 68 percent of the total assets of state-owned business groups in 1990. The member firms are in a variety of industries; most firms are former state-owned enterprises, although joint ventures and collective enterprises are also included.⁶

Commission and collected an additional year of data (1988), corrected errors in the original data, and added five-times the original number of variables. To maximize accuracy, I personally copied data from the firms' financial statements, spoke with managers formally and informally (out of the plant), and validated the data against other published sources. While errors may still exist, the data appear consistent with other estimates of firm performance (Jefferson and Xu 1991; Naughton 1995). I also conducted qualitative interviews in the 40 largest groups, in a random sample of small, medium, and large groups in Shanghai, and in additional groups in eight cities and several underrepresented industries. It would be ideal to compare firm performance in the late 1980s to pre-reform performance or performance prior to business group membership. However, such data is not available.

⁶A collective is jointly owned by a "guardian" organization (another firm, a social organization, or a government agency) and a rural township or urban municipality. Collectives existed prior to 1978 but were often ignored by the state planning system. Since reform, they have thrived because of their flexible management systems, low labor costs, and ability to retain profits (Oi 1990; Walder 1995).

II. INSIDER LENDING AND ECONOMIC TRANSITION

Economic historians have documented the practice of insider lending in emerging market economies and argue that these informal finance arrangements may aid firms in the developing economies overcome obstacles associated with poorly-developed formal financial systems. One of the most well-known accounts of informal lending arrangements is Lamoreaux's study of banks in early 19th century New England (Lamoreaux 1991, 1994). Because branch banking was not permitted at that time in the U.S., bank operations were confined to local communities. Banks rarely provided financial services to ordinary households; typically, banking customers were local businessmen who exchanged IOUs for short-term loans, guaranteed by a third individual. These early banks also obtained their funds from different sources than modern banks. Whereas modern banks rely on deposits, the early banks issued currency (banknotes), non-interest-bearing IOUs, and the bulk of a bank's liabilities were usually in shares of its own capital stock. Moreover, the management structure of the early banks differed from that of modern banks. While modern banks have elaborate management structures, their predecessors had only a few salaried workers. The real managers were the directors, one of whom was elected as president and was paid a small salary (Lamoreaux 1994).

Also in contrast to modern banking practices in the U.S., directors in the late 19th century routinely funneled the bulk of the money under their control to themselves, their relatives, or others with personal ties to the board (Lamoreaux 1986). Lamoreaux labels this practice "insider lending" and argues that it is the key to understanding not just the operation of the early banks but also the key to understanding financial development in the United States (Lamoreaux 1991, 1994). As Lamoreaux points out, insider lending was neither illegal nor done secretly and "investors knew that when they bought stock in a bank they were actually investing in the diversified enterprises of the institution's directors" (Lamoreaux 1994:7). Moreover,

Lamoreaux's research demonstrates that failure to regulate insider lending had few adverse (and possibly had quite positive) consequences for the economy and the development of the U.S. financial system. Researchers have documented the occurrence of similar insider lending arrangements during the emergence of financial markets in England (Allen 1993; Cottrell 1980), Scotland (Allen 1993; Munn 1981), Germany (Tilly 1966), and other European economies (Cameron, Crisp, Patrick, and Tilly 1967; Mayer 1990).

While they are seldom referred to as insider lending arrangements, the banks associated with business groups in many Asian countries engaged in activities during economic development that bear strong resemblance to the informal financing arrangements documented in the west. For example, the pre-WWII Japanese economy was dominated by *zaibatsu*, or family-centered holding companies. The post-war American occupation forces attempted to destroy these groups, but as soon as the U.S. forces withdrew from Japan, modern business groups (*keiretsu*) emerged in their place (Gerlach 1992; Johnson 1982). The Japanese government encouraged the formation of both the *zaibatsu* and the *keiretsu*, in large part, because of the group's potential to provide financing to firms during the development of Japan's modern financial system. After World War II, government-related banks were able to supply funds to the *keiretsu*, but firms found it more efficient to obtain capital from the banks affiliated with the group. Moreover, the Tokyo Stock Exchange was not truly an option for corporate finance because, while it had begun to develop prior to the war, it was closed during the war years and took several years to regain strength and the confidence of investors before it was a viable alternative for corporate finance (Miyashita and Russell 1994).

In the early stages of development, the banks that were allied with *keiretsu* were small financial concerns that collected and redistributed money within the group. Over time, firms

began to cluster around the banks, and the banks quickly became very powerful, "main" banks that not only made loans but also monitored group performance, held equity in companies, and provided management assistance to the business group's member firms. Only after Japan's economy had developed did they become major, western-style banks.⁷ In Japan today, firms almost always develop a close relationship with a single bank on whom they rely for the majority of their financing (Gerlach 1992; Miyashita and Russell 1994). The business groups of South Korea (*chaebol*) are strikingly similar to Japan's keiretsu, and the role banks have played in these groups is similar to the Japanese case as well (Fields 1995; Steers, Shin, and Ungson 1989:46; Whitley 1990). Researchers have documented similar phenomenon in Taiwan (Hamilton and Kao 1990; Whitley 1991), Hong Kong (Wong 1991), India (Hazari 1966), Singapore (Hock 1991; Kiong 1991) and several Latin American countries (Balmori, Voss and Wortman 1984; Camp 1989; Strachan 1979).

