

Volume 2

Asian Business and Management

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ASIAN BUSINESS AND MANAGEMENT

VOLUME II

Edited by

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First published 2012

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55 City Road
London EC1Y 1SP

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2455 Teller Road
Thousand Oaks, California 91320

SAGE Publications India Pvt Ltd
B 1/I 1, Mohan Cooperative Industrial Area
Mathura Road
New Delhi 110 044

SAGE Publications Asia-Pacific Pte Ltd
3 Church Street
#10-04 Samsung Hub
Singapore 049483

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-4462-0025-4 (set of eight volumes)

Library of Congress Control Number: 2011939536

Typeset by Arete Publishing, Delhi

Printed on paper from sustainable resources

Printed and bound in Great Britain by TJ International Ltd, Padstow, Cornwall



Contents

30807545

Volume II

Business Groups

15. Project Execution Capability, Organizational Know-how and
Conglomerate Corporate Growth in Late Industrialization 3
Alice H. Amsden and Takashi Hikino
16. The Co-evolution of Institutional Environments and Organizational
Strategies: The Rise of Family Business Groups in the ASEAN Region 37
Michael Carney and Eric Gedajlovic
17. Economic Performance of Group-affiliated Companies in Korea:
Intragroup Resource Sharing and Internal Business Transactions 67
Sea Jin Chang and Jaebum Hong
18. Structural Inertia, Imitation, and Foreign Expansion: South Korean
Firms and Business Groups in China, 1987-95 99
Mauro F. Guillén
19. Engineering Growth: Business Group Structure and Firm
Performance in China's Transition Economy 127
Lisa A. Keister
20. Estimating the Performance Effects of Business Groups in Emerging
Markets 161
Tarun Khanna and Jan W. Rivkin
21. From Diversification Premium to Diversification Discount during
Institutional Transitions 205
Keonbeom Lee, Mike W. Peng and Keun Lee

Corporate Governance

22. A Clash of Capitalisms: Foreign Shareholders and Corporate
Restructuring in 1990s Japan 237
Christina L. Ahmadjian and Gregory E. Robbins
23. Corporate Governance in Asia: A Survey 269
Stijn Claessens and Joseph P.H. Fan
24. Outside Directors and Firm Performance during Institutional
Transitions 303
Mike W. Peng

Business Groups

Project Execution Capability, Organizational Know-how and Conglomerate Corporate Growth in Late Industrialization

Alice H. Amsden and Takashi Hikino

1. Introduction

In many successful late-industrializing countries in the 20th century that are historically, culturally and geographically distinct, business groups with operating units in technologically unrelated industries have acted as the microeconomic agent of industrial growth. This was the case in pre-war Japan and continues to be the case in postwar Argentina, Brazil, India, Malaysia, Mexico, South Africa, South Korea, Taiwan, Thailand and Turkey. Why this business form has characterized countries industrializing 'late' – a process of borrowing foreign technology in the absence of any proprietary products or processes in the marketplace – and why it succeeded in the early phases of catching up whereas the advanced-country conglomerate has had an undistinguished performance are the issues explored in this paper.

Seminal work by Nathaniel Leff (1978, 1979) emphasizes that business groups evolved in response to the acute market imperfections in products, finance and information associated with underdevelopment. While acknowledging the significance of market imperfections as the background to the emergence of groups, we go one step further and use internal resource-base theories of the firm (Penrose, 1959; Nelson and Winter, 1982) to explore the

significance of organizational knowledge and resulting increasing returns in the group form which, even in mature markets and especially in late industrialization, constitute a sustainable source of competitiveness. The operational premiss of internal resource utilization approaches to diversification is that firms can exploit assets such as specialized capital equipment, technological and organizational know-how, and goodwill owing to economies of scope of sharable inputs and transaction cost-economies (Williamson, 1975; Teece, 1980, 1982; Baumol *et al.*, 1982; Levy and Haber, 1986). They can utilize these resources more efficiently for internal diversification than external sale or lease because such resources cannot necessarily realize their full value on the market. In the case of late industrialization, however, this internal resource-based diversification does not initially come from the production process (as is assumed in Teece, 1982) because of a technology constraint. Rather, it originates in foreign technology acquisition, which thus becomes a necessary condition for corporate success. In the best diversified business groups the capability to acquire foreign technology is transformed into organizational know-how that provides a key resource in the effectiveness of corporate growth through diversification.

In Sections 2 and 3 of the paper we briefly survey diversified industrial groups in historical contexts and then across a broad array of late-industrializing countries. Then we consider the historical specificity of diversified business groups in late industrialization by discussing three questions: Why was diversification not prevalent among firms attempting to catch up in earlier historical periods? Why was the strategy of leading late-industrializing firms one of diversification rather than specialization? Why was their chosen diversification path one involving technologically unrelated industries? We next present our core argument about the transformation of technology acquisition into a competitive asset and then illustrate our points with evidence from South Korea, where big diversified industrial groups in mid-tech industries have gained an especially large share of world output. Finally, we analyze why the behavior of the late-industrializing group differs from that of the American conglomerate.

2. Overview: Historical Paradigms of Technology Acquisition

Owing to the coalescence of an international technology market at the time of late industrialization any cash-rich firm theoretically could borrow foreign technology and instantly establish itself as an oligopolistic domestic player in a capital-intensive, 'mid-tech' industry (Amsden, 1989). This potential to employ foreign technology was unavailable to earlier firms attempting to catch up at a time when world technology markets were still ill-defined [witness, say, Britain's strict prohibition of textile technology

exports during the first Industrial Revolution, which forced Samuel Slater to memorize British know-how in order to establish his American textile mill, compared with the RCA Corporation in the 1950s which 'remained prepared to license its technology to almost anyone who asked and would pay the fee' (Sobel, 1986, p. 152)].

Despite the availability of foreign technology, however, large firms in the particular historical context of late industrialization could no longer grow through a progression similar to the Chandlerian pattern followed by big business dating from the second Industrial Revolution: first specializing in producing a narrow product line based on proprietary technology and then diversifying into related industries (Chandler, 1977, 1990). This is because those very large industrial enterprises that arose in the late 19th century in the USA and Germany (and to a lesser degree other European countries) achieved Schumpeterian technological and organizational breakthroughs, which in turn resulted in the formation of international oligopolies both in product markets and in technology generation (Hikino and Amsden, 1994). Latecomers, therefore, faced entry and growth barriers based on first-mover advantages in many of the new, capital-intensive industries (Chandler, 1990, ch. 2). As long as the incumbents continued to generate radically new products and processes within their technology trajectories and dominate global markets, challengers were forced defensively to adjust their growth strategies within the competitive rules and regulations set by these oligopolistic players.

Latecomers could borrow foreign technology and utilize low factor costs such as wages and possibly subsidized credit to enter the bottom, soft segments of oligopolistic markets. But until they became major innovators they could not expand into higher value added segments and thus their overall potential to expand in these sectors was limited. Instead, latecomers were forced to grow through diversification. In the absence of proprietary technology to exploit in related industries and in the presence of potentially high profit rates in 'pre-modernized' start-up industries, their pattern of diversification tended to be opportunistic and technologically unrelated.

When initially expanding, the most successful business groups experienced a large number of technology acquisition transactions, first in borrowing foreign technology to establish and expand plants in their 'flagship' or original industry and then in importing technology to diversify or enter new industries. The greater the number of technology acquisition transactions they engaged in, the greater their potential to unpack technology imports and acquire (internalize) the skills involved in such projects. Moreover, the greater their experience, the greater their ability to routinize this function and free up human resources for other tasks. Step-by-step, rather than in a great Schumpeterian leap, the best business groups in late industrialization mobilized project execution skills in-house. These were generic skills, originating from foreign technology acquisition, applicable to many industries

and diffused among industry-level subsidiaries within an organized internal labor market fostered by deliberate group-level training and coordination. The mobilization of 'fungible' skills in project execution through internalization served as a shared resource (Teece, 1982), which enabled diversification to occur at lower cost (and greater speed) than if such skills were bought for each diversification transaction in the market. In turn, skills related to project execution tended to have a positive spillover on acquiring plant-level production capability; another aspect of technology acquisition.