There are several explanations for the role insider lending arrangements have apparently played in the emergence of financial markets. First, insider lending substitutes for the existence of a formal financial system, giving firms access to otherwise scarce capital (Goto 1982; Lamoreaux 1986). In the early stages of economic development, financial markets tend to be inadequate at allocating funds. Commercial banks, if they exist, are likely to be inefficient, and securities exchanges are likely to provide few opportunities for raising capital. Informal

⁷Because of space limitations, my discussion of the history of banking in each context is necessarily limited. For more detailed accounts of prewar business groups in Japan, see Molony (1990) or Cusumano (1985). In addition, Mark Fruin's (1983) excellent study of the Kikkoman company is an insightful account of a rural business group in prewar Japan. On the dissolution of the *zaibatsu*, see Hadley (1970).

financing arrangements provide a small-scale substitute for a financial market, making it possible for firms to cover short-term operating expenses, if necessary, and to engage in research and development and other more long-term endeavors. Informal financing arrangements also allow funds to be allocated to their highest return uses, at least within a particular group of firms. An economy without a well-developed financial market is unlikely to distribute funds efficiently among competing interests. The group of firms engaged in insider lending substitutes for a financial market, allocating funds with some degree of efficiency. Similarly, the centralization of funds within a group of firms provides opportunities for diversification and, through economies of scale, to engage in activities that might not otherwise be possible.

Insider lending within a group of related firms can also mitigate certain informational asymmetries and reduce transaction costs, allowing firms to gain control over their environments. Informational asymmetries and other uncertainties that make the environments in which corporate actors operate highly unpredictable (Cook 1977) are particularly apparent when formal financial markets are not well-developed. During development, if banks exist, they are likely to be skeptical about potential borrowers with whom they are unfamiliar. Informal finance arrangements, that are often based on trust among well-acquainted parties, reduce such risks by reducing the amount of information unknown to each party. As such, relations based on trust, such as those present in most insider lending arrangements, may also reduce transaction costs, such as those associated with investigating the reliability of potential borrowers (Williamson 1981). Thus, because they tend to reduce informational asymmetries and transaction costs, informal finance arrangements tend also to facilitate improved firm performance.

III. THE EMERGENCE AND STRUCTURE OF CHINESE BUSINESS GROUPS AND THEIR FINANCE COMPANIES

The Emergence of Business Groups in China

Chinese reformers began to encourage the formation of business groups in the mid-1980s, several years after the start of industrial reform. Before reform, organizations in China were all part of the state administrative rank system (Walder 1992) and had little choice in how or with whom they conducted business. While central planning in China was far less comprehensive than in the former Soviet Union (Jefferson and Rawski 1994), China's economy was unquestionably orchestrated by a myriad of administrative bureaus, responsible for a particular segments of the economy. In 1964 (at the Third National People's Congress) and again in 1975 (at the Fourth National People's Congress), Premier Zhou Enlai declared that a central goal of the Chinese government was to modernize the country's economy by the year 2000. Part of this reform involved the transfer of control of many formerly state-owned firms from administrative bureaus to business groups. At the same time, the state began to reduce its own role in many of these firms to that of a shareholder with limited liability and authority.

As the Japanese government did in the 1880s and then again in the 1950s, the Chinese state participated actively in the formation of business groups. On July 1, 1980, in a document called *Provisional Regulations Regarding the Promotion of Economic Alliances*, the State Council began to outline the process by which it planned to promote the formation of business groups and to specify more precisely its goals for the structure and function of the groups (PRC 1980). In 1986, the State Council issued a second document called *Regulations Regarding A Few Problems Related to the Further Promotion of Lateral Economic Alliances* that listed more specific goals for the groups and addressed problems that had already begun to arise in the experimental groups (PRC 1986). These documents were particularly important to managers

because they indicated that the state was serious about firm autonomy, in general, and the formation of business groups, in particular. The finance director in a large chemical group in Jilin Province told me that these documents, though issued several years apart, marked a dramatic change in his own attitude about reform. He claimed he knew that the state was (and still is) capable of changing its direction at any moment, but he added that their willingness to deal with practical problems surrounding the formation of the groups signaled to him a real difference in the direction of Chinese industry (March 1996).

The second crucial division in the history of the Chinese business groups was the 1987-1989 period during which groups emerged rapidly in the state-owned sector. In 1987, the Committee for Economic System Reform and the National Committee on Economic Alliances began to work together to address particular issues regarding the function and operation of the groups. These two organizations issued a joint document called *A Few Ideas Regarding the Establishment and Development of Business Groups* that outlined the state's conception of its role in the establishment and subsequent management of the groups and that provided additional incentives for firms (particularly state-owned enterprises) to join groups (PRC 1987). During this period, numerous groups emerged, primarily among state-owned firms. Estimates of the number of groups that existed at the end of this period range from 10 to about 50 and vary with definitions of ownership. Most importantly, during this period, the state not only continued to encourage the groups to develop, but it repeatedly voiced its support and demonstrated its commitment through subsidies and other forms of assistance and protection to the groups that did emerge (personal interviews, June 1995, March 1996).