Although project execution skills may become a shared asset for the group, they remain too tacit to become a public good as in the case of, say, the patent of a specialized firm. Therefore, project execution skills may be assumed to be perishable: unless they are used, they are lost. Their perishability is especially likely if managers or engineers who embody such skills are not given the opportunity to use them. Unlike physical assets, human assets may individually or collectively exit from the firm. Project execution skills may then become marketable: people who embody them try to capture their market value by spinning off a venture after they exit, for instance, thereby increasing competition for the incumbent.

Sharable human capabilities at the group level also involve functions other than expansion-induced project execution, such as transactions related to dealing with a developmental state. The shared resource involving project execution, however, is among the most important and tends to be subject to increasing returns if the group succeeds in diversifying further. This is because the 'remembering-by-doing' of technology acquisition is itself constantly changing, analogous to the learning-by-doing related to changing product composition of the specialized economy theorized by Lucas (1988) and Stokey (1988).

3. Divergence and Convergence among Diversifiers

Big businesses from late-industrializing countries have increased dramatically their share of world output relative to those from advanced economies (see Table 1). Of the world's 500 largest industrial enterprises, Japan expanded its share from 31 in 1962 to 128 in 1992. Excluding Japan, the share of late industrializers rose during this period from two to 33. Of those 33, as many as 12 were from South Korea (which is why we use South Korean evidence later to illustrate our points).¹

By comparison with big business in developed market economies, big business in late industrialization is characterized by a relatively large proportion of:

- (i) foreign-owned firms (although foreign-owned firms are also prevalent in an advanced economy such as Canada);

Table 1: The distribution of world's 500 largest industrial enterprises by country, 1962 and 1992

Country	Year	
	1962	1992
Developed market economies (except Japan) total	462	339
USA	297	161
UK	55	41
Germany	36	32
France	27	30
Sweden	8	14
Switzerland	6	9
Australia	2	9
Canada	13	8
The Netherlands	5	7
Italy	7	6
Norway	0	5
Belgium	3	4
Finland	0	4
Others	2	9
Japan	31	128
Other late-industrializing countries total	4	33
South Korea	0	12
South Africa	2	4
India	1	3
Turkey	0	3
Others	1	11
Total	497	500

Source: For 1962, adopted and reorganized from Dunning and Pearce. For 1992, compiled from 'Fortune's Global 500', *Fortune*, July 26, 1993.

Note: Enterprises, including private and state-owned, are from market economies only and are ranked by sales. Firms included are manufacturers which often engage in such related activities as mining and distribution. Because of the lack of adequate data 497 companies are listed for 1962. Because of different disclosure standards the companies of late industrialization may be underrepresented.

- (ii) state-owned enterprises; and
- (iii) diversified business groups.

The predominance of large foreign-owned firms in the 'South' tends to be greatest in Latin America. In 1987 four out of Mexico's 10 largest companies were estimated to be foreign-owned (depending on how state companies are defined), all in the automobile industry. The comparable number of foreign-owned firms for Brazil was three (all in petroleum). By contrast, neither Taiwan nor South Korea had any foreign-owned firms among their top 10 business enterprises (Gereffi, 1990).

With respect to ownership and business structure among only indigenous, locally-owned enterprises, Table 2 reveals sharp differences between advanced and late-industrializing economies. Among the biggest 70 companies from advanced economies, only six were state-owned. All the rest (ranked in terms of sales in 1987) were located in Chandlerian scale-intensive industries such as chemicals, electrical machinery and transportation equipment,

8 Business Groups

Table 2: Distribution of the 70 largest industrial enterprises in advanced and late-industrializing economies, 1987