The final stage, to date, in the history of the Chinese groups is the period from 1990 to the present. The 1990s have seen a rapid expansion of the business group phenomenon in all

sectors of the economy. Official estimates indicate that there are more than 7,000 registered groups at the end of 1993, and the unofficial estimates of academics and government officials suggest that the number of unregistered groups may push that number closer to 10,000 (personal interviews June 1995, February 1996, September 1996). During the 1990s, the Chinese state has continued to support the groups, in anticipation that they will contribute to cost containment through economies of scale, a decrease in the reliance by firms on the state to cover operating deficits, improved firm performance, increased total output, improved relations among firms and scientific research institutions, improved research and development in order to decrease reliance on foreign technology, international competitiveness, and the protection for firms from competition (personal interviews March 1996; Li 1995).

The Structure of Chinese Business Groups

The ownership of both the core firm and its subsidiaries in a Chinese business group typically takes one of five forms. The first form is investment, in which the state or another investor owns a portion of the firm's stocks or other assets. The second form is stock control, in which the investor owns a majority share of the lower firm. The firm may also be involved in a joint stock relationship in which a portion of its assets is owned by another firm in which the focal firm also has an interest. A more extreme case is a situation in which two firms each control a majority of each others stock. Finally, the ownership of either the core firm or its subsidiaries may be proprietary, that is, a right related to goods or other products. It is often the case that the state owns completely or in part the group's core firm and the core firm owns completely or in part the firms under it. However, even if a firm is state-owned, once it enters a group, it is controlled by the central firm in the group. Though rare, it is also possible that the core firm is completely owned by private individuals.

The core firm (or parent company or head office) is typically a large industrial or commercial enterprise. It is possible for the core firm to be a pure holding company, but this is also rare in China. There are three basic organizational structures among Chinese business groups. In the first structure, the core firm is a head office (*zong gongsi*), and the member firms are constituent companies (*fen gongsi*). In the second, the core firm is a head office (*zong gongsi*) which oversees an enterprise office (*shiyebu*), and the enterprise office, in turn, manages several factories (*gongchang*) or production companies (*shengchan qiye*). The third structure is headed by a parent company (*mu gongsi*) which has several subsidiary or “child” companies (*zi gongsi*) under it. In this structure, it is also common for the subsidiaries to have one or more of their own subsidiaries (*sun gongsi* or grandchild companies).⁸

Before reform, the government oversaw bureaus (*ju*) that were responsible for running the companies under them. These companies were generally all in the same industry. Since reform, companies have become increasingly self-sufficient. The former bureaus still exist and invest in the companies, so they still have a stake in the companies; however, they are no longer solely responsible for the performance of the firms. In many cases, the former administrative bureaus have become the core firm of a business group and are still controlled by the state, particularly in central industries (*zhizhu hangye*). The degree of control the state exercises over

⁸If a business group is part of a holding company, it is also likely that the holding company owns other groups as well. The result is that another level of hierarchy is added to the group structure. That is, the holding company owns several group companies, and the group companies each own their own set of subsidiaries. In this type of structure, the holding company is referred to as the grandparent company (*zumu gongsi*), the group company is the parent company (*mu gongsi*), and the member firms are known as subsidiaries or child companies (*zi gongsi*).

the core firms in business groups, though, is much less than the control it once exercised over the administrative bureaus. The core firms are now able to expand the group into various industries. Even when they are state owned, they can make most of their production decisions.

In the typical business group, the finance company is located organizationally directly under the management council or enterprise office. The finance company collects and redistributes funds to the firms in the group, aids the firms in investing their excess funds, and otherwise acts as a bank to the member firms. The first finance company was established in 1987. By March 1996, 65 finance companies existed, and their total assets are 82.5 billion *yuan* (\$9.9 billion). Moreover, the finance companies are performing well financially. The total profits for all such firms was 2.38 billion *yuan* (\$286.7 million) at the end of 1995. The finance companies were originally experimented with in the central industries (energy, steel, chemical, and petrochemical), but they spread rapidly throughout all industries.

Figure 1 illustrates the basic organizational structure of a finance company.⁹ At the end of the 1980s, the finance companies were officially overseen by the Bank of China, although they were actively run by the core firm's board of directors via the president of the core firm. The actual head of the finance company was usually the president of the finance company or the core firm's vice president for finance. Most finance companies had two divisions, as depicted in figure 1. The first was overseen by the general manager for finance and was responsible for activities such as auditing, benefits, and tracking the performance of the finance company and its clients. The second division was headed by the chief auditor and includes accounting and related sections. Unlike banks in other business groups, China's finance companies are not true banks. They receive their funds from other member firms or through application to state-owned banks.

⁹The finance company is located under the management council.

The primary purpose of the finance companies is to redistribute funds within the group. In addition, the finance company aids member firms in obtaining funding from outside sources (including from state banks and other investors) and aids member firms in making investment decisions.

(Figure 1 about here)

IV. FINANCE COMPANIES AND FIRM PERFORMANCE

If, as economic historians have argued, insider lending arrangements substitute for more well-developed formal financial markets and give firms access to otherwise scarce capital during development, these arrangements should translate into relatively high levels of performance for firms with access to them. In the Chinese business groups of the late 1980s and early 1990s, this implies that firms in business with finance companies would have performed better financially and been more productive than firms in business groups without finance companies. This also implies that the more active the finance company, the better the performance of the firms it serves. Moreover, the argument that the finance company substitutes for a more well-developed financial market implies that the impact of the finance company should be stronger in less marketized areas of China where finance options through the formal (external) financial market are not available.

To test these ideas, I use the data described in the introduction, which includes information on the structure of China's 40 largest business groups in 1988 and 1990 and financial information for their 535 member firms in the same years.¹⁰ To model the relationship between

¹⁰Only 426 of the member firms are actually included in the regression equations because the others had missing values on the dependent variables. Because the sample includes only large

the presence of a finance company in the business groups and the profitability and productivity (output per worker) of the groups' member firms, I use random effects generalized least-squares regression equations. The random effects equations decompose the error term to adjust for autocorrelation arising from common firm membership in the same group and inter-temporal correlation of error terms¹¹. The equations take the form:

$$Y_{1990i} = \alpha + \beta'x_i + \gamma' Y_{1988i} + \lambda'G_i + \varepsilon_i$$

where: Y_{1990i} is 1990 profits or output per worker, α is the intercept, x_i is a vector of group- and firm-level control variables, Y_{1988i} is the lagged dependent variable, G_i is a vector of group structure variables that test the hypotheses, and ε_i is the stochastic error term. For the actual estimation of the output per worker equations, all variables (both independent and dependent) are

groups, the results are generalizable only to large groups. The groups with finance companies and those without finance companies come from the same, larger sample and are, therefore, otherwise comparable.

¹¹ The Fuller-Battese GLS algorithm decomposes the error term as follows: $\varepsilon_{it} = \alpha_i + \rho_j + \gamma_t + \lambda_{it}$ where ε_{it} is the total stochastic component for firm i in time t , α_i is the error component associated with firm i , ρ_j is the component associated with group j , γ_t is the component associated with time period t , and λ_{it} is the stochastic component. While inter-temporal correlation is minimal in panel data, preliminary tests indicated that errors were correlated between 1988 and 1990. Multilevel or hierarchical models use a similar algorithm and return equivalent estimates (Bryk and Raudenbush 1992).

multiplied by the number of workers in 1990 so that the dependent variable is the level of output in 1990 and not a ratio.¹²

To compare the effects of insider lending arrangements in different regions (i.e., marketized versus non-marketized) using the same regression equations, I use structural equation models (Greene 1990:582). In the structural equation models, there are two intercepts: one for firms in marketized regions and one for firms in non-marketized regions.¹³ The structural equation models take the form:

$$Y_{1990i} = (\alpha_1 + \lambda'_1 G_{i1}) + (\alpha_2 + \lambda'_2 G_{i2}) + \beta'x_i + \gamma' Y_{1988i} + \varepsilon_i$$

where: each term is equivalent to the standard equations (above), but where the subscript one (1) denotes that the term is for firms located in a marketized area, and two (2) denotes that the term is for firms located in non-marketized regions.

In all models, I correct for heteroskedasticity and autocorrelation of error terms. Preliminary tests of OLS estimates of the equations using the White estimator indicated that the OLS assumption of heteroskedasticity was violated, which would result in inefficient coefficient estimates and biased standard errors. In addition, OLS fails to account for the component of the error term that is common to firms in the same group. For these reasons, I used the Fuller-Battese

¹²I also estimated the output per worker equations using the ratio (output/worker) as the dependent variable. The results were not materially different from those I report here.

¹³The intercept is multiplied by the dummy variable indicating the presence of the structural feature. The use of structural equation explains the absence of the single form of variables that appear to be interactions.

algorithm to estimate Generalized Least Squares (GLS) regression equations (Greene 1990:397-399, 428-430).¹⁴

Variables

Dependent Variables: I use two firm-level dependent variables: 1990 firm *profits* and *productivity* (output per worker), standard performance indicators (Meyer 1994; Stickney 1990). Profits are actual profits (revenues less expenses), and productivity is output per worker (output is the actual dependent variable, but it is multiplied by the number of workers).¹⁵ Equations estimated using assets turnover (sales/net assets) as a dependent variable produced results virtually identical to those reported here.

Insider lending measures: I use a dummy variable indicating whether the group had a *finance company* in 1988 to test for the impact of such a company on 1990 firm profits and productivity. The continuous variable *percentage of firms with debt to the finance company* indicates the extent of the finance company's activities within the group. I use Nee's (1996) measure of the degree to which a region is marketized to create a dummy variable indicating

¹⁴The Fuller-Battese GLS algorithm weights the coefficient estimates to account for correlation among error terms, thus hierarchical linear models are unnecessary (Bryk and Raudenbush 1992; Greene 1990). Nonetheless, I estimated the equations using HLM; the results were not significantly different from the GLS results.