SIC	Industry	Advanced economies		Late-industrializing economies	
		Private	State	Private	State
20	Food	4	0	1	0
21	Tobacco	3	0	0	1
22	Textiles	0	0	1	0
23	Apparel	0	0	0	0
24	Lumber	0	0	0	0
25	Furniture	0	0	0	0
26	Paper	0	0	0	0
27	Printing/publishing	0	0	0	0
28	Chemicals	7	0	2	1
29	Petroleum	14	2	0	28
30	Rubber	0	0	0	0
31	Leather	0	0	0	0
32	Stone/clay/glass	1	0	0	0
33	Primary meals	2	3	0	7
34	Fabricated metals	0	0	0	0
35	Machinery	1	0	0	0
36	Electrical machinery	12	0	1	1
37	Transportation equipment	19	1	0	0
38	Instruments	1	0	0	0
39	Miscellaneous	0	0	0	0
—	Conglomerate/diversified	0	0	26	1
	Total	64	6	31	39

Source: Advanced economies, compiled from 'The 500 Largest Industrial Corporations', *Fortune*, April 25, 1988; 'The Fortune International 500', *Fortune*, August 1, 1988. Late-industrializing economies: compiled from 'The Fortune International 500', *Fortune*, August 1, 1988; 'South 600', *South*, August 1988; 'Africa 100', *South*, July 1988; 'Latin America 250', *South*, May 1988; 'Asia 150', *South*, June 1988.

Notes: Listed enterprises are independent parent companies only. Domestic and foreign subsidiaries are not counted. Sales figures represent those of entire enterprises and groups when data are available. Many groups publish non-consolidated financial statements only, so some groups' sizes are underrepresented. Industrial category is based on US Standard Industrial Classification.

and most of them were administered by salaried managers. By contrast, of the top 70 industrial enterprises from late-industrializing economies, as many as 39 were state-owned, clustered mostly in resource-related, scale-intensive industries such as petroleum (28 companies out of the total) and primary metals (which includes iron and steel).

The importance of the diversified group structure among indigenous private enterprises from the 'South' compared with the 'North' is also evident in Table 2. Out of the 31 largest private industrial enterprises from the South, as many as 26 were diversified groups. By contrast, out of the 64 largest private industrial enterprises from the North, none was a widely diversified group or conglomerate.

Table 3: The largest private industrial enterprises in late industrialization, 1987

Rank	Company	Country	Sales (US\$ million)	Industry	Control
1	Hyundai	Korea	25 243	diversified	family
2	Samsung	Korea	21 053	diversified	family
3	Lucky Goldstar	Korea	14 422	diversified	family
4	Daewoo	Korea	13 437	diversified	family
5	Barlow Rand	South Africa	7 617	diversified	prof. ^a
6	Sunkyong	Korea	6 781	diversified	family
7	Tata Group	India	4 866	diversified	family
8	Koc Holding	Turkey	4 738	diversified	family
9	Ssangyong	Korea	4 582	diversified	family
10	Sabanci Group	Turkey	4 582	diversified	family
11	Korea Explosives	Korea	3 563	diversified	family
12	Hyosung	Korea	3 257	diversified	family
13	De Beers	South Africa	3 091	diversified	family
14	Formosa Plastics	Taiwan	2 955	diversified	family
15	Birla Group	India	2 932	diversified	family
16	Swire Pacific	Hong Kong	2 585	diversified	family
17	Koor Industries	Israel	2 571	diversified	union ^b
18	Jardine Matheson	Hong Kong	1 628	diversified	family
19	AECI	South Africa	1 607	chemicals	family
20	Copersucar	Brazil	1 512	food	coop. ^c
21	Doosan	Korea	1 478	diversified	family
22	Sasol	South Africa	1 417	chemicals	govt. ^d
23	Alfa	Mexico	1 380	diversified	family
24	Tatung	Taiwan	1 248	electronics	family
25	Modi Group	India	1 070	diversified	family
26	Reliance Inds.	India	1 015	textiles	family
27	Hutchison-Whampoa	Hong Kong	994	diversified	family
28	Sime Darby	Malaysia	950	diversified	govt. ^d
29	RPE Enterprises	India	930	diversified	family
30	J.K. Singhania	India	889	diversified	family
31	Dong-A Construction	Korea	824	diversified	family

Source: See Table 2, entry for 'Late-industrializing economies'.

Notes: ^aPublicly-owned, professionally managed; ^bOwned by Israeli trade union federation; ^cCooperative;

^dGovernment holds controlling influence.

Many groups publish non-consolidated financial statements only, so some groups' sizes are underrepresented. Listed enterprises are independent parent companies only. Domestic and foreign subsidiaries are not counted. Information on industrial activities and control comes from company directories of appropriate countries.

Table 3 gives a further breakdown of the largest 31 late-industrializing private enterprises. Whatever the region, the structure of the great majority of them is the diversified group. Only five out of the largest 31 private late-industrializing companies were specialized, three in chemicals and food. Almost all were owned and controlled by families but had managerial hierarchies.

In terms of the industry distribution of the 200 largest operating units from late-industrializing countries (including the subsidiaries of state-owned firms but excluding those of foreign multinationals), 42 were in petroleum-related industries. Another 29 were in 'high-tech', although typically in the labor-intensive, bottom-end of high-tech sectors. As many as 60 were in mid-tech industries (Hikino and Amsden, 1994). It is largely companies in

mid-tech industries (as well as companies attempting to move out of the lower segments of high-tech sectors) that confronted technological barriers to global expansion in the early 1990s.

Diversified business groups in late industrialization emerge from different backgrounds. Thus, from many distinct historical patterns and roots there is a convergence towards a similar unrelated diversification strategy and group structure with diversification and convergence accelerating after World War II. Even within a region the origins of industrial groups are diverse, as the following brief survey suggests.²

In the case of Asia, the generalists who established South Korea's *chaebol* arose out of the rent seeking and business opportunities surrounding American foreign aid allocation in the 1950s (Amsden, 1989, 1995). For instance, the Samsung group (ranked second in Table 3) had an indifferent start in overseas trading in 1938 but revived in 1953 with the establishment of a subsidiary in a typical import-substitution and capital-intensive industry, sugar refining. The Hyundai group (ranked first in Table 3) started as an automobile repair shop and then prospered as a construction firm during the Korean and later Vietnam wars. As in Japan the *chaebol* benefited from government incentives. The Daewoo group, with a ranking of four in Table 3, was unusual in growing largely through acquisition, mainly of ailing government-owned factories at bargain prices (Jones and SaKong, 1980; Aguilar and Cho, 1985a; Kim, 1987).

In Taiwan, state-owned enterprises and relatively small diversified industrial groups have been more prevalent than in either Japan or Korea. Whereas in 1987 only one of 10 top Korean firms was state-owned, the comparable figure for Taiwan was four (depending on how a public enterprise is defined) (Gereffi, 1990). A typical small diversified business in Taiwan is the Aurora group with 12 strategic business units but only 4000 employees and total sales (in 1990) of merely \$370 million (Wu, 1992).

Nevertheless, large private enterprise has hardly been absent in Taiwan: in the early 1970s Taiwan had a larger share than Korea of manufacturing output accounted for by firms with over 500 workers (Amsden, 1991); among the 'South's' top 200 operating units in 1985 as many as 18 were from Taiwan, the same number as from Brazil (Hikino and Amsden, 1994). As indicated in Table 3, one of Taiwan's most diversified groups (Formosa Plastics) and one of its most successful specialized firms (Tatung), ranked 14th and 24th among the South's largest private companies. Taiwan's Far Eastern Group, originally based in textiles and forced to diversify due to bleak market prospects, was cited by the McKinsey consulting firm as one of East Asia's leading diversified companies (Chu and MacMurray, 1993).

Taiwan's diversified groups would probably be larger were it not for government opposition to the emergence of private economic concentration (ethnic differences once divided the Taiwanese business community and the Mainlander government). According to a history of Formosa Plastics, the

government refused its request to diversify into ethylene production because it conflicted with the investment planning of the state-owned China Petroleum Company (Taniura, 1989). In 1993 permission was denied to Formosa Plastic's proposal for a major investment in China. On the other hand, where big business has arisen in Taiwan the government has played a key role, as in Korea. In Formosa Plastics's case: 'We cannot by any means ignore the forward-looking attitudes taken by those [government bureaucrats] who lent support to the [founder's] enterprise' (Taniura, 1989, p. 69).