¹⁵These are *actual*, not *remitted*, profits. I do not use logged profits as the dependent variable because there are many negative values for profits in both 1988 and 1990. The Shapiro-Wilk statistic (the ratio of the best estimator of the variance – based on the square of a linear combination of the order statistics – to the corrected sum of squares of the variance) indicated that profits and output are normally distributed.

location in a marketized area. The final two insider lending measures are dummy variables indicating either 1) that the firm was located in a marketized region and is in a business group with a finance company or 2) that the firm was located in a non-marketized area and is in a business group with a finance company.

Control variables: I use a lagged dependent variable in all regression equations to allow interpretation of the independent variables in terms of change in the dependent variable. In the equations using 1990 profits as the dependent variable, I control for *1988 profits*; in the equations using 1990 output per worker as the dependent variable, I control for *1988 output per worker*. At the group level, I also control for the *number of second- and third-tier subsidiaries* in the group. Second-tier subsidiaries are firms in which a member firm has ownership rights, but in which the core firm does not have an interest. Third-tier subsidiaries are firms in which second tier subsidiaries have an ownership interest, but in which the core firm does not have an interest. These indicators control for size and vertical integration, which might influence the efficiency with which inputs and outputs flow among group members and thus performance and productivity.¹⁶

Because the firms included in these analyses are spread across a variety of industries, I control for the (log of) the firm's *total assets*. I also control for whether the firm is in *light industry* (versus heavy) as a means of accounting for capital intensity and remaining industry-

¹⁶The existence of second- and third-tier subsidiaries raises the issue of where the business group's boundaries should be drawn. I include only the 535 firms in which the core firm has an ownership interest for two reasons. First, second- and third-tier subsidiaries are not considered member of the business group, by the definition given above. Second, firms owned by the core firm's subsidiaries typically do not have access to the group's finance company.

specific differences.¹⁷ I use the logged *number of workers* to control for firm size. In addition, I control for whether the firm is the *core firm* (versus a member firm). I have also estimated the equations eliminating the core firm (i.e., using only the profits or productivity of member firms as the dependent variables) and obtained generally similar results.

I control for the fraction of the firm's *total sales* (in 1990) that are within the group to indicate the degree to which the firm is integrated into (or connected to) the group. More connected firms might perform better, not because the group has a finance company, but because the firm has better access than less well-connected firms to productive inputs. In models of productivity, I control for whether the firm was *established since 1978* to differentiate firms that were part of the administrative bureau system from those that have been formed since the beginning of reform (newer firms are likely to be more efficient). I control for whether the firm is located in a *foreign* country, which might indicate that it has better access to foreign financing. I also control for whether the firm is located geographically in the *same province* as the group's core firm. Geographical proximity to the core firm might reduce the costs of requesting and receiving financial and other assistance and affect performance and productivity.¹⁸

Finally, I control for the continued involvement of the state in firm affairs. I use a dummy variable to control for the presence of a *technology center*, which indicates that the state subsidizes technological research by the firm. For example, Shanghai firms with technology centers (generally the same firms dubbed "high tech") not only have a portion of their expenses for

¹⁷ Attempts to control for industry and in various other ways (e.g., defined in Chinese or Western terms) and former administrative bureau proved ineffective. In addition, I found no correlation between industry or former administrative bureau and the test variables.

¹⁸ Approximately 7 percent of firms in the sample are located in the same province as the core firm.

technological research subsidized, but also receive tax breaks of 30 to 50 percent. Second, the state designates certain industries (automobile, communications, household appliance, power, steel and iron, and petrochemical) as *central industries*. I use a dummy variable to indicate that the firm is in a central industry because these firms tend to receive state assistance more readily. Third, I control for the proportion of *profits remitted* by the firm to the state to indicate state relinquishment of firm control (most firms in the sample did not remit profits in 1988 or 1990).

Results

Existing research speculates that a primary advantage of business group membership, particularly during economic development, is improved access to financing. Thus the group's finance activities, in particular insider lending arrangements, are likely to positively affect firm financial outcomes. Indeed, figure 2 demonstrate this advantage in the Chinese business groups. This figure compares the raw (with no other causal variables controlled) financial performance in 1990 of firms in business groups with finance companies to the raw financial performance of firms in groups with no finance companies. The figure includes separate measures of sales, net assets, profits, and output per worker for firms with access to finance companies and those without access to such a company. In this figure, sales, net assets, and profits are given in millions of 1990 *yuan*, and output per worker is the total value of the output for the firm in millions of 1990 *yuan* divided by the total number of works (and multiplied by 100). Each of the performance measures is at the firm level, while the indicator of the presence of a finance company is at the firm level. The estimates in this figure demonstrate the stark differences in the financial performance between firms in groups with finance companies and those in groups without finance companies. These results are even more noteworthy given that there were no discernible performance differences between firms with finance companies and those without finance companies in 1988.