In Hong Kong, British merchant houses were active in the creation of groups, such as Swire Pacific and Jardine Matheson (ranked 16th and 18th respectively in Table 3). The Hutchison-Whampoa group (ranked 27th) was also established by a British trading house, with subsidiaries spanning petroleum and telecommunications (in Britain). A 40% controlling interest was ultimately acquired by the Cheung Kong property company, which began a process of transferring management from expatriates to ethnic Chinese with a new strategy to expand in China.

Diversified industrial groups have been prominent throughout south-east Asia. In Malaysia, most groups emerged out of the plantation and mining operations of British 'agency houses', or merchant banks, such as Sime Darby and Harrisons & Crossfield, which were subsequently either nationalized or brought under government control (Saruwatari, 1991). The latter was the case of Sime Darby, which ranks 28th in Table 3. Unique among Malaysia's business groups is OCBC whose name and influence 'are synonymous with that of Morgan or Rockefeller' in the USA (Lim, 1981, p. 91). OCBC's activities span banking, insurance, tin mining and smelting, rubber plantations, trading, hotels, properties, investments, manufacturing (from engineering to brewing) and management services. Its size is unknown, however, because it is privately held by overseas Chinese entrepreneurs.

Big business in Indonesia has included state-owned enterprises and groups with Chinese, *pribumi* (indigenous) and military/bureaucratic origins. Of the top 10 groups, nine are Chinese-managed. Many have diversified into the automotive industry (from dealerships to car assembly and parts manufacture) as well as forestry and wood-based industries. A common trait of most Indonesian groups is involvement in finance and commodity distribution, banking, insurance and foreign trade. 'This indicates the importance of merchant and usurer capital in the creation of these groups' (Kano, 1989, p. 151). Salim, one of the largest Chinese-owned groups, went from trading agricultural commodities to investments in import-substitution; and from export promotion to global diversification (Schwarz, 1991).

In Thailand, while traditional business groups arose out of rice milling and commercial banking, a new elite emerged in the 1960s in tandem with import substitution. Manufacturing became the new groups' core activity. In 1979 each Thai industrial group on average owned and controlled 16 affiliates (Suehiro, 1985). The CP group and Siam Motor groups each held as

many as over 50 firms, with manufacturing activities ranging from textiles, to automobiles, to food processing (they do not appear in Table 3 because they do not provide consolidated sales figures).

Similarly in Turkey, big industrial groups emerged out of import substitution industrialization, dependent initially on government support. As in Korea, such groups lacked internal sources of finance and relied heavily on debt to finance their expansion. Turkey's biggest groups – Koc (ranked eighth in Table 3), which produces industrial products as well as consumer goods, and its rival Sabanci (ranked tenth in Table 3), which produces textiles, tires, and cement, among 50 or so other products – established numerous tie-ups with foreign firms (as in Thailand). Beginning in the 1970s there was a scramble to establish general trading companies in Turkey along the lines of the *sogo-shosha* of Japan (see Onis, 1993; Cho, 1987, discusses the attempt to form general trading companies by groups in Brazil, Korea, Taiwan, Thailand and Turkey). The largest Turkish trading company was ENKA Marketing, with exports of roughly 5% of GNP in 1983, established by Turkey's fourth largest group with over 40 affiliated companies in trade, construction and manufacturing (textile products, foodstuffs and chemicals) (Cho, 1987).