(Figure 2 about here)

Regression analyses that control for other potential causes of financial performance yield equally compelling results. Model 1 in table 1 demonstrates that profits are greater for firms in business groups with finance companies. In fact, the increase in profits between 1988 and 1990 for firms in business groups with a finance company was 1.4 million *yuan* greater than the change in profits for firms in groups without finance companies. Likewise, the more extensive the operations of the finance company, the greater the performance and productivity advantages enjoyed by the firm. Model 2 demonstrates that the proportion of firms with debt to the finance company is also a positive influence on firm performance. Of course, the results in this table do not suggest that all Chinese firms were profitable in the final years of the 1980s. Indeed, it was the largest (in terms of total assets) firms that were the least profitable, as we would expect. Instead these results support the idea that *improvements* in firm performance were greater when firms had access to informal financing arrangements, as demonstrated by the test variables.¹⁹

(Table 1 about here)

¹⁹The data provide strong support for the proposed direction of causation. Because the independent variables are measured in 1988 and the dependent variable in 1990, the coefficient estimates provide some support for the proposed causal direction. Moreover, in 1988, there was no statistically significant difference between the profits and productivity of firms in groups with a finance company and groups with no finance company. However, both the 1990 profits and productivity of firms in groups that had finance companies in 1988 was significantly greater than the profits and productivity of those in groups that did not have a finance company in 1988.

In the late 1980s and early 1990s, financing from external (to the group) sources was not widely available in China. As previous sections have noted, China's formal financial market was not well-developed at that time, and firms were often left with few alternatives for raising capital. Of course some geographic regions had developed more quickly than others, providing firms in those areas with a wider selection of financing alternatives. Model 3 in table 1 compares the impact of the presence of a finance company in marketized regions to the impact of the finance company in non-marketized regions by including separate regression lines for firms in the two regions. The results demonstrate that the impact of access to a finance company on firm profits was more than ten times as great in non-marketized regions as in marketized regions. This supports the idea that the finance company substitutes for a more well-developed formal financial system. Indeed, where markets, including financial markets, are more developed, firms turned to the market. but where markets were not well-developed, firms sought alternatives to commercial (or state) credit. In particular, this result suggest that firms turned to the informal finance options of their business groups.

The ability to improve the efficiency of operations is crucial in the transition from state socialism, a system which bred large, inefficient business enterprises. Survival in post-socialism requires the firm to remake drastic changes to production, management, marketing, and nearly all other aspects of corporate operation. Yet, as has been the case in China since the beginning of reform, it is likely that environmental challenges and economic shocks associated with development will impede the realization of these changes. The argument that the business group finance company eases this transition by centralizing the capitalization process for a group of firms is born out in the empirical results. The 1988-1990 increase in productivity of firms in business groups with a finance company was significantly greater than that of firms in groups

without a finance company, shown in the results of model 1 of table 2. Moreover, as model 2 demonstrates, firms are more productive when the finance company in the business group is active. That is, the greater the proportion of firms with debt to the finance company, the greater the productivity of all firms in the group.

(Table 2 about here)

Again, the impact of these informal finance arrangements on firm productivity is most prevalent in less marketized regions, supporting the idea that the business group finance company substitutes for a more well-developed formal financial market. Like the third model in the previous table, model 3 in table 2 includes separate equations for firms in marketized and non-marketized regions, and the coefficient estimates included in the table demonstrate that the impact of the finance company was greater in less-marketized regions. Again, this provides support for the idea that informal financing arrangements substitute for more well-developed formal financial systems.

Finally, the results displayed in both table 1 and table 2 demonstrate relationships between the group structure and changes in firm performance between 1988 and 1990. They do not demonstrate that the profitability and productivity of firms in groups with the feature were greater in either year than for firms in groups without the characteristics. Also, the results do not disprove the possibility that group structure results from firm performance. Groups had finance companies in 1988, yet the mean profits and output per worker for firms in groups with finance companies and in groups without them were not significantly different from each other in that year. Because 1988 is early in the formation of the groups, this suggests that the establishment of the finance company is not determined by firm performance. Moreover, profits and output per worker were significantly greater in 1990 for firms in groups with a finance company than for

firms in groups without it. This latter finding confirms that changes in performance apparent in my results is a relative increase for firms with access to the finance company.

V. CONCLUSIONS AND DISCUSSION

I build on literature from economic history and literature on business groups in modern economies to examine the significance of insider lending arrangements in China's economic transition. The real growth China experienced during the 1980s is noteworthy because it was so dramatic and also because it occurred in the virtual absence of a formal financial system (either a banking system or a securities exchange). Economists studying growth in other contexts have demonstrated that it tends to be correlated with the development of an economy's formal financial system. China's experience provides an interesting case in which this relationship does not hold.

Another phenomenon occurring simultaneously in China may provide a partial explanation. Economic historians have long been fascinated by the emergence of informal financing arrangements ("insider lending") in the early stages of financial development. Researchers have documented the occurrence of such arrangements in the U.S., Europe, and other Asian economies (Cameron, et. al 1967; Lamoreaux 1991; Miyashita and Russell 1994). This research has called attention to the widespread nature of insider lending and has argued that such arrangements facilitate not only the development of a formal financial system but also firm performance in the absence of a formal financial system. The emergence of business groups in China, many of which include finance companies, provides another example of the occurrence of insider lending arrangements during economic development. Moreover, the Chinese case presents an opportunity to examine the impact of insider lending on firm outcomes during economic transition.

I investigate the emergence of insider lending in China, documents the structure of the finance companies that are coordinating informal lending relations, and analyzes the impact of access to informal finance options on firm financial performance and productivity. My objective is to fill a gap in the literature by demonstrating that, in at least one context, access to informal finance options significantly improves the financial performance of firms during economic development. Specifically, the finding that the presence and predominance of a finance company in a business group improves firm profitability and productivity demonstrates the impact of insider lending on firms. Even more, I demonstrate that these effects are stronger where markets are less developed, lending support to the widely-held notion that insider lending is effective to the extent to which it substitutes for formal financial markets.

Comparisons between the Chinese case and the role business groups played in the economic development of Japan and Korea following World War II are inevitable given the geographic proximity of these countries and the deliberate efforts of the Chinese state to reproduce the groups of its Asian neighbors (Li 1995). While banks were central players in the business groups in Japan and Korea, little empirical evidence exists to support claims that these banks provided advantages to the firms they served. My results uphold arguments suggesting a link between business group banking functions and firm performance. The strength of the results given here suggest that empirical investigation of the effects of business group structure on firm performance in other contexts might be fruitful. Such research might also clarify the exact conditions under which the relations evident in my results hold.

My findings also have important practical implications. Given the predominance of business groups in China and the expanding international role of Chinese corporations, understanding how business groups structure economic activity is becoming increasingly

important for management practice and public policy. Japan's *keiretsu* have long been criticized as an impediment to fair and open competition, and the Chinese business groups now have the potential to impede competition in much the same way. Miyashita and Russell (Miyashita and Russell 1994) argue that simply being aware of the existence of *keiretsu* is an important prerequisite to doing business in Japan and that, because of their ignorance of the groups, foreign business people were long at a disadvantage in dealing with Japanese firms. Because business groups are becoming equally predominant in China, the need to understand the role the groups play in this economy has increased as well. More importantly, the strong role the Chinese state is playing in forming the groups and in fostering the development of insider lending arrangements suggests that an active state in other contexts might also successfully engineer real growth by deliberately creating insider lending arrangements among firms. Specifically, the apparent success of the diffusion of these practices to China suggests that firms in Vietnam, Eastern Europe, and other countries and regions that are also undertaking economic transition and pursuing development might benefit from the deliberate formation of comparable informal finance arrangements.

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FIGURE 1. THE ORGANIZATION OF THE TYPICAL FINANCE COMPANY

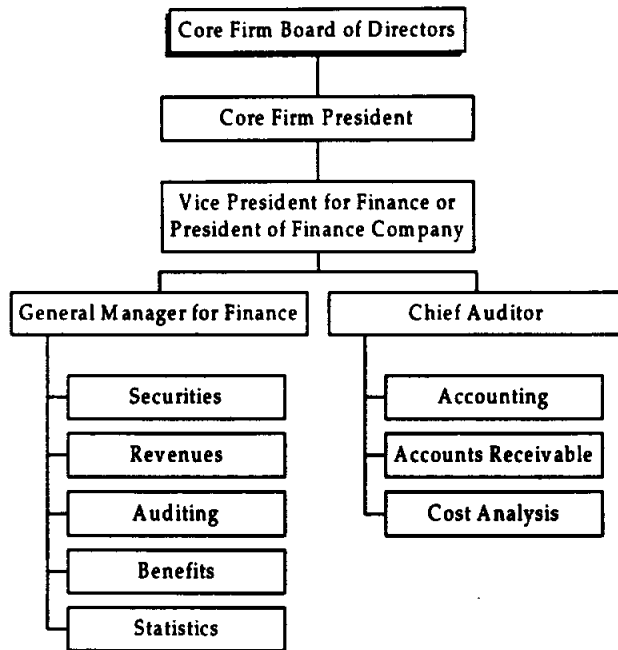
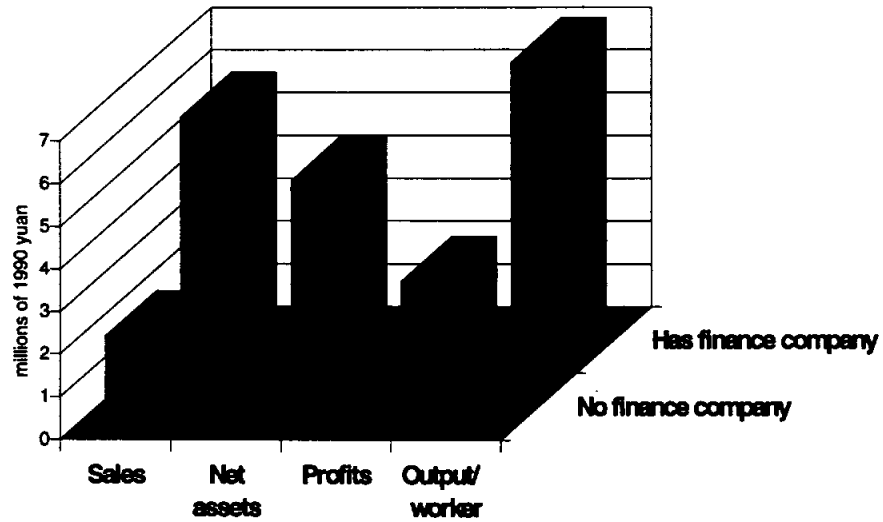