In India, the dominant form of corporate control by the middle of the 19th century was the managing agency system originally established by British adventurers (shareholders had to wait for a return on their investment while the agent/promoter was assured of a return in the form of a managing agent's commission). 'The managing agency system was ideally suited to the Hindu joint family system in India' and provided the basis for the formation of modern diversified industrial groups (Herdeck and Piramal, 1985, p. 6). India's two major business groups, Tata and Birla (ranked seventh and 15th in Table 3), date to the late 19th century. The Tata group's founder was born in 1839 and, after a start in cotton textiles, established India's first steel mill. The group now has subsidiaries in textiles, steel, engineering, chemicals, consumer goods, electronics, hotels and trade (Nanda and Austin, 1992; McDonald, 1993). The Birla group was founded by a Marwaris family (the Marwaris are a Hindu community originally from Rajasthan, traditionally engaged in trade and money-lending). In 70 years the Birla group evolved into a producer of aluminum, textiles, chemicals, automobiles, jute, cement, tea, textile machinery, light engineering and other products. No fewer than 30 of the Birla group's 175 companies are listed among the top 250 corporations in India's private sector (Herdeck and Piramal, 1985; Encarnation, 1989).

Turning to Latin America, the diversified industrial group tends to be sandwiched between foreign firms (sometimes allied in groups with local firms) and state-owned enterprises. Scattered evidence also indicates that diversification may not be quite as technologically unrelated as in Asia. In Mexico: 'Of the 121 major groups, all were substantially diversified, even though they usually remained identified with a core product' (Camp, 1989,

p. 174). Some of Mexico's biggest groups (such as Vitro, with a nucleus in glass) date from the first wave of modern Mexican industrialization in the 1890s to 1930s (Haber, 1989). An alliance among various firms, however, began to accelerate in the mid-1960s. Mexico's largest group (Industrial Alfa, which ranked 23rd in Table 3) was established in 1974 by inheriting a number of iron and paper companies when the (now extinct) Cuauhtemoc-HYSLA group split into two (Hoshino, 1990). The largest 100 Mexican firms in 1981 were roughly estimated to account for 50% of GNP and 73% of capital (Castaneda, 1982, p. 87). The subsidiaries of the largest groups were, as in Asia, predominantly in manufacturing. The top 50 Mexican groups were estimated in 1983 to have a total of 739 companies, 439 of which were in industry (Cordero *et al.*, 1983).

In the case of Brazil, almost two-thirds of its biggest domestic enterprises were established before World War I (Queiroz, 1962, 1965). As for the origins of Brazil's local groups, 'whether established by immigrants or families long rooted in Brazil, one of the common features of the largest Brazilian economic groups is that they moved into industry via commerce' (Evans, 1979, p. 108). By the early 1970s about half the firms among the top 100 companies were state-owned (the comparable share for the top 50 companies was even higher, roughly two-thirds) but among private firms in the top 100 about 35 were in groups (13 in private domestic groups and 22 in private foreign groups). Seven local groups, five of them highly diversified in manufacturing, were the central core of private domestic industry (Evans, 1979, pp. 152–158). The only Brazilian firm to appear in Table 3 is Copersucar, which is a cooperative in food and chemicals.

Argentina's groups also evolved in two distinct periods, the first (1860–1930) associated with agro-exports and the second (1930–1960) with import-substitution. Bunge y Born, one of the largest groups, was founded by Belgian expatriates as a trading company in the first wave (Ines Barbero, 1995). Emblematic of the second phase of expansion was SIAM, founded by an Italian immigrant, Torcuato di Tella, who believed as early as 1910 that while imported machines were more efficient than any produced in Argentina, a domestic model superior to either could be developed (Cochran and Reina, 1962). In 1986 the top 15 Argentine groups represented 22% of firms quoted on the Buenos Aires Stock Exchange and were among the top five producers in 30 industries (Sguiglia, 1988).

South Africa's largest business group, the Anglo-American Corporation, was formed in 1917 and has interests in an estimated 1300 South African companies (it is now officially registered in Bermuda). It has a 34% share in De Beers Consolidated (ranked 13th in Table 3), which is involved in the distribution of some 80% of the world's rough-diamond production (Palister *et al.*, 1987). Barlow Rand Limited (ranked fifth in Table 3), also established early in the 20th century, started as South Africa's sales agent for Caterpillar Company (an American manufacturer of heavy equipment). This company