FIGURE 2. THE FINANCE COMPANY AND FIRM PERFORMANCE



Notes: Sales, net assets, and profits are in millions of 1990 *yuan*. Output per worker is the total value of output in millions of 1990 *yuan* divided by the total number of workers and multiplied by one hundred. Each of these financial measures is at the firm level. The presence of a finance company is a group-level indicator.

TABLE 1. GLS REGRESSIONS OF 1990 PROFITS ON INSIDER LENDING VARIABLES: 40 LARGEST CHINESE BUSINESS GROUPS, 462 FIRMS

	Model 1	Model 2	Model 3
Intercept	-1.696** (2.52)	-.637 (1.34)	—
Lagged (1988) profits	.015* (1.73)	.015* (1.82)	.103 (.180)
Intercept for groups in marketized regions	—	—	.573 (1.08)
Intercept for groups in non-marketized regions	—	—	-4.439** (2.69)
<i>Insider lending measures</i>			
Had a finance company (1988)	1.375** (2.47)	—	—
Proportion of firms with debt to finance co.	—	.297*** (4.07)	—
Group in marketized region, had a finance co.	—	—	1.603* (1.61)
Group in non-marketized region, had a finance co.	—	—	11.37*** (7.75)
<i>Group control variables</i>			
Number of 2 nd tier subsidiaries (1990)	3.64*** (4.38)	3.85*** (4.67)	5.83*** (6.48)
Number of 3 rd tier subsidiaries (1990)	2.03** (2.66)	1.04* (1.68)	1.52* (2.14)
<i>Firm control variables</i>			
Located in a marketized area	.380* (1.88)	.407* (1.95)	—
(log) total assets (1990)	.319 (0.97)	.096 (0.29)	-.585* (1.70)
Thousands of workers (1990)	.004 (0.47)	.004 (0.51)	.021 (1.36)
Total sales in the group (1990)	.330*** (3.71)	.351*** (3.99)	.315*** (3.61)
Adjusted R ²	0.223	0.246	0.309

Notes: Monetary values are in 100 million 1990 *yuan* (\$12.5 million). Entries are GLS estimates of metric regression coefficients; absolute *t*-statistics are in parentheses. Included in the regression (but not displayed) are dummy variables for having a technology center (a state-supported research division), being in a protected industry, being foreign-located, location in same province as core firm, being the core firm, and being in light industry. Also included but not displayed is a continuous variable indicating percent of profits remitted to the state. * $p < .05$ ** $p < .01$ *** $p < .001$.

**TABLE 2. GLS REGRESSIONS OF 1990 OUTPUT/WORKER ON INSIDER LENDING
VARIABLES: 40 LARGEST CHINESE BUSINESS GROUPS, 462 FIRMS**

	Model 1	Model 2	Model 3
Intercept	.619*** (13.37)	.629*** (13.70)	.355*** (5.79)
Lagged (1988) profits or output/worker	.007*** (3.85)	.007*** (3.85)	.009*** (5.17)
Intercept for groups in marketized regions	—	—	.355*** (5.79)
Intercept for groups in non-marketized regions	—	—	.254** (2.72)
<i>Insider lending measures</i>			
Had a finance company (1988)	.012* (2.14)	—	—
Proportion of firms with debt to finance co.	—	.004** (2.45)	—
Group in marketized region, had a finance co.	—	—	.022 (.00)
Group in non-marketized region, had a finance co.	—	—	1.31*** (4.41)
<i>Group control variables</i>			
Number of 2 nd tier subsidiaries (1990)	.006* (1.36)	.012* (2.41)	.003 (.55)
Number of 3 rd tier subsidiaries (1990)	0.038*** (5.62)	.033*** (4.62)	.015* (2.09)
<i>Firm control variables</i>			
Located in a marketized area	.258** (2.99)	—	—
(log) total assets (1990)	-.006** (2.72)	-.004* (2.25)	-.008*** (3.65)
Total sales in the group (1990)	-.002* (1.78)	-.001 (1.28)	-.000 (.83)
Adjusted R ²	0.385	0.387	.474

Notes: Monetary values are in 100 million 1990 *yuan* (\$12.5 million). Entries are GLS estimates of metric regression coefficients; absolute *t*-statistics are in parentheses. Included in the regression (but not displayed) are dummy variables for having a technology center (a state-supported research division), being in a protected industry, being foreign-located, location in same province as core firm, being the core firm, and being in light industry. Also included but not displayed is a continuous variable indicating percent of profits remitted to the state. * $p < .05$ ** $p < .01$ *** $p < .001$.